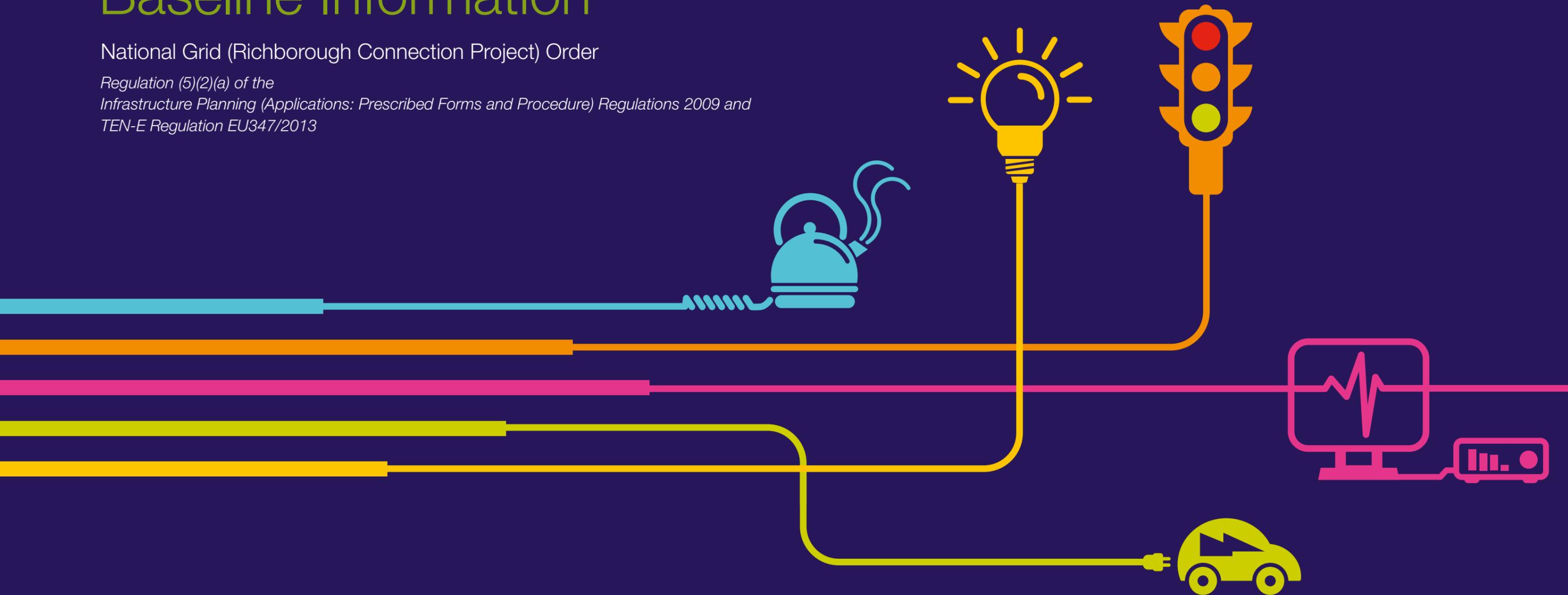


13B Supporting Water Quality Baseline Information

National Grid (Richborough Connection Project) Order

*Regulation (5)(2)(a) of the
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 and
TEN-E Regulation EU347/2013*



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Richborough Connection Project

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5.4 Environmental Statement Appendices

5.4.13B Supporting Water Quality Baseline Information

National Grid
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

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Organisation	Amec Foster Wheeler		
Author	Richard Cartlidge		
Approved by	Karen Wilson		
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1. SUPPORTING WATER QUALITY BASELINE INFORMATION

1.1 RBMP information

- 1.1.1 The River Stour (Great Stour between A2 and West Stourmouth WFD water body) is currently at moderate ecological potential, with a target of reaching good potential by 2027. It is designated as a HMWB due to the hard engineering of the river banks and impounding structures required on account of the adjacent land use which includes urban areas associated with the city of Canterbury. Those elements of the water body assessment found to be at less than good potential are seen in Table 13.7 of the ES Chapter. The biological supporting element for fish is found to be currently at moderate potential with improved fish passage and habitat improvements being undertaken during Cycle 2 to help reach good status⁵³. Phosphate concentrations (and macrophyte assessment) are currently consistent with poor status/potential and (as reported within the 2009 RBMP) it is deemed disproportionately expensive to achieve GEP for phosphate by 2015 (reporting date of the second WFD cycle). The next five years will see improvements in water quality through Southern Water's Asset Management Plan (AMP) programme at Canterbury and Herne Bay WWTWs, as well as catchment-wide programmes. The document notes that mitigation measures (environmental improvements) such as approaches to 'naturalise' hard engineered river banks would benefit the water body from their presence.
- 1.1.2 The Sarre Penn and Wantsum water body (formerly Sarre Penn, Monkton & Minster Marshes WFD water body) is currently deemed to be at bad ecological potential, with the target of achieving good potential by 2027. It is designated as a HMWB on account of land drainage. Macrophytes are the key element driving the status (Table 13.7 of the ES Chapter) with fish, phosphates and mitigation measures also currently at less than good potential. The biological supporting element for fish is found to be currently at poor status/potential; the EA report that the fish populations reflect two distinct habitat types: the upper river (taken to be upstream of Upstreet) is typically trout and minor species habitat and the mid-lower river (taken to be downstream of Upstreet and inclusive of the River Wantsum) reflects a uniform, over-engineered channel in which the fish population is likely to be highly mobile. The man-made drainage channels do not provide natural fish habitat, and water control structures can cause obstruction. The current phosphate potential is reported to be moderate. Although data analyses indicate sewage, agriculture and dilution issues all contribute to the phosphate levels seen in this water body, the main source of orthophosphate in the Wantsum is probably from transfer from the Great Stour. As phosphate levels in the Stour are improved there will be corresponding changes in the Wantsum. The document notes that a number of mitigation measures will be required in order to achieve GEP, which includes improving fish passage.
- 1.1.3 Monkton and Minster Marshes (formerly part of the Sarre Penn, Monkton & Minster Marshes water body) and Ash Level WFD water bodies were both created as water bodies in their own right as part of the Cycle 2 update. They are both currently identified to be of moderate potential. Limited data are available with respect to these water bodies; the EA report that 2013 Macrophyte classifications are bad and poor respectively. Macroinvertebrate data for Ash Level WFD water body (2013 data) is classified as good.

- 1.1.4 Downstream of West Stourmouth, the River Stour is classified as a transitional WFD water body on account of its tidal influence, and is referred to as the Stour (Kent) water body. The EA has advised that ostracod surveys indicate a saline influence at least as far upstream as Minster WWTW. The water body is designated as a HMWB due to flood protection measures. Those supporting elements at less than good potential based on 2013 data comprise phytoplankton, dissolved inorganic nitrogen, phosphate, specific pollutants (cypermethrin) and the mitigation measures assessment. In the 2009 RBMP, the EA deemed it disproportionately expensive to achieve good potential by 2015. Eight mitigation measures, or environmental improvements have been identified in the draft 'Cycle 2' South East RBMP which should be put in place to achieve good potential, however the EA have deemed it technically infeasible to do so by 2015. The missing mitigation measures include measures to 'preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone' and 'removal of hard bank reinforcement / revetment, or replacement with soft engineering solution'. The current objective for this waterbody is to achieve good potential by 2027
- 1.1.5 A number of WFD lake water bodies are located in the floodplain of the River Great Stour downstream of Fordwich, comprising (from upstream to downstream) Fordwich Lakes, Westbere Lakes, Fordwich Lake East, Great Puckstone and Stodmarsh Nature Reserve Pool. Section A of the Order Limits in the Great Stour valley around Canterbury Substation are located approximately 1.5km upstream of the Fordwich Lakes (NGR TR186599). Although no part of the Order Limits overlaps with the direct catchment area of these lakes, they have been included on the grounds that they may be in hydrological connectivity with the River Great Stour, which could therefore provide a pathway for effects from those areas of the Order Limits that are located upstream. All are artificial water bodies and all were classified on the basis of 2013 data as being at poor potential, on the basis of phytoplankton and total phosphorus, and, for Fordwich Lakes only, dissolved oxygen. The poor status for these water bodies is mainly related to a combination of agricultural diffuse pollution and point sewage discharges. The current objective for these waterbodies is to achieve good potential by 2027.
- 1.1.6 The Order Limits predominantly overlie the East Kent Tertiaries groundwater body, although a small section is overlies the Thanet Chalk groundwater body in the vicinity of Sarre. Both of these WFD groundwater bodies are currently assigned poor status (Table 13.7) as a consequence of the effects of abstraction on dependent surface waters. Also, in the case of the Thanet Chalk, it has been assigned poor status on the basis of aquifer water balance and groundwater quality grounds (e.g. risk from pesticides and chlorinated solvents). With respect to the water quality element of the East Kent Tertiaries groundwater body classification, the EA does not have any groundwater quality monitoring boreholes in this waterbody and therefore it has defaulted to good status in terms of quality.

1.2 Water quality

- 1.2.1 Water quality data relating to a total of 41 monitoring sites across the lower Stour catchment were provided by the EA. A short summary of the water quality data with respect to suspended solids is presented here since this is the water quality parameter most likely to be affected by construction phase effects.

- 1.2.2 Fifteen of the EA monitoring sites are located on the River Stour itself, eight of which had greater than five records of suspended solids data collection. Across these eight River Stour sites the mean suspended solids concentration was found to be 18.2mg/l. Concentrations vary greatly (standard deviation (SD) of +/- 29.7mg/l) with the maximum concentration exhibited across all sites being 240mg/l. The limited suspended sediment data (single site; four samples) available for the River Wantsum exhibited a mean value of 25.3mg/l (SD of +/-16.1mg/l) although a much lower maximum value of 41.3mg/l was evident compared to the River Stour. Water quality data for the Sarre Penn at Calcott does not include collection of suspended solids data.
- 1.2.3 There are few water quality sampling sites (and little data availability) on the IDB ditches with monitoring locations clustered around the WwTWs, presumably as a consequence of the EA's monitoring responsibilities in respect of consented discharges.

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