



Drainage and Wastewater Management Plan

Dambridge Wingham
Wastewater System Plan



from
**Southern
Water** 

Contents

Wastewater System Map

Problem Characterisation

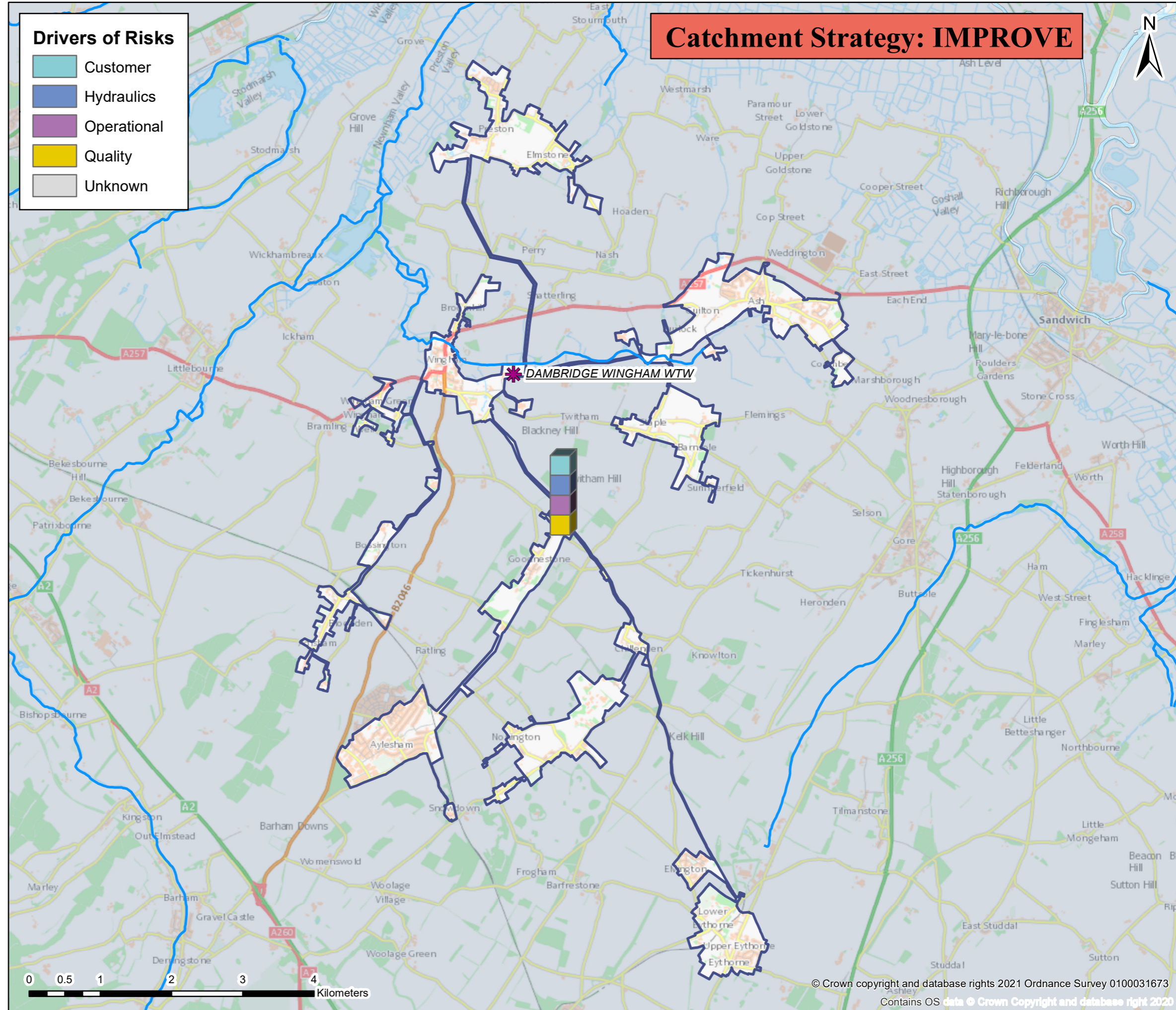
Generic Options

Outline Option Appraisal

Investment Needs

Location of Potential Options

Dambridge Wingham wastewater system: map and key facts



Population Equivalent (PE)	14,211
Discharge Waterbody	Wingham River
Number of Pumping Stations	17
Number of Overflows	1
Length of Sewer (km)	185.6
Catchment Reference	DAMB

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



Problem Characterisation

Dambridge Wingham (DAMB)

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 Dambridge Wingham wastewater system

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

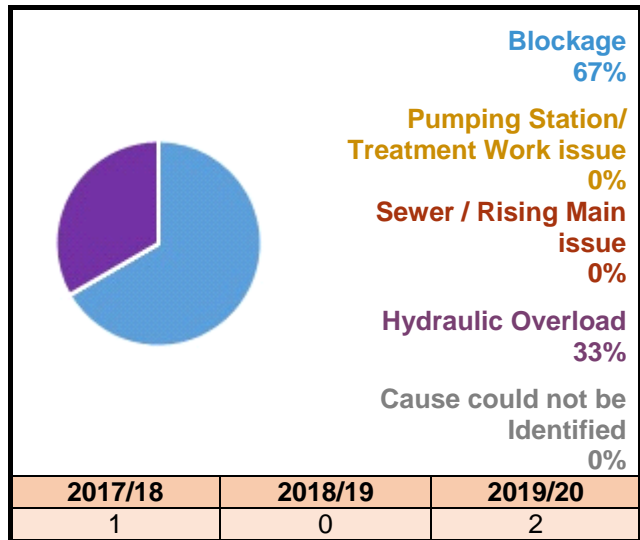


Planning Objective 1: Internal Sewer Flooding Risk

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 between 1.68 and 3.35 incidents per 10,000 connections per year (a threshold set by Ofwat) so the risk is in the 'moderately significant' band.

The primary driver for internal sewer flooding in this wastewater system 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 1: Number of internal flooding incidents per annum and causes

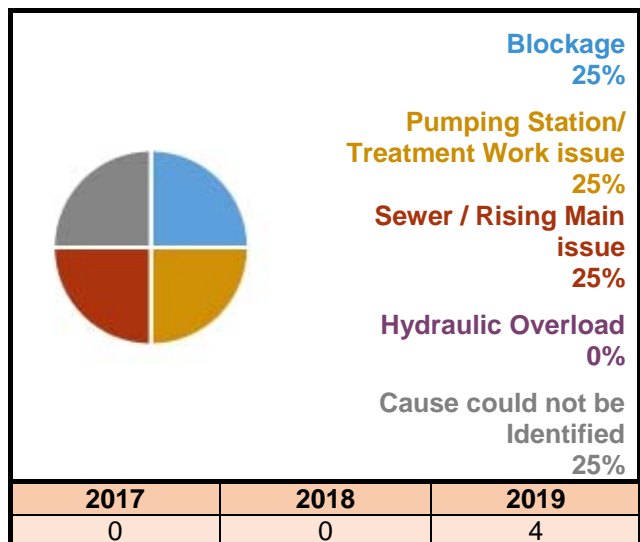


Planning Objective 2: Pollution Risk

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 25% 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 less than 5.72 incidents per 1,000km per year (a threshold set by Ofwat) so the risk is in the 'not significant' band.

Table 2: Sewer collapses and rising main bursts

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

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 100 - 200 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 200 - 300 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 not significant in 2020 and 2050.

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 both 2020 and 2050. This is because the wastewater treatment works has no record of compliance failure during the last three years (2018-2020).

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 3.

Table 3: Annualised number of properties at risk per 10,000 connections.

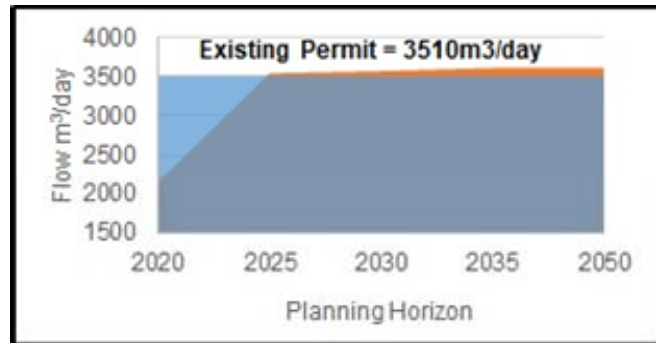
Rainfall Return Period (yr)	Number of Properties at Risk		Annualised per 10,000 connections	
	2020	2050	2020	2050
1 in 1	12	23	8	15
1 in 2	21	38	8	15
1 in 5	52	81	9	15
1 in 10	81	106	8	10
1 in 20	114	154	6	8
1 in 30	140	180	5	6
Total Annualised			43	68

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 Compliance is not significant for 2020 but is predicted to increase to very significant in 2050, shown in Figure 3. This is because the predicted DWF in 2050 is expected to exceed the current permit.

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



Planning Objective 9: Good Ecological Status / Good Ecological Potential

Table 4 shows the waterbodies connected to this wastewater catchment are not achieving Good Ecological Status or Potential (GES/GEP). The Environment Agency has attributed the 'reasons for not achieving good status' to water company operations. Our risk assessment has been assessed based on the worst assigned status (Bad) and is very significant. This is due to the pollution incidents from this wastewater system.

Table 4: Waterbodies not achieving GES/GEP

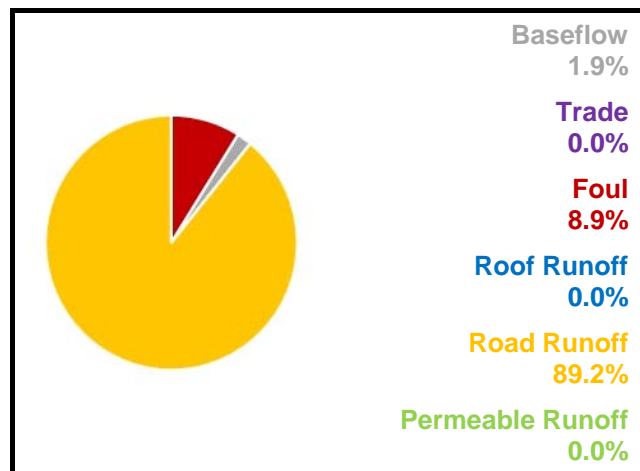
Waterbody	Classification	EA-Status	Activity
Wingham and Little Stour	Dissolved oxygen	Bad	Incidents
Wingham and Little Stour	Phosphate	Poor	Sewage discharge (continuous)
East Kent Chalk - Stour	Chemical Drinking Water Protected Area	Poor	Leaking utility sewers

The primary driver is 'Customer', based on the incident data from the Pollution Risk Planning Objective

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 89.2% of the flow in the sewers. The total contribution of foul water from homes is 8.9% with business contributing 0.0%. The baseflow is infiltration from water in the ground and makes up 1.9% 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

The risk to internationally designated habitat sites from this wastewater system is not significant in 2020 but rises to moderately significant in 2050.

Our growth forecast suggest that more than 2,000 new homes could occur in this wastewater system by 2050 which means the risk to habitat sites increases to moderately significant by 2050.

Planning Objective 12: Groundwater Pollution

The risk of Groundwater Pollution is not significant. Although our wastewater network crosses over Source Protection Zones (SPZ) used for water supply, there is no evidence to suggest our network is leaking into these SPZs.

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: Dambridge Wingham (DAMB)



Planning Objectives		2020	Driver	2050	Type of Measures	Generic Option Categories	Icon	Take Forward?	Reasons	Examples of Generic Options
PO1	Internal Flooding	1	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	None of the significant risks in this catchment are caused by high groundwater levels. Hence reducing groundwater levels will not impact any of the risks in this catchment.	Reduce leakage from water supply pipes; pump away schemes to locally lower groundwater near sewer network
PO3	Sewer Collapse	0	-	-		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	0	-	0	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	-	0		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		N	The causes of risk are not due to where our systems discharge to the environment or our ability to increase the capacity to connect more homes. Transferring wastewater for treatment elsewhere will not reduce any of the significant risks in this catchment.	Transfer flow to other network or treatment sites; transport sewage by tanker to other sites
PO8	DWF Compliance	0	-	2	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	2	Customer	-		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	0	-	1		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		N	No further studies are required at this stage	Additional data required; hydraulic model development; WQ monitoring and modelling
PO13	Improve Bathing Water Quality	NA	-	-						
PO14	Improve Shellfish Water Quality	NA	-	-						

Dambridge Wingham 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	Flooding Cluster DAMB FC01 - The Forstal Preston	PO4 and PO7 Flooding	DAMB.SC01.1	Surface Water Separation	SEPARATION SOLUTION.	Yes	Yes	Yes	Moderate Positive ++	£620K	Yes	Best Value
Control/ Reduce surface water entering the sewers	Flooding Cluster DAMB FC02 - Pudding Lane Ash	PO4 and PO7 Flooding	DAMB.SC01.2	Surface Water Separation	SEPARATION SOLUTION.	Yes	Yes	Yes	Moderate Positive ++	£1,165K	Yes	Best Value
Control/ Reduce surface water entering the sewers	Flooding Cluster DAMB FC03 - High Street Wingham	PO4 and PO7 Flooding	DAMB.SC01.3	Surface Water Separation	SEPARATION SOLUTION.	Yes	Yes	Yes	Minor Positive +	£970K	Yes	Best Value
Control/ Reduce surface water entering the sewers	Flooding Cluster DAMB FC04 - Burgess Road Aylesham	PO4 and PO7 Flooding	DAMB.SC01.4	Surface Water Separation	SEPARATION SOLUTION.	Yes	Yes	Yes	Moderate Positive ++	£960K	Yes	Best Value
Control / Reduce groundwater infiltration												
Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste)	Catchment wide	PO1 - Sewer blockages causing internal flooding incidents PO2 - Sewer blockages causing pollution	DAMB.SC03.1	Customer Education Programme	Target both domestic and business customers in the catchment with a campaign to reduce FOG.	Yes	Yes	Yes	Minor Positive +	£115K	Yes	Best Value
Control / Reduce the quantity / flow of wastewater entering sewer system	Catchment wide	PO8 - Failing to meet WTW DWF Compliance	DAMB.SC04.1	Water Efficient Appliance / Measures	Link to Southern Water's Target100 (100 litres/day per household).	No						Deliver the required outcome
Control / Reduce the quantity / flow of wastewater entering sewer system	Catchment wide	PO8 - Domestic water consumption and growth causing future DWF Compliance failure	DAMB.SC04.2	Grey water Reuse	Link to Southern Water's Target100 (100 litres/day per household).	No						Deliver the required outcome
Network Improvements (eg increase capacity, storage, conveyance)	Flooding Cluster DAMB FC01 - The Forstal Preston	PO4 and PO7 Flooding	DAMB.PW01.1	Storage Tank	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	Flooding Cluster DAMB FC02 - Pudding Lane Ash	PO4 and PO7 Flooding	DAMB.PW01.2	Storage Tank	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	Flooding Cluster DAMB FC03 - High Street Wingham	PO4 and PO7 Flooding	DAMB.PW01.3	Storage Tank	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	Flooding Cluster DAMB FC04 - Burgess Road Aylesham	PO4 and PO7 Flooding	DAMB.PW01.4	Storage Tank	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	Grove Road Preston WPS	PO2 - Pollution due to electrical faults, blockages and rising main bursts	DAMB.PW01.5	Maintenance Programme WPS	Link to Southern Water's PIRP (pollution incident reduction plan) to improve the WPS's resilience to blockages.	Yes	Yes	Yes	Minor Positive +	£235K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Grove Road Preston WPS	PO2 - Pollution due to electrical faults, blockages and rising main bursts	DAMB.PW01.6	Jetting Programme	Smart network upstream of Grove Road Preston WPS.	Yes	Yes	Yes	Minor Positive +	£10K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Catchment wide	PO1 - Sewer blockages causing internal flooding incidents	DAMB.PW01.7	Smart Network	Smart network.	No						Technically feasible and Environmental risk mitigatable
Network Improvements (eg increase capacity, storage, conveyance)	Grove Road Preston WPS	PO2- Pollution Risk	DAMB.PW01.8	Pipe Rehabilitation Programme	Targeted CCTV / electroscan surveys and sewer rehabilitation.	Yes	Yes	Yes	Minor Positive +	£420K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Larch Road, Hyde Place	PO1- Internal Flooding	DAMB.PW01.9	Jetting Programme	Improved targeting and frequency of sewer jetting.	Yes	Yes	Yes	Minor Positive +	£25K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Catchment wide	PO9 - Good Ecological Status Affected by leaking sewers	DAMB.PW01.10	Pipe Rehabilitation Programme	To reduce risk of leaking sewers affecting Good Ecological Status.	Yes	No					Environmental - Strategic Environmental Assessment
Improve treatment (capacity and quality at existing works or develop new WTWs)	Dambridge Wingham WTW	PO8 - Failing to meet WTW DWF Compliance	DAMB.PW02.1	DWF Permit Increase	Increase Capacity at WTW for New DWF Permit.	Yes	Yes	Yes	Minor Positive +	£1,540K	Yes	Best Value
Improve treatment (capacity and quality at existing works or develop new WTWs)	Dambridge Wingham WTW	PO9 - risk of WTW discharges on GES	DAMB.PW02.2	WTW Tertiary Treatment	Link to Dambridge WTW WFD-P Scheme.	No						Cost Effective and Risk and uncertainty - future resilience
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)	Flooding Cluster DAMB FC01 - The Forstal Preston	PO4 & PO7 - Sewer Flooding	DAMB.RC04.1	Property Flood Mitigation / Resistance	Short-term property level protection.	No						Risk and uncertainty - future resilience
Reduce consequences Properties (e.g. Property Flood Resilience)	Flooding Cluster DAMB FC02 - Pudding Lane Ash	PO4 & PO7 - Sewer Flooding	DAMB.RC04.2	Property Flood Mitigation / Resistance	Short-term property level protection.	No						Risk and uncertainty - future resilience
Reduce consequences Properties (e.g. Property Flood Resilience)	Flooding Cluster DAMB FC03 - High Street Wingham	PO4 & PO7 - Sewer Flooding	DAMB.RC04.3	Property Flood Mitigation / Resistance	Short-term property level protection.	No						Risk and uncertainty - future resilience
Reduce consequences Properties (e.g. Property Flood Resilience)	Flooding Cluster DAMB FC04 - Burgess Road Aylesham	PO4 & PO7 - Sewer Flooding	DAMB.RC04.4	Property Flood Mitigation / Resistance	Short-term property level protection.	No						Risk and uncertainty - future resilience
Study/ investigation to gather more data	Dambridge Wingham WTW	PO8 - Failing to meet WTW DWF Compliance	DAMB.OT01.1	Infiltration Study	Infiltration surveys.	Yes	No					Environmental - Strategic Environmental Assessment
Study/ investigation to gather more data	Groundwater Capture Zones and Source Protection Zones within catchment	PO9 - risk of leaking sewers to GES (East Kent Chalk - Chemical Drinking Water Protected Area)	DAMB.OT01.2	Sewer Condition Surveys	CCTV and Electroscan Surveys of sewer network within Groundwater Capture Zones and SPZs.	Yes	No					Operational
Study/ investigation to gather more data	Dambridge Wingham WTW	PO11 - Continuous (WTW treated effluent) and / or intermittent (storm overflow) wastewater discharges affecting Nutrient Neutrality in the Stodmarsh	DAMB.OT01.3	Nutrient Budget	Link to Southern Water's CSMG Study and Investigations.	Yes	Yes	Yes	Minor Positive +	£TBC - With Partners	Yes	Best Value
Study/ investigation to gather more data	Catchment wide	PO9- GE Status / Potential Sewage discharge (intermittent) into the Wingham and Little Stour, and East Kent Chalk	DAMB.OT01.4	Study and Investigations to Achieve Good Ecological Status	Catchment was banded 1 in because; Sarre Penn and River Wantsum-Phosphate.	Yes	Yes	Yes	Minor Positive +	£695K	No	Best Value
Study/ investigation to gather more data	Catchment Wide	PO1, PO4 & PO7 - Sewer Flooding	DAMB.OT01.5	Improve Hydraulic Model	There is a Low confidence between Storm Overflow spill frequencies.	Yes	Yes	Yes	Major Positive +++	£200K	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

Version : 1.0

Reference	River Basin (L2)	Wastewater System (L3)	Location	Option	Indicative Cost	Indicative Timescales	Potential Partners	Applicable Planning Objectives
Stour								
Dambridge Wingham								
DAMB.SC01.1	Stour	Dambridge Wingham	The Forstal, Preston and areas upstream	Flood Alleviation: Separate or attenuate excess rainwater in sewer network using Sustainable Drainage Systems (SuDS) to reduce risk of flooding (Costs based on storage solution but surface water separation is our preferred approach)	£620K	AMP9	Kent CC, Catchment Partnership, Kent Wildlife Trust	PO4 PO7
DAMB.SC01.2	Stour	Dambridge Wingham	Pudding Lane, Ash and areas upstream	Flood Alleviation: Separate or attenuate excess rainwater in sewer network using Sustainable Drainage Systems (SuDS) to reduce risk of flooding (Costs based on storage solution but surface water separation is our preferred approach)	£1,165K	AMP9	Kent CC, Catchment Partnership, Kent Wildlife Trust	PO4 PO7
DAMB.SC01.3	Stour	Dambridge Wingham	High Street, Wingham and areas upstream	Flood Alleviation: Separate or attenuate excess rainwater in sewer network using Sustainable Drainage Systems (SuDS) to reduce risk of flooding (Costs based on storage solution but surface water separation is our preferred approach)	£970K	AMP9	Kent CC, Catchment Partnership, Kent Wildlife Trust	PO4 PO7
DAMB.SC01.4	Stour	Dambridge Wingham	Burgess Road, Ayelsham and areas upstream	Flood Alleviation: Separate or attenuate excess rainwater in sewer network using Sustainable Drainage Systems (SuDS) to reduce risk of flooding (Costs based on storage solution but surface water separation is our preferred approach)	£960K	AMP9	Kent CC, Catchment Partnership, Kent Wildlife Trust	PO4 PO7
DAMB.SC03.1	Stour	Dambridge Wingham	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	-	PO1 PO2
DAMB.PW01.5	Stour	Dambridge Wingham	Grove Road Preston WPS	Improve the operational resilience of wastewater pumping station (WPS) to reduce pollution incidents	£235K	AMP8 onwards	-	PO2
DAMB.PW01.6	Stour	Dambridge Wingham	Network upstream of Grove Road Preston WPS	Enhanced Sewer Maintenance: Increase targeted sewer jetting to reduce the number of blockages in the network	£10K	AMP8 onwards	-	PO2
DAMB.PW01.8	Stour	Dambridge Wingham	Grove Road Preston WPS	Sewer Rehabilitation: Targeted CCTV or electroscan surveys and sewer rehabilitation to reduce the risk of sewer bursts and collapses	£420K	AMP8 onwards	-	PO2
DAMB.PW01.9	Stour	Dambridge Wingham	Larch Road, Hyde Place	Enhanced Sewer Maintenance: Increase targeted sewer jetting to reduce the number of blockages in the network	£25K	AMP8 onwards	-	PO1
DAMB.PW02.0	Stour	Dambridge Wingham	System Wide	Sewer Rehabilitation: Targeted CCTV or electroscan surveys and sewer rehabilitation to reduce the risk of sewer bursts and collapses	£865K	AMP8 onwards	Environment Agency	PO9
DAMB.PW02.1	Stour	Dambridge Wingham	Dambridge Wingham WTW	Increase capacity to allow for planned new development	£1,540K	AMP9	Environment Agency	PO8
DAMB.OT01.3	Stour	Dambridge Wingham	System Wide	Working with partners, implement the findings of the study/investigation into the requirements to achieve or prevent deterioration from Natural England's revised Common Standards Monitoring Guidance (rCSMG) targets for Total Phosphorus and Total Nitrogen.	£TBC	AMP8	Environment Agency, Natural England	PO11
DAMB.OT01.4	Stour	Dambridge Wingham	System Wide	Study and Investigation to understand the impact of wastewater discharges on the local environment and identify measures required to achieve good ecological status in the receiving waterbody	£695K	AMP8	Environment Agency	PO9
DAMB.OT01.5	Stour	Dambridge Wingham	System Wide	Improve the Hydraulic Model: Surveys and reverification of model to improve confidence and accuracy	£200K	AMP8	-	PO1 PO4 PO7

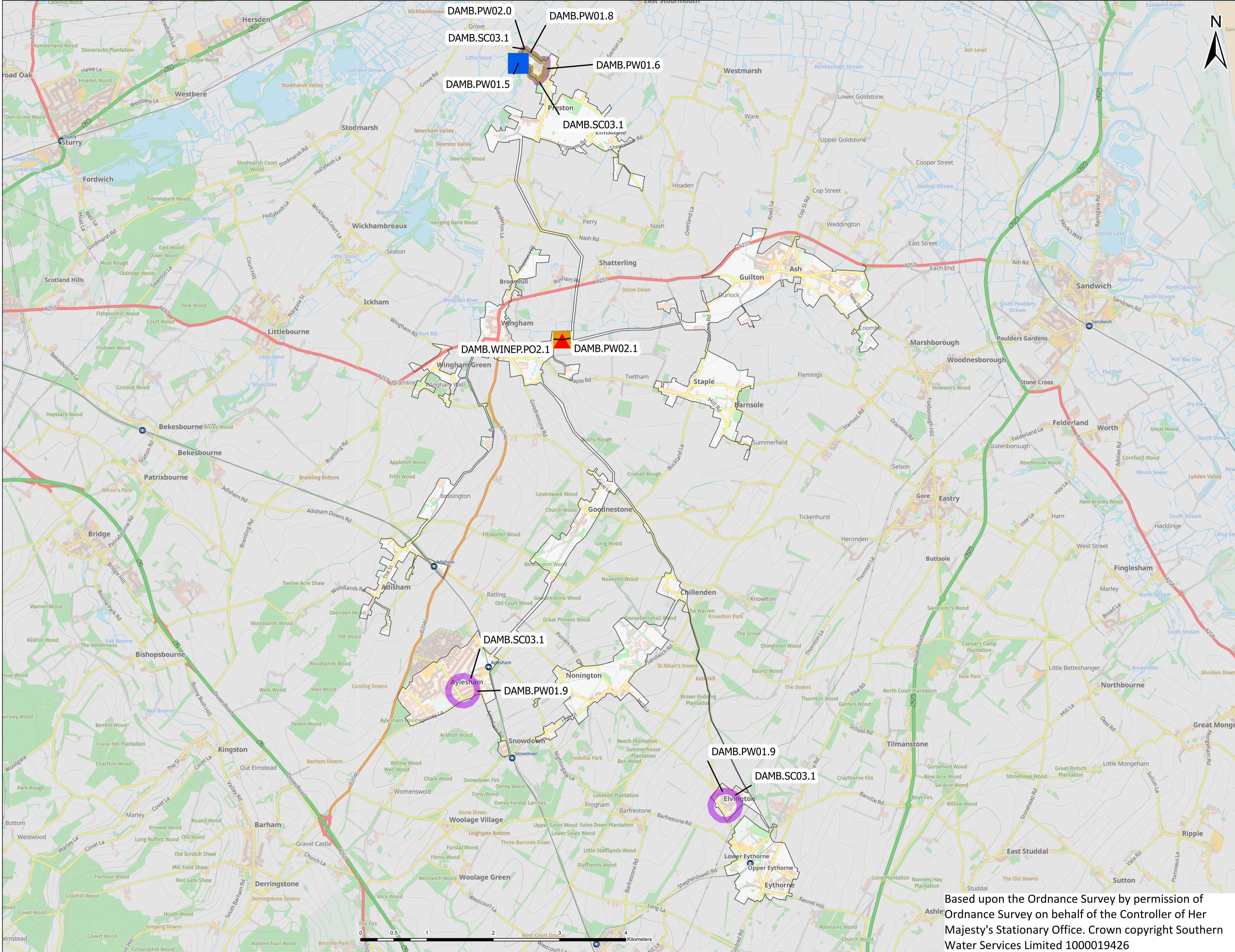
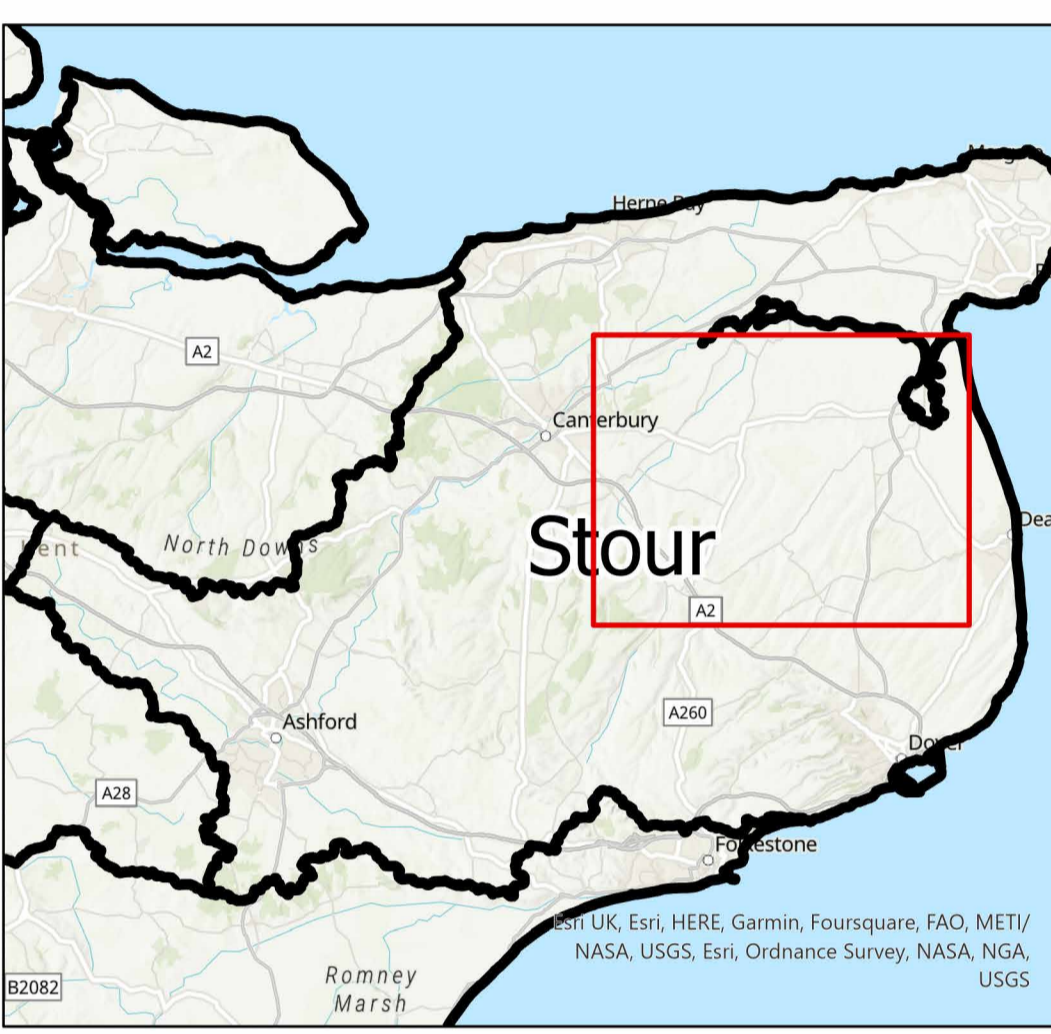
Reference	River Basin (L2)	Wastewater System (L3)	Location	Option	Indicative Cost	Indicative Timescales	Potential Partners	Applicable Planning Objectives
DAMB.WINEP.PO2.1	Stour	Dambridge Wingham	Dambridge Wingham WwTW	Provision of additional tertiary treatment (MBSF) to existing process (WINEP OAR 08SO104999)	£12,225K	AMP8	-	PO9




Drainage and Wastewater Management Plan: Location of Potential Options DAMBRIDGE WINGHAM

Wastewater system in Stour 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.



-  Customer Education
-  Pipe Rehabilitation
-  Asset Resilience
-  Wastewater Treatment
-  WINEP Nutrient Neutrality
-  WINEP Storm Overflows

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