

TECHNICAL NOTE

JBA Project Code	2021s1233
Contract	Eastbourne and Southern Wealden Level 1 SFRA
Client	Eastbourne Borough Council
Date / version	November 2023 / Version 1
Author	Peter Rook
Reviewer / Sign-off	Alastair Dale
Subject	Review of Southern 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. Southern 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 Southern Water so formal confirmation can be given to the proposed methods and approach used in the preparation of the SFRA and the Plan.

2 Southern Water DWMP

2.1 Background

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

Southern 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.

Southern Water have prepared a regional (Level 1) DWMP which is supported by 11 catchment strategic plans (Level 2 DWMP). Eastbourne and Southern Wealden is located within Cuckmere and Pevensy Levels catchment strategic plan.

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 Southern Water to address:

- 1 Sewage treatment works quality compliance
- 2 Sewage treatment works flow compliance
- 3 Risk of pollution incidents
- 4 Storm overflow performance

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- 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.Southernwater.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 18 in the Cuckmere and Pevensey Levels catchment which fully encompasses the study area, 16 catchments required progression to the BRAVA stage. The remaining 2 catchments (Lime Park Herstmonceux and Wartling) 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.southernwater.co.uk/about-us/our-plans/drainage-and-wastewater-management-plans/risk-based-catchment-screening/>

2.4 Baseline Risk and Vulnerability Assessment

Southern 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 Southern 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

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

<https://www.southernwater.co.uk/about-us/our-plans/drainage-and-wastewater-management-plans/baseline-risk-and-vulnerability-assessment/>

Southern Water produced a table summarising the BRAVA risks (Figure 2-1) identified for each catchment along with a summary of the investment strategy. The SFRA study area falls mostly within the 'Eastbourne' catchment although the north of the study area falls within the 'Wilmington study area

Figure 2-1: BRAVA internal sewer flooding map

Southern Water Drainage and Wastewater Management Plans
 Cuckmere and Pevensy Levels River Basin Catchment



System Ref	Wastewater System	Population	BRAVA Result for each Planning Objective																				% Forecast growth increase from 2020		Proposed investment strategy	Level of Concern						
			PO1 - Internal Sewer Flooding Risk	PO2 - Pollution Risk	PO3 - Sewer Collapse Risk	PO4 - Risk of Sewer Flooding in a 1 in 50 year Storm	PO5 - Storm Overflow performance	PO6 - Risk of WTR Compliance Failure	PO7 - Risk of flooding due to Hydraulic Overload	PO8 - Dry Weather Flow Compliance	PO9 - Good Ecological Status / Potential	PO10 - Surface Water Management	PO11 - Nutrient Neutrality	PO12 - Groundwater Pollution	PO13 - Bathing Waters	PO14 - Shellfish Waters	2023	2050														
ALFR	ALFRISTON	416						H	H						O	???													11%	11%	Improve	Low
BERW	BERWICK	300																											14%	18%	Maintain	Low
HABX	BEXHILL AND HASTINGS	141,300	C	O	O	H	H	H	H						Q	Q	H	U	Q		U								11%	15%	Improve	Medium
BOSG	BODLE STREET Low	62																											79%	84%	Maintain	Low
CATS	CATSFIELD	645										Q							U	Q									12%	19%	Prepare	Low
EADE	EAST DEAN	1,824																											11%	15%	Maintain	Low
EAHD	EAST HOATHLY	1,051						H	H				H	H			Q												15%	24%	Improve	Low
EALP	EASTBOURNE	116,948	C	O		H	H	H	H			H	H		Q		H				O	U							11%	14%	Improve	High
HAIN	HAILSHAM NORTH	12,023	C	O	O	H	H	H	H			Q	H	H		Q	Q	H											61%	70%	Improve	Medium
HAS	HAILSHAM SOUTH	28,543		O	O	H	H	H	H		Q	Q	H	H		Q		H											17%	23%	Improve	Medium
HOOE	HOOE	1,933										Q	H	H			Q		U	Q									15%	24%	Improve	Low
HERS	LIME PARK HERSTMONCEUX	44																											66%	76%	Maintain	Low
NINF	LUNSFORDS CROSS	248						H	H								Q		U	Q									11%	19%	Improve	Low
RUGR	RUSHLAKE Low	152																											43%	54%	Maintain	Low
VINE	VINES CROSS	13,883	H	O	O	H	H	H	H			H	H				Q												17%	25%	Improve	Medium
WART	WARTLING	55																											17%	23%	Maintain	Low
WILM	WILMINGTON	202																											19%	26%	Maintain	Low
WIND	WINDMILL HILL HERSTMONCEUX	2,144				H	H					Q					Q												18%	29%	Prepare	Low

Key:	Primary Risks	
Customer	C	
Maintenance	H	
Operational	O	
Quality	Q	
Unknown	U	
Key:	Cell Colour Coding	
Not tagged		
Not significant		
Not significant		
Moderately Significant		
Very Significant		

The BRAVA indicates that there is a 'high' level of concern for the Eastbourne catchment and there overall investment strategy for Southern Water is to 'improve'. The BRAVA for the Eastbourne catchment identified the following risks as 'very significant':

- Risk of sewer flooding in a 1 in 50 year storm (both in 2020 and 2050);
- Storm overflow performance (2020 and 2050);
- Risk of flooding due to hydraulic overload 2020 and 2050);
- Surface water management;
- Bathing waters.

Remaining risks are categorised as either 'moderately significant' or 'not significant'. By contrast there is a 'low' level of concern for the Wilmington catchment with an

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investment strategy of 'maintain' and no moderately significant or very significant risks were identified through the BRAVA screening.

3 Recommendation

On the basis of our understanding of the RBCS and BRAVA data, the area of Eastbourne and Southern Wealden within Southern Water's coverage boundary does not contain any detailed mapping or modelling that would influence the proposed land use planning prioritisation process and the Sequential Test.

However, the Eastbourne catchment which encompasses the borough has been identified as a concern from Southern Water. This highlights the importance of sustainable development and ensuring that developers, RMAs and other partners work collaboratively and seek opportunities to reduce the impacts of sewer flooding where appropriate.

Accordingly, it is concluded that Southern Water DWMP is not used by Eastbourne Borough Council or Wealden District Council in the preparation of their Sequential Tests.

