

# Light Valley Solar

Environmental Statement Volume 3

## Appendix 15.2: Water Environment Regulations Assessment

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# Infrastructure Planning

## Planning Act 2008

### The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

# Light Valley Solar

## DCO Submission

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## Appendix 15.2: Water Environment Regulations Assessment

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# 1 Introduction

- 1.1.1 This Appendix presents the findings of the Water Environment Regulations (WER) compliance assessment (also referred to as a Water Framework Directive (WFD) compliance assessment) of the likely compliance of Light Valley Solar (the Proposed Development) in respect of the requirements of the WER (see Annex A). The WER requires that new developments demonstrate that no deterioration of the status of water bodies will occur. This report forms an Appendix to Chapter 15: Water Resources and Flood Risk (Environmental Statement (ES) Volume 1) **[EN0110012/APP/LVS/06.01.15]**.
- 1.1.2 This Appendix presents an assessment of the potential impact of the Proposed Development on WER objectives. The report provides a summary of the Proposed Development, the assessment methodology and preliminary results of the assessment. It has been undertaken in accordance with relevant WER legislative context and guidance (Annex A.1) and has involved a desk-based study using readily available Environment Agency (EA) WER baseline information and internal datasets held by the EA. The assessment is based on the design of the Proposed Development as presented within the Development Consent Order (DCO) Application.
- 1.1.3 The assessment is a final assessment, provided as part of the ES submitted with the DCO Application.

## 2 Assessment Methodology

### 2.1 Scope of the assessment

2.1.1 WER compliance assessments comprise a stepped process undertaken in parallel with the design development for a Proposed Development. This includes the following key steps, described in detail in Annex A of this report:

- 1) Screening assessment;
- 2) Scoping assessment; and
- 3) Detailed impact assessment (where deemed required).

2.1.2 This report comprises the screening and scoping assessment elements of the process. Site walkovers have been undertaken on a number of watercourses and results have been reported within this document. A detailed impact assessment has not been deemed as required, as the Proposed Development is not expected to result in a risk of deteriorating current WER status, or prevention of achieving a Good Status in the future for the WER water bodies.

2.1.3 The spatial scope of the assessment includes all WER designated surface water and groundwater bodies potentially affected by the Proposed Development, as outlined in Figure 15.5: WER - Surface Water Bodies (ES Volume 2) [EN0110012/APP/LVS/06.02.15.05] and Figure 15.6: Groundwater Bodies (ES Volume 2) [EN0110012/APP/LVS/06.02.15.06]. The Study Area for the WER Assessment comprises the footprint of the Order Limits and a 1 km buffer which is considered to cover the zone of influence for the Proposed Development. This considers the potential impacts of the Proposed Development on all the relevant quality elements associated with the surface water and groundwater bodies affected, at the water body scale.

The assessment focuses on the long-term impacts of the Proposed Development. Temporary impacts are not considered to result in deterioration in WER status and so have not been considered within the assessment in accordance with current guidance (Ref 1) (note that typically construction impacts would only be considered temporary if works do not extend beyond 3 years in duration, which is the case for the construction phase of the Proposed Development). To be conservative and based on engagement with the Environment Agency, temporary has been considered to be works lasting no more than 6 months. Any temporary works with a duration above 6 months have been considered.

2.1.4 Following this, impacts are not considered to result in a deterioration of the water body status if the water body:

- 1) is only impacted for a short time period;
- 2) is likely to recover within a short time period; and
- 3) is likely to recover without the need for any restoration (beyond reinstatement).

## 2.2 Data sources

2.2.1 The following EA WER datasets and resources are available online and have been collated to support this assessment:

- 1) EA “Cycle 3 River Basin Management Plan (RBMP), Humber River Basin Management Plan” (2022) (Ref 2)
- 2) Humber River Basin Cycle 3 RBMP 2022 and 2019 water body status classification and status objectives data (EA Catchment Data Explorer) (Ref 3)
- 3) WER Protected Area data (EA Catchment Data Explorer) (Ref 3)
- 4) Freshwater biological survey datasets for invertebrates, macrophytes and diatoms, including monitoring site locations, dates and results (EA’s BIOSYS dataset on the EA’s Ecology & Fish Data Explorer) (Ref 4)
- 5) Freshwater fish survey data collated from fisheries monitoring work, including monitoring site locations, dates and fish species count results (EA’s National Fish Populations Database (NFPD) on the EA’s Ecology and Fish Data Explorer) (Ref 4)
- 6) Water quality monitoring datasets, including monitoring site locations, dates and results (EA’s water quality data archive) (Ref 5).

2.2.2 A data request was submitted to the EA on 24 June 2024 to request relevant information which is not publicly available. An additional request was submitted for additional water bodies identified along the Cable Route Corridor in February 2025. Where provided, this data is detailed in Annex E and includes:

- 1) Extended Waterbody Summary Reports for the relevant water bodies (where available)
- 2) RBMP “Reasons for Not Achieving Good” (RNAG) investigation reporting for the relevant water bodies (where available)
- 3) Waterbody Level Measure Actions and Heavily Modified Water Body (HMWB) Mitigation Measure Assessments (where available / applicable).

2.2.3 The following additional key sources of data have also been used to inform this WER Assessment:

- 1) MAGIC Map (Ref 6)
- 2) British Geological Society (BGS) Geo Index viewer (Ref 7).

## 2.3 Other relevant environmental reports

2.3.1 This assessment should be read in conjunction with the following ES documents available at statutory consultation which have been used to inform this assessment:

- 1) Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02]**;

- 2) Chapter 6: Biodiversity (ES Volume 1) [EN0110012/APP/LVS/06.01.06];
- 3) Chapter 15: Water Resources and Flood Risk (ES Volume 1) [EN0110012/APP/LVS/06.01.15];
- 4) Appendix 15.1: Flood Risk Assessment (ES Volume 3) [EN0110012/APP/LVS/06.03.15.01];
- 5) Appendix 15.4: Outline Drainage Strategy (ES Volume 3) [EN0110012/APP/LVS/06.03.15.04]; and
- 6) Water Resource Assessment [EN0110012/APP/LVS/07.16]

## 2.4 Watercourse receptor valuation

2.4.1 Activities associated with the Proposed Development have the potential to affect a number of watercourse receptors. The watercourses present within each WER water body catchment that have the potential to be affected by the Proposed Development have therefore been identified, assessed and assigned a receptor value using desktop information and professional judgement. The receptor value was then verified with site visits. The criteria used to classify watercourse receptor value is summarised in Table 2-1. This criteria has been established based upon available guidance, legislation, statutory designation and / or professional judgement.

**Table 2-1 Watercourse receptor values and criteria**

| Receptor value | Criteria   |
|----------------|--|
| Very High      | <ul style="list-style-type: none"> <li>▪ Within or in close hydraulic connectivity with a statutory designated site (e.g. Site of Special Scientific Interest (SSSI) or Special Area of Conservation (SAC)).</li> <li>▪ Main River, not an Ordinary watercourse.</li> <li>▪ Part of main WER river water body extent.</li> <li>▪ Permanent baseflow. Definable flow types.</li> <li>▪ Evidence of active fluvial geomorphological processes and features (e.g. fluvial bank erosion and bars).</li> <li>▪ Supports freshwater fish, macroinvertebrate and/or macrophyte communities. Subject to EA freshwater monitoring regime</li> <li>▪ Channel may be subject to physical modifications (e.g. historically straightened or reprofiled).</li> <li>▪ Riparian zone typically exhibits some structural diversity. May be impacted or heavily modified by adjacent land uses (e.g. agricultural) and/or vegetation maintenance.</li> </ul> |
| High           | <ul style="list-style-type: none"> <li>▪ Main River or significant Ordinary watercourse</li> <li>▪ Part of main WER water body extent</li> <li>▪ Permanent baseflow. Definable flow types</li> <li>▪ Evidence of active fluvial geomorphological processes and features (e.g. fluvial bank erosion and bars)</li> <li>▪ Supports freshwater fish, macroinvertebrate and/or macrophyte communities. Typically to EA freshwater monitoring regime</li> </ul>   |

| Receptor value | Criteria   |
|----------------|--|
|                | <ul style="list-style-type: none"> <li>▪ Channel may be subject to physical modifications (e.g. historically straightened or reprofiled)</li> <li>▪ Riparian zone may be impacted or heavily modified by adjacent land uses (e.g. agricultural) and/or regular vegetation maintenance.</li> </ul>  |
| Moderate       | <ul style="list-style-type: none"> <li>▪ Ordinary watercourse</li> <li>▪ Tributary of main WER water body</li> <li>▪ Some limited baseflow. Generally shallow flows with limited hydraulic diversity</li> <li>▪ Some limited evidence of active fluvial geomorphological processes and features (e.g. fluvial bank erosion and bars)</li> <li>▪ Potential to support some freshwater fish, macroinvertebrate and/or macrophyte communities (but typically low diversity and/or abundance). Generally, not subject to EA freshwater monitoring regime</li> <li>▪ Channel may be subject to physical modifications (e.g. historically straightened or reprofiled)</li> <li>▪ Riparian zone may be impacted or heavily modified by adjacent land uses (e.g. agricultural) and/or regular vegetation maintenance.</li> </ul> |
| Low            | <ul style="list-style-type: none"> <li>▪ Ordinary watercourse</li> <li>▪ Minor tributary (within WER water body catchment). Typically comprising artificially created drainage ditch or small and/or ephemeral channel</li> <li>▪ Little or no baseflow. Largely very shallow and/or ponded flows under normal conditions, with potential to dry-out during periods of dry weather</li> <li>▪ Little evidence of active fluvial geomorphological processes and features (e.g. fluvial bank erosion and bars)</li> <li>▪ Little or no potential to support freshwater fish, macroinvertebrate and/or macrophyte communities. Not subject to EA freshwater monitoring</li> <li>▪ Riparian zone typically impacted or heavily modified by adjacent land uses (e.g. agricultural).</li> </ul>                                |

### 3 Stakeholder engagement and consultation

- 3.1.1 Chapter 15: Water Resources and Flood Risk (ES Volume 1) [EN0110012/APP/LVS/06.01.15] summarises the engagement and consultation that has taken place with the Environment Agency, who are the consultation body for WER.
- 3.1.2 The Environment Agency have responded to preliminary environmental information set out within the Preliminary Environmental Information Report (PEIR) which included the preliminary screening and scoping assessment for WER compliance.
- 3.1.3 Several stakeholder meetings have taken place with the Environment Agency to discuss Environment Agency comments and Applicant responses on the statutory consultation, including matters which affect this WER. This is set out further in table 15-6 of Chapter 15: Water Resources and Flood Risk (ES Volume 1) [EN0110012/APP/LVS/06.01.15].

## 4 Existing site

- 4.1.1 The Study Area for water resources and flood risk is defined by the Order Limits plus a 1 km buffer, as shown in Figure 15.1: Surface Water Features (ES Volume 2) [EN0110012/APP/LVS/06.02.15.01].
- 4.1.2 The 1 km Study Area was selected based on professional judgement of the potential impacts and pathways related to the Proposed Development, and alignment on approach with other solar developments. The final Study Area has been reviewed to ensure that all receptors that are potentially in hydraulic continuity with the Proposed Development are included (such as downstream receptors and wider flood risk areas).

### 4.2 Site location

- 4.2.1 The Order Limits (refer to Figure 1.1: Site Location Plan and Order Limits (ES Volume 2) [EN0110012/APP/LVS/06.02.01.01]) comprises seven 'Solar Development Sites' (herein referred to as 'Solar Development Sites'/'Solar Development Sites 1-4 and 6-8' or individually) which cover a combined area of approximately 900 hectares (ha). Including the Cable Route Corridor, the Solar Development Site 8 Access and Highways Improvement Areas the total area of the Order Limits is approximately 1,270 ha.

### 4.3 Site description

- 4.3.1 A significant number of watercourses are found within the Study Area, including main rivers, ordinary watercourses and Internal Drainage Board (IDB) watercourses. A number of unnamed drains are also found within the Study Area. All watercourses identified within the Order Limits can be found within Section 6.5 (see also Figure 15.1: Surface Water Features (ES Volume 2) [EN0110012/APP/LVS/06.02.15.01] and Chapter 15: Water Resources and Flood Risk (ES Volume 1) [EN0110012/APP/LVS/06.01.15]).
- 4.3.2 For the purposes of the WER assessment, only watercourses located within the Order Limits have been assessed. Watercourses outside of the Order Limits but within 1 km have been considered for assessment, however have been screened out as upstream or downstream impacts are not deemed likely due to the nature of the Proposed Development. These watercourses are documented in Annex B. Further detail on the screening in or out of water bodies can be found within Section 6 (Screening and baseline assessment).

### Geology

- 4.3.3 The British Geological Survey (BGS) 1:50,000 scale mapping (Ref 7) indicates that the bedrock geology across all the Solar Development Sites and the Cable Route Corridor is from the Sherwood Sandstone Group, with the exception of Solar Development Site 3, from the Roxby Formation which is mostly made up of mudstone and siltstone.

4.3.4 Superficial deposits vary across the site as follows:

- 1) Solar Development Site 1 - Escrick Moraine Member - Clay, Sandy, Gravelly, Skipwith Sand Member - Sand, Clayey, Gravelly and Skipwith Sand Member - Sand, Clayey, Gravelly
- 2) Solar Development Site 2, Solar Development Site 6, Solar Development Site 7 - Hemingbrough Glaciolacustrine Formation - Clay, Silty
- 3) Solar Development Site 3, Solar Development Site 4, Solar Development Site 8 - Hemingbrough Glaciolacustrine Formation - Clay, Silty and Brighton Sand Formation – Sand
- 4) Cable Route Corridor – In addition to the above, the following superficial units are crossed by the Cable Route Corridor: Thornganby Clay Member, as well as Alluvium composed of clay, peat and silt found along the Ouse Valley, and its tributary Selby Dam.

4.3.5 Annex D shows the bedrock and superficial geology within the Study Area.

### Topography

4.3.6 The area within the Study Area is relatively flat or very gently sloping, dominated by the River Ouse valley and its wide floodplain and with an elevation between 0 and 10 m AOD.

### Land use

4.3.7 The land use within the Study Area is predominantly agricultural. According to the 2018 Corine Land Cover map (Ref 8) the Study Area is dominated by pastures and non-irrigated arable land.

4.3.8 A small number of dispersed residential properties are present across the Study Area as well as some larger population centres and main roads being crossed and/or within the buffer of the Cable Route Corridor. Bands of narrow woodland strips are located along watercourses.

## 5 Proposed Development

### 5.1 Overview

5.1.1 Details about the Proposed Development are provided in Chapter 2: The Proposed Development (ES Volume 1) [EN0110012/APP/LVS/06.01.02]. The Outline Drainage Strategy is included in Appendix 15.4: Outline Drainage Strategy (ES Volume 3) [EN0110012/APP/LVS/06.03.15.04]. Key assumptions are discussed in Section 5.2 below.

### 5.2 Design mitigation and assumptions

#### Embedded mitigation

5.2.1 Embedded measures are modifications to the design of a scheme, made during the pre-application phase, which are an inherent part of the design and do not require additional action to be taken. Good practice measures are standard approaches and actions undertaken to avoid or reduce environmental impacts in line with best practice guidance and legislative requirements.

5.2.2 In addition, specific mitigation and good practice will be implemented during construction to prevent permanent effects on water bodies from construction. The Proposed Development would be managed during its construction in accordance with the detailed Construction Environmental Management Plan (CEMP)(s) and associated other management plans relevant to this assessment which will be developed which are outlined below:

- 1) Materials and Waste Management Plan (MWMP);
- 2) Soil Resources Management Plan (SRMP); and
- 3) Pollution and Spillage Response Plan (PSRP).

5.2.3 An outline CEMP (oCEMP) [EN0110012/APP/LVS/07.02], outline MWMP (oMWMP) [EN0110012/APP/LVS/07.07], outline SRMP (oSRMP) [EN0110012/APP/LVS/07.14] and outline PSRP (oPRSP) [EN0110012/APP/LVS/07.08] have been submitted with the DCO Application to secure the commitments set out below. Final versions of these plans will be required as a requirement of the DCO and must be prepared in substantial accordance with the outlines and approved by North Yorkshire Council prior to the commencement of each relevant phase of the development.

5.2.4 The Proposed Development has evolved through an iterative design process. Measures for the Proposed Development relevant to water resources and flood risk already committed to and secured within the oCEMP [EN0110012/APP/LVS/07.02] or Design Parameters and Commitments Document (as relevant) [EN0110012/APP/LVS/05.06] include:

- 1) A minimum offset of 10 m from bank top for all WER surface water bodies from all infrastructure (including fencing) and construction works, except where watercourse crossings are required (access tracks / cable routing /

fencing will be located to pass across existing watercourse crossings where feasible).

- 2) The sequential location of flood-sensitive infrastructure, including substations and the BESS Compound, in areas of lowest flood risk, in the locations shown on the Works Plans [EN0110012/APP/LVS/02.03]. This includes locating these assets within Flood Zone 1 and Flood Zone 2 only, thereby avoiding Flood Zone 3 and minimising potential flood risk and the loss of functional floodplain.
- 3) The use of site-specific flood modelling to inform the spatial distribution of infrastructure, ensuring that substations and the BESS Compound are located outside the flood envelope associated with the 1 in 100-year plus climate change design flood event.
- 4) Solar panels will be mounted on metal frames, which are compatible with being placed in a floodplain.
- 5) Sustainable drainage solutions (SuDS) will be provided at source, and be considered in the drainage strategy, ensuring that surface water run-off is managed appropriately.
- 6) Internal Solar PV access tracks will be permeable to allow water to filtrate through and maintain greenfield runoff rates as per the existing condition.
- 7) Existing watercourse crossings are to be used wherever practicable.
- 8) Where watercourse crossing structures are required, the design will maintain a natural watercourse bed where reasonably practicable.
- 9) Culverts will be sized appropriately to the flow in the watercourse.
- 10) Temporary watercourse crossing structures should be removed once they are no longer required for the purposes of construction.
- 11) When a temporary watercourse crossing structure is removed, the watercourse should be reinstated to the baseline condition or to a better condition than baseline.
- 12) Suitable stand offs from springs, spring catchments or boreholes.
- 13) Use of underground cabling methodology that minimises disruption to the ground.
- 14) Use of piling methodology that minimises likelihood of creating pollution pathway to groundwater.
- 15) Trenchless solutions, for example horizontal directional drilling (HDD), are proposed for the crossing of the River Ouse, main rivers, IDB watercourses, and WER water body line watercourses. Trenchless solutions will also be utilised when/if crossing ditches that lead to the following designated sites: Common Wood SINC, Nightingale Wood SINC, Burr Closes SSSI, and Barber Rain SINC. Trenchless solutions will also be employed to pass beneath Ouse Bank-Westfield-Riccall Ings SINC that flanks the River Ouse, which will avoid direct impacts to the designated site. For some minor

watercourse crossings (unnamed watercourses) trenchless techniques such as HDD will also be utilised. For some unnamed watercourse crossings, open cut crossing techniques will be utilised in some instances and only where the watercourse receptor value is low. This is secured within the oCEMP [EN0110012/APP/LVS/07.02].

- 16) A number of 'Avoidance Areas' have been identified for HDD (refer to Figure 2.5: Avoidance Areas (ES Volume 2) [EN0110012/APP/LVS/06.02.02.05] and Appendix 2.1: Cable Route Method Statement (ES Volume 3) [EN0110012/APP/LVS/06.03.02.01]) where non-intrusive installation methods will be used to avoid impact to sensitive features such as the watercourses set out above, hedgerows and mature vegetation. No open cut trenches or launch/exit pits will be located within Avoidance Areas.
- 17) Where practicable, cabling within the Solar Development Sites will be routed to follow access tracks and where these access tracks cross drains/watercourses via existing culverts cables would be routed over these culverts/new culverts constructed to the dimensions of the existing culverts. In cases where this is not practicable the impact of open cut trenching will be short term (less than 6 months in duration). This is secured within the oCEMP [EN0110012/APP/LVS/07.02].

### Construction mitigation

5.2.5 Relevant construction mitigation secured via the oCEMP [EN0110012/APP/LVS/07.02] includes:

- 1) Internal Solar PV access tracks will be of permeable construction to allow water to filtrate through and maintain greenfield runoff rates.
- 2) A 50 m stand off will be applied from all groundwater and surface water abstractions, both licensed and private water supplies.
- 3) Use of underground cabling methodology that minimises disruption to the ground (e.g. where practicable cable plough which cuts, installs and backfills in one operation). The use of underground cabling will consider the risk of groundwater flooding and be appropriately waterproofed.
- 4) Use of piling methodology that minimises likelihood of creating pollution pathway to groundwater. This will be assessed in a foundation works risk assessment.
- 5) Minimising area of hardstanding required for laydown and construction compounds.
- 6) Design of temporary / construction works excavations and storage to not increase flood risk or be placed within the floodplain as far as practicable this is secured within the oCEMP [EN0110012/APP/LVS/07.02].
- 7) Where land drainage from agriculture is encountered during construction, actions will be taken to divert the flow to an appropriate location, such as

the construction drainage network. Prior to completion of the Proposed Development, these field drains will be reinstated to the original locations, where practicable, or to a suitable alternative discharge point determined before the end of construction.

- 8) The Proposed Development would be managed during its construction in accordance with the CEMP and other management plans indicated in Section 5.2.2 above to provide biosecurity, manage contamination risk and minimise disturbance, and manage pollution and spillage incidents on site.

## 5.3 Assumption and limitations

- 5.3.1 This assessment is based on baseline and design information available at the time of writing. Walkover surveys were conducted in May 2025 and August 2025 and information gathered has been used as part of this assessment.
- 5.3.2 The findings presented in this assessment are subject to change as and when the detailed design is developed following the DCO Application / appointment of a contractor. At this stage, the Cable Route Corridor typically covers a 50 m width, however it is noted that the typical construction working width is approximately 25 m. Potential effects associated with the Cable Route Corridor have been assessed based on the larger width as a 'worst case scenario'.
- 5.3.3 Where design details are still under development or flexibility is sought, assumptions have been made based on professional judgment and the assessment has been based on the parameters set.
- 5.3.4 At this stage the water supply for the development is not confirmed, however it is understood that there is no requirement for a new licensed water abstraction from surface water or groundwater to provide water during construction. This is considered in further detail in the Water Resource Assessment [EN0110012/APP/LVS/07.16]. Water is expected to be either transported to the Site by road tankers from mains water where available, subject to agreement from Yorkshire Water, or from another water tanker supplier. Alternatives being considered are repurposing existing nearby licenced water abstractions or private water supplies source, where viable; abstracting from one or more small scale surface water abstractions (<20 m<sup>3</sup>/d) which do not require licensing; or surface water sourced and stored on site.
- 5.3.5 At this stage, access tracks within the Solar Development Sites are only indicative for the purposes of assessment. The locations and alignments of the internal access tracks within the Solar Development Sites are likely to change depending on the final layout design and the construction methodology.
- 5.3.6 A possible access route for Solar Development Site 8, as a worst case scenario, may require removal of an existing crossing structure over Selby Dam and replacement of this structure with a new crossing structure to maintain access to nearby properties. It is assumed that the construction period for replacement would not exceed 2 months.

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- 5.3.7 As set out in the Cable Route Corridor Construction Method Statement [EN110012/APP/LVS/06.03.02.01], haul roads required for the cable routing have been designed to avoid drainage ditches and watercourses based on the surface water flood map for the region. Where watercourses cannot be avoided, it is assumed as a worst case that a temporary culvert will be used as the crossing structure. The culverts required for the haul roads are assumed to be in place for a maximum of two years as a worst case.
- 5.3.8 The oCEMP [EN0110012/APP/LVS/07.02] includes measures to reinstate watercourses impacted by temporary cross structures to baseline condition or better.
- 5.3.9 If footpath diversions, which are part of the ancillary works, cross watercourses, it has been assumed, for the purposes of this assessment, that any crossings needed will take the form of footbridges.
- 5.3.10 Any third-party information, including the readily available data sources and input from external consultations is assumed to be accurate at the time of writing.
- 5.3.11 The decommissioning phase is anticipated to include less but similar works to the construction phase and therefore to have potential similar potential impacts.

## 6 Screening and baseline assessment

### 6.1 Overview

6.1.1 The screening and baseline assessment stage has identified the relevant WER water bodies that will potentially be affected by the Proposed Development. The information relating to these water bodies, alongside the relevant EA WER data, is summarised in the sections below.

### 6.2 River Basin Management Plan

6.2.1 The Proposed Development is located within the Ouse Lower and Aire Lower operational catchments, within the Humber River Basin District (RBD). The groundwater bodies are located within the Wharfe & Lower Ouse Sherwood Sandstone, Aire & Don Sherwood Sandstone, Wharfe Magnesian Limestone and Aire & Don Magnesian Limestone Operational Catchments. The WER status objectives and programme of measures derived by the EA for water bodies located within this RBD are outlined within the recently published Cycle 3 Humber River Basin Management Plan (RBMP).

6.2.2 Readily available baseline information has been collated to identify the relevant WER surface water and groundwater bodies potentially affected by the Proposed Development. Additional information has been provided by the EA following relevant requests and is summarised below.

### 6.3 Relevant water bodies

6.3.1 Eleven WER surface water bodies and four WER groundwater bodies are present within the study area and are summarised in Table 6-1. The catchment locations are also shown in B.1 of Annex B. Six of these surface water bodies contain watercourses within the Order Limits:

- 1) Aire from Fryston Beck to River Ouse;
- 2) Ouse from R Wharfe to Upper Humber;
- 3) Selby Dam from Conf. Fox Dike and Carr Dike to Ouse;
- 4) Riccall Dam Catchment (trib of Ouse);
- 5) The Fleet from Source to River Aire; and
- 6) Holmes Dike Catchment (trib of Ouse).

6.3.2 Given the nature and location of the Proposed Development, these six water bodies and all four groundwater bodies have been screened in for assessment.

6.3.3 Given the nature and location of the Proposed Development, it is not anticipated to affect the other five surface water bodies in the Study Area. Three of these water bodies are located outside of the Order Limits, these are Mill Dike from Source Bishop Dike, Fox Dike / Carr Dike from Source to Selby Dam and Upper Fox Drain Catchment ds of Sherburn STW. These water bodies have no direct

hydrological connection to the Solar Development Sites. The Proposed Development will have no direct physical impact on these sites and no changes to surface processes are expected to these water bodies as a result of the Proposed Development. Therefore, these surface water bodies have been screened out of the WER scoping assessment, as summarised in Table 6-1. In addition, the Order Limits extend in a very limited way into two WER water body catchments; Stillingfleet Beck Source to Ouse Catchment and Bishop Dike (trib of Ouse). Given that there are no watercourses within this small area and the surface water drainage management proposals for the Solar Development Sites, it is not anticipated that these water bodies would be affected and have therefore been screened out.

**Table 6-1 WER water bodies present within and adjacent to the Proposed Development**

| Water Body Name                                     | Water Body ID   | Water Body Type | Hydromorphological Designation                | Catchment Area / Length                  | Screened in or out? |
|---|-----------------|-----------------|---|--|---------------------|
| Aire from Fryston Beck to River Ouse                | GB10402706 3037 | River           | Designated heavily modified                   | 92.15 km <sup>2</sup> / 48.9 km          | Screened in         |
| Ouse from R Wharfe to Upper Humber                  | GB10402706 4270 | River           | Designated heavily modified                   | 87.78 km <sup>2</sup> / 34.241 km        | Screened in         |
| Selby Dam from Conf. Fox Dike and Carr Dike to Ouse | GB10402706 3620 | River           | Designated heavily modified                   | 39.593 km <sup>2</sup> / 8.857 km        | Screened in         |
| Riccall Dam Catchment (trib of Ouse)                | GB10402706 3690 | River           | Not designated artificial or heavily modified | 41.932 km <sup>2</sup> / 19.91 km        | Screened in         |
| The Fleet from Source to River Aire                 | GB10402706 2740 | River           | Designated artificial                         | 13.397 km <sup>2</sup> / 8.838 km        | Screened in         |
| Holmes Dike Catchment (trib of Ouse)                | GB10402706 3650 | River           | Not designated artificial or heavily modified | 17.433 km <sup>2</sup> / 4.808 km        | Screened in         |
| Wharfe & Lower Ouse Sherwood Sandstone              | GB40401G70 2400 | Groundwater     | Not applicable                                | 397.205 km <sup>2</sup> / not applicable | Screened in         |

| Water Body Name                               | Water Body ID   | Water Body Type | Hydromorphological Designation                | Catchment Area / Length                  | Screened in or out? |
|---|-----------------|-----------------|---|--|---------------------|
| Aire & Don Sherwood Sandstone                 | GB40401G70 1000 | Groundwater     | Not applicable                                | 303.169 km <sup>2</sup> / not applicable | Screened in         |
| Wharfe Magnesian Limestone                    | GB40401G70 1100 | Groundwater     | Not applicable                                | 176.217 km <sup>2</sup> / not applicable | Screened in         |
| Aire & Don Magnesian Limestone                | GB40401G70 0900 | Groundwater     | Not applicable                                | 221.765 km <sup>2</sup> / not applicable | Screened in         |
| Bishop Dike (trib of Ouse)                    | GB10402706 3660 | River           | Not designated artificial or heavily modified | 25.346 km <sup>2</sup> / 16.968 km       | Screened out        |
| Fox Dike / Carr Dike from Source to Selby Dam | GB10402706 3680 | River           | Not designated artificial or heavily modified | 11.296 km <sup>2</sup> / 6.693 km        | Screened out        |
| Mill Dike from Source Bishop Dike             | GB10402706 3640 | River           | Not designated artificial or heavily modified | 21.604 km <sup>2</sup> / 14.958 km       | Screened out        |
| Stillingfleet Beck Source to Ouse             | GB10402706 3710 | River           | Designated heavily modified                   | 53.695 km <sup>2</sup> / 26.629 km       | Screened out        |
| Upper Fox Drain Catchment ds of Sherburn STW  | GB10402706 3610 | River           | Designated heavily modified                   | 10.104 km <sup>2</sup> / 11.357 km       | Screened out        |

6.3.4 Annex E of this report also contains more detail about information discussed in the following sections pertaining to Reasons for Not Achieving Good (RNAG), Protected Areas and EA monitoring locations.

## 6.4 WER water body baseline

### Aire from Fryston Beck to River Ouse (GB104027063037)

#### Status and objectives

6.4.1 The Aire from Fryston Beck to River Ouse water body is designated as a HMWB, in recognition of physical modifications by human activity and a resultant

substantial change in character. It is currently assessed (as of 2022) as having an Overall Status of Moderate, Ecological Status of Moderate and a Chemical Status of Fail. The water body is therefore failing its Good Overall Status objective under the WER at present.

6.4.2 A breakdown of the current status and status objectives of the water body is provided in Table 6-2. The quality elements currently limiting the Ecological Status of the water body are Invertebrates (Moderate), Macrophytes Sub Element (Poor), Phosphate (Poor), the Mitigation Measures Assessment (Moderate or less) and Diazinon (Moderate). The quality elements limiting the Chemical Status of the water body are Mercury and its Compounds (Fail), Perfluorooctane sulphonate (PFOS) (Fail) and Polybrominated diphenyl ethers (PBDE) (Fail).

**Table 6-2 Aire from Fryston Beck to River Ouse (GB104027063037) water body**

| Quality Element                               | Cycle 3 RBMP     |                       | Objective                           |
|---|------------------|-----------------------|-------------------------------------|
|   | 2019 status      | Current status (2022) |                                     |
| <b>ECOLOGICAL</b>                             | <b>Moderate</b>  | <b>Moderate</b>       | <b>Good (2027) - Low confidence</b> |
| <b>Biological quality elements</b>            | <b>Moderate</b>  | <b>Moderate</b>       | <b>Good (2027) - Low confidence</b> |
| Invertebrates                                 | Moderate         | Moderate              | Good (2027) - Low confidence        |
| Macrophytes and Phytobenthos Combined         | Not assessed     | Not assessed          | Not assessed (2015)                 |
| Macrophytes Sub Element                       | Poor             | Poor                  | -                                   |
| <b>Physico-chemical quality elements</b>      | <b>Moderate</b>  | <b>Moderate</b>       | <b>Good (2027) - Low confidence</b> |
| Acid Neutralising Capacity                    | High             | High                  | Good (2015)                         |
| Ammonia (Phys-Chem)                           | Good             | Good                  | Good (2015)                         |
| Dissolved oxygen                              | High             | High                  | Good (2015)                         |
| Phosphate                                     | Poor             | Poor                  | Good (2027) - Low confidence        |
| Temperature                                   | Good             | Good                  | Good (2015)                         |
| pH  | High             | High                  | Good (2015)                         |
| <b>Hydromorphological Supporting Elements</b> | <b>Not high</b>  | <b>Not high</b>       | <b>Not high (2015)</b>              |
| Hydrological Regime                           | Supports good    | Supports good         | Supports good (2015)                |
| <b>Supporting elements (Surface Water)</b>    | <b>Moderate</b>  | <b>Moderate</b>       | <b>Good (2027) - Low confidence</b> |
| Mitigation Measures Assessment                | Moderate or less | Moderate or less      | Good (2027) - Low confidence        |
| <b>Specific pollutants</b>                    | <b>Moderate</b>  | <b>Moderate</b>       | <b>High (2027) - Low confidence</b> |
| 2,4-dichlorophenol                            | High             | High                  | High (2015)                         |
| 2,4-dichlorophenoxyacetic acid                | High             | High                  | High (2015)                         |

| Quality Element                                | Cycle 3 RBMP |  |                              |
|--|--------------|--|------------------------------|
|  | 2019 status  | Current status (2022)                          | Objective                    |
| Arsenic  | High         | High   | High (2015)                  |
| Chlorothalonil                                 | High         | High   | High (2015)                  |
| Copper   | High         | High   | High (2015)                  |
| Diazinon                                       | Moderate     | Moderate                                       | High (2027) - Low confidence |
| Dimethoate                                     | High         | High   | High (2015)                  |
| Iron   | High         | High   | High (2015)                  |
| Manganese                                      | High         | High   | High (2015)                  |
| Mecoprop                                       | High         | High   | High (2015)                  |
| Pendimethalin                                  | High         | High   | High (2015)                  |
| Permethrin                                     | High         | High   | High (2015)                  |
| Phenol   | High         | High   | High (2015)                  |
| Zinc   | High         | High   | High (2015)                  |
| <b>CHEMICAL</b>                                | <b>Fail</b>  | <b>Does not require assessment<sup>1</sup></b> | <b>Good (2063)</b>           |
| <b>Priority hazardous substances</b>           | <b>Fail</b>  | <b>Does not require assessment</b>             | <b>Good (2063)</b>           |
| Benzo(a)pyrene                                 | Good         |  | Good (2015)                  |
| Benzo(b)fluoranthene                           | Good         |  | Good (2015)                  |
| Benzo(g-h-i)perylene                           | Good         |  | Good (2015)                  |
| Benzo(k)fluoranthene                           | Good         |  | Good (2015)                  |
| Cadmium and Its Compounds                      | Good         |  | Good (2015)                  |
| Di(2-ethylhexyl)phthalate (Priority hazardous) | Good         |  | Good (2015)                  |
| Dioxins and dioxin-like compounds              | Good         |  | Good (2015)                  |
| Endosulfan                                     | Good         |  | Good (2015)                  |
| Heptachlor and cis-Heptachlor epoxide          | Good         |  | Good (2015)                  |
| Hexabromocyclododecane (HBCDD)                 | Good         |  | Good (2015)                  |
| Hexachlorobenzene                              | Good         |  | Good (2015)                  |
| Hexachlorobutadiene                            | Good         |  | Good (2015)                  |
| Hexachlorocyclohexane                          | Good         |  | Good (2015)                  |
| Mercury and Its Compounds                      | Fail         |  | Good (2040)                  |
| Nonylphenol                                    | Good         |  | Good (2015)                  |
| Pentachlorobenzene                             | Good         |  | Good (2015)                  |
| Perfluorooctane sulphonate (PFOS)              | Fail         |  | Good (2039)                  |
| Polybrominated diphenyl ethers (PBDE)          | Fail         |  | Good (2063)                  |

<sup>1</sup> Chemical status is only measured once per RBMP cycle, therefore the 2019 status still remains applicable.

| Quality Element                    | Cycle 3 RBMP |                                    |   |
|------------------------------------|--------------|------------------------------------|---|
|                                    | 2019 status  | Current status (2022)              | Objective                                 |
| Quinoxifen                         | Good         |                                    | Good (2015)                               |
| Tributyltin Compounds              | Good         |                                    | Good (2015)                               |
| <b>Priority substances</b>         | <b>Good</b>  | <b>Does not require assessment</b> | <b>Good (2015)</b>                        |
| 1,2-dichloroethane                 | Good         |                                    | Good (2015)                               |
| Aclonifen                          | Good         |                                    | Good (2015)                               |
| Alachlor                           | Good         |                                    | Good (2015)                               |
| Atrazine                           | Good         |                                    | Good (2015)                               |
| Bifenox                            | Good         |                                    | Good (2015)                               |
| Chlorfenvinphos                    | Good         |                                    | Good (2015)                               |
| Cybutryne                          | Good         |                                    | Good (2015)                               |
| Cypermethrin (Priority)            | Good         |                                    | Good (2015)                               |
| Dichlorvos (Priority)              | Good         |                                    | Good (2015)                               |
| Fluoranthene                       | Good         |                                    | Good (2015)                               |
| Lead and Its Compounds             | Good         |                                    | Good (2015)                               |
| Nickel and Its Compounds           | Good         |                                    | Good (2015)                               |
| Pentachlorophenol                  | Good         |                                    | Good (2015)                               |
| Simazine                           | Good         |                                    | Good (2015)                               |
| Terbutryn                          | Good         |                                    | Good (2015)                               |
| Trichlorobenzenes                  | Good         |                                    | Good (2015)                               |
| Trichloromethane                   | Good         |                                    | Good (2015)                               |
| <b>Other Pollutants</b>            | <b>Good</b>  | <b>Does not require assessment</b> | <b>Does not require assessment (2015)</b> |
| Aldrin, Dieldrin, Endrin & Isodrin | Good         |                                    | Good (2015)                               |
| Carbon Tetrachloride               | Good         |                                    | Good (2015)                               |
| Tetrachloroethylene                | Good         |                                    | Good (2015)                               |
| Trichloroethylene                  | Good         |                                    | Good (2015)                               |
| para - para DDT                    | Good         |                                    | Good (2015)                               |

## Protected areas

- 6.4.3 The water body is not reported as falling within any protected areas on the EA Catchment Data Explorer (Ref 3). However it should be noted that the Aire from Fryston Beck to River Ouse (GB104027063037) is a new water body for the Cycle 3 RBMP, created by splitting the Cycle 2 Aire from River Calder to River Ouse (GB104027062760) water body into two separate water bodies (Aire from Fryston Beck to River Ouse (GB104027063037) and Aire from Wyke Beck to Fryston Beck (GB104027063036). Consequently, the EA Catchment Data Explorer (Ref 3) may not be showing protected areas accurately for this water body.

## EA monitoring locations

- 6.4.4 There are eight EA monitoring sites in this water body in Cycle 3 (Ref 3). These include one for diatoms, two for macrophytes, one for fish and four for water quality, including physico-chemical elements.

## RNAG status

- 6.4.5 The EA have identified eight RNAG status for this water body (Annex E.2). These include Phosphate from agriculture diffuse sources and water industry point sources, Diazinon from water industry point sources, point source intermittent and continuous sewage discharge impacting invertebrates, and presence of PBDE which is currently being investigated. Measures are being delivered to address Mercury and its Compounds and PFOS and these are awaiting recovery.

## Measures and actions

- 6.4.6 Additional information on RBMP measures/actions (including HMWB mitigation measures assessment) identified for the water body to support achievement of its status objectives was requested from the EA.
- 6.4.7 As noted in Section 6.4.3, this water body is a new water body for the RBMP Cycle 3. The new status of the water body means that it currently does not have a suite of measures and actions, and HMWB Mitigation Measures assigned to it. As such no further information from the EA was received on this water body.
- 6.4.8 Data received for Cycle 2 Aire from River Calder to River Ouse (GB104027062760) has been used as a proxy catchment. However, it is noted that the data covers a wider area than this catchment alone and therefore does not perfectly represent the Cycle 3 catchment.
- 6.4.9 HMWB Mitigation Measures assessment information for Cycle 2 Aire from River Calder to River Ouse (GB104027062760) was received, relating to modifications concerning Flood Protection and Navigation, including measures to remove/soften engineering modifications and improve sediment management practices. Nineteen measures/actions were subsequently defined for the water body (Annex E.3). This includes one to manage rural diffuse pollution, five to manage point source discharges and 13 to mitigate the impacts on ecology from physical modifications. The measures and actions to mitigate physical modification comprise improving eel passage, improving operational and maintenance regimes and potentially removing or altering assets. Amending permit limits at Sewage Treatment Works is also outlined as the main mitigation to manage point source inputs.

## Ouse from R Wharfe to Upper Humber (GB104027064270)

### Status and objectives

- 6.4.10 The Ouse from R Wharfe to Upper Humber water body is designated as a HMWB, in recognition of physical modifications by human activity and a resultant

substantial change in character. It is currently assessed (as of 2022) as having an Overall Status of Moderate, Ecological Status of Moderate and a Chemical Status of Fail. The water body is therefore failing its Good Overall Status objective under the WER at present.

6.4.11 A breakdown of the current status and status objectives of the water body is provided in Table 6-3. The quality elements currently limiting the Ecological Status of the water body are Phosphate (Moderate) and the Mitigation Measures Assessment (Moderate or less) and the quality elements limiting the Chemical status of the water body are Mercury and its Compounds (Fail), PFOS (Fail), PBDE (Fail) and para – para Dichlorodiphenyltrichloroethane (DDT) (Fail).

**Table 6-3 Ouse from R Wharfe to Upper Humber (GB104027064270) water body**

| Quality Element                               | Cycle 3 RBMP     |                       |                                     |
|---|------------------|-----------------------|-------------------------------------|
|   | 2019 status      | Current status (2022) | Objective                           |
| <b>ECOLOGICAL</b>                             | <b>Moderate</b>  | <b>Moderate</b>       | <b>Good (2027) - Low confidence</b> |
| <b>Physico-chemical quality elements</b>      | <b>Moderate</b>  | <b>Moderate</b>       | <b>Good (2027) - Low confidence</b> |
| Acid Neutralising Capacity                    | High             | High                  | Good (2015)                         |
| Ammonia (Phys-Chem)                           | High             | High                  | Good (2015)                         |
| Dissolved oxygen                              | Good             | High                  | Good (2015)                         |
| Phosphate                                     | Moderate         | Moderate              | Good (2027) - Low confidence        |
| Temperature                                   | High             | High                  | Good (2015)                         |
| pH  | High             | High                  | Good (2015)                         |
| <b>Hydromorphological Supporting Elements</b> | <b>Not high</b>  | <b>Not high</b>       | <b>Not high (2015)</b>              |
| Hydrological Regime                           | Supports good    | Supports good         | Supports good (2015)                |
| <b>Supporting elements (Surface Water)</b>    | <b>Moderate</b>  | <b>Moderate</b>       | <b>Good (2027) - Low confidence</b> |
| Mitigation Measures Assessment                | Moderate or less | Moderate or less      | Good (2027) - Low confidence        |
| <b>Specific pollutants</b>                    | <b>High</b>      | <b>High</b>           | <b>High (2015)</b>                  |
| Arsenic                                       | High             | High                  | High (2015)                         |
| Chlorothalonil                                | High             | High                  | High (2015)                         |
| Chromium (VI)                                 | High             | High                  | High (2015)                         |
| Copper  | High             | High                  | High (2015)                         |
| Diazinon                                      | High             | High                  | High (2015)                         |
| Dimethoate                                    | High             | High                  | High (2015)                         |
| Iron  | High             | High                  | High (2015)                         |
| Manganese                                     | High             | High                  | High (2015)                         |
| Pendimethalin                                 | High             | High                  | High (2015)                         |
| Zinc  | High             | High                  | High (2015)                         |

| Quality Element                       | Cycle 3 RBMP |  |                                     |
|---------------------------------------|--------------|--|-------------------------------------|
| <b>CHEMICAL</b>                       | <b>Fail</b>  | <b>Does not require assessment<sup>1</sup></b> | <b>Good (2063)</b>                  |
| <b>Priority hazardous substances</b>  | <b>Fail</b>  | <b>Does not require assessment</b>             | <b>Good (2063)</b>                  |
| Benzo(a)pyrene                        | Good         |  | Good (2015)                         |
| Cadmium and Its Compounds             | Good         |  | Good (2015)                         |
| Dioxins and dioxin-like compounds     | Good         |  | Good (2015)                         |
| Heptachlor and cis-Heptachlor epoxide | Good         |  | Good (2015)                         |
| Hexabromocyclododecane (HBCDD)        | Good         |  | Good (2015)                         |
| Hexachlorobenzene                     | Good         |  | Good (2015)                         |
| Hexachlorobutadiene                   | Good         |  | Good (2015)                         |
| Hexachlorocyclohexane                 | Good         |  | Good (2015)                         |
| Mercury and Its Compounds             | Fail         |  | Good (2040)                         |
| Pentachlorobenzene                    | Good         |  | Good (2015)                         |
| Perfluorooctane sulphonate (PFOS)     | Fail         |  | Good (2039)                         |
| Polybrominated diphenyl ethers (PBDE) | Fail         |  | Good (2063)                         |
| Quinoxifen                            | Good         |  | Good (2015)                         |
| <b>Priority substances</b>            | <b>Good</b>  | <b>Does not require assessment</b>             | <b>Good (2015)</b>                  |
| Aclonifen                             | Good         |  | Good (2015)                         |
| Alachlor                              | Good         |  | Good (2015)                         |
| Bifenox                               | Good         |  | Good (2015)                         |
| Cybutryne                             | Good         |  | Good (2015)                         |
| Cypermethrin (Priority)               | Good         |  | Good (2015)                         |
| Dichlorvos (Priority)                 | Good         |  | Good (2015)                         |
| Fluoranthene                          | Good         |  | Good (2015)                         |
| Lead and Its Compounds                | Good         |  | Good (2015)                         |
| Nickel and Its Compounds              | Good         |  | Good (2015)                         |
| Terbutryn                             | Good         |  | Good (2015)                         |
| <b>Other Pollutants</b>               | <b>Fail</b>  | <b>Does not require assessment</b>             | <b>Good (2027) - Low confidence</b> |
| para - para DDT                       | Fail         |  | Good (2027) - Low confidence        |

## Protected areas

6.4.12 The water body falls within three Protected Areas (Annex E.1). These comprise of the River Derwent SAC and two Nitrate Vulnerable Zones (NVZs): Selby Dam from Conf. Fox Dike & Carr Dike to Ouse NVZ and Aire from River Calder to River Ouse NVZ.

### EA monitoring locations

- 6.4.13 No ecological monitoring locations are found within the water body. Three water quality monitoring sites have been used to inform the classification of the water body (Ref 3).

### RNAG status

- 6.4.14 The EA have identified nine RNAG status for this water body (Annex E.2). These include Phosphate from agriculture diffuse sources and water industry point sources, and Mitigation Measures Assessment due to physical modification, diffuse source *para DDT* pollution from industry and agriculture, and presence of PFOS which is currently being investigated. Measures are being delivered to address Mercury and its Compounds and PBDE, and these are awaiting recovery.

### Measures and actions

- 6.4.15 Additional information on RBMP measures/actions (including HMWB mitigation measures assessment) identified for the water body to support achievement of its status objectives was requested from the EA. HMWB Mitigation Measures assessment information was received, relating to modifications associated with Flood Protection and Navigation, including measures to remove/soften engineering modifications and improve sediment management practices (Annex A.1).
- 6.4.16 No additional data was available from the EA regarding programme of measures or water body actions.

### Selby Dam from Conf. Fox Dike and Carr Dike to Ouse (GB104027063620)

#### Status and objectives

- 6.4.17 The Selby Dam from Conf. Fox Dike and Carr Dike to Ouse water body is designated as a HMWB, in recognition of physical modifications by human activity and a resultant substantial change in character. It is currently assessed (as of 2022) as having an Overall Status of Moderate, Ecological Status of Moderate and a Chemical Status of Fail. The water body is therefore failing its Good Overall Status objective under the WER at present.
- 6.4.18 A breakdown of the current status and status objectives of the water body is provided in Table 6-4. The quality elements currently limiting the Ecological Status of the water body are Fish (Moderate), Macrophytes Sub Element (Moderate), Ammonia (Phys-Chem) (Moderate), Dissolved oxygen (Bad), Phosphate (Poor) and the Mitigation Measures Assessment (Moderate or less). The quality elements limiting the Chemical status of the water body are Mercury and its Compounds (Fail), PFOS (Fail), PBDE (Fail) and Cypermethrin (Priority) (Fail).

**Table 6-4 Selby Dam from Conf. Fox Dike and Carr Dike to Ouse (GB104027063620) water body**

| Quality Element                               | Cycle 3 RBMP     |  |                                     |
|---|------------------|--|-------------------------------------|
|   | 2019 status      | Current status (2022)                          | Objective                           |
| <b>ECOLOGICAL</b>                             | <b>Moderate</b>  | <b>Moderate</b>                                | <b>Moderate (2015)</b>              |
| <b>Biological quality elements</b>            | <b>Moderate</b>  | <b>Moderate</b>                                | <b>Moderate (2021)</b>              |
| Fish  | Moderate         | Moderate                                       | Moderate (2021)                     |
| Invertebrates                                 | Good             | Good   | Good (2015)                         |
| Macrophytes and Phytobenthos Combined         | Not assessed     | Not assessed                                   | Not assessed (2015)                 |
| Macrophytes Sub Element                       | Moderate         | Moderate                                       |                                     |
| <b>Physico-chemical quality elements</b>      | <b>Moderate</b>  | <b>Moderate</b>                                | <b>Moderate (2015)</b>              |
| Acid Neutralising Capacity                    | High             | High   | Good (2015)                         |
| Ammonia (Phys-Chem)                           | Moderate         | Moderate                                       | Moderate (2015)                     |
| Dissolved oxygen                              | Bad              | Bad  | Poor (2027) – Low confidence        |
| Phosphate                                     | Poor             | Poor   | Poor (2015)                         |
| Temperature                                   | High             | High   | Good (2015)                         |
| pH  | High             | High   | Good (2015)                         |
| <b>Hydromorphological Supporting Elements</b> | <b>Not high</b>  | <b>Not high</b>                                | <b>Not high (2015)</b>              |
| Hydrological Regime                           | Supports good    | Supports good                                  | Supports good (2015)                |
| <b>Supporting elements (Surface Water)</b>    | <b>Moderate</b>  | <b>Moderate</b>                                | <b>Good (2027) - Low confidence</b> |
| Mitigation Measures Assessment                | Moderate or less | Moderate or less                               | Good (2027) - Low confidence        |
| <b>Specific pollutants</b>                    | <b>High</b>      | <b>High</b>                                    | <b>High (2015)</b>                  |
| Copper  | High             | High   | High (2015)                         |
| Iron  | High             | High   | High (2015)                         |
| Manganese                                     | High             | High   | High (2015)                         |
| Mecoprop                                      | High             | High   | High (2015)                         |
| Zinc  | High             | High   | High (2015)                         |
| <b>CHEMICAL</b>                               | <b>Fail</b>      | <b>Does not require assessment<sup>1</sup></b> | <b>Good (2063)</b>                  |
| <b>Priority hazardous substances</b>          | <b>Fail</b>      | <b>Does not require assessment</b>             | <b>Good (2063)</b>                  |
| Benzo(a)pyrene                                | Good             |  | Good (2015)                         |
| Benzo(b)fluoranthene                          | Good             |  | Good (2015)                         |
| Benzo(g-h-i)perylene                          | Good             |  | Good (2015)                         |
| Benzo(k)fluoranthene                          | Good             |  | Good (2015)                         |
| Cadmium and Its Compounds                     | Good             |  | Good (2015)                         |
| Dioxins and dioxin-like compounds             | Good             |  | Good (2015)                         |

| Quality Element                       | Cycle 3 RBMP                       |                                    |   |
|---------------------------------------|------------------------------------|------------------------------------|---|
| Heptachlor and cis-Heptachlor epoxide | Good                               |                                    | Good (2015)                               |
| Hexabromocyclododecane (HBCDD)        | Good                               |                                    | Good (2015)                               |
| Hexachlorobenzene                     | Good                               |                                    | Good (2015)                               |
| Hexachlorobutadiene                   | Good                               |                                    | Good (2015)                               |
| Mercury and Its Compounds             | Fail                               |                                    | Good (2040)                               |
| Perfluorooctane sulphonate (PFOS)     | Fail                               |                                    | Good (2039)                               |
| Polybrominated diphenyl ethers (PBDE) | Fail                               |                                    | Good (2063)                               |
| <b>Priority substances</b>            | <b>Fail</b>                        | <b>Does not require assessment</b> | <b>Good (2027) - Low confidence</b>       |
| Cypermethrin (Priority)               | Fail                               |                                    | Good (2027) - Low confidence              |
| Fluoranthene                          | Good                               |                                    | Good (2015)                               |
| Lead and Its Compounds                | Good                               |                                    | Good (2015)                               |
| Nickel and Its Compounds              | Good                               |                                    | Good (2015)                               |
| <b>Other Pollutants</b>               | <b>Does not require assessment</b> | <b>Does not require assessment</b> | <b>Does not require assessment (2015)</b> |

### Protected areas

6.4.19 The water body falls within one Protected Areas (Annex E.1), the Selby Dam from Conf. Fox Dike & Carr Dike to Ouse NVZ.

### EA monitoring locations

6.4.20 Six monitoring locations have been used to inform water body classifications in Cycle 3 (Ref 3). These include two invertebrate sites, one macrophyte monitoring site and three water quality sites.

### RNAG status

6.4.21 The EA have identified 15 RNAG status for this water body (Annex E.2). These include point source pollution from industry and sewage discharge which is impacting phosphate, ammonia, and dissolved oxygen, as well as diffuse source phosphate pollution from agriculture. Other reasons include sewage discharge impacting fish, failing the Mitigation Measures Assessment due to physical modification, and presence of PFOS which is currently being investigated. Measures have been delivered to address Mercury and Its Compounds and PBDE and these are awaiting recovery.

## Measures and actions

6.4.22 The HMWB Mitigation Measures assessment for the water body includes measures relating to modifications for Flood Protection, Land Drainage and Urbanisation. Fourteen measures/actions were subsequently defined for the water body (Annex E.3). This includes two to manage rural diffuse pollution, five to manage point source discharges and seven to mitigate the impacts on ecology from physical modifications. The measures and actions to mitigate physical modification comprise of installing a fish pass on Selby Dam Pumping Station, developing a bankside planting project, improving in channel and marginal diversity and potentially removing or altering assets.

## Riccall Dam Catchment (trib of Ouse) (GB104027063690)

### Status and objectives

6.4.23 The Riccall Dam Catchment (trib of Ouse) water body is not designated as artificial or heavily modified, in recognition of the fact there has been limited anthropogenic change to the river character. It is currently assessed (as of 2022) as having an Overall Status of Moderate, Ecological Status of Moderate and a Chemical Status of Fail. The water body is therefore failing its Good Overall Status objective under the WER at present.

6.4.24 A breakdown of the current status and status objectives of the water body is provided in Table 6-5. The quality element currently limiting the Ecological Status of the water body is Macrophytes and Phytobenthos Combined (Moderate), Macrophytes Sub Element (Moderate) and Phosphate (Moderate). The quality elements limiting the Chemical status of the water body are PBDE (Fail), and Mercury and its Compounds (Fail).

**Table 6-5 Riccall Dam Catchment (trib of Ouse) (GB104027063690) water body**

| Quality Element                          | Cycle 3 RBMP    |                       |                                     |
|--|-----------------|-----------------------|-------------------------------------|
|  | 2019 status     | Current status (2022) | Objective                           |
| <b>ECOLOGICAL</b>                        | <b>Moderate</b> | <b>Moderate</b>       | <b>Good (2027) - Low confidence</b> |
| <b>Biological quality elements</b>       | <b>Moderate</b> | <b>Moderate</b>       | <b>Good (2027) - Low confidence</b> |
| Invertebrates                            | Good            | Good                  | Good (2015)                         |
| Macrophytes and Phytobenthos Combined    | Moderate        | Moderate              | Good (2027) - Low confidence        |
| Macrophytes Sub Element                  | Moderate        | Moderate              |                                     |
| <b>Physico-chemical quality elements</b> | <b>Moderate</b> | <b>Moderate</b>       | <b>Good (2027) - Low confidence</b> |

| Quality Element                               | Cycle 3 RBMP                       |  |   |
|---|------------------------------------|--|---|
|   | 2019 status                        | Current status (2022)                          | Objective                                 |
| Ammonia (Phys-Chem)                           | Good                               | Good   | Good (2015)                               |
| Dissolved oxygen                              | Moderate                           | High   | Good (2015)                               |
| Phosphate                                     | Moderate                           | Moderate                                       | Good (2027)<br>- Low confidence           |
| Temperature                                   | High                               | High   | Good (2015)                               |
| pH  | High                               | High   | Good (2015)                               |
| <b>Hydromorphological Supporting Elements</b> | <b>Not high</b>                    | <b>Not high</b>                                | <b>Not high (2015)</b>                    |
| Hydrological Regime                           | Supports good                      | Supports good                                  | Supports good (2021)                      |
| Morphology                                    | Not high                           | Not high                                       |   |
| <b>Supporting elements (Surface Water)</b>    | <b>Not assessed</b>                | <b>Not assessed</b>                            | <b>Not assessed (2015)</b>                |
| <b>Specific pollutants</b>                    | <b>Not assessed</b>                | <b>Not assessed</b>                            | <b>Not assessed (2015)</b>                |
| <b>CHEMICAL</b>                               | <b>Fail</b>                        | <b>Does not require assessment<sup>1</sup></b> | <b>Good (2063)</b>                        |
| <b>Priority hazardous substances</b>          | <b>Fail</b>                        | <b>Does not require assessment</b>             | <b>Good (2063)</b>                        |
| Benzo(a)pyrene                                | Good                               |  | Good (2015)                               |
| Dioxins and dioxin-like compounds             | Good                               |  | Good (2015)                               |
| Heptachlor and cis-Heptachlor epoxide         | Good                               |  | Good (2015)                               |
| Hexabromocyclododecane (HBCDD)                | Good                               |  | Good (2015)                               |
| Hexachlorobenzene                             | Good                               |  | Good (2015)                               |
| Hexachlorobutadiene                           | Good                               |  | Good (2015)                               |
| Mercury and Its Compounds                     | Fail                               |  | Good (2040)                               |
| Perfluorooctane sulphonate (PFOS)             | Good                               |  | Good (2015)                               |
| Polybrominated diphenyl ethers (PBDE)         | Fail                               |  | Good (2063)                               |
| <b>Priority substances</b>                    | <b>Good</b>                        | <b>Does not require assessment</b>             | <b>Good (2015)</b>                        |
| Cypermethrin (Priority)                       | Good                               |  | Good (2015)                               |
| Fluoranthene                                  | Good                               |  | Good (2015)                               |
| <b>Other Pollutants</b>                       | <b>Does not require assessment</b> | <b>Does not require assessment</b>             | <b>Does not require assessment (2015)</b> |

## Protected areas

6.4.25 The water body falls within three Protected Areas (Annex E.1). These comprise of the Skipwith Common SAC and two NVZs: Lowmoor Drain Catch (trib of Derwent) NVZ and Riccall Dam Catchment (trib of Ouse) NVZ.

### EA monitoring locations

- 6.4.26 There is one EA water quality monitoring site for Cycle 3 for this water body (Ref 3).

### RNAG status

- 6.4.27 The EA have identified ten RNAGs for this water body (Annex E.2). These include diffuse and point source impacts on phosphate from sewage treatment and agriculture respectively. Dissolved oxygen levels are being impacted by point and diffuse sources, as well as by physical modification for land drainage. Sewage treatment point source discharge is also impacting Macrophytes and Phytobenthos Combined. Measures have been delivered to address Mercury and Its Compounds and PBDE and these are awaiting recovery.

### Measures and actions

- 6.4.28 No HMWB Mitigation Measure assessment has been undertaken for this water body, as it is not designated as heavily modified. The EA have defined five measures/actions relevant to the water body (Annex E.3). This includes three to manage rural diffuse pollution, one to manage point source discharges and two to manage modified habitats. These measures/actions are required to address existing pressures on current status and to support the achievement of the water body's status objectives going forward.

## The Fleet from Source to River Aire (GB104027062740)

### Status and objectives

- 6.4.29 The Fleet from Source to River Aire water body is designated as an Artificial Water Body, in recognition of physical modifications by human activity. It is currently assessed (as of 2022) as having an Overall Status of Moderate, Ecological Status of Moderate and a Chemical Status of Fail. The water body is therefore failing its Good Overall Status objective under the WER at present.
- 6.4.30 A breakdown of the current status and status objectives of the water body is provided in Table 6-6. The quality elements currently limiting the Ecological Status of the water body are Invertebrates (Moderate), Macrophytes Sub Element (Poor), Dissolved oxygen (Bad) and the Mitigation Measures Assessment (Moderate or less). The quality elements limiting the Chemical status of the water body are Mercury and its Compounds (Fail), PBDE (Fail) and Cypermethrin (Priority) (Fail).

**Table 6-6 The Fleet from Source to River Aire (GB104027062740) water body**

| Quality Elements                              | Cycle 3 RBMP        |  |   |
|---|---------------------|--|---|
|   | 2019 status         | Current status (2022)                          | Objective                               |
| <b>ECOLOGICAL</b>                             | <b>Moderate</b>     | <b>Moderate</b>                                | <b>Good (2027) - Low confidence</b>     |
| <b>Biological quality elements</b>            | <b>Bad</b>          | <b>Moderate</b>                                | <b>Moderate (2027) - Low confidence</b> |
| Invertebrates                                 | <b>Bad</b>          | Moderate                                       | Moderate (2027) - Low confidence        |
| Macrophytes and Phytobenthos Combined         | Not assessed        | Not assessed                                   | Not assessed (2015)                     |
| Macrophytes Sub Element                       | Moderate            | Poor   |   |
| <b>Physico-chemical quality elements</b>      | <b>Moderate</b>     | <b>Moderate</b>                                | <b>Good (2027) - Low confidence</b>     |
| Ammonia (Phys-Chem)                           | Good                | High   | Good (2021)                             |
| Dissolved oxygen                              | <b>Bad</b>          | <b>Bad</b>                                     | Good (2027) - Low confidence            |
| Phosphate                                     | Poor                | Good   | Good (2015)                             |
| Temperature                                   | High                | High   | Good (2015)                             |
| pH  | High                | High   | Good (2015)                             |
| <b>Hydromorphological Supporting Elements</b> | <b>Not high</b>     | <b>Not high</b>                                | <b>Not high (2015)</b>                  |
| Hydrological Regime                           | Supports good       | Supports good                                  | Supports good (2015)                    |
| <b>Supporting elements (Surface Water)</b>    | <b>Moderate</b>     | <b>Moderate</b>                                | <b>Good (2027) - Low confidence</b>     |
| Mitigation Measures Assessment                | Moderate or less    | Moderate or less                               | Good (2027) - Low confidence            |
| <b>Specific pollutants</b>                    | <b>Not assessed</b> | <b>Not assessed</b>                            | <b>Not assessed (2015)</b>              |
| <b>CHEMICAL</b>                               | <b>Fail</b>         | <b>Does not require assessment<sup>1</sup></b> | <b>Good (2063)</b>                      |
| <b>Priority hazardous substances</b>          | <b>Fail</b>         | <b>Does not require assessment</b>             | <b>Good (2063)</b>                      |
| Benzo(a)pyrene                                | Good                |  | Good (2015)                             |
| Dioxins and dioxin-like compounds             | Good                |  | Good (2015)                             |
| Heptachlor and cis-Heptachlor epoxide         | Good                |  | Good (2015)                             |
| Hexabromocyclododecane (HBCDD)                | Good                |  | Good (2015)                             |
| Hexachlorobenzene                             | Good                |  | Good (2015)                             |
| Hexachlorobutadiene                           | Good                |  | Good (2015)                             |

| Quality Elements                      | Cycle 3 RBMP                       |                                    |   |
|---------------------------------------|------------------------------------|------------------------------------|---|
|                                       | 2019 status                        | Current status (2022)              | Objective                                 |
| Mercury and Its Compounds             | Fail                               |                                    | Good (2040)                               |
| Perfluorooctane sulphonate (PFOS)     | Good                               |                                    | Good (2015)                               |
| Polybrominated diphenyl ethers (PBDE) | Fail                               |                                    | Good (2063)                               |
| <b>Priority substances</b>            | <b>Fail</b>                        | <b>Does not require assessment</b> | <b>Good (2027) - Low confidence</b>       |
| Cypermethrin (Priority)               | Fail                               |                                    | Good (2027) - Low confidence              |
| Fluoranthene                          | Good                               |                                    | Good (2015)                               |
| <b>Other Pollutants</b>               | <b>Does not require assessment</b> | <b>Does not require assessment</b> | <b>Does not require assessment (2015)</b> |

### Protected areas

- 6.4.31 The water body falls within three Protected Areas (Annex E.1). These comprise of three NVZs: The Fleet from Source to River Aire NVZ, Aire from River Calder to River Ouse NVZ and Yorkshire Mag Limestone.

### EA monitoring locations

- 6.4.32 There are three EA monitoring sites in this water body in Cycle 3 (Ref 3). These include one for invertebrates and macrophytes and two for water quality, including physico-chemical elements.

### RNAG status

- 6.4.33 The EA have identified eight RNAG status for this water body (Annex E.2). These include a mix of Physical modification related to Agriculture and rural land management, point source related to Water Industry sewage discharge, flow impacts related to agricultural land drainage, and four measures delivered to address Mercury and its compounds, Dissolved oxygen, Phosphate and PBDE with no sector responsible assigned.

### Measures and actions

- 6.4.34 All HMWB Mitigation Measures assessed for this water body are related to land drainage. The EA have subsequently defined four measures/actions relevant to the water body (Annex E.3). This includes one to manage point source discharges, one to manage modified habitats and two to mitigate the impacts on ecology from physical modifications. The actions to mitigate physical modification comprise of reviewing external compliance and improving habitats.

## Holmes Dike Catchment (trib of Ouse) (GB104027063650)

### Status and objectives

- 6.4.35 The Holmes Dike Catchment (trib of Ouse) water body is not designated as artificial or heavily modified, in recognition of the fact there has been limited anthropogenic change to the river character. It is currently assessed (as of 2022) as having an Overall Status of Moderate, Ecological Status of Moderate and a Chemical Status of Fail. The water body is therefore failing its Good Overall Status objective under the WER at present.
- 6.4.36 A breakdown of the current status and status objectives of the water body is provided in Table 6-7. The quality elements currently limiting the Ecological Status of the water body are Invertebrates (Moderate), Dissolved Oxygen (Bad) and Phosphate (Moderate). The quality elements limiting the Chemical status of the water body are PBDE (Fail), and Mercury and its Compounds (Fail).

**Table 6-7 Holmes Dike Catchment (trib of Ouse) (GB104027063650) water body**

| Quality Element                               | Cycle 3 RBMP     |  |                                     |
|---|------------------|--|-------------------------------------|
|   | 2019 status      | Current status (2022)                          | Objective                           |
| <b>ECOLOGICAL</b>                             | <b>Moderate</b>  | <b>Moderate</b>                                | <b>Moderate (2021)</b>              |
| <b>Biological quality elements</b>            | <b>Moderate</b>  | <b>Moderate</b>                                | <b>Moderate (2021)</b>              |
| Invertebrates                                 | Moderate         | Moderate                                       | Moderate (2021)                     |
| Macrophytes and Phytobenthos Combined         | Good             | Good   | Good (2015)                         |
| Macrophytes Sub Element                       | Good             | Good   |                                     |
| <b>Physico-chemical quality elements</b>      | <b>Moderate</b>  | <b>Moderate</b>                                | <b>Good (2015)</b>                  |
| Ammonia (Phys-Chem)                           | Good             | High   | Good (2015)                         |
| Dissolved oxygen                              | Bad              | Bad  | Good (2015)                         |
| Phosphate                                     | Moderate         | Moderate                                       | Good (2015)                         |
| Temperature                                   | High             | High   | Good (2015)                         |
| pH  | High             | High   | Good (2015)                         |
| <b>Hydromorphological Supporting Elements</b> | <b>Not high</b>  | <b>Not high</b>                                | <b>Not high (2015)</b>              |
| Hydrological Regime                           | Supports good    | Supports good                                  | Supports good (2015)                |
| Morphology                                    | Not high         | Not high                                       |                                     |
| <b>Supporting elements (Surface Water)</b>    | <b>Moderate</b>  |  | <b>Good (2027) - Low confidence</b> |
| Mitigation Measures Assessment                | Moderate or less |  | Good (2027) - Low confidence        |
| <b>CHEMICAL</b>                               | <b>Fail</b>      | <b>Does not require assessment<sup>1</sup></b> | <b>Good (2063)</b>                  |
| <b>Priority hazardous substances</b>          | <b>Fail</b>      | <b>Does not require assessment</b>             | <b>Good (2063)</b>                  |
| Benzo(a)pyrene                                | Good             |  | Good (2015)                         |

| Quality Element                       | Cycle 3 RBMP                       |                                    |   |
|---------------------------------------|------------------------------------|------------------------------------|---|
|                                       | 2019 status                        | Current status (2022)              | Objective                                 |
| Dioxins and dioxin-like compounds     | Good                               |                                    | Good (2015)                               |
| Heptachlor and cis-Heptachlor epoxide | Good                               |                                    | Good (2015)                               |
| Hexabromocyclododecane (HBCDD)        | Good                               |                                    | Good (2015)                               |
| Hexachlorobenzene                     | Good                               |                                    | Good (2015)                               |
| Hexachlorobutadiene                   | Good                               |                                    | Good (2015)                               |
| Mercury and Its Compounds             | Fail                               |                                    | Good (2040)                               |
| Perfluorooctane sulphonate (PFOS)     | Good                               |                                    | Good (2015)                               |
| Polybrominated diphenyl ethers (PBDE) | Fail                               |                                    | Good (2063)                               |
| <b>Priority substances</b>            | <b>Good</b>                        | <b>Does not require assessment</b> | <b>Good (2015)</b>                        |
| Cypermethrin (Priority)               | Good                               |                                    | Good (2015)                               |
| Fluoranthene                          | Good                               |                                    | Good (2015)                               |
| <b>Other Pollutants</b>               | <b>Does not require assessment</b> | <b>Does not require assessment</b> | <b>Does not require assessment (2015)</b> |

### Protected areas

6.4.37 The water body is not reported as falling within any protected areas.

### EA monitoring locations

6.4.38 There is one EA water quality monitoring site for Cycle 3 for this water body (Ref 3).

### RNAG status

6.4.39 The EA have identified 12 RNAG status for this water body (Annex E.2). These include a mix of Diffuse and Point source RNAG related to the Water Industry and Agriculture and rural land management, as well as Physical modification related to Agriculture and rural land management, and measures delivered to address Mercury and its compounds, and PBDE with no sector responsible assigned.

### Measures and actions

6.4.40 The EA have defined two actions relevant to the water body (Annex E.3). This includes one to manage rural diffuse pollution and one to manage modified habitats. These actions are required to address existing pressures on current status and to support the achievement of the water body's status objectives going forward.

## Wharfe & Lower Ouse Sherwood Sandstone (GB40401G702400)

### Status and objectives

- 6.4.41 The groundwater body is currently assessed (as of 2019) as having a Poor Overall Status, with a Good Quantitative Status but Poor Chemical Status. The groundwater body is therefore failing its Good Overall Status objective under the WER at present.
- 6.4.42 A breakdown of the current status and status objectives for the groundwater body are provided in Table 6-8. The quality elements limiting the Chemical (GW) status are the Chemical Status Elements and the Chemical Drinking Water Protected Area. Investigations into the Trend Assessment Classification status were undertaken in Cycle 2 (2015) which found no trend, however in 2019 an upward trend was observed.

**Table 6-8 Wharfe & Lower Ouse Sherwood Sandstone (GB40401G702400) groundwater body**

| Quality Element                                  | Cycle 3 RBMP |             |
|--|--------------|-------------|
|  | 2019 status  | Objective   |
| <b>Overall Water Body</b>                        | Poor         | Good (2021) |
| <b>Quantitative</b>                              | Good         | Good (2021) |
| <b>Quantitative Status Element</b>               | Good         | Good (2021) |
| Quantitative Dependent Surface Water Body Status | Good         | Good (2015) |
| Quantitative GWDTEs test                         | Good         | Good (2015) |
| Quantitative Saline Intrusion                    | Good         | Good (2021) |
| Quantitative Water Balance                       | Good         | Good (2015) |
| <b>Chemical (GW)</b>                             | Poor         | Good (2021) |
| <b>Chemical Status Element</b>                   | Poor         | Good (2021) |
| Chemical Dependent Surface Water Body Status     | Good         | Good (2015) |
| Chemical Drinking Water Protected Area           | Poor         | Good (2015) |
| Chemical GWDTEs test                             | Good         | Good (2015) |
| Chemical Saline Intrusion                        | Good         | Good (2021) |
| General Chemical Test                            | Good         | Good (2015) |
| <b>Supporting Elements (Groundwater)</b>         | -            | -           |
| Prevent and Limit Objective                      | Active       | -           |
| Trend Assessment                                 | Upward trend | -           |

### Protected areas

- 6.4.43 The groundwater body falls within 19 Protected Areas (Annex E.1). These comprise of 15 NVZs, two Special Areas of Conservation (River Derwent and Skipwith Common), the Wharfe & Lower Ouse Sherwood Sandstone Drinking Water Protected Area and the Carlton East Safeguard Zone.

### RNAG status

6.4.44 RNAG status for this groundwater body are reported as pending investigation.

### Measures and actions

6.4.45 The EA have identified one measure/action relevant to the groundwater body, which is to ban future abstraction from the aquifer to prevent further saline intrusion (Annex E.3). This RBMP measure/action is required to address existing pressures on current status and to support the achievement of the groundwater body's status objectives going forward.

### Aire & Don Sherwood Sandstone (GB40401G701000)

#### Status and objectives

6.4.46 The groundwater body is currently assessed (as of 2019) as having a Poor Overall Status, with a Poor Quantitative Status and a Poor Chemical Status. The groundwater body is therefore failing its Good Overall Status objective under the WER at present.

6.4.47 A breakdown of the current status and status objectives for the groundwater body are provided in Table 6-9. The quality elements limiting Quantitative status are the Quantitative Status Elements and the Quantitative Water Balance. The quality elements limiting the Chemical (GW) status are the Chemical Status Elements, the Chemical Drinking Water Protected Area and the General Chemical Test. Investigations into the Trend Assessment Classification status were undertaken in Cycle 2 (2015) which confirmed an upward trend, which was continued in 2019.

**Table 6-9 Aire & Don Sherwood Sandstone (GB40401G701000) groundwater body**

| Quality Element                                  | Cycle 3 RBMP |                                     |
|--|--------------|-------------------------------------|
|  | 2019 status  | Objective                           |
| <b>Overall Water Body</b>                        | <b>Poor</b>  | <b>Poor (2015)</b>                  |
| <b>Quantitative</b>                              | <b>Poor</b>  | <b>Poor (2015)</b>                  |
| <b>Quantitative Status Element</b>               | <b>Poor</b>  | <b>Poor (2015)</b>                  |
| Quantitative Dependent Surface Water Body Status | Good         | Good (2015)                         |
| Quantitative GWDTEs test                         | Good         | Good (2015)                         |
| Quantitative Saline Intrusion                    | Good         | Good (2015)                         |
| Quantitative Water Balance                       | Poor         | Poor (2021)                         |
| <b>Chemical (GW)</b>                             | <b>Poor</b>  | <b>Good (2027) - Low confidence</b> |
| <b>Chemical Status Element</b>                   | <b>Poor</b>  | <b>Good (2027) - Low confidence</b> |
| Chemical Dependent Surface Water Body Status     | Good         | Good (2015)                         |

| Quality Element                          | Cycle 3 RBMP |                              |
|--|--------------|------------------------------|
|  | 2019 status  | Objective                    |
| Chemical Drinking Water Protected Area   | Poor         | Good (2027) - Low confidence |
| Chemical GWDTEs test                     | Good         | Good (2015)                  |
| Chemical Saline Intrusion                | Good         | Good (2015)                  |
| General Chemical Test                    | Poor         | Good (2027) - Low confidence |
| <b>Supporting Elements (Groundwater)</b> | -            | -                            |
| Prevent and Limit Objective              | Active       | -                            |
| Trend Assessment                         | Upward trend | -                            |

### Protected areas

6.4.48 The groundwater body falls within 20 Protected Areas (Annex E.1). These comprise of 13 NVZs, the Humber Estuary SAC, SPA and Ramsar site, Thorne Moor SAC, the Aire & Don Sherwood Sandstone Drinking Water Protected Area and Carlton East and Great Heck and Pollington Safeguard Zones.

### RNAG status

6.4.49 The EA have identified 16 RNAG status for this water body (Annex E.2). The identified RNAGs are mainly related to the Water Industry and Agriculture and rural land management and include both diffuse and point sources as significant water management issues.

### Measures and actions

6.4.50 The EA have identified 12 actions relevant to the water body (Annex E.3). This includes three to manage rural diffuse pollution, nine to manage diffuse pollution and one to manage point source discharges. These actions are required to address existing pressures on current status and to support the achievement of the groundwater body's status objectives going forward.

## Wharfe Magnesian Limestone (GB40401G701100)

### Status objectives

6.4.51 The groundwater body is currently assessed (as of 2019) as having a Poor Overall Status, with a Good Quantitative Status but Poor Chemical Status. The groundwater body is therefore failing its Good Overall Status objective under the WER at present.

6.4.52 A breakdown of the current status and status objectives for the groundwater body are provided in Table 6-10. The quality elements limiting the Chemical (GW) status are the Chemical Status Elements and the Chemical Drinking Water Protected Area. Investigations into the Trend Assessment Classification status

were undertaken in Cycle 2 (2015) which found no trend, however in 2019 an upward trend was observed.

**Table 6-10 Wharfe Magnesian Limestone (GB40401G701100) groundwater body**

| Quality Element                                  | Cycle 3 RBMP |                    |
|--|--------------|--------------------|
|  | 2019 status  | Objective          |
| <b>Overall Water Body</b>                        | <b>Poor</b>  | <b>Good (2021)</b> |
| <b>Quantitative</b>                              | <b>Good</b>  | <b>Good (2015)</b> |
| <b>Quantitative Status Element</b>               | <b>Good</b>  | <b>Good (2015)</b> |
| Quantitative Dependent Surface Water Body Status | Good         | Good (2015)        |
| Quantitative GWDTEs test                         | Good         | Good (2015)        |
| Quantitative Saline Intrusion                    | Good         | Good (2015)        |
| Quantitative Water Balance                       | Good         | Good (2015)        |
| <b>Chemical (GW)</b>                             | <b>Poor</b>  | <b>Good (2021)</b> |
| <b>Chemical Status Element</b>                   | <b>Poor</b>  | <b>Good (2021)</b> |
| Chemical Dependent Surface Water Body Status     | Good         | Good (2015)        |
| Chemical Drinking Water Protected Area           | Poor         | Good (2015)        |
| Chemical GWDTEs test                             | Good         | Good (2015)        |
| Chemical Saline Intrusion                        | Good         | Good (2015)        |
| General Chemical Test                            | Good         | Good (2021)        |
| <b>Supporting Elements (Groundwater)</b>         | -            | -                  |
| Prevent and Limit Objective                      | Active       | -                  |
| Trend Assessment                                 | Upward trend | -                  |

### Protected areas

6.4.53 The groundwater body falls within 12 Protected Areas (Annex E.1). These comprise of 13 NVZs and the Aire & Don Magnesian Limestone Drinking Water Protected Area.

### RNAG status

6.4.54 RNAG status for this groundwater body are reported as pending investigation.

### Measures and actions

6.4.55 The EA have identified one action relevant to the groundwater body, which is to implement farm manure and slurry management plans and promote fertiliser best practices (Annex E.3). This action is required to address existing pressures on current status and to support the achievement of the groundwater body's status objectives going forward.

## Aire & Don Magnesian Limestone (GB40401G700900)

### Status and objectives

- 6.4.56 The groundwater body is currently assessed (as of 2019) as having a Poor Overall Status, with a Good Quantitative Status but Poor Chemical Status. The groundwater body is therefore failing its Good Overall Status objective under the WER at present.
- 6.4.57 A breakdown of the current status and status objectives for the groundwater body are provided in Table 6-11. The quality elements limiting the Chemical (GW) status are the Chemical Status Elements, the Chemical Drinking Water Protected Area and the General Chemical Test. Investigations into the Trend Assessment Classification status were undertaken in Cycle 2 (2015) which found no trend, however in 2019 an upward trend was observed.

**Table 6-11 Aire & Don Magnesian Limestone (GB40401G700900) groundwater body.**

| Quality Element                                  | Cycle 3 RBMP |                                     |
|--|--------------|-------------------------------------|
|  | 2019 status  | Objective                           |
| <b>Overall Water Body</b>                        | <b>Poor</b>  | <b>Good (2027) - Low confidence</b> |
| <b>Quantitative</b>                              | <b>Good</b>  | <b>Good (2015)</b>                  |
| <b>Quantitative Status Element</b>               | <b>Good</b>  | <b>Good (2015)</b>                  |
| Quantitative Dependent Surface Water Body Status | Good         | Good (2015)                         |
| Quantitative GWDTEs test                         | Good         | Good (2015)                         |
| Quantitative Saline Intrusion                    | Good         | Good (2015)                         |
| Quantitative Water Balance                       | Good         | Good (2015)                         |
| <b>Chemical (GW)</b>                             | <b>Poor</b>  | <b>Good (2027) - Low confidence</b> |
| <b>Chemical Status Element</b>                   | <b>Poor</b>  | <b>Good (2027) - Low confidence</b> |
| Chemical Dependent Surface Water Body Status     | Good         | Good (2015)                         |
| Chemical Drinking Water Protected Area           | Poor         | Good (2015)                         |
| Chemical GWDTEs test                             | Good         | Good (2015)                         |
| Chemical Saline Intrusion                        | Good         | Good (2015)                         |
| General Chemical Test                            | Poor         | Good (2027) - Low confidence        |
| <b>Supporting Elements (Groundwater)</b>         | -            | -                                   |
| Prevent and Limit Objective                      | Active       | -                                   |
| Trend Assessment                                 | Upward trend | -                                   |

## Protected areas

- 6.4.58 The groundwater body falls within 15 Protected Areas (Annex E.1). These comprise of 11 NVZs and the Wharfe Magnesian Limestone Drinking Water Protected Area.

## RNAG status

- 6.4.59 The EA have identified six RNAG status for this water body (Annex E.2). The identified RNAGs include Agriculture and rural land management, and Private Sewage Treatment related to General Chemical Test classification element.

## Measures and actions

- 6.4.60 The EA have identified six actions relevant to the groundwater body (Annex E.3). This includes four to manage rural diffuse pollution and two to manage point source discharges. These actions are required to address existing pressures on current status and to support the achievement of the groundwater body's status objectives going forward.

## 6.5 Watercourse baseline and receptor valuation

- 6.5.1 Activities associated with the Proposed Development have been reviewed against the watercourses present within or in the vicinity of the Order Limits. A receptor value has been assigned to each of the relevant watercourses which have the potential to be impacted by the Proposed Development, based on the available desktop information and expert judgement. Reconnaissance surveys were then undertaken on a number of watercourses to verify the receptor values. Annex F.2 shows the reconnaissance survey information collected.
- 6.5.2 For very high, high and moderate value watercourses where reconnaissance surveys have not been undertaken expert judgement has been used to assign a receptor value (as described in Section 2.4).
- 6.5.3 For low value watercourses, a small number have been visited to verify the principal of categorisation as low value. Low value watercourses will not require any further survey now the principal has been verified.
- 6.5.4 The relevant watercourses and their receptor valuations are summarised in the sections below.

### Aire from Fryston Beck to River Ouse (GB104027063037)

- 6.5.5 A total of three watercourses in the Aire from Fryston Beck to River Ouse water body catchment are within the Study Area of the Proposed Development. These are listed in Table 6-12 below and shown in Figure 15.1: Surface Water Features (ES Volume 2) [EN0110012/APP/LVS/06.02.15.01].
- 6.5.6 All watercourses are assessed as low value.

**Table 6-12 Water bodies in the Aire from Fryston Beck to River Ouse WER water body within the Study Area**

| Watercourse name | Designation          | Location             | Receptor value |
|------------------|----------------------|----------------------|----------------|
| Unnamed Drain 1  | Ordinary watercourse | Cable Route Corridor | Low            |
| Unnamed Drain 2  | Ordinary watercourse | Cable Route Corridor | Low            |
| Unnamed Drain 3  | Ordinary watercourse | Cable Route Corridor | Low            |

### Ouse from R Wharfe to Upper Humber (GB104027064270)

- 6.5.7 A total of five watercourses in Ouse water body catchment are within the Study Area of the Proposed Development. These are listed in Table 6-13 below and shown in Figure 15.1: Surface Water Features (ES Volume 2) [EN0110012/APP/LVS/06.02.15.01].
- 6.5.8 The River Ouse, crossed by the Cable Route Corridor, is a Main River and WER river water body, is high value and can support Biological quality elements and exhibit some evidence of active fluvial geomorphological processes and sediment dynamics. The remaining watercourses are assessed as low value.

**Table 6-13 Water bodies in the Ouse from R Wharfe to Upper Humber WER water body within the Study Area**

| Watercourse name | Designation                 | Location             | Receptor value |
|------------------|-----------------------------|----------------------|----------------|
| Old Ings Dyke    | Ordinary watercourse        | Cable Route Corridor | Low            |
| West Field Dyke  | Ordinary watercourse        | Cable Route Corridor | Low            |
| Unnamed Drain 32 | Ordinary watercourse        | Cable Route Corridor | Low            |
| Unnamed Drain 33 | Ordinary watercourse        | Cable Route Corridor | Low            |
| River Ouse       | Main River (WER water body) | Cable Route Corridor | High           |

### Selby Dam from Conf. Fox Dike and Carr Dike to Ouse (GB104027063620)

- 6.5.9 A total of 24 watercourses in Selby Dam water body catchment are within the Study Area of the Proposed Development. These are listed in Table 6-14 below and shown in Figure 15.1: Surface Water Features (ES Volume 2) [EN0110012/APP/LVS/06.02.15.01].
- 6.5.10 One high value watercourse, Selby Dam, is a designated Main River and part of the WER water body extent. It is anticipated that this watercourse has the potential to support Biological quality elements and exhibit some evidence of active fluvial geomorphological processes and sediment dynamics. The watercourse is crossed by the Cable Route Corridor. Two watercourses are assessed to be moderate value as they are tributaries of the main channel and have a relatively large catchment area. It is anticipated these watercourses will have some limited baseflow and will exhibit some minor evidence of active fluvial

geomorphological processes and sediment transport. The remaining watercourses are considered to be low value.

**Table 6-14 Water bodies in the Selby Dam from Conf. Fox Dike and Carr Dike to Ouse WER water body within the Study Area.**

| Watercourse name                   | Designation                 | Site Location   | Receptor value |
|------------------------------------|-----------------------------|---|----------------|
| Breckswood Drain                   | Ordinary watercourse        | Cable Route Corridor                                  | Low            |
| Causeway Dike                      | Ordinary watercourse        | Cable Route Corridor                                  | Low            |
| Common Drain 2                     | Ordinary watercourse        | Cable Route Corridor                                  | Low            |
| Fleet Dike                         | Ordinary watercourse        | Solar Development Site 2, Cable Route Corridor        | Low            |
| Low Common Drain                   | Ordinary watercourse        | Solar Development Site 6                              | Low            |
| Lumby Common Drain                 | Ordinary watercourse        | Solar Development Site 6                              | Low            |
| Morton Drain                       | Ordinary watercourse        | Cable Route Corridor                                  | Low            |
| Outwoods Drain                     | Ordinary watercourse        | Cable Route Corridor                                  | Low            |
| Town Dike                          | Ordinary watercourse        | Cable Route Corridor                                  | Low            |
| Unnamed Drain 18                   | Ordinary watercourse        | Solar Development Site 2                              | Low            |
| Unnamed Drain 19                   | Ordinary watercourse        | Cable Route Corridor                                  | Low            |
| Unnamed Drain 20                   | Ordinary watercourse        | Solar Development Site 2, Cable Route Corridor        | Low            |
| Unnamed Drain 21                   | Ordinary watercourse        | Cable Route Corridor                                  | Low            |
| Unnamed Drain 22                   | Ordinary watercourse        | Solar Development Site 8                              | Low            |
| Unnamed Drain 24                   | Ordinary watercourse        | Solar Development Site 8                              | Low            |
| Unnamed Drain 29                   | Ordinary watercourse        | Cable Route Corridor                                  | Low            |
| Unnamed Drain 74                   | Ordinary watercourse        | Solar Development Site 6                              | Low            |
| Unnamed Drain 76                   | Ordinary watercourse        | Cable Route Corridor                                  | Low            |
| Unnamed trib of Low Common Drain 1 | Ordinary watercourse        | Solar Development Site 6                              | Low            |
| Unnamed trib of Low Common Drain 2 | Ordinary watercourse        | Solar Development Sites 6 and 7                       | Low            |
| Habholme Dike                      | Ordinary watercourse        | Solar Development Sites 2 and 8, Cable Route Corridor | Moderate       |
| Main Drain 1                       | Ordinary watercourse        | Solar Development Site 8                              | Moderate       |
| Selby Dam                          | Main River (WER water body) | Cable Route Corridor                                  | High           |

### Riccall Dam Catchment (trib of Ouse) (GB104027063690)

6.5.11 A total of 16 watercourses in Riccall Dam water body catchment are within the Study Area of the Proposed Development. These are listed below in Table 6-15

and shown in Figure 15.1: Surface Water Features (ES Volume 2) [EN0110012/APP/LVS/06.02.15.01].

- 6.5.12 One high value watercourse, Riccall Dam, is a part of the WER water body extent. It is anticipated that this watercourse has the potential to support Biological quality elements and exhibit some evidence of active fluvial geomorphological processes and sediment dynamics. The watercourse is crossed by the Cable Route Corridor. Five watercourses are assessed to be moderate value as they are tributaries of the main channel and have a relatively large catchment area. It is anticipated these watercourses will have some limited baseflow and will exhibit some minor evidence of active fluvial geomorphological processes and sediment transport. The remaining watercourses are considered to be low value.

**Table 6-15 Water bodies in the Riccall Dam Catchment (trib of Ouse) WER water body within the Study Area.**

| Watercourse name   | Designation          | Site Location            | Receptor value |
|--------------------|----------------------|--------------------------|----------------|
| Common Drain 1     | Ordinary watercourse | Solar Development Site 1 | Low            |
| Unnamed Drain 34   | Ordinary watercourse | Cable Route Corridor     | Low            |
| Unnamed Drain 35   | Ordinary watercourse | Cable Route Corridor     | Low            |
| Unnamed Drain 36   | Ordinary watercourse | Cable Route Corridor     | Low            |
| Unnamed Drain 37   | Ordinary watercourse | Cable Route Corridor     | Low            |
| Unnamed Drain 38   | Ordinary watercourse | Cable Route Corridor     | Low            |
| Unnamed Drain 39   | Ordinary watercourse | Solar Development Site 1 | Low            |
| Unnamed Drain 40   | Ordinary watercourse | Solar Development Site 1 | Low            |
| Unnamed Drain 41   | Ordinary watercourse | Solar Development Site 1 | Low            |
| Unnamed Drain 42   | Ordinary watercourse | Solar Development Site 1 | Low            |
| Chatterton Dyke    | Ordinary watercourse | Solar Development Site 1 | Moderate       |
| Hopney Stable Dyke | Ordinary watercourse | Cable Route Corridor     | Moderate       |
| Pallion Dyke       | Ordinary watercourse | Solar Development Site 1 | Moderate       |
| Swinbank Dike      | Ordinary watercourse | Cable Route Corridor     | Moderate       |

| Watercourse name                   | Designation                           | Site Location            | Receptor value |
|------------------------------------|---------------------------------------|--------------------------|----------------|
| Whinchat Dyke                      | Ordinary watercourse                  | Solar Development Site 1 | Moderate       |
| Riccall Dam (Gosling Marsh Clough) | Ordinary watercourse (WER water body) | Cable Route Corridor     | High           |

### The Fleet from Source to River Aire (GB104027062740)

- 6.5.13 A total of 21 watercourses in The Fleet water body catchment are within the Study Area of the Proposed Development. These are listed below in Table 6-16 and shown in Figure 15.1: Surface Water Features (ES Volume 2) [EN0110012/APP/LVS/06.02.15.01].
- 6.5.14 The Fleet and Hagg Lane Drain are assessed as Moderate value and are anticipated to have the potential to support Biological quality elements and exhibit some evidence of active fluvial geomorphological processes and sediment dynamics. The remaining watercourses are assessed as low value.

**Table 6-16 Water bodies in The Fleet from Source to River Aire WER water body within the Study Area**

| Watercourse name    | Designation          | Site location            | Receptor value |
|---------------------|----------------------|--------------------------|----------------|
| Hillam Common Drain | Ordinary watercourse | Cable Route Corridor     | Low            |
| Roe Lane Drain      | Ordinary watercourse | Solar Development Site 4 | Low            |
| Unnamed Drain 4     | Ordinary watercourse | Cable Route Corridor     | Low            |
| Unnamed Drain 5     | Ordinary watercourse | Cable Route Corridor     | Low            |
| Unnamed Drain 6     | Ordinary watercourse | Cable Route Corridor     | Low            |
| Unnamed Drain 7     | Ordinary watercourse | Solar Development Site 4 | Low            |
| Unnamed Drain 8     | Ordinary watercourse | Cable Route Corridor     | Low            |
| Unnamed Drain 9     | Ordinary watercourse | Cable Route Corridor     | Low            |
| Unnamed Drain 10    | Ordinary watercourse | Solar Development Site 3 | Low            |
| Unnamed Drain 11    | Ordinary watercourse | Solar Development Site 4 | Low            |
| Unnamed Drain 12    | Ordinary watercourse | Solar Development Site 4 | Low            |
| Unnamed Drain 13    | Ordinary watercourse | Cable Route Corridor     | Low            |

| Watercourse name | Designation                           | Site location                  | Receptor value |
|------------------|---------------------------------------|--------------------------------|----------------|
| Unnamed Drain 14 | Ordinary watercourse                  | Cable Route Corridor           | Low            |
| Unnamed Drain 15 | Ordinary watercourse                  | Cable Route Corridor           | Low            |
| Unnamed Drain 16 | Ordinary watercourse                  | Cable Route Corridor           | Low            |
| Unnamed Drain 17 | Ordinary watercourse                  | Cable Route Corridor           | Low            |
| Unnamed Drain 25 | Ordinary watercourse                  | Solar Development Site 4       | Low            |
| Unnamed Drain 26 | Ordinary watercourse                  | Solar Development Site 4       | Low            |
| Unnamed Drain 43 | Ordinary watercourse                  | Solar Development Site 4       | Low            |
| Hagg Lane Drain  | Ordinary watercourse                  | Solar Development Site 4       | Moderate       |
| The Fleet        | Ordinary watercourse (WER water body) | Solar Development Site 3 and 4 | Moderate       |

### Holmes Dike Catchment (trib of Ouse) (GB104027063650)

- 6.5.15 A total of seven watercourses in Holmes Dike water body catchment are within the Study Area of the Proposed Development. These are listed in Table 6-17 below and shown in Figure 15.1: Surface Water Features (ES Volume 2) [EN0110012/APP/LVS/06.02.15.01].
- 6.5.16 One watercourse, Ings Drain, is considered to be of moderate value and the remaining watercourses are considered to be low value.

**Table 6-17 Water bodies in the Holmes Dike Catchment (trib of Ouse) WER water body within the Study Area**

| Watercourse name          | Designation          | Site Location        | Receptor value |
|---------------------------|----------------------|----------------------|----------------|
| Black Fen Drain           | Ordinary watercourse | Cable Route Corridor | Low            |
| Ings Drain                | Ordinary watercourse | Cable Route Corridor | Moderate       |
| Lordship Lane Drain       | Ordinary watercourse | Cable Route Corridor | Low            |
| Gibbet Lane Drain         | Ordinary watercourse | Cable Route Corridor | Low            |
| Trib of Black Fen Drain 2 | Ordinary watercourse | Cable Route Corridor | Low            |
| Unnamed Drain 30          | Ordinary watercourse | Cable Route Corridor | Low            |
| Unnamed Drain 31          | Ordinary watercourse | Cable Route Corridor | Low            |

## 7 Scoping assessment

### 7.1 Overview

7.1.1 A scoping assessment has been undertaken to establish the likely effects of the Proposed Development on the WER status elements of the water bodies screened in for assessment.

7.1.2 Effects have been considered with regard to the risk of the Proposed Development:

- 1) causing a deterioration in current status of the water body, whether individual quality elements or for the water body as a whole; and/or
- 2) preventing the future achievement of water body status objectives.

7.1.3 The assessment process for determining the potential risk of status deterioration uses the following coloured rating system to assign the magnitude of the likely effect anticipated on each of the quality elements of the affected water bodies:

- 1) **Dark Blue**: beneficial effect of a scale sufficient to increase status class for the quality element at water body scale.
- 2) **Light Blue**: minor/localised beneficial effect resulting in a localised improvement but insufficient to increase status class for the quality element at water body scale.
- 3) **Green**: negligible effect on (or no measurable change to) status class for the quality element at water body scale.
- 4) **Yellow**: minor localised adverse effect when balanced against mitigation included in the design – insufficient to affect status class for the quality element at water body scale.
- 5) **Amber**: an adverse effect is possible when balanced against mitigation included in the design – the extent of effect is uncertain, and there remains a potential to affect status class for the quality element at water body scale. Additional mitigation and residual effects need to be considered.
- 6) **Red**: adverse effect of sufficient scale to impact on status class for the quality element at a water body scale (certain). Additional mitigation or re-design required to avoid non-compliance.

### 7.2 Relevant components

#### Construction phase

7.2.1 The indicative construction methodology and outline activities for the Proposed Development are described in Chapter 2: The Proposed Development (ES Volume 1) [EN0110012/APP/LVS/06/01/02]. Activities will be required during construction to install the Proposed Development, such as:

- 1) preparation of land for construction, including localised levelling;

- 2) establishment of construction laydown areas;
- 3) construction of internal access roads;
- 4) upgrade, modification or improvement of highways where required;
- 5) installation of solar PV panels including piling and erection of mounting structures;
- 6) trenching and installation of electric cabling;
- 7) installation of transformers, conversion units, switchgears, control systems;
- 8) pouring of concrete foundations and plinths for the electrical equipment;
- 9) construction of BESS, including foundations, installation of electric cabling, transformers and electrical equipment; and
- 10) Cable Route Corridor construction, including excavation.

7.2.2 The oCEMP [EN0110012/APP/LVS/07.02] and oPSRP [EN0110012/APP/LVS/07.08] include pollution prevention practices, details of appropriate construction drainage and a groundwater management plan.

7.2.3 An overview of key construction mitigation measures relevant to the water environment included within the oCEMP [EN0110012/APP/LVS/07.02] is provided in Section 5.2.

7.2.4 Assuming embedded and statutory construction mitigation methods are implemented during the construction phase through the detailed CEMP which must be produced in substantial accordance with the oCEMP [EN0110012/APP/LVS/07.02] (and associated groundwater management plan) to manage and reduce potential impacts, and considering that construction programme is not expected to extend in time over two years, potential impacts arising from construction are anticipated to be temporary in nature with no significant effects on the WER status or objectives of the relevant water bodies.

7.2.5 The decommissioning phase is anticipated to include less but similar works to the construction phase and therefore has the potential for similar impacts. The decommissioning phase impacts have therefore been considered alongside construction phase impacts. The Outline Decommissioning Environmental Management Plan (oDEMP) [EN0110012/APP/LVS/07.04] contains measures similar to the oCEMP.

### **Permanent components of the Proposed Development**

7.2.6 The relevant components of the Proposed Development that have the potential to impact upon water bodies screened in are:

- 1) Solar PV modules and mounting structures;
- 2) Conversion Units and 33kV Switchrooms;
- 3) Transformers;

- 4) Extra high voltage (EHV) switchgear and control equipment (housed inside a building);
- 5) On-site electrical compounds comprising Substations, control buildings and associated equipment;
- 6) A Battery Energy Storage System (BESS);
- 7) On-site and Interconnecting Cables: underground electrical cable routes within the Solar Development Sites, and underground electrical cable routes (located within Cable Route Corridors) to connect the solar infrastructure (located within the Solar Development Sites 1-4 and 6-8) to each other;
- 8) Grid Connection Cables: underground electrical cable routes to connect the Proposed Development to the National Grid at Monk Fryston Substation, routing from Solar Development Site 4 to Monk Fryston Substation and with an option to extend to Solar Development Site 2;
- 9) 275 kV cable connection within the existing Monk Fryston Substation and associated works to connect into the substation;
- 10) Spare parts storage buildings or enclosures and back-up generators;
- 11) Fencing and security measures;
- 12) Access tracks;
- 13) Footpath diversions<sup>2</sup>;
- 14) Environmental mitigation / BNG; and
- 15) As described in Section 4.3.8, temporary works will also be required to facilitate construction.

## 7.3 Potential effects on water environment

7.3.1 Embedded mitigation for the Proposed Development is outlined in Section 5.2. The potential effects from permanent components (identified in Section 7.2) on surface water and groundwater WER water bodies, factoring in consideration of the embedded mitigation measures, are summarised below:

- 1) The physical footprint of the Proposed Development is not anticipated to affect watercourses directly, due to the 10 m offset of development to watercourse bank tops.
- 2) Installation of hardstanding (required for infrastructure such as substations and BESS facilities) and Solar PV modules and mounting structures required for the Proposed Development have the potential to alter surface water runoff to watercourses due to changes in permeability, existing ground elevations and land drainage systems.

<sup>2</sup> Footpath diversions are part of ancillary works and have been included indicatively. Specific locations where these may be required are not yet known.

- 3) Infrastructure associated with the Proposed Development (such as BESS facilities and drainage infrastructure) could provide a source and pathway for potential contaminants to enter the water environment, whether through routine use or through response to a potential incident.
- 4) Construction of infrastructure may result in the loss of small drainage ditches with a potential impact on water received by larger watercourses, and a resulting impact of flow and morphology.
- 5) Cables will need to cross watercourses. HDD methods (or other trenchless methods) will be used to pass cables beneath Main Rivers, IDB and WER water body line watercourses. Open cut methods are expected to be used to pass cables beneath all other watercourses not located in an Avoidance Area. Cables buried beneath watercourses may have the potential to affect fish behaviours and migration due to the electromagnetic fields (EMF) generated by currents passing through the cables. Potential impacts on fish from cable crossing will be mitigated through embedded mitigation which includes burying cables at a minimum depth of 5 m below the bed, reducing the residual EMF emitted within the water column.
- 6) Access tracks will need to cross watercourses in places, which may require the construction of new crossing structures. This has the potential to effect local in-channel habitats as well as flow and sediment continuity and/or fish passage.
- 7) Footpaths may need to cross watercourses in places<sup>2</sup>, which may require the construction of new footbridges. This has the potential to effect local in-channel and riparian habitats.
- 8) Below ground infrastructure, such as foundations for infrastructure and cables installed below ground levels, have the potential to effect local groundwater flows and/or levels, which may in turn have indirect effects on dependent surface water bodies and/or habitats. It is assumed that any below ground works will be shallow and only enter the superficial deposits, therefore not impacting bedrock groundwater/aquifers.
- 9) In addition, proposed environmental mitigation / BNG proposals could potentially provide beneficial effects to the water environment and WER quality elements. Assessment of any beneficial elements has been included within this assessment and report.

7.3.2 A summary of permanent components of the Proposed Development and their potential effects on surface water bodies and groundwater bodies is provided in Table 7-1 and Table 7-2, respectively.

**Table 7-1 Permanent components of the Proposed Development and their potential effects on surface water bodies. A tick (✓) indicates a potential effect may arise and a dash (-) indicates no effect**

| Proposed Development component     |  | Solar PV modules and mounting structures  | Substations, Conversion Units and Switchrooms  |  | BESS and transformers  |  | Permanent access tracks / replacement of existing access track crossings |  |  | Footbridges  | Underground cabling   |   |  |  |
|------------------------------------|--|---|--|--|--|--|--|--|--|--|---|---|--|--|
| Potential effect                   |  | Infrastructure /hardstanding causing alteration of surface water flow permeability, flow paths and runoff to watercourses | Infrastructure /hardstanding causing alteration of surface water permeability, flow paths and runoff to watercourses | Source and pathway for potential contaminants runoff to watercourses | Below ground infrastructure causing alteration of shallow groundwater flows/levels potentially affecting watercourse flows | Infrastructure /hardstanding causing alteration of surface water permeability, flow paths and runoff to watercourses | Source and pathway for potential contaminants runoff to watercourses     | Below ground infrastructure causing alteration of shallow groundwater flows/levels potentially affecting watercourse flows | Infrastructure /hardstanding causing alteration of surface water permeability, flow paths and runoff to watercourses | Source and pathway for potential contaminants runoff to watercourses | New watercourse crossings structures affecting local hydromorphology and river continuity | New watercourse crossings structures affecting local hydromorphology and river continuity | Buried cable crossings beneath watercourses (production of electromagnetic fields) | Below ground infrastructure causing alteration of shallow groundwater flows/levels potentially affecting watercourse flows |
| WER surface water quality elements | Biological quality elements            | ✓   | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  | -  | ✓  | ✓   | ✓   | ✓  | ✓  |
|                                    | Hydromorphological Supporting Elements | ✓   | ✓  | -  | ✓  | ✓  | -  | ✓  | ✓  | -  | ✓   | ✓   | ✓  | ✓  |
|                                    | Physicochemical quality elements       | -   | -  | ✓  | -  | -  | ✓  | -  | -  | ✓  | -   | -   | -  | -  |
|                                    | Specific pollutants                    | -   | -  | ✓  | -  | -  | ✓  | -  | -  | ✓  | -   | -   | -  | -  |
|                                    | Chemical Status                        | -   | -  | ✓  | -  | -  | ✓  | -  | -  | ✓  | -   | -   | -  | -  |

**Table 7-2 Permanent components of the Proposed Development and their potential effects on groundwater bodies. A tick (✓) indicates a potential effect may arise and a dash (-) indicates no effect**

| Proposed Development component   |                                   | Substations, Conversion Units and Switchrooms   |   |  | BESS and transformers   |   |  | Underground cabling   |  |  |
|----------------------------------|-----------------------------------|---|---|--|---|---|--|---|--|--|
| Potential effect                 |                                   | Infrastructure /hardstanding causing alteration of surface permeability and infiltration to groundwater | Infrastructure /hardstanding causing alteration of surface permeability and infiltration to groundwater | Source and pathway for potential contaminants to groundwater | Below ground infrastructure /foundations causing alteration of shallow groundwater flows/levels | Infrastructure /hardstanding causing alteration of surface permeability and infiltration to groundwater | Source and pathway for potential contaminants to groundwater | Below ground infrastructure /foundations causing alteration of shallow groundwater flows/levels | Source and pathway for potential contaminants to groundwater | Below ground infrastructure causing alteration of shallow groundwater flows/levels |
| WER groundwater quality elements | Quantitative status elements      | ✓   | ✓   | -  | ✓   | ✓   | -  | ✓   | -  | ✓  |
|                                  | Chemical status elements          | -   | -   | ✓  | -   | -   | ✓  | -   | ✓  | -  |
|                                  | Supporting elements (groundwater) | -   | -   | -  | -   | -   | -  | -   | -  | -  |

## 7.4 Potential effects on current status

- 7.4.1 The scoping assessment has considered the potential effects of the key permanent components of the Proposed Development on the current status of the surface and groundwater bodies screened in. These are described in the sections below.
- 7.4.2 The assessment is based on the currently available desk study and outline design information.

### Potential effects on surface water bodies

#### Changes to surface water runoff to watercourses

- 7.4.3 The proposed Solar PV modules and mounting structures, Substations, Conversion Units, Switchrooms, BESS and transformers, and permanent access tracks have the potential to reduce infiltration and alter existing surface water runoff and land drainage pathways. The proposed Solar PV modules and mounting structures could alter the spatial distribution of infiltration, whilst the Substations, BESS and transformers, and permanent access tracks could reduce surface permeability by increasing hardstanding areas and result in the physical loss of existing land drains within their footprint.
- 7.4.4 These changes have the potential to impact watercourse flows, in turn affecting fluvial geomorphological processes and aquatic habitats. Such impacts therefore have the potential to affect the hydromorphological and biological status of the relevant surface water bodies.
- 7.4.5 As summarised in Section 5.2, embedded mitigation is incorporated into the design for the Proposed Development to minimise potential impacts of surface water runoff on the adjacent watercourses. This includes:
- 1) The Solar PV modules and mounting structures, Substations, Conversion Units, Switch Rooms, BESS and transformers will all be set back 10 m from the bank top of watercourses.
  - 2) The drainage strategy outlined in Appendix 15.4: Drainage Strategy (ES Volume 3) [EN0110012/APP/LVS/06.03.15.04] promotes the discharge of surface water runoff following the established order of priority (infiltration to ground, surface water body, surface water sewer or other surface water systems, combined sewer).
  - 3) The permanent Solar PV access tracks will be designed to be permeable.
- 7.4.6 Drainage ditches located in Solar Development Sites, Substations, Conversion Units, Switch Rooms, BESS and access tracks are predominantly of low value. As summarised in Section 6.5, these low value drainage ditches are anticipated to have limited baseflow, minimal geomorphological processes and low aquatic habitat potential for Biological quality elements. As such any localised changes in surface water runoff within the catchment areas of these low value

watercourses are anticipated to have negligible effects on Hydromorphological and Biological status at the water body scale.

- 7.4.7 However, there are some moderate and high value watercourses which have Solar PV modules and mounting structures, Substations, Conversion Units, Switch Rooms, BESS and access tracks in close proximity to them. These watercourses are likely to have some baseflow, active geomorphological processes and high aquatic potential for Biological quality elements. Embedded mitigation, such as a 10 m distance from any watercourse, will ensure any localised changes in surface water runoff will result in negligible effects on Hydromorphological and Biological status.
- 7.4.8 There is one high value watercourse within the vicinity of components with the potential to affect surface water runoff. Selby Dam is located within the vicinity of Solar Development Site 8 and will potentially be crossed by an access road as part of the Proposed Development. There are several moderate value watercourses within Solar Development Sites 1, 2, 3, 4, and 8 with the potential to affect surface water runoff. Given the embedded mitigation measures and drainage design, the baseline receptor value and sensitivity of the nearby watercourses, and the magnitude of change in the context of scale of the relevant water body catchments, the proposed Solar PV modules and mounting structures, Substations, Conversion Units, Switch Rooms, BESS facilities, and permanent access tracks are anticipated to have a negligible effect on the Hydromorphological and Biological quality elements of the relevant surface water bodies.

### **Potential sources of contaminant runoff to watercourses**

- 7.4.9 The proposed Substations, BESS infrastructure, and permanent access tracks for the Proposed Development could, without embedded mitigation measures, provide a source and pathway for potential contaminants (oil, fire waters and hydrocarbons respectively) to enter the water environment. This could have the potential to impact on the water quality of watercourses downstream, which in turn could adversely affect the Biological, Physico-chemical, Specific Pollutants and Chemical Status of the relevant surface water bodies.
- 7.4.10 As summarised in Section 4.3.8, embedded mitigation is incorporated into the design for the Proposed Development to minimise potential impacts of potential contaminant releases to nearby watercourses. Surface water emanating from the substation and associated infrastructure will be managed by the implementation of an appropriate surface water drainage system. The drainage system will be comprised of SuDS features and feature pollution prevention measures as described within the Outline Drainage Strategy (Appendix 15.4: Outline Drainage Strategy (ES Volume 3) [EN0110012/APP/LVS/06.03.15.01]) to safeguard the surrounding water environment.
- 7.4.11 Contamination and water suppression as a result of the potential release of firewater and other chemicals from BESS and the Substations shall be avoided with embedded mitigation implemented as outlined within the Outline Drainage

Strategy (Appendix 15.4: Outline Drainage Strategy (ES Volume 3) [EN0110012/APP/LVS/06.03.15.04]) and included within the Outline Battery Safety Management Plan (oBSMP) [EN0110012/APP/LVS/07.06] that is included within the DCO Application.

- 7.4.12 During normal site usage under operation, it is anticipated the site will have low traffic numbers resulting in a low potential for new contaminants to enter the water environment via access tracks.
- 7.4.13 Decommissioning of the Proposed Development could, without embedded mitigation measures, provide a source and pathway for potential contaminants to enter the watercourses and groundwater body within the Order Limits. As outlined within the Outline Drainage Strategy (Appendix 15.4: Outline Drainage Strategy (ES Volume 3) [EN0110012/APP/LVS/06.03.15.04]) and the Outline Decommissioning Environmental Management Plan (oDEMP) [EN0110012/APP/LVS/07.04] embedded mitigation measures have been included within the design to minimise the potential impacts of potential contaminant releases to nearby water receptors.
- 7.4.14 Given the embedded mitigation and the Proposed Development operating regime, the baseline receptor value and sensitivity of the nearby watercourses, and the location and scale of the proposed infrastructure in the context of scale of the relevant water body catchments, it is anticipated that the potential for the introduction of source and pathways is low and so the Proposed Development will have a negligible effect on Biological and Physico-chemical quality elements, Specific Pollutants and Chemical Status.

### Watercourse crossings

- 7.4.15 A small number of permanent watercourse crossing structures are likely to be required for new access roads associated with the Proposed Development. These are listed within the Crossings Schedule [EN0110012/APP/LVS/07.01] The crossing structures have the potential to impact on river continuity (flow, sediment and fish passage), which could affect the Hydromorphological Supporting Elements and Biological status of the relevant surface water bodies.
- 7.4.16 To prevent adverse impacts on WER quality elements watercourse crossings would ensure impact to channel banks and bed is minimised, where practicable, and that the design limits any impacts to longitudinal and lateral continuity. Where practicable access tracks have sought to utilise existing crossing structures, it is assumed at this stage that these will be suitable for continued use as part of the Proposed Development and will not interfere with river continuity, and therefore no effects are anticipated.
- 7.4.17 Where a new crossing structure is needed, it is assumed at this stage that a natural watercourse bed will be maintained wherever reasonably practicable and use of a culvert as a crossing structure will be a worst case scenario.
- 7.4.18 As part of a possible access route to the north of Solar Development Site 8, a new permanent access road culvert may be needed on one moderate value

watercourse, Habholme Dike. Additionally, the potential access road to the north of Solar Development Site 8 will cross over Selby Dam, a high value watercourse. There is currently an existing culvert crossing across Selby Dam, however the condition of the culvert is not known at present. As a worst case scenario, the existing culvert may need to be removed and replaced with a new permanent crossing structure. During the replacement of the culvert (if required) a temporary crossing structure would be installed to maintain current access provision if access could not be maintained over the current structure during the replacement works. If a temporary crossing structure is required the structure would be in place for less than 6 months. Both watercourses are part of the Selby Dam From Conf. Fox Dike and Carr Dike to Ouse water body. The addition of a culvert is likely to impact on river continuity which may result in minor, localised adverse effects on Hydromorphological Supporting Elements and Biological status. The replacement of the existing culvert on Selby Dam with a new crossing structure may result in a minor, localised adverse impact. This is due to a potential minor, temporary biological and hydromorphological impact caused by the disturbance of in-channel and riparian habitats associated with the replacement. The new crossing structure is not anticipated to be any wider than the existing crossing structure and therefore the length of channel impacted by this modification is expected to remain the same as in the baseline condition. Whilst the components of the Proposed Development are likely to cause a minor localised adverse impact on the Habholme Dike, this is not expected to result in a change to current status at the scale of the water body.

- 7.4.19 Two further new access road culverts are likely to be needed on two low value drains, Unnamed Drain 18 which is part of the Selby Dam from Conf. Fox Dike and Carr Dike to Ouse water body within Solar Development Site 2 and Unnamed Drain 40, which is part of the Riccall Dam Catchment water body within Solar Development Site 1. The new access road culvert on Unnamed Drain 18 is likely to be permanent and the access road culvert on Unnamed Drain 40 is temporary. Given low value watercourses are anticipated to have limited baseflow, minimal geomorphological processes and low aquatic habitat potential for Biological quality elements, impacts at the water body scale on Hydromorphological and Biological status are anticipated to be negligible.
- 7.4.20 Footpath diversions may be necessary as part of the Proposed Development<sup>2</sup>, whilst specific locations are not yet known. For the purposes of the assessment it is assumed two new footbridge crossings over watercourses may be required across Lumby Common Drain and Unnamed Drain 11, which are both low value watercourses. The footbridges are expected to result in negligible impacts to Hydromorphological and Biological status at the water body scales, given their limited baseflow and the low aquatic habitat potential, and the limited impact of a clear span small footbridge.

### **Cable crossings**

- 7.4.21 Cables will pass beneath watercourses. HDD or other trenchless methods would be used for any crossings of moderate and high value watercourses (comprising

Main Rivers, IDB watercourses and/or main WER river water bodies), and some low value watercourses, in order to prevent any impacts to Hydromorphological Supporting Elements.

- 7.4.22 For some low value watercourses, the cable will be laid through an open cut method. Additionally, as a worst case assumption, there will be an associated temporary haul road and culvert over these watercourses for a duration of up to two years to allow access for cable laying during the construction phase. The haul road and culverts will be removed following construction. As the impacts are expected to be short lived and temporary in nature, there is not expected to be a permanent impact on watercourses.
- 7.4.23 EMF can be generated when electricity passes through cables, however, which could induce both a behavioural response in migratory fish swimming over the cable as well as negatively impact individual organisms during the embryonic and larval life stages. This therefore has the potential to affect the Biological status of the water bodies. A potential minor localised adverse effect on the Biological status of these water bodies is therefore anticipated. However, following the implementation of mitigation (burying the cable at a minimum distance of 5 m below bed level), impacts are considered to cause no measurable change on status class for the quality element at water body scale. The impacts of EMF, vibration and noise disturbance to watercourses within the Cable Route Corridor have been fully assessed within Chapter 15: Water Resources and Flood Risk (Volume 1) [EN0110012/APP/LVS/06.01.15] following further assessment and/or survey of aquatic habitat and faunal receptors.
- 7.4.24 For all watercourses, cable crossings are anticipated to have no permanent effects on Physico-chemical quality elements, Specific Pollutants and Chemical status.

### **Watercourse enhancement zones**

- 7.4.25 Enhancement areas to existing watercourses have been proposed as part of environmental mitigation / BNG proposals. These areas are shown on the Outline Environmental Masterplan (OEM) [EN0110012/APP/LVS/02.12], which also shows the biodiversity mitigation and enhancement across the Proposed Development. These areas could potentially provide beneficial effects to the water environment and WER quality elements.
- 7.4.26 At this stage, two watercourses, totalling approximately 1.8 km in length, have been identified for enhancement within the southern part of Solar Development Site 1. These are Chatterton Dyke and Whinchat Dyke within the Riccall Dam Catchment (trib of Ouse) WER water body. As per the outline Landscape Environmental Management Plan [EN0110012/APP/LVS/07.05], habitats adjacent to watercourses will be managed to enhance the structural and species diversity of marginal vegetation. This may be achieved through a combination of seeding, rotational cutting and targeted scrub removal where encroachment is detrimental the watercourse. The planting of trees may also be undertaken

adjacent to ditches and rivers, with sufficient distance from the ditch to prevent damage and on the northern side where practicable to prevent shading.

- 7.4.27 Whilst the specific details of the watercourse enhancements are not fully known, these have the potential to result in minor, localised beneficial effects on biological and hydromorphological status.

### Potential effects on groundwater bodies

- 7.4.28 The solar PV modules and mounting structures within the Solar Development Sites could alter the spatial distribution of infiltration, whilst the Substations and BESS and transformers could reduce surface permeability by increasing hardstanding areas. This in turn could lead to some local changes in the rate of recharge to the underlying aquifers, which has the potential to affect Groundwater Quantitative Status. At the scale of the WER groundwater bodies, the area of impermeable hardstanding is negligible, and ground beneath Solar PV modules and mounting structures will still be permeable. Therefore, the Proposed Development is anticipated to have a negligible effect on groundwater Quantitative Status.
- 7.4.29 The BESS could provide a risk of pollutants entering the water environment in the case of an incident and therefore present a risk to groundwater Chemical Status. While detail of the drainage design is to be finalised, the drainage strategy notes that drainage at BESS facilities would be designed to contain/separate fire water from surface water runoff and ground infiltration if an incident were to arise, and drainage waters should be contained in an impermeable bund. This approach therefore minimises the potential for pollutants to enter the water environment. Therefore, taking into account the embedded mitigation in the drainage strategy and the scale of the water body, the BESS units, are anticipated to have no measurable change on groundwater Chemical Status. New permanent access tracks may result in the introduction of new pollutants to the water environment, such as hydrocarbons, which has the potential to affect groundwater Chemical Status. However, during normal usage it is anticipated site access requirements will be limited, meaning the site will have a low traffic volume. Therefore, there will be a low potential for new contaminants to enter the water body meaning at the scale of the groundwater body permanent access tracks are anticipated to have a negligible effect on overall Chemical Status, and no impact on groundwater Quantitative Status and Supporting Elements (groundwater). Where large scale replacement activities are taking place, measures in the oOEMP [EN0110012/APP/LVS/07.03] similar to the CEMP for construction, would be utilised.
- 7.4.30 Below ground infrastructure for operation of the Proposed Development is likely to encompass shallow building foundations and cable installations. As these components will be located in the shallow superficial aquifer, it is anticipated that these would have no effect on the Quantitative Status and Chemical Status of the groundwater bodies present at the site.

### **Summary of effects on current status**

- 7.4.31 Summaries of the anticipated effects of the Proposed Development on WER surface water bodies is provided in Table 7-3.
- 7.4.32 A summary of the anticipated effects of the Proposed Development on the WER groundwater bodies is provided in Table 7-4, combined for all groundwater bodies.
- 7.4.33 In addition, proposed environmental mitigation / BNG proposals could potentially provide beneficial effects to the water environment and WER quality elements. Any proposal that may have a beneficial effect has been assessed within this report.

**Table 7-3 Summary of anticipated effects of the Proposed Development on WER status elements of relevant watercourses in the Aire from Fryston Beck to River Ouse (GB104027063037), the Ouse from R Wharfe to Upper Humber (GB104027064270), Selby Dam from Conf. Fox Dike and Carr Dike to Ouse (GB104027063620), Riccall Dam Catchment (trib of Ouse) (GB104027063690), The Fleet from Source to River Aire (GB104027062740) and Holmes Dike Catchment (trib of Ouse) (GB104027063650)**

| WER water body   | Watercourses       | Receptor value | Relevant component  | Biological Status | Hydromorphological Supporting Elements | Physico-chemical quality elements | Specific Pollutants | Chemical Status | Overall effect at watercourse level |
|--|--------------------|----------------|---|-------------------|--|-----------------------------------|---------------------|-----------------|-------------------------------------|
| <b>Aire from Fryston Beck to River Ouse</b>                | Unnamed Drain 1    | Low            | Cable crossing (assumed open cut)                           | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|  | Unnamed Drain 2    | Low            | Cable crossing (assumed open cut)                           | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|  | Unnamed Drain 3    | Low            | Cable crossing (assumed open cut)                           | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
| <b>Ouse from R Wharfe to Upper Humber</b>                  | Old Ings Dyke      | Low            | Cable crossing (HDD)  | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|  | West Field Dyke    | Low            | Cable crossing (HDD)  | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|  | Unnamed Drain 32   | Low            | Cable crossing (assumed open cut)                           | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|  | Unnamed Drain 33   | Low            | Cable crossing (HDD)  | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|  | River Ouse         | High           | Cable crossing (HDD)  | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
| <b>Selby Dam from Conf. Fox Dike and Carr Dike to Ouse</b> | Breckswood Drain   | Low            | Cable crossing (HDD)  | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|  | Causeway Dike      | Low            | Cable crossing (HDD)  | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|  | Common Drain 2     | Low            | Cable crossing (HDD)  | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|  | Fleet Dike         | Low            | Solar PV modules and mounting structures                    | Negligible        | Negligible                             | -                                 | -                   | -               | Negligible – no measurable change   |
|  |                    |                | Substation, conversion units, switch rooms and transformers | Negligible        | Negligible                             | Negligible                        | Negligible          | Negligible      | Negligible                          |
|  | Low Common Drain   | Low            | Solar PV modules and mounting structures                    | Negligible        | Negligible                             | -                                 | -                   | -               | Negligible – no measurable change   |
|  |                    |                | Access track (assumed existing crossing)                    | Negligible        | -                                      | Negligible                        | Negligible          | Negligible      |                                     |
|  | Lumby Common Drain | Low            | Solar PV modules and mounting structures                    | Negligible        | Negligible                             | -                                 | -                   | -               | Negligible – no measurable change   |
|  |                    |                | Access track (assumed existing crossing)                    | Negligible        | -                                      | Negligible                        | Negligible          | Negligible      |                                     |
|  |                    |                | Indicative footpath crossing – new footbridge               | Negligible        | Negligible                             | -                                 | -                   | -               |                                     |

| WER water body                     | Watercourses     | Receptor value                           | Relevant component  | Biological Status       | Hydromorphological Supporting Elements | Physico-chemical quality elements | Specific Pollutants | Chemical Status                     | Overall effect at watercourse level  |
|------------------------------------|------------------|--|---|-------------------------|--|-----------------------------------|---------------------|-------------------------------------|--|
|                                    | Morton Drain     | Low                                      | Cable crossing (HDD)  | Negligible              | -                                      | -                                 | -                   | -                                   | Negligible – no measurable change  |
|                                    | Outwoods Drain   | Low                                      | Cable crossing (HDD)  | Negligible              | -                                      | -                                 | -                   | -                                   | Negligible – no measurable change  |
|                                    | Town Dike        | Low                                      | Cable crossing (HDD)  | Negligible              | -                                      | -                                 | -                   | -                                   | Negligible – no measurable change  |
|                                    | Unnamed Drain 18 | Low                                      | Solar PV modules and mounting structures                          | Negligible              | Negligible                             | -                                 | -                   | -                                   | Minor localised adverse effect - no change in status class at the water body scale |
|                                    |                  |  | Substation, conversion units, switch rooms, transformers and BESS | Negligible              | Negligible                             | Negligible                        | Negligible          | Negligible                          |  |
|                                    |                  |  | New access road culvert   | Minor localised adverse | Minor localised adverse                | Negligible                        | Negligible          | Negligible                          |  |
|                                    | Unnamed Drain 19 | Low                                      | Cable crossing (HDD)  | Negligible              | -                                      | -                                 | -                   | -                                   | Negligible – no measurable change  |
|                                    | Unnamed Drain 20 | Low                                      | Solar PV modules and mounting structures                          | Negligible              | Negligible                             | -                                 | -                   | -                                   | Negligible – no measurable change  |
|                                    |                  |  | Substation, conversion units, switch rooms, transformers and BESS | Negligible              | Negligible                             | Negligible                        | Negligible          | Negligible                          |  |
|                                    |                  |  | Cable crossing (HDD)  | Negligible              | -                                      | -                                 | -                   | -                                   |  |
|                                    | Unnamed Drain 21 | Low                                      | Cable crossing (HDD)  | Negligible              | -                                      | -                                 | -                   | -                                   | Negligible – no measurable change  |
|                                    | Unnamed Drain 22 | Low                                      | Solar PV modules and mounting structures                          | Negligible              | Negligible                             | -                                 | -                   | -                                   | Negligible – no measurable change  |
|                                    | Unnamed Drain 24 | Low                                      | Access track (assumed existing crossing)                          | Negligible              | -                                      | Negligible                        | Negligible          | Negligible                          | Negligible – no measurable change  |
|                                    | Unnamed Drain 29 | Low                                      | Cable crossing (HDD)  | Negligible              | -                                      | -                                 | -                   | -                                   | Negligible – no measurable change  |
|                                    | Unnamed Drain 74 | Low                                      | Solar PV modules and mounting structures                          | Negligible              | Negligible                             | -                                 | -                   | -                                   | Negligible – no measurable change  |
|                                    |                  |  | Access track (assumed existing crossing)                          | Negligible              | -                                      | Negligible                        | Negligible          | Negligible                          |  |
| Unnamed trib of Low Common Drain 1 | Low              | Solar PV modules and mounting structures | Negligible  | Negligible              | -                                      | -                                 | -                   | Negligible – no measurable change   |  |
| Unnamed trib of Low Common Drain 2 | Low              | Solar PV modules and mounting structures | Negligible  | Negligible              | -                                      | -                                 | -                   | Negligible – no measurable change   |  |
| Habholme Dike                      | Moderate         | Solar PV modules and mounting structures | Negligible  | Negligible              | -                                      | -                                 | -                   | Minor localised adverse effect - no |  |

| WER water body                              | Watercourses     | Receptor value  | Relevant component  | Biological Status       | Hydromorphological Supporting Elements | Physico-chemical quality elements | Specific Pollutants | Chemical Status | Overall effect at watercourse level  |
|---|------------------|---|---|-------------------------|--|-----------------------------------|---------------------|-----------------|--|
|   |                  |   | Substation, conversion units, switch rooms, transformers and BESS | Negligible              | Negligible                             | Negligible                        | Negligible          | Negligible      | change in status class at the water body scale                                     |
|   |                  |   | Cable crossing (HDD)  | Negligible              | -                                      | -                                 | -                   | -               |  |
|   |                  |   | New access road culvert   | Minor localised adverse | Minor localised adverse                | Negligible                        | Negligible          | Negligible      |  |
|   | Main Drain 1     | Moderate  | Access track (assumed existing crossing)                          | Negligible              | -                                      | Negligible                        | Negligible          | Negligible      | Negligible – no measurable change  |
|   | Selby Dam        | High  | Cable crossing (HDD)  | Negligible              | -                                      | -                                 | -                   | -               | Minor localised adverse effect - no change in status class at the water body scale |
|   |                  | Replacement of existing culvert with new crossing structure | Minor localised adverse   | Minor localised adverse | Negligible                             | Negligible                        | Negligible          |                 |  |
| <b>Riccall Dam Catchment (trib of Ouse)</b> | Common Drain 1   | Low   | Solar PV modules and mounting structures                          | Negligible              | Negligible                             | -                                 | -                   | -               | Negligible – no measurable change  |
|   |                  |   | Substation  | Negligible              | Negligible                             | Negligible                        | Negligible          | Negligible      |  |
|   | Unnamed Drain 34 | Low   | Cable crossing (assumed open cut)                                 | Negligible              | -                                      | -                                 | -                   | -               | Negligible – no measurable change  |
|   | Unnamed Drain 35 | Low   | Cable crossing (assumed open cut)                                 | Negligible              | -                                      | -                                 | -                   | -               | Negligible – no measurable change  |
|   | Unnamed Drain 36 | Low   | Cable crossing (HDD)  | Negligible              | -                                      | -                                 | -                   | -               | Negligible – no measurable change  |
|   | Unnamed Drain 37 | Low   | Cable crossing (assumed open cut)                                 | Negligible              | -                                      | -                                 | -                   | -               | Negligible – no measurable change  |
|   | Unnamed Drain 38 | Low   | Cable crossing (HDD)  | Negligible              | -                                      | -                                 | -                   | -               | Negligible – no measurable change  |
|   | Unnamed Drain 39 | Low   | Solar PV modules and mounting structures                          | Negligible              | Negligible                             | -                                 | -                   | -               | Negligible – no measurable change  |
|   |                  |   | Substation, conversion units, switch rooms and transformers       | Negligible              | Negligible                             | Negligible                        | Negligible          | Negligible      |  |
|   | Unnamed Drain 40 | Low   | Solar PV modules and mounting structures                          | Negligible              | Negligible                             | -                                 | -                   | -               | Minor localised adverse effect - no change in status class at the water body scale |
|   |                  |   | Substation, conversion units, switch rooms and transformers       | Negligible              | Negligible                             | Negligible                        | Negligible          | Negligible      |  |
|   |                  |   | New temporary access road culvert                                 | Minor localised adverse | Minor localised adverse                | Negligible                        | Negligible          | Negligible      |  |
|   | Unnamed Drain 41 | Low   | Solar PV modules and mounting structures                          | Negligible              | Negligible                             | -                                 | -                   | -               | Negligible – no measurable change  |

| WER water body                                 | Watercourses                       | Receptor value | Relevant component  | Biological Status          | Hydromorphological Supporting Elements | Physico-chemical quality elements | Specific Pollutants | Chemical Status                   | Overall effect at watercourse level   |
|--|------------------------------------|----------------|---|----------------------------|--|-----------------------------------|---------------------|-----------------------------------|---|
|  |                                    |                | Substation, conversion units, switch rooms and transformers | Negligible                 | Negligible                             | Negligible                        | Negligible          | Negligible                        |   |
|  | Unnamed Drain 42                   | Low            | Solar PV modules and mounting structures                    | Negligible                 | Negligible                             | -                                 | -                   | -                                 | Negligible – no measurable change   |
|  |                                    |                | Substation, conversion units, switch rooms and transformers | Negligible                 | Negligible                             | Negligible                        | Negligible          | Negligible                        |   |
|  | Chatterton Dyke                    | Moderate       | Solar PV modules and mounting structures                    | Negligible                 | Negligible                             | -                                 | -                   | -                                 | Minor localised beneficial effect – no change in status at the water body scale |
|  |                                    |                | Substation, conversion units, switch rooms and transformers | Negligible                 | Negligible                             | Negligible                        | Negligible          | Negligible                        |   |
|  |                                    |                | Watercourse enhancement zone                                | Minor localised beneficial | Minor localised beneficial             | Negligible                        | -                   | -                                 |   |
|  | Hopney Stable Dyke                 | Moderate       | Cable crossing (HDD)  | Negligible                 | -                                      | -                                 | -                   | -                                 | Negligible – no measurable change   |
|  | Pallion Dyke                       | Moderate       | Solar PV modules and mounting structures                    | Negligible                 | Negligible                             | -                                 | -                   | -                                 | Negligible – no measurable change   |
|  |                                    |                | Substation, conversion units, switch rooms and transformers | Negligible                 | Negligible                             | Negligible                        | Negligible          | Negligible                        |   |
|  | Swinbank Dike                      | Moderate       | Cable crossing (HDD)  | Negligible                 | -                                      | -                                 | -                   | -                                 | Negligible – no measurable change   |
|  | Whinchat Dyke                      | Moderate       | Solar PV modules and mounting structures                    | Negligible                 | Negligible                             | -                                 | -                   | -                                 | Minor localised beneficial effect – no change in status at the water body scale |
|  |                                    |                | Substation, conversion units, switch rooms and transformers | Negligible                 | Negligible                             | Negligible                        | Negligible          | Negligible                        |   |
|  |                                    |                | Access track (assumed existing crossing)                    | Negligible                 | -                                      | Negligible                        | Negligible          | Negligible                        |   |
|  |                                    |                | Watercourse enhancement zone                                | Minor localised beneficial | Minor localised beneficial             | Negligible                        | -                   | -                                 |   |
|  | Riccall Dam (Gosling Marsh Clough) | High           | Cable crossing (HDD)  | Negligible                 | -                                      | -                                 | -                   | -                                 | Negligible – no measurable change   |
| <b>The Fleet from Source to River Aire WER</b> | Hillam Common Drain                | Low            | Cable crossing (HDD)  | Negligible                 | -                                      | -                                 | -                   | Negligible – no measurable change |   |
|  |                                    |                | Access track (assumed existing crossing)                    | Negligible                 | -                                      | Negligible                        | Negligible          |                                   | Negligible  |
|  | Roe Lane Drain                     | Low            | Solar PV modules and mounting structures                    | Negligible                 | Negligible                             | -                                 | -                   | -                                 | Negligible – no measurable change   |

| WER water body | Watercourses                                  | Receptor value   | Relevant component  | Biological Status   | Hydromorphological Supporting Elements | Physico-chemical quality elements | Specific Pollutants | Chemical Status | Overall effect at watercourse level |                                   |
|----------------|---|------------------|---|---|--|-----------------------------------|---------------------|-----------------|-------------------------------------|-----------------------------------|
|                |   |                  | Substation, conversion units, switch rooms and transformers | Negligible  | Negligible                             | Negligible                        | Negligible          | Negligible      |                                     |                                   |
|                |   |                  | Cable crossing (HDD)  | Negligible  | -                                      | -                                 | -                   | -               |                                     |                                   |
|                |   | Unnamed Drain 4  | Low   | Cable crossing (assumed open cut)                           | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                |   | Unnamed Drain 5  | Low   | Cable crossing (HDD)  | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                |   | Unnamed Drain 6  | Low   | Cable crossing (assumed open cut)                           | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                |   | Unnamed Drain 7  | Low   | Cable crossing (HDD)  | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                |   | Unnamed Drain 8  | Low   | Cable crossing (assumed open cut)                           | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                |   | Unnamed Drain 9  | Low   | Cable crossing (assumed open cut)                           | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                |   | Unnamed Drain 10 | Low   | Cable crossing (assumed open cut)                           | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                |   | Unnamed Drain 11 | Low   | Cable crossing (HDD)  | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                | Indicative footpath crossing – new footbridge |                  |   | Negligible  | Negligible                             | -                                 | -                   | -               |                                     |                                   |
|                |   | Unnamed Drain 12 | Low   | Cable crossing (assumed open cut)                           | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                |   | Unnamed Drain 13 | Low   | Cable crossing (assumed open cut)                           | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                |   | Unnamed Drain 14 | Low   | Cable crossing (assumed open cut)                           | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                |   | Unnamed Drain 15 | Low   | Cable crossing (HDD)  | Negligible                             | -                                 | -                   | -               | -                                   | Negligible – no measurable change |
|                |   | Unnamed Drain 16 | Low   | Access track (assumed existing crossing)                    | Negligible                             | -                                 | Negligible          | Negligible      | Negligible                          | Negligible – no measurable change |
|                |   | Unnamed Drain 17 | Low   | Access track (assumed existing crossing)                    | Negligible                             | -                                 | Negligible          | Negligible      | Negligible                          |                                   |
|                |   | Unnamed Drain 25 | Low   | Solar PV modules and mounting structures                    | Negligible                             | Negligible                        | -                   | -               | -                                   | Negligible – no measurable change |
|                |   |                  |   | Substation, conversion units, switch rooms and transformers | Negligible                             | Negligible                        | Negligible          | Negligible      | Negligible                          |                                   |
|                |   |                  |   | Access track (assumed existing crossing)                    | Negligible                             | -                                 | Negligible          | Negligible      | Negligible                          |                                   |

| WER water body | Watercourses     | Receptor value | Relevant component  | Biological Status  | Hydromorphological Supporting Elements | Physico-chemical quality elements | Specific Pollutants | Chemical Status | Overall effect at watercourse level |
|----------------|------------------|----------------|---|--|--|-----------------------------------|---------------------|-----------------|-------------------------------------|
|                |                  |                | Indicative footpath crossing (assumed existing crossing)    | -  | -                                      | -                                 | -                   | -               |                                     |
|                |                  |                | Indicative footpath crossing (assumed existing crossing)    | -  | -                                      | -                                 | -                   | -               |                                     |
|                | Unnamed Drain 26 | Low            | Solar PV modules and mounting structures                    | Negligible   | Negligible                             | -                                 | -                   | -               | Negligible – no measurable change   |
|                |                  |                | Substation, conversion units, switch rooms and transformers | Negligible   | Negligible                             | Negligible                        | Negligible          | Negligible      |                                     |
|                |                  |                | Access track (assumed existing crossing)                    | Negligible   | -                                      | Negligible                        | Negligible          | Negligible      |                                     |
|                | Unnamed Drain 43 | Low            | Solar PV modules and mounting structures                    | Negligible   | Negligible                             | -                                 | -                   | -               | Negligible – no measurable change   |
|                |                  |                | Substation, conversion units, switch rooms and transformers | Negligible   | Negligible                             | Negligible                        | Negligible          | Negligible      |                                     |
|                | Hagg Lane Drain  | Moderate       | Solar PV modules and mounting structures                    | Negligible   | Negligible                             | -                                 | -                   | -               | Negligible – no measurable change   |
|                |                  |                | Substation, conversion units, switch rooms and transformers | Negligible   | Negligible                             | Negligible                        | Negligible          | Negligible      |                                     |
|                |                  |                | Access track (assumed existing crossing)                    | Negligible   | -                                      | Negligible                        | Negligible          | Negligible      |                                     |
|                |                  |                | Access track (assumed existing crossing)                    | Negligible   | -                                      | Negligible                        | Negligible          | Negligible      |                                     |
|                | The Fleet        | Moderate       | Solar PV modules and mounting structures                    | Negligible   | Negligible                             | -                                 | -                   | -               | Negligible – no measurable change   |
|                |                  |                | Substation, conversion units, switch rooms and transformers | Negligible   | Negligible                             | Negligible                        | Negligible          | Negligible      |                                     |
|                |                  |                | Cable crossing (HDD)  | Negligible   | -                                      | -                                 | -                   | -               |                                     |
|                |                  |                | Access track (assumed existing crossing)                    | Negligible   | -                                      | Negligible                        | Negligible          | Negligible      |                                     |
|                | Black Fen Drain  | Low            | Cable crossing (HDD)  | Negligible   | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
| Ings Drain     |                  |                | Low   | Cable crossing (assumed utilising existing culvert crossing) | Negligible                             | -                                 | -                   | -               |                                     |

| WER water body                              | Watercourses              | Receptor value | Relevant component                       | Biological Status | Hydromorphological Supporting Elements | Physico-chemical quality elements | Specific Pollutants | Chemical Status | Overall effect at watercourse level |
|---|---------------------------|----------------|--|-------------------|--|-----------------------------------|---------------------|-----------------|-------------------------------------|
| <b>Holmes Dike Catchment (trib of Ouse)</b> | Lordship Lane Drain       | Low            | Cable crossing (HDD)                     | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|   | Gibbet Lane Drain         | Low            | Access track (assumed existing crossing) | Negligible        | -                                      | Negligible                        | Negligible          | Negligible      | Negligible – no measurable change   |
|   | Trib of Black Fen Drain 2 | Low            | Cable crossing (assumed open cut)        | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|   | Unnamed Drain 30          | Low            | Cable crossing (HDD)                     | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |
|   | Unnamed Drain 31          | Low            | Cable crossing (HDD)                     | Negligible        | -                                      | -                                 | -                   | -               | Negligible – no measurable change   |

**Table 7-4 Summary of the anticipated effects of relevant Proposed Development components on the status elements of WER groundwater bodies, including Wharfe & Lower Ouse Sherwood Sandstone (GB40401G702400), Aire & Don Sherwood Sandstone (GB40401G701000), Wharfe Magnesian Limestone (GB40401G701100) and Aire & Don Magnesian Limestone (GB40401G7009000)**

| Relevant Proposed Development components                  | Quantitative Status | Chemical Status | Supporting Elements (Groundwater) | Overall effect                    |
|---|---------------------|-----------------|-----------------------------------|-----------------------------------|
| Hardstanding, Solar PV modules and mounting structures    | Negligible          | -               | -                                 | Negligible – no measurable change |
| Associated infrastructure, including BESS units           | -                   | Negligible      | -                                 | Negligible – no measurable change |
| Access Tracks   | -                   | Negligible      | -                                 | Negligible – no measurable change |
| Below ground infrastructure                               | Negligible          | -               | -                                 | Negligible – no measurable change |
| Cumulative effect on quality elements / water body status | Negligible          | Negligible      | -                                 | Negligible – no measurable change |

## 7.5 Potential effects on future status objectives

### Effects on existing pressures on status

- 7.5.1 The Proposed Development is not anticipated to adversely impact on or exacerbate any existing RNAGs for the Aire from Fryston Beck to River Ouse (GB104027063037), Ouse from R Wharfe to Upper Humber (GB104027064270), Selby Dam from Conf. Fox Dike and Carr Dike to Ouse (GB104027063620), Riccall Dam Catchment (trib of Ouse) (GB104027063690), The Fleet from Source to River Aire (GB104027062740) and Holmes Dike Catchment (trib of Ouse) (GB104027063650). The RNAGs for these WER surface water bodies are described in Section 6.4. These RNAGs relate mostly to point and diffuse sources for Biological, Physico-chemical and Chemical quality elements from agriculture, industry and water industry and physical modification. As highlighted in Section 7.3, the Proposed Development is not anticipated to cause significant physical modification to watercourses or create pollutant pathways. Therefore, the Proposed Development will not exacerbate the RNAGs.
- 7.5.2 The Proposed Development will also not adversely impact on or exacerbate the existing RNAGs identified for the Wharfe & Lower Ouse Sherwood Sandstone (GB40401G702400), Aire & Don Sherwood Sandstone (GB40401G701000), Wharfe Magnesian Limestone (GB40401G701100) and Aire & Don Magnesian Limestone (GB40401G7009000) groundwater bodies. The RNAGs for these groundwater bodies are described in Section 6.4. These RNAGs relate to diffuse and point source pollution from water industry and agriculture. As highlighted in Section 7.3, some components of the Proposed Development that involve hard standings and below ground infrastructure may cause some very minor, localised changes in shallow groundwater flows/levels. However, this will be negligible at the water body scale and not affect the underlying bedrock aquifer or any sensitive dependent surface water receptors. Therefore, the Proposed Development is not expected to exacerbate existing flow RNAGs.
- 7.5.3 In addition, proposed environmental mitigation / BNG proposals could potentially provide beneficial effects to the water environment and WER quality elements. Any such proposals will be assessed as design progresses and details become available.

### Effects on water body measures and actions

- 7.5.4 The latest available water body level measures and actions provided by the EA have been reviewed for the relevant WER water bodies. These measures are summarised in Section 6.4. Whilst the Proposed Development will not contribute towards the achievement of these water body level measures and actions, it will not affect or prevent the implementation of these measures in the future.
- 7.5.5 Note that the Proposed Development also includes environmental mitigation / BNG. Based on the current design information, watercourse enhancement is

proposed on two watercourses. Whilst there are limited details available at the time of writing it is possible that these activities can support measures to improve the status of the water body, Riccall Dam Catchment (trib of Ouse). More details on the watercourse enhancement and further opportunities will be explored as the design develops.

## 7.6 Mitigation requirements and compliance

- 7.6.1 Based on the latest design information available at this stage, there is the potential for the Proposed Development to have minor, localised adverse effects on the Biological status of the surface water bodies. This relates to the proposed possible new access road culvert on a moderate value watercourse, Habholme Dike, and a replacement of an existing crossing structure on a high value watercourse, Selby Dam. At the scale of the water body these effects are deemed unlikely to result in a deterioration in the current status of the Selby Dam from Conf. Fox Dike and Carr Dike to Ouse water body.
- 7.6.2 The potential for the Proposed Development to have minor, localised adverse effects on the Biological status of the surface water bodies also relates to the proposed trenchless cable crossings of some moderate and high value watercourses and the associated potential impact of EMF from buried cables beneath the watercourses on the behaviour and movement of fish. At the scale of the water bodies, these effects are deemed unlikely to result in a deterioration in the current status of the water bodies. However, embedded mitigation which includes burying the cable at a minimum distance of 5 m below the bed level will be implemented. With this mitigation implemented, the effect of EMF on Biological quality elements (fish) is anticipated to be negligible with no change in the status of the quality element or water body as a whole.
- 7.6.3 The remaining components of the Proposed Development are anticipated to have negligible or minor localised beneficial effects on the surface and groundwater bodies present at the site.
- 7.6.4 As such, the Proposed Development is considered to be compliant with the WER and no additional mitigation beyond the above is expected to be required at this stage to avoid the risk of a deterioration in the current status of the water bodies, or the prevention of the future achievement of status objectives.
- 7.6.5 Whilst the Proposed Development is not deemed to pose a risk of non-compliance at this stage, opportunities for environmental enhancements should continue to be developed over subsequent design stages, in conjunction with the BNG assessment.

## 8 Conclusions

- 8.1.1 An assessment of the compliance of the Proposed Development with the objectives of the WER has been undertaken.
- 8.1.2 This has included a baseline and screening assessment to identify the relevant WER water bodies potentially affected and collate available data regarding water body baseline condition and WER status and objectives. This has also included identification of the relevant permanent Proposed Development components with the potential to affect the water bodies, together with the relevant embedded design and construction mitigation developed at this stage.
- 8.1.3 The screening assessment has concluded that the Proposed Development has the potential to affect the following WER water bodies:
- 1) Surface water
    - a) Aire from Fryston Beck to River Ouse (GB104027063037);
    - b) Ouse from R Wharfe to Upper Humber (GB104027064270);
    - c) Selby Dam from Conf. Fox Dike and Carr Dike to Ouse (GB104027063620);
    - d) Riccall Dam Catchment (trib of Ouse) (GB104027063690);
    - e) The Fleet from Source to River Aire (GB104027062740); and
    - f) Holmes Dike Catchment (trib of Ouse) (GB104027063650);
  - 2) Groundwater
    - a) Wharfe & Lower Ouse Sherwood Sandstone (GB40401G702400);
    - b) Aire & Don Sherwood Sandstone (GB40401G701000);
    - c) Wharfe Magnesian Limestone (GB40401G701100); and
    - d) Aire & Don Magnesian Limestone (GB40401G7009000).
- 8.1.4 A scoping assessment has been undertaken to identify the potential effects of the Proposed Development on the current status and status objectives of these water bodies. This assessment has been based on the currently available site and design information, and assumptions regarding best practice and mitigation included within the oCEMP [EN0110012/APP/LVS/07.02] and the Design Parameters and Commitments document [EN0110012/APP/LVS/05.06] for the Proposed Development.
- 8.1.5 For the WER river water bodies a desk-based study and reconnaissance walkovers have been undertaken at this stage to identify and determine receptor values for all watercourses within the water body catchments within the vicinity of the Proposed Development.
- 8.1.6 Based on the currently available design information, the Proposed Development has the potential to have some minor, localised adverse effects on the Ouse, Selby Dam, Riccall Dam and The Fleet water bodies associated with the HDD cable crossings of moderate and high value watercourses which have the potential to impact on fish populations. However, it is expected that with the appropriate embedded mitigation, this impact will become negligible. At the scale

of the water body, these effects are not anticipated to result in a deterioration in the current status of the water body or prevent the future achievement of status objectives.

- 8.1.7 The Proposed Development also has the potential to have some minor, localised adverse effects on the Selby Dam from Conf. Fox Dike and Carr Dike to Ouse water body associated with two new permanent access road culverts and replacement of an existing crossing structure. At the scale of the water body, these effects are not anticipated to result in a deterioration in the current status of the water body or prevent the future achievement of status objectives.
- 8.1.8 The Proposed Development is anticipated to have only negligible effects on the quality elements of the Aire water body and the Holmes Dike water body, and on the Wharfe & Lower Ouse Sherwood Sandstone, Aire & Don Sherwood Sandstone, Wharfe Magnesian Limestone and Aire & Don Magnesian Limestone groundwater bodies.
- 8.1.9 The Proposed Development is therefore not anticipated to pose a risk of causing a deterioration in status or preventing the future attainment of status objectives for the relevant water bodies screened in for assessment. As such, the Proposed Development is deemed to be compliant with the requirements and objectives of the WER.
- 8.1.10 This WER compliance assessment provides an indication of the likely compliance of the Proposed Development at the time the assessment was prepared. This assessment would be reviewed to consider if there have been any substantial changes to the Proposed Development as part of seeking any approvals from the Environment Agency or the Local Lead Flood Authority pursuant to their protective provisions in the draft DCO. Such reviews would consider:
- 1) new baseline information that becomes available for the site, including from any further walkover surveys, and/or the relevant WER water bodies present at the site; and
  - 2) developing updates to the design details and construction methodology for the Proposed Development.

## References

- Ref 1 EC (2017) Guidance for assessing activities and projects for compliance with the Water Framework Directive.
- Ref 2 Environment Agency (2022) Cycle 3 River Basin Management Plan (RBMP), Humber Basin Management Plan.
- Ref 3 Environment Agency (2025). Catchment Data Explorer. Available at: <https://environment.data.gov.uk/catchment-planning>. (Accessed December 2025).
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- Ref 5 Environment Agency (2015) Water Quality Archive. Available at: <https://environment.data.gov.uk/water-quality/view/landing>. (Accessed December 2025).
- Ref 6 Department of Food and Rural Affairs (2025) Magic Map. Available at: <https://magic.defra.gov.uk/>. (Accessed December 2025)
- Ref 7 The British Geological Society (2025) GeoIndex Map. Available at:  (Accessed December 2025).
- Ref 8 Copernicus (2025) Land Monitoring Service. Available at:  (Accessed December 2025).
- Ref 9 NRW, NIEA, & SEPA (2018). Guidance for Pollution Prevention: Works and maintenance in or near water: GPP 5.
- Ref 10 NRW, NIEA, & SEPA (2017) Guidance for Pollution Prevention: Pollution Incident Response Plans: GPP21.
- Ref 11 Environment Agency (2022) Humber Basin District Management Plan, updated 2022.
- Ref 12 Statutory Instruments (2017) No.407, The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.
- Ref 13 Environment Agency (2015) Rules for assessing Surface Water Body Status and Potential, V2.0.
- Ref 14 European Commission (2013) Directive 2013/39/EU of the European Parliament and of Council of 12 August 2013 amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy Text with EEA relevance.
- Ref 15 UKTAG (2012) Paper 11b(ii): Groundwater Quantitative Classification for purposes of the Water Framework Direction, V3.1.
- Ref 16 The Water Framework Directive (Standards and Classification) Directions (England and Wales 2015).

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- Ref 17 Environment Agency (2010) Assessing new modifications for compliance with WFD: detailed supplementary guidance.
- Ref 18 Scoping Report, Vol 3, Appendix 1.1
- Ref 19 Directive 2013/39/EU of the European Parliament and of the Council of 12 August 2013 amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy Text with EEA relevance.  
Available at: [REDACTED]  
[REDACTED] (Accessed December 2025).
- Ref 20 Case 461/13 Bund für – Umwelt Und Naturschutz Deutschland v Bundesrepublik Deutschland ('the Bund case') concerning the interpretation of Article 4(1)(a)(i) to (iii) of the Water Framework Directive 2000/60/EC (WFD)
- Ref 21 Environment Agency (2010) Assessing new modifications for compliance with WFD: detailed supplementary guidance.
- Ref 22 The Planning Inspectorate (2025) Nationally significant infrastructure projects: advice on the Water Framework Directive.
- Ref 23 UK Technical Advisory Group on the Water Framework Directive (2009) Recommendations on Surface Water Classification Schemes for the purposes of the Water Framework Directive.

# Annex A Background information - WER status determination and compliance assessment process

## A.1. WER background

### Legislative context

A.1.1. The EU WFD has been in force since 2000 and is currently one of the most important pieces of EU legislation relating to the water environment. The Directive was transposed into UK law by The Water Environment (Water Framework Directive) (England and Wales) Regulations (amended 2017 (Ref 12) (the “WER”). The Environment Agency is the competent authority responsible for delivering the Directive in England. The WER aims to protect and enhance the quality of the water environment across all EU Member States. It takes a holistic approach to the sustainable management of water by considering the interactions between surface water, groundwater and water-dependent ecosystems. Under the WER, ‘water bodies’ are the basic management units and are defined as all or part of a river system or aquifer. These water bodies form part of a larger RBD, for which RBMPs are developed by EU Member States and environmental objectives are set. These RBMPs are produced every six years, in accordance with the river basin management planning cycle. The statutory objective of the WER is to prevent deterioration of all designated water bodies at good or high status or potential and to prevent water bodies at less than good status or potential from deteriorating further. A series of objectives for maintaining or improving conditions so that water bodies reach and/or maintain ‘good status or potential’ have also been set out in the WER. These overall Environmental Objectives are to:

- 1) Prevent the deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters;
- 2) Aim to achieve at least ‘Good’ ecological status or potential and ‘Good’ surface water chemical status for all water bodies by 22 December 2021. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve Good status or potential by 2027;
- 3) Meet the requirements of Water Framework Directive Protected Areas;
- 4) Promote sustainable use of water as a natural resource;
- 5) Conserve habitats and species that depend directly on water;
- 6) Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- 7) Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; and

8) Contribute to mitigating the effects of floods and droughts.

A.1.2. All activities with the potential to impact upon the water environment now need to be guided by the requirements of the WER. This includes ensuring that no changes occur that causes a deterioration of current status of a water body or prevents the achievement of the future status objectives of a water body. This principle is now integrated into the planning permission application process for proposed schemes/developments.

## Determination of WER status

### Introduction

- A.1.3. Surface water bodies and groundwater bodies are defined within WER legislation. There are three types of surface water body, as follows:
- 1) natural water bodies;
  - 2) HMWBs; and
  - 3) artificial water bodies (AWBs).
- A.1.4. The Overall Status of natural surface water bodies is determined on the basis of their Ecological Status and Chemical Status. The overall status of heavily modified and artificial water bodies is classified based on their ecological potential and chemical status. The overall status of groundwater bodies is determined on the basis of their Quantitative Status and Chemical Status.
- A.1.5. Groundwater bodies are defined within WER legislation as Groundwater Management Units (GWMU) and Water Resource Management Units (WRMU), and their status is determined on the basis of quantitative and chemical sub-elements.
- A.1.6. The means by which these determinations are made for both surface water and ground water bodies is described in below.

## Surface water bodies

### Ecological status

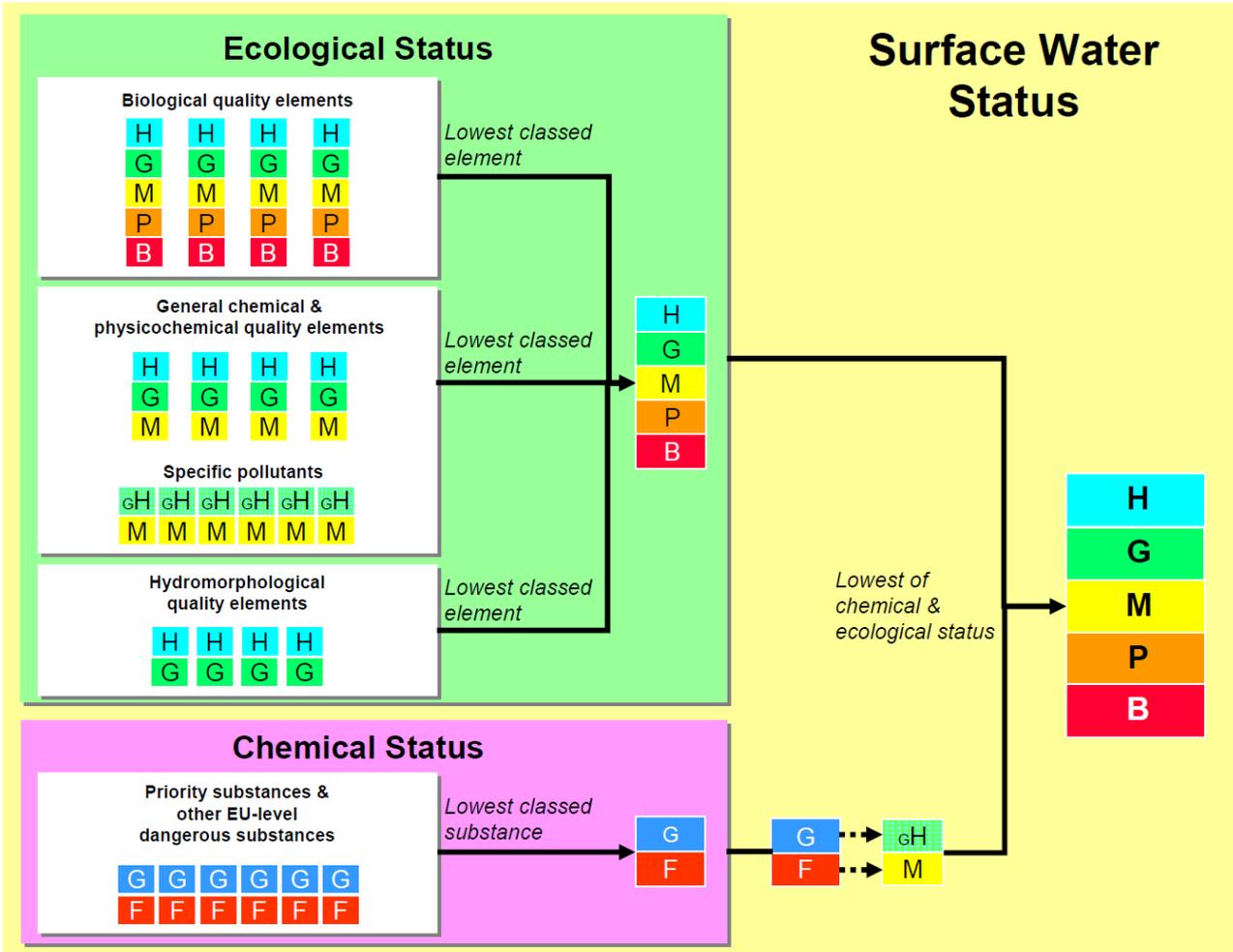
- A.1.7. Ecological Status is categorised by the overall quality of the structure and functioning of aquatic ecosystems associated with surface waters, i.e. the condition of the watercourse. This is assigned on a scale of high, good, moderate, poor or bad, and on the basis of four classification elements or 'tests', as follows:
- 1) Biological - this test is designed to assess the status indicated by Biological quality elements such as fish, invertebrates, macrophytes or phytobenthos (diatoms). The Biological quality elements can influence an overall water body status from bad through to high. It is also important to note that the presence of invasive species prevents a water body from achieving high status when all other elements attain high;

- 2) Physicochemical - this test is designed to assess the status indicated by physicochemical quality elements such as dissolved oxygen, phosphorus and ammonia, against environmental standards. The physicochemical quality elements can only influence an overall water body status from moderate through to high; and
- 3) Hydromorphology - for natural surface water bodies this test is undertaken by the EA during classification when the biological and physicochemical tests indicate that a water body may be of high Overall Status. It specifically assesses hydromorphological quality elements such as water flow, sediment composition and movement, continuity, and structure of the habitat against reference or 'largely undisturbed' conditions. If the hydromorphological quality elements do not support high Ecological Status, then the status of the water body is limited to good Overall Status. Hydromorphological assessments are used to determine 'high' Overall Status only and are not used to drive a water body status class below good. The 'does not support good' classification should be reported for the purposes of identifying water bodies which fail the flow test.

A.1.8. The worst-case classification is assigned as the overall surface water body status, in a 'one-out all-out' system. This system is summarised in Plate A-1.

**Plate A-1**

**Ecological status classification process (Source: UK Technical Advisory Group on the Water Framework Directive (2009)) (Ref 23).** Key: "H" means high; "G" means good; "GH" means good or better and is normally treated as high for calculating, as relevant, ecological status and surface water status<sup>10</sup>; "M" means moderate; "P" means poor; "B" means bad; and "F" means failing to achieve good surface water chemical status.



**Chemical status**

- A.1.9. Chemical Status is defined by compliance with environmental standards for chemicals that are priority substances and/or priority hazardous substances, in accordance with the Environmental Quality Standards Directive (2013/39/EU) (Ref 19). This is assigned on a scale of good or fail.
- A.1.10. Surface water bodies are only monitored for priority substances where there are known discharges of these pollutants; otherwise, surface water bodies are reported as being of good Chemical Status.

### ***Ecological potential for heavily modified (and artificial) water bodies***

- A.1.11. Ecological Potential is assigned to AWB (such as reservoirs and canals), or natural water bodies which, as a result of physical alterations by human activity, are substantially changed in character. The latter are termed HMWB. The term 'ecological potential' is used to classify AWBs and HMWBs as it may be impossible for these water bodies to achieve good Ecological Status (GES) because of their creation or modification for a specific use, such as navigation, water supply or flood protection. The Ecological Potential of an AWB or HMWB represents the degree to which the quality of the water body approaches the optimum condition it could achieve given its artificial or heavily modified state
- A.1.12. AWB and HMWB are subject to an additional set of rules that need to be implemented prior to running the one-out-all-out process. These rules determine which Biological quality elements should be used in the water body Ecological Potential classification. Under normal circumstances, AWB and HMWB are classified according to an assessment of Mitigation Measures, which defines good Ecological Potential (GEP) in waterbodies where all applicable mitigation is in place, and moderate ecological potential in water bodies where some or all relevant mitigation is missing.
- A.1.13. However, to prevent AWB and HMWB being incorrectly classified as good potential in situations where all mitigation is in place, but other pressures are causing an impact (e.g. nutrient enrichment or pollution from toxic substances), the methodology adopted in the UK additionally considers biological indicators providing they are not sensitive to the heavily modified nature of the water body. AWB and HMWB hydromorphological elements are assessed using a three-stage process, firstly looking at flow, then Mitigation Measures Assessment and Biological quality elements. Flow conditions are assessed initially on a fail or pass basis to determine which of the biological and physicochemical quality elements should be used in the classification of Ecological Potential. Where the flow conditions are unaffected by the physical modification (flow conditions pass), the water body Ecological Potential is determined by the worst of either the Mitigation Measures Assessment, or any element that is not sensitive to the modified nature of the water body. Where the flow conditions are significantly impacted by the physical modification (flow conditions fail), the water body Ecological Potential is determined by the worst of any of the Mitigation Measures Assessments or the assessment of Biological quality elements, physicochemical quality elements or specific pollutants.
- A.1.14. Where a water body is designated as artificial or heavily modified for water resources usage, either solely or jointly with other uses, the flow condition is assumed to be good (pass).

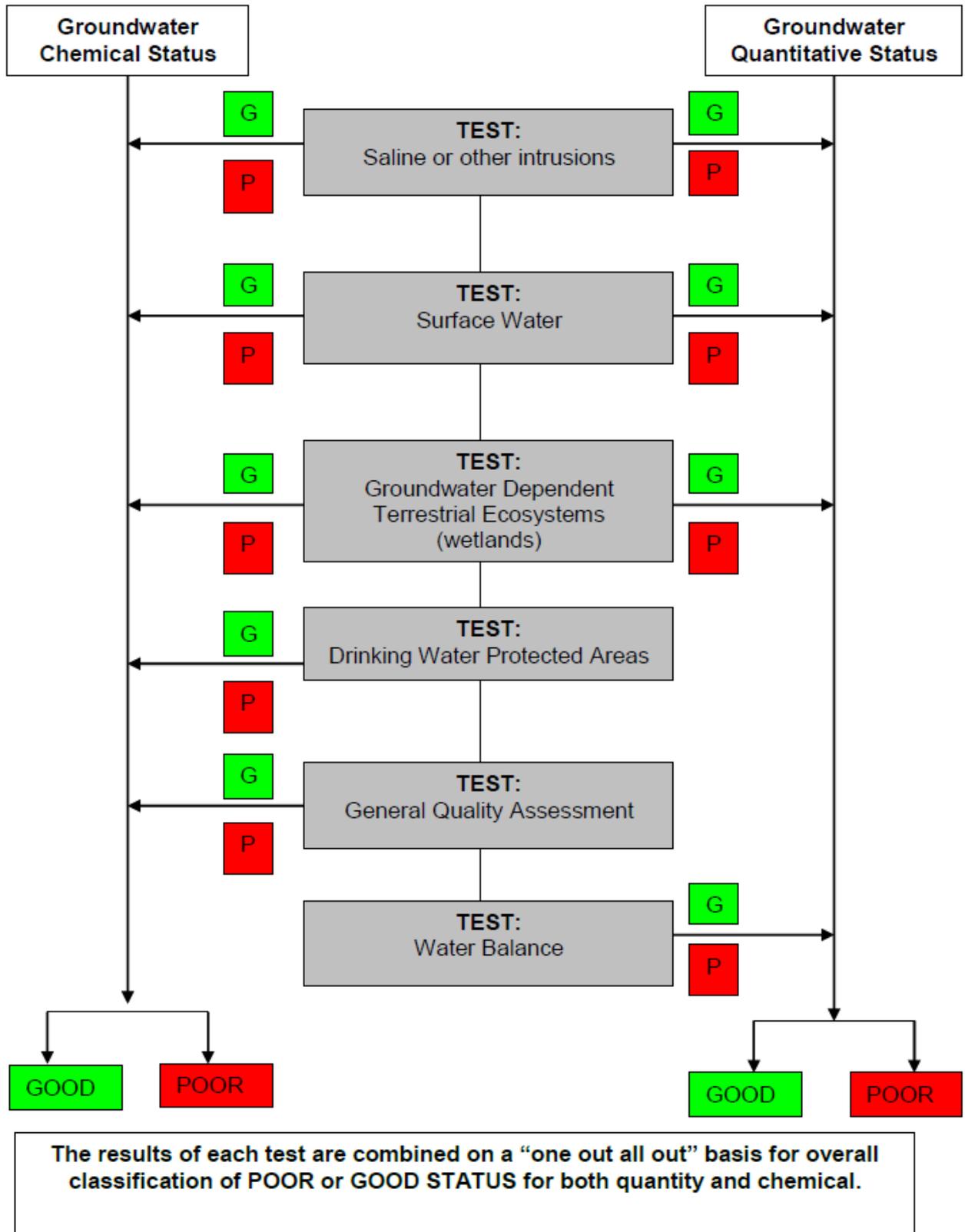
### **Groundwater bodies**

- A.1.15. Under the WER, groundwater body Overall Status is classified on the basis of Quantitative Status and Chemical Status. The groundwater bodies are

separated into GWMU and WRMU. GWMU are sub-divisions of the groundwater to aid the resource assessment process. WRMU are sub-divisions according to the water resource availability and the management of water.

- A.1.16. The worst-case classification dictates the Overall Status, via a 'one-out all-out' system. This system is summarised in Plate A-2.

**Plate A-2 Groundwater body status classification (Source: UKTAG (2012) (Ref 15))**



### Quantitative status

- A.1.17. Quantitative Status is defined by the quantity of groundwater available as base flow to watercourses and water-dependent ecosystems and as 'resource' available for use as drinking water and other consumptive purposes. It is assigned on a scale of good or poor, and on the basis of four classification elements or 'tests' as follows:
- 1) *saline or other intrusions* - this test is designed to identify groundwater bodies where the intrusion of poor quality water, such as saline water or water of different chemical composition, as a result of groundwater abstraction is leading to sustained upward trends in pollutant concentrations or significant impact on one or more groundwater abstractions;
  - 2) *surface water* - this test is designed to identify groundwater bodies where groundwater abstraction is leading to a significant diminution of the Ecological Status of associated surface water bodies;
  - 3) *Groundwater Dependent Terrestrial Ecosystems (GWDTE)* - this test is designed to identify groundwater bodies where groundwater abstraction is leading to significant damage to associated GWDTE; and
  - 4) *water balance* - this test is designed to identify groundwater bodies where groundwater abstraction exceeds the 'available groundwater resource', defined as the rate of overall recharge to the groundwater body itself less the rate of flow required to meet the ecological needs of associated surface water bodies and GWDTE.

### Chemical status

- A.1.18. Chemical Status is defined by the concentrations of a range of key pollutants, by the quality of groundwater feeding into watercourses and water-dependent ecosystems and by the quality of groundwater available for drinking water purposes. This is assigned on a scale of good or poor, and on the basis of five classifications elements or 'tests', as follows:
- 1) *saline or other intrusions* - this test is designed to identify groundwater bodies where the intrusion of poor quality water, such as saline water or water of different chemical composition, as a result of groundwater abstraction is leading to sustained upward trends in pollutant concentrations or significant impact on one or more groundwater abstractions;
  - 2) *surface water* - this test is designed to identify groundwater bodies where groundwater is leading to a significant diminution of the Chemical Status of associated surface water bodies;
  - 3) *GWDTE* - this test is designed to identify groundwater bodies where groundwater is leading to significant damage to associated GWDTE;

- 4) *Drinking Water Protected Areas (DrWPA)* - this test is designed to identify groundwater bodies failing to meet the DrWPA objectives defined in Article 7 of the WER or at risk of failing in the future. The aim is no deterioration in quality of waters for human consumption, and
- 5) *general quality assessment* - this test is designed to identify groundwater bodies where widespread deterioration in quality has, or will, compromise the strategic use of groundwater. The aim is no significant impairment of human use of groundwater and no significant environmental risk from pollutants across a groundwater body. Status is assessed primarily using data collected from the EA monitoring network; therefore, the scale of assessment means that groundwater status is mainly influenced by larger scale effects such as significant abstraction or widespread diffuse pollution.

### Environmental standards

- A.1.19. Under the WER, a range of environmental standards and condition limits are applied in order to help the classification of water body status and the setting of status objectives via the RBMP process. These environmental standards define the range of environmental conditions that support “healthy” aquatic life. For instance, standards are set for the composition of biological communities, the physicochemical water quality parameters, the concentration of pollutants, and the level of flows in rivers (as described above).
- A.1.20. These standards (Ref 16) inform the EA on the implementation of the RBMP process, including the identification of measures required to support the achievement of the GES / GEP objectives, as well as underpinning efforts to protect the water environment by helping to regulate activities that could cause adverse impacts.
- A.1.21. WER Assessment requirements for new developments to ensure compliance with the WER, decision makers must consider whether proposals for new developments have the potential to:
- 1) cause a deterioration of a water body from its current status or potential;
  - 2) prevent future attainment of good status or potential where not already achieved;
  - 3) impact on protected or priority species and habitats; and/or
  - 4) provide opportunities to improve the water environment.
- A.1.22. A ruling by the European Union Court of Justice on 1 July 2015 (Ref 20) has significant implications for projects that may impact water bodies, namely:
- 1) consent for development must not be granted by an authorising authority – unless a derogation is granted - where the project may cause a deterioration in the status of a body of surface water or where it jeopardises the attainment of good Ecological Status or of good Ecological Potential and good Chemical Status by the date laid down in the Directive;

- 2) that deterioration of the status of the relevant body of surface water includes a fall by one class of any element of the quality elements within the meaning of Annex V of the WER even if the fall does not result in a fall of the classification of the body of surface water as a whole; and
- 3) if the quality element is already in the lowest class, any deterioration of that element represents deterioration of status within the meaning of Article 4(1)(a)(i)<sup>3</sup>.

### Guidance

- A.1.23. Whilst there is no established methodology for assessing compliance with WER legislation, the WER Compliance Assessment is based upon expert judgement, established best practice and consultation with the EA and is undertaken in accordance with relevant EA guidance (Ref 21) and the guidance provided by The Planning Inspectorate (Ref 22).

## A.2. WER assessment process

- A.2.1. The assessment process described has been followed pursuant to the PINS Advice Note (Ref 22) on WFD assessments.

### Overview

- A.2.2. WER Compliance Assessment is undertaken as an iterative, stepped process, which typically includes the following:
- 1) Step 1: Screening assessment (baseline);
  - 2) Step 2: Scoping assessment;
  - 3) Step 3: Detailed impact assessment (where required); and
  - 4) Step 4: Application of Regulation 19 (where applicable).
- A.2.3. These key process steps are described in further detail in the following sections. Consultation with regulatory authority should be undertaken to share the findings of each step, where necessary/applicable.

### Screening Assessment (baseline)<sup>4</sup>

- A.2.4. The key objective of the screening (baseline) assessment is to identify the zone or zones of influence (Study Area) based on specific activities and/or characteristics of the Proposed Development that could affect water bodies. Relevant WER surface water and groundwater bodies (including any undesignated tributary watercourses) potentially affected by the Proposed Development can then be identified and their baseline condition established.

<sup>3</sup> Article 4(1)(a)(i) states 'In making operational the programmes of measures specified in the river basin management plans for surface waters Member States shall implement the necessary measures to prevent deterioration of the status of all bodies of surface water, subject to the application of paragraphs 6 and 7 and without prejudice to paragraph 8.'

<sup>4</sup> Aligns to Stage 1 Screening of the PINS guidance (Ref 22).

- A.2.5. The water body baseline condition of relevant water bodies has been identified via desk-top assessment, utilising readily available information and environmental, asset and operations data obtained from relevant stakeholders, including the EA, Yorkshire Wildlife Trust and the Colne and Calder Rivers Trust.
- A.2.6. WER baseline datasets have been obtained from the EA's Catchment Data Explorer website (Ref 3) and through internal data request to the EA. This includes:
- 1) RBMP Cycle 2 current status and status objectives data;
  - 2) WER Protected Areas data;
  - 3) Reasons for to achieving good status (RNAG) data;
  - 4) Measures / actions data; and
  - 5) Mitigation Measures Assessment data (if applicable).
- A.2.7. The 2019 EA WER water body status data has been used to inform the assessment. These data are considered to provide the current best estimate of status and the formal baseline against which the EA will assess compliance with the 'no deterioration' objective. Where baseline data is limited, professional judgement has been used in the assessment and a precautionary approach taken with regard to screening.
- A.2.8. The relevant WER water bodies present within the potential zone of influence of the Proposed Development are taken through to the subsequent preliminary assessment (scoping) stage.

### Scoping assessment<sup>5</sup>

- A.2.9. The objective of the preliminary (scoping) assessment is to establish the relevant likely effects of the Proposed Development on the WER status elements of the relevant WER surface water and groundwater bodies. This includes identification of potential impact types, and any relevant mitigation embedded within the design of the Proposed Development at this stage.
- A.2.10. The scoping assessment considers both the beneficial and adverse effects of the relevant elements of the Proposed Development and applies a risk-based method in line with existing EA and Natural Resources Wales (although the Proposed Development is not in Wales, the principles within the guidance are of general relevance) guidance [Ref 16].
- A.2.11. Effects are considered with regard to the risk of the Proposed Development causing a deterioration in current status and/or a failure to achieve status objectives. The assessment identifies those scheme components /impacts that pose a risk to current status or status objectives and thus may require more detailed impact assessment. The scoping assessment therefore comprises two parts, as follows:

<sup>5</sup> Aligns to Stage 2 Scoping of the PINS guidance (Ref 22).

- 1) likely effects on current status or potential, involving:
  - a) identification of relevant scheme components with potential to impact upon water body status;
  - b) identification of likely potential impact and magnitude of effects of the relevant scheme components on the current status of the water body (taking account of any 'embedded' mitigation; and
  - c) identification of potential risks of deterioration in current status and associated requirements for additional mitigation and/or further detailed assessment.
- 2) likely effects on status objectives, involving:
  - a) scoping of the relevant scheme components to identify where the Proposed Development may pose a risk of worsening existing pressures responsible for current status failures (RNAGs) and/or prevent the implementation of measures identified by the EA to address existing status failures; and
  - b) scoping of relevant scheme components against any available EA HMWB / AWB 'mitigation measure assessment' outputs, in order to identify where the Proposed Development may pose a potential risk of inhibiting the implementation of measures derived to mitigate the impacts of existing physical modifications and operational regimes to support the achievement of good Ecological Potential objectives.

### Detailed impact assessment<sup>6</sup>

- A.2.12. Where required, the objective of the detailed impact assessment is to establish the nature and anticipated magnitude of the effects of relevant elements of the Proposed Development on the WER quality elements of the surface water and groundwater bodies affected. These effects are considered in terms of the potential for deterioration of current status and/or the prevention of status objectives. This detailed assessment may be based on targeted baseline surveys, monitoring or modelling assessments completed at the impact sites.
- A.2.13. As with the scoping assessment stage, the detailed impact assessment is therefore comprised of two key parts, as follows:
- 1) assessment of effects on current status of quality element; and
  - 2) assessment of effects on status objectives, with regards to any water body RNAG or measures/actions identified as potentially being at risk from the Proposed Development under the preceding preliminary (scoping) assessment. This is done via expert judgement and consultation with the EA, based on the currently available information.
- A.2.14. Where significant effects are identified with regard to the risk of status deterioration and/or the prevention of status objectives, the assessment should

<sup>6</sup> Aligns to Stage 3 Impact Assessment of the PINS guidance (Ref 22).

identify 'further mitigation' required in order to avoid and/or minimise risks and the residual effects on quality elements at the water body scale.

A.2.15. The detailed impact assessment will also identify if Regulation 19 tests need to be prepared for affected water bodies, where a residual risk to status deterioration and/or prevention of future status objectives has been identified.

A.2.16. A detailed impact assessment has not been deemed required for the Proposed Development, based on the information available at this stage, as there is not expected to be any risk of deterioration in current WER status or prevention of achieving a Good WER status in the future for relevant water bodies identified.

### Regulation 19 tests

A.2.17. Regulation 19 of the WER states that the appropriate agency will not be in breach of the Directive when failure to meet its environmental objectives is the result of either new modifications to the physical characteristics of a water body or as a result of new human sustainable development, on the proviso that the modifications or new development proposed are compliant with the four key conditions listed below. In doing so, Regulation 19 provides a means whereby a derogation for a proposed modification or sustainable development may be granted where it meets these four conditions.

- 1) all practicable steps have been taken to mitigate the adverse impact on the status of the water body;
- 2) the reasons for the modifications or alterations are of overriding public interest and/or the benefits to the environment and to society of achieving the objectives are outweighed by the benefits of the new modifications or alterations to human health, to the maintenance of human safety or to sustainable development;
- 3) the beneficial objectives served by the modifications or alterations of the water body cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option; and
- 4) the reasons for the modifications or alterations are clearly identified to the Environment Agency, so that they can be specifically set out and explained in the relevant RBMP, and the environmental objectives must be reviewed every six years.

Regulation 19 tests are not deemed required for the Proposed Development, based on the information available at this stage, as the Proposed Development is deemed compliant with the WER.

## Annex B Watercourses outside of the Order Limits located within the Study Area

### B.1. List of watercourses

Table 8-1 List of watercourses

| Watercourse name        | Site location     | Designation          | Parent catchment                     |
|-------------------------|-------------------|----------------------|--------------------------------------|
| Common Drain 3          | Within Study Area | Ordinary watercourse | Riccall Dam Catchment (trib of Ouse) |
| Trib of Pallion Dyke    | Within Study Area | Ordinary watercourse | Riccall Dam Catchment (trib of Ouse) |
| Unnamed Drain 44        | Within Study Area | Ordinary watercourse | Riccall Dam Catchment (trib of Ouse) |
| Stillingfleet Beck      | Within Study Area | Ordinary watercourse | Stillingfleet Beck Source to Ouse    |
| Halfpenny Dike          | Within Study Area | Ordinary watercourse | Stillingfleet Beck Source to Ouse    |
| Trib of Pallion Dyke    | Within Study Area | Ordinary watercourse | Riccall Dam Catchment (trib of Ouse) |
| Holmes Dike             | Within Study Area | Ordinary watercourse | Riccall Dam Catchment (trib of Ouse) |
| Unnamed Drain 45        | Within Study Area | Ordinary watercourse | Riccall Dam Catchment (trib of Ouse) |
| Unnamed Drain 46        | Within Study Area | Ordinary watercourse | Riccall Dam Catchment (trib of Ouse) |
| Unnamed Drain 47        | Within Study Area | Ordinary watercourse | Riccall Dam Catchment (trib of Ouse) |
| Angram Clough           | Within Study Area | Ordinary watercourse | Ouse from R Wharfe to Upper Humber   |
| Trib of Angram Clough 1 | Within Study Area | Ordinary watercourse | Ouse from R Wharfe to Upper Humber   |
| Trib of Angram Clough 2 | Within Study Area | Ordinary watercourse | Ouse from R Wharfe to Upper Humber   |
| River Aire              | Within Study Area | Main River           | Aire from Fryston Beck to R Ouse     |
| Watergate Lane Drain    | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Ings Lane Drain         | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 48        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |

| Watercourse name        | Site location     | Designation          | Parent catchment                     |
|-------------------------|-------------------|----------------------|--------------------------------------|
| Unnamed Drain 49        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 50        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 51        | Within Study Area | Ordinary watercourse | Ouse from R Wharfe to Upper Humber   |
| Dickey Lane Drain       | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Marsh Lane Drain        | Within Study Area | Ordinary watercourse | Ouse from R Wharfe to Upper Humber   |
| Lordship Lane Drain 2   | Within Study Area | Ordinary watercourse | Ouse from R Wharfe to Upper Humber   |
| Unnamed Drain 52        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Holmes Dike             | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Cockret Dike            | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 53        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 54        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 55        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 56        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Trib of Cockret Dike    | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 57        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 58        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 59        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 60        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 61        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Trib of Black Fen Drain | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 62        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 63        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |
| Unnamed Drain 64        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse) |

| Watercourse name      | Site location     | Designation          | Parent catchment                                    |
|-----------------------|-------------------|----------------------|---|
| Main Drain 2          | Within Study Area | Ordinary watercourse | Bishop Dike (Trib of Ouse)                          |
| Bayle Dike            | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Dutchman's Dike       | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Unnamed Drain 23      | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Fox Drain             | Within Study Area | Main River (in part) | Fox Dike/Carr Dike from Source to Selby Dam         |
| Upper Fox Drain       | Within Study Area | Main River (in part) | Upper Fox Drain Catchment ds of Sherburn STW        |
| Long Dike             | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Briggs River          | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Hammersike Dike       | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Trib of Main Drain    | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Unnamed Drain 65      | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Hillam Road Drain     | Within Study Area | Ordinary watercourse | Ouse from R Wharfe to Upper Humber                  |
| Unnamed Drain 66      | Within Study Area | Ordinary watercourse | Ouse from R Wharfe to Upper Humber                  |
| Unnamed Drain 67      | Within Study Area | Ordinary watercourse | The Fleet from Source to River Aire                 |
| Unnamed Drain 68      | Within Study Area | Ordinary watercourse | The Fleet from Source to River Aire                 |
| Unnamed Drain 69      | Within Study Area | Ordinary watercourse | The Fleet from Source to River Aire                 |
| Unnamed Drain 70      | Within Study Area | Ordinary watercourse | The Fleet from Source to River Aire                 |
| Old Eye               | Within Study Area | Ordinary watercourse | Aire from Fryston Beck to R Ouse                    |
| Fleet Drain           | Within Study Area | Ordinary watercourse | Aire from Fryston Beck to R Ouse                    |
| Trib of Fleet Drain 1 | Within Study Area | Ordinary watercourse | Aire from Fryston Beck to R Ouse                    |
| Trib of Fleet Drain 2 | Within Study Area | Ordinary watercourse | Aire from Fryston Beck to R Ouse                    |
| Trib of Fleet Drain 3 | Within Study Area | Ordinary watercourse | Aire from Fryston Beck to R Ouse                    |
| Trib of Old Eye 1     | Within Study Area | Ordinary watercourse | Aire from Fryston Beck to R Ouse                    |

| Watercourse name        | Site location     | Designation          | Parent catchment                                    |
|-------------------------|-------------------|----------------------|---|
| Trib of Old Eye 2       | Within Study Area | Ordinary watercourse | Aire from Fryston Beck to R Ouse                    |
| Trib of Old Eye 3       | Within Study Area | Ordinary watercourse | Aire from Fryston Beck to R Ouse                    |
| Unnamed Drain 71        | Within Study Area | Ordinary watercourse | Aire from Fryston Beck to R Ouse                    |
| Unnamed Drain 72        | Within Study Area | Ordinary watercourse | The Fleet from Source to River Aire                 |
| Unnamed Drain 73        | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Unnamed Drain 87        | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Unnamed Drain 75        | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Mill Dike               | Within Study Area | Main River (in part) | Mill Dike from Source to Bishop Dike                |
| Trib of Mill Dike       | Within Study Area | Ordinary watercourse | Mill Dike from Source to Bishop Dike                |
| Trib of Upper Fox Drain | Within Study Area | Ordinary watercourse | Upper Fox Drain Catchment ds of Sherburn STW        |
| Unnamed Drain 77        | Within Study Area | Ordinary watercourse | The Fleet from Source to River Aire                 |
| Unnamed Drain 78        | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Unnamed Drain 79        | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Bishop Dike             | Within Study Area | Main River           | Bishop Dike (Trib of Ouse)                          |
| Trib of Bishop Dike 1   | Within Study Area | Ordinary watercourse | Bishop Dike (Trib of Ouse)                          |
| Trib of Bishop Dike 2   | Within Study Area | Ordinary watercourse | Bishop Dike (Trib of Ouse)                          |
| Unnamed Drain 80        | Within Study Area | Ordinary watercourse | Bishop Dike (Trib of Ouse)                          |
| Trib of Bishop Dike 3   | Within Study Area | Ordinary watercourse | Bishop Dike (Trib of Ouse)                          |
| Unnamed Drain 81        | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Unnamed Drain 82        | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |
| Unnamed Drain 83        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse)                |
| Unnamed Drain 84        | Within Study Area | Ordinary watercourse | Holmes Dike catchment (trib of Ouse)                |
| Unnamed Drain 85        | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |

| Watercourse name | Site location     | Designation          | Parent catchment                                    |
|------------------|-------------------|----------------------|---|
| Unnamed Drain 86 | Within Study Area | Ordinary watercourse | Selby Dam from Conf. Fox Dike and Carr Dike to Ouse |

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## Annex C WER water body locations

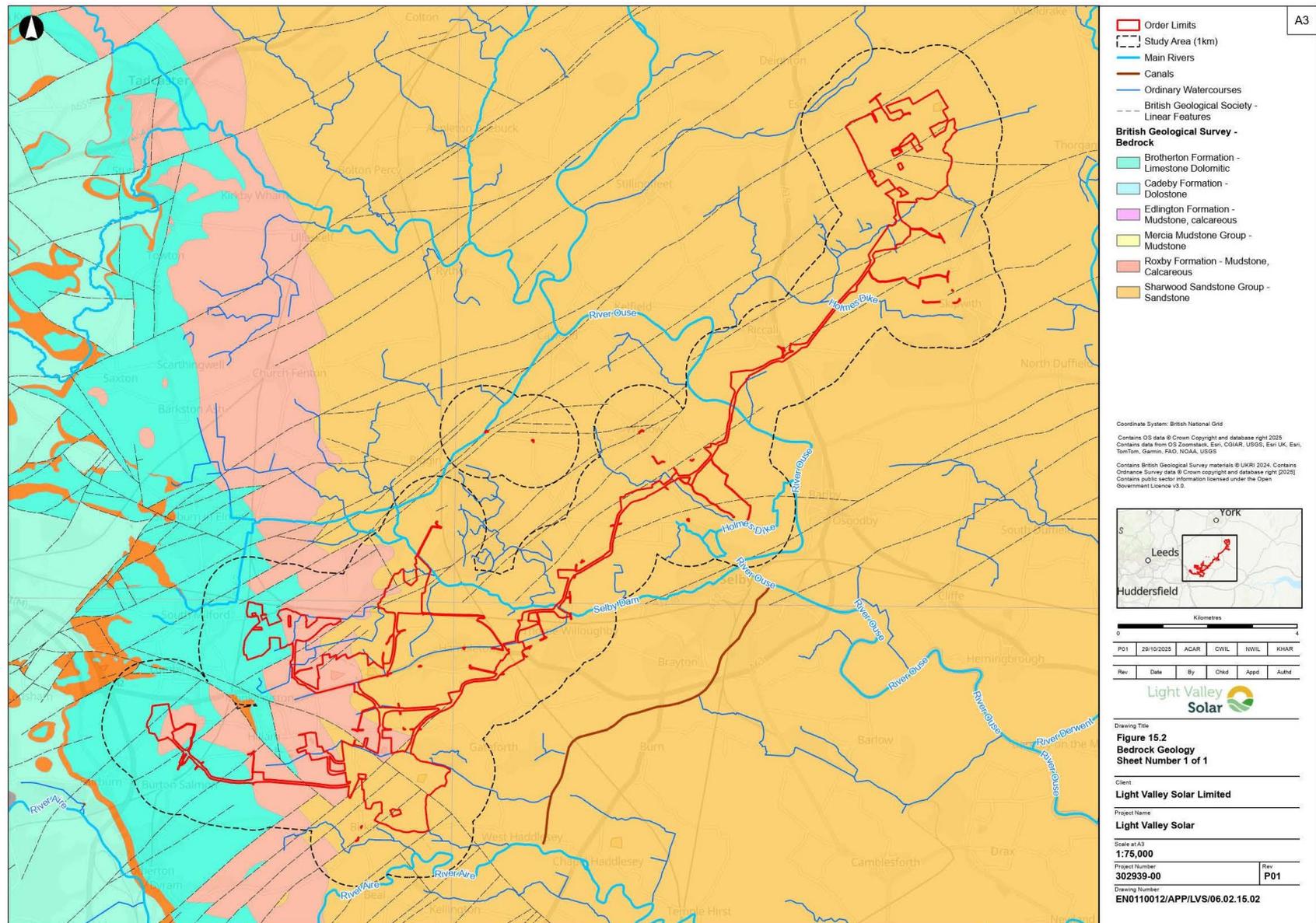
- C.1.1. Figure 15.5: WER - Surface Water Bodies (ES Volume 2) [EN0110012/APP/LVS/06.02.15.05] and Figure 15.6: Groundwater Bodies (ES Volume 2) [EN0110012/APP/LVS/06.02.15.06] show surface and groundwater WER water bodies in the Study Area.

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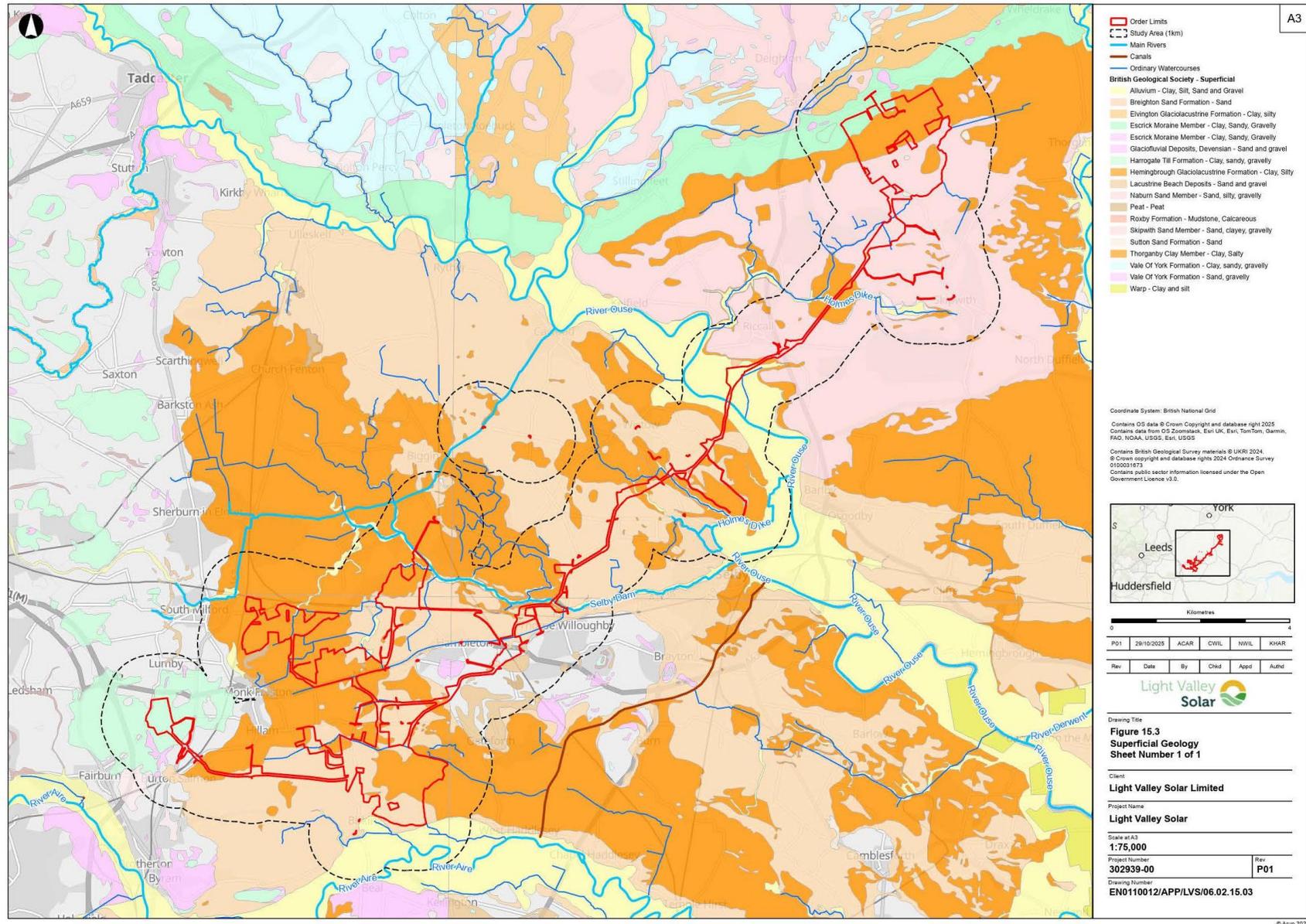
## Annex D Additional desk study information

### D.1. Geology and topography mapping

- D.1.1. The section below shows maps from ES Volume 2 that have informed the baseline/desk study. See also Figure 15.2: Bedrock Geology (ES Volume 2) [EN0110012/APP/LVS/06.02.15.02] and Figure 15.3: Superficial Geology (ES Volume 2) [EN0110012/APP/LVS/06.02.15.03].



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## Annex E Additional WER water body data

### E.1. Protected areas

**Table 8-2 Protected areas for the Ouse from R Wharfe to Upper Humber (GB104027064270) water body**

| Protected area name                                   | Protected area code | Protected area type          |
|---|---------------------|------------------------------|
| River Derwent   | UK0030253           | Special Area of Conservation |
| Selby Dam from Conf. Fox Dike & Carr Dike to Ouse NVZ | S287                | Nitrates Directive           |
| Aire from River Calder to River Ouse NVZ              | S274                | Nitrates Directive           |

**Table 8-3 Protected areas for the Selby Dam from Conf. Fox Dike and Carr Dike to Ouse (GB104027063620) water body**

| Protected area name                                   | Protected Area Code | Protected Area Type |
|---|---------------------|---------------------|
| Selby Dam from Conf. Fox Dike & Carr Dike to Ouse NVZ | S287                | Nitrates Directive  |

**Table 8-4 Protected areas for the Riccall Dam Catchment (trib of Ouse) (GB104027063690) water body**

| Protected area name                       | Protected area code | Protected area type          |
|---|---------------------|------------------------------|
| Skipwith Common                           | UK0030276           | Special Area of Conservation |
| Lowmoor Drain Catch (trib of Derwent) NVZ | S282                | Nitrates Directive           |
| Riccall Dam Catchment (trib of Ouse) NVZ  | S288                | Nitrates Directive           |

**Table 8-5 Protected areas for The Fleet from Source to River Aire (GB104027062740) water body**

| Protected area name                      | Protected area code | Protected area type |
|--|---------------------|---------------------|
| The Fleet from Source to River Aire NVZ  | S272                | Nitrates Directive  |
| Yorkshire Mag Limestone                  | G101                | Nitrates Directive  |
| Aire from River Calder to River Ouse NVZ | S274                | Nitrates Directive  |

**Table 8-6 Protected areas for the Wharfe & Lower Ouse Sherwood Sandstone (GB40401G702400) groundwater body**

| Protected area name                                   | Protected area code | Protected area type          |
|---|---------------------|------------------------------|
| Selby Dam from Conf. Fox Dike & Carr Dike to Ouse NVZ | S287                | Nitrates Directive           |
| River Derwent   | UK0030253           | Special Area of Conservation |
| River Derwent from Kirkham to Elvington Beck NVZ      | S303                | Nitrates Directive           |
| River Foss from the Syke to the River Ouse NVZ        | S284                | Nitrates Directive           |
| The Fleet from Source to River Aire NVZ               | S272                | Nitrates Directive           |
| Yorkshire Mag Limestone                               | G101                | Nitrates Directive           |
| Vale of York  | G103                | Nitrates Directive           |
| Brayton   | G107                | Nitrates Directive           |
| Aire from River Calder to River Ouse NVZ              | S274                | Nitrates Directive           |
| The Foss/Moor Drain from Foss Dike to River Ouse NVZ  | S291                | Nitrates Directive           |
| Carlton East  | GWSGZ0029           | Safeguard Zone               |

| Protected area name                                | Protected area code | Protected area type           |
|--|---------------------|-------------------------------|
| The Foss Catchment (trib of Wharfe) NVZ            | S296                | Nitrates Directive            |
| The Fleet/The Foss from Source to River Wharfe NVZ | S297                | Nitrates Directive            |
| Ouse from Naburn to Sillingfleet NVZ               | S289                | Nitrates Directive            |
| Skipwith Common                                    | UK0030276           | Special Area of Conservation  |
| Lowmoor Drain Catch (trib of Derwent) NVZ          | S282                | Nitrates Directive            |
| Nidd from Crimble Beck to River Ouse NVZ           | S801                | Nitrates Directive            |
| Wharfe & Lower Ouse Sherwood Sandstone             | UKGB40401G702400    | Drinking Water Protected Area |
| Riccall Dam Catchment (trib of Ouse) NVZ           | S288                | Nitrates Directive            |

**Table 8-7 Protected areas for the Aire & Don Sherwood Sandstone (GB40401G701000) groundwater body**

| Protected area name                           | Protected area code | Protected area type          |
|---|---------------------|------------------------------|
| Ea Beck from the Skell to Goosepool Drain NVZ | S277                | Nitrates Directive           |
| Humber Estuary                                | UK9006111           | Special Protection Area      |
| Humber Estuary                                | UK11031             | Ramsar Site                  |
| Humber Estuary                                | UK0030170           | Special Area of Conservation |
| The Fleet from Source to River Aire NVZ       | S272                | Nitrates Directive           |
| Nottinghamshire                               | G40                 | Nitrates Directive           |
| Yorkshire Mag Limestone                       | G101                | Nitrates Directive           |
| Brayton                                       | G107                | Nitrates Directive           |

| Protected area name                               | Protected area code | Protected area type           |
|---|---------------------|-------------------------------|
| Aire from River Calder to River Ouse NVZ          | S274                | Nitrates Directive            |
| Went from Blowell Drain to the River Don NVZ      | S299                | Nitrates Directive            |
| LOWER DON NVZ                                     | S298                | Nitrates Directive            |
| Bramwith Drain from Source to River Don NVZ       | S280                | Nitrates Directive            |
| Bentley Mill Stream Lower to River Don NVZ        | S263                | Nitrates Directive            |
| Swinefleet Warping Drain Source to River Ouse NVZ | S281                | Nitrates Directive            |
| Thorne Moor                                       | UK0012915           | Special Area of Conservation  |
| Carlton East                                      | GWSGZ0029           | Safeguard Zone                |
| Aire & Don Sherwood Sandstone.                    | UKGB40401G701000    | Drinking Water Protected Area |
| Ea Beck from Abbess Dyke to River Don NVZ         | S279                | Nitrates Directive            |
| Selby   | G108                | Nitrates Directive            |
| Great Heck and Pollington                         | GWSGZ0267           | Safeguard Zone                |

**Table 8-8 Protected areas for the Wharfe Magnesian Limestone (GB40401G701100) groundwater body**

| Protected area name                                   | Protected area code | Protected area type |
|---|---------------------|---------------------|
| Selby Dam from Conf. Fox Dike & Carr Dike to Ouse NVZ | S287                | Nitrates Directive  |
| The Fleet from Source to River Aire NVZ               | S272                | Nitrates Directive  |
| Yorkshire Mag Limestone                               | G101                | Nitrates Directive  |
| Cock Beck Catchment (trib of Wharfe) NVZ              | S293                | Nitrates Directive  |

| Protected area name                          | Protected area code | Protected area type           |
|--|---------------------|-------------------------------|
| Thorner Beck Catchment (trib of Wharfe) NVZ  | S294                | Nitrates Directive            |
| Collingham Bk Catchment (trib of Wharfe) NVZ | S295                | Nitrates Directive            |
| Crimple Beck from Source to River Nidd NVZ   | S290                | Nitrates Directive            |
| Lin Dike for Source to River Aire NVZ        | S275                | Nitrates Directive            |
| Vale of York                                 | G103                | Nitrates Directive            |
| The Foss Catchment (trib of Wharfe) NVZ      | S296                | Nitrates Directive            |
| Nidd from Crimble Beck to River Ouse NVZ     | S801                | Nitrates Directive            |
| Wharfe Magnesian Limestone                   | UKGB40401G701100    | Drinking Water Protected Area |

**Table 8-9 Protected areas for the Aire & Don Magnesian Limestone (GB40401G700900) groundwater body**

| Protected area name                                   | Protected area code | Protected area type           |
|---|---------------------|-------------------------------|
| Selby Dam from Conf. Fox Dike & Carr Dike to Ouse NVZ | S287                | Nitrates Directive            |
| R Torne / Three Rivers from Mother Dr to R Trent NVZ  | S351                | Nitrates Directive            |
| Ea Beck from the Skell to Goosepool Drain NVZ         | S277                | Nitrates Directive            |
| The Fleet from Source to River Aire NVZ               | S272                | Nitrates Directive            |
| Nottinghamshire                                       | G40                 | Nitrates Directive            |
| Yorkshire Mag Limestone                               | G101                | Nitrates Directive            |
| Lin Dike for Source to River Aire NVZ                 | S275                | Nitrates Directive            |
| Aire from River Calder to River Ouse NVZ              | S274                | Nitrates Directive            |
| Went from Blowell Drain to the River Don NVZ          | S299                | Nitrates Directive            |
| LOWER DON NVZ   | S298                | Nitrates Directive            |
| River Dearne NVZ                                      | S278                | Nitrates Directive            |
| Bentley Mill Stream Lower to River Don NVZ            | S263                | Nitrates Directive            |
| Ea Beck from Abbess Dyke to River Don NVZ             | S279                | Nitrates Directive            |
| Selby   | G108                | Nitrates Directive            |
| Aire & Don Magnesian Limestone.                       | UKGB40401G700900    | Drinking Water Protected Area |

## E.2. Reasons for Not Achieving Good (RNAG)

**Table 8-10 RNAGs for the Aire from Fryston Beck to River Ouse (GB104027063037) water body**

| Failing element                       | ID     | Category                   | Business sector       | Surface Water Management Issue (SWMI)                   | Activity                        |
|---------------------------------------|--------|----------------------------|-----------------------|---|---------------------------------|
| Polybrominated diphenyl ethers (PBDE) | 590659 | No sector responsible      | Not applicable        | Measures delivered to address reason, awaiting recovery | Not applicable                  |
| Perfluorooctane sulphonate (PFOS)     | 590661 | Sector under investigation | Not applicable        | Unknown (pending investigation)                         | Unknown (pending investigation) |
| Phosphate                             | 589219 | Water Industry             | Waste water treatment | Point source  | Sewage discharge (continuous)   |
| Mercury and Its Compounds             | 590660 | No sector responsible      | Not applicable        | Measures delivered to address reason, awaiting recovery | Not applicable                  |
| Diazinon                              | 589218 | Water Industry             | Waste water treatment | Point source  | Sewage discharge (continuous)   |
| Invertebrates                         | 589222 | Water Industry             | Waste water treatment | Point source  | Sewage discharge (intermittent) |
| Invertebrates                         | 589221 | Water Industry             | Waste water treatment | Point source  | Sewage discharge (continuous)   |
| Phosphate                             | 589220 | Water Industry             | Waste water treatment | Point source  | Sewage discharge (intermittent) |

**Table 8-11 RNAGs for the Ouse from R Wharfe to Upper Humber (GB104027064270) water body**

| Failing element                       | Challenges ID | Category                              | Business sector       | Surface Water Management Issue (SWMI)                   | Activity  |
|---------------------------------------|---------------|---------------------------------------|-----------------------|---|---|
| para - para DDT                       | 572749        | Industry                              | Not applicable        | Diffuse source  | Contaminated water body bed sediments             |
| para - para DDT                       | 572748        | Agriculture and rural land management | Agriculture - Arable  | Diffuse source  | Contaminated water body bed sediments             |
| Mercury and Its Compounds             | 564106        | No sector responsible                 | Not applicable        | Measures delivered to address reason, awaiting recovery | Not applicable                                    |
| Phosphate                             | 572751        | Agriculture and rural land management | Agriculture - Arable  | Diffuse source  | Poor nutrient management                          |
| Mitigation Measures Assessment        | 576038        | Sector under investigation            | Not applicable        | Physical modification                                   | Other (not in list, must add details in comments) |
| Polybrominated diphenyl ethers (PBDE) | 564159        | No sector responsible                 | Not applicable        | Measures delivered to address reason, awaiting recovery | Not applicable                                    |
| Phosphate                             | 572750        | Water Industry                        | Waste water treatment | Point source  | Sewage discharge (continuous)                     |
| Mitigation Measures Assessment        | 576039        | Sector under investigation            | Not applicable        | Physical modification                                   | Other (not in list, must add details in comments) |
| Perfluorooctane sulphonate (PFOS)     | 564170        | Sector under investigation            | Not applicable        | Unknown (pending investigation)                         | Unknown (pending investigation)                   |

**Table 8-12 RNAGs for the Selby Dam from Conf. Fox Dike and Carr Dike to Ouse (GB104027063620) water body**

| Failing element                | Challenges |                                       |                       |                                       |   |
|--------------------------------|------------|---------------------------------------|-----------------------|---------------------------------------|---|
|                                | ID         | Category                              | Business sector       | Surface Water Management Issue (SWMI) | Activity  |
| Phosphate                      | 57607      | Agriculture and rural land management | Agriculture - Arable  | Diffuse source                        | Poor soil management                              |
| Phosphate                      | 57606      | Domestic General Public               | Not applicable        | Point source                          | Sewage discharge (continuous)                     |
| Mitigation Measures Assessment | 574627     | Urban and transport                   | Not applicable        | Physical modification                 | Other (not in list, must add details in comments) |
| Phosphate                      | 57605      | Water Industry                        | Waste water treatment | Point source                          | Sewage discharge (continuous)                     |
| Phosphate                      | 57604      | Industry                              | Not applicable        | Point source                          | Trade/Industry discharge                          |
| Mitigation Measures Assessment | 574626     | Local and Central Government          | Not applicable        | Physical modification                 | Other (not in list, must add details in comments) |
| Ammonia (Phys-Chem)            | 574566     | Industry                              | Not applicable        | Point source                          | Trade / Industry discharge                        |
| Ammonia (Phys-Chem)            | 574565     | Water Industry                        | Waste water treatment | Point source                          | Sewage discharge (continuous)                     |
| Mitigation Measures Assessment | 588357     | Agriculture and rural land management | Not applicable        | Physical modification                 | Other (not in list, must add details in comments) |
| Fish                           | 576257     | Water Industry                        | Waste water treatment | Point source                          | Sewage discharge (continuous)                     |
| Dissolved oxygen               | 574583     | Industry                              | Not applicable        | Point source                          | Trade / Industry discharge                        |
| Dissolved oxygen               | 574582     | Water Industry                        | Waste water treatment | Point source                          | Sewage discharge (continuous)                     |

| Failing element                       | Challenges |                            |                 |   |                                 |
|---------------------------------------|------------|----------------------------|-----------------|---|---------------------------------|
|                                       | ID         | Category                   | Business sector | Surface Water Management Issue (SWMI)                   | Activity                        |
| Perfluorooctane sulphonate (PFOS)     | 555294     | Sector under investigation | Not applicable  | Unknown (pending investigation)                         | Unknown (pending investigation) |
| Polybrominated diphenyl ethers (PBDE) | 555283     | No sector responsible      | Not applicable  | Measures delivered to address reason, awaiting recovery | Not applicable                  |
| Mercury and Its Compounds             | 555272     | No sector responsible      | Not applicable  | Measures delivered to address reason, awaiting recovery | Not applicable                  |

**Table 8-13 RNAGs for the Riccall Dam Catchment (trib of Ouse) (GB104027063690) water body**

| Failing element                       | Challenges ID | Category                              | Business sector           | Surface Water Management Issue (SWMI)                     | Activity                               |
|---------------------------------------|---------------|---------------------------------------|---------------------------|---|--|
| Polybrominated diphenyl ethers (PBDE) | 555669        | No sector responsible                 | Not applicable            | Measures delivered to address reason, awaiting recovery   | Not applicable                         |
| Dissolved oxygen                      | 555625        | Agriculture and rural land management | Not applicable            | Physical modification                                     | Land drainage - operational management |
| Dissolved oxygen                      | 555614        | Industry                              | Food and drink            | Point source  | Trade / Industry discharge             |
| Dissolved oxygen                      | 555603        | Industry                              | Not applicable            | Point source  | Private Sewage Treatment               |
| Ammonia (Phys-Chem)                   | 555569        | No sector responsible                 | Not applicable            | High to Good deterioration, no action required (RFD only) | Not applicable                         |
| Macrophytes and Phytobenthos Combined | 576268        | Domestic General Public               | Domestic / General public | Point source  | Private Sewage Treatment               |
| Mercury and Its Compounds             | 553002        | No sector responsible                 | Not applicable            | Measures delivered to address reason, awaiting recovery   | Not applicable                         |
| Phosphate                             | 576267        | Agriculture and rural land management | Agriculture - Arable      | Diffuse source  | Poor nutrient management               |
| Phosphate                             | 576265        | Domestic General Public               | Domestic / General public | Point source  | Private Sewage Treatment               |
| Dissolved oxygen                      | 555591        | Agriculture and rural land management | Agriculture - Arable      | Diffuse source  | Poor nutrient management               |

| Failing element  | Challenges ID | Category                | Business sector           | Surface Water Management Issue (SWMI) | Activity                 |
|------------------|---------------|-------------------------|---------------------------|---------------------------------------|--------------------------|
| Dissolved oxygen | 555580        | Domestic General Public | Domestic / General public | Point source                          | Private Sewage Treatment |

**Table 8-14 RNAGs for The Fleet from Source to River Aire (GB104027062740) water body**

| Failing element                | Challenges ID | Category                              | Business sector               | Surface Water Management Issue (SWMI)                   | Activity  |
|--------------------------------|---------------|---------------------------------------|-------------------------------|---|---|
| Mitigation Measures Assessment | 588315        | Agriculture and rural land management | Not applicable                | Physical modification                                   | Other (not in list, must add details in comments) |
| Mercury and Its Compounds      | 549638        | No sector responsible                 | Not applicable                | Measures delivered to address reason, awaiting recovery | Not applicable                                    |
| Dissolved oxygen               | 549712        | No sector responsible                 | Not applicable                | Measures delivered to address reason, awaiting recovery | Not applicable                                    |
| Dissolved oxygen               | 549701        | Water Industry                        | Waste water treatment         | Point source  | Sewage discharge (continuous)                     |
| Phosphate                      | 549734        | No sector responsible                 | Not applicable                | Measures delivered to address reason, awaiting recovery | Not applicable                                    |
| Dissolved oxygen               | 549678        | Agriculture and rural land management | Other rural (not agriculture) | Flow  | Land drainage - operational management            |

| Failing element                       | Challenges ID | Category                              | Business sector | Surface Water Management Issue (SWMI)                   | Activity                               |
|---------------------------------------|---------------|---------------------------------------|-----------------|---|--|
| Invertebrates                         | 549656        | Agriculture and rural land management | Not applicable  | Physical modification                                   | Land drainage - operational management |
| Polybrominated diphenyl ethers (PBDE) | 549741        | No sector responsible                 | Not applicable  | Measures delivered to address reason, awaiting recovery | Not applicable                         |

**Table 8-15 RNAGs for the Holmes Dike Catchment (trib of Ouse) (GB104027063650) water body**

| Failing element                       | Challenges ID | Category                              | Business sector       | Surface Water Management Issue (SWMI)                   | Activity                               |
|---------------------------------------|---------------|---------------------------------------|-----------------------|---|--|
| Polybrominated diphenyl ethers (PBDE) | 552902        | No sector responsible                 | Not applicable        | Measures delivered to address reason, awaiting recovery | Not applicable                         |
| Invertebrates                         | 574657        | Water Industry                        | Waste water treatment | Point source  | Sewage discharge (intermittent)        |
| Invertebrates                         | 574656        | Agriculture and rural land management | Agriculture - Arable  | Diffuse source  | Poor soil management                   |
| Invertebrates                         | 574655        | Agriculture and rural land management | Not applicable        | Physical modification                                   | Land drainage - operational management |
| Phosphate                             | 555510        | Agriculture and rural land management | Agriculture - Arable  | Diffuse source  | Poor soil management                   |

| Failing element           | Challenges |                                       |                         |   |  |
|---------------------------|------------|---------------------------------------|-------------------------|---|--|
|                           | ID         | Category                              | Business sector         | Surface Water Management Issue (SWMI)                   | Activity                               |
| Dissolved oxygen          | 555487     | Water Industry                        | Waste water treatment   | Point source  | Sewage discharge (intermittent)        |
| Dissolved oxygen          | 555476     | Domestic General Public               | Domestic/General public | Diffuse source  | Septic Tanks                           |
| Dissolved oxygen          | 555465     | Agriculture and rural land management | Not applicable          | Physical modification                                   | Land drainage - operational management |
| Dissolved oxygen          | 555454     | Agriculture and rural land management | Agriculture - Arable    | Diffuse source  | Poor soil management                   |
| Mercury and Its Compounds | 555421     | No sector responsible                 | Not applicable          | Measures delivered to address reason, awaiting recovery | Not applicable                         |
| Phosphate                 | 555531     | Domestic General Public               | Domestic/General public | Diffuse source  | Septic Tanks                           |
| Phosphate                 | 555520     | Water Industry                        | Waste water treatment   | Point source  | Sewage discharge (intermittent)        |

**Table 8-16 RNAGs for the Wharfe & Lower Ouse Sherwood Sandstone (GB40401G702400) groundwater body**

| Failing element                        | Challenges ID | Category                   | Business sector | Surface Water Management Issue (SWMI) | Activity                        |
|--|---------------|----------------------------|-----------------|---------------------------------------|---------------------------------|
| Trend Assessment                       | 559464        | Sector under investigation | Not applicable  | Unknown (pending investigation)       | Unknown (pending investigation) |
| Chemical Drinking Water Protected Area | 559462        | Sector under investigation | Not applicable  | Unknown (pending investigation)       | Unknown (pending investigation) |

**Table 8-17 RNAGs for the Aire & Don Sherwood Sandstone (GB40401G701000) groundwater body**

| Failing element                        | Challenges |                                       | Business sector         | Surface Water Management Issue (SWMI) | Activity                      |
|--|------------|---------------------------------------|-------------------------|---------------------------------------|-------------------------------|
|  | ID         | Category                              |                         |                                       |                               |
| Trend Assessment                       | 574669     | Water Industry                        | Waste water treatment   | Point source                          | Sewage discharge (continuous) |
| General Chemical Test                  | 574668     | Water Industry                        | Waste water treatment   | Point source                          | Sewage discharge (continuous) |
| General Chemical Test                  | 574667     | Agriculture and rural land management | Agriculture - Livestock | Point source                          | Farm/site infrastructure      |
| General Chemical Test                  | 574665     | Agriculture and rural land management | Agriculture - Arable    | Diffuse source                        | Poor nutrient management      |
| Chemical Drinking Water Protected Area | 559442     | Agriculture and rural land management | Agriculture - Livestock | Diffuse source                        | Poor nutrient management      |
| General Chemical Test                  | 574663     | Industry                              | Not applicable          | Point source                          | Contaminated land             |
| Chemical Drinking Water Protected Area | 559438     | Water Industry                        | Waste water treatment   | Point source                          | Sewage discharge (continuous) |
| Trend Assessment                       | 574672     | Domestic General Public               | Not applicable          | Point source                          | Private Sewage Treatment      |
| General Chemical Test                  | 574661     | Domestic General Public               | Domestic/General public | Point source                          | Private Sewage Treatment      |
| Trend Assessment                       | 574671     | Other                                 | Not applicable          | Diffuse source                        | Atmospheric deposition        |
| General Chemical Test                  | 574660     | Agriculture and rural land management | Agriculture - Livestock | Diffuse source                        | Poor nutrient management      |

| Failing element                        | Challenges |                                       |                      |                                       |                          |
|--|------------|---------------------------------------|----------------------|---------------------------------------|--------------------------|
|  | ID         | Category                              | Business sector      | Surface Water Management Issue (SWMI) | Activity                 |
| Trend Assessment                       | 574670     | Agriculture and rural land management | Agriculture - Arable | Diffuse source                        | Poor nutrient management |
| Quantitative Water Balance             | 559443     | No sector responsible                 | Not applicable       | Suspect data                          | Not applicable           |
| Chemical Drinking Water Protected Area | 559439     | Agriculture and rural land management | Agriculture - Arable | Diffuse source                        | Poor nutrient management |
| Chemical Drinking Water Protected Area | 559441     | Domestic General Public               | Not applicable       | Point source                          | Private Sewage Treatment |
| Chemical Drinking Water Protected Area | 559440     | Other                                 | Not applicable       | Diffuse source                        | Atmospheric deposition   |

**Table 8-18 RNAGs for the Wharfe Magnesian Limestone (GB40401G701100) groundwater body**

| Failing element                        | Challenges ID | Category                   | Business sector | Surface Water Management Issue (SWMI) | Activity                        |
|--|---------------|----------------------------|-----------------|---------------------------------------|---------------------------------|
| Trend Assessment                       | 559445        | Sector under investigation | Not applicable  | Unknown (pending investigation)       | Unknown (pending investigation) |
| Chemical Drinking Water Protected Area | 559444        | Sector under investigation | Not applicable  | Unknown (pending investigation)       | Unknown (pending investigation) |

**Table 8-19 RNAGs for the Aire & Don Magnesian Limestone (GB40401G700900) groundwater body**

| Failing element                        | Challenges ID | Category                              | Business sector         | Surface Water Management Issue (SWMI) | Activity                        |
|--|---------------|---------------------------------------|-------------------------|---------------------------------------|---------------------------------|
| Chemical Drinking Water Protected Area | 559428        | Sector under investigation            | Not applicable          | Unknown (pending investigation)       | Unknown (pending investigation) |
| Trend Assessment                       | 559437        | Sector under investigation            | Not applicable          | Unknown (pending investigation)       | Unknown (pending investigation) |
| General Chemical Test                  | 559436        | Agriculture and rural land management | Agriculture - Arable    | Diffuse source                        | Poor pesticide management       |
| General Chemical Test                  | 559434        | Domestic General Public               | Not applicable          | Point source                          | Private Sewage Treatment        |
| General Chemical Test                  | 559433        | Agriculture and rural land management | Agriculture - Livestock | Point source                          | Farm/site infrastructure        |
| General Chemical Test                  | 559432        | Agriculture and rural land management | Agriculture - Arable    | Diffuse source                        | Poor nutrient management        |

### E.3. Measures and actions

**Table 8-20 Measures and actions for Aire from Fryston Beck to River Ouse (GB104027063037) water body**

| Action measure unique ID (UID) | Title   | Category Tier 1   | Category Tier 2  |
|--------------------------------|---|---|--|
| 19533                          | Reduction at source   | To control or manage point source inputs  | Reduce point source pollution at source  |
| 19534                          | Influence wool scourers to improve on site treatment  | To control or manage point source inputs  | Reduce point source pollution at source  |
| 31836                          | Action to manage alter or remove 3 weirs (GB104027062760)   | To mitigate the impacts on ecology from physical modifications in modified waters | Remove or enhance existing structures / Improve the physical form and function of a water body   |
| 31837                          | Action to manage alter or remove 2 weirs (GB104027062760)   | To mitigate the impacts on ecology from physical modifications in modified waters | Remove or enhance existing structures  |
| 31960                          | Evaluate locations/options from Lower Aire FCRM strategy to give potential option (GB104027062760). | To mitigate the impacts on ecology from physical modifications in modified waters | Improve the physical form and function of a water body   |
| 31961                          | Review EA Compliance (GB104027062760).  | To mitigate the impacts on ecology from physical modifications in modified waters | Remove or enhance existing structures / Improve operational and maintenance regimes / Improve the physical form and function of a water body |
| 31963                          | Action to improve eel passage and eel screening.  | To mitigate the impacts on ecology from physical modifications in modified waters | Improve water resources management   |
| 31964                          | Review EA Compliance (GB104027062760).  | To mitigate the impacts on ecology from physical modifications in modified waters | Improve education  |

| Action measure unique ID (UID) | Title   | Category Tier 1   | Category Tier 2  |
|--------------------------------|---|---|--|
| 31965                          | Action to develop a project to improve in-channel habitats.   | To mitigate the impacts on ecology from physical modifications in modified waters | Improve the physical form and function of a water body   |
| 31966                          | Evaluate locations/options from Lower Aire FCRM strategy to give potential option (GB104027062760). | To mitigate the impacts on ecology from physical modifications in modified waters | Improve the physical form and function of a water body   |
| 31967                          | Develop project delivery options for bankside enhancements  | To mitigate the impacts on ecology from physical modifications in modified waters | Remove or enhance existing structures / Improve operational and maintenance regimes / Improve the physical form and function of a water body |
| 31972                          | Action to develop a project to improve marginal and riparian habitats.                              | To mitigate the impacts on ecology from physical modifications in modified waters | Remove or enhance existing structures / Improve operational and maintenance regimes / Improve the physical form and function of a water body |
| 31973                          | Investigate re-opening length of Wash Dyke  | To mitigate the impacts on ecology from physical modifications in modified waters | Improve the physical form and function of a water body   |
| 31974                          | Investigate inclusion of in-culvert structures  | To mitigate the impacts on ecology from physical modifications in modified waters | Improve the physical form and function of a water body   |
| 40108                          | Yorkshire Area Fish Pass Programme feasibility study  | To mitigate the impacts on ecology from physical modifications in modified waters | Remove or enhance existing structures  |
| 40474                          | AMP7 Castleford STW Phosphorus scheme 3mg/l   | To control or manage point source discharges                                      | Amend permit limits at Sewage Treatment Works  |

| Action measure unique ID (UID) | Title  | Category Tier 1                              | Category Tier 2   |
|--------------------------------|--|--|---|
| 40584                          | AMP7 Sutton WWTW Phosphorus scheme 1mg/l   | To control or manage point source discharges | Amend permit limits at Sewage Treatment Works   |
| 40585                          | Phosphate reductions at 21 works in upstream waterbodies   | To control or manage point source discharges | Amend permit limits at Sewage Treatment Works   |
| 40622                          | Farm manure and slurry management plans and promotion of fertiliser best practice (GB104027062760) | To control or manage rural diffuse pollution | Store and contain farm chemicals, wastes and pollutants / Apply fertilisers, chemicals and land-spread materials to meet crop needs |

**Table 8-21 Measures and actions for Selby Dam from Conf. Fox Dike and Carr Dike to Ouse (GB104027063620) water body**

| Action measure UID | Title   | Category Tier 1   | Category Tier 2  |
|--------------------|---|---|--|
| 19479              | Best practice land management to reduce soil and sediment loss to rivers.           | To control or manage rural diffuse pollution                                      | Manage, contain and treat runoff / Improve land management practices   |
| 19482              | Improve drainage on Sherburn Industrial Estate.                                     | To control or manage rural diffuse pollution                                      | Manage, contain and treat runoff   |
| 32380              | Install a fish pass on Selby Dam Pumping Station.                                   | To mitigate the impacts on ecology from physical modifications in modified waters | Remove or enhance existing structures / Improve the physical form and function of a water body   |
| 32381              | Review EA Compliance  | To mitigate the impacts on ecology from physical modifications in modified waters | Improve operational and maintenance regimes / Improve education  |
| 32385              | Determine the feasibility of altering maintenance, setting back or removing assets. | To mitigate the impacts on ecology from physical modifications in modified waters | Improve the physical form and function of a water body   |
| 32386              | Install a fish pass on Selby Dam Pumping Station.                                   | To mitigate the impacts on ecology from physical modifications in modified waters | Remove or enhance existing structures  |
| 32387              | Develop a bankside planting project   | To mitigate the impacts on ecology from physical modifications in modified waters | Improve operational and maintenance regimes / Improve the physical form and function of a water body   |
| 32390              | Liaise with IDBs to improve maintenance and in channel and marginal diversity.      | To mitigate the impacts on ecology from physical modifications in modified waters | Remove or enhance existing structures / Improve operational and maintenance regimes / Improve the physical form and function of a water body |

| Action measure UID | Title  | Category Tier 1                              | Category Tier 2                               |
|--------------------|--|--|---|
| 40446              | AMP7 Sherburn In Elmet STW Phosphorus scheme 0.5mg/l | To control or manage point source discharges | Amend permit limits at Sewage Treatment Works |
| 40447              | AMP7 Sherburn In Elmet STW Ammonia scheme 1.3mg/l    | To control or manage point source discharges | Amend permit limits at Sewage Treatment Works |
| 40535              | Sherburn In Elmet St 6mg/l BOD AMP scheme            | To control or manage point source discharges | Amend permit limits at Sewage Treatment Works |
| 40536              | Hambleton Wpc Works 0.2mg/l Phosphate AMP7 scheme    | To control or manage point source discharges | Amend permit limits at Sewage Treatment Works |
| 40537              | Hambleton Wpc Works 3mg/l Ammonia AMP7 scheme        | To control or manage point source discharges | Amend permit limits at Sewage Treatment Works |
| 40538              | Hambleton Wpc Works 30mg/l BOD AMP scheme            | To control or manage point source discharges | Amend permit limits at Sewage Treatment Works |

**Table 8-22 Measures and actions for Riccall Dam Catchment (trib of Ouse) (GB104027063690) water body**

| Action measure UID | Title  | Category Tier 1                              | Category Tier 2   |
|--------------------|--|--|---|
| 19502              | Reduce amount of sediment entering watercourse.                                    | To control or manage rural diffuse pollution | Manage, contain and treat runoff  |
| 19503              | Improve non mains sewage treatment.  | To control or manage point source discharges | Improve sewerage drainage systems (including intermittent discharges)   |
| 19504              | Improve land management practices.   | To manage modified habitats                  | Improve operations and maintenance  |
| 40657              | Farm manure and slurry management plans and promotion of fertiliser best practice. | To control or manage rural diffuse pollution | Store and contain farm chemicals, wastes and pollutants / Apply fertilisers, chemicals and land-spread materials to meet crop needs |
| 40658              | More sympathetic land drainage operational management regime.                      | To manage modified habitats                  | Improve operations and maintenance  |

**Table 8-23 Measures and actions for The Fleet from Source to River Aire (GB104027062740) water body**

| Action measure UID | Title  | Category Tier 1   | Category Tier 2                               |
|--------------------|--|---|---|
| 31830              | Review External Compliance   | To mitigate the impacts on ecology from physical modifications in modified waters | Improve operational and maintenance regimes   |
| 31831              | Action to improve habitats through both altered maintenance practise and one-off work. | To mitigate the impacts on ecology from physical modifications in modified waters | Improve water resources management            |
| 39941              | Potential measure: Phosphorus removal at Hillam WwTW                                   | To control or manage point source discharges                                      | Amend permit limits at Sewage Treatment Works |
| 40621              | More sympathetic land drainage operational management regime.                          | To manage modified habitats   | Improve operations and maintenance            |

**Table 8-24 Measures/actions for the Holmes Dike catchment (trib of Ouse) (GB104027063650) water body**

| Action measure UID | Title   | Category Tier 1                              | Category Tier 2                    |
|--------------------|---|--|------------------------------------|
| 40644              | Best practice land management to reduce soil and sediment loss to watercourses (GB104027063650) | To control or manage rural diffuse pollution | Improve land management practices  |
| 40695              | More sympathetic land drainage operational management regime (GB104027063650)                   | To manage modified habitats                  | Improve operations and maintenance |

**Table 8-25 Measures and actions for the Wharfe & Lower Ouse Sherwood Sandstone (GB40401G702400) groundwater body**

| Action measure UID | Title  | Category Tier 1                            | Category Tier 2  |
|--------------------|--|--|--|
| 39335              | Embargo on future abstraction in this aquifer to prevent further saline intrusion. | To control or manage diffuse source inputs | Mitigate/Remediate diffuse pollution impacts on receptor |

**Table 8-26 Measures and actions for the Aire & Don Sherwood Sandstone (GB40401G701000) groundwater body**

| Action measure UID | Title  | Category Tier 1                              | Category Tier 2                        |
|--------------------|--|--|--|
| 19578              | Catchment-based implementation of best practice (ammonia)                            | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |
| 19579              | Best practice land management techniques to reduce soil and sediment loss to rivers. | To control or manage rural diffuse pollution | Improve land management practices      |
| 19580              | Completion and implementation of actions from a farm infrastructure audit.           | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |
| 19581              | Catchment-based implementation of NVZ best practice                                  | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |
| 19583              | Liaison with planning authorities - potential land contamination                     | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |
| 19584              | Catchment-based implementation of best practice (nitrate)(manure & fertiliser)       | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |
| 19585              | Catchment-based implementation of best practice (nitrate)(livestock).                | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |
| 19586              | Catchment-based implementation of best practice (nitrate)(nutrients).                | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |
| 19587              | Non-mains drainage pollution prevention.   | To control or manage point source discharges | Improve private sewage treatment works |
| 39913              | Drinking Water Protected Areas_Yorkshire Project                                     | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |
| 40131              | AMP6 Nitrate Projects  | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |

| Action measure UID | Title  | Category Tier 1                              | Category Tier 2   |
|--------------------|--|--|---|
| 40647              | Farm manure and slurry management plans and promotion of fertiliser best practice. | To control or manage rural diffuse pollution | Store and contain farm chemicals, wastes and pollutants / Apply fertilisers, chemicals and land-spread materials to meet crop needs |

**Table 8-27 Measures and actions for the Wharfe Magnesian Limestone (GB40401G701100) groundwater body**

| Action measure UID | Title  | Category Tier 1                              | Category Tier 2   |
|--------------------|--|--|---|
| 40637              | Farm manure and slurry management plans and promotion of fertiliser best practice. | To control or manage rural diffuse pollution | Apply fertilisers, chemicals and land-spread materials to meet crop needs / Store and contain farm chemicals, wastes and pollutants |

**Table 8-28 Measures and actions for the Aire & Don Magnesian Limestone (GB40401G700900) groundwater body**

| Action measure UID | Title  | Category Tier 1                              | Category Tier 2                        |
|--------------------|--|--|--|
| 19573              | Catchment-based implementation of best practice (nitrate)                  | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |
| 19574              | Completion and implementation of actions from a farm infrastructure audit. | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |
| 19575              | Catchment-based implementation of best practice (bentazone)                | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |
| 19576              | Oaklands Hill  | To control or manage point source discharges | Improve private sewage treatment works |
| 19577              | Barnsdale Bar Services   | To control or manage point source discharges | Improve private sewage treatment works |
| 40648              | Use of best practice for the storage and handling of pesticides.           | To control or manage diffuse source inputs   | Reduce diffuse pollution at source     |

## Annex F Walkover survey information

### F.1. Watercourse survey status

- F.1.1. The survey status of all water features within the Study Area, including watercourses can be found in Figure 15.13: Surveyed Sites (ES Volume 2) [[EN0110012/APP/LVS/06.02.15.1](#)]

## F.2. Walkover findings

Table 8-29 Watercourses surveyed in May and August 2025

| Watercourse name<br>(Watercourse value) | Site Location               | Parent catchment /<br>WER Water Body       | Description   | Photograph   |
|---|-----------------------------|--|---|--|
| <b>Whinchat Dyke<br/>(Moderate)</b>     | Solar Development<br>Site 1 | Riccall Dam<br>Catchment (trib of<br>Ouse) | <ul style="list-style-type: none"> <li>Incised, uniform channel.</li> <li>Some perceptible flow. Not fully straight, but low sinuosity. Substrate dominated by silt, with a little gravel.</li> <li>Steep banks, 1.80m bankfull depth, wetted channel width 1m, bankfull width 3.5m probably realigned to field boundary.</li> <li>Low diversity, no noticeable geomorphological features or active processes.</li> </ul> |   |
| <b>Chatterton Dyke<br/>(Moderate)</b>   |                             |  | <ul style="list-style-type: none"> <li>Fairly straight, very incised trapezoidal drainage channel with steep banks.</li> <li>Very low gradient, no perceptible flow.</li> <li>Wetted channel 0.5m wide.</li> <li>No diversity and no evidence of active processes.</li> </ul>   |  |

| Watercourse name<br>(Watercourse value) | Site Location | Parent catchment /<br>WER Water Body | Description  | Photograph   |
|---|---------------|--------------------------------------|--|--|
| <b>Pallion Dyke<br/>(Moderate)</b>      |               |                                      | <ul style="list-style-type: none"> <li>▪ Sinuous planform, although historically incised and fixed in place.<br/>Little perceptible flow at time of survey<br/>Silt substrate.</li> <li>▪ Bed 1.5m wide.</li> <li>▪ Some evidence of limited diversity, silt berm inside meander bend and some undercutting under tree roots outside of bend.</li> </ul> |   |
| <b>Common Drain 1 (Low)</b>             |               |                                      | <ul style="list-style-type: none"> <li>▪ Straight drainage ditch, mostly dry at location near pipe, some water further along but no perceptible flow.</li> </ul>   |  |

| Watercourse name<br>(Watercourse value)          | Site Location        | Parent catchment /<br>WER Water Body | Description  | Photograph   |
|--|----------------------|--------------------------------------|--|--|
| <b>Riccall Dam (Gosling Marsh Clough) (High)</b> | Cable Route Corridor |                                      | <ul style="list-style-type: none"> <li>▪ Very incised, steep banks, almost symmetrical steep banks.</li> <li>▪ Fairly straight, some low sinuosity</li> <li>▪ Almost no perceptible flow.</li> <li>▪ Water depth at time of visit 0.4 m (eDNA sample taken)</li> <li>▪ Silty substrate, no gravel visible or noted by ranging pole.</li> <li>▪ Wetted channel width 1-1.5 m.</li> <li>▪ Very uniform riparian vegetation cover.</li> </ul> |   |
| <b>Hopney Stable Dyke (Moderate)</b>             | Cable Route Corridor |                                      | <ul style="list-style-type: none"> <li>▪ Although full channel is relatively straight, it appeared to have some low-flow variability, particularly upstream of crossing.</li> <li>▪ Little perceptible flow at time of survey.</li> <li>▪ Aquatic macrophytes visible, fairly clear water.</li> </ul>  |  |

| Watercourse name<br>(Watercourse value)                  | Site Location        | Parent catchment /<br>WER Water Body | Description  | Photograph  |
|--|----------------------|--------------------------------------|--|---|
| <b>Swinbank Dyke<br/>(Moderate)</b>                      |                      |                                      | <ul style="list-style-type: none"> <li>▪ Straight channel.</li> <li>▪ No perceptible flow, water depth 0.35 m.</li> <li>▪ eDNA survey completed at site.</li> <li>▪ Silt substrate, but some hard material underneath.</li> <li>▪ Shaded riparian area. Bank not visible.</li> </ul>   |    |
| <b>Holmes Dyke<br/>(Southfield Drain)<br/>(Moderate)</b> |                      |                                      | <ul style="list-style-type: none"> <li>▪ Channel with some sinuosity (low) and perceptible flow, although low energy.</li> <li>▪ Silted bed, no gravel visible from distance.</li> <li>▪ Wetted channel with 1-1.2 m.</li> <li>▪ Right bank steeper than left bank. Bankfull depth approx. 1.3-1.5 m.</li> <li>▪ Uniform riparian vegetation cover, no trees.</li> </ul> |   |
| <b>River Ouse (High)</b>                                 | Cable Route Corridor | Ouse from R Wharfe to Upper Humber   | <ul style="list-style-type: none"> <li>▪ Fast flowing section (tide suspected to be going out)</li> <li>▪ Turbid</li> <li>▪ Intertidal mud/mudflat habitat on banks</li> <li>▪ Sporadic trees on both banks. Agricultural land use on both banks. Steep banks. Embankment set back on right bank by</li> </ul>   |  |

| Watercourse name<br>(Watercourse value) | Site Location     | Parent catchment /<br>WER Water Body | Description   | Photograph   |
|---|-------------------|--------------------------------------|---|--|
| <b>Angram Clough (Marsh Dike)</b>       |                   |                                      | <p>1m, set back on left bank by 15m.<br/>Himalayan balsam.</p> <ul style="list-style-type: none"> <li>▪ Large river, unable to observed substrate.</li> <li>▪ Fairly straight channel, incised but not as much as others (approx. 1.2 m bankfull depth).</li> <li>▪ Little perceptible flow.</li> <li>▪ Terrestrial vegetation chocking up channel upstream of culvert.</li> <li>▪ Downstream of culvert water very clear.</li> <li>▪ No diversity or features.</li> <li>▪ Gas pipeline present at site.</li> </ul> |   |
| <b>Angram Clough (Low)</b>              | Within Study Area |                                      | <ul style="list-style-type: none"> <li>▪ Suspected dry but vegetation clogging channel - floating pennywort. Observed ponded water further upstream.</li> <li>▪ Banks are 3m high, very straight channel.</li> <li>▪ Left bank, grass and arable land use.</li> <li>▪ Right bank, scrub and line of trees.</li> <li>▪ Pumping station at downstream extent.</li> </ul>  |  |

| Watercourse name<br>(Watercourse value) | Site Location        | Parent catchment /<br>WER Water Body | Description  | Photograph   |
|---|----------------------|--------------------------------------|--|--|
| <b>Black Fen Drain (Low)</b>            | Cable Route Corridor | Holmes Dike catchment (trib of Ouse) | <ul style="list-style-type: none"> <li>▪ Ponded.</li> <li>▪ Audible trickle through culvert underneath bridge. 1.5m high banks. 0.5m wide. Straight agricultural watercourse. Suspected managed by IDB. Grass both banks. Arable land use both sides. Aquatic vegetation in channel.</li> <li>▪ No riparian buffer.</li> </ul> |   |
| <b>Cockret Dike (Low)</b>               | Within Study Area    |                                      | <ul style="list-style-type: none"> <li>▪ Dredged watercourse. Dry at time of survey. Clogged with terrestrial vegetation downstream.</li> <li>▪ Arable land use.</li> <li>▪ 2.5m height banks. 0.5m wide.</li> </ul>   |  |

| Watercourse name<br>(Watercourse value) | Site Location            | Parent catchment /<br>WER Water Body                      | Description   | Photograph   |
|---|--------------------------|---|---|--|
| <b>Outwoods Drain (Low)</b>             | Cable Route Corridor     | Selby Dam from<br>Conf. Fox Dike and<br>Carr Dike to Ouse | <ul style="list-style-type: none"> <li>▪ Ponded drain. Straight agricultural ditch. Evidence of dredging activities.</li> <li>▪ Left bank hedgerow. Right bank grass with no buffer. Arable land use.</li> <li>▪ Pond vegetation on surface of water. 0.7m wide. 2m bank height.</li> </ul> |   |
| <b>Selby Dam (High)</b>                 | Solar Development Site 8 |   | <ul style="list-style-type: none"> <li>▪ Macrophytes in channel.</li> <li>▪ Slow flowing but water depth approx. 0.4m.</li> <li>▪ Vegetation mixed on both banks.</li> <li>▪ Channel width approx. 1.2m.</li> <li>▪ Silty substrate but may have some cobbles.</li> </ul>                   |  |

| Watercourse name<br>(Watercourse value) | Site Location   | Parent catchment /<br>WER Water Body | Description   | Photograph  |
|---|---|--------------------------------------|---|---|
| <b>Town Dike (Low)</b>                  | Cable Route Corridor                                    |                                      | <ul style="list-style-type: none"> <li>Reconfigured by the railway.</li> <li>Very artificial planform and banks.</li> <li>Recently constructed so vegetation not established.</li> <li>Culvert under railway and under access track.</li> <li>Silty substrate with cobbles. 2.5m high banks.</li> <li>Dry with ponded places in channel.</li> </ul> |    |
| <b>Habholme Dike (Moderate)</b>         | Solar Development Site 2 and 8 and Cable Route Corridor |                                      | <ul style="list-style-type: none"> <li>Ponded watercourse. 2m high bank. 0.75m width.</li> <li>Left bank long grasses, right bank grasses and arable land use.</li> <li>Some aquatic vegetation present. Suspected silty substrate but difficult to see due to duck weed.</li> </ul>  |   |
| <b>Roe Lane Drain (Low)</b>             | Solar Development Site 4                                | The Fleet from Source to River Aire  | <ul style="list-style-type: none"> <li>Suspected dry ditch, clogged with terrestrial vegetation.</li> <li>Straight ditch along field boundaries.</li> <li>No sight of substrate.</li> <li>Arable land use.</li> <li>Christmas tree farm in the vicinity.</li> <li>Grasses along both banks.</li> </ul>  |  |

| Watercourse name<br>(Watercourse value)                 | Site Location                       | Parent catchment /<br>WER Water Body | Description   | Photograph   |
|---|-------------------------------------|--------------------------------------|---|--|
| <p><b>The Fleet<br/>(downstream)<br/>(Moderate)</b></p> | <p>Solar Development<br/>Site 4</p> |                                      | <ul style="list-style-type: none"> <li>▪ Aquatic vegetation.</li> <li>▪ Some ponded water either side of culvert underneath Roe Lane.</li> <li>▪ Arable land use.</li> <li>▪ Grasses along both banks.</li> </ul>   |   |
| <p><b>The Fleet (upstream)<br/>(Moderate)</b></p>       | <p>Solar Development<br/>Site 3</p> |                                      | <ul style="list-style-type: none"> <li>▪ Dry agricultural drainage ditch. Trapezoidal channel.</li> <li>▪ 3m high banks, both banks.</li> <li>▪ Grassed on both banks.</li> <li>▪ Arable land use.</li> <li>▪ Bridge over watercourse for road. Sporadic trees.</li> <li>▪ Mostly terrestrial vegetation in the channel.</li> <li>▪ Bare slopes for some of banks.</li> </ul> |  |



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