Land at South West Taunton
Foul Drainage Strategy

On behalf of Comeytrowe Consortium
Document Control Sheet

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Appendix A Site Location Plan
Appendix B Preliminary Foul Drainage Strategy
1 Introduction

1.1 Overview

1.1.1 The purpose of this report is to identify potential solutions for the provision of foul drainage in support of an outline application for development of approximately 2,000 residential units and an element (approximately 5Ha) of employment land on the Comeytrowe site in Taunton. This report has been produced to summarise the technical discussions which have taken place with the Water Authority, the Comeytrowe Developer Consortium and the Comeytrowe Masterplanning/Design Team.

1.1.2 The proposed scope of development comprises up to 2,000 dwellings; 5.25 ha of employment land use; 2.2 ha of land for a new primary school; a mixed use local centre and a 300 space park and bus facility.

1.1.3 As illustrated in Appendix A, the land identified is located on the south-western edge of Taunton and consists predominantly of open farmland.

1.1.4 The land is adjoined by Comeytrowe Road and Comeytrowe Lane to the northeast, the A38 to the northwest, Dipford Road to the southeast, and farmland to the southwest. Comeytrowe Lane runs through the middle of the site in a north-south alignment connecting Comeytrowe Lane to Middle Stoford and West Buckland.

1.2 The Report

1.2.1 This assessment has been prepared to consider the existing proposed utility infrastructure and any constraints this may present to the proposed development (with consideration for both an initial 300 residential unit development and forecast 2,000). In this respect the report is structured as follows:

- Chapter 3: Review of the existing foul sewer network in and around the site,
- Chapter 4: Reviews the proposed foul drainage strategy,
- Chapter 5: Sets out the potential pumping station considerations,
- Chapter 6: Provides conclusions to the report.
2 Existing Sewer Network

2.1 Overview

2.1.1 The site falls within the natural catchment of the Ham Sewage Treatment Works, located to the east of Taunton, which is owned and operated by Wessex Water (WW).

2.1.2 Foul sewers are present within the existing residential areas surrounding the development site, and are in the main small diameter which transfer flows to the Galmington stream sewer and College Way sewer.

2.1.3 The Galmington stream sewer runs in the approximate direction of the Galmington stream and is a 225mm diameter sewer. The College Way sewer is a 450mm diameter sewer downstream of the confirmed point of adequacy.

2.1.4 To the north west of the site, Rumwell is served by a combined sewer system that terminates at Rumwell sewage pumping station. The flows are then pumped via a 100mm diameter rising main to two pumping stations at Stonegallows, from which the flows are pumped to a local combined sewer located within the A38.
3 Proposed Foul Strategy

3.1 Overview

3.1.1 Through AMP 5, WW has made considerable investment into the treatment capacity and water quality performance of the Ham Sewage Treatment Works. WW has confirmed verbally that these upgrade works result in sufficient treatment capacity to accommodate the initial 2,000 units from the Comeytrowe site.

3.1.2 WW holds a hydraulic foul drainage model for the Taunton area which was verified through flow monitoring during 2008. At that stage the verified hydraulic model did not extend to the small diameter sewers adjacent the Comeytrowe site. In June 2011 the Comeytrowe Consortium instructed and funded a further study of the local sewerage network to assess the flows from the Comeytrowe site.

3.1.3 A meeting was held with WW on 18th July 2011 to discuss initial feasibility and agree a preferred drainage solution. At this meeting, two potential routes were highlighted by WW to reach the point of adequacy for the proposed development site, namely:

i. Upgrade the Galmington Stream sewer which runs adjacent to the Galmington Stream.

ii. Upgrade the College Way sewer and pump flows from the northern section of the site to the upgraded sewer.

3.1.4 Both these solutions were evaluated by WW through modelling and feasibility/design works. A further meeting was held with WW on 9th May 2014 to discuss the findings from these works.

3.1.5 WW currently propose to utilise the existing Galmington Steam sewer route to drain the entire development. Works required to the route (such as the provision of new or upgraded infrastructure) have been considered in line with the programme for development to minimise initial capital costs to the Consortium.

3.1.6 The drainage strategy for the initial units will utilise the existing New Barn pumping station, located to the east of the site. The strategy is illustrated in Appendix B. Draining to this pumping station requires approximately 60m of new 450mm diameter gravity oversized sewers to be laid from the site boundary, as well as the upsizing of approximately 100m of existing mains.

3.1.7 While there is insufficient existing storage at the New Barn pumping station, using new oversized sewer pipe means that they can act as storage and fulfil the storage requirement for the initial delivery of houses. An added advantage is that pipes of this size are necessary to serve the much wider development, such that no future abortive costs should be minimized.

3.1.8 The full drainage proposal for the much wider site will require further upgrade works along the existing Galmington Steam route. This would allow the entire development to drain by gravity without the need for any major onsite pumping station/rising main infrastructure (although smaller onsite pumping stations may be required, depending on the final site levels).

3.1.9 Upgrade works are likely to be required to the existing New Barn pumping station to cater for the foul flows generated by up to 2000 units; however, further work is required to determine the exact extent of works. Any development beyond 2000 units will likely require new gravity infrastructure which avoids the need to utilise the New Barn. WW have determined a proposed route for this gravity sewer, however, further site work/surveys are required to confirm whether works would be feasible.
3.1.10  Sufficient foul storage for the development would be located to the east of the site (in the vicinity of where Galmington Stream enters the site. Further offsite storage would be required in the green area at the bottom of College Way to mitigate the impact of the development on the downstream network.
4 Conclusion

4.1 Summary

4.1.1 At this stage, the preferred option to dispose of the foul sewage from the initial 2,000 units at Comeytrowe will be drainage along the Galmington Stream sewer route, via the existing New Barn pumping station.

4.1.2 Achieving this drainage solution will require the provision of new and upgraded infrastructure installed on a phased basis, with the exact detail, to be agreed with WW at the detailed design stage.
Appendix A  Site Location Plan
Appendix B  Preliminary Foul Drainage Strategy
Provisional location of onsite storage and associated gravity main to drain development along Galmington Stream route.