



Drainage and Wastewater Management Plan

Redgate Mill Crowborough
Wastewater System Plan



from
**Southern
Water** 

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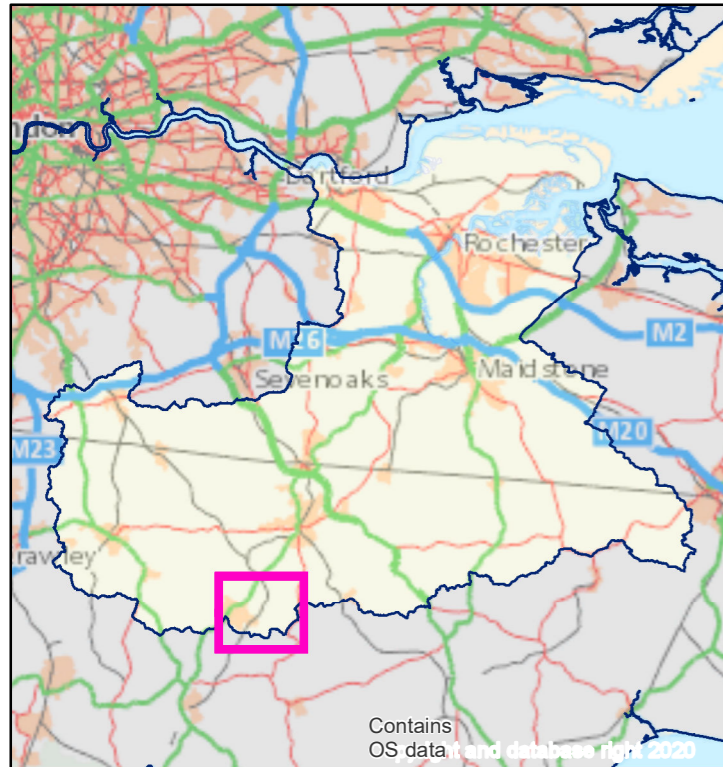
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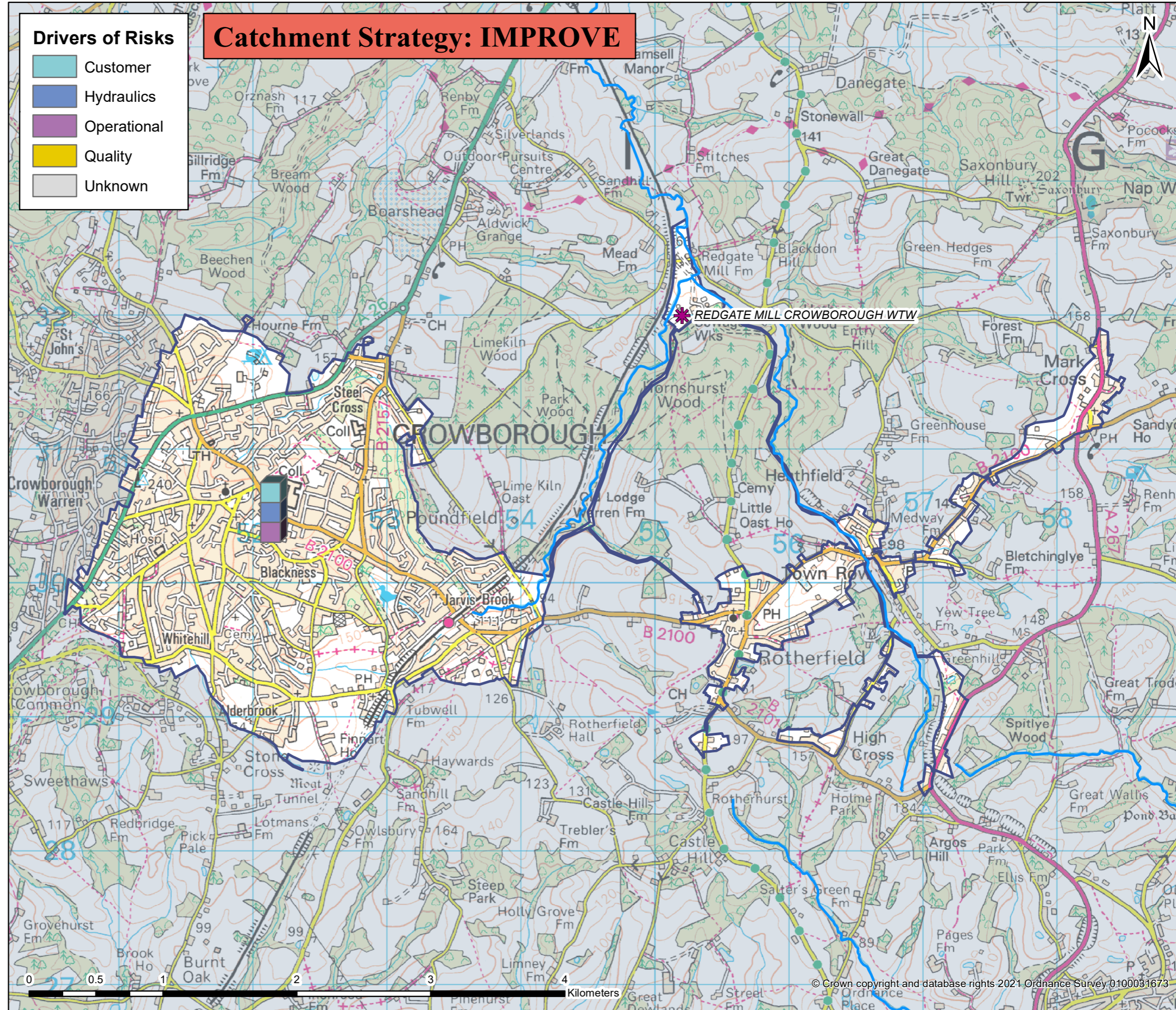
Redgate Mill Crowborough wastewater system: map and key facts



Drivers of Risks

- Customer
- Hydraulics
- Operational
- Quality
- Unknown

Catchment Strategy: IMPROVE



Population Equivalent (PE)	22,757
Discharge Waterbody	Jarvis Brook
Number of Pumping Stations	14
Number of Overflows	8
Length of Sewer (km)	180.2
Catchment Reference	CRRM

BRAVA Results Table (CRRM)		
Planning Objective	2020	2050
1 Internal Sewer Flooding Risk	2	
2 Pollution Risk	2	
3 Sewer Collapse Risk	2	
4 Risk of Sewer Flooding in a 1 in 50 year storm	1	1
5 Storm Overflow performance	2	2
6 Risk of WTW Compliance Failure	0	1
7 Risk of flooding due to Hydraulic Overload	1	1
8 Dry Weather Flow Compliance	0	0
9 Good Ecological Status / Potential	0	
10 Surface Water Management	0	
11 Nutrient Neutrality	NA	NA
12 Groundwater Pollution	0	
13 Bathing Waters	NA	
14 Shellfish Waters	NA	



Problem Characterisation

Redgate Mill Crowborough (CRRM)

This document describes the causes of the risks identified by the Baseline Risk and Vulnerability Assessment (BRAVA). The BRAVA results for this catchment are summarised in Table 1. The results indicate that flooding, pollution and water quality are the main concerns in this wastewater catchment. We have completed risk assessments for 2050 where we have the data and tools available to do so. For the other planning objectives, we will explore how we can predict future risks for the next cycle of DWMPs. All the risk assessment methods need to be reviewed after the first DWMPs have been produced with a view to improve the methods and data for future planning cycles.

Table 1: Results of the BRAVA for Redgate Mill Crowborough wastewater system

Planning Objectives		2020	Driver	2050
1	Internal Sewer Flooding Risk	2	Customer	
2	Pollution Risk	2	Customer	
3	Sewer Collapse Risk	2	Operational	
4	Sewer Flooding in a 1 in 50-year storm	1	Hydraulic	1
5	Storm Overflow Performance	2	Hydraulic	2
6	WTW Water Quality Compliance	0	Quality	1
7	Flooding due to Hydraulic Overload	1	Hydraulic	1
8	WTW Dry Weather Flow Compliance	0	-	0
9	Good Ecological Status / Good Ecological Potential	0	-	
10	Surface Water Management	0	-	
11	Nutrient Neutrality	NA	-	NA
12	Groundwater Pollution	0	-	
13	Bathing Waters	NA	-	
14	Shellfish Waters	NA	-	

Key

BRAVA Risk Band	
NA	Not Applicable*
0	Not Significant
1	Moderately Significant
2	Very Significant

*No issues relevant to planning objective within Wastewater System

Catchment Investment Strategy

The risks identified in this wastewater catchment mean that we have assigned the following investment strategy:

Improve

This means that we consider that the current performance of the drainage and wastewater system needs to be improved to reduce the impacts on our customers and/or the environment. We will plan investment to reduce the current risks by actively looking to invest capital funding in the short term to address current performance issues (and consider future risks when implementing improvements).

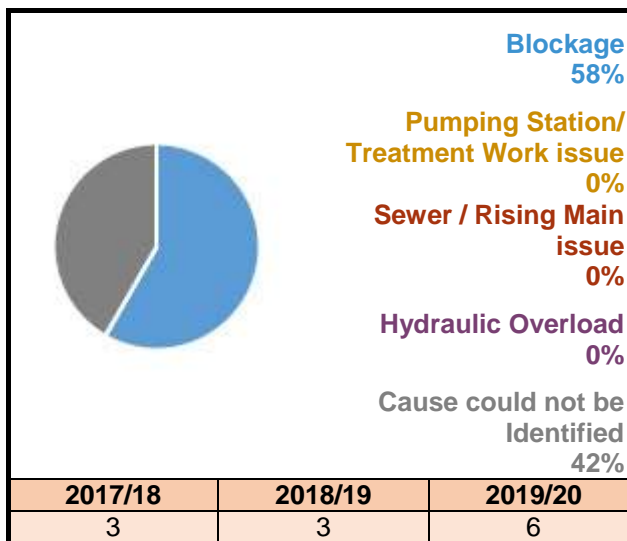


Planning Objective 1: Internal Sewer Flooding Risk

The number of internal sewer flooding incidents reported during the three years considered by the risk assessment are shown in Figure 1. The total number of connections in this wastewater system means there have been more than 3.35 incidents per 10,000 connections per year (a threshold set by Ofwat) so the risk is in the 'very significant' band.²

The primary driver for internal sewer flooding in this wastewater system is 'Customer'. Blockages caused 58% of all incidents recorded in this wastewater system. Blockages are often caused by fats, oils, grease, nappies, wet wipes and sanitary products within the system. These items are non-flushable and should not be disposed of into wastewater systems.

Figure 1: Number of internal flooding incidents per annum and causes

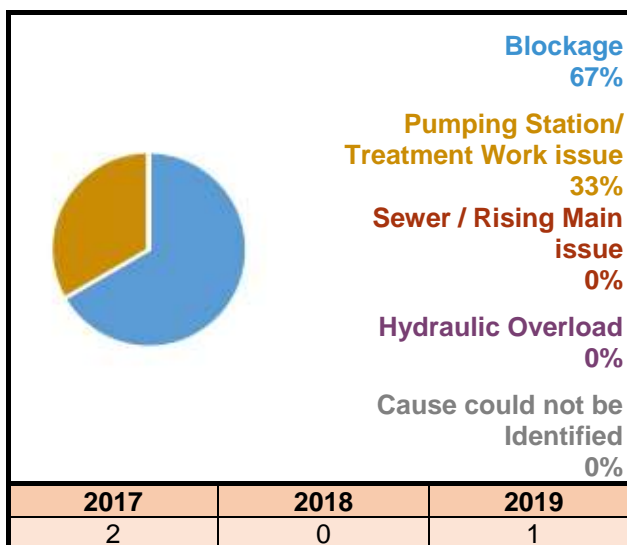


Planning Objective 2: Pollution Risk

The number of pollution incidents reported during the three years considered by the risk assessment are shown in Figure 2. The length of sewer in this wastewater system means there have been more than 49.01 incidents per 10,000km per year (a threshold set by Ofwat) so the risk is in the 'very significant' band.

The primary driver for pollution is 'Customer'. Blockages caused 67% of all incidents recorded in this wastewater system. Blockages are often caused by fats, oils, grease, nappies, wet wipes and sanitary products within the system. These items are non-flushable and should not be disposed of into wastewater systems.

Figure 2: Number of pollution incidents per annum and causes



Planning Objective 3: Sewer Collapse Risk

The number of sewer collapses reported during the three years considered by the risk assessment are shown in Table 2. The length of sewer in this wastewater system means there have been more than 9.44 incidents per 1,000km per year (a threshold set by Ofwat) so the risk is in the 'very significant' band.

The primary driver is 'Operational' as the cause of these collapses and bursts is due to the age and condition of the sewers.

Table 2: Sewer collapses and rising main bursts

Sewer Collapse	2017/18	1
	2018/19	3
	2019/20	3
Rising Main Bursts	2017/18	0
	2018/19	0
	2019/20	0

Planning Objective 4: Sewer Flooding in a 1 in 50 Year Storm

The risk of flooding in a 1 in 50 year storm is moderately significant in 2020 and 2050. This is because our computer model of the sewer network indicate for 2020 that approximately 300 - 400 properties within this wastewater system are in areas that could flood by water escaping from sewers. This model prediction increases the number of properties in areas at risk from flooding to approximately 600 - 700 by 2050.

Our wastewater networks are generally designed with capacity for up to a 1 in 30 year storm, hence flooding is expected to occur during more severe storms such as a 1 in 50 year event. Flooding will occur due to insufficient capacity of the drainage system either on the surface before it enters the drainage system, and/or from manholes, in people's homes or at a low point elsewhere in the system.

Planning Objective 5: Storm Overflow Performance

The storm overflow performance risk has been assessed as very significant for both 2020 and 2050. Table 3 shows the overflows that discharge above the low threshold set for storm overflow discharges to Shellfish Water, Bathing Water and inland rivers.

The primary driver for the Storm Overflow Performance is 'Hydraulic.'

Table 3: Overflows exceeding discharge frequency threshold per annum

	Number of overflows		Threshold for number of discharges per annum		
	2020	2050	Low	Medium	High
Shellfish Waters	0 Medium	0 Medium	Less than 8	Between 8-10	10 or more
Bathing Waters	0 Medium	0 Medium	Less than 3	Between 3-10	10 or more
Freshwater	1 High	1 High	Less than 20	Between 20-40	40 or more

Planning Objective 6: Wastewater Treatment Works Water Quality Compliance

The risk of non-compliance with our wastewater quality permit has been assessed as not significant for 2020 but is predicted to increase to moderately significant by 2050. This is because the wastewater treatment works has no record of compliance failure during the last three years (2018-2020). However it was assessed to not have adequate capacity to cope with future growth in the wastewater system.

Table 4: Annualised number of properties at risk per 10,000 connections.

Planning Objective 7: Flooding due to Hydraulic Overload

This is an assessment of the risk of flooding from sewers during a 1 in 30 year storm, and more frequent rainfall, to understand where flooding could occur. The risk of sewer flooding due to hydraulic overload is moderately significant in 2020 and 2050. The annualised number of properties in areas at risk of flooding is shown in Table 4.

Rainfall Return Period (yr)	Number of Properties at Risk		Annualised per 10,000 connections	
	2020	2050	2020	2050
1 in 1	4	20	3	13
1 in 2	9	43	4	17
1 in 5	47	111	9	20
1 in 10	102	206	10	20
1 in 20	164	338	8	16
1 in 30	214	473	7	16
Total Annualised			39	101

This indicates that the capacity of the wastewater network can be exceeded during 1 in 30 year storms (or more frequent events). Future growth, creep and/or climate change are not anticipated to significantly increase the risk by 2050.

Planning Objective 8: Wastewater Treatment Works Dry Weather Flow Compliance

The risk of Wastewater Treatment Works Dry Weather Flow (DWF) Compliance is not significant for both 2020 and 2050. This is because the average annual DWF for 2017, 2018 and 2019 has been below 80% of the current permit. The predicted DWF in 2050 is also expected to remain below 80% of the current permit, shown in Figure 3.

Figure 3: Recorded and predicted dry weather flow with existing permit



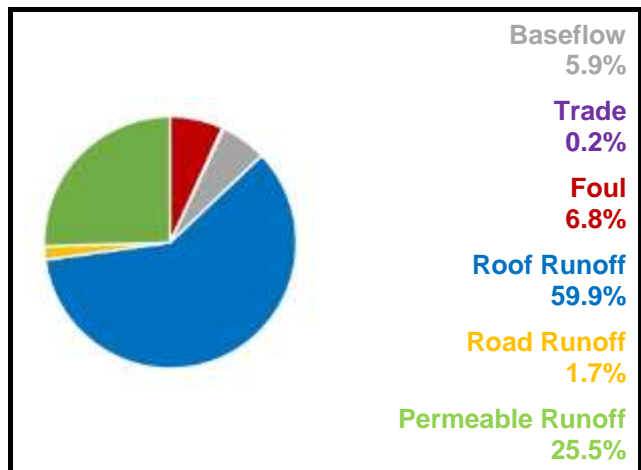
Planning Objective 9: Good Ecological Status / Good Ecological Potential

This wastewater system is not hydraulically linked to a waterbody where wastewater operations are contributing to not achieving GES/GEP, therefore the risk is not significant.

Planning Objective 10: Surface Water Management

Figure 4 illustrates the sources of water flowing in the wastewater system during a 1 in 20 year storm. It shows that surface water runoff from roofs, road and permeable surfaces constitutes more than 87.1% of the flow in the sewers. The total contribution of foul water from homes is 6.8% with business contributing 0.2%. The baseflow is infiltration from water in the ground and makes up 5.9% of the flow in the system.

Figure 4: Sources of water flowing in sewers during a 1 in 20 year storm



Planning Objective 11: Nutrient Neutrality

This wastewater system is not hydraulically linked to Habitat Sites noted as under threat by Natural England.

Planning Objective 12: Groundwater Pollution

The risk of Groundwater Pollution is not significant. This is because the wastewater network in this wastewater system does not overlap with any groundwater Source Protection Zones (SPZ) used for water supply.

Planning Objective 13: Bathing Waters

This wastewater system does not discharge into a designated bathing water.

Planning Objective 14: Shellfish Waters

The discharges from this wastewater system do not impact on any designated shellfish waters.

Generic Options Assessment for: Redgate Mill Crowborough (CRRM)



Planning Objectives		2020	Driver	2050	Type of Measures	Generic Option Categories	Icon	Take Forward?	Reasons	Examples of Generic Options
PO1	Internal Flooding	2	Customer	-	Source (Demand) Measures (to reduce likelihood)	Control / Reduce surface water run-off		Y	-	Natural Flood Management; rural land management and catchment management; SuDS including blue and green infrastructure; storm management
PO2	Pollution Risk	2	Customer	-		Reduce groundwater levels		N	Reducing groundwater levels would reduce the risks from infiltration into the network. However, in practice, reducing groundwater levels will be detrimental to the environment, ground conditions and is prohibitively too costly to implement. For these reasons, this generic option has been discounted.	Reduce leakage from water supply pipes; pump away schemes to locally lower groundwater near sewer network
PO3	Sewer Collapse	2	Operational	-		Improve quality of wastewater		Y	-	Domestic and business customer education; incentives and behaviour change (reduce Fats, Oils & Grease, wet wipes etc.); monitoring trade waste at source; on-site black water and/or greywater pre-treatment
PO4	Risk of Sewer Flooding in 1 in 50 yr	1	Hydraulic	1		Reduce the quantity / demand		Y	-	Water efficient appliances; water efficient measures; blackwater and/or greywater re-use; treatment at source
PO5	Storm Overflow Performance	2	Hydraulic	2	Pathway (Supply) Measures (to reduce likelihood)	Network Improvements		Y	-	Asset optimisation; additional network capacity; storage; separate flows; structural repairs; re-line sewer pipe and manholes; smart networks.
PO6	Risk of WTW Compliance Failure	0	Quality	1		Improve Treatment Quality		Y	-	Increase treatment capacity; rationalisation of treatment works (centralisation / de-centralisation); install tertiary plant; UV plant or disinfection facilities; innovation; improve Technical Achievable Limits; new WTWs
PO7	Annualised Flood Risk/Hydraulic Overload	1	Hydraulic	1		Wastewater Transfer to treatment elsewhere		Y	-	Transfer flow to other network or treatment sites; transport sewage by tanker to other sites
PO8	DWF Compliance	0	-	0	Receptor Measures (to reduce consequences)	Mitigate impacts on Air Quality		N/A	Not included in first round of DWMPs	Carbon offsetting; noise suppression /filtering; odour control and treatments
PO9	Achieve Good Ecological Status	0	-	-		Improve Land and Soils		N/A	Not included in first round of DWMPs	Sludge soil enhancement
PO10	Improve Surface Water Management	0	-	-		Mitigate impacts on receiving waters		Y	-	River enhancement, aeration
PO11	Secure Nutrient Neutrality	NA	-	NA		Reduce impact on properties		Y	-	Property flood resilience; non-return valves; flood guards / doors; air brick covers
PO12	Reduce Groundwater Pollution	0	-	-	Other	Study / Investigation		Y	-	Additional data required; hydraulic model development; WQ monitoring and modelling
PO13	Improve Bathing Water Quality	NA	-	-						
PO14	Improve Shellfish Water Quality	NA	-	-						

Redgate Mill Crowborough Wastewater System - Outline Options Appraisal

Generic Option	Location of Risk	Planning Objective and Description of Risk	Option Reference	Description	Further Description	Unconstrained Option?	Constrained Option?	Feasible Option?	Net Benefits	Estimated Cost	Preferred Option	Best value / Least cost or Reasons for Rejection
Control/ Reduce surface water entering the sewers	Pondhill	PO4 and PO7 – Surface water flooding and Hydraulic overflow	CRRM.SC01.1	Surface Water Separation and SuDS	Disconnect significant areas of surface runoff from wastewater network and provide storm water SuDS.	Yes	Yes	Yes	Moderate Positive ++	TBC	No	Best Value
Control / Reduce groundwater infiltration												
Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste)	London Road and High Street	PO1 – Internal Flooding	CRRM.SC03.1	Customer Education Programme	Customer education programme in Tanners Way, High Street, London Road, Green Lane, Eridge Road, Church Road, Mill Lane, and Pellings Wood, to reduce the risk.	Yes	Yes	Yes	Minor Positive +	£115K	Yes	Best Value
Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste)	TBC	PO2 – Pollution Risk	CRRM.SC03.2	Customer Education Programme	Customer education programme to reduce the risk.	Yes	No					Performance and Sustainability
Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste)	Catchment wide	PO4 and PO7 – Surface water flooding and Hydraulic overflow	CRRM.SC03.3	Grey Water Reuse	Reuse of wastewater (grey water) especially in commercial properties.	Yes	No					Performance and Sustainability
Control / Reduce the quantity / flow of wastewater entering sewer system												
Network Improvements (eg increase capacity, storage, conveyance)	Catchment wide	PO3 - Sewer Collapse	CRRM.PW01.1	Pipe Rehabilitation Programme	Targeted CCTV / electroscan surveys and proactive sewer rehabilitation to reduce risk of sewer collapse.	Yes	Yes	Yes	Minor Positive +	£2,955K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	CRRM FC01 The Farthings - Millbrook Road	PO1, PO4 & PO7 - Flooding	CRRM.PW01.2	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£355K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	CRRM FC02 Eridge Road	PO4 & PO7 - Flooding	CRRM.PW01.3	Upsizing \ Online storage	DAP Option.	Yes	Yes	Yes	Major Positive +++	£355K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	CRRM FC03 Millbrook Road	PO4 & PO7 - Flooding	CRRM.PW01.4	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£355K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	CRRM FC04 Green Lane (to the east on field)	PO4 & PO7 - Flooding	CRRM.PW01.5	Upsizing \ Online storage \ Offline Storage	DAP Option.	Yes	Yes	Yes	Major Positive +++	£355K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	CRRM FC05 Tollwood Road + Osborne Road	PO4 & PO7 - Flooding	CRRM.PW01.6	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£355K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	CRRM FC06 Walshes Road	PO4 & PO7 - Flooding	CRRM.PW01.7	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£355K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	CRRM FC07 Western Road	PO4 & PO7 - Flooding	CRRM.PW01.8	Upsizing \ Online storage	DAP Option.	Yes	Yes	Yes	Major Positive +++	£355K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	CRRM FC08 Crowborough Hill	PO4 & PO7 - Flooding	CRRM.PW01.9	Upsizing \ Online storage	DAP Option.	Yes	Yes	Yes	Major Positive +++	£355K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	CRRM FC09 Sybron Way	PO4 & PO7 - Flooding	CRRM.PW01.10	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£355K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	CRRM FC10 Maynards Gate Crowborough CSO	PO4, PO5 & PO7 - Flooding	CRRM.PW01.11	Additional storage	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,145K	Yes	Best Value
Improve treatment (capacity and quality at existing works or develop new WTWs)	Redgate Mill Crowborough WTW	PO2 - Pollution Risk	CRRM.PW02.1	Maintenance Programme WTW	An efficient maintenance programme for the treatment works to eliminate the risk of a pollution incident due to an operational failure.	Yes	Yes	Yes	Minor Positive +	£7,665K	Yes	Best Value
Improve treatment (capacity and quality at existing works or develop new WTWs)	Redgate Mill Crowborough WTW	PO6 - WTW compliance	CRRM.PW02.2	Increase Capacity	Upsize Treatment Works to address risk of compliance failure in 2050.	Yes	Yes	Yes	Minor Positive +	£35,445K	Yes	Best Value
Wastewater Transfer												
Mitigate impacts on Air Quality (e.g. Carbon neutrality, noise, odour)												Not included in the first round of DWMPs
Improve Land and Soils												Not included in the first round of DWMPs
Mitigate impacts on Water Quality												
Reduce consequences Properties (e.g. Property Flood Resilience)	TBC	PO4 - Flooding	CRRM.RC04.1	Non-return valves; Flood guards/doors	Property Flood Mitigation / Resistance – non return valves, flood doors / gates etc.	Yes	No					Operational
Study/ investigation to gather more data	TBC	PO1- Internal Flooding	CRRM.OT01.1	Investigation into causes	Further investigation to identify the causes of the internal flooding incidents.	Yes	No					Operational
Study/ investigation to gather more data	Catchment wide	PO3 - Sewer Collapse	CRRM.OT01.2	Investigate sewer collapse	Investigate root causes of sewer collapse, including review of quality of data collection to improve forecasting of sewer deterioration.	Yes	Yes	Yes	Minor Positive +	£150K	Yes	Best Value
Study/ investigation to gather more data	CRRM FC11 Pellings Wood Crowborough CSO	PO4, PO5 & PO7 - Flooding	CRRM.OT01.3	Study / Modelling investigation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,000K	Yes	Best Value
Study/ investigation to gather more data	CRRM FC12 Maynards Mead Crowborough CSO	PO4, PO5 & PO7 - Flooding	CRRM.OT01.4	Study / Modelling investigation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,000K	Yes	Best Value
Study/ investigation to gather more data	CRRM FC13 REDGATE MILL CROWBOROUGH WTW	PO5 - SO performance	CRRM.OT01.5	Study / Modelling investigation	The model predicts the below spills for this WTW: Offline storage of 0m3 required to achieve a 3 Spill 2020 and 2050 solution; Offline storage of 1660m3 required to achieve a 10 Spill 2020 solution; Offline storage of 2353m3 required to achieve a 10 Spill 2050 solution; Offline storage of 0m3 required to achieve a 20 Spill 2020 and 2050 solution.	Yes	Yes	Yes	Major Positive +++	£1,000K	Yes	Best Value
Study/ investigation to gather more data	Town Row Rotherfiled No 1 CSO	PO5 - SO performance	CRRM.OT01.6	Study / Modelling investigation	Storage volume to be confirmed; no previous EDM data.	Yes	Yes	Yes	Minor Positive +	£1,000K	Yes	Best Value
Study/ investigation to gather more data	Catchment Wide	PO1, PO4, PO7 - Sewer Flooding PO5 - Storm Overflow Performance	CRRM.OT01.7	Improve Hydraulic Model	Hydraulic surveys and reverification to improve model confidence and accuracy of simulations.	Yes	Yes	Yes	Minor Positive +	£150K	Yes	Best Value

Drainage and Wastewater Management Plan (DWMP)

DWMP Investment Needs

1. The options listed in the DWMP Investment Needs below are the preferred options in our DWMP. They will need further refinement as we implement the DWMP to confirm the exact location and scope of action needed, and the cost.
2. The costs are indicative costs for planning purposes only. The basis for the cost estimates, including assumptions and uncertainties, are explained in our DWMP Investment Plans.
3. The table of Investment Need provides an indicative cost so we know what level of funding is needed to reduce the risks. It is not a commitment to fund or deliver any option.
4. The Indicative Timescale is when the investment is needed. Some options may take several investment periods to achieve the desired outcomes.
5. Potential Partners have been identified in the table of Investment Needs. This is to indicate where there may be opportunities for us to work with these partners when developing and delivering these options. It is not a commitment by any of the partners to work with us.
6. These options will inform our future business plans as part of the Ofwat periodic review process to secure the finance to implement these options.
7. The options listed are prioritised by the method stated in the [Programme Appraisal Technical Summary](#).

Date : May 2023

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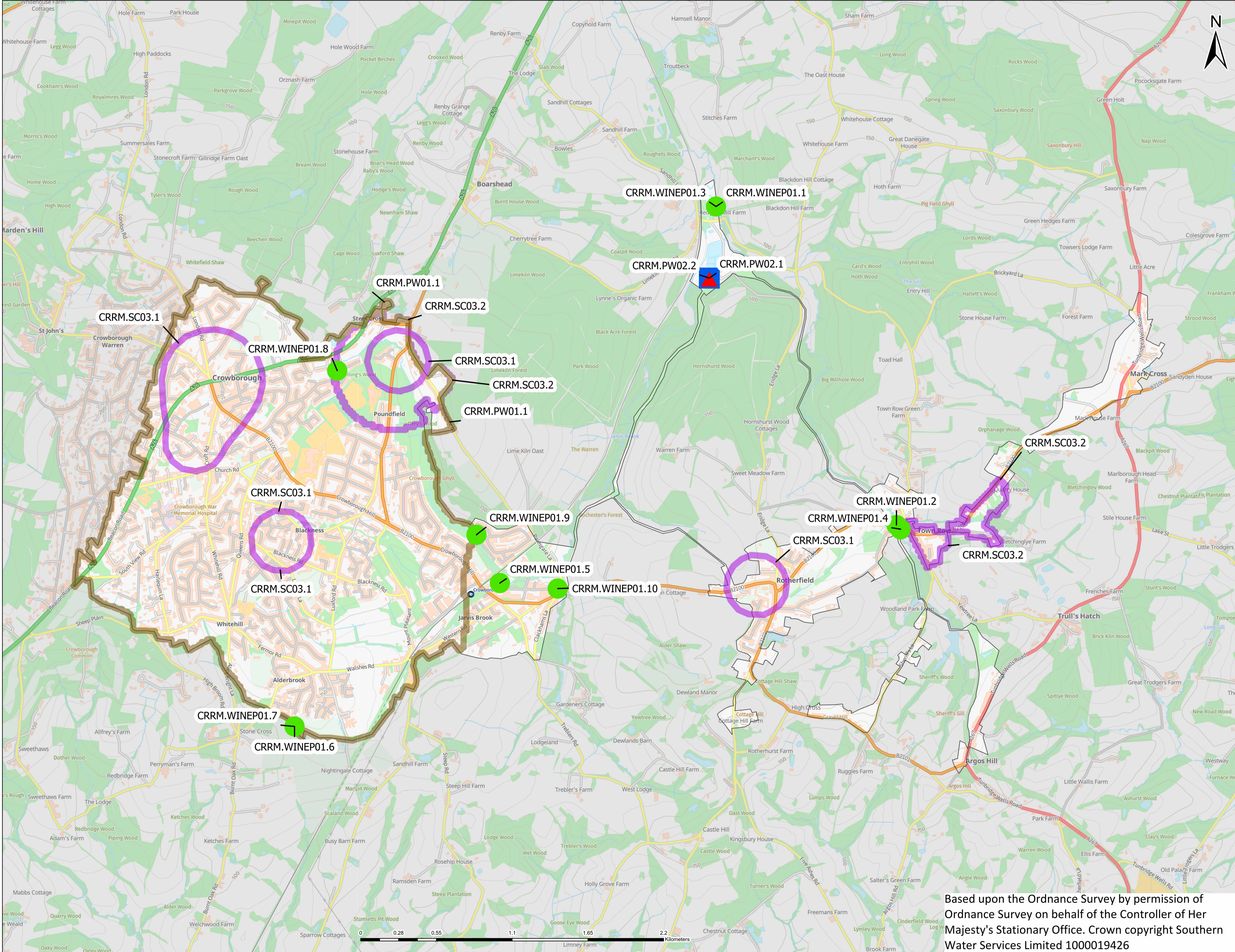
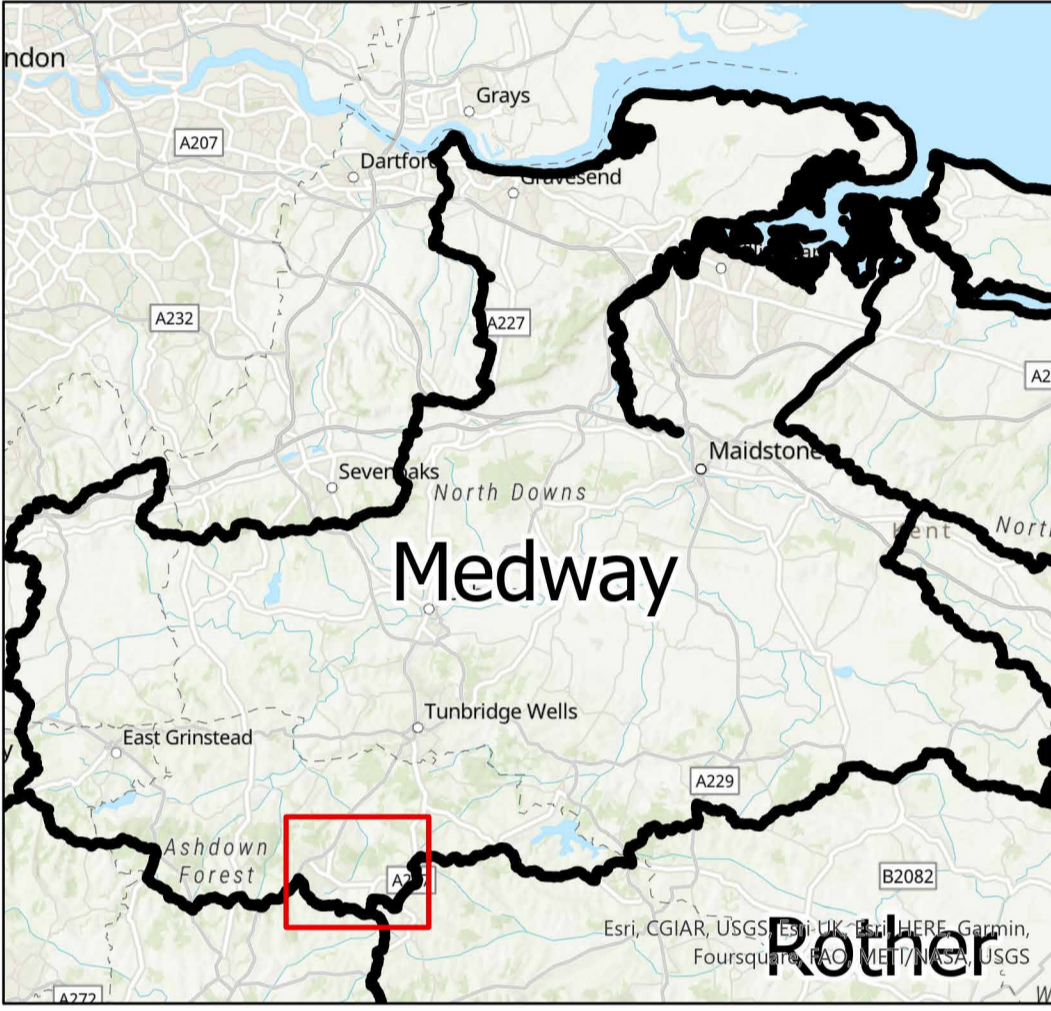
Reference	River Basin (L2)	Wastewater System (L3)	Location	Option	Indicative Cost	Indicative Timescales	Potential Partners	Applicable Planning Objectives
Medway								
Redgate Mill, Crowborough								
CRRM.SC03.1	Medway	Redgate Mill Crowborough	Tanners Way, High Street, London Road, Green Lane, Eridge Road, Church Road, Mill Lane, and Pellings Wood	Customer Education Programme: Targeted campaign to reduce the amount of FOG (fats, oils and grease) and unflushables discharged into the sewer network	£115K	AMP8 onwards	East Sussex County Council, Weaden District Council	PO1
CRRM.SC03.2	Medway	Redgate Mill Crowborough	System Wide	Customer Education Programme: Targeted campaign to reduce the amount of FOG (fats, oils and grease) and unflushables discharged into the sewer network	£115K	AMP8 onwards	-	PO2
CRRM.PW01.1	Medway	Redgate Mill Crowborough	System Wide	Sewer Rehabilitation: Targeted CCTV or electroscan surveys and sewer rehabilitation to reduce the risk of sewer bursts and collapses	£2,955K	AMP8 onwards	-	PO3
CRRM.PW01.2	Medway	Redgate Mill Crowborough	The Farthings - Millbrook Road	Growth scheme from our Drainage Area Plan (DAP): Pipe upsize of 450mm sewer; New manholes on new sewer	£355K	AMP9	-	PO1 PO4 PO7
CRRM.PW01.3	Medway	Redgate Mill Crowborough	Eridge Road	Growth scheme from our Drainage Area Plan (DAP): Construct new gravity sewer and new Manholes	£355K	AMP9	-	PO4 PO7
CRRM.PW01.4	Medway	Redgate Mill Crowborough	Millbrook Road	Growth scheme from our Drainage Area Plan (DAP): Upsize the pipe diameter of a section of 450mm sewer	£355K	AMP9	-	PO4 PO7
CRRM.PW01.5	Medway	Redgate Mill Crowborough	Green Lane	Growth scheme from our Drainage Area Plan (DAP): Upsize the pipe diameter of a sections of the sewer; Construct new manholes; New offline storage tank	£355K	AMP9	-	PO4 PO7
CRRM.PW01.6	Medway	Redgate Mill Crowborough	Tollwood Road	Growth scheme from our Drainage Area Plan (DAP): Sewer upsizing	£355K	AMP9	-	PO4 PO7
CRRM.PW01.7	Medway	Redgate Mill Crowborough	Walshes Road	Growth scheme from our Drainage Area Plan (DAP): Pipe upsize; Construct new manholes	£355K	AMP9	-	PO4 PO7
CRRM.PW01.8	Medway	Redgate Mill Crowborough	Western Road	Growth scheme from our Drainage Area Plan (DAP): Pipe upsize; Construction of new manholes	£355K	AMP9	-	PO4 PO7
CRRM.PW01.9	Medway	Redgate Mill Crowborough	Crowborough Hill	Growth scheme from our Drainage Area Plan (DAP): Upsize the pipe diameter; Construct new manholes	£355K	AMP9	-	PO4 PO7
CRRM.PW01.10	Medway	Redgate Mill Crowborough	Sybron Way	Growth scheme from our Drainage Area Plan (DAP): Upsize sections of 525mm sewer	£1,175K	AMP9	-	PO4 PO7
CRRM.PW02.1	Medway	Redgate Mill Crowborough	Redgate Mill Crowborough WTW	Improve the operational resilience of wastewater pumping station (WPS) to reduce pollution incidents	£6,970K	AMP8 onwards	-	PO2
CRRM.PW02.2	Medway	Redgate Mill Crowborough	Redgate Mill Crowborough WTW	Increase treatment capacity to allow for planned new development	£35,445K	AMP10	Environment Agency	PO6

Reference	River Basin (L2)	Wastewater System (L3)	Location	Option	Indicative Cost	Indicative Timescales	Potential Partners	Applicable Planning Objectives
CRRM.OT01.2	Medway	Redgate Mill Crowborough	System Wide	Study and Investigation: Investigation to identify the root cause of internal flooding and measures to reduce the number of incidents	£150K	AMP8	-	PO3
CRRM.OT01.7	Medway	Redgate Mill Crowborough	System Wide	Improve the Hydraulic Model: Surveys and reverification of model to improve confidence and accuracy	£150K	AMP8	-	PO1 PO4 PO5 PO7
CRRM.WINEP01.1	Medway	Redgate Mill Crowborough	REDGATE MILL CROWBOROUGH SSO	Reduce the number of storm discharges from REDGATE MILL CROWBOROUGH SSO by creating below-ground storage	£2,415K	AMP8	-	PO5
CRRM.WINEP01.2	Medway	Redgate Mill Crowborough	TOWN ROW ROTHERFIELD NO 1 CSO	Reduce the number of storm discharges from TOWN ROW ROTHERFIELD NO 1 CSO by a combination of SuDS and storage options	£2,145K	AMP10	-	PO4 PO5 PO7
CRRM.WINEP01.3	Medway	Redgate Mill Crowborough	REDGATE MILL CROWBOROUGH CSO	Reduce the number of storm discharges from REDGATE MILL CROWBOROUGH CSO by a combination of SuDS and storage options	£2,375K	AMP11	-	PO4 PO5 PO7
CRRM.WINEP01.4	Medway	Redgate Mill Crowborough	TOWN ROW ROTHERFIELD NO 2 CSO	Reduce the number of storm discharges from TOWN ROW ROTHERFIELD NO 2 CSO by a combination of SuDS and storage options	£1,505K	AMP11	-	PO4 PO5 PO7
CRRM.WINEP01.5	Medway	Redgate Mill Crowborough	MAYNARDS MEAD CROWBOROUGH CSO	New or improved screen to reduce aesthetics impacts from storm discharges at MAYNARDS MEAD CROWBOROUGH CSO	£130K	AMP12	-	PO5
CRRM.WINEP01.6	Medway	Redgate Mill Crowborough	ALDERBROOK WAY CROWBOROUGH CSO	New or improved screen to reduce aesthetics impacts from storm discharges at ALDERBROOK WAY CROWBOROUGH CSO	£130K	AMP12	-	PO5
CRRM.WINEP01.7	Medway	Redgate Mill Crowborough	ALDERBROOK WAY CROWBOROUGH NO 2 CSO	New or improved screen to reduce aesthetics impacts from storm discharges at ALDERBROOK WAY CROWBOROUGH NO 2 CSO	£130K	AMP12	-	PO5
CRRM.WINEP01.8	Medway	Redgate Mill Crowborough	PELLINGS WOOD CROWBOROUGH CSO	Reduce the number of storm discharges from PELLINGS WOOD CROWBOROUGH CSO by a combination of SuDS and storage options	£2,140K	AMP10	-	PO4 PO5 PO7
CRRM.WINEP01.10	Medway	Redgate Mill Crowborough	MAYNARDS GATE CROWBOROUGH CSO	Reduce the number of storm discharges from MAYNARDS GATE CROWBOROUGH CSO by a combination of SuDS and storage options	£1,480K	AMP12	-	PO4 PO5 PO7
CRRM.WINEP01.9	Medway	Redgate Mill Crowborough	JARVIS BROOK CROWBOROUGH CSO	Reduce the number of storm discharges from JARVIS BROOK CROWBOROUGH CSO by a combination of SuDS and storage options	£1,330K	AMP12	-	PO4 PO5 PO7
CRRM.WINEP.PO2.1	Medway	Redgate Mill Crowborough	Redgate Mill, Crowborough	Conversion of existing treatment process to Activated Sludge Process to achieve 0.25mg/l Total P permit (WINEP OAR 08SO104712)	£34,839K	AMP8	-	PO9

Drainage and Wastewater Management Plan: Location of Potential Options REDGATE MILL CROWBOROUGH Wastewater system in Medway River Basin Catchment



(i) This map should be read in conjunction with the list of Investment Needs for this wastewater system
 (ii) The areas shown on this map are the potential locations for the options. The location of the risk may be elsewhere in the system.
 (iii) Labels for each location are the option references in the list of Investment Needs
 (iv) Drainage Area Plan (DAP) options on flooding and growth are not shown.



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