Scotland England Green Link 2 - English Onshore Scheme

Environmental Statement: Volume 3

Water Framework Directive Report

Appendix 11-A

May 2022

For: National Grid Electricity Transmission

Quality information

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Revision History

Revision	Revision date	Details
Rev 1	07/04/2022	Initial draft for internal review
Rev 2	14/04/2022	1st full draft for client review
Rev 3	29/04/2022	2nd full draft for client review (updated watercourse crossing schedule)
Rev 4	10/05/2022	3rd full draft response to client review comments

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11.1 Introduction

11.1.1 Purpose of This Report

The aim of this report is to support the Hydrology and Land Drainage chapter of the Environmental Statement (ES) through the provision of sufficient information to understand the likely significant effects on the environment of the watercourses designated under the Water Framework Directive (WFD) surrounding the English Onshore Scheme, and opportunities to overcome these.

Where a scheme is found to cause a potential deterioration in WFD status of a water body or prevent it achieving good status then the scheme must be subject to a more detailed assessment under Article 4.7 to defend the breach of WFD objectives. The scoping opinion received by the Environment Agency (EA) for this project confirmed that a separate WFD Assessment will be required in order to ensure compliance by further assessing the impacts of the project on geomorphology, water quality and ecological elements.

This report seeks to address the following:

- The elements of the proposed works which have the potential to negatively impact the surrounding water environment;
- The methodology and mitigation measures for the proposed works which have been developed to minimise these impacts; and
- The compliance of the works with the European Union (EU) Water Framework Directive.

11.1.2 The English Onshore Scheme

The English Onshore Scheme involves laying underground High Voltage Direct Current (HVDC) cables in East Riding of Yorkshire, from the landfall at Fraisthorpe beach to a converter station close to the existing Drax Substation in Selby, passing Driffield, Market Weighton, and Howden. The converter station will be connected to the existing substation by less than 1 km of Alternative Current (AC) underground cable. HVDC cables will pass underneath watercourses that are intersected by the English Onshore Scheme, and watercourses will be bridged or culverted where necessary to accommodate temporary haulage routes to facilitate cable installation.

11.1.3 Background to Water Framework Directive

The WFD established a framework across the European Union for the protection of water bodies (including terrestrial ecosystems and wetlands directly dependent upon them), which aims to prevent further deterioration, enhance their status, promote sustainable water use, reduce pollution and mitigate the effects of floods and droughts. Water bodies include surface waters (rivers, large lakes, canals, transitional and coastal waters) and groundwater bodies (superficial and bedrock aquifers). Since the UK left the EU, the EU Water Framework Directive has been revoked and replaced in England, Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. The UK continues to fulfil its reporting requirements under the new legislation. On 22 December 2000, the WFD was transposed into UK law. As retained law, the WFD continues to apply in the UK following the UK's split with Europe.

The baseline condition of all water bodies was presented in the River Basin Management Plans (RBMPs) in 2009, with England and Wales being split into its major river basin catchments. Updates to water body status is presented to the European Commission (EC) every six years. The 2015 RBMPs provided Cycle 2 updates and there are a further two cycles to be repeated in 2021 and 2027, by which point all water bodies should be achieving good ecological status or good ecological potential for artificial water bodies (AWB) or heavily modified water bodies (HMWB).

For AWB and HMWB the classification system is slightly different in recognition of the impact that human activity can have on the water environment. For such water bodies the classification is based predominantly on the presence or absence of mitigation measures within the water body as a whole. These mitigation measures are defined for each water body within the RBMPs as set by the EA.

As part of the English Onshore Scheme, it is important for the client and EA (as the relevant regulator) to consider any permanent changes the English Onshore Scheme will create against the legal environmental obligations and apply best practice in terms of the environment and WFD. Any changes to physical river features, water flows, and/or chemical and ecological changes the English Onshore Scheme may cause for the long term must be adequately considered as well as impacts on locally designated sites – all of which form part of the WFD assessment criteria.

In line with the WFD[1] and EA Guidelines[2] to ensure physical works or modifications in rivers meet WFD and wider environmental duties, the English Onshore Scheme should ensure that:

- The works will not lead to a deterioration in the quality of a water body; and
- The works will not prevent the future improvement of a water body.

Consideration for the wider environmental effects of the English Onshore Scheme should also ensure that:

- The works will not impact a protected nature conservation area or priority habitat;
- The works will not impact a protected or priority species;
- Heritage, landscape and fisheries interests and the need for an Environmental Impact Assessment (EIA) have been considered; and
- Opportunities have been sought to improve the water environment.

Where a scheme is found to cause a potential deterioration in WFD status of a water body or prevent it achieving good status then the scheme must be subject to a more detailed assessment under Article 4.7 to defend the breach of WFD objectives. Strict environmental and sustainability criteria must be met to enable the work to proceed.

11.1.4 WFD Elements

The WFD classification for a defined water body is produced by the assessment of a wide variety of different ‘elements’ measured against specific standards and targets developed by the WFD UK Technical Advisory Group (UKTAG) and the EU that relate to a particular type and natural status of a water body.

11.1.4.1 Ecological Status

Ecological status classification is based upon the following groups of elements:

- Biological elements such as fish, invertebrates, macrophytes, phytobenthos (which include aquatic and riparian plants, macro-algae, phytoplankton and diatoms);
- Supporting elements that include chemical measurements such as ammonia, dissolved oxygen, pH, phosphate, copper, zinc and temperature (often referred to as ‘physchem’ attributes) and includes specific pollutants;
- Hydromorphology (supporting conditions) that assess the physical attributes of the water body such as ‘quantity and dynamics of flow’, ‘river continuity’, ‘structure of riparian zone’ and ‘morphology’; and
- Assessments given for each element are also accompanied by a measure of certainty in the result (i.e. Probable, Suspected, and Certain).

[1] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (the ‘Water Framework Directive’
[2] The Planning Inspectorate, UK Government June 2017. National Infrastructure Planning: The Water Framework Directive Advice Note 18. Accessed at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-18/

The ecological status classification is based upon the poorest measurement found for any of the relevant elements being assessed for the identified water body. 'Good ecological status' is a classification that applies to near-natural water bodies and has been described for assessment purposes to represent those that demonstrate only a slight variation from undisturbed, natural conditions.

Primary elements assessed are the biological elements, supported by standard water quality parameters (physchem). The assessment also includes a review of whether or not the water body supports good conditions or features with respect to the quantity and dynamics of flow and the geomorphological condition (hydromorphology). Biotic indicator condition (high, good, moderate, poor, bad) takes precedent over physchem standards for the classification, with physchem only contributing as high, good or moderate (even if poor or bad water quality elements are recorded).

11.1.4.2 Chemical Status

Chemical status is recorded as good or fail and is assessed by compliance with environmental standards for chemicals that are listed in the Environmental Quality Standards Directive 2008/105/EC1 4 (and amendments of 2013). These chemicals include priority substances and priority hazardous substances.

The chemical status classification for a water body is determined by the worst scoring chemical, along with a measure of results certainty. This is only assessed for water bodies where such pollutants are known to be discharged in significant quantities and is not assessed for watercourses that do not receive such substances (labelled as 'does not require assessment').

11.1.4.3 Groundwater Status

Groundwater status is based on a series of conditions defined in the WFD (2000/60/EC) and Groundwater Directive (2006/118/EC) and a series of tests have been designed to define good groundwater status in respect of five chemical and four quantitative parameters. The results for these are combined and the worst-case classification for the chemical status and the worst case for the quantitative elements are presented independently and the overall groundwater status is taken from the worst of these two results. Groundwaters are either classed as good or poor status.

11.1.4.4 Overall Status

Overall status classification is based on the poorest result for ecological and/or chemical status and is based on a 'one out, all out' principle. The classification methodology is being continuously developed as more data is collected and monitoring methods improve.

For heavily modified and artificial water bodies, the assessment is based more on chemical supporting elements than on the biological elements or supporting conditions. This is because good status would otherwise be impossible to achieve. Meeting the requirements of areas that are protected under other European legislation (e.g. Bathing Waters, Birds, Drinking Water, Freshwater Fish, Shellfish, Habitats, Nitrates and Urban Wastewater Treatment Directives) can also be applied to and strengthen WFD assessments.

The 2015 status classification provides a baseline condition against which targets of 'no deterioration' can be measured and provides a basis against which any future improvements can be measured. Reasons for a given classification are complex and may not necessarily be fully understood, particularly if there is a failure of an element of an overall status. Further investigations and improved monitoring may be required.

The 2019 status cycle 2 is the most recent classification.

11.1.5 WFD Assessment Process

In order to perform the WFD assessment the following methodology has been adopted:

- Step 1 – Baseline data collection;
- Step 2 – Screening: exclude activities assessed not to have an impact on water bodies or WFD elements;

- Step 3 – Scoping: identify water bodies and receptors to be assessed; and
- Step 4 – WFD Compliance Assessment: consider impacts and mitigation and conclude the effects of the activity.

In order to ensure no deterioration in the WFD status of surface or ground water bodies, the following criteria must be demonstrated:

- WFD 1: The proposed works will not result in a deterioration of current ecological status or potential.
- WFD 2: The proposed works will not cause failure to meet Good Ecological Status (GES) or Good Ecological Potential (GEP) by the target timeframe.
- WFD 3: The proposed works will not permanently prevent or compromise the relevant environmental objectives being met in other water bodies.

11.2 Methodology

11.2.1 Study Area

For the proposed landfall and underground cable route, the assessment considers the potential for direct hydrological impacts to be within 250 m of the footprint of the English Onshore Scheme. Impacts to surface water resources crossed by the English Onshore Scheme could result in indirect hydrological effects to other surface water resource receptors downstream of the local hydrological area of influence. Therefore, a wider study area is required to identify potentially sensitive high-value receptors.

Indirect hydrological impacts associated with the English Onshore Scheme are considered to be negligible to water resource receptors (water bodies and water dependent habitats) located over 2 km away. Due to the dilution and in-channel processing that will occur within 2 km, it is difficult to categorically determine the source of impacts to water resources and hydrology beyond this distance. It is therefore considered that 2 km is a sufficient study area for these receptors, taking into account the nature of the development and the rural location of the English Onshore Scheme.

In summary, the study area for this assessment has considered:

- Direct hydrological impacts to receptors within the site boundary;
- Indirect hydrological impacts to water bodies and water dependent habitats within 2 km of the site boundary.

11.2.2 Establishing a Baseline

In order to assess the impacts of the proposed works on the water environment, relative to the objectives of the WFD, an assessment of the baseline conditions is required. The English Onshore Scheme is in proximity to fluvial (river) settings and crosses many of these water bodies and therefore should consider the relevant RBMP. The Humber RBMP covers the north and east Yorkshire, where the English Onshore Scheme is located.

The EA Catchment Data Explorer, Natural England's Magic Maps Application and the Humber RBMP have been used to define the current condition of the relevant water bodies, the objectives in place specific to the relevant water bodies, and any protected areas associated with the water bodies.

In addition, a review of contemporary Ordnance Survey maps, aerial imagery and targeted site visits to the majority of watercourses potentially affected by the English Onshore Scheme, was undertaken to determine the baseline environment.

Walkover surveys were completed in Summer 2021. These included a geomorphological reconnaissance survey of the watercourses (where accessible) within the study area and of areas with high fluvial and surface water flood risk (according to the EA Flood Risk for Planning Map) located close to urban areas and surface watercourses. The surveys noted key baseline features and pressures including local topography, land drainage and existing infrastructure that informed receptor value. They also noted key features and pressures on watercourses including: riparian vegetation; morphological processes (such as erosion); morphological features (such as deposits); bed substrate; and bank composition.

Due to the number of watercourses crossed by the English Onshore Scheme, a proportionate approach to surveying was undertaken. As a result, not all water bodies were visited during site visits. Site walkovers were conducted for all watercourses considered to be high risk based on their sensitivity value. These criteria included:

- morphological status and potential for significant hydromorphological impacts;
- national or international statutory designations;
- WFD status with susceptibility to pressures that could cause a decline;
- fish passage; and
- crossing design (locations with open cut prioritised over horizontal directional drilling (HDD)).

Groundwater has not been assessed.

11.3 Design Elements

This section provides a description of all the design elements along the route as is currently understood from the information available.

The installation of the underground DC cables requires a working width up to 40 m wide to be established along the length of the cable route. The planning application boundary provides for a 'limit of deviation' around the working width of underground DC cable route which provides for reasonable flexibility in the planning permission for the cable installation to avoid areas of sensitivity or risk. Through most of the route this limit of deviation is approximately 20 m (i.e. 10 m either side) beyond the working width.

Where possible mitigation by design has been incorporated into the base scheme design such that they inform its detailed design and/or how it shall be constructed.

11.3.1 Cable Crossings

Where the English Onshore Scheme intersects a watercourse, the underground DC cables will be installed beneath the bed of the watercourse using either HDD or open cut techniques.

Open cut techniques will require the watercourse to be temporarily dammed for approximately 10 days, and flow diverted by over-pumping around the working area.

Depth between hard channel bed level and top of cable trench is to be agreed on a case by case basis with the relevant regulatory stakeholders (EA/Internal Drainage Board (IDB)/Local Lead Flood Authority (LLFA)) and will therefore avoid any potential for obstruction to flow or risk of damage from any typical in-channel maintenance activities and look to ensure no preclusion to future flood defence works.

11.3.2 Haul Road Crossings

A temporary haul road will be installed along the majority of the length of underground DC cable route to facilitate cable installation activities. The haul road will comprise a layer of unbound granular material circa 0.5 m deep, with the potential for geogrid layers to be used for stabilisation. Silt management measures will be employed to reduce the risk of sediment runoff from the haul road.

The haul road will cross watercourses separately from the cables, but within the working width. Most main rivers or sensitive features will be crossed by a temporary bridge, including Kelk Beck, Nafferton Beck, Nafferton Drain, Back Delfin/Market Weighton Canal and River Foulness. Driffield Canal, West Beck (River Hull) and the River Ouse will not be crossed by the haul road. The remaining 89 watercourses will be crossed by a culvert installation.

Specific details for specification of temporary bridges is currently unknown, as is their specific crossing location within the working width. The basic parameters of these however are expected to be clear span and soffits >0.6 m higher than bank tops with no change to surrounding ground level profiles surrounding the crossing. They will be sited to avoid tree/root loss and cross at straight reaches, perpendicular to flow.

Where the haul road will cross via a temporary culvert installation, these will be concrete culvert pipes of suitable size to accommodate the natural water regime (volumes and flows). For the majority of watercourses, the culvert will be sat at hard bed level and orientated with flows to limit obstruction and potential for scour. These will allow free passage for fish and eels and be sited to avoid spawning habitat/morphological bar and riffle features. In some cases, culverts may be above hard bed level, however this is limited to channels which are balanced systems with little flow and no concern for fish and eel passage. These will be determined on a case-by-case basis with the relevant stakeholder. Culverts are anticipated to be approximately 6 m long and will include structure scour protection measures.

All temporary crossings will be removed at the end of the construction programme. It is assumed this will be in place for the complete duration of the construction works (5 years).

All hard banks and bed added during construction will be temporary and the bankside will be returned to its original stabilised state after construction, including re-grading where required and re-vegetating/seeding.

11.3.3 Temporary Drainage

During installation of the cable, drainage measures and provision for water management is included within the working width. An appropriate temporary drainage system would be incorporated to manage off site flow/runoff, ensuring waters are controlled in quality and volume. An outline drainage design is included with this submission which set out the principles that will be applied in the design of the detailed drainage strategy by the appointed Contractor. The principles of the outline drainage strategy are considered within the embedded mitigations of the English Onshore Scheme. These documents will be produced at a later stage during detailed design or by the works contractor. Areas with prevalent runoff (overland flow) are to be identified and drainage actively managed, e.g. through bunding and/or temporary drainage as part of the development of the drainage strategy.

Open cut trenches plus all temporary construction compounds associated with trenchless techniques will be dammed and on-site water management protocols would be incorporated to manage off site flows/runoff (e.g., mud filter filters or sediment/pollutant capture mechanism to nearby attenuation ponds to remove sediment and potential contaminants). Discharge will be pumped/gravity fed to local watercourses utilising a flow control device or via soakaway/infiltration. Thus, ensures all discharge is controlled in terms of quality and volume.

A temporary drainage system would be incorporated into all construction compounds to manage off site flow/runoff, ensuring waters are controlled in quality and volume. This will comprise attenuation ponds and/or subbase storage. Discharge will be pumped/gravity fed to local watercourse or via soakaway at a controlled rate which is to be agreed with the relevant regulator.

Construction compounds will include bunded/sump areas with proprietary treatment for re-fuelling, wheel washing and oil separator areas to prevent runoff of these liquids into surface waters. Any site discharge will be pumped/gravity fed via attenuation ponds to remove sediment and potential contaminants before discharging (to local watercourse or infiltration) at a controlled rate which is to be agreed with the relevant regulator.

Haul roads will include header and filter drains, use of sandbags either side of the haul road at watercourse crossings and ensure runoff is directed into attenuation ponds to remove sediment and potential contaminants before discharging (to local watercourse or infiltration) at a controlled rate which is to be agreed with the relevant regulator.

Watercourses receiving drainage water will require headwall installations. These are expected to be <300 mm in size. Precise locations within banks will be determined at detailed design but will in general include:

- No part of the outfall structure will protrude significantly beyond the existing line of the bank. This includes headwalls, wingwalls and protection aprons;
- Discharge will be with the direction of flow, ideally the outfall pipe should be angled at 45° to the direction of flow; and
- Sited to avoid tree loss or bank experiencing significant scour.

Installation of these outfalls will likely require temporary coffer dams.

All hard banks and bed added during construction will be temporary and the bankside will be returned to its original stabilised state after construction.

11.3.4 Operational Drainage

The converter station will have a surface water management plan in place, including a drainage attenuation system incorporated to manage off site flows/runoff, ensuring waters are controlled in quality and volume during operation of the site. This will include subbase storage and attenuation ponds for treatment and flood storage. Discharge will be pumped/gravity fed to a local watercourse via a permanent headwall installation. This is expected to be <300 mm in size.

11.3.5 General Measures

Surface water abstraction may be required at watercourses for mixing/cable installation. Where abstraction is necessary, permits will be obtained in agreement with appropriate regulator in accordance with the Catchment Abstraction Management Strategy and be for less than a 28-day duration per water body.

Stockpiles will have measures in place to prevent erosion, and thus mitigate potential for sediment laden run off (as per Soil Management Plan).

Temporary structures (coffer dams) will dam off a part of the channel to allow maintenance or installation of headwalls and culvert building works to take place. The whole structure will be removed once the works are complete and will likely be in place for a short time-period (weeks).

All discharges will be attenuated to at most greenfield runoff rates unless otherwise agreed with the relevant stakeholder. There will be maintenance of the drainage systems that will ensure the systems remain effective for the life of the English Onshore Scheme.

Disturbance to areas close to watercourses will be reduced to the minimum necessary for the work. A minimum 15 m separation will be maintained from watercourses that are not crossed.

11.3.5.1 Pollution Management

All relevant Code of Construction Practice (CoCP) guidelines will be followed to reduce impacts.

The risk of pollution to the water environment during construction will be reduced through the adoption of good working practice. Although withdrawn in 2015, the Pollution Prevention Guidelines[3] provide environmental good practice guidance. Replacements for certain aspects have subsequently been updated and form the new Guidance for Pollution Prevention[4] and therefore considered in the creation of the Construction Environmental Management Plan (CEMP).

In addition, CIRIA construction guidance also contains details for pollution prevention best practise, specifically CIRIA C532, C648, and C786F[5] and these have also been considered in the creation of the CEMP.

As such, pollution management may include, but not be limited to:

- Erosion and sediment control management procedures;
- Water discharge management;
- Invasive non-native species procedure;
- Emergency incident response procedure;
- Spill kits; and
- High standards of equipment and vehicle hygiene.

[3] Pollution prevention advice and guidance (PPG) Environment Agency, 2014. Available online at: https://webarchive.nationalarchives.gov.uk/20140328090931/http://www.environment-agency.gov.uk/business/topics/pollution/39083.aspx
[4] Available online at https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/guidance-for-pollution-prevention-gpps-full-list/
[5] Available online at https://www.ciria.org/CIRIA/Home/CIRIA/default.aspx?hkey=b9b32704-f151-4cb8-83fc-c9da82a10893

11.4 Baseline

In order to assess the impacts of the proposed works on the water environment, relative to the objectives of the WFD, an assessment of the baseline conditions is required.

The English Onshore Scheme is in proximity to fluvial (river), coastal and canal settings and therefore considers the relevant RBMP. The Humber RBMP covers the South Yorkshire area.

The EA Catchment Data Explorer, Natural England's Magic Maps Application and the Humber RBMP have been used to define the current condition of the relevant water bodies, the objectives in place specific to the relevant water bodies, and any protected areas associated with the water bodies.

Walkover surveys were completed in Summer 2021. These included a geomorphological reconnaissance survey of the watercourses (where accessible) within the study area. The surveys noted key baseline features and pressures including local topography, land drainage and existing infrastructure that informed receptor value. They also noted key features and pressures on watercourses including: riparian vegetation; morphological processes (such as erosion); morphological features (such as deposits); bed substrate; and bank composition.

11.4.1 Surface water bodies

There are 16 surface water bodies designated under the WFD present in the study area:

- Yorkshire South (GB640402491000) – heavily modified coastal water body
- Auburn Beck from Source to North Sea (GB104026066650) – heavily modified river
- Earls Dyke from Source to North Sea (GB104026066640) – artificial river
- Gransmoor Drain (Burton Agnes to Lissett Area) (GB104026066630) – artificial river
- Lowthorpe/Kelk/Foston Bks from Source to Frodingham (GB104026067101) - not designated artificial or heavily modified river
- Nafferton Beck from Source to Driffield Canal (GB104026067090) - heavily modified river
- Driffield Navigation Water Body (GB70410028) – artificial canal
- West Beck Upper (GB104026067080) - heavily modified river
- West Beck Lower to River Hull (GB104026067040) - heavily modified river
- Skerne Beck (GB104026067041) - heavily modified river
- Scurf Dike from Source to River Hull (GB104026067010) – artificial river
- Wellsprings Drain/Eastburn Beck/Driffield Trout Stream (GB104026067031) - not designated artificial or heavily modified river
- Middleton on the Wolds and Watton Beck (GB104026066980) - not designated artificial or heavily modified river
- Foulness from Black Beck to Market Weighton Canal (GB104026066690) - not designated artificial or heavily modified river
- Derwent from Elvington Beck to River Ouse GB104027068311 - heavily modified river
- Ouse from R Wharfe to Upper Humber (GB104027064270) - heavily modified river.

All crossing types are listed in Table 11.4-1.

All WFD classifications and objectives are included in Table 11.4-2.

Table 11.4-1 Crossing Schedule

Waterbody Name	Direct Crossing Type
Yorkshire South	HDD
Auburn Beck from Source to North Sea	HDD and culverted haul road
Earls Dyke from Source to North Sea	No direct crossing
Gransmoor Drain (Burton Agnes to Lissett Area)	HDD and culverted haul road
Lowthorpe/Kelk/Foston Bks from Source to Frodingham	HDD and temporary bridge
Nafferton Beck from Source to Driffield Canal	HDD and temporary bridge
Driffield Navigation Water Body	HDD
West Beck Upper	HDD
West Beck Lower to River Hull	No direct crossing
Skerne Beck	HDD and culverted haul road
Scurf Dike from Source to River Hull	No direct crossing
Wellsprings Drain/Eastburn Beck/Driffield Trout Stream	No direct crossing
Middleton on the Wolds and Watton Beck	No direct crossing
Foulness from Black Beck to Market Weighton Canal	HDD and temporary bridge at both branches
Derwent from Elvington Beck to River Ouse	No direct crossing
Ouse from R Wharfe to Upper Humber	HDD

Table 11.4-2: WFD classification for the surface water bodies affected by the English Onshore Scheme

WFD ID	Water body Name	Overall status (2015)	Current Status (2019)			Elements less than good	Failing Elements	Reasons for not achieving good status	2027 Ecological Objective
			Ecological	Chemical	Overall				
GB640402491000	Yorkshire South	Moderate	Moderate	Fail	Moderate	Mitigation Measure Assessment, PBDE, Benzo(g-h-i)perylene, Mercury and its compounds, Tributyltin compounds	PBDE, Benzo(g-h-i)perylene, Mercury and its compounds, Tributyltin compounds	Physical modification	Good
GB104026066650	Auburn Beck from Source to North Sea	Moderate	Moderate	Fail	Moderate	Invertebrates, Mitigation Measure Assessment, PBDE, Mercury and its compounds	PBDE, Mercury and its compounds	Suspect data	Good
GB104026066640	Earls Dyke from Source to North Sea	Moderate	Moderate	Fail	Moderate	Invertebrates, dissolved oxygen, Mitigation Measure Assessment, PBDE, Mercury and its compounds	PBDE, Mercury and its compounds	Land drainage-operational management (physical modification) Trade/industry discharge (point source) Poor nutrient management (diffuse source) Sewage discharge (point source)	Good
GB104026066630	Gransmoor Drain (Burton Agnes to Lissett Area)	Moderate	Moderate	Fail	Moderate	Fish, phosphate, Mitigation Measure Assessment, PBDE, Mercury and its compounds	PBDE, Mercury and its compounds	Land drainage-operational management (physical modification) Sewage discharge (point source)	Good

WFD ID	Water body Name	Overall status (2015)	Current Status (2019)			Elements less than good	Failing Elements	Reasons for not achieving good status	2027 Ecological Objective
			Ecological	Chemical	Overall				
GB104026067101	Lowthorpe/Kelk/Foston Bks from Source to Frodingham Beck	Poor	Moderate	Fail	Moderate	Fish, PBDE, Mercury and its compounds	PBDE, Mercury and its compounds	Barriers-ecological discontinuity (physical modification) Poor soil management (diffuse source) Land drainage-operational management (physical modification)	Good
GB104026067090	Nafferton Beck from Source to Driffield Canal	Moderate	Moderate	Fail	Moderate	Fish, phosphate, Mitigation Measure Assessment, Cypermethrin (Priority hazardous), PBDE, Mercury and its compounds	Cypermethrin (Priority hazardous), PBDE, Mercury and its compounds	Poor soil management (diffuse source) Physical modification Sewage discharge (point source) Private sewage treatment (point source)	Moderate (only 2015 objective available for ecology)
GB70410028	Driffield Navigation Water Body	Good	Good	Good	Good	N/A	N/A	N/A	Good
GB104026067080	West Beck Upper	Moderate	Moderate	Fail	Moderate	Fish, Macrophytes and Phytobenthos combined, Mitigation Measure Assessment, PBDE, Mercury and its compounds	PBDE, Mercury and its compounds	Land drainage-operational management (physical modification) Trade/industry discharde (point source) Surface water abstraction (flow) Barriers-ecological discontinuity (physical modification) Commercial fin fisheries	Good

WFD ID	Water body Name	Overall status (2015)	Current Status (2019)			Elements less than good	Failing Elements	Reasons for not achieving good status	2027 Ecological Objective
			Ecological	Chemical	Overall				
								(physical modification) Riparian/in-river activities (diffuse source) Physical modification	
GB104026067040	West Beck Lower to River Hull	Moderate	Moderate	Fail	Moderate	Fish, Mitigation Measure Assessment, PBDE, Mercury and its compounds	PBDE, Mercury and its compounds	Physical modification Suspect data	Good (only 2021 objective available for ecology)
GB104026067041	Skerne Beck	Moderate	Moderate	Fail	Moderate	Mitigation Measure Assessment, PBDE, Mercury and its compounds	PBDE, Mercury and its compounds	Physical modification	Good
GB104026067010	Scurf Dike from Source to River Hull	Good	Moderate	Fail	Moderate	Mitigation Measure Assessment, PBDE, Mercury and its compounds	PBDE, Mercury and its compounds	None given	Good (only 2015 objective available for ecology)
GB104026067031	Wellsprings Drain/Eastburn Beck/Driffield Trout Stream	Bad	Moderate	Fail	Moderate	Fish, PBDE, Mercury and its compounds	PBDE, Mercury and its compounds	Land drainage-operational management (physical modification) Barriers-ecological discontinuity (physical modification)	Good

WFD ID	Water body Name	Overall status (2015)	Current Status (2019)			Elements less than good	Failing Elements	Reasons for not achieving good status	2027 Ecological Objective
			Ecological	Chemical	Overall				
GB104026066980	Middleton on the Wolds and Watton Beck	Good	Moderate	Fail	Moderate	Fish, PBDE, Mercury and its compounds	PBDE, Mercury and its compounds	None given	Good (only 2015 objective available for ecology)
GB104026066690	Foulness from Black Beck to Market Weighton Canal	Moderate	Moderate	Fail	Moderate	Macrophytes and Phytobenthos Combined, dissolved oxygen, PBDE, Mercury and its compounds	PBDE, Mercury and its compounds	Septic tanks (diffuse source) Trade/industry discharde (point source) Poor nutrient management (diffuse source)	Good
GB104027068311	Derwent from Elvington Beck to River Ouse.	Moderate	Moderate	Fail	Moderate	Mitigation Measures Assessment, PBDE, Mercury and its compounds	Mitigation Measures Assessment, PBDE, Mercury and its compounds	Physical modification of the water body	Good
GB104027064270	Ouse from R Wharfe to Upper Humber	Moderate	Moderate	Fail	Moderate	Phosphate, Mitigation Measure Assessment, DDT, PBDE, PFOS, Mercury and its compounds	DDT, PBDE, PFOS, Mercury and its compounds	Sewage discharge (point source) Contaminated water body bed sediments (diffuse source)	Good

11.4.1.1 Yorkshire South GB640402491000

Yorkshire South is the main water body designated under the WFD and is a heavily modified coastal water body. The WFD status of this has degraded from good in 2014 to moderate from 2015 to present. This status awarded due to failure of the chemical dependant surface water status as a result of physical modification for coastal protection.

This is characterised by a sandy beach with a gentle slope from Mean High Water into Bridlington Bay. There are no WFD habitats of higher sensitivity within 500 m of the English Onshore Scheme at the Yorkshire South crossing. However, there are two WFD habitats of lower sensitivity, including subtidal soft sediment and intertidal soft sediment which are crossed by the Scheme. The English Onshore Scheme footprint in these locations will constitute less than 1% of their area.

This water body is crossed by both the English Onshore Scheme and Marine Scheme, and it is also located 1 km downstream of the English Onshore Scheme where Auburn Beck is crossed.

11.4.1.2 Auburn Beck from Source to North Sea GB104026066650

Auburn Beck is the main watercourse designated under the WFD and has been heavily modified. The WFD status of this watercourse has degraded from good in 2014 to moderate from 2015 to present, with this status awarded due to failure of the mitigation measures assessment and priority hazardous substances elements. Reasons for this failure are unclear due to suspect data. This watercourse will be crossed by the English Onshore Scheme.

The channel drains a landscape primarily agricultural, with a recent windfarm addition dispersed across the agricultural the fields. The topography is flat, with little elevation change across the catchment. Maximum elevation is approximately 10 m Above Ordnance Datum (AOD) which is within the upstream reaches surrounding Wilsthorpe Sewage Works. The river channel is uniform, with a regular channel width for much of its length. There are few trees, with the majority of the channel unshaded. Riparian vegetation is reeds and grasses on bank sides and bank tops.

Channel planform has few meanders through the landscape, with two large meanders however these are irregular and surround larger agricultural fields. A short section (300 m) of continuous sinuous channel is located close to the confluence with the sea. However, these show signs of physical modification (straightening) around field boundaries with efforts to control any lateral channel movements.

In channel, there are few observable morphological features, and large growth of reeds and grass. Sediments were mostly fine silt materials with some gravels. Bank sides are steep with trapezoidal shape. Channel appears wetted in all seasons, although flow reduced within summer months with over-wide bed contributing to stagnation and weed overgrowth. The channel appears maintained by dredging, and therefore any natural biodiversity produced from the channel geomorphology is lost.

In addition, there are two further channels within the Auburn Beck WFD catchment which are small, minor drains and associated with field/land drainage. There appear to ultimately drain into Auburn Beck, however are not crossed by the English Onshore Scheme. As such, these are of low quality as fluvial processes are limited and heavily influenced by modifications and anthropogenic processes.

11.4.1.3 Earls Dyke from Source to North Sea GB104026066640

Earls Dyke is the main watercourse designated under the WFD and is classified as artificial river. It has remained at a constant moderate ecological status, and has not achieved good status due to a failure of the priority hazardous substances, invertebrates and dissolved oxygen elements. Reasons for not achieving a good status include point source pollution from sewage and industrial discharge, diffuse source pollution from agriculture as a result of poor nutrient management, and physical modifications for agricultural land drainage operations. The English Onshore Scheme crosses this watercourse within its headwaters which is 670 m upstream of the WFD designated reach.

Earls Dyke drains a catchment that is predominantly flat, with slight hills at the northern extreme end of the drainage catchment at Wold Gate. A Roman Road forms the border of the northern extent of the catchment.

The landscape is open agricultural fields, with some demarcation with hedgerows. There are few wooded areas, with small parcels located in the west at Harpham. The catchment is therefore rural, however with a medium sized industrial estate (Carnaby Industrial Estate).

Channel planform is somewhat sinuous but shows no regularity. Channel shape is trapezoidal with steep bank sides and wide flat bed. As such, there are few geomorphological features present. Where they are present, these are mobile, showing signs of instability of accumulated silts, clean gravels and few vegetated deposits. More diverse morphology was observed where the channel is lined with trees, as bank slip and erosion has lead to slight diversions of flow around these features resulting in meandering. The channel is largely grassed, with little variability in riparian species. Fluvial process are therefore highly influenced by the artificial channel and management.

Carr Dike is a major tributary of Earls Dyke, which confluences downstream of the English Onshore Scheme at Fraisthorpe. This channel is modified, acting as field drainage and also running alongside the A165. This channel will be crossed by the English Onshore Scheme within its upstream reaches close to the A165. In addition, there are a further six channels within the catchment area, which are small, minor drains and associated with field/land drainage. Fluvial processes and active features are therefore limited.

11.4.1.4 Gransmoor Drain (Burton Agnes to Lissett Area) GB104026066630

Gransmoor Drain is the main watercourse designated under the WFD and is classified as artificial river. The WFD status of this watercourse has degraded from overall good status in 2013 to moderate from 2014 to present. Failure to achieve good ecological status is due to failure of fish, phosphate, mitigation measures assessment, and priority hazardous substances. Reasons for failure are attributed to diffuse source pollution from poor agricultural soil management, point source pollution from sewage discharge and physical modification of the water body for agricultural land drainage.

This watercourse will be crossed by the English Onshore Scheme south of Gransmoor Quarry. Although designated under WFD, this waterbody is managed by the Beverley and North Holderness IDB.

The catchment is flat overall, with minimal topographic highs at 10 mAOD. Landscape is predominantly agricultural with several extractive industries quarrying for chalks, sands and gravels. In addition, there is a wind farm at the southern extent. Several large artificial ponds are located along the river corridor which are associated with the quarries for draining and as sediment settling systems.

Gransmoor Drain is artificial channel, modified for land drainage purposes. In-channel are some observable morphological features. Sediments were mostly fine silt materials with some gravels and large reed/weed growth resulting in stagnating sections. Bank sides are steep with a trapezoidal shape and signs of bank slip leading to unstable eroding and depositing berm and side bar features. Channel appears wetted in all seasons, although flow reduced within summer months with over-wide bed contributing to stagnation and weed overgrowth. The channel appears maintained by dredging, and therefore any natural biodiversity produced from the channel geomorphology is lost. Fluvial processes are therefore highly influenced by the channel modifications and surrounding anthropogenic pressures.

Burton Drain is the major tributary of Gransmoor Drain, which is located within the far east of the drainage catchment. This waterbody is managed by the Beverley and North Holderness IDB and will be crossed by the English Onshore Scheme north of Gransmoor. This is a heavily modified channel managed for land drainage with limited fluvial processes.

In addition, there are 11 further small channels within the Gransmoor Drain catchment, which are small, minor drains and associated with field/land drainage. Fluvial processes are limited and vulnerable to changes within the vicinity of the channels. Variety of morphological features is limited and active features rare. Five of these channels will be crossed by the English Onshore Scheme.

11.4.1.5 Lowthorpe/Kelk/Foston Bks from Source to Frodingham Beck GB104026067101

Lowthrope, Kelk and Foston Becks are one singular watercourse. The upstream reach is Lowthorpe, central reach is Kelk Beck and downstream reach is Foston Beck which ultimately confluences with West Beck (River Hull). This watercourse forms part of the River Hull Headwaters Site of Special Scientific Interest (SSSI) and is a Chalk Stream.

The watercourse is not designated as artificial or heavily modified with a current WFD ecological status of moderate. This watercourse has shown improvement in ecological quality status as this was previously poor status. Failure to achieve good status is due to failure of fish, hydrological regime, and priority hazardous substance elements. Reasons for failure are attributed to physical modification for land drainage and barriers causing ecological discontinuity. In addition, diffuse source pollution from poor soil management from agriculture and land management.

This will be is crossed by the English Onshore Scheme south of Lowthorpe on the Kelk Beck central reach.

The landscape topography is flat within its central and southern areas surrounding the main channel. Within the upper northern region of the drainage catchment, there is the high point Nafferton Wold although there a few channels.

The landscape is predominantly rural agricultural with dispersed villages and disused quarries. There are wooded areas primarily surrounding Kelk Beck river corridor. The river channel itself is a mixture been shaded and open. The open sections show historic signs of channel modifications to straighten the channel along agricultural field boundaries or constrain through road bridge crossings. Elsewhere, the channel planform exhibits a regular meandering pattern through the landscape. In channel bed deposits of varied gravel, sand and silt sediments form a variety of morphological features. Berms, riffles and bars show stability, and are well vegetated, with sediment flux in equilibrium. Vegetation is varied within the bed, channel banks and bank tops. As a result of channel morphology, flows are also varied.

Nafferton Drain is located within this drainage catchment, which is also classified as Main River. This watercourse will also be crossed by the English Onshore Scheme. Nafferton Drain is indirectly connected with Kelk Beck by small transfer drainage channels. It is an artificially straightened channel with no obvious morphological features or ongoing processes due to this state.

White Dike, White Dike Branch and Warren Hill Drain will also be crossed by the English Onshore Scheme to the west of Kelk Beck. These are within the drainage catchment of Kelk Beck and are indirectly connected to Kelk Beck by small transfer drainage channels. These are all managed by the Beverley and North Holderness IDB for land drainage purposes. As such fluvial processes are limited and vulnerable to changes within the vicinity of the channels and in response to management practises.

In addition, there are 10 further small channels within the drainage catchment, which are small, minor drains and associated with field/land drainage. Fluvial processes are therefore limited. Six of these channels will be crossed by the English Onshore Scheme.

11.4.1.6 Nafferton Beck from Source to Driffield Canal GB104026067090

Nafferton Beck is the main watercourse designated under the WFD and is classified as heavily modified river. The WFD status of this watercourse has remained at a stable state of moderate since 2013. Failure to achieve good ecological status is due to failure of fish, phosphate, mitigation measures assessment, and priority hazardous substance elements. Reasons for failure are attributed to diffuse source pollution from poor agricultural soil management, point source pollution from sewage discharge and physical modification for land drainage and barriers causing ecological discontinuity.

This watercourse will be crossed by the English Onshore Scheme north of Wansford.

Nafferton Beck drains a small catchment area, with a mixture of land use between urban and surrounding flat agricultural land. The channel is mostly open, with short sections tree lined ultimately draining into Driffield canal. The channel is a regular uniform trapezoidal shaped channel, over-wide and deepened. There are some locations with morphological features, but variety is limited to sections of narrower channel within the tree lined sections. Fluvial processes are influenced by the surrounding anthropogenic pressures. Despite lack of overall dynamicity, Nafferton Beck is classified as a chalk stream.

In addition, there are seven further channels within the Nafferton Beck WFD catchment which are small, minor drains and associated with field/land drainage. These appear to ultimately drain into Nafferton

Beck, however are not crossed by the English Onshore Scheme. As such, these are of low quality as fluvial processes are limited and heavily influenced by modifications and anthropogenic processes.

11.4.1.7 Driffield Navigation Water Body GB70410028

Driffield Canal is the main watercourse designated under the WFD and is classified as artificial canal. The WFD status of this watercourse has remained at good ecological status since 2015. Deteriorating elements are priority hazardous substances of which this deterioration is not attributed to any particular source or activity within the catchment. No hydromorphological elements are assessed.

As a canal, the channel contains no natural fluvial processes nor morphological features. Regular maintenance clears any sediment accumulations or weed growth. This water feature is therefore of hydrological importance to navigation recreation, and amenity.

11.4.1.8 West Beck Upper GB104026067080

West Beck (River Hull) and Wanlass Drain are the main watercourses designated under the WFD and classified as heavily modified. The WFD status of this watercourse has remained at a stable state of moderate since 2013. Failure to achieve good ecological status is due to failure of fish, macrophytes and phytobenthos, mitigation measures assessment, hydrological regime, and priority hazardous substances. Reasons for failure are attributed to diffuse source pollution from bank side erosion from agricultural/rural land management, point source pollution from industry discharge, physical modification for land drainage and barriers causing ecological discontinuity, and flow from over abstraction. The channels will be crossed by the English Onshore Scheme west of Wansford.

West Beck (River Hull) forms part of the River Hull Headwaters SSSI and is a Chalk Stream.

The catchment topography is varied. In the northern areas above Driffield, topography consists of Towfield Wold and Driffield Wold high points up to 120 mAOD. The lower catchments, where the main channels are located are flatter with maximums of 20 mAOD. West Beck (River Hull) sits within a narrow corridor constrained by the road network to the north. However lateral movement within the corridor can occur with evidence of past movement recorded in historic maps over the last 120 years.

The landscape is predominantly agricultural with dispersed villages and a vast road network. There are few wooded areas, with trees primarily lining river channel. The river channel itself is a mixture between shaded and open channel. The open sections show historic signs of channel modifications to straighten the channel along agricultural field boundaries or constrain through road bridge crossings and around Driffield Trout Farm and within Driffield Town. Elsewhere, the channel planform exhibits a regular meandering pattern through the landscape. In channel bed deposits of varied gravel, sand and silt sediments form a variety of morphological features. Berms, riffles and bars show stability, and are well vegetated, with sediment flux in equilibrium at the observed reach at Wansford. Vegetation is varied within the bed, channel banks and bank tops. As a result of channel morphology, flows are also varied.

Wanlass Drain flows adjacent to West Beck (River Hull) 15 m to the south. Wanlass Drain is not directly connected with West Beck, but it shares the same floodplain and therefore water will transfer between during overbank flows in either channel. The channel is highly modified and lacks natural features throughout. This drain is managed by the Beverley and North Holderness IDB for land drainage purposes. As such, fluvial processes are limited and vulnerable to changes within the vicinity of the channels and in response to management practises.

In addition, there are three further small channels within the drainage catchment, which are small, minor drains and associated with field/land drainage that ultimately confluence with West Beck or Wanlass Drain. Fluvial processes are therefore limited. Two of these channels will be crossed by the English Onshore Scheme.

11.4.1.9 West Beck Lower to River Hull GB104026067040

West Beck (River Hull) is the main watercourse designated under the WFD and is classified as heavily modified river. The WFD status of this watercourse is moderate ecological status, a recent deterioration from good classification. Deteriorating elements are fish and priority hazardous substances. Reasons for failure are attributed to diffuse source pollution from agricultural land management practises and physical modification for land drainage and barriers causing ecological discontinuity.

This section of the West Beck (River Hull) is not crossed by the English Onshore Scheme, and is located over 2 km downstream. Therefore potential effects are limited and this waterbody has been screened out of the assessment.

11.4.1.10 Skerne Beck GB104026067041

Skerne Beck (alternatively named Northfield Beck) is the main watercourse designated under the WFD and is classified as heavily modified river. The WFD status of this watercourse is moderate ecological status, a recent deterioration from good classification. Deteriorating element is priority hazardous substances, of which this deterioration is not attributed to any particular source or activity within the catchment. Skerne Beck will be crossed by the English Onshore Scheme north of Hutton.

Topography of the catchment shows only minor changes, sloping from highs of 30 mAOD in the west towards the east. The catchment is predominantly rural agricultural, with few woodlands including a small plantation.

Channel planform shows some natural features with obvious meandering although significant reaches are straightened around agricultural land. The channel is open, with few interspersed trees.

Channel has been deepened in the past, likely worsened by dredging management. Banks are overly steepened slopes as part of an over-widened trapezoidal shape. This includes grassed banks with some variety of macrophytes in channel. Where the banks have slipped, this has provided flow diversity around the slump. As such, sections have become more stabilised and vegetated while others are eroded. Bed sediments are predominantly silts with some sands and fine gravels accumulated in narrower slumped sections.

Overall, the banks are under continual scour pressure due to shape and slope. Long profile/bed slope is also flat with little observable drop within the surveyed section at Hutton. The channel suffers stagnation and reed overgrowth, particularly in widened sections as flows are minimal. Fluvial processes are therefore highly influenced by the channel modifications and surrounding anthropogenic pressures.

Knorka Dike is a major tributary of Skerne Beck, and will be crossed by the English Onshore Scheme 400 m upstream of the confluence with Skerne Beck. This channel is managed by the Beverley and North Holderness IDB This is a heavily modified channel managed for land drainage with limited fluvial processes.

In addition, there are 18 further small channels within the Skerne Beck catchment, which are small, minor drains and associated with field/land drainage. Fluvial processes are limited and vulnerable to changes within the vicinity of the channels. Variety of morphological features is limited and active features rare. Five of these channels will be crossed by the English Onshore Scheme.

11.4.1.11 Scurf Dike from Source to River Hull GB104026067010

Scurf Dike is the main designated watercourse and is located 1.8 km south from the English Onshore Scheme. In addition, there are also several minor channels within 2 km of the English Onshore Scheme which are all minor land drainage ditches and minor tributaries of Scurf Dike. These watercourses are outside of the direct hydrological catchment connected with the English Onshore Scheme. Therefore, no potential effects are anticipated and has therefore been screened out of this assessment.

11.4.1.12 Wellsprings Drain/Eastburn Beck/Driffield Trout Stream GB104026067031

This water body is split into three main channels, which all drain in an easterly direction and confluence with West Beck. Wellsprings Drain is located 840 m north of the English Onshore Scheme, Driffield Trout Stream is located 1.7 km north, and Eastburn Beck is not within the study area. In addition, there are also several minor channels within 2 km of the English Onshore Scheme which are all minor tributaries of Wellsprings Drain. These watercourses are outside of the direct hydrological catchment connected with the English Onshore Scheme. Therefore, no potential effects are anticipated and has therefore been screened out of this assessment.

11.4.1.13 Middleton on the Wolds and Watton Beck GB104026066980

Middleton on the Wolds is the main watercourse and is located 550 m south east of the English Onshore Scheme. In addition, there are also several minor channels within 2 km of the English Onshore Scheme which are all minor tributaries of Middleton on the Wolds. The English Onshore Scheme crosses within the catchment, but upstream of any watercourses associated with the Middleton on the Wolds or Watton Beck channels.

The channel is not designated artificial or heavily modified, and at moderate ecological status in 2019. Failure is due to fish and Priority hazardous substances elements. Reasons for failure are attributed to diffuse source pollution from poor agricultural soil management, point source pollution from sewage discharge and physical modification resulting in barriers causing ecological discontinuity.

The catchment drains a large area of predominantly agricultural land, with several small villages and main A roads. There are several relic and active chalk mining pits within the catchment and some small woodland areas that surround the villages. The catchment drains the eastern facing slope of Middleton Wold. The main channel is modified within its upstream reaches surrounding agricultural fields, but further downstream through Kilnwick becomes more natural with varied meanders and depositional berms and bars features.

11.4.1.14 Foulness from Black Beck to Market Weighton Canal GB104026066690

The River Foulness and Back Delfin/Market Weighton Canal are the two main watercourses designated under the WFD. The water body is also not designated as heavily modified or artificial. The water body has been classified as moderate ecological status since 2013. Failure to achieve good status is due to macrophytes and phytobenthos, dissolved oxygen and priority hazardous substances. Reasons for failure are attributed to diffuse pollution from poor nutrient management on surrounding agricultural land and septic tanks, and also point source pollution from trade discharges.

This water body drains a large catchment which covers large urban areas and many small villages dispersed between agricultural land. In addition, there is also a large main road and motorway network throughout. The topography is predominantly a flat landscape with only small rises in the northern reaches of the catchment. There are significant pressures from industrial and general public pollution from the towns and transport network.

Back Delfin/Market Weighton Canal is a modified, straightened channel, crossed by the English Onshore Scheme. The channel is predominantly open, with few trees. Flow was poor with many large sections of stagnation resulting in grasses and reed overgrowth within channel. Small flow paths can be carved through the vegetation in some reaches downstream of Sand Lane, exposing fine gravels and sand bed sediments. Overall the channel is predominantly a depositing reach surrounding the English Onshore Scheme.

River Foulness was open, lacking trees surrounding the watercourse. Some trees had recently been felled leaving exposed bank top soils. In channel, there are few observable morphological features, and large growth of reeds and grass. Sediments were mostly fine silt materials with some gravels. Bank sides are steep with trapezoidal shape. Channel appears wetted in all seasons, although flow reduced within summer months with over-wide bed contributing to stagnation and weed overgrowth. The channel appears maintained by dredging, and therefore any natural biodiversity produced from the channel geomorphology is lost. This channel is managed by the Ouse and Humber IDB.

Bowman Drain, Bishopsoil Drain/Carr Drain, Beils Beck, Egremont Drain, Holme Main Drain, Dunn's Drain and Feathered Drain are major tributaries within the Foulness catchment and are managed by the Ouse and Humber IDB. These are heavily modified channel managed for land drainage with limited fluvial processes.

In addition, there are numerous further small channels within the Foulness catchment, which are small, minor drains and associated with field/land drainage. Fluvial processes are limited and vulnerable to changes within the vicinity of the channels. Variety of morphological features are limited and active features rare. Five of these channels will be crossed by the English Onshore Scheme.

11.4.1.15 Derwent from Elvington Beck to River Ouse GB104027068311

The River Derwent is the main designated watercourse and is located 1.4km northwest of the English Onshore Scheme. It is designated as heavily modified river, and classified as moderate ecological status since 2013. Failure to achieve good status is due to mitigation measures assessment and priority hazardous substances elements. Reasons for failure are attributed to physical modification of the water body.

There are three minor channels which drain north towards the River Derwent and will all be crossed by the English Onshore Scheme. These are Asselby Marsh drain, Asselby Marsh Lane drain and New Drain which are maintained by the Ouse and Humber IDB. Their outfalls are all located at pumping stations. Fluvial processes and active features are therefore limited by the managed flow regime. No observation morphological features were observed, however there were heavy silt inputs from adjacent agricultural land run off. Channel was large and trapezoidal, with limited visible flows.

11.4.1.16 Ouse from R Wharfe to Upper Humber GB104027064270

The River Ouse is the main watercourse designated under the WFD. It is also designated as heavily modified river and has been classified as moderate ecological status since 2013. Failure to achieve good status is due to phosphate, mitigation measures assessment, priority hazardous substances and other pollutants. Reasons for failure are attributed to diffuse pollution from poor nutrient management on surrounding agricultural land, contaminated water body bed sediments from agricultural and industrial uses and point source pollution from sewage discharge. The water body is not assessed for specific ecological elements.

The River Ouse catchment is large, containing large towns, villages and industrial units including Drax Power Station. Surrounding these is agricultural land. The landscape is managed for land drainage with a dense network of channels.

The River Ouse channel is approximately 100 m wide with large flood embankments to both side of the channel. It has been heavily modified for flood protection, disconnecting the floodplain in all but the largest flood events. Meander bends are present, but are engineered to prevent lateral movement across the floodplain. There are few observable in-channel morphological features present, and these are influenced by the constrained channel.

Lowfields Drain, Seave Carr, Bank Field Lane Drain, Willow Row Drain, Fields Drain, Black Tom Drain, Back Lane Drain and several unnamed drains all confluence with the River Ouse. These outfall at pumping stations, however the majority are gravity led. These are all managed and maintained by the Ouse and Humber IDB and Selby IDB. These are heavily modified channel managed for land drainage with limited fluvial processes. Seven of these channels will be crossed by the English Onshore Scheme.

In addition, there are 14 further small channels within the River Ouse catchment, which are small, minor drains and associated with field/land drainage. Fluvial processes are limited and vulnerable to changes within the vicinity of the channels. Variety of morphological features is limited and active features rare. Four of these channels will also be crossed by the English Onshore Scheme.

11.4.2 Protected Areas

As part of this assessment information has been gathered from the EA and Natural England. These both provide online maps and data downloads which present the best available information on the protected sites across the UK. Using the online maps, a search was carried out for statutory ecological designations within the 2 km study area.

Section 1

- ***Fraisthorpe Bathing Waters*** (located approximately 230 m east of the landfall and crossed by both the English Onshore Scheme and Marine Scheme). This is a rural sandy beach and its bathing water quality is affected by storm, emergency and surface water outfalls flowing from Auburn Beck.
- ***Earls Dyke from Source to North Sea Nitrate Vulnerable Zone (NVZ) S825*** (will be crossed by the English Onshore Scheme). The designation covers the entire Earls Dyke from Source to North

Sea surface water body catchment area. The entire catchment is considered to be affected by pollution. The water body is primarily groundwater fed, however the main source of pollution is considered to be from arable agricultural runoff.

- ***Barmston Sea Drain from Skipsea Drain to North Sea NVZ S259*** (will be crossed by the English Onshore Scheme). This designation covers Gransmoor Drain (Burton Agnes to Lissett Area) WFD surface water body plus additional downstream WFD surface water catchments. The water quality in this area is considered to be improving, however it is still not to standard. Nitrogen pollution is seasonal, and thus attributed mainly to arable agriculture pollution sources although some point source (consented) discharges are contributing to the poor water quality. The surface water body considered to be affected by the pollution from the NVZ area is approximately 5 km downstream of the English Onshore Scheme and therefore it is considered there would be limited hydraulic interaction between the two.
- ***River Hull from Arram Beck to Humber NVZ S254*** (will be crossed by the English Onshore Scheme). This designation covers the entire Upper Hull Operational Catchment and the northern section of the Lower Hull Operational Catchment. Sources of pollution are split between consented discharges and agriculture. The designated surface water body affected by pollution from this NVZ catchment is the Beverley and Barmston Drain which is approximately 7 km downstream of the English Onshore Scheme and therefore it is considered there would be limited hydraulic interaction between the two.
- ***River Hull Headwaters SSSI*** (will be crossed by the English Onshore Scheme in three locations). This is the most northerly chalk stream system in Britain. Surface geology influences the character of the river with gravel, sand and silt sediments deposited on the riverbed in varying proportions. This variation in the riverbed sediments is reflected in the species composition of the aquatic vegetation which is abundant throughout the headwaters during the summer. The river valley also supports a diverse breeding bird community. Kelk Beck and West Beck (River Hull) are part of this designation.
- ***Nafferton Beck Kelk Beck and West Beck (River Hull) Chalk Streams*** (all will be crossed by the English Onshore Scheme). The bedrock underlying the chalk streams comprises the Flamborough Chalk Formation, which provides a high level of water feeding into the chalk streams. As such, the water received from this groundwater aquifer is of high quality. These chalk streams have characteristic features that support special habitats or species which are therefore dependent on this quality. Kelk Beck and West Beck (River Hull) are also designated individually as SSSI (River Hull Headwaters SSSI) on this basis.

Section 2

- ***Market Weighton Canal/Bk from Source to Humber NVZ S250*** (will be crossed by the English Onshore Scheme). This designation falls within the Foulness Operational Catchment. Sources of pollution are split between consented discharges, agriculture, and losses from woodland and urban areas with the majority produced by agricultural runoff. The designated surface water body affected by pollution from this NVZ catchment is the eastern branch of the Foulness from Black Beck to Market Weighton Canal which will be crossed by the English Onshore Scheme at Back Delfin south of Market Weighton.

Section 3

- ***Barn Hill Meadows SSSI*** (850 m south east of the English Onshore Scheme): An ancient hay meadow characterised as a species rich lowland neutral grassland with damp areas associated with the Old Derwent floodplain. Barn Hill Meadows SSSI is located approximately 850 m south east of Section 3 of the English Onshore Scheme, and approximately 1 km downstream of the crossing point with Black Dyke. It is not located within a catchment area for a WFD water body.
- ***River Derwent SAC and SSSI*** (1.4 km north of the English Onshore Scheme): This lowland section of river from mouth to the confluence with the River Ouse supports diverse communities of aquatic flora and fauna, many elements of which are nationally significant. Although not directly crossed, the River Derwent SSSI is located approximately 1.3 km north of Section 3 of the English Onshore Scheme via land and 1.7 km downstream from crossing points on the Asselby Marsh Drain and New Drain. This SSSI is also located within the WFD water body Derwent from Elvington Beck to River Ouse (GB104027068311).

- ***South Cliffe Common SSSI*** (1.2 km south of the English Onshore Scheme): A mixture of heathland and wet acidic grassland. It is important as a remnant of once much more widespread habitats, now substantially reduced by agricultural improvement and conifer planting. It forms one of only six extensive heathlands developed on sand remaining in Humberside. There are several small drains which run through the site. In addition, it is located within the upstream reaches of WFD water body Foulness from Black Beck to Market Weighton Canal (GB1040266690). South Cliffe SSSI is located approximately 1.3 km south from Section 3 of the English Onshore Scheme via land, however only indirectly connected by the drainage channels which confluence with the Market Weighton Canal 1.7 km downstream of the crossing point with the English Onshore Scheme. Therefore, impacts are limited by the natural drainage regime of the catchment.
- ***Foulness from Black Beck to Market Weighton Canal NVZ S249*** (will be crossed by the English Onshore Scheme). This designation falls within the Foulness Operational Catchment. Sources of pollution are considered to be split between consented discharges, agriculture, domestic properties and losses from woodland and urban areas. The designated surface water body affected by pollution from this NVZ catchment is the western branch of the Foulness from Black Beck to Market Weighton Canal (GB104026066690) WFD water body which will be crossed by Section 3 of the English Onshore Scheme at the River Foulness.

Section 4

- ***Aire from River Calder to River Ouse NVZ S274*** (located approximately 0.9 km south of the English Onshore Scheme). This designation covers the entire Aire from River Calder to River Ouse WFD water body catchment. Sources of pollution are considered to be primarily from consented discharges with some agricultural input. This catchment is outside of any connected hydrological catchment with the English Onshore Scheme.

11.5 Screening

In this section, the scheme components (described in Section 11.3) and the water body baseline information (described in Section 11.4) are used to assess which scheme components and surface water bodies are to be taken forward for the WFD Compliance Assessment.

Watercourses identified as high status or with a high morphological element condition are automatically screened in to the WFD Compliance Assessment, except in cases where the scheme component is replacing like for like, or there are no anticipated impacts.

Table 11.5 sets out the scheme components, a high-level description of the potential impacts from each scheme component, and the screening outcome.

Table 11.5- 1Screening of scheme components

Scheme Component	Affected Water Bodies	Screening Outcome	Justification / Potential Impact if Relevant
Cable crossing under the riverbed	All watercourses within the vicinity of the alignment	Out	Depth between hard channel bed level and top of trench/cable bore is to be agreed with relevant regulatory stakeholders (EA/IDB/LLFA) and will therefore avoid any potential for obstruction to flow.
Cable crossing through cliffs at coast	Yorkshire South	Out	Trenchless installation (likely to be HDD) has been committed by the Project beneath the headland and out to a breakout location within the nearshore marine environment thereby avoiding the Yorkshire South water body. This therefore avoids cable exposure, potential for future damage and any ongoing coastal erosion processes.
Temporary coffer dam	WFD water bodies: • Auburn Beck • Nafferton Beck • Driffield Canal • Back Delfin/Market Weighton Canal • River Ouse Numerous ordinary watercourses and minor drains	Out	Temporary structure to dam off a part of the channel only. The whole structure is removed once the works are complete.
Temporary flow diversion (over-pumping)	All ordinary watercourses within headwaters of a WFD water body catchment. No WFD water bodies will be directly obstructed.	In	Obstruct fish and eel passage; alter flow regime and limit natural sediment transport.
Temporary bridge	Kelk Beck Nafferton Beck Back Delfin/Market Weighton Canal River Foulness	In	Long term temporary placement (5yr), including over a protected area and chalk streams (Kelk Beck and Nafferton Beck).

Scheme Component	Affected Water Bodies	Screening Outcome	Justification / Potential Impact if Relevant
Culvert	WFD water bodies: • Auburn Beck • Gransmoor Drain • Skerne Beck	In	Long term temporary structure. Increased shading; loss of existing channel; changes to hydromorphological regime; hard banks and bed.
Culvert	Numerous ordinary watercourses and minor drains (channels not designated for WFD but part of headwater drainage catchments).	In	Long term temporary structure in headwaters that may remove fish spawning habitat. However, no physical works are proposed in or near water bodies at WFD high status or with high status morphology.
Surface water abstraction	All surface water bodies (no confirmed abstractions nor associated watercourse identified at time of writing).	Out	The abstraction will not exceed 28 days duration and there will be no physical works within, or alterations to, a water course as part of the abstraction. This will be below the Environmental Flow Indicator levels in accordance with the relevant Catchment Abstraction Management Strategy.
Outfall	WFD water bodies: • Auburn Beck • Nafferton Beck • Driffield Canal • Back Delfin/Market Weighton Canal • River Ouse Numerous ordinary watercourses and minor drains	Out	Small outfall pipes (<300 mm) below screening threshold. In addition, design principles will limit any impacts to hydromorphology.
Entire scheme – runoff	All watercourses, coastal waters and protected areas t	Out	Potential increase in fine sediment, contaminant and pollutant inputs are attenuated as part of the surface water drainage strategy for the scheme thereby eliminating impacts.

11.6 Scoping

11.6.1 Elements to be Assessed

The assessment of the English Onshore Scheme and its design will be conducted for various WFD elements that are relevant to those that provide the 2015/2019 WFD classification for the water bodies that were screened into the assessment.

11.6.1.1 Ecological status (potential) elements

The ecological elements considered in this assessment include: Fish; Invertebrates; Macrophytes; and Phytobenthos.

Supporting elements are also assessed in the report, including: standard water quality (physchem) parameters; and hydromorphology including: hydrological regime; and morphology.

11.6.1.2 Chemical status elements

Chemical status (for priority and priority hazardous substances) is not considered to be a long-term risk for the English Onshore Scheme as there are no changes to the quality of water being abstracted or discharged that would arise from the English Onshore Scheme. This element is scoped out as the potential risk of contaminant release during the construction phase is to be managed throughout to ensure all discharges are attenuated.

11.7 WFD Assessment

11.7.1 WFD Assessment

The purpose of the assessment is to ensure that the works are compliant with the WFD. The following section considers the proposed works as set out in Section 11.3.

The surface water assessment is provided in Section 11.7.2. The assessment includes: (i) a description of the potential impacts from each scheme component on WFD elements and receptors in the absence of mitigation; (ii) proposed mitigation measures; and (iii) an indication of whether the WFD objectives (as stated in Section 11.1.5) are met by the scheme, including with the application of mitigation measures.

11.7.2 Surface Water Assessment

The design elements are outlined in Section 11.3. The following components of the scheme have been screened in to the WFD assessment for impacts on surface water bodies. Table 11.7.1 presents this assessment.

- Element 1: Temporary flow diversion (over-pumping)
- Element 2: Temporary bridge
- Element 3: Culvert crossing

Table 11.7- 1 WFD classification for the surface water bodies affected by the English Onshore Scheme

Key Impact and WFD Element Affected	Potential Impacts of the Element without Mitigation	Proposed Mitigation Measures	Risk of Deterioration or Prevention to meet Objectives?	Risk of Deterioration to Other Water bodies?
Element 1: Temporary flow diversion (over-pumping) Key water bodies affected: All ordinary watercourses within headwaters/drainage catchment of a WFD water body				
Ecology Fish Invertebrates Macrophytes & Phytobenthos	Open cut and ducting techniques will require the watercourse to be temporarily dammed for approximately 10 days, and flow diverted by over-pumping around the working area. This will obstruct fish and eel passage for the duration of the works and lead to a temporary loss of spawning habitat. Although these works will not be undertaken directly on any water bodies designated under the WFD, these will be undertaken on headwater or feeder channels. In particular, White Dyke and White Dyke branch which are known to contain fish, and form part of the headwater channel network associated with Kelk Beck and the River Hull.	Although minor, impacts would be mitigated by general measures embedded within the design and good construction practises (including but not limited to): • Using eel/fish friendly pumps • Flow over-pumped at sufficient volume/rate to ensure no upstream hydrological regime changes • Downstream outflow is located to avoid causing erosion of riffle features	No, impacts are short term and normal conditions naturally recover once works are complete.	No, due to design mitigation which ensures impacts are temporary.
Physchem Ammonia Dissolved oxygen pH Phosphate Temperature	These works are not expected to have any long-term impact on any of the physico-chemical elements.			
Hydromorphology Hydrological regime Morphology	Over-pumping will alter the flow regime and limit natural sediment transport for the duration of the works and may lead to depletion of coarse sediments downstream and aggradation upstream. However,			

Key Impact and WFD Element Affected	Potential Impacts of the Element without Mitigation	Proposed Mitigation Measures	Risk of Deterioration or Prevention to meet Objectives?	Risk of Deterioration to Other Water bodies?
	as this is temporary for approximately 10 days, this is expected to be very minor as many of these channels observed had few larger sediments or morphological features present. Those channels with greater morphological diversity (White Dyke) impact will be greater, although minor as this will be a short term duration and will recover once the obstruction is removed. The outflow of the pumps has potential to create patches of scour where flow rates are larger. However, this can be mitigated by thoughtful placement within the river channel to avoid any present morphological features or spawning habitats.			
Element 2: Temporary bridge Key water bodies affected: Kelk Beck, Nafferton Beck, Back Delfin/Market Weighton Canal, River Foulness				
Ecology Fish Invertebrates Macrophytes & Phytobenthos	There is potential for disturbance to channel bed and bank, loss of riparian and marginal vegetation resulting in loss of invertebrate and fish spawning habitat. However, the design of the bridge is such that it will be clear span without bed or bank reinforcement. Temporary bridges were selected over culvert installations so as to avoid any in-channel impacts. Any loss of vegetation on banks will be minimal as placement will be considered to avoid losses within the limit of deviation, in	Primarily mitigation is embedded within the design: Temporary bridges will be clear span, with no bed or bank reinforcements, and foundations set well back from the bank edge. The soffits will be >0.6m higher than bank tops with no change to surrounding ground level profiles surrounding the crossing. They will be sited to avoid tree/root loss (where possible) and cross at straight reaches, perpendicular to flow.	No, as impacts are negligible due to design mitigation.	No, due to design mitigation.

Key Impact and WFD Element Affected	Potential Impacts of the Element without Mitigation	Proposed Mitigation Measures	Risk of Deterioration or Prevention to meet Objectives?	Risk of Deterioration to Other Water bodies?
	particular bridges will avoid tree loss. In addition, there is potential for shading due to the span of the bridge structure across the channels. Kelk Beck and Nafferton Beck are chalk streams and therefore support fish and invertebrate species. By design, the bridge structures are narrow and sat above bank tops therefore any shading will be minimal and move throughout the day and unlikely to lead to any change.	Any loss of vegetation will be replaced with similar, suitable species native to the area. Maintenance of passage on the bank beneath the bridge structures will mitigate any shading impacts and allow for passage of mammals and continuity of vegetation.		
Physchem Ammonia Biological Oxygen Demand Dissolved oxygen pH Phosphate Temperature	These works are not expected to have any long-term impact on any of the physico-chemical elements.			
Hydromorphology Hydrological regime Morphology	The bridge structures have potential to create a narrowing or constriction of flows during flood or high flows. Their final designs are to be developed later, however will include measures to reduce or eliminate these impacts including clear-span, with soffit above surrounding bank levels. Loss of morphological features is avoided by design by avoiding in-channel supports. Addition of the bridge structure in a location suffering from scour will force additional load onto banks which has the potential to exacerbate destabilisation and			

Key Impact and WFD Element Affected	Potential Impacts of the Element without Mitigation	Proposed Mitigation Measures	Risk of Deterioration or Prevention to meet Objectives?	Risk of Deterioration to Other Water bodies?
	bank collapse. Equally, locating the structure on a meander bend may lead to flows directed towards the supports. This may exacerbate fine sediment delivery in the short term into the channel as banks may be destabilised leading to bed structure and substrate changes locally from smothering of bed and morphological features downstream. The precise location for bridge crossings are to be determined later, and will be situated to avoid areas of scour and be perpendicular to flow thereby avoiding impacts.			
Element 3: Culvert crossing Key water bodies affected: WFD water bodies Auburn Beck, Gransmoor Drain and Skerne Beck; Ordinary watercourses and minor drains within headwaters of WFD water body				
Ecology Fish Invertebrates Macrophytes & Phytobenthos	The addition of culvert and hard banks will result in the direct loss of habitat within the bed and banks due to loss of natural substrate, and also prevent natural recolonisation while the structure is in place. This will also result in loss of fish spawning habitats and therefore impacts may also be at downstream WFD water bodies as a result of this loss. However, this bed and bank loss is localised, and the channel bed of all crossed WFD watercourses are classed as heavily modified or artificial. Majority of channel bed sediments observed were silts, receiving large fine sediment inputs from runoff from local areas and erosion to banks. The loss of	Temporary concrete culvert pipes will be of suitable size to accommodate the natural water regime (volumes and flows). For the majority of watercourses, the culvert will be sat at hard bed level and orientated with flows to limit obstruction and potential for scour. These will allow free passage for fish and eels and be sited to avoid spawning habitat/morphological features where present. In some cases, culverts may be sat above hard bed level, however this is limited to channels which are balanced systems with little flows so would be unlikely to be used by fish and eel. These will be	No, due to design mitigation any impacts are to be avoided or reduced as far as possible.	No, due to design mitigation.

Key Impact and WFD Element Affected	Potential Impacts of the Element without Mitigation	Proposed Mitigation Measures	Risk of Deterioration or Prevention to meet Objectives?	Risk of Deterioration to Other Water bodies?
	bed sediments will therefore result in a minor localised reduction in quality of aquatic environment. Fish passage through the structure may be limited reducing access and leading to stranding.	determined on a case-by-case basis with the relevant stakeholder (EA, LLFA, IDB). All hard banks and bed added during construction will be temporary and the bankside will be returned to its original stabilised state after construction, including re-grading where required and re-vegetating/seeding to replace any lost habitat and vegetation or trees.		
Physchem Ammonia Dissolved oxygen pH Phosphate Temperature	The loss of tree root mass on banks may provide a short-term pathway for fine sediment delivery leading to changes in oxygenation, nutrient conditions and water quality parameters. However, majority of channel bed sediments observed were silts, receiving large fine sediment inputs from runoff from local areas and erosion to banks. Therefore, any impacts will be minor.			
Hydromorphology Hydrological regime Morphology	Culverting will result in straightening and hard banks of a section of channel (approximately 6m). In addition to removal of bed and substrate this may lead to changes in flow dynamics and patterns of erosion at the structure which will also impact the transfer of sediment downstream. It is expected a loss of velocity and reduced sediment transport leading to material deposition upstream of culvert structure and material deficit and scour downstream of structure due to velocity increase through/off culvert. These channels are already straightened as are designated artificial or heavily modified and this will constitute a very small			

Key Impact and WFD Element Affected	Potential Impacts of the Element without Mitigation	Proposed Mitigation Measures	Risk of Deterioration or Prevention to meet Objectives?	Risk of Deterioration to Other Water bodies?
	section of any overall water body. Therefore, impacts are expected to be minor and localised. Any tree loss may exacerbate fine sediment delivery in the short term into the channel as banks may be destabilised leading to bed structure and substrate changes locally from smothering of bed and morphological features downstream. Post construction, banks would be stabilised which will eliminate these effects.			

11.8 Conclusions and Recommendations

11.8.1 Conclusions

In summary, the English Onshore Scheme has been designed to primarily avoid and then mitigate water environment impacts. Compliance with the WFD has been sought throughout the design process. Taking this integrated approach has enabled the English Onshore Scheme design to be sensitive to the water environment. Adverse impacts have been avoided where possible, or otherwise minimised.

The assessment has only reviewed works as set out at this stage of the design process using the information made available. Temporary and permanent works have been assessed as part of the WFD compliance assessment undertaken in support of the ES.

Where works outside of those specified in this assessment are identified, consideration should be given as to whether compliance with the WFD needs to be reviewed.

In conclusion, the English Onshore Scheme satisfies the relevant criteria for compliance with the WFD. The proposed works can be said to satisfy the following statements:

- WFD 1: The proposed works will not result in a deterioration of current ecological status or potential.
- WFD 2: The proposed works will not cause failure to meet Good Ecological Status by the target timeframe.
- WFD 3: The proposed works will not permanently prevent or compromise the relevant environmental objectives being met in other water bodies.

11.8.2 Recommendations

The final design of the appointed Contractor takes on board the mitigation measures outlined in principle in the tables within Section 11.7.2 of this Report including:

- Any loss of vegetation will be replaced with similar, suitable species native to the area.
- Maintenance of passage on the bank beneath the bridge structures will mitigate any shading impacts and allow for passage of mammals and continuity of vegetation.
- Using eel/fish friendly pumps when working in channel containing fish.
- Flow over-pumped at sufficient volume/rate to ensure no upstream hydrological regime changes.
- Downstream outflow is located to avoid causing erosion of riffle features.

Should further detailed design information be released, or design changes made which invalidate the assumptions used or any additional works be identified which fall outside of those specified in this assessment, further assessment would be required and compliance with the WFD assured.