TECHNICAL NOTE

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Subject	Review of Thames Water's DWMP

1 Introduction

Water companies were required to publish Drainage Water Management Plans (DWMPs) for river basin catchments across England as part of the Environment Act. Thames Water has recently published their DWMP. This provides a wider geographical extent of information on sewer flood risk than has previously been available. In doing this, the DWMP's include risk assessment and mapping which could potentially be used in the proposed land use planning prioritisation process and could potentially be perceived as being appropriate for consideration in the Sequential and Exception Tests. As this is a matter that could be raised at Examination this review is performed to understand the nature of the DWMP mapping and data that is now available and the extent to which it can appropriately be used to support the preparation of the Sequential Test. The intention is that this review is used to support consultation with Thames Water so formal confirmation can be given to the proposed methods and approach used in the preparation of the SFRA and the Plan.

2 Thames Water DWMP

2.1 Background

The DWMP describes the basis for long term investment proposals by Thames Water that span for more than 25 years and set out the commitment needed to make wastewater systems safe and secure.

Thames Water's plan contains substantive volumes of mapping, information and data that has not previously been made available by water companies. The focus is on planning for the future, so customer flooding is reduced. However, this is only for a 3.3% and 2% Annual Exceedance Probability (AEP) events. By comparison, fluvial, tidal and surface water modelling already used within the Sequential Test is for the 3.3%, 1% and 0.1% AEP events. Additionally, the future epochs considered in the DWMP are 2035 and 2050. The fluvial, tidal and surface water mapping used in the Sequential Test consider events up to 2125.

Thames Water have prepared a regional (Level 1) DWMP which is supported by 13 catchment strategic plans (Level 2 DWMP). Sevenoaks District is located within Thames Water's Long Reach catchment strategic plan. The Long Reach catchment strategic plan is split into tactical planning units (Level 3 DWMP). The tactical planning units are geographical areas in which a wastewater network drains to a single sewage treatment works

2.2 DWMP Objectives

The planning objectives in the DWMP assess the current and future performance of the drainage and wastewater systems and identify where action and/or future investment is required. The performance is considered as a risk where failure could have an impact on people and/or the environment. A total of 12 objectives were identified by Thames Water to address:

1 Sewage treatment works quality compliance

2 Sewage treatment works flow compliance

3 Risk of pollution incidents

4 Storm overflow performance
5 Carbon
6 Wellbeing
7 Internal sewer flooding risk
8 External sewer flooding risk
9 Percentage of population at risk of sewer flooding in a 1 in 50-year storm
10 Reduce surface water runoff
11 Reduce misconnections
12 Sewer collapses

Further details can be found here: https://www.thameswater.co.uk/media-library/home/about-us/regulation/drainage-and-wastewater/the-plan.pdf

2.3 Risk Based Catchment Screening

As part of the DWMP, a risk based catchment screening (RBCS) was completed to identify catchments where further investigations were necessary. Through the RBCS catchment vulnerability was screened against 17 different risk indicators. Catchments that have operated without issue for many years, can accommodate future growth, and are resilient to future changes were classified as low risk for future stages of assessment. Catchments that have known performance issues or are known to be vulnerable to future change were forwarded to the baseline risk and vulnerability assessment (BRAVA) planning stage. Out of 382 catchments, 293 required progression to the BRAVA stage. The remaining 89 catchments have been characterised as low risk by the RBCS process and are unlikely to be vulnerable to changes in future inputs.

Further details regarding the RBCS methodology can be found here: https://www.thameswater.co.uk/media-library/home/about-us/regulation/drainage-and-wastewater/appendix-b-risk-based-catchment-screening.pdf

2.4 Baseline Risk and Vulnerability Assessment

Thames Water conducted a BRAVA to understand the current system performance of the planning objectives and future vulnerabilities. As part of the BRAVA, baseline and future risks were assessed against the planning objectives for 293 catchments identified in the RBCS. The outputs of the BRAVA provide information to determine the severity, location, and type of problems within Thames Water's coverage area with regards to meeting the planning objectives. The full results provide the risk levels of individual catchments according to the planning objectives.

As part of the BRAVA, each catchment was provided a risk level for each of the 12 planning objectives listed in Section 2.2 using the following grades:

- 0 - Not significant
- 1 - Moderately significant
- 2 - Very significant

Further details regarding the BRAVA methodology a table outlining the results can be found here:

https://www.thameswater.co.uk/media-library/home/about-us/regulation/drainage-and-wastewater/appendix-c-baseline-risk-and-vulnerability-assessment-and-problem-characterisation.pdf

The Sevenoaks District area sits within the South East London area as classified by Thames Water. This area is located on the south of the River Thames in northern Kent. The system drains from south to north, from Croydon and Sevenoaks to the River Thames. The South East London area is at moderately significant risk of internal flooding and sewer collapse.

3 Implications

The implications of the DWMP BRAVA data are outlined below:

- It is understood that the BRAVA table and mapping have been prepared for the purpose of Long-Term Investment Planning and not for the sequential placement of new development. The mapping shows where certain wastewater systems would require investment. However, as there is no certainty about any potential investment and the benefits this may bring, it is not necessarily possible to conclude that this should be used as the basis for the Sequential Test.
- The BRAVA results provide one risk category for each wastewater system, the actual level of risk within the areas shown might potentially vary substantially and thus the spatial resolution might not be appropriate for use in a comparative analysis of specific sites. The data resolution used as part of the DWMPs does not appear to be comparable to the river and sea flooding information and thus could not easily used alongside the existing data and mapping on a site-specific basis.
- Whilst it might not be possible to use the DWMP data and mapping in a comparative assessment to support the Sequential Test the content might influence the timing and viability of potential allocations that are identified. It isn't possible to report on the extent to which these considerations might affect viability from the information available, but this matter should be discussed and a formal position agreed with Thames Water. For sites where it is understood that the DWMP data does potentially introduce sewer flooding matters that affect the implementation of development then appropriate content should be included in the Level 2 SFRA by way of demonstrating that the principle of development can be supported.

4 Recommendations

On the basis of our understanding it is recommended that the DWMP information and mapping is not used to assess sewer flooding in the Sequential Test alongside river, sea and surface water flooding on the basis that the available information is not of appropriate resolution or format. This understanding should be addressed with Thames Water and formal confirmation obtained as necessary to support the Plan and Examination. This will be clearly stated in the Level 1 SFRA and where possible the DWMP information will be used to inform the scope of site specific FRAs.

Further consultation with Thames Water should clarify the necessity and extent to which identified DWMP sewer flood risk should be addressed at sites where this is potentially an influential matter. This can then inform the necessity to include content on sewer flood risk in a Level 2 SFRA.