



# Drainage and Wastewater Management Plan

Stockbridge  
Wastewater System Plan



from  
**Southern  
Water** 

# Contents

Wastewater System Map

Problem Characterisation

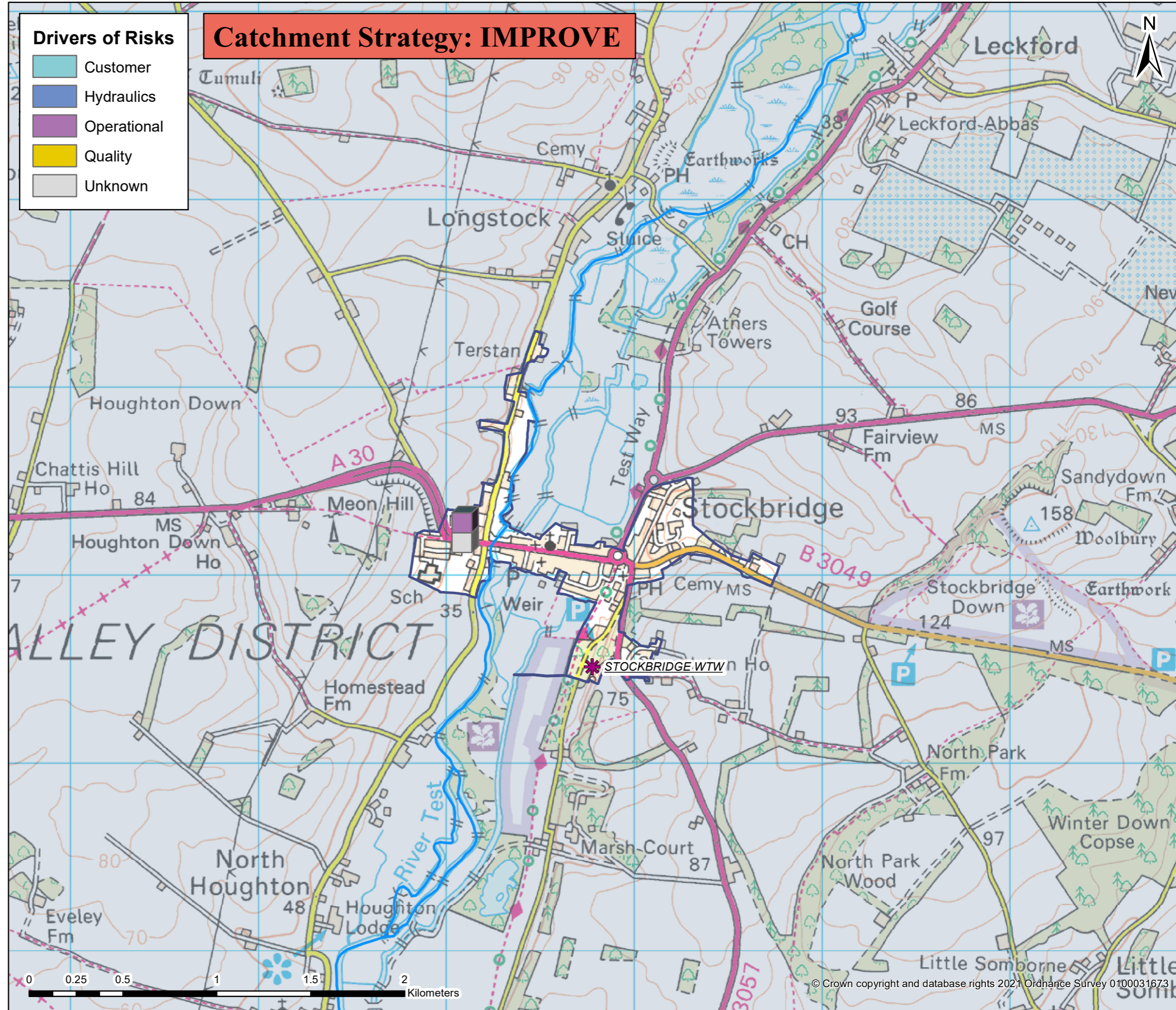
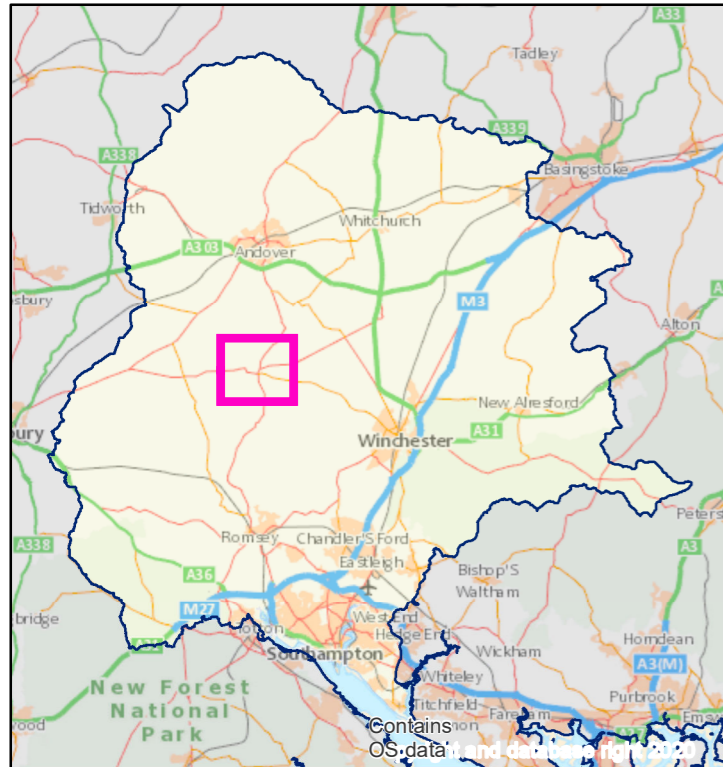
Generic Options

Outline Option Appraisal

Investment Needs

Location of Potential Options

# Stockbridge wastewater system: map and key facts



Population Equivalent (PE)	824
Discharge Waterbody	Marshcourt River
Number of Pumping Stations	5
Number of Overflows	4
Length of Sewer (km)	13.2
Catchment Reference	STOC

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



# Problem Characterisation

## Stockbridge (STOC)

This document describes the causes of the risks identified by the Baseline Risk and Vulnerability Assessment (BRAVA). The BRAVA results for this wastewater system are summarised in Table 1. The results indicate that water quality is the main concern 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 Stockbridge 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	0	-	0
5	Storm Overflow Performance	0	-	0
6	WTW Water Quality Compliance	0	-	0
7	Flooding due to Hydraulic Overload	0	-	0
8	WTW Dry Weather Flow Compliance	2	Operational	2
9	Good Ecological Status / Good Ecological Potential	0	-	
10	Surface Water Management	0	-	
11	Nutrient Neutrality	1	Unknown	1
12	Groundwater Pollution	0	-	
13	Bathing Waters	NA	-	
14	Shellfish Waters	0	-	

### 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

### Investment Strategy

The risks identified in this wastewater system 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 less than 1.68 incidents per 10,000 connections per year (a threshold set by Ofwat) so the risk is in the 'not significant' band.

**Planning Objective 2: Pollution Risk**

There has been less than one pollution incident reported on average during the three year period considered by the risk assessment, so the risk is in the 'not significant' band. The exception is if there were two incidents in the most recent year.

**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.

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

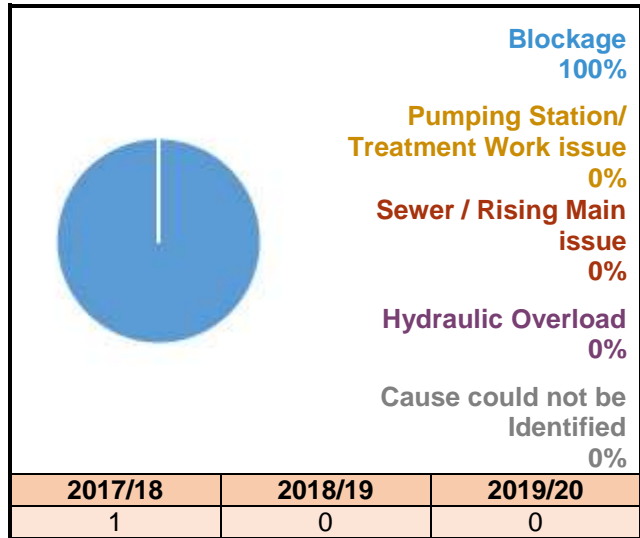
The risk of flooding in a 1 in 50 year storm is not significant in 2020 or 2050. A hydraulic model is not available for this wastewater system, however our wastewater system vulnerability assessment (using Ofwat's guidance on Risk of Sewer Flooding in a Storm) identified this wastewater system as grade 1/2 (i.e. low vulnerability).

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.

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



**Table 2: Sewer collapses and rising main bursts**

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

**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**

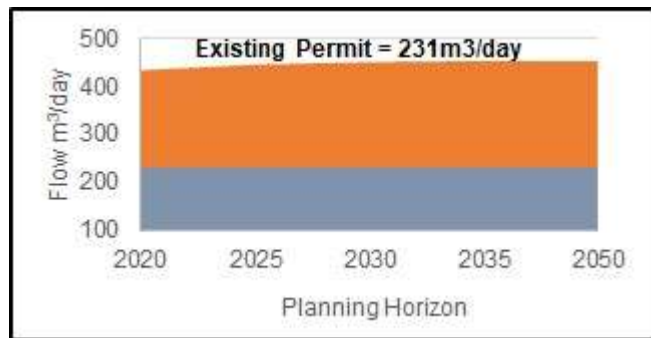
Our initial assessment is that flooding from hydraulic overload is not significant in this wastewater catchment for both 2020 and 2050. We will use a hydraulic model of the wastewater system to determine if this catchment is at risk for Hydraulic Overload across the various storm events, and update this risk assessment accordingly for the next cycle of DWMPs.

**Planning Objective 8: Wastewater Treatment Works Dry Weather Flow Compliance**

The risk of Wastewater Treatment Works Dry Weather Flow Compliance is very significant for both 2020 and 2050. This is because the average annual dry weather flow for 2017, 2018 and 2019 has exceeded the current permit, shown in Figure 2.

The primary driver is 'Operational' because the contribution of infiltration to the baseline DWF is estimated to be above 50%, based on an equation using the recorded flow (Q90), the resident population reported in 2019 as well the contribution of trade effluent and cesspits from the annual return for 2019.

**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**

A network model was not available for this assessment, therefore the risk has been moderated to not significant for this planning objective.

**Planning Objective 11: Nutrient Neutrality**

The risk to internationally designated habitat sites from this wastewater system is moderately significant in 2020 and 2050. This is because Natural England have advised that there is a risk to condition for the habitat sites that are hydraulically linked to our wastewater system, listed in Table 3.

**Table 3: Habitat Sites hydraulically linked to wastewater system**

Habitat Sites	
Solent Maritime	Nitrate permit review required Overflow Spills
Solent & Southampton Water	No Threat/Remedy Identified or Anticipated
Solent and Dorset Coast	Nitrate permit review required Overflow Spills



### 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 can affect the designated shellfish waters shown in Table 4. The risk of not achieving the faecal standards for shellfish in these designated waters from this wastewater system is not significant. This is because any microbes or bacteria from the wastewater will either die or their impact will be dissipated before they reach the shellfish water where the discharges are over 5 km away.

**Table 4: Shellfish Waters linked to wastewater system**

<b>Shellfish Waters</b>
Southampton Water Sw

# Generic Options Assessment for: Stockbridge (STOC)



Planning Objectives		2020	Driver	2050	Type of Measures	Generic Option Categories	Icon	Take Forward?	Reasons	Examples of Generic Options
PO1	Internal Flooding	0	-	-	Source (Demand) Measures (to reduce likelihood)	Control / Reduce surface water run-off		N	None of the significant risks in this catchment are caused by surface water getting into our wastewater system. Hence, no specific investment is required. Continue to promote policies for sustainable drainage and to separate surface water from foul or combined systems.	Natural Flood Management; rural land management and catchment management; SuDS including blue and green infrastructure; storm management
PO2	Pollution Risk	0	-	-		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	0	-	-		Improve <b>quality</b> of wastewater		N	None of the significant risks are caused by the quality of wastewater entering the wastewater system.	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	0	-	0		Reduce the <b>quantity</b> / 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		N	There are no causes of risk due to the capacity or performance of the wastewater system. Hence, improving the sewer network will not reduce the significant risks in this wastewater catchment.	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	0	-	0		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	2	Operational	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	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	1	Unknown	1		Reduce impact on properties		N	There are no properties affected by the significant risks in this catchment, hence reducing impacts at property level will not mitigate any significant risks.	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	0	-	-						



# Stockbridge 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												
Control / Reduce groundwater infiltration												
Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste)												
Control / Reduce the quantity / flow of wastewater entering sewer system	STOCKBRIDGE WTW	PO8 (2050)- Dry Weather Flow	STOC.SC04.1	Water Efficient Appliance / Measures	Southern Water aims to reduce water consumption to 100 l/h/d by 2040.	Yes	No					Environmental - Strategic Environmental Assessment
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO8 (2050)- Dry Weather Flow	STOC.PW01.1	Pipe Rehabilitation Programme	Relining/improving structural grades of sewers across the catchment.	Yes	No					Environmental - Strategic Environmental Assessment
Network Improvements (eg increase capacity, storage, conveyance)	High Street	PO2 - Pollution Risk	STOC.PW01.2	Improved Jetting Programmed	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall.	Yes	Yes	Yes	Minor Positive +	£TBC - With Partners	Yes	Best Value
Improve treatment (capacity and quality at existing works or develop new WTWs)	STOCKBRIDGE WTW	PO8 (2050)- Dry Weather Flow	STOC.PW02.1	Permit Review	Increase capacity of the Wastewater Treatment Works (WTW).	Yes	Yes	Yes	Minor Positive +	£1,500K	Yes	Best Value
Wastewater Transfer	STOCKBRIDGE WTW	PO8 (2050)- Dry Weather Flow	STOC.PW03.1	Construct New WPS & Rising Main	Within 15km radius of STOC is ROMS which in 2050 will have approximately 305m3/day of headroom (until it is above 80% of its DWF permit).	Yes	Yes	Yes	Minor Positive +	£TBC - With Partners	No	Best Value
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)												
Study/ investigation to gather more data	Catchment Wide	PO8 (2050)- Dry Weather Flow	STOC.OT01.1	Pipe Rehabilitation Programme / CCTV Investigation / Infiltration Reduction Programme	Relining/improving structural grades of sewers across the catchment.	Yes	No					Environmental - Strategic Environmental Assessment
Study/ investigation to gather more data	Solent Maritime Solent & Southampton Water Solent and Dorset Coast	PO11 - Nutrient Neutrality	STOC.OT01.2	Nutrient Budget	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites.	Yes	Yes	Yes	Minor Positive +	£75K	Yes	Best Value
Study/ investigation to gather more data	Catchment Wide? Overflow Locations	PO4, PO5, PO7 & PO10	STOC.OT01.3	Improve Hydraulic Model	Study / Investigation: Update and re-verify the Stockbridge Hydraulic Model to improve model confidence.	Yes	Yes	Yes	Minor Positive +	£300K		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

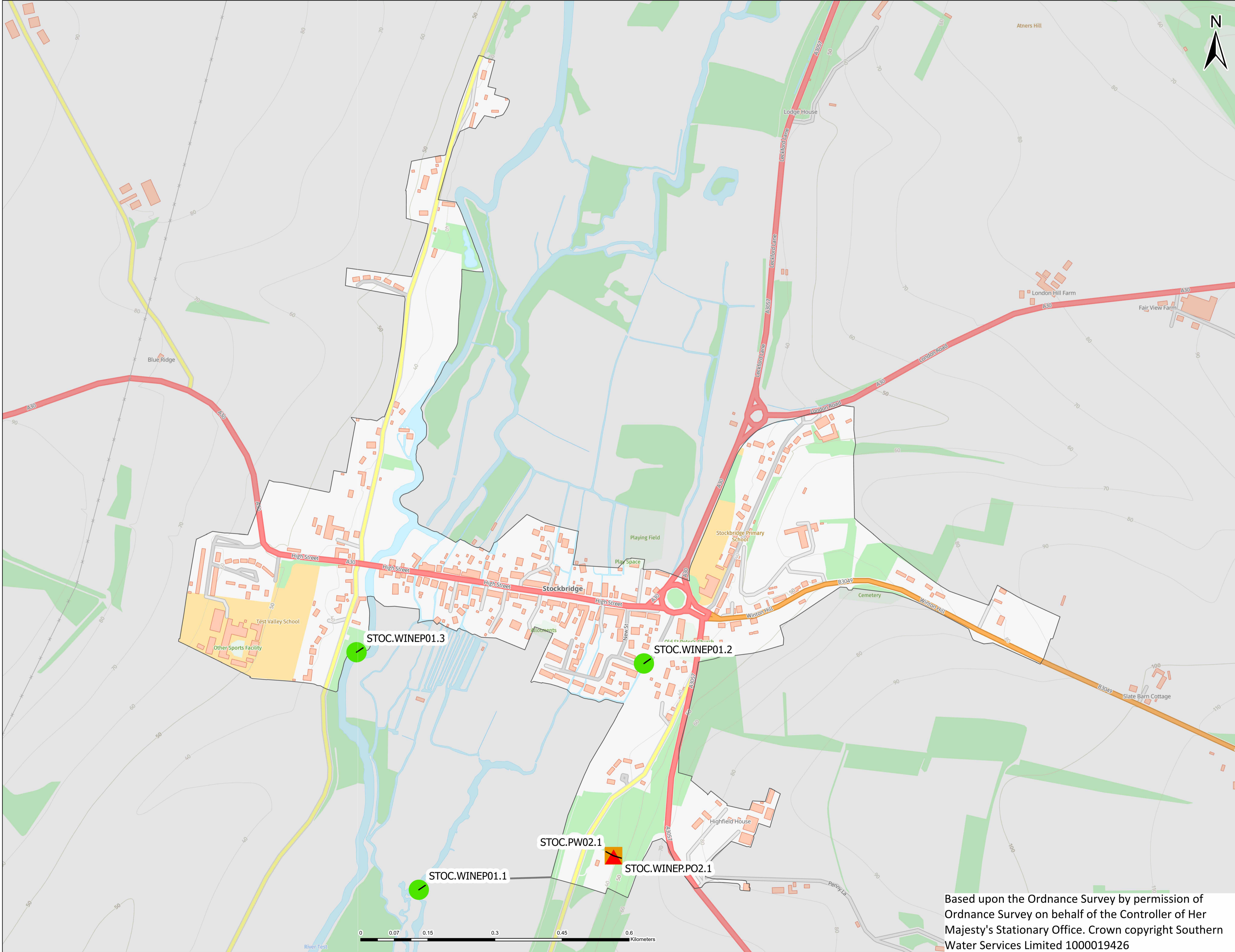
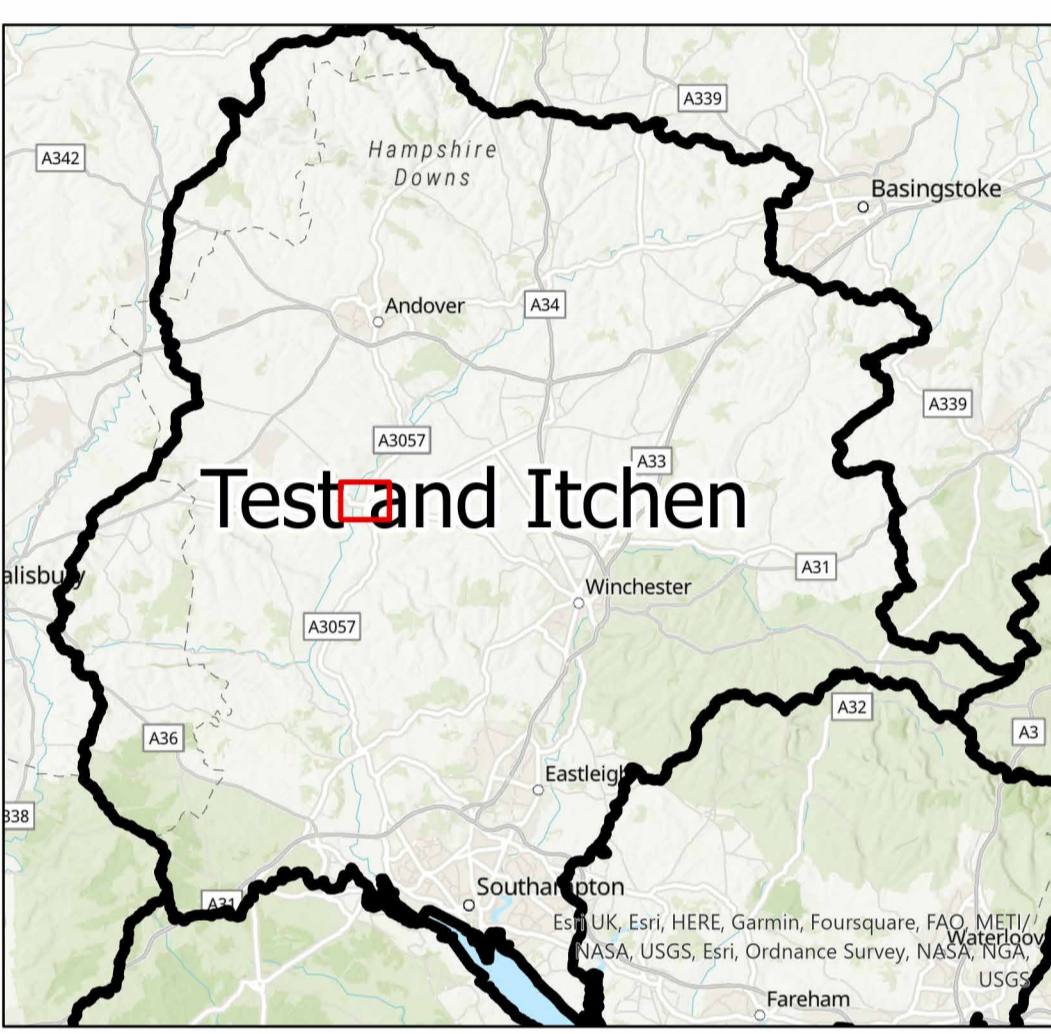
Version : 1.0

Reference	River Basin (L2)	Wastewater System (L3)	Location	Option	Indicative Cost	Indicative Timescales	Potential Partners	Applicable Planning Objectives
<b>Test and Itchen</b>								
<b>Stockbridge</b>								
STOC.PW01.2	Test and Itchen	Stockbridge	High Street, Stockbridge	Enhanced Sewer Maintenance: Increase targeted sewer jetting to reduce the number of blockages in the network	£TBC	AMP8 onwards	-	PO2
STOC.PW02.1	Test and Itchen	Stockbridge	Stockbridge WTW	Increase capacity to allow for planned new development	£1,000K	AMP8	Environment Agency	PO8
STOC.OT01.3	Test and Itchen	Stockbridge	System Wide	Improve the Hydraulic Model: Surveys and reverification of model to improve confidence and accuracy	£300K	AMP8	Hampshire County Council Test Valley Borough Council	PO4 PO5 PO7 PO10
STOC.WINEP01.1	Test and Itchen	Stockbridge	STOCKBRIDGE SSO	Reduce the number of storm discharges from STOCKBRIDGE SSO by a combination of SuDS and storage options	£1,950K	AMP8	-	PO5
STOC.WINEP01.2	Test and Itchen	Stockbridge	TRAFALGAR WAY STOCKBRIDGE CEO	New or improved screen to reduce aesthetics impacts from storm discharges at TRAFALGAR WAY STOCKBRIDGE CEO	£130K	AMP11	-	PO5
STOC.WINEP01.3	Test and Itchen	Stockbridge	HOUGHTON ROAD STOCKBRIDGE CEO	New or improved screen to reduce aesthetics impacts from storm discharges at HOUGHTON ROAD STOCKBRIDGE CEO	£130K	AMP11	-	PO5
STOC.WINEP.PO2.1	Test and Itchen	Stockbridge	Stockbridge WTW	Conventional treatment (ferric dosing, potentially including alkalinity dosing and/or deep bed sandfilters) (WINEP action 08SO102637)	£3,305K	AMP10	-	PO9 PO11

# Drainage and Wastewater Management Plan: Location of Potential Options STOCKBRIDGE Wastewater system in Test and Itchen 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



Based upon the Ordnance Survey by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office. Crown copyright Southern Water Services Limited 100019426