Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Environmental Statement
Volume 1: Main Statement

Preliminary Water Framework Directive Assessment

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Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 Regulation 14

This document forms a part of the Environmental Statement for the Hinckley National Rail Freight Interchange project.

Tritax Symmetry (Hinckley) Limited (TSH) has applied to the Secretary of State for Transport for a Development Consent Order (DCO) for the Hinckley National Rail Freight Interchange (HNRFI).

To help inform the determination of the DCO application, TSH has undertaken an environmental impact assessment (EIA) of its proposals. EIA is a process that aims to improve the environmental design of a development proposal, and to provide the decision maker with sufficient information about the environmental effects of the project to make a decision.

The findings of an EIA are described in a written report known as an Environmental Statement (ES). An ES provides environmental information about the scheme, including a description of the development, its predicted environmental effects and the measures proposed to ameliorate any adverse effects.

Further details about the proposed Hinckley National Rail Freight Interchange are available on the project website:

http://www.hinckleynrfi.co.uk/

The DCO application and documents relating to the examination of the proposed development can be viewed on the Planning Inspectorate's National Infrastructure Planning website:

https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/hinckley-national-rail-freight-interchange/

Preliminary Water Framework Directive Assessment

INTRODUCTION

1.1. This Preliminary Water Framework Directive (WFD) Assessment has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Tritax Symmetry (Hinckley) Limited (hereafter referred to as 'TSH') in relation to the proposed National Rail Freight Interchange on land north-east of Hinckley, which is to be the subject of a Development Consent Order (DCO) application. The full extent of the DCO Order Limits is hereafter referred to as the 'DCO Site'.

1.2. This document was originally prepared as a screening and scoping exercise to identify the waterbodies upon which potential effects from the Development Proposals may arise and identify potential effects arising from the proposals upon relevant waterbodies and their water quality elements. Following consultation it has subsequently been updated to accord with the latest Development Proposals and to include the consultation response from the Environment Agency confirming agreement with the findings.

1.3. This document should be read in conjunction with the following Appendices and Figures:

- Appendix 1 - Thurlaston Brook Tributary Sub-Catchments (BWB, HRF-BWB-ZZ-XX-SK-YE-0016, Rev P01);
- Appendix 2 - Groundwater Classification Criteria;
- Appendix 3 - Pertinent Water Framework Directive Waterbodies;
- Appendix 4 – Environment Agency Consultation Response
- Figure 14.4 - Main HNRFI Site Concept Surface Water Drainage Strategy (document reference 6.3.14.4);
- Figure 14.5 - Main HNRFI Site Concept Foul Water Drainage Strategy (document reference 6.3.14.5);
- Figure 14.6 -A47 Link Road Concept Drainage Strategy (document reference 6.3.14.6); and
- Figure 14.7 - M69 Junction 2 Concept Drainage Strategy (document reference 6.3.14.7)

1.4. The land between the M69 motorway and the Leicester to Hinckley railway on which the proposed Hinckley National Rail Freight Interchange (HNRFI) would be developed is identified as the 'Main HNRFI Site', as shown in Figure 2.1 of ES Chapter 2 (document reference 6.3.2.1).

1.5. The DCO Site contains the Main HNRFI Site and also includes contiguous areas to the north, west, south and east, respectively to contain the corridor of a proposed link road that would cross the Leicester to Hinckley railway and connect to the B4668/A47 Leicester Road (the 'A47 Link Road'), the proposed works to M69 Junction 2 and a section of the B4669 Hinckley Road towards the village of Sapcote. These are hereafter referred to as the 'Main Order Limits'.

1.6. The DCO Site also includes additional non-contiguous areas of land at roads and junctions for which highway enhancements and traffic management measures are proposed, in addition to pedestrian level crossings on the Leicester to Hinckley railway that are subject to proposed works and restrictions.

1.7. The Development Proposals comprise use class B8 logistics buildings with a total floor area of up to 850,000 square metres (comprising 650,000 square metres 'footprint' and 200,000 square metres of mezzanine floorspace) of high bay use class B8 storage and logistics buildings. The development will also include associated infrastructure including a railport for rail-based freight delivery, improvements to the M69 Junction 2 and A47 link road, linking the site from the M69 to the B4668.

1.8. The Main Order Limits lie 3km north-east of Hinckley in an area of mixed farmland to the north-west of M69 Junction 2 and is centred on National Grid Reference (NGR) SP 46314 94858. Of pertinence to this report, several Ordinary[1] watercourses flow through and within the Main Order Limits. An unnamed stream flows north-eastward through the southern portion of the Main Order Limits (referred to as Reach 5, as illustrated at Appendix 1 to this report). This is in addition to a second unnamed watercourse (Reach 2) and two land drains (Reach 3 and Reach 8) which flows circa south to south across the farthest north-western extent of the Main Order Limits, south of the A47. Each waterbody onsite discharges into the Thurlaston Brook (a 'Main River'[2]), located downstream of the Main Order Limits. The location of these waterbodies and other land drains recorded across the Main Order Limits are illustrated at Appendix 1 to this report. The highest aspect of the Main Order Limits is along the middle of the southern edge of the Main Order Limits, which sits at c.108m above Ordnance Datum (aOD), with the landform falling to c.80m aOD at the far northern and eastern boundaries.

1.9. Of pertinence to the DCO application, a scoping opinion received from the Planning Inspectorate during December 2020 identified the requirement for a Preliminary Water Framework Directive (WFD) Assessment in respect of waterbodies present within and adjacent to the Main Order Limits. Specifically, the Scoping Opinion states: *'A Preliminary Water Framework Directive (WFD) Assessment should be carried out to inform the assessment of impacts from the Proposed Development on WFD waterbodies'.*

1.10. As such, this Preliminary WFD Assessment has been prepared as a screening and scoping

[1] Ordinary watercourse - An Ordinary Watercourse is any river, stream, brook, ditch, drain, culvert, pipe and any other passage through which water may flow which is not designated as Main River.

[2] Main River – Larger rivers and streams designated as such on the Main River Map by the Environment Agency. Available at: https://environment.maps.arcgis.com/apps/webappviewer/index.html?id=17cd53dfc524433980cc333726a56386

exercise to:

- Identify the waterbodies upon which potential effects from Development Proposals may arise and thus establish the potential Zone of Influence (ZoI)[3] of the Main Order Limits;
- Identify potential effects arising from the Proposed Development activities upon relevant waterbodies and their water quality elements; and
- Identify which (if any) waterbodies required further detailed assessment.

1.11. In so doing, this Preliminary WFD Assessment has informed the Sustainable Drainage Statement (document reference 6.2.14.2), Illustrative Masterplan (document reference 2.8) and Illustrative Landscape Strategy (document reference 6.3.11.20). This Preliminary WFD Assessment has been prepared with reference to the Planning Inspectorate Advice Note 18.[4]

BACKGROUND TO THE WATER FRAMEWORK DIRECTIVE

1.12. The WFD was adopted by the European Union (EU) and came into force in December 2000. The European Union (EU) WFD was transposed into law in England and Wales by WFD (England and Wales) Regulations 2017. The WFD establishes a legislative framework for the protection of surface waters (including rivers, lakes, transitional waters, and coastal waters) and groundwater throughout the EU. The WFD requires all-natural waterbodies to achieve good 'status' by 2027; the status of a waterbody being a function of its chemical, ecological and physical (hydromorphological) condition based on a number of 'supporting elements'.

1.13. These waterbodies are collated into 'river basin district's' for which River Basin Management Plans (RBMP) are developed to cover a period of six years and set out the current status of each watercourse, the predicted status for the end of the RBMP cycle, as well as the actions and objectives required to ensure waterbodies achieve good status. However, artificial and heavily modified waterbodies may be prevented from reaching good status due to the modifications necessary to maintain their function. They are, however, required to achieve good ecological potential (GEP).

1.14. Ecological status or ecological potential is defined by the overall health or condition of the watercourse. This is assigned on a scale of High, Good, Moderate, Poor or Bad, and on the basis of four classification elements as detailed below:

- Biological – fish, invertebrates or alga;
- Physico-chemical – dissolved oxygen, phosphorus and ammonia;

[3] Zone of Influence - the areas and resources that may be affected by the proposed development

[4] The Planning Inspectorate. Water Framework Directive Advice Note 18. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2017/06/advice_note_18.pdf. [Accessed on 09 August 2021)

- Specific pollutants – assessed according to concentrations of specific pollutants; and
- Hydromorphology – water flow, sediment composition and movement, continuity, and structure of the habitat against reference conditions. Used to determine a waterbody of high status.

1.15. Under the WFD, groundwater body status is classified on the basis of quantitative and chemical status further details of which are provided at Appendix 2 to this report.

1.16. New activities and schemes that affect the water environment and associated biological, hydromorphological, physico-chemical and/or chemical quality elements must consider whether there is the potential to:

- Cause a deterioration of a water body from its current status or potential; and/or
- Prevent future attainment of good status or potential where not already achieved.

1.17. In brief, deterioration of the status of a waterbody is defined as a fall by one class of any element of the 'classification elements' (where assessed) even if the fall does not result in a fall of the classification of the water body as a whole[5].

1.18. New projects/developments that have the potential to impact on current or predicted WFD status are required to assess their compliance against the WFD objectives of the potentially affected water bodies. However, WFD Article 4.7 provides legislation for exemption conditions that could allow implementation of schemes that cause deterioration in ecological status, for example for reasons of overriding public interest.

WFD SCREENING

Baseline Conditions and Pertinent WFD Waterbodies

1.19. The Main Order Limits are located within the Humber River Basin district which is managed by the Humber River Basin Management Plan.[6] The Environment Agency's Catchment Data Explorer online tool (https://environment.data.gov.uk/catchment-planning/) was used to identify water bodies present within the potential ZoI of the Main Order Limits. In addition to the above, the existing baseline data of the Main Order Limits was reviewed, where available.

1.20. Of pertinence to this report, several Ordinary watercourses flow through and within the Main Order Limits. An unnamed tributary of the Thurlaston Brook (referenced as Reach 1 in Appendix 1), flows eastwards across the route of the proposed A47 Link Road within the Main Order Limits. In addition, there are 7 smaller streams/drains across the Main Order Limits which flow into Reach 1 at different locations along its route. For the purpose of this exercise, these watercourses have been individually referred to as Reach 2-8 (see

[5] Environment Agency, 2013. Water Framework Directive – no deterioration. Position Paper 200_13. Issued 01/05/2013

[6] Environment Agency (2015). River Basin Management Plan, Humber River Basin District. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718328/Humber_RBD_Part_1_river_basin_management_plan.pdf [Accessed on 09 August 2021]

Appendix 1). Reaches 2, 3 and 8 similarly bisect the A47 Link Road corridor. Reaches 4 and 4a principally lie outside the Order Limits, flowing north from the northern extents of the Main HNRFI Site under the railway line to join Reach 1. Reach 6 lies primarily inside the Order Limits, flowing east along the northern boundary, south of the railway line before joining Reach 1, just outside the Order Limits boundary to the north.

1.21. A Phase 1 Habitat survey of the Main Order Limits was undertaken by suitably qualified surveyors from EDP in accordance with best practice guidance[7]. on 19 June 2017 and 26 June 2018, updated in 2021. A Phase 1 Habitat Plan for the Main Order Limits illustrating the location and alignment of onsite watercourses is shown at Figure 12.3 of ES Chapter 12 (document reference 6.3.12.3). In brief, the Main Order Limits are dominated by arable land with field boundaries delineated by native hedgerows. At the time of survey only one running watercourse (Reach 5) was evident within the Main Order Limits.

1.22. A number of ditches exist across the Main Order Limits, the majority of which are dry most of the year. These are generally vegetated with nettles (*Urtica dioica*), rosebay willowherb (*Chaemaenerion angustifolium*), other willowherb species (*Epilobium* spp.), cleavers (*Galium aparine*), hogweed (*Heracleum sphondylium*) and other species indicative of waste or disturbed ground. Of these, only a small number remain wet throughout the year, primarily in the north-east corner of the Main Order Limits and along the south-western boundary. The north-eastern ditch contains some aquatic and marginal plants such as rushes (*Juncus* sp.) and watercress (*Nasturtium officinale*), as well as species such as meadowsweet (*Filipendula ulmaria*), pendulous sedge (*Carex pendula*) and woody nightshade (*Solanum dulcamara*). The south-western ditch, bordering Burbage Common, was wetter and contained willowherb and yellow flag iris (*Iris pseudacorus*). Several of these field drainage ditches also discharge into tributaries of the Thurlaston Brook.

1.23. Overall, the majority of the development assessed under the WFD is located within the Thurlaston Brook catchment. Further downstream of the Main Order Limits, the Thurslaton Brook discharges into the River Soar circa 6km downstream of the Main Order Limits. Both of these waterbodies are classified as Main Rivers and are monitored by the Environment Agency to assess their status under the WFD. Other waterbodies identified within the locality of the Main Order Limits include the Soar Secondary Combined Groundwater Body. The catchment of WFD waterbodies pertinent to this assessment are illustrated at Appendix 3.

Thurlaston Brook

1.24. The Thurlaston Brook (WFD Waterbody GB106040024190) is located within the Humber River basin district, the first cycle RBMP[8] (2009) for which identifies the objectives and measures required to improve the status of surface and ground waterbodies within the catchment. During 2009, the Thurlaston Brook (WFD Waterbody GB104028046940) was

[7] Joint Nature Conservation Council (2004) *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit* (reprinted with minor corrections for original Nature Conservancy Council publication).

[8] Environment Agency (2009). River Basin Management Plan, Humber River Basin District. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/297488/gene0910bsqr-e-e.pdf [Accessed on 09 August 2021]

considered to be at poor ecological status following monitoring of biological, physio-chemical and hydromorphological elements. Failure to achieve good status is largely attributed to macroinvertebrate and phytobenthos communities assessed as moderate and poor condition respectively whilst phosphate levels were similarly assessed as poor. In contrast, assessment of hydromorphological elements found the watercourse to achieve good status whilst fish populations and physio chemical elements comply with the criteria for high status. Following progression of the 2015 Cycle 2 assessment, this watercourse was similarly assessed to be of poor ecological status. A summary of the 2015 Cycle 2 assessment is provided at https://environment.data.gov.uk/catchment-planning/WaterBody/GB104028046940.

River Soar

1.25. The River Soar from Thurlaston Brook to the River Sence (WFD Waterbody GB104028046880) is located downstream of both the Main Order Limits and Thurlaston Brook. During 2009, this stretch of the River Soar was similarly considered to be at poor ecological status. Failure to achieve good status is largely attributed to macroinvertebrate and phytobenthos communities assessed as moderate and poor condition respectively whilst phosphate levels were similarly assessed as poor. A fish population was, however, assessed as good whilst other physio chemical elements comply with the criteria for high status. Following progression of the 2015 Cycle 2 assessment, this watercourse was again assessed to be of poor ecological status. A summary of the 2015 Cycle 2 assessment is available at https://environment.data.gov.uk/catchment-planning/WaterBody/GB104028046880.

1.26. In respect of its proximity and/or hydrological connectivity to the Main Order Limits, the Thurlaston Brook has been screened into an assessment. The River Soar by virtue of its distance from the Main Order Limits and has been screened out of further assessment.

Soar – Secondary Combined

1.27. There is one groundwater body to be considered in the WFD assessment: the Soar- Secondary Combined (ID: GB40402G990600). Overall classification for 2019 is Good with all monitored quantitative and chemical elements assessed as good. A summary of the 2015 Cycle 2 assessment is available at https://environment.data.gov.uk/catchment-planning/WaterBody/GB40402G990600.

Effects of the Proposed Development

1.28. The Proposed Development will result in the loss of semi-natural habitat dominated by arable land and native hedgerow field boundaries. To accommodate the development footprint, circa 1,045m of Reach 5 across the southern extents of the Main Order Limits will be diverted from its original course and realigned to flow along the eastern boundary of the Main Order Limits with construction of 6 surface water outfalls to discharge into the waterbody. In addition to this, a total 177m stretch of Reach 5 will be culverted to accommodate construction of an access road across the waterbody at two locations including 151m under roundabout 1 and a further 26m under the M1 footbridge. At the

north-western boundary of the Main Order Limits, adjacent to the existing railway line, a further three outfalls are proposed which will ultimately discharge surface water runoff to offsite drainage ditches. On the western boundary an additional outfall to Reach 2 is proposed. The outfall locations and drainage catchments have been distributed to mimic the existing drainage catchments.

1.29. In addition to the above circa 30m of Reach 1, 35m of Reach 2 and 38m of Reach 8 across the north-western extent of the Main Order Limits will be culverted to accommodate construction of the A47 link road. Additionally, to allow Reach 3 to pass beneath the link road, it is to be diverted within a new channel circa 290m in length which will flow alongside the link road and outfall into Reach 1. A 75m length of culvert will be required to allow this new channel to pass beneath the link road. The remaining downstream length of Reach 3 will be left *in situ* to continue to serve local runoff.

1.30. All of the above proposals are illustrated on the Concept Surface Water Drainage Strategy provided at Figures 14.4, 14.5, 14.6 and 14.7 (document references 6.3.14.4, 6.3.14.5, 6.3.14.6 and 6.3.14.7)

1.31. Likely impacts upon surface and/or ground water bodies associated with the Proposed Development as described above which could arise as a result of the construction phase include the following:

- Direct habitat loss during construction associated with realignment of Reach 5 and infilling of field drainage ditches;
- Fragmentation/severance upon aquatic communities due to culverting of each watercourse and/or their realignment;
- Physical disturbance (lighting/noise/vibration) and displacement of aquatic communities;
- Changes in water quality and pollution arising from generation of silty run-off, oil and hydrocarbon pollutants during the construction phase; and
- Introduction of invasive non-native species (INNS).

1.32. Likely impacts upon surface and/or ground water bodies identified which could arise as a result of the operation phase include the following:

- Physical disturbance (lighting, noise, vibration) and displacement of aquatic communities;
- Changes in volume of surface water runoff following conversion of a greenfield site to hardstanding; and
- Changes in water quality and pollution arising from generation of contaminated surface water runoff during operation.

WFD SCOPING

1.33. This section identified elements within the Thurlaston Brook and River Soar waterbodies downstream of the Main Order Limits, which may be impacted as a result of activities screened in at the previous stage. The following surface water quality elements have been considered in this instance:

Ecological Status

- Biological Supporting Elements:
  - Fish;
  - Macroinvertebrates; and
  - Macrophytes and Phytobenthos.
- Hydromorphological Supporting Elements; and
- Physiochemical Supporting Elements (and Specific Pollutants).

Chemical Status

- Priority Substances; and
- Priority Hazardous Substances.

1.34. The WFD assessment for groundwater bodies was based on consideration of the potential effects of the proposed works on Quantitative status and Chemical status of groundwater bodies in the vicinity of the project.

1.35. Overall, no direct impacts to the Thurlaston Brook are predicted given its distance and spatial separation from the Main Order Limits. However, given their location downstream of the Main Order Limits there is the potential for indirect impacts following progression of Proposed Development. Furthermore, direct and indirect impacts upon biological communities and water quality parameters upon each watercourse within the Main Order Limits will arise associated with the proposed realignment and/or culverting of each waterbody.

1.36. Of further pertinence, the Proposed Development has the potential to affect the existing groundwater resource during the construction phase by construction activities, leading to the mobilisation of existing contaminants (e.g. via bulk earthworks, piling or penetrative ground improvement) or via spillages of construction materials or fuels.

1.37. Further details regarding potential effects scoped in and out of an assessment are provided at Table 1.1.

Table 1.1: Potential Effects upon Biological and Chemical Quality Elements during the Construction and Operation Phases of Proposed Development.

Classification Elements Considered		**Current Classification (Cycle 2)**	**Nature of Impact**	**Scoped In/Out?**
Thurlaston Brook				
Biological Quality Elements	Invertebrates	Moderate	Direct loss of riparian and in-channel habitats of potential value to a fish assemblage following realignment and culverting of onsite Ordinary watercourses during construction.	Yes
			Indirect impacts to Thurlaston Brook and River Soar following increase in surface/ground water run-off and pollution during construction with inputs of silt potentially smothering downstream channel features and subsequently changes in the species composition of a macroinvertebrate community.	Yes

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Scoped In/Out?
			Changes to the hydrological regime downstream following realignment and culverting of onsite Ordinary watercourses during construction with subsequent changes to sediment and flow dynamics downstream.	Yes
			Introduction and proliferation of INNS during construction if present onsite.	No – no INNS have been identified to date.
	Fish	High	Direct loss of riparian and in-channel habitats of potential value to a fish assemblage following realignment and culverting of onsite Ordinary watercourses during construction.	Yes
			Increase in noise and vibration during construction resulting in disturbance to fish populations and changes in behaviour or migratory patterns (if occurring).	

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Scoped In/Out?
			Fragmentation of populations through introduction of engineered features presenting a barrier to fish movement.	No – the Ordinary watercourse issues within the Main Order Limits. There are no upstream habitats. Any fish assemblage present onsite is already at the upper end of their range
			Indirect impacts following increased mobilisation of contaminated sediments during construction phase and subsequent smothering of spawning habitats and/or reduction in dissolved oxygen giving rise to fish kills.	Yes
			Changes to the hydrological regime downstream following realignment and culverting of onsite Ordinary watercourses during construction with subsequent changes to sediment and flow dynamics downstream.	Yes

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Scoped In/Out?
			Introduction and Proliferation of INNS during construction if present onsite.	No – no INNS have been identified to date.
	Macrophytes and Phytobenthos	Poor	Direct loss of riparian and in-channel habitats and associated vegetation following realignment and culverting of onsite Ordinary watercourses during construction.	Yes
			Indirect impacts following increased mobilisation of contaminated sediments during construction phase and subsequent deterioration in the quantity and condition of a macrophyte community.	Yes
			Changes to the hydrological regime downstream following realignment and culverting of onsite Ordinary watercourses during construction with subsequent changes to sediment and flow dynamics downstream.	Yes

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Scoped In/Out?
			Introduction and Proliferation of INNS during construction.	No – no INNS have been identified to date.
Hydromorphological Supporting Elements	Hydrological Regime	Supports Good	Changes to the hydrological regime downstream following realignment and culverting of onsite Ordinary watercourses during construction with subsequent changes to sediment and flow dynamics downstream.	Yes
	Morphology	Supports Good	Re-alignment of Ordinary watercourses will result in a change in their form, structure and function.	Yes
Physiochemical Supporting Elements (and Specific Pollutants)		Poor	Indirect impacts to Thurlaston Brook and River Soar following increase in surface/ground water run-off and accidental spills during construction which subsequently affects levels of dissolved oxygen, BOD, phosphorus and ammonia.	Yes

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Scoped In/Out?
Priority Substances		Good	Increased mobilisation of contaminated sediments and pollution incidents (e.g. chemical spills) during the construction phase and subsequent increases in concentrations or priority substance.	Yes
Priority Hazardous Substances		Fail	Increased mobilisation of contaminated sediments and pollution incidents (e.g. chemical spills) during the construction phase and subsequent increases in concentrations or priority substance.	Yes
Soar – Secondary Combined				
Quantitative		Good	Mobilisation of existing contaminants during the construction phase of the Proposed Development (e.g. via bulk earthworks, piling or penetrative ground improvement) or via spillages of construction materials or fuels.	Yes
Chemical		Good		

IMPACT ASSESSMENT

1.38. This section provides an assessment of potential impacts arising from implementation of the Proposed Development and associated Drainage Strategy. This section should be read with reference to the Sustainable Drainage Statement at Appendix 14.2 (document reference 6.2.14.2) and figures 14.4, 14.5, 14.6 and 14.7 (document reference 6.3.14.4, 6.3.14.5, 6.3.14.6 and 6.3.14.7. This section further provides those outline mitigation measures and design principles necessary to avoid or reduce impacts. Finally, this section concludes if the activity may cause deterioration or prevent any quality element within any of the assessed waterbodies from achieving good status/potential, where sufficient baseline evidence is available to do so.

1.39. This document was originally prepared at the preliminary design stage of the proposals but has been updated following the finalisation of the Proposed Development. It should be noted that the changes to the Proposed Development relate to additional landscape measures and the changes in heights associated with the proposed buildings. The drainage strategy remains the same. Therefore, the findings of this document remain pertinent whilst initial consultation responses received (see Appendix 4 to this document) remain valid. Through the DCO process there does, however, remain the possibility that alterations to the development design may be required that would result in changes to the drainage strategy. As such, an assessment of impacts and associated mitigation may be subject to change pending finalisation of the proposals and outcome of further statutory consultation.

1.40. Nevertheless, many of the potential adverse effects identified within Table 1.1 can be avoided through inherent mitigation incorporated into the detailed planning drawings and drainage strategy to accompany a DOC, combined with the localised nature, duration and extent of potential impacts. Such inherent mitigation includes:

- The proposed retention of permanently wet ditches identified across the main development site and offsetting of development through inclusion of suitable habitat buffers to prevent degradation of these features whilst reducing the potential for negative effects on downstream waterbodies through contamination;

- Culverted and realigned watercourses will be designed to convey flows into downstream watercourses as existing, maintaining baseline conditions;

- The implementation of the Surface Water Drainage Strategy and Sustainable Urban Drainage Systems (SuDS) to attenuate and remediate surface water runoff from the Main Order Limits prior to its discharge into onsite and offsite waterbodies. Specifically, proposed SuDS will restrict runoff from the development to the equivalent greenfield QBAR rate such that the continuing peak flow runoff from the development area will be reduced from existing during equivalent flood events; and

- The proposed creation and enhancement of aquatic and riparian habitats for biodiversity in accordance with the Landscape Strategy submitted with the DCO application.

1.41. Additional design measures recommended for inclusion are identified below:

- The inclusion of native riparian and aquatic planting along each watercourse to compensate for the temporary loss of Reach 5 following its diversion, combined with permanent partial loss of Reach 1, 3 and 8 to accommodate engineered structures. Such planting will provide an enhancement over baseline conditions;

- The implementation of a sensitive design for the proposed re-alignment of Reach 5 to allow for a naturalistic profile with variations in flow and morphology and establishment of vegetation which is currently absent;

- The offsetting of development from retained aquatic features as far as possible during construction to avoid the potential for habitat degradation and disturbance of aquatic communities; and

- Implementation of construction in accordance with a Construction and Environmental Management Plan (CEMP) detailing those measures necessary for the protection of aquatic and other ecological features including adherence to best practice such as the Environment Agency's Pollution Prevention Guidance Notes (PPGs)[9].

1.42. A summary of proposed avoidance, mitigation and compensation measures is provided within Table 1.2.

[9] Available at Guidance for Pollution Prevention (GPPs) - Full list | NetRegs | Environmental guidance for your business in Northern Ireland & Scotland

Table 1.2: Proposed Avoidance, Mitigation and Compensation Measures

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
Thurlaston Brook					
Biological Quality Elements	Invertebrates	Moderate	Direct loss of riparian and in-channel habitats of potential value to a macroinvertebrate assemblage following realignment and culverting of onsite watercourses during construction.	Implementation of development in accordance with a Landscape Strategy. Potential to deliver increased species diversity through habitat creation/enhancement of riparian habitats and sensitive management of the re-aligned Ordinary watercourses to promote establishment of floral communities with subsequent diversification of habitats available to a macroinvertebrate assemblage.	No deterioration at waterbody level.
			Indirect impacts to Thurlaston Brook and River Soar following increase in surface/ground water run-off and pollution during construction	Implementation of development in accordance with a CEMP detailing ecological protection zones, sensitive working practices, dust suppression measures and materials storage to reduce risk of pollution events.	No deterioration at waterbody level.

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
			with inputs of silt potentially smothering downstream channel features and subsequently changes in the species composition of a macroinvertebrate community.	Implementation of Sustainable Drainage Systems to attenuate and treat surface water runoff prior to its leaving site. The strategy will include pollution control in the form of oil separators, which capture and contain any fuel or oil spillages from vehicles using the development, allowing it to be disposed of safely. Proposed swales will also be vegetated, which will help to remove silts and other pollutants from the storm water discharge from the Main Order Limits.	
			Changes to the hydrological regime downstream following realignment and culverting of onsite watercourses during construction with subsequent changes to sediment and flow	Implementation of development in accordance with a Surface Water Drainage Strategy to manage surface water run-off on site. Drainage proposals will seek to attenuate surface water runoff at the equivalent greenfield rate.	No deterioration at waterbody level.

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
			dynamics downstream.		
	Fish	High	Direct loss of riparian and in-channel habitats of potential value to a fish assemblage following realignment and culverting of onsite watercourses during construction.	Implementation of development in accordance with a Landscape Strategy and potential to deliver increased species diversity through habitat creation/enhancement of riparian habitats and sensitive management of the re-aligned Ordinary watercourses to promote establishment of floral communities with subsequent diversification of habitats available to a fish assemblage.	No deterioration at waterbody level.
			Increase in noise and vibration during construction resulting in disturbance to fish populations and changes in behaviour or migratory patterns (if occurring).	Implementation of development in accordance with a CEMP detailing ecological protection zones and sensitive working practices including sensitive timing of works (where required) to avoid migration and spawning periods.	No deterioration at waterbody level.
			Indirect impacts	Implementation of development in	No deterioration at

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
			following increased mobilisation of contaminated sediments during construction phase and subsequent smothering of spawning habitats and/or reduction in dissolved oxygen giving rise to fish kills.	accordance with a CEMP detailing ecological protection zones, sensitive working practices, dust suppression measures and materials storage to reduce risk of pollution events. Implementation of Sustainable Drainage Systems to attenuate and treat surface water runoff prior to its leaving site. The strategy will include pollution control in the form of oil separators, which capture and contain any fuel or oil spillages from vehicles using the development, allowing it to be disposed of safely. Proposed swales will also be vegetated, which will help to remove silts and other pollutants from the storm water discharge from the Main Order Limits.	waterbody level.
			Changes to the hydrological regime downstream following realignment and culverting of onsite watercourses during	Implementation of development in accordance with a Surface Water Drainage Strategy to manage surface water run-off on site. Drainage proposals will seek to attenuate surface water runoff at the equivalent	No deterioration at waterbody level.

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
			construction with subsequent changes to sediment and flow dynamics downstream.	greenfield rate.	
	Macrophytes and Phytobenthos	Poor	Direct loss of riparian and in-channel habitats and associated vegetation following realignment and culverting of onsite watercourses during construction.	Implementation of development in accordance with a Landscape Strategy. Potential to deliver increased species diversity through habitat creation/enhancement of riparian habitats and sensitive management of re-aligned Ordinary watercourses to promote establishment of floral communities with subsequent diversification of habitats available to a macroinvertebrate assemblage.	No deterioration at waterbody level.
			Indirect impacts following increased mobilisation of contaminated sediments during construction phase and	Implementation of development in accordance with a CEMP detailing ecological protection zones, sensitive working practices, dust suppression measures and materials storage to	No deterioration at waterbody level.

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
			subsequent deterioration in the quantity and condition of a macrophyte community.	reduce risk of pollution events. Implementation of Sustainable Drainage Systems to attenuate and treat surface water runoff prior to its leaving site. The strategy will include pollution control in the form of oil separators, which capture and contain any fuel or oil spillages from vehicles using the development, allowing it to be disposed of safely. Proposed swales will also be vegetated, which will help to remove silts and other pollutants from the storm water discharge from the Main Order Limits. With implementation of mitigation, there is the potential to deliver beneficial effects through the removal of land from agricultural production and thus a reduction in agricultural phosphate inputs.	

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
			Changes to the hydrological regime downstream following realignment and culverting of onsite watercourses during construction with subsequent changes to sediment and flow dynamics downstream	Implementation of development in accordance with a Surface Water Drainage Strategy to manage surface water run-off on site. Drainage proposals will seek to attenuate surface water runoff at the equivalent greenfield rate.	No deterioration at waterbody level.
Hydromorphological Supporting Elements	Hydrological Regime	Supports Good	Changes to the hydrological regime downstream following realignment and culverting of onsite watercourses during construction with subsequent changes to sediment and flow dynamics downstream	Implementation of development in accordance with a Surface Water Drainage Strategy to manage surface water run-off on site. Drainage proposals will seek to attenuate surface water runoff at the equivalent greenfield rate.	No deterioration at waterbody level.
	Morphology	Supports	Re-alignment of	The implementation of a sensitive	No deterioration at

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
		Good	Ordinary watercourses will result in a change in its form, structure and function.	design for proposed re-aligned Ordinary watercourses to allow for a naturalistic profile with variations in flow and morphology and establishment of vegetation which is currently absent.	waterbody level.
Physiochemical Supporting Elements (and Specific Pollutants)	Acid Neutralizing Capacity; Ammonia; Biochemical Oxygen Demand; Dissolved Oxygen, Ph, phosphate; temperature, Triclosan; Copper; Iron; Zinc.	Poor	Indirect impacts to Thurlaston Brook and River Soar following increase in surface/ground water run-off and accidental spills during construction which subsequently affects levels of dissolved oxygen, BOD, phosphorus and ammonia.	Implementation of development in accordance with a CEMP detailing ecological protection zones, sensitive working practices, dust suppression measures and materials storage to reduce risk of pollution events. Implementation of Sustainable Drainage Systems to attenuate and treat surface water runoff prior to its leaving site. The strategy will include pollution control in the form of oil separators, which capture and contain any fuel or oil spillages from vehicles using the development, allowing it to be disposed of safely. Proposed swales	No deterioration at waterbody level. Potential for positive effects following cessation of agricultural production onsite.

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
				will also be vegetated, which will help to remove silts and other pollutants from the storm water discharge from the Main Order Limits. With implementation of mitigation, there is the potential to deliver beneficial effects through the removal of land from agricultural production and thus a reduction in agricultural phosphate inputs.	
Priority Substances		Good	Increased mobilisation of contaminated sediments and pollution incidents (e.g. chemical spills) during the construction phase and subsequent increases in concentrations or priority substance.	Implementation of development in accordance with a CEMP detailing ecological protection zones, sensitive working practices, dust suppression measures and materials storage to reduce risk of pollution events. Implementation of Sustainable Drainage Systems to attenuate and treat surface water runoff prior to its leaving Main Order Limits. The strategy will include pollution	No deterioration at waterbody level.

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
				control in the form of oil separators, which capture and contain any fuel or oil spillages from vehicles using the development, allowing it to be disposed of safely. Proposed swales will also be vegetated, which will help to remove silts and other pollutants from the storm water discharge from the Main Order Limits.	
Priority Hazardous Substances		Fail	Increased mobilisation of contaminated sediments and pollution incidents (e.g. chemical spills) during the construction phase and subsequent increases in concentrations or priority substance.	Implementation of development in accordance with a CEMP detailing ecological protection zones, sensitive working practices, dust suppression measures and materials storage to reduce risk of pollution events. Implementation of Sustainable Drainage Systems to attenuate and treat surface water runoff prior to its leaving Main Order Limits. The strategy will include pollution control in the form of oil separators, which capture and contain any fuel or oil spillages from vehicles using the	No deterioration at waterbody level.

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
				development, allowing it to be disposed of safely. Proposed swales will also be vegetated, which will help to remove silts and other pollutants from the storm water discharge from the Main Order Limits.	
Soar – Secondary Combined					
Quantitative		Good	Mobilisation of existing contaminants during the construction phase of Proposed Development (e.g. via bulk earthworks, piling or penetrative ground improvement) or via spillages of construction materials or fuels	Implementation of development in accordance with a CEMP detailing ecological protection zones, sensitive working practices, dust suppression measures and materials storage to reduce risk of pollution events. The strategy will include pollution control in the form of oil separators, which capture and contain any fuel or oil spillages from vehicles using the development, allowing it to be disposed of safely. Proposed swales will also be vegetated, which will help to remove silts and other pollutants	No deterioration at waterbody level.
Chemical		Good			

Classification Elements Considered		Current Classification (Cycle 2)	Nature of Impact	Summary of Avoidance/Mitigation Measures?	Likely Residual Effect of Proposed Development
				from the storm water discharge from the Main Order Limits.	

SUMMARY AND CONCLUSIONS

1.43. This Preliminary Water Framework Directive (WFD) Assessment has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Tritax Symmetry (Hinckley) Limited, in relation to the Proposed Development of land north-east of Hinckley.

1.44. To accommodate the development footprint circa 1,045m of Reach 5 will be diverted from its original course and realigned to flow along the south-eastern boundary of the Main Order Limits with construction of 6 surface water outfalls to discharge into the waterbody. In addition to this a circa 177m stretch of the realigned watercourse will be culverted to accommodate construction of an access road across the waterbody. At the north-western boundary of the main development footprint, a further three outfalls are proposed which will ultimately discharge surface water runoff to offsite drainage ditches. On the western boundary an additional outfall to Reach 2 is proposed. The outfall locations and drainage catchments have been distributed to mimic the existing drainage catchments.

1.45. In addition to the above, circa 30m of Reach 1, 35m of Reach 2 and 38m of Reach 8 across the north-western extent of the Main Order Limits will be culverted to accommodate construction of the A47 link road. Additionally, to allow Reach 3 to pass beneath the link road, it is to be diverted within a new channel circa 290m in length which will flow alongside the link road and outfall into Reach 1. A 75m length of culvert will be required to allow this new channel to pass beneath the link road. The remaining downstream length of Reach 3 will be left *in situ* to continue to serve local runoff. Water bodies on site discharge into the Thurlaston Brook downstream of the Main Order Limits whilst the Study Site is encompassed by the Soar Secondary Combined ground waterbody.

1.46. New activities and schemes that affect the water environment must consider whether there is the potential to cause a deterioration of each water body from its current status or potential; and/or prevent future attainment of good status or potential where not already achieved.

1.47. An assessment identified the potential for likely impacts to arise upon ecological and chemical water quality elements as a result of:

- Physical disturbance (lighting/noise/vibration) and displacement of aquatic communities;
- Changes in volume of surface water runoff following conversion of a greenfield site to hardstanding;
- Changes in water quality and pollution arising from generation of silty run-off, oil and hydrocarbon pollutants during the construction phase; and
- Introduction of invasive non-native species.

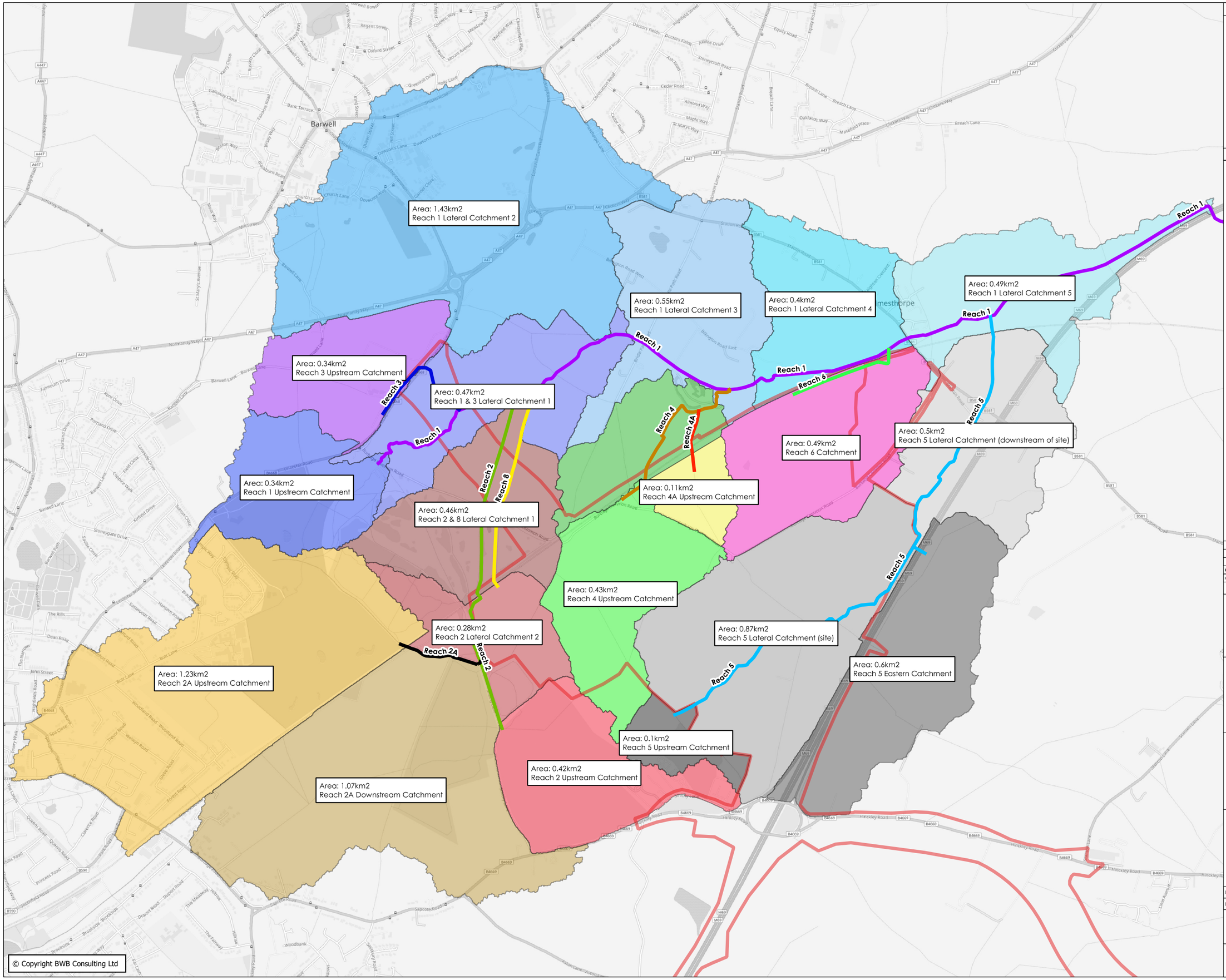
1.48. Although direct impacts to the onsite waterbodies associated with habitat loss and degradation were identified, such impacts are not considered to determinately affect the status of the Thurlaston Brook, located downstream of the Main Order Limits. However,

there is the potential for indirect impacts following progression of the Proposed Development. Furthermore, direct and indirect impacts upon biological communities and water quality parameters upon each identified watercourse flowing within/through the Main Order Limits, will arise associated with the proposed realignment and/or culverting of select waterbodies. Of further pertinence, the Proposed Development has the potential to affect the existing groundwater resource during the construction phase.

1.49. Inherent within current proposals is the design and implementation of a Surface Water Strategy and Sustainable Urban Drainage System designed to manage, treat and remediate surface water runoff from the Main Order Limits. Furthermore, development will be implemented in accordance with a CEMP and appropriate pollution control measures to ensure no deterioration in water quality onsite and downstream and subsequently no change in the ecological status of biological, physiological and chemical elements. Furthermore and subject to implementation of proposed mitigation, development could potentially deliver beneficial effects through the removal of arable land from agricultural production and thus a reduction in phosphate and other nutrient inputs to the catchment.

1.50. Overall, the assessment of the scheme under the WFD has concluded that, subject to implementation of the mitigation and design principles described above, the proposals are unlikely to result in a deterioration in the current ecological status of the Thurlaston Brook and Soar Secondary Combined ground waterbody, nor is it likely to compromise progress towards achieving good status.

Appendix 1 ◆ Thurlaston Brook Tributary Sub-Catchments (BWB, HRF-BWB-ZZ-XX-SK-YE-0016, Rev P01)



Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.

2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.

4. Any discrepancies noted on site are to be reported to the engineer immediately.

5. Background cartography used with permission of © OpenStreetMap contributors.

Key

- Illustrative Site Boundary

Modelled Reaches

- Reach 1
- Reach 2
- Reach 2A
- Reach 3
- Reach 4
- Reach 4A
- Reach 5
- Reach 6
- Reach 8

Rev	Date	Details of issues/ revision	Drw	Rev
P01	30.06.21	PRELIMINARY ISSUE	RG	CG

Issues & Revisions

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www.bwbconsulting.com

Client

Tritax Symmetry (Hinckley) Ltd

Project Title

Hinckley Rail Freight Interchange

Drawing Title

Thurlaston Brook Tributary Sub-Catchments

Drawn:	R Green		Reviewed:	C Gardner	
BWB Ref:	NTT 2814	Date:	30/06/21	Scale@A3:	1:15,000

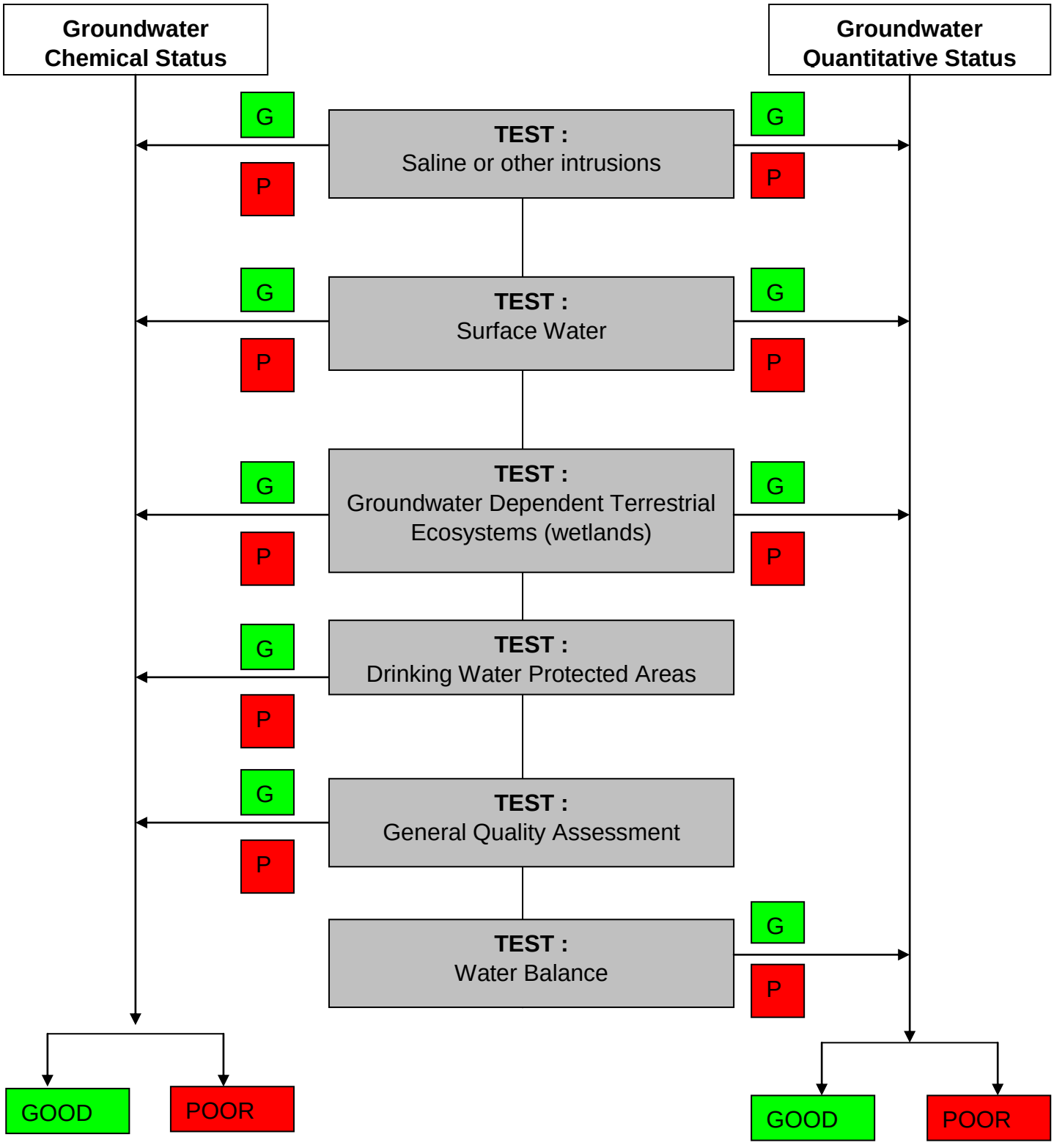
Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
HRF-BWB-ZZ-XX-SK-YE-0016	S2	P01

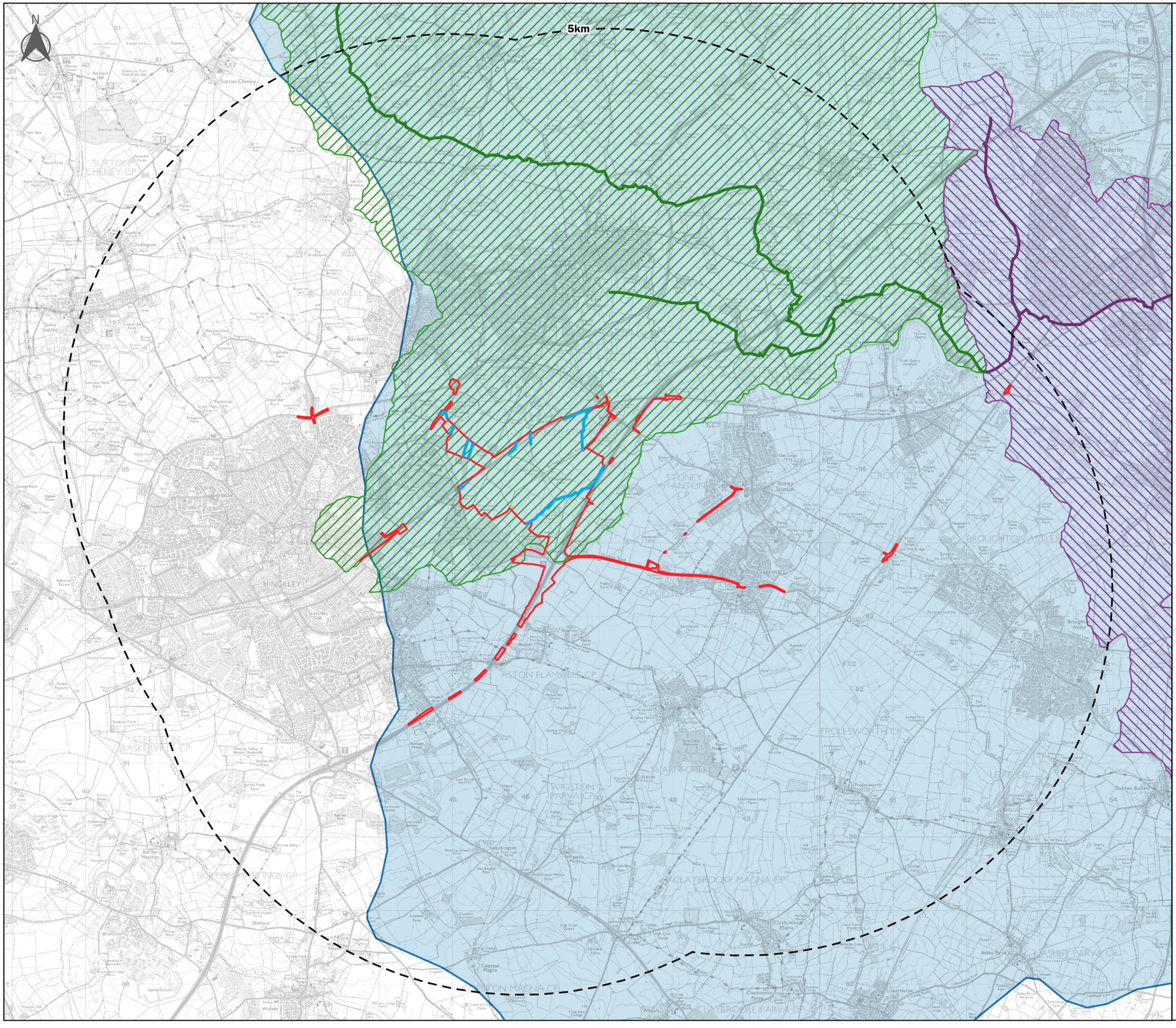
Appendix 2 ◆ Groundwater Classification Criteria

Figure 3: Summary of the tests used in classification



The results of each test are combined on a "one out all out" basis for overall classification of POOR or GOOD STATUS for both quantity and chemical. The worst result of these is then reported for the groundwater body overall.

Appendix 3 ◆ Pertinent Water Framework Directive Waterbodies (edp3267_d180 09 March 2023 DJo/EWi)



HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

Date:	09-03-2023
Paper size:	A3
Scale:	1:50000

0 500 1000 1500 2000 2500 m

Key:

- Order Limits
- 5km Range Ring
- Unnamed Tributaries of Thurlaston Brook within Limits
- Thurlaston Brook
- Catchment of the Thurlaston Brook (surface waterbody)
- River Soar from Thurlaston Brook to the River Sence
- Catchment of the River Soar from Thurlaston Brook to the River Sence (surface waterbody)
- Soar - Secondary Combined (ground waterbody)

Catchment data available at:
https://environment.data.gov.uk/catchment-planning
[Accessed on 09 March 2023]

TRITAX SYMMETRY
A TRITAX BIG BOX COMPANY

Pertinent Water Framework Directive Waterbodies

APFP Regulation:	5(2)(a)
Document Ref:	
Drawing Number:	edp3267_d180
Drawing Status:	FINAL
Revision:	-
Drawn by:	DJo
Approved by:	EWi

Appendix 4 ◆ Environment Agency Consultation Response

Ms Fiona McKenzie
edp
The Bonded Warehouse Atlantic Wharf
Cardiff
South Glamorgan
CF10 4HF

Our ref: LT/2022/126940/01-L01
Your ref: Email 11 April 2022

Date: 24 May 2022

Dear Ms McKenzie

PROPOSALS FOR A STRATEGIC RAIL FREIGHT INTERCHANGE THE LAND SOUTH OF ELMESTHORPE, BETWEEN THE LEICESTER TO HINCKLEY RAILWAY AND THE M69 MOTORWAY (KNOWN AS HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE (HNRFI)) INCLUDING WAREHOUSING AND ASSOCIATED HIGHWAY WORKS

PRELIMINARY WATER FRAMEWORK DIRECTIVE ASSESSMENT.

Thank you for giving the Environment Agency the opportunity to review the Preliminary Water Framework Directive assessment (report reference edp3267_r028b) for the above proposal.

We have reviewed the submitted report and from the perspective of our remit we have no adverse comments to make.

I have sent a copy of this letter to Tritax Symmetry.

Yours sincerely
Mr Nick Wakefield
Planning Specialist

Direct dial 02030 253354
Direct e-mail nick.wakefield@environment-agency.gov.uk
cc Tritax Symmetry

End