Green Hill Solar Farm
EN010170

Water Framework Directive Assessment
Revision A (Tracked)

Prepared by: Arthian

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Schedule of Changes

Revision	Section Reference	Description of Changes	Reason for Revision
A	[cover]	Updated to Revision A	As required for submission at Deadline 1.
	[throughout]	Updates to document references	As required for submission at Deadline 1.
	Section 5.6 Section 9	Additional information on WFD groundwater bodies added.	In response to RRs made by the Environment Agency

~~Water Framework Directive Assessment~~

Water Framework Directive Assessment_Revision A

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Site: Green Hill Solar

Date: ~~23/05/2025~~30/10/2025

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Quality Assurance

Issue Record

Revision	Description	Date	Author	Reviewer	Approver
1.0	First Issue	08/04/2025	LA / GO	JR	JR
2.0	Second Issue for submission of ES Chapter	23/05/2025	LA / GO	JR	JR
3.0	Third Issue following amendments in response to Relevant Representations made by the Environment Agency.	30/10/2025	LA	JR	JR

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1. Introduction

1.1 Acknowledgement

1.1.1 This report has been prepared for the sole and exclusive use of Green Hill Solar Farm Ltd in accordance with the scope of work presented via email by Arthian (formally Mabbett Ltd), Letter Agreement (313532/LA/DH) dated 27/08/2024. This report is based on information and data collected by Arthian. Should any of the information be incorrect, incomplete, or subject to change, Arthian may wish to revise the report accordingly.

1.1.2 The Scheme comprises of a number of land parcels (the "Site" or "Sites") described as Green Hill A, A.2, B, C, D, E, F, G for the solar arrays, and also the Battery Energy Storage System (BESS), grid connection infrastructure and the Cable Route Corridor.

1.2 Project Understanding

1.2.1 The aim of the Water Framework Directive (WFD) Assessment is to assess the impacts of the proposed works associated with the Scheme against the WFD parameters. The assessment includes a summary of the current local conditions, the potential for the Scheme to contribute towards WFD objectives and any likely alterations to the WFD classifications that could arise from the Scheme.

1.2.2 This WFD Assessment is required to demonstrate that the Scheme will not result in deterioration of the current quality status of the relevant WFD water bodies, and could provide improvements to the current status, in accordance with the objectives and measures set out in the Anglian River Basin District: River Basin Management Plan (RBMP).

1.2.3 This report has been produced in consultation with the Environment Agency (EA) and the Lead Local Flood Authority (LLFA).

1.3 Sources of Information

1.3.1 The following sources of information have been reviewed and assessed for the purpose of this WFD Assessment:

- EA online flood maps[1];
- British Geological Society (BGS) Interactive Map[2];
- MAGIC Interactive Map, [3];
- Soilscapes Mapping[4];

[1] https://flood-map-for-planning.service.gov.uk/
[2] http://mapapps.bgs.ac.uk/geologyofbritain/home.html
[3] http://www.magic.gov.uk/
[4] https://www.landis.org.uk/soilscapes/

- National Library of Scotland Historic Mapping[5]; and
- Anglian River Basin District River Basin Management Plan (2022 RBMP)[6].

[5] https://maps.nls.uk/geo/explore
[6] https://www.gov.uk/guidance/anglian-river-basin-district-river-basin-management-plan-updated-2022

2. Site Details

The aim of this section of the report is to outline key environmental information associated with the baseline environment.

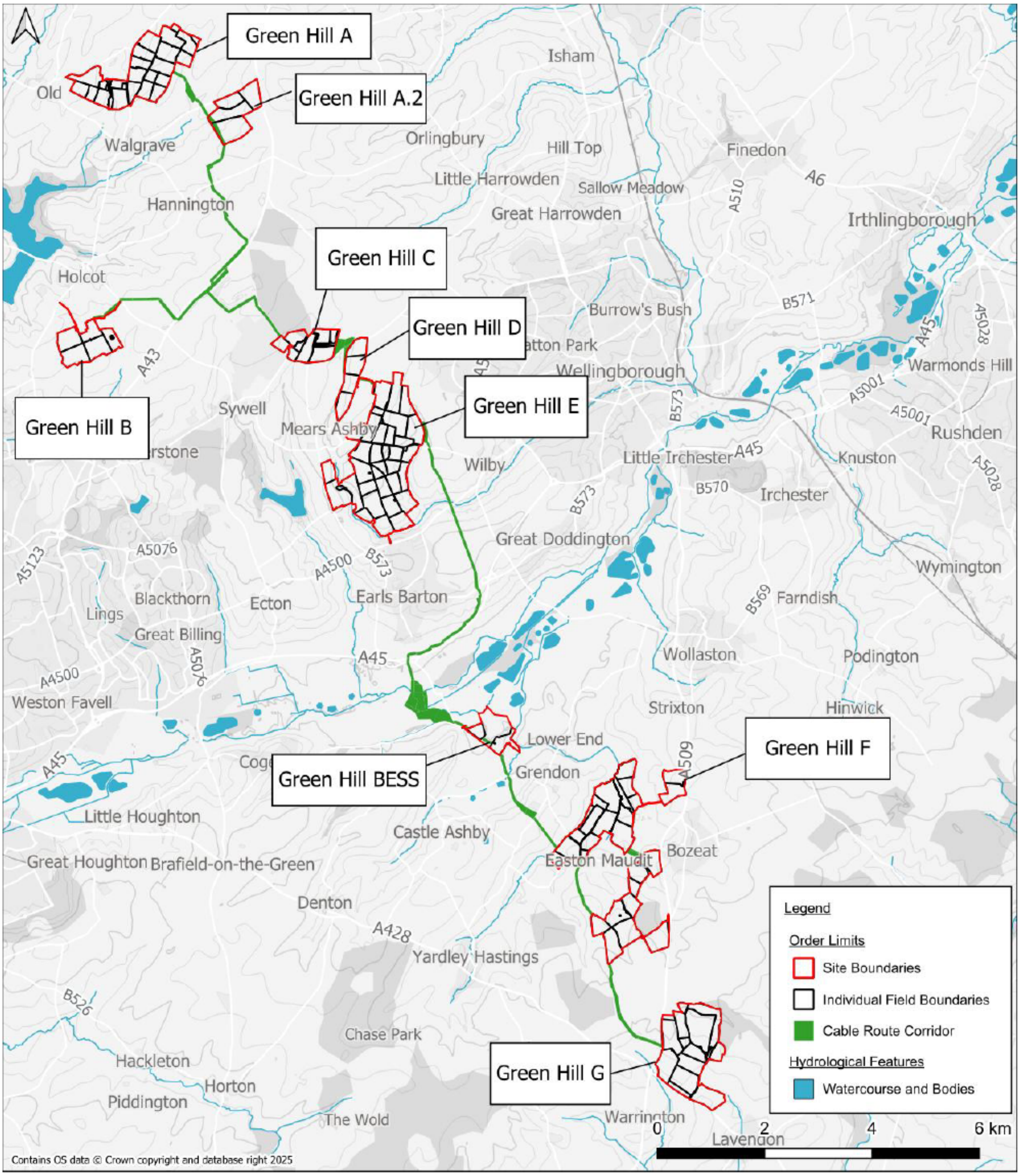

Figure 1: Site Location

2.1 Scheme Location

2.1.1 The Scheme extends from Old Village and Walgrave Village in the north-west, where Green Hill A is situated, to Lavendon Village in the south-east where Green Hill G is located.

2.1.2 The Scheme is located in a rural to semi-rural region, largely bounded by agricultural land. Green Hill D and E are located in proximity to residential settlements such as Mears Ashby and Earls Barton.

2.1.3 The proposed Cable Route Corridor crosses several watercourses and land drains.

2.2 Topography

2.2.1 Topographic levels to metres Above Ordnance Datum (m AOD) have been derived from a 1m resolution Environment Agency (EA) composite 'Light Detecting and Ranging' (LiDAR) Digital Terrain Model (DTM). A review of LiDAR ground elevation data shows that the site slopes from approximately 137m AOD in the north of the site at Green Hill A to approximately 72m AOD to the south of E2. The site also slopes from approximately 103m AOD in the south of the site at Green Hill G to 47m AOD at Green Hill BESS .

2.3 Hydrology

2.3.1 Given the scale of the Scheme there are numerous watercourses that flow within and adjacent to it.

2.3.2 The River Nene is a Main River which flows in a north-easterly direction in the central section of the Scheme, north of Green Hill BESS and south of Green Hill E. There are multiple tributaries of the River Nene located around the southern sites, such as Grendon Brook and several unnamed Main Rivers and Ordinary Watercourses.

2.3.3 Main Rivers are within the jurisdiction of the EA whereas Ordinary Watercourses fall within the jurisdiction of the LLFA.

2.3.4 The Scheme, in exception of Green Hill G, is located wholly within the River Nene WFD Surface Water Management Catchment, with Green Hill G located within the Upper and Bedford Ouse Management Catchment.

2.3.5 The Scheme is located within 8 Water Body locations: Ouse (Newport Pagnell to Roxton) Water Body, Grendon Brook Water Body, Castle Ashby Arm (Grendon Brook) Water Body, Pytchley Brook Water Body, Swanspool Brook Water Body, Sywell Brook Water Body, Malton Arm of the Brampton Branch Water Body and Pitsford Arm of the Brampton Branch Water Body.

2.3.6 However, the Scheme is located wholly within the Anglian Management Catchment.

2.4 Geology

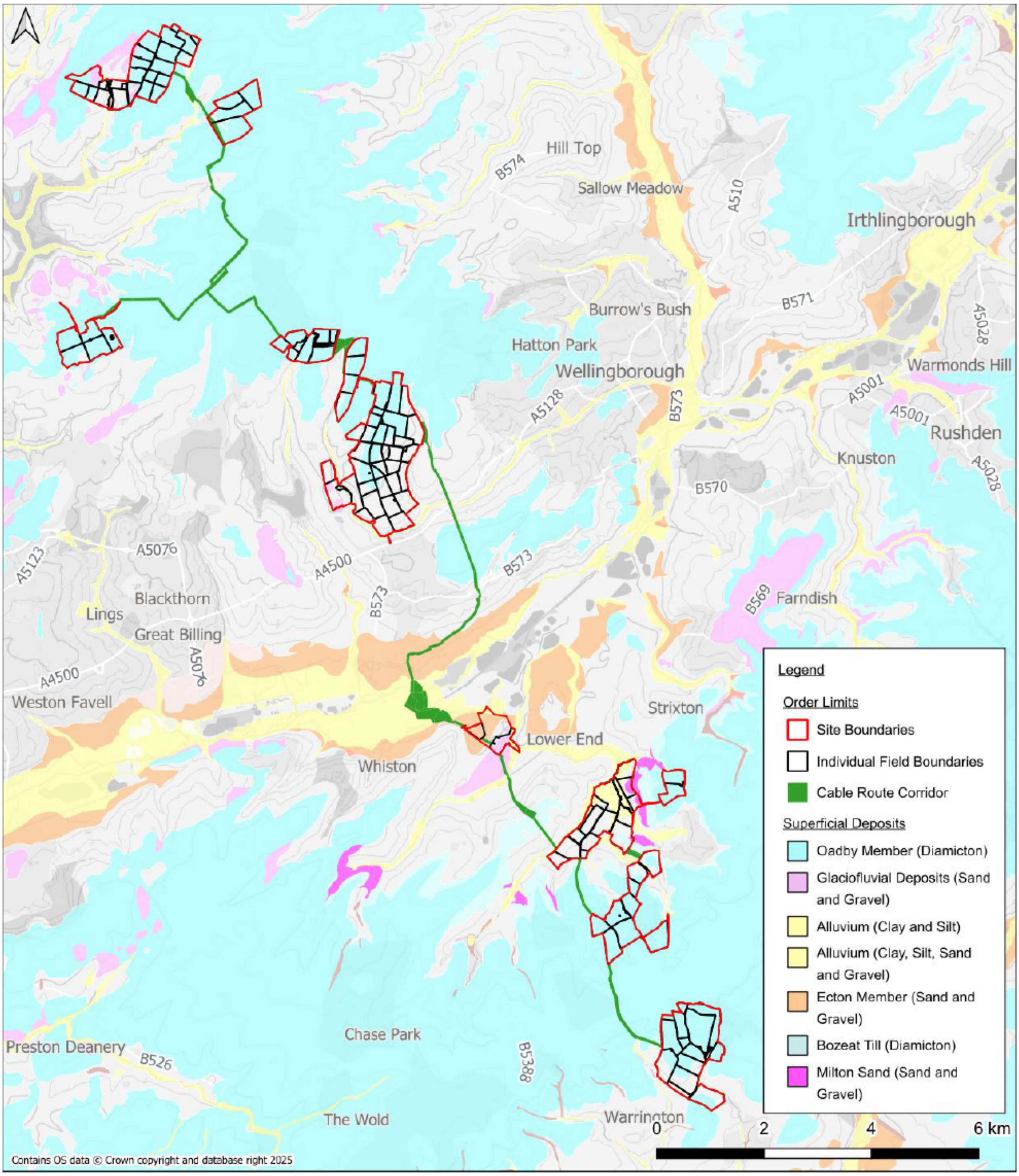

Figure 2: Superficial Deposits

2.4.1 Reference to the British Geological Survey (BGS) online mapping (1:50,000 scale) indicates that the Scheme is underlain by the following superficial deposits (also in **Figure 2**):

- Glaciofluvial Deposits (mid Pleistocene) (sand and gravel);

- River Terrace Deposits Undifferentiated (Sand and Gravel);
- Ecton Member (Sand and Gravel);
- Milton Sand (Sand and Gravel);
- Alluvium (Clay and Silt);
- Alluvium (clay, silt, sand and gravel);
- Bozeat Till (Diamicton); and
- Oadby Member (Diamicton).

2.4.2 There are also areas of the Scheme identified as not being underlain by any superficial deposits.

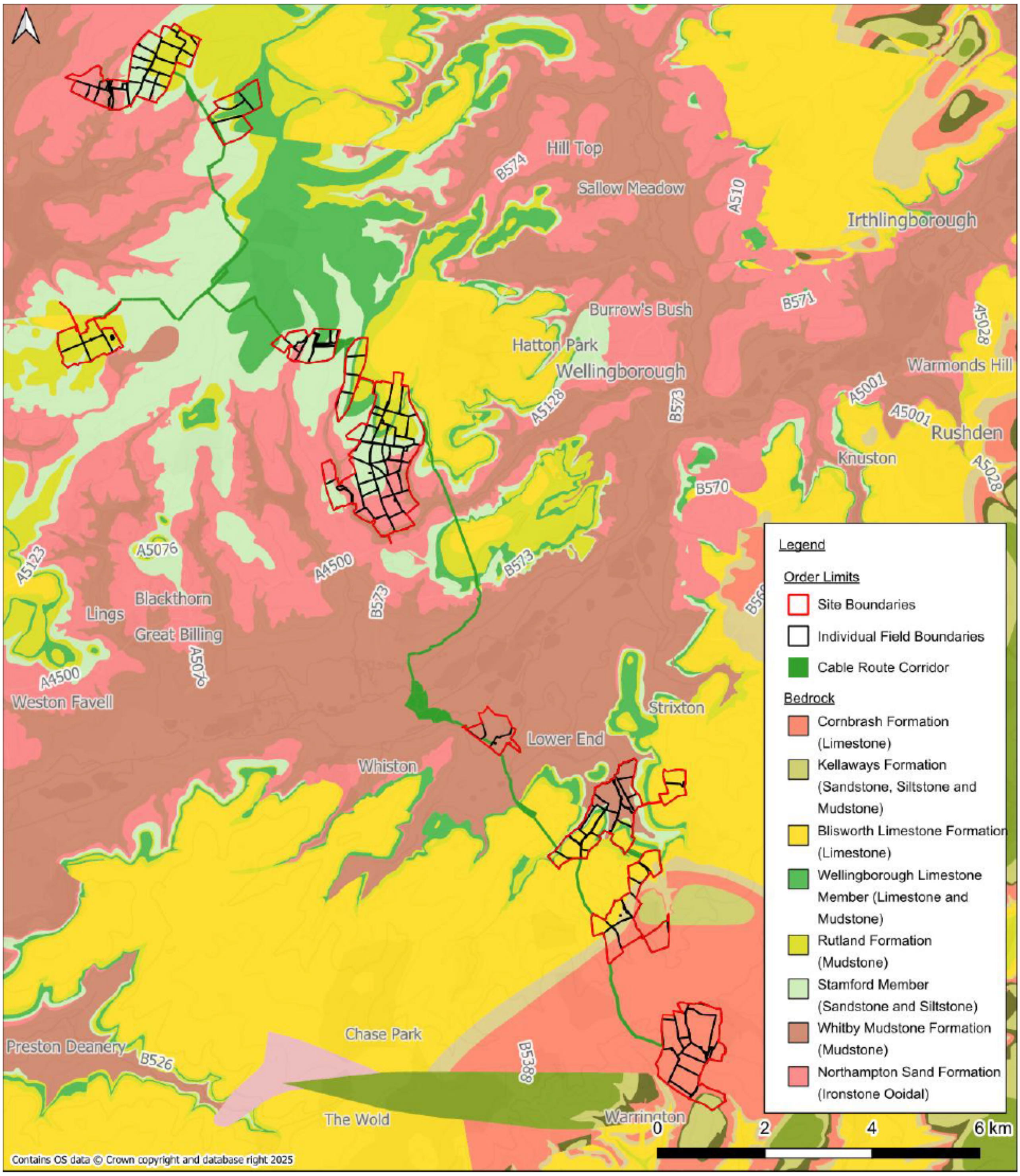

Figure 3: Bedrock Deposits

2.4.3 The Scheme is identified as being underlain by the following bedrock deposits (also in **Figure 3**):

- Stamford Member (Sandstone and siltstone (interbedded));
- Tamford Member (Interbedded Sandstone and Siltstone);
- Northampton Sand Formation (Ironstone (ooidal));
- Whitby Mudstone Formation (Mudstone);

- Rutland Formation (Mudstone);
- Blisworth Limestone Formation (Limestone);
- Blisworth Clay Formation (Mudstone);
- Kelloway Clay Member (Mudstone);
- Kelloways Formation (Sandstone, Siltstone and Mudstone);
- Cornbrash Formation (Limestone); and
- Wellingborough Limestone Member (Limestone and mudstone (interbedded)).

2.4.4 The geological mapping is available at a scale of 1:50,000 and as such may not be accurate on a site-specific basis. This is the best available data at the time of writing.

2.5 Hydrogeology

2.5.1 According to the EA's Aquifer Designation data, obtained from MAGIC Map's online mapping (Ref 2.6.1), the superficial deposits are classified as the following:

- Glaciofluvial Deposits- Secondary A Aquifer;
- River Terrace Deposits Undifferentiated - Secondary A Aquifer;
- Ecton Member - Secondary A Aquifer;
- Milton Sand- Secondary A Aquifer;
- Alluvium- Secondary A Aquifer;
- Bozeat Till - Unproductive Aquifer; and
- Oadby Member- Secondary (undifferentiated) Aquifer.

2.5.2 The underlying bedrock deposits are classified as the following:

- Stamford Member - Secondary A Aquifer;
- Tamford Member - Secondary A Aquifer;
- Northampton Sand Formation - Secondary A Aquifer;
- Whitby Mudstone Formation - Unproductive Aquifer;
- Rutland Formation - Secondary B Aquifer;
- Blisworth Limestone Formation- Principal Aquifer;
- Blisworth Clay Formation - Secondary (undifferentiated) Aquifer;
- Kelloway Clay Member - Secondary B Aquifer;
- Kelloways Formation - Secondary A Aquifer;
- Cornbrash Formation - Secondary B Aquifer; and
- Wellingborough Limestone Member - Secondary A Aquifer.

2.5.3 The EA's 'Source Protection Zones' data, obtained from MAGIC Map's online mapping (Ref 2.6.3) indicates that the site is not located within a Groundwater Source Protection Zone.

2.6 Groundwater Levels and Flow Direction

2.6.1 The closest historical BGS borehole record to Green Hill BESS (BGS Ref: SP86SE52), the site in closest proximity to the River Nene (NGR 486580, 261130) indicates that no water strikes were encountered. However, drainage ditches are present across the Scheme, as such, perched groundwater may be present.

2.6.2 Groundwater is expected to flow locally towards drainage channels and regionally towards Grendon Brook and the River Nene.

2.7 Local Drainage

2.7.1 Due to the predominantly rural nature of the Scheme and the agricultural land use across most sites, the presence of public sewerage infrastructure is considered limited. However, given the scale of the Scheme and its interface with a number of settlements, it is possible that isolated sections of public foul or surface water sewers may cross the Cable Route Corridor or lie in proximity to certain sites. Any such infrastructure will be identified and safeguarded through detailed design and engagement with the relevant statutory undertaker, as necessary.

3. Introduction to the Water Framework Directive

3.1.1 The Directive 2000/60/EC of the European Parliament and Council, dated 23 October 2000) (Ref 3.1.1) is an EU directive that required member states to achieve good qualitative and quantitative status for all water bodies by 2015. The Directive defines water bodies as all groundwater and distinct, significant elements of surface water. This includes lakes, reservoirs, streams, rivers, canals, individual sections of these, as well as transitional waters (such as estuaries) and coastal waters extending up to one nautical mile from the shoreline.

3.1.2 It was not possible to achieve good status of all water bodies by 2021 and therefore the outstanding water bodies have objectives set for 2027. Although the original deadline for achieving good status in all water bodies was 2015, the Water Framework Directive (Directive 2000/60/EC) permits deadline extensions under Article 4(4) where timely achievement is not possible due to technical infeasibility, disproportionate cost, or natural conditions. These extensions are linked to the six-year cycle of River Basin Management Plans (RBMPs), as defined in Article 13 of the Directive. As such, the Directive allows for up to two further RBMP cycles beyond 2015, resulting in revised target dates of 2021 and, in exceptional cases, 2027.

3.1.3 The WFD is transposed into law in England and Wales by The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (the 2017 Regulations) (Ref 3.1.3).

3.2 Determination of Good Status

Surface Water

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

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

3.2.2 Chemical quality relates to environmental quality standards set for pollutants specific to each river basin. These standards define the maximum allowable concentrations for certain substances in the water. The WFD follows a 'one out, all out' principle—meaning if even one pollutant exceeds its threshold, the entire water body cannot be classified as having good status. As a result, the chemical status of surface waters is assessed as either good or fail, while physical-chemical quality indicators are rated on a scale of high, good, moderate, poor, or bad.

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

3.2.4 These objective years, typically 2015, 2021 or 2027, are set by the Environment Agency within River Basin Management Plans in line with the Water Framework Directive.

Groundwater

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

River Basin Management Plans

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

4. Water Framework Directive Assessments

4.1.1 Water Framework Directive (WFD) assessments are undertaken to ensure that proposed works—whether at the strategic planning stage or during detailed design and implementation—can proceed without negatively affecting the status of water bodies or hindering future improvements needed to achieve good status or potential.

4.1.2 Determining WFD compliance involves a structured process designed to identify any potentially significant effects of the Proposed Scheme. These effects are then evaluated in detail to assess whether they would breach any requirements of the WFD.

4.1.3 The assessment objectives, derived from the Environmental Objectives of the Directive, are used to determine whether the water environments impacted by the Scheme comply with the overarching objectives of the WFD:

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

4.1.4 The assessment process is usually as follows:

- Screening the Scheme against ecological, chemical, and quantitative status objectives and elements to determine whether the project has the potential to impact any identified criteria for water bodies;
- Scoping the assessment for criteria where a potential adverse effect has been identified, in order to determine the effects on quality elements;
- Identified significant effects in relation to ecological and supporting chemical and hydromorphological status objectives;
- For Heavily Modified Water Bodies (HMWBs), the preferred option must also be evaluated against the applicable mitigation measures; and
- If the preferred option is expected to cause a deterioration in the status of a water body or prevent it from achieving its objectives, it must be assessed against the conditions set out in Article 4.7 of the Directive 2000/60/EC of the European Parliament and Council (Ref 3.1.1) detailed as the following:
    - a) all practicable steps are taken to mitigate the adverse impact on the status of the body of water;
    - b) the reasons for those modifications or alterations are specifically set out and explained in the river basin management plan required under Article 13 and the objectives are reviewed every six years;

c) the reasons for those modifications or alterations are of overriding public interest and/or the benefits to the environment and to society of achieving the objectives set out in paragraph 1 are outweighed by the benefits of the new modifications or alterations to human health, to the maintenance of human safety or to sustainable development, and

d) The beneficial objectives served by those modifications or alterations of the water body cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option.

- All of these conditions must be satisfied for the option to proceed without breaching the WFD.
- Additionally, the potential impact on other water bodies within the River Basin District must be taken into account (Article 4.8), and the protection afforded to any Protected Areas under existing Community legislation must be upheld (Article 4.9).

4.2 Assessment Methodology

4.2.1 Due to the low-impact nature of the proposed solar development and the minimal disturbance expected from the construction methods, as detailed in Section 10.12 of the ES Chapter, the assessment was carried out using the following approach:

- Gathering baseline information to establish the current condition of nearby water bodies and evaluate their potential to meet Water Framework Directive (WFD) objectives now and in the future;
- Compiling baseline data specific to the proposed development;
- Engaging with the appropriate regulatory bodies; and
- Conducting an initial review of the possible significant impacts on surface water bodies, including identifying effects that may either support progress toward WFD objectives or affect the ability of the water bodies to achieve the WFD objectives.

4.2.2 The Cable Route Corridor crosses multiple watercourses, including designated Main Rivers and ordinary watercourses, but no in-channel works are proposed. All Main River crossings will be delivered using trenchless techniques such as HDD, and appropriate stand-off distances have been maintained. Where minor watercourse crossings are required, these will be subject to permitting or disapplication through the DCO and will not involve any works likely to affect water body morphology or status. The route has therefore been excluded from the WFD assessment on the basis that the proposed works present no reasonable pathway for WFD deterioration or constraint to future objectives.

5. Baseline Desk Study

5.1 Catchment Characteristics

5.1.1 The Scheme covers 4 WFD Operational Catchments, and 8 water body catchments. The Scheme, in exception of Green Hill G, is located wholly within the Nene WFD Management Catchment, with Green Hill G located within the Upper and Bedford Ouse Management Catchment.

5.1.2 The Scheme is wholly located within the Anglian River Basin District (RBD). The WFD water bodies and Operational Catchments are provided as **Figure 4** and in **Table 1** below:

Table 1: Waterbody Catchments

River Basin District	Management Catchment	Operational Catchment	Water Body
Anglian	Nene	Nene Middle Operational Catchment	Castle Ashby Arm (Grendon Brook) Water Body
			Grendon Brook*
			Sywell Brook
		Ise Operational Catchment	Swanspool Brook
			Pytchley Brook Water Body
		Brampton Branch	Pitsford Arm of the Brampton Branch Water Body
			Malton Arm of the Brampton Branch Water Body
	Ouse Upper and Bedford	Great Ouse Bedford	Ouse (Newport Pagnell to Roxton) Water Body

*Grendon Brook appears twice within WFD mapping, therefore for the purpose of the report will be named 'Grendon Brook 1' and 'Grendon Brook 2'. See **Figure 4** for clarification of locations.

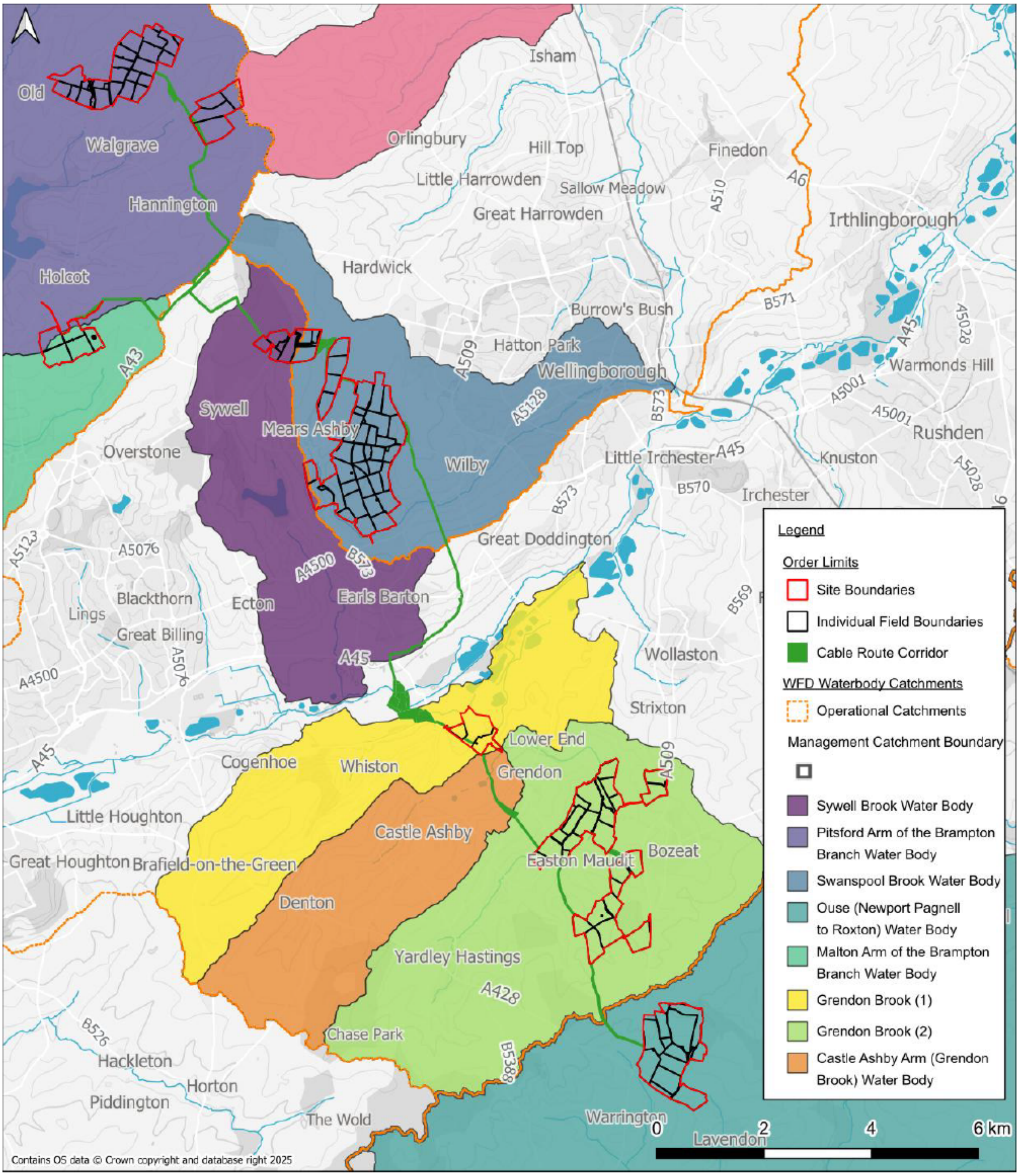

Figure 4 : Waterbody Catchments

5.1.3 The 8 identified WFD water bodies all have very similar characteristics; therefore, broad description of their host Operational Catchment is provided below (Section 5.2) and where they differ. The individual WFD status tables are included as Annex A.

5.1.4 The Scheme falls within 3 WFD groundwater bodies. Green Hill A, A.2, B, C, D E, BESS and the northern extents of Green Hill F are all located within the Nene Mid Lower Jurassic Unit. The remaining extents of Green Hill F are located within the Northampton Sands Groundwater body. Green Hill G is located wholly within the Upper Bedford Ouse Principal Oolite 2. The WFD Groundwater Bodies are mapped as **Figure 5** below.

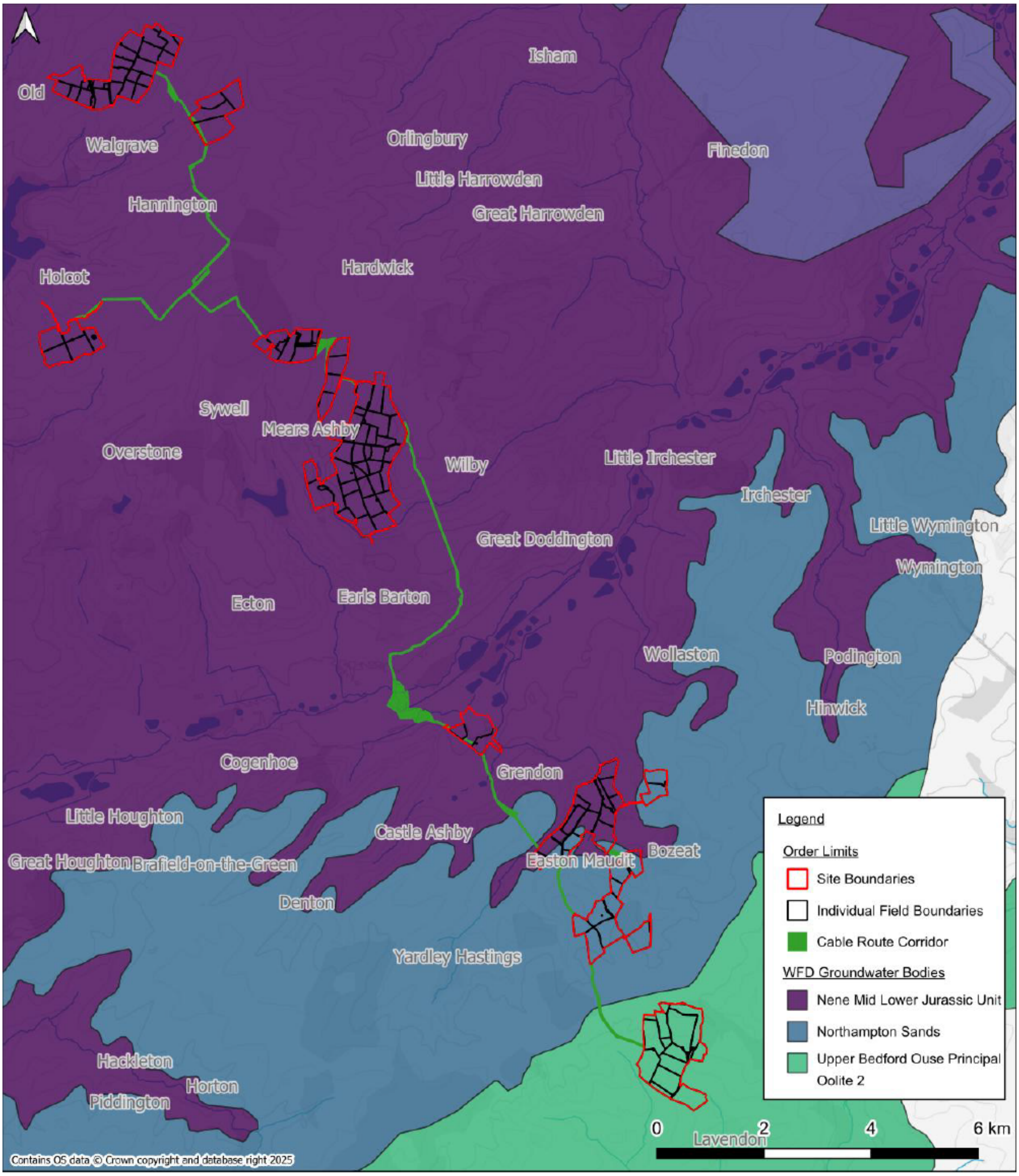

Figure 5: Groundwater Body Classifications

5.2 General Operational Catchment Characteristics

Nene Middle

5.2.1 The Nene Middle is a 78,313 Ha catchment which ranges from approximately 140m AOD in the west, north of Desborough, to 2m AOD in the east of Peterborough. However, the Scheme is situated in the upstream section of the catchment generally surrounding Grendon Town. The catchment generally flows in a north-easterly direction from Northampton to Peterborough, with a section also running from the north of Desborough to Peterborough.

5.2.2 Section of Green Hill C, E, BESS, and F are located within the upstream section of this Operational Catchment. Excluding the urbanised towns Rushden, Earls Barton, Woolaston, Irchester, Higham Ferrers, Raunds, Thrapston, Corby, Oundle and the cities Peterborough and Nottingham (which predominately comprise residential, commercial and industrial developments), the remainder of the catchment largely comprises arable farmland and improved grassland.

Ise

5.2.3 Ise is an 23,684 Ha catchment which ranges from approximately 194m AOD in the north-west to approximately 40m AOD in the south. The catchment generally falls from west to east in the northern extent of the catchment, before running southwards from Kettering to Wellingborough. The River Isle joins the River Nene in the southern boundary of the site.

5.2.4 Sections of Green Hill A.2 and C and the majority of E are located within the south-western extents of this Operational Catchment. Excluding the urbanised towns of Kettering, Burton Latime and Wellingborough (which predominately comprise residential, commercial and industrial developments), the remainder of the catchment largely comprises arable farmland and improved grassland.

Brampton Branch

5.2.5 Brampton Branch is an 24,753 Ha catchment which ranges from approximately 208m AOD in elevation in the north-west to approximately 57m AOD in the south. The catchment generally falls from north to south, towards the City of Northampton and the River Nene.

5.2.6 Green Hill A, A.2 and B are located within the eastern extent of this Operational Catchment. The vast majority of the catchment comprises arable farmland and improved grassland, with the southern extent of the catchment gradually becoming more urbanised surrounding Northampton, largely comprising commercial, residential and industrial land.

Great Ouse Bedford

5.2.7 Great Ouse Bedford is an 49,271 Ha catchment which ranges from approximately 118m AOD in the west to 20m AOD in the east. The catchment generally flows in a north-easterly direction before flowing in a southernly direction then easterly from Bedford.

5.2.8 Green Hill G is located within the north-western extent of this Operational Catchment. The majority of the catchment comprises arable farmland and improved grassland, with urbanised area surrounding the towns Bedford, Kempston and Olney which largely comprising commercial, residential and industrial land.

5.3 Catchment Hydrology

Nene Middle

5.3.1 The Nene Middle has poor coverage of readily available hydrology data with just one National River Flow Archive gauge situated in the uppermost region of the catchment, in the west of Northampton (32006 - Nene/Kislingbury at Upton Total). Annual average rainfall for the region is 675mm and 651mm for the periods 1941-1970 and 1961-1990 respectively. The mean river flow between 1939 – 2023 is 1.455m^3/s and a baseflow (Q95) of 0.28m^3/s.

Ise

5.3.2 The Ise has poor coverage of readily available hydrology data with the nearest National River Flow Archive gauge situated in the downstream section of the River Ise (32004 - Ise Brook at Harrowden). Annual average rainfall for the region is 631mm and 635mm for the periods 1941-1970 and 1961-1990 respectively. The mean river flow between 1939 – 2023 is 1.362m^3/s and a baseflow (Q95) of 0.178m^3/s.

Brampton Branch

5.3.3 The Brampton Branch has poor coverage of readily available hydrology data with the nearest National River Flow Archive gauge situated in the downstream section of the unnamed watercourse (32007 - Nene/Brampton at St Andrews Total). Annual average rainfall for the region is 642mm and 648mm for the periods 1941-1970 and 1961-1990 respectively. The mean river flow between 1939 – 2023 is 1.147m^3/s and a baseflow (Q95) of 0.224m^3/s.

Great Ouse Bedford

5.3.4 The Great Ouse Bedford has poor coverage of readily available hydrology data with the nearest National River Flow Archive gauge situated in the downstream section of the River Great Ouse (33009 - Bedford Ouse at Harrold Mill). Annual average rainfall for the region is 655mm and 641mm for the periods 1941-1970 and 1961-1990 respectively. The mean river flow between 1939 – 2023 is 9.593m^3/s and a baseflow (Q95) of 1.498m^3/s.

5.4 Catchment Geology and Soils

Nene Middle

5.4.1 A description of the underlying geology is included in Section 2.0 above.

5.4.2 Due to the size of the catchment, many soil designations are identified, therefore only the sites have been summarised. Additionally as the cable is subsurface infrastructure and will have a negligible impact on WFD status.

5.4.3 The west of Green Hill E is located within the Middle Nene and is detailed as having *'Freely draining slightly acid but base-rich soils'*. Green HillBESS is underlain by the following soil designations: '*Slightly acid loamy and clayey soils with impeded drainage'* (BESS 2) and Freely draining slightly acid loamy soils (BESS1).

5.4.4 Green Hill F is largely underlain by 'Freely draining slightly acid loamy soils', with areas of both 'Lime-rich loamy and clayey soils with impeded drainage' and 'Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils'.

Ise

5.4.5 A description of the underlying geology is included in Section 2.0 above.

5.4.6 Due to the size of the catchment, many soil designations are identified, therefore only the sites have been summarised.

5.4.7 The south of Green Hill E is largely underlain by 'Freely draining slightly acid but base-rich soils', with 'Freely draining lime-rich loamy soils' in the central areas and 'Lime-rich loamy and clayey soils with impeded drainage' in the north.

5.4.8 The majority of Green Hill D is underlain by 'Lime-rich loamy and clayey soils with impeded drainage', with areas of both 'Freely draining lime-rich loamy soils' and 'Freely draining slightly acid but base-rich soils' to the south.

5.4.9 Only the east of Green Hill C is located in the Ise Operational Catchment, and is detailed as being underlain by *'Lime-rich loamy and clayey soils with impeded drainage'*. The eastern boundary of Green Hill A.2 is detailed as having the same classification.

Brampton Branch

5.4.10 A description of the underlying geology is included in Section 2.0 above.

5.4.11 Due to the size of the catchment, many soil designations are identified, therefore only the sites have been summarised.

5.4.12 Green Hill A.2 is detailed as being underlain wholly by *'Lime-rich loamy and clayey soils with impeded drainage'* Green Hill A is also largely underlain by the same soil classification, with an area in the central area detailed as *'Freely draining slightly acid but base-rich soils'*.

5.4.13 Green Hill B is predominately underlain by 'Lime-rich loamy and clayey soils with impeded drainage', with an isolated area to the south identified as 'Freely draining slightly acid but base-rich soils'.

Great Ouse Bedford

5.4.14 A description of the underlying geology is included in Section 2.0 above.

5.4.15 Due to the size of the catchment, many soil designations are identified, therefore only the sites have been summarised.

5.4.16 Green Hill G is largely underlain by 'Lime-rich loamy and clayey soils with impeded drainage', with an area to the north underlain by 'Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils' and an area to the south identified as being underlain by 'Freely draining lime-rich loamy soils'.

5.5 Historical Channel Change

Nene Middle

5.5.1 Analysis of the historical mapping record National Library of Scotland (NLS, 2025, Ref 5.5.1) reveals very little channel change over long-term and more recent timeframes respectively. This is because modifications to watercourses and excavation of land drains for agriculture took place many centuries before the emergence of formal mapping. Notable changes are to the washlands and neighbouring surface water bodies alongside the River Nene which were not detailed on the 1900s mapping. Tributaries to Grendon Brook also appear more detailed in current mapping, however this also may be due to the advancement in mapping detail. The River Nene appears to have been realigned in the westernmost extent of the Operational Catchment within Northampton.

Ise

5.5.2 Analysis of historical mapping records (NLS, 2025) reveals minimal channel change within the Ise catchment, during both long-term and more recent timeframes respectively. Subtle shifts in the upper reach indicate natural meander development enhanced by modern remapping techniques. Notable changes are to the washlands and neighbouring surface water bodies within the Ise catchment which were not detailed on the 1900s mapping. Early modifications, including agricultural drainage excavations that predate formal mapping, are also evident. Current maps now provide enhanced detail of the channel and its tributaries, reflecting advances in surveying methods rather than significant alterations in the river's course.

Brampton Branch

5.5.3 Analysis of historical mapping records (NLS, 2025) reveals minimal channel change within the Brampton Branch catchment over both long-term and more recent timeframes respectively. This is because modifications to watercourses and excavation of land drains for agriculture took place many centuries before the emergence of formal mapping. Notable changes are to the washlands and neighbouring surface water bodies alongside within the Brampton Branch which were not detailed on the 1900s mapping. Contemporary mapping now offers greater detail of the channel and its tributaries, reflecting advances in surveying techniques rather than significant channel movement. Notably, the Pitsford Arm of the Brampton Branch has been heavily modified; however, these alterations are not clearly captured in historical mapping due to the low resolution of the historical mapping available.

Great Ouse Bedford

5.5.4 Analysis of historical mapping records (NLS, 2025) reveals minimal channel change within the Great

Ouse Bedford catchment over both long-term and more recent timeframes respectively. This is because modifications to watercourses and excavation of land drains for agriculture took place many centuries before the emergence of formal mapping. Notable changes are to the washlands and neighbouring surface water bodies alongside within the Great Ouse Bedford catchment were not detailed on the 1900s mapping. Notably, the Ouse (Newport Pagnell to Roxton) Water body has been heavily modified; however, these alterations are not clearly captured in historical mapping due to the low resolution of the historical mapping available.

5.6 WFD Status

5.6.1 The most recent (2022) WFD status (Ref 5.6.1) of the four screened-in surface water bodies and ground water bodies are provided in **Table 2** overleaf:

Table 2: Summary of WFD Surface Water and Groundwater Bodies

	Surface Water								
Operational Catchment	**Nene Middle**				**Brampton Branch**		**Great Ouse Bedford**	**Ise**	
Water Bodies	Sywell Brook	Grendon Brook (1)	Grendon Brook (2)	Castle Ashby Arm (Grendon Brook)	Pitsford Arm of the Brampton Branch	Malton Arm of the Brampton Branch	Ouse (Newport Pagnell to Roxton)	Pytchley Brook	Swanspool Brook
Water Body ID	GB105032045430	GB105032045330	GB105032045040	GB105032045030	GB105032045470	GB105032045410	GB105033047923	GB105032045110	GB105032045070
Artificial or Heavily Modified Water Body?	Not designated artificial or heavily modified	Not designated artificial or heavily modified	Not designated artificial or heavily modified	Not designated artificial or heavily modified	Heavily modified	Not designated artificial or heavily modified	Heavily modified	Not designated artificial or heavily modified	Not designated artificial or heavily modified
Overall Ecological Status	Poor	Moderate	Moderate	Poor	Good	Poor	Moderate	Moderate	Moderate
Biological Quality Elements	Poor	Good	Good	Poor	Poor	Poor	Good	Moderate	Moderate
Physico-Chemical	High	Moderate	Moderate	Good	High	N/A	Moderate	Moderate	Moderate
Hydro-morphological Supporting Elements	~~Supports~~ Not High~~Good~~	~~Support~~ Not High~~Good~~	~~Supports~~ Not High~~Good~~	~~Supports Good~~Not High	N/A	~~Supports Good~~Not High	~~Supports Good~~Not High	~~Supports Good~~Not High	~~Supports Good~~Not High

Specific Pollutants	N/A	N/A	N/A	N/A	N/A	N/A	High	N/A	N/A
Chemical	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
Priority Hazardous	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
Other Pollutants	Does not require assessment	Does not require assessment	Does not require assessment	Does not require assessment	Does not require assessment	Does not require assessment	Does not require assessment	Does not require assessment	Does not require assessment

	Groundwater		
Water Body	**Nene Mid Lower Jurassic Unit**	**Northampton Sands**	**Upper Bedford Ouse ~~Principle~~Principal Oolite 2**
WFD ID	GB40502G402400	GB40501G445500	GB40501G445600
Objective Year	2015	2015	2027- Low Confidence
Objective Status	Good	Good	Good
Overall Water Body	Good	Good	Poor
Chemical Status	Good	Good	Poor
Quantitative	Good	Good	Good
Quantitative Status Element	Good	Good	Good

5.6.2 Table 2 above aligns with the 2022 RBMP.

5.6.3 The only underlying groundwater body classified as having a Poor status is the Upper Bedford Ouse Principal Oolite 2, which is limited to Green Hill G. Upper Bedford Ouse Principal Oolite 2 is classed as having a Poor Chemical Status (2022 RBMP) due to historical nitrate and phosphate pressures from agriculture. However it must be noted that its quantitative status is 'Good' and its objective is *'Good by 2027'*.

5.6.4 No new abstraction, discharge or infiltration to groundwater is proposed. Embedded measures secured through the OCEMP [EX1/GH7.1_A], OSMP [APP-550] and OBSSMP [EX1/GH7.7_A] will prevent pollutant pathway formation, ensuring no deterioration. Potential pathways for impact are minimal due to the nature of the Scheme, which has very low water demand, no requirement for groundwater abstraction, and includes embedded pollution prevention measures secured through the OCEMP [EX1/GH7.1_A], OSMP [APP-550] and OBSSMP [EX1/GH7.7_A]. These measures include impermeable containment for hazardous materials, isolation and removal of contaminated firewater, and strict controls on soils, fuels and construction materials.

5.6.5 Furthermore, at Green Hill G, BGS mapping indicates the presence of low-permeability Oadby Member (Diamicton) overlying the Northampton Sand Formation (Ironstone Ooidal). The Oadby Member, associated with the Bozeat Till, is classified as an Unproductive Aquifer, while the Northampton Sand Formation is a Secondary A Aquifer capable of supporting local groundwater flow. However, the low-permeability superficial deposits limit vertical connectivity with the underlying aquifer, thereby reducing the potential for impact. Further detail on aquifer sensitivity is included in ES Ch 22 Ground Conditions and Contamination [EX1/GH6.2.22_A].

5.6.6 Therefore, the Scheme will not cause deterioration in the status of any groundwater body or prevent the achievement of WFD objectives. Groundwater has not been considered further within this assessment.

6. WFD Screening

6.1.1 The purpose of the WFD screening stage is to determine the area of influence of the Scheme and assess whether this influence could potentially have an adverse impact on WFD water body receptors. This stage also identifies specific elements of the Scheme that may affect the WFD status of those receptors, which are then taken forward for further assessment. Water body receptors that are screened out, meaning they are not considered to be at risk, are not carried forward and do not require further consideration, with justification provided for their exclusion.

6.1.2 Certain activities on or near waterbodies are exempt from the requirement for Environmental Permits for Flood Risk Activities, and hence would unlikely require WFD assessments, as summarised in **Table 3**, below. However, where such activities could still affect water body status, they may be considered as part of a WFD assessment in line with Article 4 of the Directive.

Table 3: Summary of Environmental Permits for Flood Risk Activities

Activity	Type of Modification
Low impact maintenance activities (encourage removal of obstructions to fish/eel passage)	Re-pointing (block work structures)
	Void filling ('solid' structures)
	Re-positioning (rock or rubble or block work structures)
	Replacing elements (not whole structure)
	Re-facing
	Skimming/ covering/ grit blasting
	Cleaning and/or painting of a structure
Temporary Works	Temporary scaffolding to enable bridge re-pointing
	Temporary clear span bridge with abutments set-back from bank top
	Temporary cofferdam(s) (if eel/ fish passage not impeded)
	Temporary flow diversion (if fish/ eel passage not impeded) such as flumes and porta-dams
	Repair works to bridge or culvert which do not extend the structure, reduce the cross-section of the river or affect the banks or bed of the river, or reduce conveyance
	Excavation of trial pits of boreholes in byelaw margin
	Structural investigation works of a bridge/ culvert/ flood defence such as intrusive tests, non-intrusive surveys
Footbridges	Footbridge over a main river not more than 8m wide from bank to bank
	Bridge deck/ parapet replacement/ repair works
Service Crossing	Service crossing below the riverbed, installed by directional drilling or micro tunnelling if more than 1.5 m below the natural bed line of the river
	Service crossing over a river. This includes those attached to the parapets of a bridge or encapsulated within the bridge's footpath or road
	Replacement, installation or dismantling of service crossing/ high voltage cable over a river
Other Structures	Fishing Platforms
	Fish/ eel pass on existing structure (where <2% water body length is impacted)

	Cattle drinks
	Mink rafts
	Fencing (if open panel/ chicken wire) in byelaw margin
	Outfall to a river ≤300 mm diameter

6.2 Screening of WFD Surface Water Bodies

6.2.1 The scheme interacts with a number of WFD surface water bodies. Screening of these water bodies is provided in **Table 4**.

Table 4: Screening of WFD Surface Water Bodies

Water Body	Screen In / Out
Sywell Brook Water Body	In
Pitsford Arm of the Brampton Branch	In
Pytchley Brook Water Body	In
Swanspool Brook Water Body	In
Ouse (Newport Pagnell to Roxton) Water Body	In
Malton Arm of the Brampton Branch	In
Grendon Brook (2)	In
Grendon Brook (1)	In
Castle Ashby Arm (Grendon Brook)	In

6.2.2 The footprint of the Scheme interacts with these water bodies and therefore there is a risk to WFD quality elements and the ecological and chemical status of each receptor water body. Therefore, these water bodies are screened in for further assessment below.

6.3 Screening of WFD groundwater bodies

6.3.1 The Scheme interacts with a number of WFD groundwater bodies. WFD Screening of these water bodies is provided in **Table 5**.

Table 5: Screening of WFD Groundwater Bodies

Water Body	Screen In / Out
Nene Mid Lower Jurassic Unit	In
Northampton Sands	In
Upper Bedford Ouse Principal Oolite 2	In

6.3.2 Groundwater bodies designated under the Water Framework Directive (WFD) that underlay the Scheme area and could potentially be affected, depending on the depth of proposed foundations or excavations and the thickness of overlying superficial deposits. As such, these groundwater bodies have been included for further assessment. However, this decision has been made on a precautionary basis, and may be revised should more detailed information become available.

6.4 Screening of Activities

6.4.1 The scheme comprises a number of activities that present a potential risk to the WFD status of the water body identified in the previous section. The screening assessment of activities pertaining to the Scheme is provided in **Table 6**.

Table 6: Summary of Screening Assessment of Activities Pertaining to the Scheme

Activity	Type of Modification
The proposed development including ground mounted solar photo-voltaic plant and associated electrical equipment, BESS and access.	The Scheme falls within the following water body catchments: • Sywell Brook Water Body; • Pitsford Arm of the Brampton Branch; • Ptychley Brook Water Body; • Swanspool Brook Water Body; • Ouse (Newprt Pagnell to Roxton) Water Body; • Malton Arm of the Brampton Branch; • Grendon Brook (1); • Grendon Brook (2); and • Castle Ashby Arm (Grendon Brook). Construction, decommissioning and operation phases pose a potential risk to WFD receptors or may prevent the identified water bodies from reaching their objectives. This is however a conservative assessment, and potential mitigations are considered below.
Proposed Cable Corridor	The indicative Cable Route Corridor sits with the following catchments: • The Pitsford Arm of the Brampton Branch Water Body; • The Sywell Brook Water Body catchment; • The Swanspool Brook Water Body; • The Hardwick Brook Water Body; • The Malton Arm Water Body; • Billing Brook (Northampton) Water Body; • Nene (conf Brampton Branch to conf Ise) Water Body; • Grendon Brook Water Body catchment; • Castle Ashby Arm (Grendon Brook); and • Ouse Water Body. This is however a conservative assessment, and potential mitigations are considered below.

7. Potential Significant Effects

7.1.1 An assessment of the potential likely significant effects of the Scheme during the Construction, Decommissioning and Operational Phases has been undertaken within the ES Chapter.

7.1.2 The potential likely significant effects of the scheme during decommissioning are likely to be the same and no worse than as those encountered during the construction phase. Therefore, those effects considered for constructions below are similarly expected during the decommissioning phase.

Table 7: Summary of Significant Impacts of the Scheme during Decommissioning

Likely Significant Effect	Description
Construction / Decommissioning Phase	
Mud and Debris Blockages	Prior to the commencement of construction activities, the absence of an appropriate temporary drainage network where necessary could result in uncontrolled surface water runoff. Without a comprehensive maintenance strategy during the construction phase, as would otherwise be outlined in an Outline Construction Environmental Management Plan (OCEMP), there is an increased risk of sediment-laden runoff, leading to the mobilisation of mud and debris into nearby surface water and land drainage systems. This lack of precautionary drainage measures could increase the risk to site personnel and raise the potential for adverse environmental effects, including pollution of watercourses and downstream flooding. Similarly, failure to adhere to an Outline Decommissioning Statement (ODS) during the decommissioning phase could result in ongoing environmental impacts due to inadequate drainage and surface water management. Mitigation is recommended to manage these risks, which will ensure the residual risk of mud and debris entering the surface water and land drainage systems is assessed as negligible.
Temporary Increase in Impermeable Area	During the construction phase, appropriate mitigation guidance should be strictly followed. This includes, where practicable, limiting the increase in impermeable surfaces and, where necessary, implementing a temporary surface water drainage system to manage runoff during construction activities. If appropriate mitigation guidance is not strictly followed, such implementing a temporary surface water drainage system where necessary, there is a high potential for uncontrolled runoff. This could result in sediment transport, pollution of watercourses, and overloading of existing land drainage systems. As the Scheme progresses, the reliance on temporary measures is expected to decrease, with permanent surface water drainage infrastructure being installed to accommodate the increased impermeable area and manage associated runoff effectively. Following the implementation of temporary construction and decommissioning drainage systems, the residual effect on surface water and land drainage is assessed to be negligible.
Compaction of Soils	In absence of construction good practice, access tracks and movement of construction / decommissioning traffic, can lead to soil compaction.

	In turn this can reduce soil permeability, potentially increase run-off rates and soil erosion. Given the large widespread scale of the Scheme, the superficial geology is varied, resulting in a range of permeability conditions across the site. However, it can be noted that any effects of soil compaction are not anticipated to result in a substantial increase in runoff beyond existing baseline conditions.
Silt-laden Runoff	During the construction and decommissioning phases of the Scheme, a range of activities have the potential to adversely impact the local water environment. Works such as excavation dewatering, concreting, general earthworks, and the operation of heavy machinery may generate substantial volumes of silty runoff. This runoff could become contaminated with hydrocarbons (e.g., oil and fuel) or other construction-related materials, all of which pose a risk of pollution to nearby surface water and groundwater environments, as well as the ecological receptors they support. The Scheme will require the construction of temporary access tracks, formed using compacted self-binding aggregate fill. Installation of these tracks will involve shallow excavation of existing vegetation and soils to facilitate road placement. These access roads, extending as linear features across the Site, have the potential to act as temporary flow pathways for surface water during rainfall events. Given the potential for soil erosion and sediment mobilisation from these excavated areas, it is essential that robust pollution prevention measures are implemented across the Site to minimise the risk of sediment and associated contaminants reaching surface watercourses and underlying groundwater bodies.
Spillages, Leakages and Pollutants	During construction and decommissioning, substances such as fuel, hydraulic fluids, solvents, grouts, paints, detergents, and other potentially polluting materials will be stored and used on the Scheme. Without proper controls, leaks or spills could contaminate groundwater through infiltration or impact nearby surface watercourses by entering existing flow paths. To ensure compliance with relevant legislation, including the Water Resources Act 1991, appropriate measures for the storage, handling, and disposal of these substances must be implemented prior to and throughout construction and decommissioning activities. As the exact locations of construction compounds have not yet been finalised. It remains uncertain whether concrete batching will occur on-site or off-site. Additionally, a precautionary approach has been taken, assuming that construction compounds could be located near existing flow pathways.
Inappropriate Wastewater Disposal from Welfare Facilities	In the absence of nearby public foul water sewers to which foul water from welfare facilities could be connected, suitably sized self-contained welfare should be provided by a specialist Contractor.
Operational Phase	
Increase in Permanent Impermeable Area	Given the nature of the Scheme, the increase in permanent impermeable area on the Site will be negligible, however equipment such as the proposed substations and energy storage areas will generate increased surface water runoff when compared to the current use of the Scheme. This could potentially increase localised surface water flooding throughout the Scheme, as well as increase flood risk to people and property in the immediate surrounding area and

	downstream. Areas which propose BESS areas and substations (Green Hill BESS and Green Hill C) have had Drainage Strategies undertaken which assess how any additional surface water will be managed.
Increase in Discharge to Local Watercourses.	An increase in the volume of water discharged into local watercourses may elevate the risk of flooding in areas downstream of the Scheme.
Blockage of Drainage Networks	Mud and debris generated during construction or decommissioning could enter existing surface water or land drainage systems, potentially causing blockages and impeding flow. This may lead to localised flooding within the Scheme area, particularly following periods of heavy or sustained rainfall. As the current site is largely agricultural, the initial impact is expected to be limited. However, as construction advances and the scale of activity grows, the potential for more significant construction-related impacts increases.
Diffuse Pollution Contained in Urban Runoff	The operation of the Scheme may negatively impact the local water environment. Urban runoff from the Scheme, along with the associated infrastructure, could contain diffuse urban pollutants such as hydrocarbons, heavy metals, and nutrients as well as debris and silt which could ultimately be discharged to the nearby watercourses via surface water runoff or infiltrate to ground. Without mitigation this could have a moderate adverse effect on water quality.
Diffuse Pollution Contained in Fire Water Runoff	Given the nature of the Scheme, there is a potential risk of fire that could negatively impact the local water environment. Runoff from the Scheme and the associated infrastructure following a fire could contain diffuse urban pollutants such as hydrocarbons, heavy metals, debris, and silt. These pollutants may be discharged into nearby watercourses through surface water runoff or infiltrate into the ground. In the absence of mitigation measures, this could result in a moderate adverse effect on water quality.
Increase in Highway Routine Runoff	Traffic on existing roads to and from the Scheme is expected to increase slightly as a result of its implementation. Even a minor increase in traffic flow can introduce new sources of highway runoff or alter existing discharge patterns into nearby watercourses. Traffic on roads will increase for both general maintenance onsite as well as any panel replacement. This is detailed further in the EA Chapter. Surface water runoff from roads may contain pollutants such as hydrocarbons, heavy metals, and inert particulates, which have the potential to cause long-term pollution of the water environment if they enter watercourses without suitable treatment.
Increase in Highway Spillage Risk	Accidental spillages of substances like oil on highways can be carried into watercourses through runoff, where they may harm ecological life or infiltrate into the ground.
Increased Demand on Water Supply	Given the nature of the Scheme, there is no anticipated demand for water, aside from during operation for panel washing. This is not considered a direct surface water quality issue, as it is unlikely that any required water would be drawn from local surface water sources by tanker. It is assumed that the Scheme would only proceed if an external supply of potable water is available. Any future water use on-site should be minimised through the implementation of water efficiency measures.

Disposal of Surface and Foul Water from the Scheme	Access to the solar PV array during both construction and operation will be via existing farm tracks or new grassed or permeable routes connected to the wider highway network, thereby reducing the need for additional hardstanding.

8. Mitigation

8.1 Embedded Mitigation

8.1.1 In recognition of the requirements of the Water Framework Directive (WFD) and the potential for significant environmental effects arising from the Scheme, a series of embedded mitigation measures have been incorporated into the design. These measures are intended to minimise impacts on the water environment throughout all phases of the Scheme:

- **Watercourse Easements:** A minimum 8m easement has been incorporated around all watercourses, including both Main Rivers and Ordinary Watercourses. A 9m easement has been maintained adjacent to IDB assets;
- **Separation from Drainage Features:** Beyond designated easements, the Scheme has been designed to maximise the separation of construction and decommissioning groundworks from drainage ditches, with particular emphasis on avoiding encroachment upon IDB-maintained ditches within the site;
- **Use of Existing Access Tracks:** Where practicable, existing access tracks will be utilised to reduce the need for new access infrastructure. This approach minimises soil disturbance and reduces the potential for compaction. Where new access tracks are required, they have been aligned to avoid crossings of drainage ditches wherever possible;
- **Water Management during Construction and Decommissioning:** The Outline Construction Environmental Management Plan (OCEMP) submitted with the application outlines water management measures to control surface water runoff and to drain hardstanding areas and other structures during the construction, operational and decommissioning phases. These measures will form part of a comprehensive Pollution Prevention Plan (PPP) implemented for the Scheme;
- **Watercourse Crossings:** All Main River crossings will be undertaken using trenchless techniques such as Horizontal Directional Drilling (HDD), in line with Environment Agency expectations. For ordinary watercourses, a combination of HDD and open trench techniques may be used depending on sensitivity, with final methods determined through detailed design. All works will be subject to the relevant permitting or DCO disapplication process, with embedded mitigation measures in place, including minimum 8m stand-offs. No in-channel haul road crossings are proposed.
- **HDD Launch and Reception Pits**: HDD operations will involve the excavation of a launch pit at the drilling start point and a reception pit at the end point. These pits are anticipated to be up to 2m deep, 8m long, and 4m wide. Both the launch and reception pits will be situated a minimum of 10m from any watercourse and will be fully backfilled and reinstated upon completion of the cable installation. The exact locations and dimensions of these pits will be finalised during detailed design; and
- **Access Arrangements:** Access to the Scheme during construction, operation and decommissioning will be via existing farm tracks or new grassed or permeable routes connected to the local highway network. This approach helps to minimise increases in surface water runoff and reduce sediment mobilisation during the temporary works phases.

8.2 Mitigation Measures

8.2.1 **Table 8** below details the mitigations incorporated into the scheme to mitigate the potential significant impacts:

Table 8: Summary of likely construction-phase effects on WFD-relevant water bodies and status elements if left unmitigated

Likely Significant Effect	Mitigation
Construction / Decommissioning Phase	
Mud and Debris Blockages	Where necessary a temporary drainage network will be installed prior to the commencement of construction and a robust maintenance plan, confirmed through an Outline Construction Environmental Management Plan (OCEMP), should be maintained throughout the duration of construction works on the Scheme. This is a precautionary and safeguarding approach to reduce the risk to the workers and help reduce the likelihood of the above significant effects. Similarly, during decommissioning an Outline Decommissioning Statement (ODS), should be maintained. The Outline Construction Environment Management Plan (OCEMP) accompanying the DCO application, will describe water management measures to control surface water run-off and drain hardstanding and other structures during the construction, operation and decommissioning of the Scheme. This will form part of a Pollution Prevention Plan (PPP) to be implemented for the Scheme. Following the implementation of mitigation measures the residual effect of mud and debris entering the surface water / land drainage system is considered Negligible.
Temporary Increase in Impermeable Area	Construction mitigation measures should be followed, such as minimizing any increase in impermeable surfaces within the Scheme and, where required, implementing a temporary surface water drainage system during construction. As the Scheme advances and permanent surface water drainage systems are put in place, this impact is expected to diminish. After applying a temporary drainage system during construction or decommissioning, the remaining impact is considered to be Negligible.
Compaction of Soils	Construction mitigation guidance should be adhered to, for example ensuring that heavy equipment is only used where necessary to avoid ground compaction. Topsoil should be cultivated in-line with BS 3882: 2015 to a minimum depth of 400mm over all planting areas or to a fine tilth over all areas to be seeded and include basic levelling with levels graded to fall. No cultivation should take place in wet/ waterlogged conditions and within the root protection areas of existing trees as defined by BS5837:2012. Where necessary, imported topsoil should be sustainably sourced and must be compliant with the BS 3882: 2015. The residual effect, following the implementation of a temporary construction / Decommissioning works, is considered to be Negligible.
Silt-laden Runoff	The following mitigation measures will be incorporated into the OCEMP and ODS for silt management and control:

	• Works that are likely to generate silt-laden runoff (e.g. earthworks and excavations) will be done preferentially during the drier months of the year; • During the construction / decommissioning phases, ideally easements of 10m (where possible) should be preserved adjacent to all receptors to ensure that there is a sufficient buffer from the sensitive receptor to the construction stages of development; • Site compounds and stockpiles will be located as far as possible (ideally at least 30m) away from receptors; • A drainage system will be developed to prevent silt-laden runoff from entering surface water drains, watercourses and ponds without treatment (e.g. earth bunds, silt fences, straw bales, or proprietary treatment) under any circumstances; • Earth stockpiles will be seeded as soon as possible, covered with geotextile mats or surrounding by a bund; • Mud will be controlled at entry and exits to the Site using wheel washes and / or road sweepers; • Tools and plant will be washed out and cleaned in designated areas within Site compound where runoff can be isolated for treatment before discharge to watercourse under appropriate consent; • Debris and other material will be prevented from entering receptors; and • Construction / decommissioning SuDS (such as temporary attenuation) to be used during construction / decommissioning if necessary. Following the implementation of mitigation measures the residual effect is considered to be Negligible.
Spillages, Leakages and Pollutants	Measures to control the storage, handling and disposal of chemicals, fuels/oils and other substances will need to be put in place prior to and during construction / decommissioning. The following key mitigation measures relating to the control of spillages and should be included within the OCEMP. • Fuel will be stored and handled in compliance with the Control of Substances Hazardous to Health Regulations 2002 and the Control of Pollution (Oil Storage) (England) Regulations 2001; • Fuel and other potentially hazardous chemicals will be kept in a secure, impermeable, and bunded storage area; • Wherever possible, plant refuelling will occur off-site. If this is not feasible, it will take place within a designated refuelling zone at the site compound, ideally located at least 20 metres from sensitive receptors; • All plant, machinery, and vehicles will undergo regular inspections and maintenance to ensure they are functioning properly and suitable for use in environmentally sensitive areas. Maintenance will be carried out off-site where possible or restricted to designated areas within the site compound; • All fixed plant used on-site will be self-bunded; • Mobile plant will be maintained in good condition, kept clean, and fitted with drip trays where appropriate;

	• An Emergency Response Plan will be developed and incorporated into the OCEMP. Spill kits and oil absorbent materials will be available on mobile plant and at key vulnerable areas across the site. Construction personnel will receive training in spill response procedures; • Site security will be maintained to deter vandalism that could result in pollution incidents; • Measures will be taken to prevent construction and decommissioning waste or debris from entering any nearby water bodies; • Surface water drains near roads, watercourse crossings, or the core scheme compound will be identified and protected (e.g., using covers or sandbags) where there is a risk of silt-laden runoff entering them; and • Concrete wash water will be properly contained and safely removed from the site.
Inappropriate Wastewater Disposal from Welfare Facilities	In the absence of nearby public foul water sewers to which foul water from welfare facilities could be connected, suitably sized self-contained welfare should be provided by a specialist contractor.
Operation Phase	
Increase in Permanent Impermeable Area	Given the nature of the Scheme, the increase of permanent impermeable area on the Scheme will be negligible, however equipment such as the proposed substations and battery / energy storage areas will generate increased surface water runoff when compared to the current undeveloped nature of the Scheme. Areas which propose BESS areas and substations (Green Hill BESS and Green Hill C) have had Drainage Strategies undertaken which assess how any additional surface water will be managed. The drainage strategies ensure that surface water on-site (at BESS and substation locations) will be attenuated up to an including a 1 in 200 year event +40% climate change. There can be no off-site detriment in terms of surface water runoff rates and volumes and therefore it is proposed to maintain the predevelopment surface water regime post development. This will be achieved through: • Utilising permeable surfacing (Type 2 aggregate) for the Site access, ensuring that surface water is retained where it falls and is allowed to infiltrate to subsoils as per the existing situation; • Installation of lined gravel surfacing at Critical infrastructure (the substations and energy storage compounds) or any other required hardstanding such as concrete bases. Infiltration trenches will ensure that any surface water generated by hardstanding is retained adjacent to the infrastructure, allowing it to infiltrate to subsoils as per the existing situation; and • The solar panels have the potential to concentrate rainfall under the leeward edge of the panels themselves. Research in the United States by Cook & McCuen (Ref 8.2.1), suggested this increase would not be significant however, there is a potential increase in silt ladened runoff. With the implementation of suitable planting (such as a wildflower or grass mix) the underlying ground cover is strengthened and is unlikely to generate surface water runoff rates beyond the baseline scenario.

Increase in Discharge to Local Watercourses	Maintaining the existing surface water run-off regime by utilising permeable surfacing for the Site access, lined gravel surfacing at any proposed infrastructure (substations and BESS) and wildflower planting at the leeward edge of solar panels will ensure that the Scheme is unlikely to generate surface water runoff rates beyond the baseline scenario. The Drainage Strategies at Green Hill BESS and Green Hill C ensure surface water is attenuated up to an including a 1 in 200 year event +40% climate change.
Increase in Discharge to Local Watercourses	Maintaining the existing surface water run-off regime by utilising permeable surfacing for the Site access, lined gravel surfacing at any proposed infrastructure (substations and batteries) and wildflower planting at the leeward edge of solar panels will ensure that the Scheme is unlikely to generate surface water runoff rates beyond the baseline scenario. This is detailed further within the Drainage Strategies for Green Hill BESS and Green Hill C. The management train of any proposed SuDS will be designed appropriately so as not to exacerbate surface water risk from the Scheme. Suitability of the SuDS components will be determined in the detailed drainage design for the Scheme.
Diffuse Pollution Contained in Urban Runoff	The Scheme is likely to have a very-low pollution risk and so the management train should normally have one or two treatment stages. Generally, two treatment stages for run-off from access and one treatment stage for run-off from roofs are sufficient. Where practical, at detailed design stage runoff from equipment and access tracks will be directed to permeable SuDS features with contributions being made from permeable surfacing, wildflower planting and lined gravel surfacing at the BESS and substations. Inclusion of aforementioned features would provide sufficient treatment. An overview of possible SuDS features and possible future maintenance are provided in the Drainage Strategy sections of the Flood Risk Assessment and Drainage Strategy [~~EN010170/APP/GHXX].~~EX1/GH6.3.10.1_A, APP-098 to APP-102, EX1/GH6.3.10.6_A, APP-104 to APP-107, EX1/GH6.3.10.11_A].
Diffuse Pollution Contained in Fire Water Runoff	Given the nature of the energy storage within the scheme, there is a potential risk of fire which could result in the mobilisation of pollution within surface water run-off. Where practical, at detailed design stage it is recommended that runoff from the energy storage area will be contained by local bunding and attenuated within gravel subgrade of lined permeable SuDS features prior to being passed forward to the local land drainage network. In the event of a fire a system of automatically self-actuating valves at the outfalls from the battery storage areas will be closed, isolating the battery storage areas drainage from the wider environment. The water contained by the valves will be tested and either treated and released or tankered off-site as necessary and in consultation with the relevant consultees at the time. Further detailed information on firewater risk is included in the Drainage Strategies for Green Hill BESS and Green Hill C. Local fire water provision has also been provided adjacent to the battery storage sites as requested by the fire department. Inclusion of aforementioned features should provide sufficient mitigation should a fire event occur.

Increase in Highway Routine Runoff	Mitigation will be secured through the DCO and confirmed at detailed design. This is expected to include appropriate measures such as porous surfacing or equivalent drainage features to control routine highway runoff.
Increase in Highway Spillage Risk	
Increased Demand on Water Supply	The increased demand on water supply from the Scheme is considered to have an effect of Negligible magnitude (i.e. to locations where potable water supply is obtained from). The significance of effect is therefore Negligible.
Disposal of Surface and Foul Water from the Scheme	Currently there is no known existing foul network on the Scheme or adjacent. Wastewater associated with welfare facilities at the substations will be contained in a septic tank to be emptied as and when required by tanker as there will be no foul drainage network associated with the Site.

8.2.2 In the context of this assessment, receptors at risk refer specifically to WFD–designated surface water bodies and the status elements used to classify them, including hydromorphology, chemical quality, and biological conditions. These receptors are screened to determine whether proposed activities could lead to status deterioration or prevent future improvements.

8.2.3 The method by which the proposed mitigation measures are secured are summarised as **Table 9** below:

Table 9: Method of Proposed Mitigation Measures

Measure to avoid, reduce or manage any adverse effects and/ or to deliver beneficial effects	How measure would be secured	
	By Design	By DCO Requirement
Maintaining the existing surface water run-off regime by utilising permeable surfacing for the Scheme access, lined gravel surfacing at any proposed infrastructure (substations and batteries) and wildflower planting at the leeward edge of solar panels.	X	
Where necessary install temporary drainage network prior to the commencement of construction / decommissioning and robust maintenance plan should be maintained throughout the duration of construction works on the Scheme.		X
Any proposed drainage features such as permeable surfacing, lined gravel surfacing and wildflower planting should be designed to good practice standards and a robust maintenance plan should be implemented.	X	X
Include silt management and control measures in the CEMP.		X
Ensure measures to control the storage, handling and disposal of pollutants are put in place prior to and during construction included in the CEMP and during decommissioning in the DEMP.		X

9. Summary and Conclusions

9.1.1 This WFD Assessment has evaluated the potential significant impacts of the proposed solar scheme works in relation to the Water Framework Directive (WFD) criteria. The evaluation considered the assessment methods applied, the existing baseline conditions at and around the site, the mitigation measures necessary to prevent, reduce, or offset any adverse impacts, and the expected residual effects following the implementation of those measures.

9.1.2 In summary, the primary potential significant impacts on the WFD water bodies associated with the scheme centre on managing surface water risks. Key concerns include the likelihood of silt-laden runoff, accidental spillages, leaks, and other pollutant discharges during both the construction and decommissioning phases, as well as the diffuse pollution arising from urban runoff during the operational phase, all of which could affect water quality and water resource management.

9.1.3 To address these issues, the Scheme will implement a CEMP, prepared in substantial accordance with the certified OCEMP, and a DEMP in accordance with the ODS. These plans will set out specific mitigation measures designed to protect controlled waters, incorporating simple/temporary SuDS to reduce surface water risks. For the operational phase, water protection measures will be secured through an OEMP, where applicable. Given the generally low pollution potential of the Scheme, the planned management approach will typically include one or two treatment stages to effectively mitigate any adverse impacts.

9.1.4 Additional measures include the use of permeable surfaces for site access, the installation of lined gravel surfacing at the key infrastructure elements such as substations and battery units, and the strategic planting of wildflowers along the leeward edges of solar panels. These enhancements are intended to provide sufficient treatment, attenuate runoff effectively, and maintain current runoff rates.

9.1.5 With the implementation of the identified mitigation measures, the scheme is expected to have no significant adverse effects on the WFD water bodies. The proposed interventions collectively ensure that both direct and diffuse pollution risks are managed, ultimately supporting compliance with WFD objectives and safeguarding local water quality.

9.1.6 With the implementation of the embedded measures set out in this assessment, and secured through the CEMP, OEMP and Drainage Strategy, the Scheme is not expected to result in any deterioration of the status of WFD-designated water bodies or prevent the future achievement of relevant environmental objectives. The Cable Route Corridor avoids in-channel works, and all crossings of designated Main Rivers will be undertaken using trenchless techniques such as HDD. A minimum 8m easement from all watercourses has been incorporated into the layout, with a 9m easement maintained from IDB-managed watercourses. Within the panelled areas of the Scheme, no formal surface water drainage infrastructure is proposed, and runoff will be managed through revegetation and wildflower planting. This is expected to reduce runoff, improve infiltration, and enhance water quality through the cessation of agrichemical use relative to baseline agricultural conditions. For areas of permanent built infrastructure such as the BESS and substation compounds, surface water will be managed through lined SuDS-based systems incorporating gravel subbases, flow control, and automated shut-off valves to prevent pollution in the event of spillage or firefighting activity. These measures collectively control both direct and diffuse water quality risks and are considered sufficient to ensure the Scheme complies with the Water Framework Directive.

9.1.7 With embedded mitigation in place, the Scheme will not cause deterioration nor prevent the achievement of Good Status in any WFD-relevant waterbody

References

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Ref 3.1.1 European Parliament and Council. (2000). Directive 2000/60/EC establishing a framework for Community action in the field of water policy. Official Journal of the European Communities [Accessed April 2025].

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Ref 5.5.1 National Library of Scotland (NLS). (2025). Historical mapping record. Available at: https://maps.nls.uk/ [Accessed 1 December 2024].

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Ref 8.2.1 Cook, L.M. and McCuen, R.H. (2013). Hydrologic response of solar farms. Journal of Hydrologic Engineering, 18(5), pp.536–541. Available at: https://doi.org/10.1061/(ASCE)HE.1943-5584.0000530 [Accessed December 2024.

Annex A – Tabulated WFD Status

Castle Ashby Arm (Grendon Brook) Water Body

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Poor	Poor	Poor	Good	2027 - Low confidence	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	Poor	Poor	Poor	Good	2027 - Low confidence	Disproportionately expensive: Disproportionate burdens
Invertebrates	Poor	Poor	Poor	Good	2027 - Low confidence	Disproportionately expensive: Disproportionate burdens
Macrophytes and Phytobenthos Combined	Poor	Poor	Poor	Good	2027 - Low confidence	Disproportionately expensive: Disproportionate burdens
Physio-Chemical Quality Elements	Good	Good	Moderate	Good	2015	
Acid Neutralising Capacity	N/A	N/A	N/A	N/A	N/A	
Ammonia (Phys-Chem)	High	High	Good	Good	2015	
Dissolved Oxygen	Good	Good	Poor	Good	2015	
Phosphate	High	High	Good	Good	2015	
Temperature	High	High	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports good	Supports good	Supports good	Supports good	2015	
Chemical	Fail	Fail	Does not require assessment	Good	2063	Natural conditions: Chemical status recovery time; Technically infeasible: No known technical solution is available
Priority Hazardous Substances	Fail	Fail	Does not require assessment	Good	2063	Natural conditions: Chemical status recovery time; Technically infeasible: No known technical solution is available
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	Good	Good	N/A	Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good	2015	
Hexabromocyclododecane	Good	Good	N/A	Good	2015	
Hexachlorobenzene	Good	Good	N/A	Good	2015	
Hexachlorobutadiene	Good	Good	N/A	Good	2015	
Mercury and Its Compounds	Fail	Fail	N/A	Good	2040	Natural conditions: Chemical status recovery time
Perfluorooctane sulphonate (PFOS)	Fail	Fail	N/A	Good	2039	Technically infeasible: No known technical solution is available
Polybrominated diphenyl ethers (PBDE)	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	Does not require assessment	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	Does not require assessment	Does not require assessment	Does not require assessment	Does not require assessment	2015	

Grendon Brook Water Body

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Moderate	Moderate	Moderate	Poor	2015	Disproportionately expensive: Unfavourable balance of costs and benefits
Biological Quality Elements	Good	Good	Good	Poor	2015	Disproportionately expensive: Unfavourable balance of costs and benefits
Invertebrates	Good	Good	Good	Good	2015	
Macrophytes and Phytobenthos Combined	N/A	N/A	N/A	Poor	2015	Disproportionately expensive: Unfavourable balance of costs and benefits
Physio-Chemical Quality Elements	Moderate	Moderate	Moderate	Moderate	2015	Disproportionately expensive: Unfavourable balance of costs and benefits
Acid Neutralising Capacity	N/A	N/A	N/A	N/A	N/A	
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	High	High	High	Good	2015	
Phosphate	Poor	Poor	Poor	Poor	2015	Disproportionately expensive: Unfavourable balance of costs and benefits
Temperature	High	High	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports good	Supports good	Supports good	Supports good	2015	
Chemical	Fail	Fail	Does not require assessment	Good	2063	Natural conditions: Chemical status recovery time; Technically infeasible: No known technical solution is available
Priority Hazardous Substances	Fail	Fail	Does not require assessment	Good	2063	Natural conditions: Chemical status recovery time; Technically infeasible: No known technical solution is available
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	Good	Good	N/A	Good		
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good		
Hexabromocyclododecane	Good	Good	N/A	Good		
Hexachlorobenzene	Good	Good	N/A	Good		
Hexachlorobutadiene	Good	Good	N/A	Good		
Mercury and Its Compounds	Fail	Fail	N/A	Good	2040	Natural conditions: Chemical status recovery time
Perfluorooctane sulphonate (PFOS)	Fail	Fail	N/A	Good	2039	Technically infeasible: No known technical solution is available
Polybrominated diphenyl ethers (PBDE)	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	Does not require assessment	Does not require assessment	Does not require assessment	Does not require assessment	2015	

Malton Arm of the Brampton Branch Water Body

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Poor	Poor	Poor	Poor	2015	Technically infeasible: No known technical solution is available
Biological Quality Elements	Poor	Poor	Poor	Poor	2015	Technically infeasible: No known technical solution is available
Invertebrates	Poor	Poor	Poor	Poor	2015	Technically infeasible: No known technical solution is available
Macrophytes and Phytobenthos Combined	Good	Good	Good	Good	2015	
Physio-Chemical Quality Elements	Good	N/A	N/A	N/A	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2015	
Supporting Elements (surface Water)	N/A	Moderate	Supports Good	Supports Good	2015	
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	Good	Good	N/A	Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good	2015	
Hexabromocyclododecane	Good	Good	N/A	Good	2015	
Hexachlorobenzene	Good	Good	N/A	Good	2015	
Hexachlorobutadiene	Good	Good	N/A	Good	2015	
Mercury and Its Compounds	Fail	Fail	N/A	Good	2040	Natural conditions: Chemical status recovery time
Perfluorooctane sulphonate (PFOS)	Good	Good	N/A	Good	2015	
Polybrominated diphenyl ethers (PBDE)	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	N/A	N/A	N/A	N/A	2015	

Ouse (Newport Pagnell to Roxton) Water Body

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Moderate	Moderate	Moderate	Moderate	2015	Disproportionately expensive: Disproportionate burdens; Disproportionately expensive: Unfavourable balance of costs and benefits; Technically infeasible: No known technical solution is available
Biological Quality Elements	Good	Good	Good	Good	2015	
Invertebrates	High	High	High	Good	2015	
Macrophytes and Phytobenthos Combined	N/A	N/A	N/A	Not assessed	2015	Disproportionately expensive: Unfavourable balance of costs and benefits
Physio-Chemical Quality Elements	Moderate	Moderate	Moderate	Moderate	2015	Disproportionately expensive: Unfavourable balance of costs and benefits; Technically infeasible: No known technical solution is available
Acid Neutralising Capacity	N/A	N/A	High	N/A	N/A	
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	High	High	High	Good	2015	
Phosphate	Poor	Poor	Poor	Poor	2015	Disproportionately expensive: Unfavourable balance of costs and benefits; Technically infeasible: No known technical solution is available
Temperature	High	High	High	Temperature	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2015	
Chemical	Fail	Fail	Does not require assessment	Good	2063	Natural Conditions: Chemical status recovery time
Priority Hazardous Substances	Fail	Fail	Does not require assessment	Good	2063	Natural Conditions: Chemical status recovery time
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	Good	Good	N/A	Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good	2015	
Hexabromocyclododecane	Good	Good	N/A	Good	2015	
Hexachlorobenzene	Good	Good	N/A	Good	2015	
Hexachlorobutadiene	Good	Good	N/A	Good	2015	
Mercury and Its Compounds	Good	Good	N/A	Good	2015	
Perfluorooctane sulphonate (PFOS)	Good	Good	N/A	Good	2015	
Polybrominated diphenyl ethers (PBDE)	Fail	Fail	N/A	Good	2063	Natural Conditions: Chemical status recovery time
Priority substances	Good	Good	Does not require assessment	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	Does not require assessment	Does not require assessment	Does not require assessment	Does not require	2015	

Pitsford Arm of the Brampton Branch

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Good	Good	Good	Good	2015	
Biological Quality Elements	Poor	Poor	Moderate	Good	2015	
Invertebrates	Poor	Poor	Moderate	Good	2015	
Macrophytes and Phytobenthos Combined	N/A	N/A	N/A	N/A	2015	Disproportionately expensive: Disproportionate burdens; Technically infeasible: No known technical solution is available
Physio-Chemical Quality Elements	High	High	Good	Good	2015	
Acid Neutralising Capacity	N/A	N/A	High	N/A		
Ammonia (Phys-Chem)	N/A	N/A	High	Good	2015	
Dissolved Oxygen	N/A	N/A	Good	Good	2015	
Phosphate	N/A	N/A	Good	Good	2015	
Temperature	N/A	N/A	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	N/A	N/A	N/A	N/A	2015	
Supporting Elements (surface Water)	Good	Good	Good	Good	2015	
Mitigation Measures Assessment	Good	Good	Good	Good	2015	
Specific Pollutants	High	High	High	High	2015	
Iron	High	High	High	High	2015	
Maganese	High	High	High	High	2015	
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time; Technically infeasible: No known technical solution is available
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time; Technically infeasible: No known technical solution is available
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	Good	Good	N/A	Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good	2015	
Hexachlorobenzene	Good	Good	N/A	Good	2015	
Hexachlorobutadiene	Good	Good	N/A	Good	2015	
Mercury and Its Compounds	Fail	Fail	N/A	Good	2040	Natural conditions: Chemical status recovery time
Perfluorooctane sulphonate (PFOS)	Fail	Fail	N/A	Good	2039	Technically infeasible: No known technical solution is available
Polybrominated diphenyl ethers (PBDE)	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	N/A	N/A	N/A	N/A	2015	

Pytchley Brook Water Body

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Invertebrates	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Macrophytes and Phytobenthos Combined	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Physio-Chemical Quality Elements	Moderate	Moderate	N/A	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Acid Neutralising Capacity	High	High	N/A	Good	2015	
Ammonia (Phys-Chem)	High	High	N/A	Good	2015	
Dissolved Oxygen	Moderate	Moderate	N/A	Good	2015	
Phosphate	Moderate	Moderate	N/A	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Temperature	Good	Good	N/A	Good	2015	
pH	High	High	N/A	Good	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Good	2015	
Chemical	Fail	Fail	Does not require assessment	Good	2015	
Priority Hazardous Substances	Fail	Fail	Does not require assessment	Good	2063	Natural Conditions: Chemical status recovery time
Benzo(a)pyrene	Good	Good	N/A	Good	2063	Natural Conditions: Chemical status recovery time
Dioxins and dioxin-like compounds	Good	Good	N/A	Good	2063	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good	2015	
Hexabromocyclododecane	Good	Good	N/A	Good	2015	
Hexachlorobenzene	Good	Good	N/A	Good	2015	
Hexachlorobutadiene	Good	Good	N/A	Good	2015	
Mercury and Its Compounds	Fail	Fail	N/A	Good	2040	Natural Conditions: Chemical status recovery time
Perfluorooctane sulphonate (PFOS)	Good	Good	N/A	Good	2015	
Polybrominated diphenyl ethers (PBDE)	Fail	Good	N/A	Good	2063	Natural Conditions: Chemical status recovery time
Priority substances	Good	Good	Does not require assessment	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	Does not require assessment	Does not require assessment	Does not require assessment	Does not require assessment	2015	

Swanspool Brook Water Body

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Moderate	Moderate	Moderate	Good	2027- Low confidence	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	Moderate	Moderate	Moderate	Good	2027- Low confidence	Disproportionately expensive: Disproportionate burdens
Invertebrates	Moderate	Moderate	Moderate	Good	2027- Low confidence	Disproportionately expensive: Disproportionate burdens
Macrophytes and Phytobenthos Combined	Moderate	Moderate	Moderate	Good	2027- Low confidence	Disproportionately expensive: Disproportionate burdens
Physio-Chemical Quality Elements	Moderate	Moderate	Good	Good	2027	Disproportionately expensive: Disproportionate burdens
Acid Neutralising Capacity	High	High	N/A	Good	2015	
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	Moderate	Moderate	N/A	Good	2015	
Phosphate	Moderate	Moderate	Good	Good	2027	Disproportionately expensive: Disproportionate burdens
Temperature	Good	Good	N/A	Good	2015	
pH	High	High	N/A	Good	2015	
Hydromorphological Supporting Elements	Supports good	Supports good	Supports good	Supports good	2015	
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time; Technically infeasible: No known technical solution is available
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time; Technically infeasible: No known technical solution is available
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	Good	Good	N/A	Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good	2015	
Hexachlorobenzene	Good	Good	N/A	Good	2015	
Hexachlorobutadiene	Good	Good	N/A	Good	2015	
Mercury and Its Compounds	Fail	Fail	N/A	Good	2040	Natural conditions: Chemical status recovery time
Perfluorooctane sulphonate (PFOS)	Fail	Fail	N/A	Good	2039	Technically infeasible: No known technical solution is available
Polybrominated diphenyl ethers (PBDE)	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	N/A	N/A	N/A	N/A	2015	

Sywell Brook Water Body

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Poor	Poor	Poor	Good	2027- Low confidence	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	Poor	Poor	Poor	Good	2027- Low confidence	Disproportionately expensive: Disproportionate burdens
Invertebrates	Moderate	Moderate	Moderate	Good	2027- Low confidence	Disproportionately expensive: Disproportionate burdens
Macrophytes and Phytobenthos Combined	Poor	Poor	Poor	Good	2027- Low confidence	Disproportionately expensive: Disproportionate burdens
Physio-Chemical Quality Elements	High	High	High	Good	2015	
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	High	High	High	Good	2015	
Phosphate	High	High	High	Good	2015	
Temperature	High	High	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2015	
Supporting Elements (surface Water)	N/A	N/A	N/A	N/A	2015	
Mitigation Measures Assessment	N/A	N/A	N/A	N/A	2015	
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time; Technically infeasible: No known technical solution is available
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time; Technically infeasible: No known technical solution is available
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	Good	Good	N/A	Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good	2015	
Hexachlorobenzene	Good	Good	N/A	Good	2015	
Hexachlorobutadiene	Good	Good	N/A	Good	2015	
Mercury and Its Compounds	Fail	Fail	N/A	Good	2040	Natural conditions: Chemical status recovery time
Perfluorooctane sulphonate (PFOS)	Fail	Fail	N/A	Good	2039	Technically infeasible: No known technical solution is available
Polybrominated diphenyl ethers (PBDE)	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	N/A	N/A	N/A	N/A	2015	