The Great Grid Upgrade

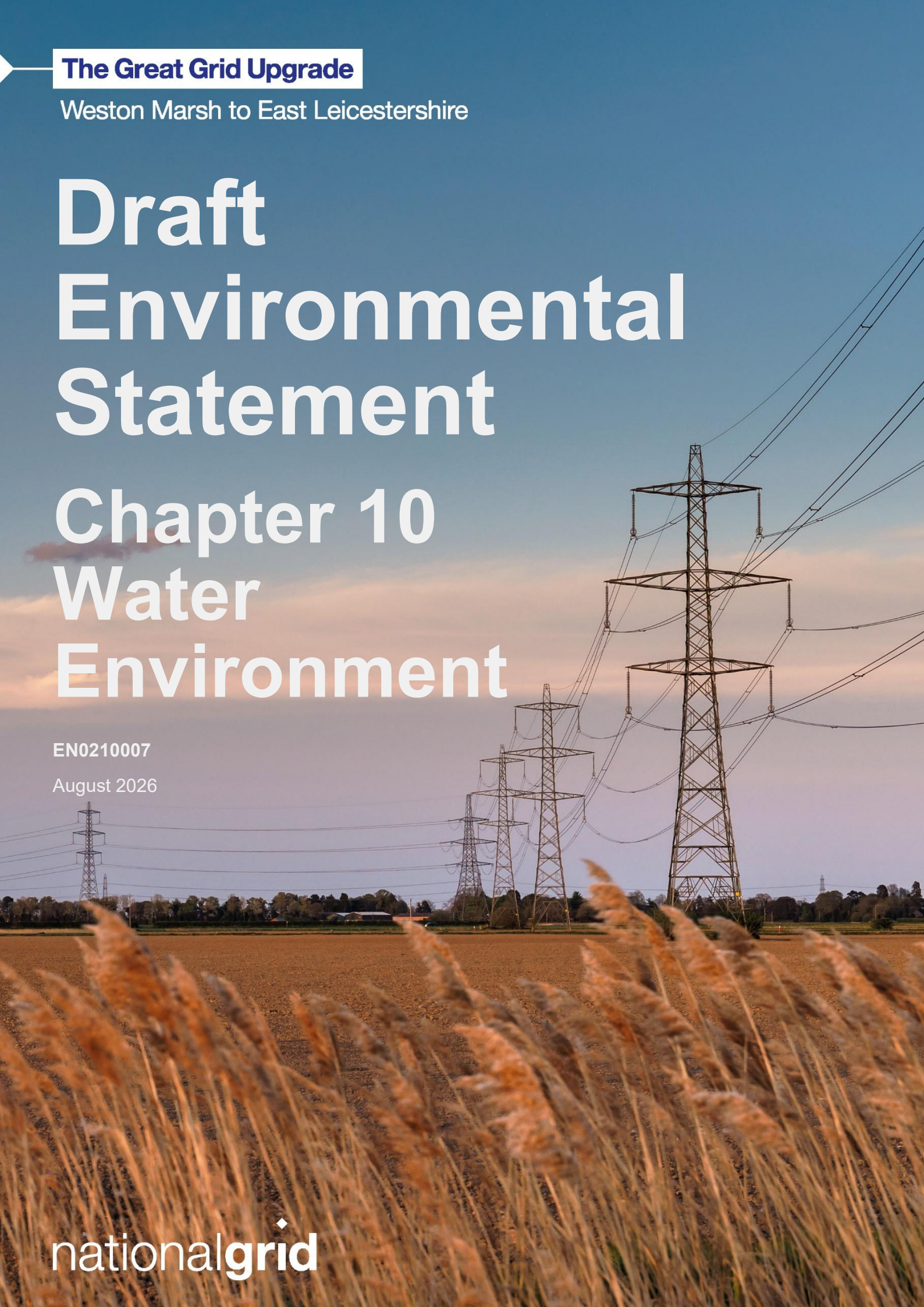
Weston Marsh to East Leicestershire

Draft Environmental Statement

Chapter 10 Water Environment

EN0210007

August 2026



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Contents

10. Water Environment

10.1 Introduction

10.1.1 This chapter reports the preliminary assessment of the potential effects of the Weston Marsh to East Leicestershire Project (the Project) on the Water Environment. This chapter includes consideration of the following matters:

- potential impacts on surface water receptors such as watercourses, canals, estuaries/coastal water bodies, lakes and reservoirs – during construction, operation and maintenance, and including water quality, water resources and hydromorphology; and
- potential impacts on people, existing property and infrastructure – during construction, operation and maintenance, from changes in flood risk or local water supplies.

10.1.2 This chapter should be read in conjunction with the following chapters which provide the Project context and approach to Environmental Impact Assessment (EIA):

- **Chapter 2 Regulatory and Planning Policy Context**;
- **Chapter 3 Main Alternatives Considered**;
- **Chapter 4 Description of the Project**; and
- **Chapter 5 EIA Approach and Methodology**.

10.1.3 There are interrelationships with other disciplines. Therefore, this chapter should also be read in conjunction with the following chapters:

- **Chapter 8 Ecology and Biodiversity**, particularly aquatic ecology and assessment of ponds, which are considered as a habitat and not a water feature;
- **Chapter 11 Geology and Hydrogeology**, for assessment of any groundwater or contaminated land issues, including impacts on any surface water features; and
- **Chapter 19 Cumulative Effects**, for the assessment of potential cumulative effects on the water environment.

10.1.4 This chapter is also supported by the following figures and appendices:

- **Figure 10.1 Surface Water Receptors and their Attributes**;
- **Figure 10.2 Fluvial Flood Risk**;
- **Figure 10.3 Surface Water Flood Risk**;
- **Figure 10.4 WER[1] Surface Water Body Catchments**;
- **Figure 10.5 WER Groundwater Bodies**;
- **Figure 10.6 Tidal Flood Risk**;

[1] Water Environment Regulations

- **Appendix 10A Water Environment Baseline Report**;
- **Appendix 10B Preliminary Flood Risk Assessment**;
- **Appendix 10C Preliminary Water Environment Regulations Assessment**; and
- **Appendix 10D Surface Water Environment Walkover Summary**.

10.1.5 In addition to the above, **Figure 11.2 Superficial Geology**, **Figure 11.3 Bedrock Geology**, and **Figure 11.4 Groundwater Features** also provide relevant and contextual baseline information and are referred to where necessary in this chapter.

10.2 Legislation, Policy Framework, and Guidance

Legislation and National Policy

10.2.1 Legislation and national policy relevant to the Project and this chapter are described in **Chapter 2 Regulatory and Planning Policy Context**, and supporting appendices **Appendix 2A Key Legislation**, **Appendix 2B National and Regional Planning Policy** and **Appendix 2C Local Policy**.

Regional and Local Policy

10.2.2 **Chapter 2 Regulatory and Planning Policy Context** sets out relevant regional and local policy. Regional and local plans or policies relevant to this assessment are as follows:

- South East Lincolnshire Local Plan 2011-2036 (Adopted March 2019) (Ref 10.4), Policy 4: Approach to Flood Risk, Policy 30: Pollution, and Policy 31: Climate Change and Renewable and Low Carbon Energy;
- Melton Local Plan 2011-2036 (Adopted October 2018) (Ref 10.5), Policy EN8: Climate Change, Policy EN11: Minimizing the Risk of Flooding and Policy EN12: Sustainable Drainage Systems;
- South Kesteven District Council Local Plan 2011-2036 (Adopted 2020) (Ref 10.6), Policy EN4: Pollution Control and Policy EN5: Water Environment and Flood Risk Management;
- Harborough Local Plan 2011-2031 (Adopted 2019) (Ref 10.7), Policy CC3: Managing Flood Risk and Policy CC4: Sustainable Drainage;
- North Northamptonshire Local Plan (Part 1 (2016) and Part 2 Local Plans) (Ref 10.8), Policy 5: Water Environment, Resources and Flood Risk Management;
- West Northamptonshire Local Plan (Adopted 2014) (Ref 10.9), Policy BN7: Flood Risk; and
- Charnwood Local Plan 2021-2037 (Adopted 2026) (Ref 10.10), Policy CC1 Flood Risk Management, Policy CC2 Sustainable Drainage Systems (SuDS).

Guidance

10.2.3 Relevant guidance specific to the Water Environment that has informed this non-statutory Draft Environmental Statement (DES) (referred to in this document as

"DES" and "non-statutory DES") and will inform the assessment within the Environmental Statement (ES) comprises:

- The Flood Risk and Coastal Change National Planning Practice Guidance (NPPG) (Ref 10.12), updated in 2025, provides guidance for local planning authorities on assessing the significance of water environment effects of projects. The Flood Risk and Coastal Change NPPG advises on how to take account of and address the risks associated with flooding and coastal change in the planning process. In addition, the guidance provides detail on the application of the Sequential Test and the Exception Test.
- The national guidance for the implementation of Sustainable Drainage Systems (SuDS) was recently updated and is presented as the National Standards for SuDS (Ref 10.11).
- The Environment Agency provides their current guidance/position statements on the approach to protection of groundwater (Ref 10.13). This includes:
  - Regulatory Position Statement (RPS) A (General Approach to Groundwater Protection);
  - RPS B (Protection of Water Intended for Human Consumption);
  - RPS G (Discharge of Liquid Effluents into the Ground); and
  - RPS N (Groundwater Resources).
- The Environment Agency also provides their current guidance/position statements on environmental permits (Ref 10.14) and impoundments which may be relevant to the discharge of water from excavations or watercourse diversions if required. These include:
  - RPS 261: Temporary dewatering from excavations to surface water (Ref 10.40); and
  - RPS 302: Low risk impounding activities (Ref 10.41).
- Planning Inspectorate's Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive (Ref 10.15) has been used for **Appendix 10C Preliminary Water Environment Regulations Assessment**.

10.3 Scope of Assessment

10.3.1 The scope of the assessment has been informed by **Appendix 5B Scoping Opinion** (adopted by the Planning Inspectorate on behalf of the Secretary of State on 17 December 2025) and ongoing engagement with relevant technical consultees.

10.3.2 A full summary of all issues raised relevant to the Water Environment in the Scoping Opinion and National Grid's response is provided in **Appendix 5C Preliminary Scoping Opinion Response**. Further details of engagement undertaken to date is provided in Section 10.4.

10.4 Stakeholder Engagement

10.4.1 National Grid has held several meetings with stakeholders and a summary of these discussions and how these have influenced the Project, scope and/or the approach to the assessment is provided in **Table 10.1**.

Table 10.1 Key stakeholder engagement and National Grid's response

Organisation and Date	Summary of Issue Discussed	Response
Canal and Rivers Trust Environment Agency Leicestershire County Council Lincolnshire County Council Natural England Severn Trent Witham and Humber Internal Drainage Board (IDB) 31 March 2026	This was the first water environment technical working group meeting. The programme was discussed and an overview of the draft DES assessment, proposed design and mitigation was given. The following comments were made: a) The Environment Agency acknowledged the Project was not the most water intensive. The Environment Agency and Anglian Water noted the need for a water supply strategy, including restriction, practical arrangements and limitations. b) The Environment Agency raised a comment on operational pollution risks and the need to list all potential impacts, including herbicide and welfare facilities, even if managed through mobile welfare units. c)The approach to Flood Risk Assessment (FRA) was discussed, including the use of available model datasets and the need for supporting evidence in the final FRA. The Environment Agency noted the use of existing model datasets and surface water flood risk data was supported for the Preliminary FRA, especially for lower-risk elements like towers. For the final FRA, it was recommended to provide supporting evidence for the chosen datasets, particularly if detailed modelling is not undertaken. Alignment with National Policy Statements and the Exception Test should be ensured, with attention to avoiding increased flood risk outside the Project footprint.	a) A water supply strategy will be undertaken for the ES. Should the required supply be greater than 20 m^3/day, a water resource assessment will be undertaken. The Environment Agency and Anglian Water will be informed following the water supply strategy should a water resources assessment be required. b) This has been considered within the DES (see Section 10.8) and will be considered further in the ES assessment once more information is received. c) These comments will be taken into consideration and discussions with the Environment Agency will be ongoing as the assessment develops. Commentary on datasets will be provided in the final FRA at ES stage.

10.5 Assessment Methodology

10.5.1 This section describes the methodology used to establish the existing and future baseline together with the methodology/approach used to undertake the preliminary assessment on Water Environment. The overarching approach is also described in **Chapter 5 EIA Approach and Methodology**. This section also identifies further assessment needed to be undertaken as part of the ES.

Study Area

10.5.2 The core Study Area for the Water Environment impact assessment, Water Environment Regulations (WER) Assessment, and FRA includes all land within the draft Order Limits and a buffer of 500 m from the draft Order Limits, as shown in **Figure 10.1 Surface Water Receptors and their Attributes**.

10.5.3 The buffer has been used to identify water features that may be impacted by the Project. It is considered appropriate based on technical knowledge of similar projects and has been set following consideration of the distance over which likely significant effects can reasonably be expected to occur. However, as pollution risks can propagate downstream, it is important to also consider any additional attributes of a watercourse downstream of the Project, and sometimes beyond the Study Area, to ensure that the most appropriate and precautionary importance value has been awarded to it for the assessment of potential water quality impacts. Generally, a distance of a few kilometres is used for this purpose, and this will be defined further as part of the ES. Additionally, a method of tracing downstream watercourses beyond the 500 m buffer to a defined distance where impact pathways exist, such as outfalls or diversions, will be implemented. This method will also be used in the FRA, in order to include reaches of the watercourse upstream/downstream of the draft Order Limits that may impact, or be impacted by, the Project. This will be defined during later stages of assessment and described within the ES. It will also be confirmed with the Environment Agency and Lead Local Flood Authorities (LLFAs).

Data Collection

Desk study

10.5.4 The known or predicted current and future baseline environment described in this section has been informed by the data sources as listed in **Table 10.2**.

Table 10.2 Water environment – sources of information

Data Topic	Sources of Information
Climate	• Met Office UK Climate averages at Wittering (Ref 10.19).
Topography	• Ordnance Survey mapping (Ref 10.21).
Geology	• British Geological Survey GeoIndex Viewer (Ref 10.20).
Soils and land use	• Department for Environment, Food and Rural Affairs (Defra) Multi-Agency Geographic Information for the Countryside (MAGIC) Map online GIS portal (Ref 10.21). • Land Information System (LandIS) Soilscapes Viewer (Ref 10.22).
Hydrology	• Defra Hydrology Data Explorer (Ref 10.23). • Environment Agency Statutory Main River Map for England (Ref 10.24). • Flood Estimation Handbook Web Service (Ref 10.25). • National River Flow Archive (Ref 10.26).
Flood risk	• Environment Agency Flood Map for Planning (Ref 10.27). • Environment Agency Risk of Flooding from Surface Water (RoFSW) (Ref 10.28) • Environment Agency Risk of Flooding from Reservoirs (Ref 10.28). • Environment Agency flood defence asset database (Ref 10.29). In addition to the above, data requests will be made to the Environment Agency, LLFAs and IDBs to provide information on the following to support the Water Environment assessment: • Baseline flood risk data, including available modelled flood data for Main Rivers, and local flood risk data from commissioned studies. • Data on consented discharges to surface waters and licensed and exempted (private) abstractions from surface waters. • Specific watercourse characteristics (e.g. flow, control measures, maintenance regimes, Environment Agency flood defence assets) will be requested from IDBs for their districts. • Information on local flood risk from LLFAs (e.g. specific watercourse characteristics, local flood history, Section 19 flood investigation reports which the LLFAs create when there has been a significant flooding event in line with Section 19 of the Flood and Water Management Act 2010 (Ref 10.2), flow, control measures, maintenance regimes, Environment Agency flood defence assets).
Water quality and WER status	• Catchment Data Explorer database (Ref 10.30) River Basin Management Plan (RBMP) Cycle 3 WER information. • Environment Agency Water Quality Explorer (Ref 10.31).
Water resources	A data request was made to the Environment Agency, and the following data was received in November 2025: • All licensed water abstractions within the Study Area.

Data Topic	Sources of Information
	• All consented and permanent discharges to Controlled Waters covered by an active Water Activity Permit within the Study Area. • All category 3 (minor) or worse water pollution incidents within the Study Area as recorded on the National Incident Recording Database within the past 5 years. A data request was also made to the Environmental Health Departments of all local councils for information on any known surface water private water supplies within the Study Area. The majority of data was received May 2026, however, two councils are still outstanding.

Further data to be collected to inform the Environmental Statement

10.5.5 Information relating to the water supply required during construction, operation and maintenance of the Project is currently unknown and is required to inform a water supply strategy. This will be provided at ES stage and will determine if a water resources assessment is required.

10.5.6 The requirement for hydraulic modelling will be determined once the design is developed further in consultation with the Environment Agency and LLFAs.

Impact Assessment Methodology

10.5.7 This section describes the assessment methodology to determine the effects on the water environment, drainage and flood risk as a result of the Project, including the criteria for determining the importance of the receptor and the magnitude of change from baseline conditions. The assessment methodology would be the same across the whole Project.

10.5.8 Potential impacts of the Project on the water environment, drainage, and flood risk have been assessed by:

- considering the existing (baseline) status of the water environment within the study area and relevant surrounds with respect to flood risk, surface water and drainage, following the source-pathway-receptor approach;
- identifying potential impacts of the Project on the water environment, drainage and flood risk during the construction and operation and maintenance phases, as well as cumulative effects;
- proposing suitable mitigation measures to be incorporated into the Project design, construction, operation and maintenance to offset any adverse impacts (i.e. design mitigation); and
- reviewing any residual impacts and presenting additional mitigation measures to limit impacts.

Source-pathway-receptor approach

10.5.9 The water environment, drainage, and flood risk impact assessment has been based on a source-pathway-receptor model. For an impact on the water environment to exist, the following is required:

- an impact source (such as the release of polluting chemicals, particulate matter, or biological materials that cause harm or discomfort to humans or other living organisms, or the loss of or damage to all or part of a water body);
- a receptor that is sensitive to that impact (i.e. water bodies and the services they support); and
- a pathway by which the two are linked.

10.5.10 The first stage in applying the source-pathway-receptor model is to identify the causes or 'sources' of potential impact from the Project. The impact sources have been identified through a review of the details of the Project, including the size and nature of the Project, potential construction, operation and maintenance methodologies and timescales. The next step is to undertake a review of the potential receptors, that is, the water environment receptors that have the potential to be affected. Water features including their attributes have been identified through desk study and walkover surveys, building on the baseline information gathered at the Scoping stage. The last stage of the model is, therefore, to determine if there is a viable exposure pathway or a 'mechanism' linking the source to the receptor. This has been undertaken in the context of local conditions relative to the water receptors within the Study Area, such as topography, geology, climatic conditions and the nature of the impact (e.g. the mobility of a liquid pollutant or the proximity to works that may physically impact a water body).

10.5.11 The preliminary assessment of the likely significant effects is qualitative and has considered both the construction, and operation and maintenance phases. A preliminary assessment of cumulative effects with other developments is reported in **Chapter 19 Cumulative Effects**. This will be further considered and reported on in the ES.

10.5.12 To support the assessment of likely significant effects on the water environment, some sub-topic specific assessments have been undertaken. These are described in more detail in the following sections.

Water quality and resource assessment

10.5.13 Relevant data has been requested and obtained from the Environment Agency. A walkover survey was undertaken in April 2026 by a hydromorphologist and a water resources specialist to observe surface water features in the draft Order Limits and to make observations about their current condition and character, the presence of existing risks and any potential pathways for construction, operation and maintenance impacts as a result of the Project.

10.5.14 Although relevant background water quality data from the Environment Agency has been used to inform the baseline at subsequent stages of assessment, the importance of water bodies has been determined from a holistic review of water body features and does not rely on water quality at any given time or period. This is due to the principle that no controlled water may be polluted and thus it is not appropriate to potentially allow a greater impact based on a perceived lower water quality. Due to the nature of the potential water quality impacts from the Project, the assessment has been based on a risk assessment basis that does not require input of raw background water quality data. This is considered an appropriate and standard approach based on professional judgement. Water quality monitoring is only effective when there is a clear purpose for it, which is not considered the case here. Therefore, no water quality sampling has been undertaken or is proposed to support the water environment assessment.

10.5.15 A qualitative assessment of potential effects on surface water quality from construction, operation and maintenance of the Project has been undertaken. This considers the risk to surface water features resulting from construction or future operation and maintenance activity using the source-pathway-receptor approach. Where there is a risk of pollution, mitigation measures have been described with information drawn from good practice guidance (e.g. Guidance on Pollution Prevention (Ref 10.46), British Industry Standards set by the British Standards Institution (Ref 10.47) and Construction Industry Research and Information Association (CIRIA) guidance (Ref 10.48). Mitigation measures are provided in Section 10.7 and **Appendix 4A Draft Outline Code of Construction Practice.**

10.5.16 A water supply strategy will be undertaken at the ES stage once estimates are available of total and daily peak water requirements during all phases of the Project, to demonstrate water will be available. Should the Project require more than 20 m^3/d, a water resources assessment form must then be completed for Anglian Water and the Environment Agency.

Hydromorphology and Water Environment Regulations (WER) Assessment

10.5.17 A WER Screening and Scoping Assessment was initially undertaken at the scoping stage in accordance with the Planning Inspectorate's Advice on the Water Framework Directive (Ref 10.15), and submitted as Appendix 10A of the Scoping Report (see **Appendix 5A EIA Scoping Report**). It concluded that there are potential risks from the Project to the WER objectives of those water bodies screened in. The WER Screening and Scoping Assessment also identified which WER elements may be at risk from Project activities. The risks of WER impacts were considered to be low, and it was considered likely that all WER risks could be designed out or mitigated through the application of standard protection measures. However, the WER Screening and Scoping Assessment noted that risks to WER objectives could not be ruled out at that stage of the Project's design. The assessment therefore concluded, on a precautionary basis, that a WER Assessment will need to be undertaken to demonstrate WER compliance.

10.5.18 The WER Assessment has been produced, in light of further design development and is presented in **Appendix 10C Preliminary Water Environment Regulations Assessment**. This includes a review of the WER Screening and Scoping Assessment presented in the Scoping Report and initial assessment of impacts and proposed mitigation. The assessment concludes that the risks of impacts to WER water bodies, and risks to achieving WER objectives are considered to be low. It is likely that all WER risks can be designed out or mitigated based on the measures outlined in Section 10.7 and **Appendix 4A Draft Outline Code of Construction Practice**. However, at this stage of the Project's design, risks to WER objectives still cannot be ruled out. This assessment will be revisited with the ES and extended where necessary to support the application for development consent.

10.5.19 At the ES stage, when more construction and design information is available, the WER Assessment will be expanded to evaluate the potential for any non-compliance of the Project with WER objectives for affected water bodies, using readily available information and site observations obtained during site walkover surveys. Effort will be made to agree the scope of further assessment with the Environment Agency, but at this stage, it is envisaged that it will include a qualitative examination of the potential construction, and operation and maintenance phase impacts of the Project on relevant WER hydromorphological, biological and physio-chemical parameters.

High Level Preliminary drainage design

10.5.20 The design of the Project's drainage systems aims to ensure that there would be no significant increases in flood risk downstream, during storms up to and including the 1 in 100 (1%) annual probability design flood, with an allowance for climate change.

10.5.21 A high level preliminary drainage design has been prepared to ensure that the risk of surface water flooding is not increased as a result of the Project, including any land-take for foundations and any access roads.

10.5.22 SuDS features will be carefully considered, in keeping with local planning policy and through liaison with the LLFAs, South Holland IDB, Welland & Deepings IDB, Black Sluice IDB, Upper Witham IDB and the Environment Agency, as the Project progresses. This will ensure that the Drainage Strategy, to be updated from the high level preliminary drainage design and provided with the ES, adequately attenuates and treats runoff from the Project, whilst minimising flood risk to the Project and surrounding areas.

10.5.23 In accordance with the planning policies of South Holland District Council, South Kesteven District Council, Melton Borough Council, Harborough District Council, North Northamptonshire Council, and West Northamptonshire Council, and general good practice, mitigation would be provided by restricting surface water discharge rates and providing on-site attenuation, primarily via SuDS, such as Rural SuDS techniques or other appropriate solutions.

10.5.24 A water quality risk assessment of routine surface water runoff from the substation infrastructure sites will be undertaken using the Simple Index Approach described in The SuDS Manual (Version 6) (Ref 10.16) as part of the Drainage Strategy. Further qualitative appraisal of spillage risk, such as in the event of a fire, would also been undertaken. This would inform what, if any, treatment measures are required to manage the risk from diffuse pollutants in runoff or in the event of a spillage or emergency situation, from the proposed substation sites to watercourses or ground.

Preliminary Flood Risk Assessment

10.5.25 Given the size of the Project and the presence of areas of Flood Zone 2 and 3 within the Study Area, a Preliminary FRA (**Appendix 10B Preliminary Flood Risk Assessment**) has been produced in accordance with the requirements of the Overarching National Policy Statement for Energy (EN-1) (Ref 10.3) and also the National Planning Policy Framework (Ref 10.45), the Flood Risk and Coastal Change NPPG (Ref 10.12) and local planning policy. The Preliminary FRA includes a review of the current and future flood risk to the Project from all sources (including tidal, fluvial, surface water, groundwater, sewer, and artificial sources) to inform the Project design and set out any proposed mitigation requirements.

10.5.26 The WMEL-A and WMEL-B substations are located within Flood Zone 1 and have been sequentially located away from any surface water flow paths.

10.5.27 When the final layout is confirmed and all flood risk datasets have been reviewed, the Preliminary FRA will be updated, and the FRA will be provided with the ES.

Determining the Significance of Effects

10.5.28 The significance of effects has been determined using the principles of the guidance and criteria set out in the Design Manual for Roads and Bridges (DMRB) LA 113

Road Drainage and the Water Environment (Ref 10.17), adapted to take account of hydromorphology, and DMRB LA 104 Environmental Assessment and Monitoring (Ref 10.18). This can be applied to all development types and represents the most robust and nationally accepted criteria for the determination of potential effects on the water environment.

10.5.29 There are three stages to the assessment of effects on water environment, drainage, and flood risk as follows:

- The level of importance assigned to the water resources receptor, ranging from negligible to very high, is determined using **Table 10.3**. This assessment is based on a combination of attributes, such as water supply, biodiversity, and recreation, as well as the vulnerability of the receptor to flood risk. For example, as shown in **Table 10.3**, essential infrastructure is considered to be of very high importance, whereas water compatible development is considered to be of low importance.
- The magnitude of potential and residual impact (classed as negligible, minor, moderate or major adverse/beneficial, or no change) is determined based on the criteria listed in **Table 10.4** and based on professional judgement. Design and standard mitigation measures that are embedded in the Project, as well as additional mitigation measures, are considered when assessing impact magnitude. The determination of impact magnitude also considers the likelihood of the effect occurring. The likelihood of an effect occurring is based on a scale of certain, likely or unlikely. Likelihood has been considered in the case of water quality and resources only, as likelihood is inherently included within the FRA.
- The importance of the resource and magnitude of the impact (for both potential and residual impacts) are compared to assess the overall significance of the effect on the receptor using the matrix presented in **Table 10.5**. The significance of each identified effect (both potential and residual) is classed as very large, large, moderate, slight or neutral and either beneficial or adverse. Effects that are of moderate significance or above are considered to be significant in planning terms (see **Table 10.5**).

Table 10.3 Criteria to determine receptor importance (adapted from DMRB LA 113 (Ref 10.17))

Importance	General Criteria	Surface Water	Hydromorphology	Flood Risk
Very high	Nationally significant attribute of high importance – the receptor has little or no ability to absorb change without fundamentally altering its present character and is therefore of very high environmental value.	Designated salmonid/cyprinid fishery. Watercourse having a WER classification as shown in a RBMP and $Q95^{+} \geq 1.0\ m^3/s$. Site protected/designated under UK habitat legislation (Special Area of Conservation (SAC), Special Protection Area (SPA), Site of Special Scientific Interest (SSSI), Water Protection Zones, Ramsar site). Species protected by UK legislation. Critical social or economic uses (e.g. public water supply and navigation).	Unmodified, near to or pristine conditions, with well-developed and diverse geomorphic forms and processes characteristic of river and lake type.	Essential infrastructure or highly vulnerable development
High	The receptor has low ability to absorb change without fundamentally altering its present character, is of high environmental value, or of national importance.	Watercourse having a WER classification as shown in a RBMP and $Q95 < 1.0\ m^3/s$. Major cyprinid fishery. Species protected under UK habitat legislation. Critical social or economic uses (e.g. water supply and navigation). Important social or economic uses such as water supply, navigation or mineral extraction.	Conforms closely to natural, unaltered state and will often exhibit well-developed and diverse geomorphic forms and processes characteristic of river and lake type. Deviates from natural conditions due to direct and/or indirect channel, floodplain, bank modifications and/or catchment development pressures.	More vulnerable development

Importance	General Criteria	Surface Water	Hydromorphology	Flood Risk
Medium	Locally significant attribute of high importance – the receptor has moderate capacity to absorb change without significantly altering its present character.	Watercourses not having a WER classification shown in a RBMP and Q95 > 0.001 m^3/s. May be designated as a Local Wildlife Site and support a small/limited population of protected species. Limited social or economic uses.	Shows signs of previous alteration and/or minor flow/water level regulation but still retains some natural features or may be recovering towards conditions indicative of the higher category.	Less vulnerable development
Low	Lower quality, commonplace – the receptor is tolerant of change without detriment to its character and is of a local and low environmental value.	Watercourses not having a WER classification shown in a RBMP and Q95 ≤ 0.001 m^3/s. Low aquatic fauna and flora biodiversity and no protected species. Minimal economic or social uses.	Substantially modified by past land use, previous engineering works or flow/water level regulation. Watercourses likely to possess an artificial cross-section (e.g. trapezoidal) and will probably be deficient in bedforms and bankside vegetation. Watercourses may also be realigned or channelized with hard bank protection or culverted and enclosed. May be significantly impounded or abstracted for water resources use. Could be impacted by navigation, with associated high degree of flow regulation and bank protection, and probable strategic need for maintenance dredging. Artificial and minor drains and ditches will fall into this category.	Water compatible development
Negligible	The receptor is resistant to change and is of little environmental value.	Not applicable	Not applicable	Not applicable

[+]Q95: the flow that is equalled or exceeded 95% of the time – an index of low flow.

Magnitude

10.5.30 The magnitude of change acting on water environment receptors is independent of the importance of the feature. This is a largely qualitative assessment, which relies on professional judgement, although it may be informed by quantitative information and analysis where data is available and where appropriate. The criteria consider the scale and extent of the predicted change and the nature and duration of the impact. **Table 10.4** defines the criteria for how the magnitude of impact will be determined and provides potential examples in relation to the water environment.

Table 10.4 Magnitude of impact criteria (adapted from DMRB LA 113 (Ref 10.17))

Magnitude	Description
Major adverse	Results in a loss of attribute and/or quality and integrity of the attribute.
Moderate adverse	Results in impact on integrity of attribute, or loss of part of attribute.
Minor adverse	Results in some measurable change in attribute's quality or vulnerability.
Negligible	Results in impact on attribute, but of insufficient magnitude to affect the use or integrity.
Minor beneficial	Results in some beneficial impact on attribute or a reduced risk of negative impact occurring.
Moderate beneficial	Results in moderate improvement of attribute quality.
Major beneficial	Creation of new attribute or major improvement of attribute quality.
No change	No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Significance of effects

10.5.31 The importance of the receptor (**Table 10.3**) and the magnitude of impact (**Table 10**.4) are determined independently from each other and are then used to determine the overall significance of effects using the matrix provided in **Table 10.5**. This takes into account mitigation proposed to avoid, minimise and reduce adverse impacts, particularly where significant effects may have otherwise occurred.

Table 10.5 Determination of significance matrix (adapted from DMRB LA 104 (Ref 10.18))

Importance of Receptor (Table 10.3)	Magnitude of Impact (Table 10.4)					
		Major	**Moderate**	**Minor**	**Negligible**	**No Change**
	Very high	Very large	Large or very large	Moderate or large	Slight	Neutral
	High	Large or very large	Moderate or large	Slight or moderate	Slight	Neutral
	Medium	Moderate or large	Moderate	Slight	Neutral or slight	Neutral
	Low	Slight or moderate	Slight	Neutral or slight	Neutral or slight	Neutral
	Negligible	Slight	Neutral or slight	Neutral or slight	Neutral	Neutral

10.5.32 An impact is considered significant if the resultant effect is moderate or above. This matrix approach provides a guide to assessing effects, however professional judgement has been applied where appropriate.

10.5.33 Potential effects may also be beneficial or adverse:

- beneficial: a beneficial/positive effect on the quality of a water resources receptor; or
- adverse: a detrimental/negative effect on the quality of a water resources receptor.

Assessment Assumptions and Limitations

10.5.34 To ensure transparency within the assessment, the following limitations and assumptions have been identified:

- Hydraulic modelling data has been requested from the Environment Agency, LLFAs and IDBs to characterise all aspects of flood risk to the Project. Hydraulic model outputs will be reviewed at the ES stage when the design has developed further. The requirement for additional hydraulic modelling will be determined once the design is developed further in consultation with the Environment Agency and LLFAs.
- It is assumed there is sufficient data from the Environment Agency to define the current condition and standards of protection provided by existing flood defences, and that no baseline condition surveys will be required.
- **Appendix 10B Preliminary Flood Risk Assessment** has been based on desktop surveys and best available layout proposals in line with good practice.
- Walkover surveys have been undertaken of accessible water/drainage features to inform the surface water environment impact and WER assessments. Surveys

were undertaken in April 2026 during a transitional seasonal period when vegetation growth is lower compared to late Spring and Summer. This period allows for best visibility of water features, and is when groundwater and flows tend to be higher to aid identification of smaller, perhaps ephemeral or only intermittently flowing watercourses. However, it may not have been possible to identify all of the smallest or ephemeral water features. In addition, given the scale of the Project, it is unpractical to visit all watercourse crossing locations or structures. Access to the proposed WMEL-B site was not possible, therefore visual assessment of the water/drainage features has not been undertaken in that location. This will be updated at ES stage. Regardless, sufficient survey coverage has been undertaken to ensure that a robust preliminary impact assessment can be made. Assessment validity checks can be made prior to any direct physical works that may be undertaken, and this is considered further in Section 10.7.

- As part of the EIA, the risk from surface water drainage to surface or groundwater features from the proposed new substations has been assessed according to the Simple Index Approach presented in The SuDS Manual (Ref 10.16), with the assessment of risk from other permanent development (i.e. new overhead line towers) by simple qualitative appraisal only.
- As the substations will generally be unmanned and operated remotely, it is assumed permanent welfare provision is not considered necessary. However, if it is, this will either have a connection to the nearest public sewer or otherwise a sealed cesspit will be provided that would be maintained by a specialist and licensed wastewater contractor, who would pump out the tank for off-site disposal as required. On-site septic tanks or other package treatment plans which discharge to a surface watercourse are not proposed. A similar arrangement is assumed for during construction works.
- Currently, no new 400 kV underground cables are proposed as part of the Project. The requirement for, and location of, any undergrounding of existing lines will be confirmed following ground investigations, and appropriate assessment included in the ES.
- At this stage, it is assumed that existing access routes would be utilised for the reconductoring section, with no new temporary crossings or modifications to existing crossings required. This will be kept under review as the design develops further.

10.6 Baseline Conditions

Existing Baseline

10.6.1 The water environment baseline is described in full in **Appendix 10A Water Environment Baseline Report** and **Appendix 10B Preliminary Flood Risk Assessment**. The following provides a summary of the conditions identified for each key matter or receptor type considered and is mainly given as a Project-wide summary, however where detailed information is available, a section-based approach has been used. The Project has been divided into five Sections as described in **Chapter 4 Description of the Project** and shown in **Figure 1.2 Draft Order Limits**. The Sections are defined by the geographical alignment of the draft Order Limits and the administrative boundaries of the local authorities.

Climate

10.6.2 According to the 1991 to 2020 (Ref 10.19) Wittering Met Office station data, the Study Area receives less rain on average annually than the rest of the Midlands Region, at 614 mm compared to 810 mm. It was also observed that the highest monthly rainfall averages occur in August and October and the lowest in February and March.

Topography and land use

10.6.3 The topography of the draft Order Limits shows little variation throughout (Ref 10.19). Section 1 – South Holland is consistently below 10 m above sea level. Sections 2 – South Kesteven, 3 – Melton, 4 – Harborough and 5 – Northamptonshire are generally between 90 m and 145 m above sea level, with a few undulations up to 200 m.

10.6.4 The general land use is typical for lowland areas in England, consisting predominantly of arable farmland, pockets of pastureland, some urban areas, and clusters of small woodlands. Main towns and villages include Melton Mowbray, Market Harborough, Wellingborough and Asfordby.

Geology

10.6.5 **Chapter 11 Geology and Hydrogeology** provides full details of the geology and hydrogeology baseline for the Study Area. The following is a brief overview to provide context for the surface water and flood risk baseline.

10.6.6 The draft Order Limits covers rock formations which mainly consist of mudstone, siltstone, sandstone and limestone, with some argillaceous rock in the Great Oolite Group (Ref 10.20). Additionally, the draft Order Limits covers Principal, Secondary A, Secondary B and Secondary (Undifferentiated) and Unproductive aquifers. The most prevalent designations within the Study Area are Secondary (Undifferentiated) and Unproductive (Ref 10.21).

Surface water features

10.6.7 The Study Area is located within the Anglian and Humber River Basin Districts (Ref 10.33 and Ref 10.34) and within the management catchments of Welland, Witham, Nene, and Soar, with a very small area in the Anglian Transitional and Coastal (TraC) Management Catchment.

10.6.8 There are a large number of watercourses within the Study Area, all of which have been identified and labelled according to a desk-based study presented in **Appendix 10A Water Environment Baseline Report**. All tributaries have been identified as discrete receptors, however noting that their importance may be different to the main stem watercourse for the WER catchment. The full watercourse list is provided in **Appendix 10A Water Environment Baseline Report**. **Table 10.6** gives a brief summary of the water environment in each of the five Project Sections.

Table 10.6 Water environment – summary of principal water features and resources

Section	Summary of principal watercourse catchments, principal tributaries and any other relevant water feature or resource
Section 1 – South Holland	• Principal watercourse catchments: Welland Lower, Glens, South Forty Foot Drain and The Wash TraC Operational Catchment • Main Rivers: River Welland and River Glen • Named ordinary watercourses: Moulton River, Vernatt's Drain, Blue Gowt Drain, Old Sea Drain and New Drain • Additional water features: a dense drainage and ditch network across the whole section with many unnamed drains
Section 2 – South Kesteven	• Principal watercourse catchments: South Forty Foot Drain, Glens, and Witham Upper • Main Rivers: Black Sluice IDB, Car Dyke, East Glen River, West Glen River and River Witham • Named ordinary watercourses: Hacconby Lode, Grimsthorpe Park Brook and The Tham • Additional water features: a dense drainage and ditch network across the eastern part of the section with many unnamed drains, and nine unnamed tributaries of the Main Rivers in the section
Section 3 – Melton	• Principal watercourse catchments: Wreake River and Witham Upper • Main Rivers: River Eye/Wreake and Welby Brook • Named ordinary watercourses: Wymondham Brook, Freeby Brook, Thorpe Brook, Scalford Brook, Austen Dyke, and Gaddesby Brook • Lakes: Kirby Lake, Frisby Lakes and Wartnaby Fishing Ponds • Additional water features: 67 unnamed tributaries of the Main Rivers and named ordinary watercourses
Section 4 – Harborough	• Principal watercourse catchments: Welland Upper and Wreake River • Main Rivers: Stonton Brook, River Welland, an unnamed watercourse, Langton Brook, Queniborough Brook and River Jordan • Named ordinary watercourses: Eye Brook and Glooston Arm • Additional water features: 48 unnamed tributaries of the Main Rivers and named ordinary watercourses
Section 5 – Northamptonshire	• Principal watercourse catchments: Welland Upper, Ise, Brampton Branch and Nene Middle • Main Rivers: River Jordan, Ise, Slade Brook, Pitsford Arm of the Brampton Branch, Harrowden Brook, Swanspool Brook, Sywell Brook, River Nene and Grendon Brook • Named ordinary watercourse: Dingley Brook, Cransley Brook, Loddington Arm of Ise, Pytchley Brook and Hardwick Brook • Lakes: Grendon Lakes (Upper Nene Valley Gravel Pits SSSI) • Additional water features: 49 unnamed tributaries of the Main Rivers and named ordinary watercourses

10.6.9 **Appendix 10A Water Environment Baseline Report** lists and summarises pertinent information on surface water features within the Study Area, as shown in **Figure 10.1 Surface Water Receptors and their Attributes**, **Figure 10.2 Fluvial Flood Risk**, **Figure 10.3 Surface Water Flood Risk**, and **Figure 10.4 WER Surface Water Body Catchments**. All water bodies summarised either flow directly through the Study Area or part of their catchment lies in the Study Area. In addition to WER status, **Appendix 10A Surface Water Environment Baseline** identifies if a watercourse is designated as a Main River or as an ordinary watercourse. Main Rivers are designated by the Environment Agency and are typically larger rivers and streams where the Environment Agency is responsible for maintenance, improvement or construction work to manage flood risk (Ref 10.35). All other watercourses are considered to be ordinary watercourses where the LLFAs and IDBs carry out flood risk management work. This distinction has relevance for whom is responsible for granting certain secondary consents as may be required when there are works close to, in, over or under watercourses.

Hydrology and flows

10.6.10 There are no flow gauging stations within the Study Area, however there are flow gauging stations located in the vicinity either upstream or downstream of watercourses within the Study Area, which can be used to provide an indication of flows. These 13 stations are summarised in **Appendix 10A Water Environment Baseline Report**. See also **Figure 10.1 Surface Water Receptors and their Attributes** for their locations.

10.6.11 Based on the summary of the flow gauging stations in **Appendix 10A Water Environment Baseline Report**, noting that these are upstream or downstream of the Study Area, the majority of the catchments are considered to have a relatively low baseflow index, meaning that baseflow is less important to sustaining flow, indicating less permeable bedrock, superficial deposits and soils. These watercourses are more dependent on surface water runoff and are likely to be susceptible to periods of dry weather.

WER classification

10.6.12 A full summary of WER classifications for relevant water bodies in the Study Area is provided in **Appendix 10A Water Environment Baseline Report**, with only a short summary provided here.

10.6.13 The draft Order Limits pass through several management and operational catchments within the Humber and Anglian River Basin Districts. The majority of water bodies within these operational catchments are not heavily modified. However, heavily modified and artificial water bodies are present within the draft Order Limits. Most water bodies are at Moderate, Poor or Bad Ecological Status due to biological quality elements and physico-chemical quality being less than Good status.

10.6.14 The reasons for not achieving Good status are shared by many of the water bodies and include diffuse pollution from rural areas and point source pollution from wastewater discharges. All water bodies share a chemical status of ‘fail’ due to exceedance of priority hazardous substances, in particular mercury and its compounds, as well as polybrominated diphenyl ethers (PBDE). However, these are chemical substances that are unlikely to be introduced by any phases of the Project.

Hydromorphology

10.6.15 Most of the WER water bodies in the Study Area are not designated artificial or as heavily modified water bodies. There are multiple Main Rivers within the Study Area. Of these, the East Glen River, West Glen River, River Wreake and River Nene show high levels of sinuosity in aerial imagery potentially indicating high hydromorphological quality. It is likely that many of the ordinary watercourses in the Study Area, particularly those within IDB districts, also serve a land drainage function and have a relatively low hydromorphological diversity. Walkover surveys were undertaken in April 2026 to inform subsequent stages of the assessment, and the ES and will allow a more detailed classification of the physical form and function of watercourses that may be impacted by the Project. An overview of the hydromorphological character of the water features visited during the walkover survey is provided in **Appendix 10D Surface Water Environment Walkover Summary**.

Water resources, abstractions and discharges

Protected areas

10.6.16 There is one Drinking Water Protected Area in the Study Area, Welland – confluence Langton Brook to conf Gwash (SWSGZ1005), and this is at risk from pesticides (Ref 10.36). Due to the nature of the Project, the risk from pesticides is unlikely to be affected. The Project does not require the use of pesticides, the main source of which is management of agricultural crops.

10.6.17 There are three surface water Drinking Water safeguard Zones in the Study Area, River Welland upstream of Tinwell (SWSGZ1005), River Nene upstream of Wansford (SWSGZ1006) and Pitsford Natural Catchment (SWSGZ1008). The main risk facing the three zones is from pesticides (Ref 10.32). Due to the nature of the Project, the risk from pesticides is unlikely to be affected.

Pollution incidents

10.6.18 The Environment Agency's publicly accessible data from the Government Data portal on pollution incidents has been interrogated (Ref 10.37). Pollution incidents to water are classified as category 1 (serious impact) through to category 4 (no impact). There have been three category 2 incidents reported in the Study Area in the past 10 years. Details of these pollution incidents are provided in **Appendix 10A Water Environment Baseline Report** and their locations are shown in **Figure 10.1 Surface Water Receptors and their Attributes**. No information was available regarding the causation or pollutant involved in the incidents. No category 1 events were reported in the same timeframe.

Surface water abstractions

10.6.19 Abstraction data was obtained through a freedom of information request made to the Environment Agency. There are 32 abstraction points located within the Study Area, details of which are provided in **Appendix 10A Water Environment Baseline Report** and locations shown in **Figure 10.1 Surface Water Receptors and their Attributes**. All abstractions are related to agriculture with 29 used for spray irrigation, either directly or for storage. The other three abstractions are used for trickle irrigation or general farming practices.

10.6.20 Thirty-one of the 32 abstractions are located in Sections 1 and 2, with the remaining abstraction located in Section 3. Eight of the 32 abstractions are located within the draft Order Limits, with the others being located in the wider Study Area.

Private water supplies

10.6.21 From currently available information, seven private water supplies (PWS) have been identified in the Study Area, of which five are in Section 2 – South Kesteven and two are in Section 4 – Harborough. Details are provided in **Appendix 10A Water Environment Baseline Report**. All seven are groundwater abstractions and will be assessed further in **Chapter 11 Geology and Hydrogeology**. Information has been requested but had not been provided at the time of writing for Section 1 – South Holland and Section 3 – Melton. This information will be incorporated into the assessment at the ES stage.

Water Activity Permits

10.6.22 Information on consented discharges was obtained from the Environment Agency through a freedom of information request. There are no consented discharges within the draft Order Limits. However, there are 27 within the wider Study Area, which are summarised in **Appendix 10A Water Environment Baseline Report** and their locations shown in **Figure 10.1 Surface Water Receptors and their Attributes**.

Water quality

10.6.23 Within the Study Area there are nine water quality archive monitoring stations (Ref 10.31), with a further 14 within 1 km of the draft Order Limits. **Table 10.7** summarises the locations of these stations, broken down by Project Section. Relevant data will be used to inform the baseline at the ES stage of assessment.

Table 10.7 Environment Agency water quality archive sites within the Study Area

Section	Number of Water Quality Monitoring Stations
Section 1 – South Holland	2
Section 2 – South Kesteven	4
Section 3 – Melton	2
Section 4 – Harborough	9
Section 5 – Northamptonshire	6
Total	23

Ecological potential of water features

10.6.24 Details of sites designated for nature conservation are provided in **Chapter 8 Ecology and Biodiversity**. Where surface waters play a key role in sustaining the designated interest features, these sites will be included as water environment receptors.

10.6.25 Within the Study Area there are four designated sites which are of hydrological importance or have direct flow paths from the draft Order Limits. These are Birch

Spinney and Mawsley Marsh SSSI (National Grid Reference: SP 809 766) and Upper Nene Valley Gravel Pits SSSI, SPA and Ramsar site (National Grid Reference: SP 868 620), all of which lie within the draft Order Limits. These designated sites have been taken into consideration with the water features that relate to them and which may be affected by the Project.

10.6.26 There are no chalk streams or rivers in the Study Area.

Surface water features and resources summary

10.6.27 **Table 10.8** provides an overview of the relevant surface water features and resources for the Study Area set out by each of the four key components of the Project. Further information is provided in **Appendix 10A Water Environment Baseline Report** and **Appendix 10B Preliminary Flood Risk Assessment**.

Table 10.8 Summary of water environment baseline within Study Area

Receptor/Constraint	Approx. 60 km new 400 kV overhead line	New 400 kV substation WMEL-A	New 400 kV substation WMEL-B	Approx. 66 km reconductoring existing ZA 400 kV overhead line
WER surface water bodies	16 no. water bodies spread throughout corridor.	West Glen River 260 m east of proposed site.	Not close to any WER surface water bodies but site is within the Austen Dyke Catchment (tributary of Wreake).	25 no. water bodies spread throughout corridor.
Main Rivers	8 no. Main Rivers spread throughout corridor.	West Glen River 260 m east of proposed site.	Not close to any Main Rivers.	17 no. Main River spread throughout corridor, particularly dense around Market Harborough and Earls Barton.
Ordinary watercourses	7 no. named plus a large number of unnamed drains predominately around Spalding.	Nothing on Ordnance Survey at site; surface water flood flow paths indicate a 'high' chance (more than 3.3%) of site flooding each year and may indicate local channels that will need to be	3 no. small unnamed watercourses; surface water flood flow paths indicate 'high' chance of watercourses flooding and may indicate local channels that will need to be	10 no. named plus a large number of unnamed watercourses spread throughout corridor.

Receptor/Constraint	Approx. 60 km new 400 kV overhead line	New 400 kV substation WMEL-A	New 400 kV substation WMEL-B	Approx. 66 km reconductoring existing ZA 400 kV overhead line
		checked by survey.	checked by survey.	
Still waters	None present	None present	None present	Approximately 15 no. including Frisby Lakes, Kirby Lake, Priory Water, Grendon Lakes, Mary's Lake
Water dependent ecological sites	Holwell Mouth SSSI	None present	None present	Holwell Mouth SSSI, Frisby Marsh SSSI, Birch Spinney and Mawsley Marsh SSSI, Upper Nene Valley Gravel Pits SSSI, SPA and Ramsar
Chalk rivers	None present	None present	None present	None present
Nutrient neutrality catchment	None present	None present	None present	None present
Drinking Water Protected Areas	None present	None present	None present	River Welland upstream of Tinwell (SWSGZ1005)
Drinking Water Safeguard Zones	Cringle Brook (SWSGZ1003)	None present	None present	River Welland upstream of Tinwell (SWSGZ1005), River Nene upstream of Wansford (SWSGZ1006), Pitsford Natural Catchment (SWSGZ1008)
Nitrate Vulnerable Zones (NVZs)	8 no. NVZs	Glen NVZ, Lincolnshire Limestone NVZ	Soar River NVZ	6 no. NVZs

Receptor/Constraint	Approx. 60 km new 400 kV overhead line	New 400 kV substation WMEL-A	New 400 kV substation WMEL-B	Approx. 66 km reconductoring existing ZA 400 kV overhead line
Abstractions or other important water uses	32 licensed abstractions, 10 consented discharges	No licensed abstractions or consented discharges	No licensed abstractions or consented discharges	No licensed abstractions, 17 consented discharges
Drainage networks (managed by Internal Drainage Boards)	Three districts: Welland & Deepings, Black Sluice, and Upper Witham	None present	None present	None present
Bathing Waters	None present	None present	None present	None present
Protected Shellfish Waters	None present	None present	None present	None present

Flood risk

10.6.28 **Table 10.9** provides a summary of the relative risk from all sources of flooding for both construction, and operation and maintenance phases. Further details can be found in **Appendix 10B Preliminary Flood Risk Assessment**.

Table 10.9 Summary of assessment of flood risk by source

Source	Degree of Hazard	Comment
Fluvial	Construction: low to medium/high locally	Construction: largely low risk with areas crossing watercourses at higher risk.
	Operation and maintenance: low	Operation and maintenance: no permanent changes to watercourses or their flow regimes are predicted. Requirement for compensatory storage will be confirmed at ES stage.
Tidal	Construction: low to high locally	Construction: low risk of flooding when considering presence of flood defences. Area at the eastern end of the draft Order Limits located within the 0.5% Annual Exceedance Probability 2115 modelled breach extent in the unlikely event that a breach in the flood defences occurred.
	Operation and maintenance: low to high locally	Operation and maintenance: draft Order Limits is not located within tidal flood extent when considering presence of flood defences. No changes to tidal flood risk expected due to operation and maintenance of the Project.

Source	Degree of Hazard	Comment
Surface water	Construction: low to medium/high locally	Construction: largely low risk, with some areas at higher risk.
	Operation and maintenance: low	Operation and maintenance: majority of Project infrastructure has low risk; measures would be in place to manage surface water runoff and minimise impacts on the land drainage regime.
Groundwater	Construction: low	Construction: limited groundwater interactions are likely due to nature of the Project and there is a low risk of groundwater flooding across the majority of the draft Order Limits. Groundwater flood risk at the substation locations will be reviewed following ground investigations at ES stage.
	Operation and maintenance: low	Operation and maintenance: the Project is of low vulnerability to this source of flooding. No changes to groundwater flood risk expected due to operation and maintenance of the Project.

Future Baseline

10.6.29 The future baseline relates to known or anticipated changes to the current baseline, in the future, in the absence of the Project. Relevant factors in defining the future baseline and considered in this DES are described here, or will be considered within the ES.

10.6.30 Climate change is likely to lead to significant changes in hydrological conditions within the Study Area over the operational lifetime of the Project. Outputs from UKCP18 (Ref 10.38) and the Future Flows and Groundwater Levels Project (Ref 10.39) will be used to assess likely changes in ambient conditions for the purposes of the future baseline. For the FRA, the impacts of climate change on future flood risk will be assessed in line with current Environment Agency Flood Risk Assessments: Climate Change Allowances guidance (Ref 10.49). Appropriate climate change allowances from this guidance will be incorporated into assessments of future baseline flood risk. This will be factored into the design of flood resilience and mitigation measures and drainage systems for the operational lifetime of the Project.

10.6.31 Changes in environmental legislation or the introduction of new standards under the Environment Act 2021 (Ref 10.1) may drive future improvements in the ecological and chemical quality of water features, building on the implementation of future cycles of RBMPs. However, while the general water quality and health of aquatic ecosystems had been improving due to stricter planning policies and regulations, in recent years this positive trend is facing challenges. Climate change, population growth, a lack of recent investment in foul sewage treatment and sewer capacity, and the emergence of new chemicals and pollutants are all working against these improvements.

10.6.32 Despite these countering factors, it is not expected that the future baseline will materially alter the overall importance of water features. Their importance is largely determined by attributes like their size, specific designations or presence of important fish populations or relevant protected species, or third party uses, and not water quality at any given time. The approach is therefore less sensitive to more subtle

longer-term changes in water quality driven by climate change or stricter environmental regulation and standards.

10.6.33 The effects of known future development that share the same hydrological catchments as the Study Area will also be considered, in terms of the potential for those developments to impact on water receptors, as part of the cumulative effects assessment. **Chapter 19 Cumulative Effects** sets out the approach to the cumulative effects assessment.

Importance of Water Features

10.6.34 The importance of the affected water features are given in **Appendix 10A Water Environment Baseline Report**. These have been based on the criteria in **Table 10.3** and consider surface water, hydromorphology and flood factors.

10.7 Design, Standard, and Additional Mitigation Measures

10.7.1 Mitigation measures to avoid, reduce, manage, or control potential impacts and resulting effects of the Project are typically described and considered in assessment in three groups or types as defined in **Chapter 5 EIA Approach and Methodology** of this DES. Each measure considered in this preliminary assessment is described in the relevant section below.

Design Measures

10.7.2 The Project and draft Order Limits have been designed to avoid sensitive receptors as far as practicable. This is in accordance with the 'Holford Rules' (Ref 10.42), applicable to routeing of new overhead lines, and the 'Horlock Rules' (Ref 10.43) which apply to the design and siting of substations. Further information on the design principles for the overhead line and siting of substations is provided in this section.

Proposed new overhead line

10.7.3 Principal routeing and siting for the new overhead line has sought to avoid designated sites and sensitive receptors as far as possible, as set out in the Corridor Preliminary Routeing and Siting Study (Ref 10.44). Through design reviews and appraisals, further work has been done to identify and evaluate water environment receptors to avoid and minimise adverse impacts through design. The following general design assumptions are being applied with regards to the overhead line. It may not be possible keep to all of these assumptions in all tower locations, and where there are exemptions these will be identified:

- As far as practicable, lakes, reservoirs and large ponds have been avoided and disruption to watercourses and ditches minimised.
- Where possible, rivers and their floodplains are crossed at a narrow location.
- The horizontal clearance of any towers from watercourses and other water features is at least 15 m measured from the top of the bank, batter, edge of a culvert or landward toe of any existing flood defence to avoid hydromorphological impacts, where practicable. Any exceptions will require agreement with the Environment Agency and IDBs, together with consideration of any mitigation that may be required.

- Overflight of watercourses by the overhead line is as perpendicular as practicable.
- There would be a minimum vertical clearance of the overhead line above the bank or flood bank crest level of watercourses in line with National Grid standards and guidance (Ref 10.42 and Ref 10.43).

Substations

10.7.4 Siting Zones were defined to identify areas of lowest flood risk in which to site the substations, considering the distribution of flood risk along the preferred route corridor, and taking into account other environmental and engineering constraints as described in the Corridor Preliminary Routeing and Siting Study (Ref 10.44). Through following the sequential approach, both WMEL-A and WMEL-B substations have been sited in the lowest flood risk areas possible i.e. Flood Zone 1, therefore complying with the National Planning Policy Framework (Ref 10.45) and Section 5.8 of the Overarching National Policy Statement for Energy (EN-1) (Ref 10.3).

10.7.5 Despite seeking to minimise flood risk to proposed substation sites, there are areas of surface water flooding within both the proposed substation Siting Areas. The layout of WMEL-A has been developed to avoid a significant surface water flow path along the southern boundary of the substation site. However, for WMEL-B there is a small and potentially ephemeral watercourse running through the centre of the substation site. It is not possible to avoid this feature, and all other options had similar features or other constraints. Where possible, a minimum setback will be maintained between new substation infrastructure and any watercourse (e.g. a minimum of 10 m from the top of bank, batter, or landward toe of any existing defence). Thus, the design will either divert this watercourse around the margins of the substation or it will need to be culverted. A survey will be undertaken and the interaction and assessment on this water feature will be provided at the ES stage.

10.7.6 A high-level preliminary drainage design has been undertaken for WMEL-A and WMEL-B. Both substations have been designed to incorporate attenuation ponds to manage surface water runoff from the substations and associated access roads. Runoff will be attenuated and discharged at a reduced rate to an off-site watercourse, subject to agreement with the relevant LLFAs (Lincolnshire County Council for WMEL-A and Leicestershire County Council for WMEL-B). The substation and haul road attenuation ponds have been designed to a 1 in 100-year event, with a 40% allowance for climate change resilience, using Flood Estimation Handbook rainfall data in the modelling. The haul road attenuation pond sizes have been developed at an outline level to allow for spatial coordination and may be refined following detailed drainage design. Infiltration testing is proposed as part of the ground investigation works. Should infiltration be demonstrated as feasible at either site, infiltration may be adopted as the primary surface water management strategy in place of discharge to a watercourse.

10.7.7 Electrical equipment such as supercharged transformers contain oil, and although self-bunded, surface water runoff from certain areas will be captured and passed through an oil separator. This will be assessed in the Drainage Strategy for the ES. Reinforced concrete bunds forming the perimeter to the substations to also act as a secondary spillage containment will be assessed in the Drainage Strategy.

10.7.8 In keeping with the current National Standards for SuDS (Ref 10.11), where possible it is proposed that surface water outfalls to any receiving watercourse will be ditches. This avoids the need for the placement of new engineered structures along watercourses. The design of the final connection of these ditches to the receiving

watercourse will be carried out post-consent, if granted. Where required, the ES and FRA would identify specific measures, which would be adopted in the detailed design and secured through the development consent order (DCO). It is recognised that it may not be possible to adhere to all design assumptions applied at this stage. Where required, exemptions will be identified as part of the ES and detailed design.

10.7.9 Substations will generally be unmanned and operated remotely, and at this stage permanent welfare provision is not considered necessary. However, if welfare facilities are required, these would either have a connection to the nearest public sewer or otherwise a sealed cesspit will be provided that would be maintained by a specialist and licensed wastewater contractor, who would pump out the tank for off-site disposal as required. There would be no discharge to the environment.

Access tracks and haul roads

10.7.10 The Project has sought to avoid sensitive features, such as the floodplains of watercourses. Through design reviews and appraisals, further work has been done to identify and evaluate water environment receptors to avoid and minimise adverse impacts. This has included:

- Where possible, watercourses and their floodplains crossings would be located:
  - at a narrow location and with the crossing being as perpendicular to the flow as practicable;
  - where the channel has already been modified;
  - on a stable and straight section; and
  - where there are no trees or habitat on the bank or in the area of the crossing.
- Where there is a requirement to cross watercourses for the temporary construction access routes and haul roads, flood risk impacts would be managed and designed out through commitments W02, W03 and W04 in **Appendix 4A Draft Outline Code of Construction Practice**. These commitments secure flood resilient haul road design, use of clear span bridges or suitably assessed and approved alternatives (where required), and reinstatement of land at the end of construction. Information on the proposed watercourse crossing locations, types of crossing and sizes will be developed as the design progresses.
- The horizontal clearance of any access track or haul road from watercourses and other water features, other than at crossings, will be at least 15 m measured from the top of the bank, batter, edge of a culvert or landward toe of any existing flood defence to avoid hydromorphological impacts, where practicable. Any exceptions will require agreement with the Environment Agency, LLFA and IDBs, and compensatory measures would be provided.
- Assessment of the impact at each crossing point will be undertaken during the ES stage, and a suitable crossing type agreed with statutory consultees. This may include clear span structures for larger or more sensitive watercourses, with the culvert hierarchy applied elsewhere, where the least impacting design that is reasonably practicable is proposed. Where box or pipe culverts are unavoidable:
  - the culvert length will be kept to a minimum;
  - the diameter of the culvert will be determined to ensure adequate flow conveyance, avoiding any increase in flood risk; and

- the base of the culvert would be set below the existing natural bed level for a semi-natural bed to establish within the culvert.

- A Pre-works Riparian and Morphology Survey of the channel of each watercourse to be crossed would be undertaken prior to construction and is secured by **Appendix 4A Draft Outline Code of Construction Practice**. The pre-works survey is to ensure that there is a formal record of the condition of each watercourse prior to commencement of works to install culverts. Once the watercourses are reinstated, silt fences, geotextile matting or straw bales would be used initially to capture mobilised sediments until the watercourse has returned to a settled state. Watercourses will be reinstated to their former, or an improved, condition, and water quality monitoring will be undertaken prior to, during, and following on from the construction activity.

Standard Measures

10.7.11 Standard measures are those that would be implemented on a project of this scale and nature regardless of being subject to statutory assessment. As such, it can be assumed that these measures will be applied in the assessment.

10.7.12 A range of standard measures for the Project will be adopted throughout the duration of the construction phase. A draft Outline Code of Construction Practice is provided in **Appendix 4A Draft Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect the water environment are (refer to **Appendix 4A** for the full description of each measure):

- GG05: on environmental training for construction workers.
- GG07: requiring the development and implementation of a Construction Environmental Management Plan.
- GG09: on reinstatement of land and vegetation.
- GG16: on storage of fuels, oils and chemicals.
- GG17: on the control of water runoff.
- GG18: on the wash down of vehicles and equipment, and use of sediment traps.
- GG24: requiring the development of an Emergency Action Plan for the construction phase.
- W01: on works near to, within, over or under Main Rivers or likely to affect the flow in ordinary watercourses, requiring appropriate environmental permits.
- W02: on measures to be employed for any open cut watercourse crossings.
- W03: on retention of riverbank and in-channel vegetation and use of natural substrate for temporary watercourse crossing culverts.
- W04: on measures to be employed where watercourses are to be crossed by construction traffic.
- W05: on requirements for works affecting watercourses, de-watering and other discharge activities.
- W06: on surface water drainage measures to be incorporated into the design.

- W07: on the use of the Environment Agency's Floodline service, for advance warning of potential local flooding events, and development and implementation of a suitable Flood Risk Action Plan.
- W08: on engagement and alternative supply where private water supplies are impacted.
- W09: on response in the event of a significant spill during construction.
- W10: on potential severance of existing land drainage routes, including agricultural field drainage systems.
- W11: on control of runoff from working areas through implementation of a Drainage Management Plan.
- W12: on surface water quality monitoring.

10.7.13 For the operation and maintenance phase, the fire protection system would be designed and operated in accordance with National Grid's requirements and standards for limitation of fire risk at electricity substations and other relevant operational sites. This includes production of a Fire Risk Assessment, a Fire Strategy document and implementation of fire preventative and protective measures.

10.7.14 Where historic clay pipes providing local land drainage are encountered during the construction works, the Contractor will reinstate any disrupted sections to maintain continuity of the existing drainage network. Reinstatement will be undertaken using appropriate materials and methods to ensure that the pre-development drainage function, flow pathways, and hydraulic performance are preserved.

Additional Mitigation Measures

10.7.15 Additional mitigation measures are those identified through assessment to reduce likely significant adverse environmental effects which may still occur despite the inclusion of the embedded design and standard measures described above.

10.7.16 As the design progresses through to the ES stage, further assessment in the FRA and WER Assessment may identify additional mitigation measures/commitments required to reduce detrimental effects on the water environment.

10.8 Preliminary Assessment of Effects

10.8.1 A summary of potential impacts and mitigation measures identified in this preliminary assessment is set out below. An initial assessment of the likely significance of effects with relevant mitigation in place is provided in **Table 10.10** for construction and **Table 10**.11 operation and maintenance. Where appropriate for likely significant or notable effects, further explanation is provided in the following sections on construction, and operation and maintenance effects.

10.8.2 A catchment-based approach has been adopted for this assessment, with consideration given to the potential cumulative impact of works across the catchment. However, if works at each point are adequately managed, they would not contribute to a cumulative impact.

10.8.3 As further Project information becomes available the assessment will be updated, which may identify the need for additional mitigation, and conclusions reported in the ES.

Construction

10.8.4 Construction activities, as described in **Chapter 4 Description of the Project**, include the following:

- soil stripping, earthworks and excavations;
- use and refuelling of plant and vehicles;
- watercourse crossings for access (culverts and clear span bridges);
- watercourse crossings for overhead lines (crossing protection scaffolds);
- temporary works (e.g. spoil storage; works on the floodplain);
- temporary construction compounds;
- temporary drainage;
- water use for mixing small quantities of cementitious materials, dust suppression and welfare; and
- foul drainage from welfare facilities.

Overhead line, access tracks and haul roads

10.8.5 Surface water quality of receiving water features may be adversely impacted by site runoff, works directly affecting water features, or the dewatering of excavations with high sediment concentrations. These concerns are relevant for both the new overhead line and the reconductored section. Accidental spillage of fuels, oils, and other potentially polluting chemicals and liquids may also result in water pollution. In addition, herbicide may be used to control the growth of weeds on any stockpiles of soil and earth; therefore, stockpiles will be located away from water features to minimise runoff risk and the use of herbicides will be carefully controlled. Overall, the risk of pollution is higher when vegetation is removed and soil is exposed, as well as when works are close to or in, under or over watercourses.

10.8.6 The standard measures, described in Section 10.7 and detailed in **Appendix 4A Draft Outline Code of Construction Practice**, would reduce the risk of pollution to the water environment during construction by removing pathways between sources and receptors for many construction activities.

10.8.7 The control and management measures, described in **Appendix 4A Draft Outline Code of Construction Practice**, would also minimise impacts on changes to flood risk during construction.

10.8.8 There may be localised and temporary changes to hydromorphology at watercourse crossings for access tracks, haul roads or temporary surface water outfalls. Construction works may also temporarily alter surface water flow paths, runoff volumes and rates of discharge, especially when vegetation has been removed, ground compacted, and temporary new hardstanding provided, as well as cause the build-up of sediment and other materials in the channel. This can potentially affect local flows in watercourses and result in localised erosion or deposition. Additionally, construction activities have the potential to create blockages in watercourses that could locally affect flood risk (e.g. from debris falling into watercourses or from the accumulation of silt). The control and management measures, described in Section 10.7 and detailed in **Appendix 4A Draft Outline**

Code of Construction Practice, would reduce the risk of hydromorphological impacts to watercourses during construction.

10.8.9 Additionally, there is likely to be some encroachment of the tower working areas on the 15 m watercourse buffers. This is most likely to occur within Sections 1 and 2 in the dense network of drains. The control and management measures, described in Section 10.7 and detailed in **Appendix 4A Draft Outline Code of Construction Practice**, would reduce the risk of construction impacts to watercourses during construction.

10.8.10 It is assumed that existing, unmodified access roads would be used for the reconductoring section of the Project. This would reduce the possible effects from new access tracks and haul roads.

Substations

10.8.11 During the construction of the substations, there would be the potential for impacts on existing land drainage regimes and associated surface water flood risk due to changes in land surface permeabilities or local topography. For example, vegetation cover may be stripped, earthworks may be undertaken, or existing land drainage infrastructure may be disrupted. There may also be a requirement to divert or culvert a watercourse at the WMEL-B site for the construction of WMEL-B. Some infrastructure and working areas, including the temporary storage of excavation arisings, may also be located within Flood Zones 2 and 3. This has the potential to affect floodplain storage or conveyance during construction, and may require temporary compensation to be provided. The control and management measures, described in **Appendix 4A Draft Outline Code of Construction Practice**, would minimise impacts on changes to flood risk during construction.

10.8.12 As the Project would be located within a water stressed area, there may be potential for impacts on water supply in the Study Area from services at construction compounds and water demand during construction. Water supply requirements for the Project will be determined at the ES stage and further consultation with Anglian Water and the Environment Agency will be undertaken.

10.8.13 During the construction of WMEL-B, if dewatering is required, there may be potential impacts on the baseflow of springs and watercourses which run through the proposed site. As the WMEL-B site was not accessible during the walkover, it was not possible to survey these water features. Therefore, a survey will be undertaken on the water features and an assessment of their interaction will be provided at the ES stage.

Summary of likely significant effects during construction

10.8.14 As detailed in **Table 10.10**, the preliminary effects during construction are considered to be not significant, across the Project:

- Temporary impacts on surface water quality from construction runoff, have been identified as having negligible adverse magnitudes of change on relevant water environment receptors, with an importance of medium to high. With the implementation of design measures, standard mitigation and any additional mitigation proposed, these impacts would result in slight adverse effects, which are **not significant**.

- Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff have been identified as having negligible adverse magnitudes of change on water environment receptors, with an importance of low to high. With the implementation of design measures, standard mitigation and any additional mitigation considered, these impacts would result in slight adverse effects, which are **not significant**.
- Temporary impacts on flood risk have been identified as having negligible adverse magnitudes of change on water environment receptors, with an importance of medium to very high. With the implementation of design measures, standard mitigation and any additional mitigation considered, these impacts would result in slight adverse effects, which are **not significant**.

Operation and Maintenance

10.8.15 Operation and maintenance activities, as described in **Chapter 4 Description of the Project**, including the following:

- runoff (volume and quality) from any impermeable surfaces;
- pollution from the use of herbicides;
- foul drainage from welfare facilities;
- chemical spillage risk including fire risk at substations; and
- loss of floodplain storage/disruption of flow paths.

10.8.16 Potential adverse impacts on the surface water environment during operation and maintenance are related to surface water runoff and spillage risk from the substation infrastructure, as well as the siting of new permanent above ground infrastructure affecting floodplain storage and surface water flow paths (although this will be minimised during design development). Although there may be some small areas of new hardstanding elsewhere, these areas are likely to be too small to represent any pollution risk to water receptors or result in any change to flood risk.

10.8.17 Substations will generally be unmanned and operated remotely, and at this stage permanent welfare provision is not considered necessary. However, if it is, this will either have a connection to the nearest public sewer or otherwise a sealed cesspit will be provided that would be maintained by a specialist and licensed wastewater contractor, who would pump out the tank for off-site disposal as required.

Overhead line

10.8.18 Given the nature of the new overhead line and reconducted section, they are unlikely to have any permanent adverse impacts on watercourse hydromorphology, flow regimes or floodplains, with the implementation of the design principles described in Section 10.7 (e.g. the application of suitable buffers). At this stage it is not proposed to replace any towers within the reconductoring section; however, if the requirement to replace towers is identified, this will be assessed at the ES stage.

10.8.19 The overhead line component of the Project is essentially passive infrastructure that, once constructed, will not have any adverse impact on the water environment. There would be no new consumptive water uses or significant runoff, meaning that the water quality of water receptors would not be degraded. There would be no major

sources of potential pollution associated with overhead line infrastructure once construction is complete.

10.8.20 Alteration of ground elevations and changes in surface water flood flow pathways may result in some very localised modification of surface water flows. The introduction of barriers to natural overland flow paths, such as the introduction of embankments, may have permanent impacts on catchment dynamics for surface water. However, new electricity transmission infrastructure is likely to only have localised adverse impacts.

10.8.21 All potential significant effects are summarised at the end of this section.

Substations

10.8.22 The proposed WMEL-A and WMEL-B substations would be located within Flood Zone 1, so would not be at risk of fluvial flooding and should not require any associated compensatory storage. However, there is high existing surface water flood risk at the proposed substation locations. The Project has been designed to reduce this risk by, where possible, placing infrastructure away from the highest risk areas and to ensure the surface water flood risk to nearby receptors is not increased, as outlined in the high level preliminary drainage design (Section 10.7) and in **Appendix 10B Preliminary Flood Risk Assessment**. There remains a potential risk from the ordinary watercourse at WMEL-B which will be addressed as the design develops during the ES stage.

10.8.23 The proposed substation infrastructure would have large areas of impermeable surfaces which have the potential to increase the volume of runoff in the area and increase flood risk to downstream receptors. This has been avoided through appropriate design of drainage infrastructure to limit runoff rates to the greenfield rate (or to an alternative rate agreed with the relevant LLFAs (Lincolnshire County Council for the WMEL-A site, and Leicestershire County Council for the WMEL-B site)). The preliminary drainage design is set out in Section 10.7 and includes the use of SuDS for the management of surface water runoff.

10.8.24 There is plant and electrical equipment proposed for the substation sites that contains oils and other potentially polluting chemical substances. The Drainage Strategy would need to include the use of proprietary pollution control devices to manage the risk from oil/chemical spills. The electrical equipment would be self-bunded to minimise the risk of a chemical spillage. The equipment would also be located on impermeable hard standing and with secondary containment provided by reinforced concrete bunds, which would prevent the propagation of any spillage so that it can be managed and remediated on-site. The surface water drainage system would include the option for spillages to be contained, so that they can be removed for off-site disposal at a suitable, licensed waste facility in accordance with the waste management regulations prevailing at the time. The Drainage Strategy will be provided alongside the ES.

10.8.25 A specific risk to the water environment may occur in the unlikely event of a fire at a substation. This would be managed through the fire protection system, in accordance with National Grid's requirements and standards. Any runoff occurring from managing the fire would be dealt with through the Drainage Strategy.

10.8.26 All potential significant effects are summarised at the end of this section.

Maintenance

10.8.27 Maintenance activities, as described in **Chapter 4 Description of the Project**, include the use of machinery and vehicles for non-intrusive inspections and localised repairs. Due to the small-scale nature of these works, their low frequency and localised nature, there is no potential for significant effects providing standard good practice measures are adopted, which can be incorporated into task specific method statements and Environmental Management Plans.

10.8.28 Maintenance activities would generally be limited to non-intrusive inspections. Where repairs are necessary, the activities involved would be similar to those for construction, albeit over a much smaller area and scale. Herbicide may be used to control the growth of weeds, and the use of herbicides will be carefully controlled. Maintenance would be undertaken in line with National Grid operational management procedures. Given the nature of the Project, maintenance activities are not considered likely to result in significant effects on surface water environment receptors.

Summary of likely significant effects during operation and maintenance

10.8.29 As detailed in **Table 10.11**, the preliminary effects during operation and maintenance are considered to be not significant, across the Project:

- Potential pollution of surface water, from an increase in runoff from impermeable surfaces and maintenance activities, has been identified as having a negligible adverse magnitude of change on water environment receptors with an importance of medium to high. With the implementation of design measures, standard mitigation and any additional mitigation considered, these impacts would result in slight adverse effects, which are **not significant**.
- Localised impacts on hydromorphology, from changes in runoff, have been identified as having negligible to minor adverse magnitude of change on water environment receptors with an importance of low to high. With the implementation of design measures, standard mitigation and any additional mitigation considered, these impacts would result in slight adverse effects, which are **not significant**.
- Potential increase in flood risk has been identified as having negligible adverse magnitude of change on water environment receptors with an importance of medium to very high. With the implementation of design measures, standard mitigation and any additional mitigation considered, these impacts would result in slight adverse effects, which are **not significant**.

Table 10.10 Preliminary summary of Water Environment effects during construction

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Section 1					
Moulton River and its tributaries within Moulton River WER water body catchment	Standard mitigation measures are presented in Section 10.7 and **Appendix 4A Draft Outline Code of Construction Practice** (W02, W09, W11, GG16, GG17, GG18, GG19).	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Moulton River and its tributaries within Moulton River WER water body catchment	Standard mitigation measures are presented in Section 10.7 and **Appendix 4A Draft Outline Code of Construction Practice** (W02, W04, W03, W10, W11).	Localised and temporary impacts on hydromorphology and flow regimes from surface water outfalls and changes in runoff.	Minor adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Moulton River and its tributaries within Moulton River WER water body catchment	Standard mitigation measures are presented in Section 10.7 and **Appendix 4A Draft Outline Code of Construction Practice** (W04, W06, W07, W10, W11).	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
River Welland	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	High for water quality	Slight adverse effect (not significant)
River Welland	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from surface water outfalls and changes in runoff.	Minor adverse	Medium for hydromorphology	Slight adverse effect (not significant)
River Welland	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Vernatt's Drain	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Vernatt's Drain	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from surface water outfalls and changes in runoff.	Negligible adverse	Low for hydromorphology	Slight adverse effect (not significant)
Vernatt's Drain	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
River Glen and its tributaries within Glen WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	High for water quality	Slight adverse effect (not significant)
River Glen and its tributaries within Glen WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
River Glen and its tributaries within Glen WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
South Forty Foot Drain and its tributaries within Black Sluice IDB draining to the South Forty Foot Drain WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
South Forty Foot Drain and its tributaries within Black Sluice IDB draining to the South Forty Foot Drain WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Minor adverse	Low for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
South Forty Foot Drain and its tributaries within Black Sluice IDB draining to the South Forty Foot Drain WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Section 2					
East Glen River and its tributaries within East Glen River WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff..	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
East Glen River and its tributaries within East Glen River WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
East Glen River and its tributaries within East Glen River WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
West Glen River and its tributaries and drains within West Glen River WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
West Glen River and its tributaries and drains within West Glen River WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
West Glen River and its tributaries and drains within West Glen River WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
River Tham and its tributaries within The Tham WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
River Tham and its tributaries within The Tham WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
River Tham and its tributaries within The Tham WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
River Witham and its tributaries within Witham headwaters to conf Cringle	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
BK WER water body catchment					
River Witham and its tributaries within Witham headwaters to conf Cringle BK WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
River Witham and its tributaries within Witham headwaters to conf Cringle BK WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Grimsthorpe Park Brook	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Low for water quality	Slight adverse effect (not significant)
Grimsthorpe Park Brook	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Low for hydromorphology	Slight adverse effect (not significant)
Grimsthorpe Park Brook	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Section 3					
Wymondham Brook and its unnamed tributaries within East Wymondham Brook Catchment (trib of Langham Brook) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Wymondham Brook and its unnamed tributaries within East Wymondham Brook Catchment (trib of Langham Brook) WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Wymondham Brook and its unnamed tributaries within East Wymondham Brook Catchment (trib of Langham Brook) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
The River Eye, the River Wreake and its tributaries and drains within Eye from Source to Langham Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
The River Eye, the River Wreake and its tributaries and drains within Eye from Source to Langham Brook WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	High for hydromorphology	Slight adverse effect (not significant)
The River Eye, the River Wreake and its tributaries and drains within Eye from Source to Langham Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Freeby Brook and its tributaries within Freeby Brook Catchment (trib of Eye) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Freeby Brook and its tributaries within Freeby Brook Catchment (trib of Eye) WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Low for hydromorphology	Slight adverse effect (not significant)
Freeby Brook and its tributaries within Freeby Brook Catchment (trib of	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Eye) WER water body catchment					
Thorpe Brook and its tributaries and drains within Thorpe Brook Catchment (trib of Eye) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Thorpe Brook and its tributaries and drains within Thorpe Brook Catchment (trib of Eye) WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Thorpe Brook and its tributaries and drains within Thorpe Brook Catchment (trib of Eye) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Scalford Brook and its tributaries within Scalford Brook Catchment (trib of Wreake) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Scalford Brook and its tributaries within Scalford Brook Catchment (trib of	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow	Negligible adverse	High for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Wreake) WER water body catchment		regimes from watercourse crossings, surface water outfalls and changes in runoff.			
Scalford Brook and its tributaries within Scalford Brook Catchment (trib of Wreake) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Welby Brook and its tributary within Welby Brook Catchment (trib of Wreake) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Welby Brook and its tributary within Welby Brook Catchment (trib of Wreake) WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Welby Brook and its tributary within Welby Brook Catchment (trib of Wreake) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Austen Dyke and its tributaries within Austen Dyke Catchment (trib of	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Wreake) WER water body catchment					
Austen Dyke and its tributaries within Austen Dyke Catchment (trib of Wreake) WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Austen Dyke and its tributaries within Austen Dyke Catchment (trib of Wreake) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Section 4					
Gaddesby Brook and Queniborough Brook and their tributaries and drains within Queniborough Brook catchment (trib of Wreake) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Gaddesby Brook and Queniborough Brook and their tributaries and drains within Queniborough Brook catchment (trib of Wreake) WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	High for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Gaddesby Brook and Queniborough Brook and their tributaries and drains within Queniborough Brook catchment (trib of Wreake) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Eye Brook and its tributaries and drains within Eye Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Eye Brook and its tributaries and drains within Eye Brook WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	High for hydromorphology	Slight adverse effect (not significant)
Eye Brook and its tributaries and drains within Eye Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Stonton Brook and its tributaries within Stonton Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Stonton Brook and its tributaries within Stonton Brook WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
		crossings, surface water outfalls and changes in runoff.			
Stonton Brook and its tributaries within Stonton Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
River Welland and its tributaries within Welland – conf to Langton BK to conf Gwash WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
River Welland and its tributaries within Welland – conf to Langton BK to conf Gwash WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	High for hydromorphology	Slight adverse effect (not significant)
River Welland and its tributaries within Welland – conf to Langton BK to conf Gwash WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Langton Brook	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Langton Brook	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Langton Brook	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Section 5					
Unnamed tributaries of the River Welland and drains within Welland – conf Jordan to conf Langton BK WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Unnamed tributaries of the River Welland and drains within Welland – conf Jordan to conf Langton BK WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Low for hydromorphology	Slight adverse effect (not significant)
Unnamed tributaries of the River Welland and drains within Welland – conf Jordan	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
to conf Langton BK WER water body catchment					
River Jordan and its tributaries and drains within Jordan (Welland) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
River Jordan and its tributaries and drains within Jordan (Welland) WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
River Jordan and its tributaries and drains within Jordan (Welland) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
River Ise and its tributary within Ise – Upper WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff..	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
River Ise and its tributary within Ise – Upper WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
		outfalls and changes in runoff.			
River Ise and its tributary within Ise – Upper WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Slade Brook and its tributary within Slade Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Slade Brook and its tributary within Slade Brook WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Slade Brook and its tributary within Slade Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Loddington Arm (Ise) tributaries within Loddington Arm (Ise) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Loddington Arm (Ise) tributaries within Loddington Arm (Ise) WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse	Negligible adverse	Low for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
		crossings, surface water outfalls and changes in runoff.			
Loddington Arm (Ise) tributaries within Loddington Arm (Ise) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Pytchley Brook and its tributaries within Pytchley Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Pytchley Brook and its tributaries within Pytchley Brook WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Pytchley Brook and its tributaries within Pytchley Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Hardwick Brook and its tributaries within Hardwick Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Hardwick Brook and its tributaries within Hardwick Brook WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Hardwick Brook and its tributaries within Hardwick Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Harrowden Brook tributary and drain within Harrowden Brook (Nene) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Harrowden Brook tributary and drain within Harrowden Brook (Nene) WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Harrowden Brook tributary and drain within Harrowden Brook (Nene) WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Swanspool Brook and its tributaries within Swanspool Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Swanspool Brook and its tributaries within Swanspool Brook WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Swanspool Brook and its tributaries within Swanspool Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Very high for flood risk	Slight adverse effect (not significant)
River Nene within Nene – conf Brampton Branch to conf Ise WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	High for water quality	Slight adverse effect (not significant)
River Nene within Nene – conf Brampton Branch to conf Ise WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
River Nene within Nene – conf Brampton Branch to conf Ise WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Grendon Lakes tributaries within Gendon Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on surface water quality from construction runoff.	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Grendon Lakes tributaries within Gendon Brook WER water body catchment	As per Mouton River in Section 1.	Localised and temporary impacts on hydromorphology and flow regimes from watercourse crossings, surface water outfalls and changes in runoff.	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Grendon Lakes tributaries within Gendon Brook WER water body catchment	As per Mouton River in Section 1.	Temporary impacts on flood risk.	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Table 10.11 Preliminary summary of Water Environment effects during operation and maintenance

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Section 1					
Moulton River and its tributaries within Moulton River WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Moulton River and its tributaries within Moulton River WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Moulton River and its tributaries within Moulton River WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
River Welland	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	High for water quality	Slight adverse effect (not significant)
River Welland	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
River Welland	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Vernatt's Drain	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Vernatt's Drain	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Minor adverse	Low for hydromorphology	Slight adverse effect (not significant)
Vernatt's Drain	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
River Glen and its tributaries within Glen WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	High for water quality	Slight adverse effect (not significant)
River Glen and its tributaries within Glen WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
River Glen and its tributaries within Glen WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
South Forty Foot Drain and its tributaries within Black Sluice IDB draining to the South Forty Foot Drain WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
South Forty Foot Drain and its tributaries within Black Sluice IDB draining to the South Forty Foot Drain WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Minor adverse	Low for hydromorphology	Slight adverse effect (not significant)
South Forty Foot Drain and its tributaries within Black Sluice IDB draining to the South Forty Foot Drain WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Section 2					
East Glen River and its tributaries within East Glen River WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
East Glen River and its tributaries within East Glen River WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
East Glen River and its tributaries within East Glen River WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
West Glen River and its tributaries and drains within West Glen River WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces, maintenance activities and welfare facilities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
West Glen River and its tributaries and drains within West Glen River WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
West Glen River and its tributaries and drains within West Glen River WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
River Tham and its tributaries within The Tham WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
		and maintenance activities			
River Tham and its tributaries within The Tham WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
River Tham and its tributaries within The Tham WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
River Witham and its tributaries within Witham headwaters to conf Cringle BK WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
River Witham and its tributaries within Witham headwaters to conf Cringle BK WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
River Witham and its tributaries within Witham headwaters to conf Cringle BK WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Grimsthorpe Park Brook	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Low for water quality	Slight adverse effect (not significant)
Grimsthorpe Park Brook	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Low for hydromorphology	Slight adverse effect (not significant)
Grimsthorpe Park Brook	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Section 3					
Wymondham Brook and its unnamed tributaries within East Wymondham Brook Catchment (trib of Langham Brook) WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Wymondham Brook and its unnamed tributaries within East Wymondham Brook Catchment (trib of Langham Brook) WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Wymondham Brook and its unnamed tributaries within East Wymondham Brook Catchment (trib of Langham Brook) WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
The River Eye, the River Wreake, and their tributaries and drains within Eye from Source to Langham Brook WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
The River Eye, the River Wreake and their tributaries and drains within Eye from Source to Langham Brook WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	High for hydromorphology	Slight adverse effect (not significant)
The River Eye, the River Wreake and their tributaries and drains within Eye from Source to Langham Brook WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Freeby Brook and its tributaries within Freeby Brook Catchment (trib of Eye) WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
		and maintenance activities			
Freeby Brook and its tributaries within Freeby Brook Catchment (trib of Eye) WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Low for hydromorphology	Slight adverse effect (not significant)
Freeby Brook and its tributaries within Freeby Brook Catchment (trib of Eye) WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Thorpe Brook and its tributaries and drains within Thorpe Brook Catchment (trib of Eye) WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Thorpe Brook and its tributaries and drains within Thorpe Brook Catchment (trib of Eye) WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Thorpe Brook and its tributaries and drains within Thorpe Brook Catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
(trib of Eye) WER water body catchment					
Scalford Brook and its tributaries within Scalford Brook Catchment (trib of Wreake) WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Scalford Brook and its tributaries within Scalford Brook Catchment (trib of Wreake) WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	High for hydromorphology	Slight adverse effect (not significant)
Scalford Brook and its tributaries within Scalford Brook Catchment (trib of Wreake) WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Welby Brook and its tributary within Welby Brook Catchment (trib of Wreake) WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Welby Brook and its tributary within Welby Brook	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Catchment (trib of Wreake) WER water body catchment					
Welby Brook and its tributary within Welby Brook Catchment (trib of Wreake) WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Austen Dyke and its tributaries within Austen Dyke Catchment (trib of Wreake) WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces, maintenance activities and welfare facilities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Austen Dyke and its tributaries within Austen Dyke Catchment (trib of Wreake) WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Austen Dyke and its tributaries within Austen Dyke Catchment (trib of Wreake) WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Section 4					
Gaddesby Brook and Queniborough Brook and their tributaries and drains	Design and Standard mitigation measures are	Potential pollution of surface water from increase in runoff from	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
within Queniborough Brook catchment (trib of Wreake) WER water body catchment	presented in Section 10.7.	impermeable surfaces and maintenance activities			
Gaddesby Brook and Queniborough Brook and their tributaries and drains within Queniborough Brook catchment (trib of Wreake) WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	High for hydromorphology	Slight adverse effect (not significant)
Gaddesby Brook and Queniborough Brook and their tributaries and drains within Queniborough Brook catchment (trib of Wreake) WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Eye Brook and its tributaries and drains within Eye Brook WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Eye Brook and its tributaries and drains within Eye Brook WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	High for hydromorphology	Slight adverse effect (not significant)
Eye Brook and its tributaries and drains within Eye Brook WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Stonton Brook and its tributaries within Stonton Brook WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Stonton Brook and its tributaries within Stonton Brook WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Stonton Brook and its tributaries within Stonton Brook WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
River Welland and its tributaries within Welland – conf to Langton BK to conf Gwash WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
River Welland and its tributaries within Welland – conf to Langton BK to conf Gwash WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	High for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
River Welland and its tributaries within Welland – conf to Langton BK to conf Gwash WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Langton Brook	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Langton Brook	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Langton Brook	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Section 5					
Unnamed tributaries of the River Welland and drains within Welland – conf Jordan to conf Langton BK WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Unnamed tributaries of the River Welland and drains within Welland – conf Jordan to conf Langton BK WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Low for hydromorphology	Slight adverse effect (not significant)
Unnamed tributaries of the River Welland and drains within Welland – conf Jordan to conf Langton BK WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
River Jordan and its tributaries and drains within Jordan (Welland) WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
River Jordan and its tributaries and drains within Jordan (Welland) WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
River Jordan and its tributaries and drains within Jordan (Welland) WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
River Ise and its tributary within Ise – Upper WER water body catchment	Design and Standard mitigation measures are	Potential pollution of surface water from increase in runoff from	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
	presented in Section 10.7.	impermeable surfaces and maintenance activities			
River Ise and its tributary within Ise – Upper WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
River Ise and its tributary within Ise – Upper WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Slade Brook and its tributary within Slade Brook WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Slade Brook and its tributary within Slade Brook WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Slade Brook and its tributary within Slade Brook WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Loddington Arm (Ise) tributaries within Loddington Arm (Ise) WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
		and maintenance activities			
Loddington Arm (Ise) tributaries within Loddington Arm (Ise) WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Low for hydromorphology	Slight adverse effect (not significant)
Loddington Arm (Ise) tributaries within Loddington Arm (Ise) WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Pytchley Brook and its tributaries within Pytchley Brook WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Pytchley Brook and its tributaries within Pytchley Brook WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Pytchley Brook and its tributaries within Pytchley Brook WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Hardwick Brook and its tributaries within Hardwick Brook WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Hardwick Brook and its tributaries within Hardwick Brook WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Hardwick Brook and its tributaries within Hardwick Brook WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Harrowden Brook tributary and drain within Harrowden Brook (Nene) WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Harrowden Brook tributary and drain within Harrowden Brook (Nene) WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Harrowden Brook tributary and drain within Harrowden	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
Brook (Nene) WER water body catchment					
Swanspool Brook and its tributaries within Swanspool Brook WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Swanspool Brook and its tributaries within Swanspool Brook WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Swanspool Brook and its tributaries within Swanspool Brook WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Very high for flood risk	Slight adverse effect (not significant)
River Nene within Nene – conf Brampton Branch to conf Ise WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	High for water quality	Slight adverse effect (not significant)
River Nene within Nene – conf Brampton Branch to conf Ise WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)

Receptor(s)	Design, Standard and Additional Mitigation	Impact	Magnitude of Change	Importance	Likely Significance of Effect
River Nene within Nene – conf Brampton Branch to conf Ise WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)
Grendon Lakes tributaries within Gendon Brook WER water body catchment	Design and Standard mitigation measures are presented in Section 10.7.	Potential pollution of surface water from increase in runoff from impermeable surfaces and maintenance activities	Negligible adverse	Medium for water quality	Slight adverse effect (not significant)
Grendon Lakes tributaries within Gendon Brook WER water body catchment	Design measures are presented in Section 10.7.	Localised impacts on hydromorphology from changes in runoff	Negligible adverse	Medium for hydromorphology	Slight adverse effect (not significant)
Grendon Lakes tributaries within Gendon Brook WER water body catchment	Design measures are presented in Section 10.7.	Potential increase in flood risk	Negligible adverse	Medium for flood risk	Slight adverse effect (not significant)

Alternative Scenarios

10.8.30 As described in Section 4.4 of **Chapter 4 Description of the Project**, there are elements of the Project which have not been fixed at this stage. Therefore, flexibility needs to be considered in this DES. Two alternative scenarios are outlined in **Table 4.3** and are assessed in **Table 10.12** below.

10.8.31 This assessment considers each scenario, together with the assumptions and mitigation measures described in this chapter. It provides a qualitative appraisal of the potential changes to the preliminary conclusions reported in this section, should these scenarios occur.

10.8.32 **Table 10.12** presents the conclusions of this appraisal, supported by appropriate qualitative justification, to ensure that any potentially significant effects are identified in this DES. If these alternative scenarios remain under consideration in the application for development consent, they will be appropriately assessed in the ES.

Table 10.12 Preliminary assessment of alternative scenarios

Scenario	Potential Change in Impacts	Potential Change in Effects
1. No or reduced haul roads	Where new haul roads are not constructed, it is assumed that existing agricultural access routes, supplemented by temporary trackway, would be utilised. However, the condition and capacity of any existing watercourse crossings along these routes are currently unknown, and upgrades may be required to accommodate agricultural machinery used to transport construction materials. In the scenario where no haul roads are proposed, this could reduce the potential for increased surface water runoff associated with an increase in hardstanding, and remove the need for watercourse crossings for the haul roads on surface water receptors. In the scenario of reduced haul roads, this could reduce the potential for increased surface water runoff associated with an increase in hardstanding, and reduce the number of watercourse crossings required for the haul roads on surface water receptors.	In the scenario where no haul roads are constructed, this may reduce the previously identified slight adverse (not significant) effects on flood risk to neutral (i.e. no change). However, due to uncertainties regarding the condition and capacity of existing watercourse crossings, this option is likely to result in no change to the effects reported for water quality and hydromorphology. At this stage, no specific data on the location or number of hauls roads removed is available. Therefore, in the case of reduced haul road provision, there would be no change to the previously reported significant effects.
2. Off-site construction compound	This scenario could reduce the potential for increased surface water runoff to surface water receptors	This may reduce the previously identified slight adverse (not significant) effects on flood risk, water

Scenario	Potential Change in Impacts	Potential Change in Effects
near Melton Mowbray	associated with additional hardstanding at the construction compounds. This reflects the use of a smaller number of compounds, rather than multiple widely distributed compounds. As there are no watercourses in the vicinity of the compound, there is likely to be reduced flood risk, water quality and hydromorphology impacts compared to what is currently proposed.	quality and hydromorphology to neutral (i.e. no change).

10.9 Monitoring

10.9.1 The need for water quality monitoring to support construction works by helping to identify any pollution risks early or the correct operation of the temporary drainage systems will be determined at the ES stage once more certainty is known about the design, including watercourse crossings. If it is decided that water quality monitoring is required, further details will be set out at the ES stage as to what broadly will be provided. However, full details of the monitoring scope would be developed post-DCO consent as part of the Surface and Groundwater Management Plan, secured through **Appendix 4A Draft Outline Code of Construction Practice**.

10.9.2 Given the nature of the works, monitoring is expected to consist mainly of high frequency visual and olfactory observations, and in-situ monitoring with a hand-held water quality probe. Locations upstream and downstream of the works should be considered so that changes can be compared during active construction works. Options for grab samples to be collected for laboratory analysis could be included. While these would not support early intervention on-site in response to a possible pollution event, they can help determine the quality of a body of water to decide how it may be removed from the site, or as part of post-pollution event investigations.

10.9.3 Outside of the substation locations, construction works would be only modest in scale and would be transitory through the landscape. The relative risk from the scale and duration of construction at any given point needs to be reflected in any monitoring approach, and there may not be the need for extensive baseline monitoring in advance of any construction works.

10.9.4 Once constructed, the operational Project would be essentially passive and low risk to the water environment, and thus there would be no need for longer-term monitoring. There would be surface water runoff from the two substation sites, but the pollution risk from these would be managed in accordance with the Drainage Strategy including proprietary measures and SuDS where appropriate. If a Water Discharge Activity Permit is required from the Environment Agency, this will specify any compliance monitoring that would need to be undertaken.

10.10 Further Assessment

10.10.1 The ES will present a detailed assessment in accordance with relevant guidance, of the likely significant effects during construction, operation and maintenance.

Significance of effect will be determined in relation to the importance of the receptor and the magnitude of the impact.

10.10.2 The assessment presented within the ES will include refining the assigned importance to receptors (for example watercourses and floodplains), where necessary based on the findings of all data collected, as well as the magnitude of impacts (i.e. the change in the baseline conditions). The criteria will consider the scale/extent of the predicted change and the nature and duration of the impact. The factors will be combined to give an overall significance of effect with reference to a matrix.

10.10.3 The ES will present the final key parameters and assumptions used within that assessment, particularly drawing attention to any aspects that may have evolved from what is presented in this preliminary assessment. This includes current drainage and design limitations, such as watercourse crossings, culverting or diverting of watercourses, water supply requirements and the overarching drainage strategy.

10.10.4 The ES will provide final details of design, standard, and additional mitigation measures, which will be informed by the findings of this preliminary assessment, responses to the Stage 2 Consultation and ongoing engagement with stakeholders.

10.10.5 The ES will be informed by the FRA and WER Assessment, which will be prepared in parallel to the impact assessment. The ES will also be informed by additional surveys which will include targeted surveys, once watercourse crossings have been confirmed. A walkover survey of the watercourse and springs at WMEL-B is also planned to be undertaken.

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