



SEWERAGE INFRASTRUCTURE BRIEFING

RED LODGE AND HERRINGSWELL **BURY ST EDMUNDS**



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This report is based on preliminary development information, layout, surveys and other information provided by the Client together with copies of utility information provided by the statutory undertakers. It should be noted that WERM has not undertaken any site surveys or visits in preparing this report.

The limited window for the completion of this study necessitates that all solutions are purely indicative, and/or based on the copies of asset plans for the relevant utility service provider. Further, it has not been possible to undertake any detailed modelling works so all final solutions could vary from those identified in this report. Care has been taken to collate written confirmation of each solution from the relevant utility providers wherever possible or in the absence of this an anticipated worst case scenario has been cited. Any additional correspondence in relation to the proposed development will be forwarded under separate cover when received.

All budget costs presented in this report are an indication of the capital sums required for procuring services based on experience of similar projects and information provided by the various utility providers. The sums presented should be used for budgeting purposes only and will need to be refined and confirmed during formulation of a detailed design, and fixed at each procurement stage thereafter.

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1.0 Red Lodge and Herringswell Sewerage – Statement of Information

1.1 Overview

It is important to understand that the foul sewerage system from the Red Lodge development travels in sealed rising mains that have no access from any other pipe along their route other than at the main pumping station points. Sewage from the original Red Lodge development (Land West of Warren Road) drains to the Warren Road pumping station, which is then pumped to the Kings Warren pumping station. Sewage from the Red Lodge, Kings Warren development (Land East of Warren Road) drains to the Kings Warren pumping station, which then pumps to the Herringswell terminal pumping station. From there the sewage is pumped to the Tuddenham Water Recycling Centre. This system involves 3 major pump stations and 3 continuous sealed pipes throughout its entire length (see Diagram 1, Appendix A).

The proposed (Land East of Red Lodge) development shall drain into existing gravity sewers on the Red Lodge, Kings Warren development which have sufficient capacity to accommodate the increased sewage flows.

The problems experienced over many years within the Herringswell village are not related to the flows from Red Lodge as there is no entry point within the rising main system or exit point for sewage to flood from. This means the only cause for these problems must lie with the drainage system within Herringswell which is not connected to the main rising mains pipework but enters the terminal pump station in Herringswell itself (See Diagram 2, Appendix B).

1.2 Summary of Recent Sewerage Upgrading Works

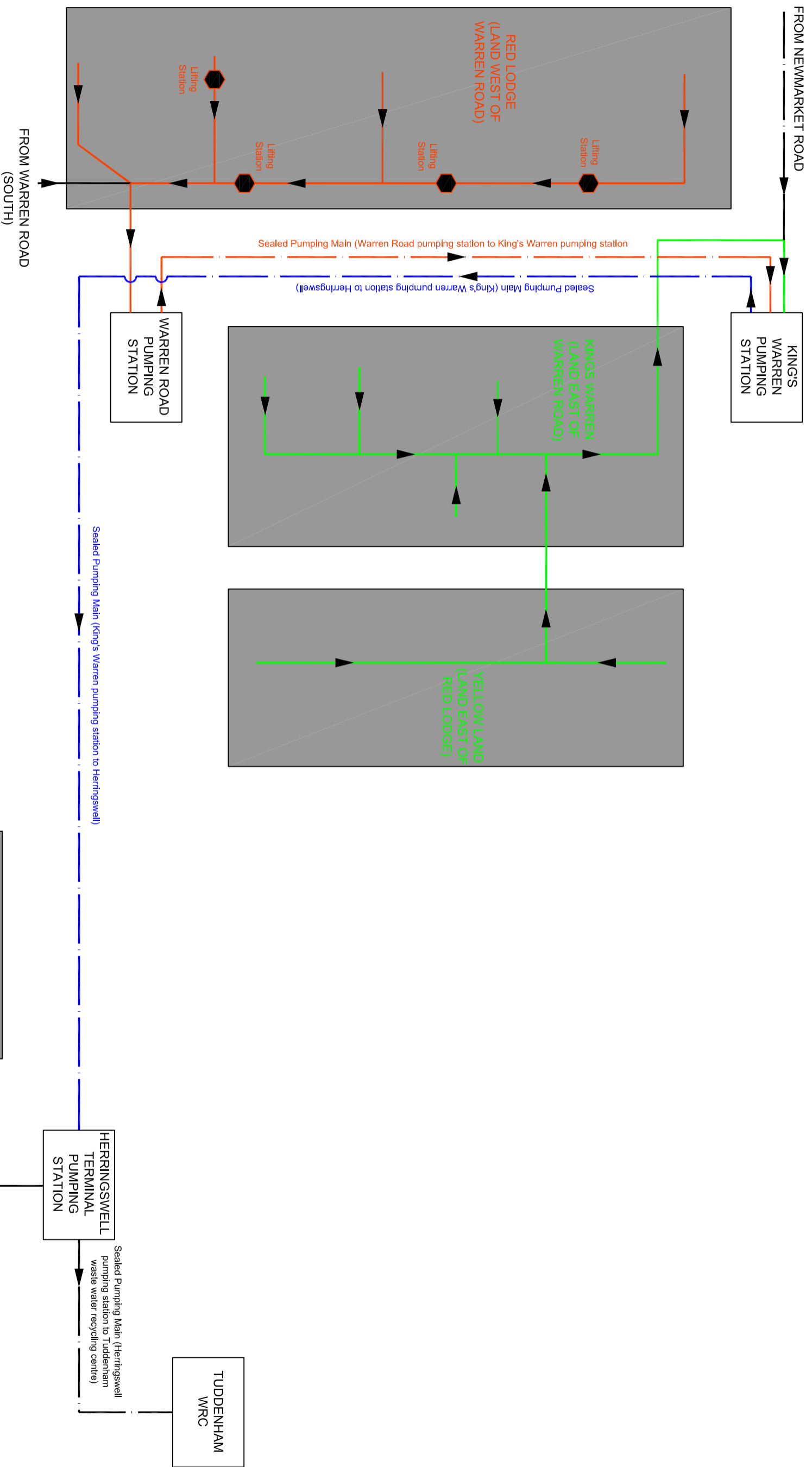
Anglian Water has undertaken the following recent upgrades and improvements to the public sewerage network:

- Originally, Kings Warren pumping station pumped to Warren Road pumping station and this pumped to Herringswell terminal pumping station. This was altered in lieu of development so that now the Warren Road pumping station pumps to Kings Warren pumping station, which then pumps to Herringswell terminal pumping station. This change made better use of the storage capacity in the Kings Warren pumping station thus allowing for resilience, and affording greater period for response by Anglian Water should Herringswell pumping station suffer a power failure or in the unlikely event of a complete pump failure. In addition, a dosing plant was installed at the Kings Warren pumping station to reduce any likelihood of sewage septicity and odours at the receiving Herringswell terminal pumping station.
- Relocation and upgrading of approximately fifty lifting stations within the villages surrounding Mildenhall to improve reliability. Eleven of these stations are located west of Warren Road, within the original Red Lodge development (to the west of Warren Road). This work is being undertaken during 2013/2014 and is anticipated by Anglian Water to complete during 2014, subject to the programme for installation of new electrical and communications services by other utility companies.
- Capacity and odour control upgrading works to Herringswell terminal pumping station. Please note that the pumping station currently has sufficient capacity to accommodate sewage flows from the proposed Yellow Land development.
- Significant upgrading works to Tuddenham Water Recycling Centre. The upgrading works ensure that the centre has sufficient capacity to treat the additional sewage flows from the proposed Land East of Red Lodge development.

1.3 Herringswell Terminal Pumping Station

- Herringswell terminal pumping station receives pumped flows from the Kings Warren pumping station. In the event of a power failure or complete (including backup) pump failure at Herringswell terminal pumping station, a timed signal is sent from Herringswell terminal pumping station to Kings Warren pumping station, via Anglian Water's control network. This is so that the Kings Warren pumping station pumps are inhibited whilst the Herringswell terminal pumping station is recovered, so that the latter is not overwhelmed with flows from the Kings Warren pumping station.
- The Herringswell terminal pumping station has 4 hours worth of emergency sewage storage in the event of a power failure or complete pump failure.
- No sewage flows from Red Lodge gravitate through Herringswell via gravity sewers. All sewage flows from the Kings Warren pumping station to the Herringswell pumping station are via a sealed rising main – effectively a sealed transmission system.
- The Kings Warren pumping station has a continuous dosing system installed to eliminate septicity in the receiving Herringswell terminal pumping station. Septicity in sewage can occur when the retention time of sewage is prolonged. This can occur in long rising mains with low flow volumes; the rising main between Kings Warren pumping station and the Herringswell terminal pumping station is around 3.5km long and without dosing is susceptible to septicity. The increased sewage flows resulting from the proposed Land East of Red Lodge development would reduce retention times in the main and would certainly be beneficial in reducing the risk of septicity and associated sewage odours at the receiving Herringswell terminal pumping station.

Appendix A – Diagram 1



**RED LODGE
FOUL DRAINAGE ARRANGEMENT SCHEMATIC
(POST DEVELOPMENT)**

Appendix B – Diagram 2

