



# Drainage and Wastewater Management Plan

Slowhill Copse Marchwood  
Wastewater System Plan



from  
**Southern  
Water** 

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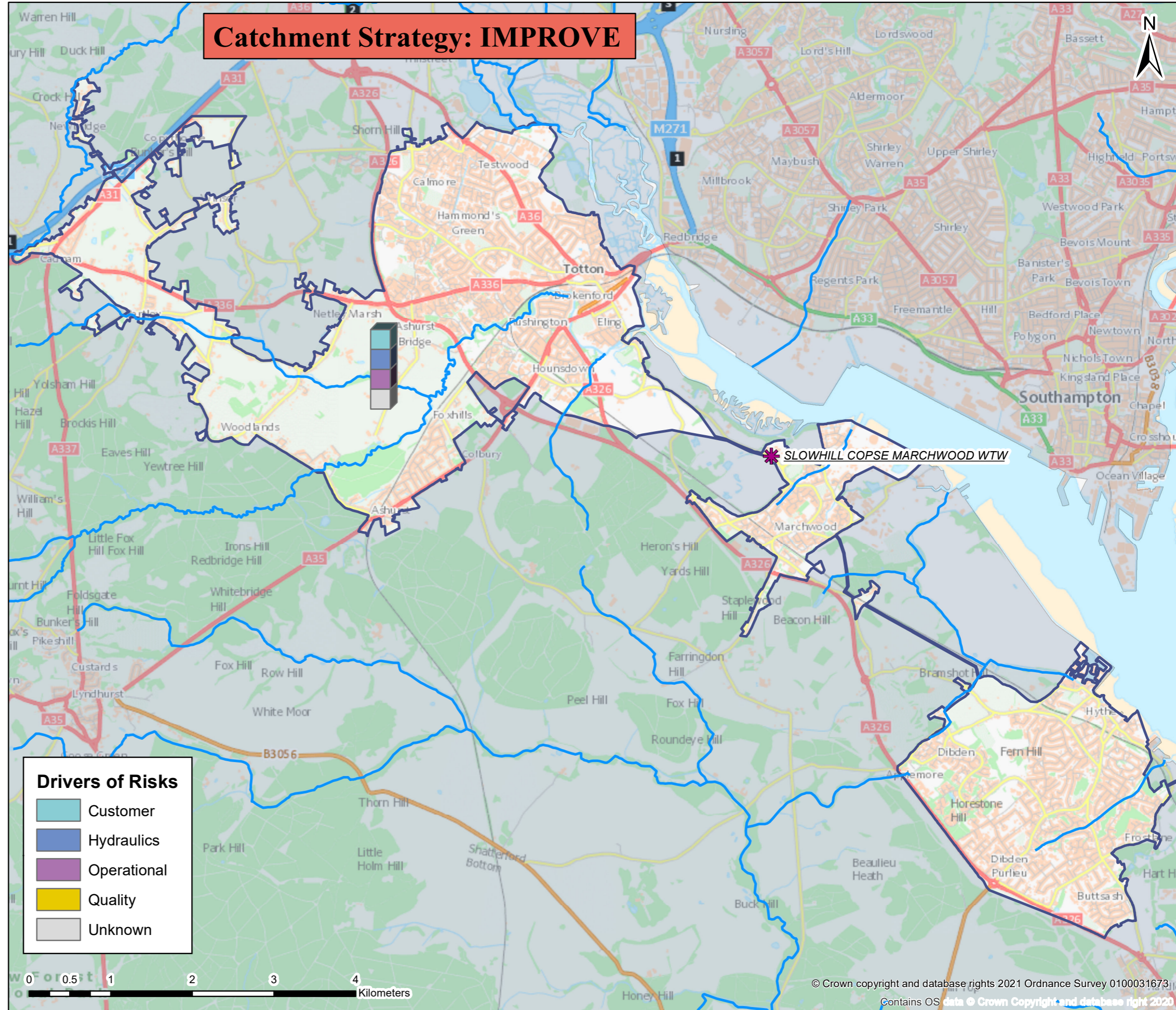
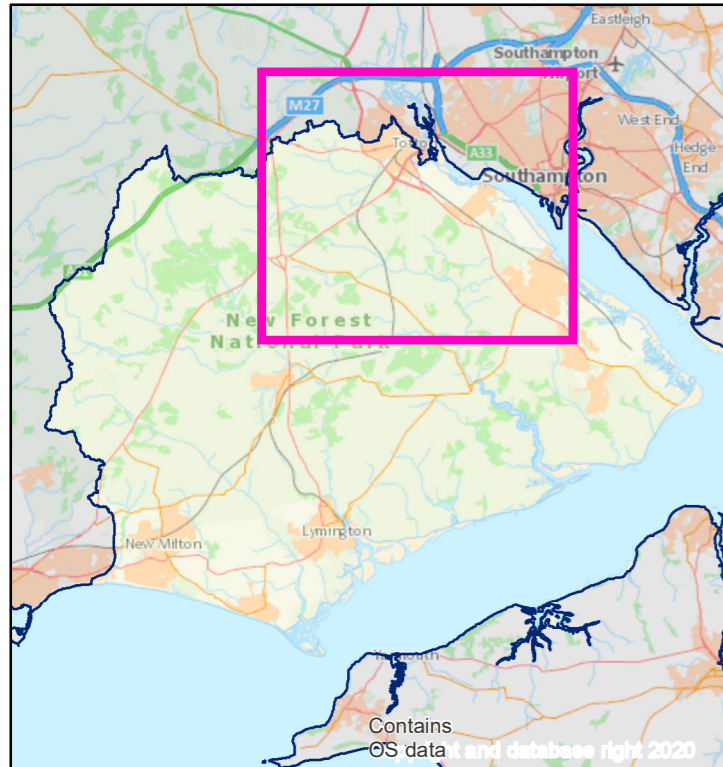
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# Slowhill Copse Marchwood wastewater system: map and key facts



**Catchment Strategy: IMPROVE**

<b>Population Equivalent (PE)</b>	<b>63,155</b>
<b>Discharge Waterbody</b>	<b>estuarial waters of the Solent</b>
<b>Number of Pumping Stations</b>	<b>64</b>
<b>Number of Overflows</b>	<b>7</b>
<b>Length of Sewer (km)</b>	<b>494.0</b>
<b>Catchment Reference</b>	<b>SLOW</b>

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



# Problem Characterisation

## Slowhill Copse Marchwood (SLOW)

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 flooding, pollution and water quality are the main concerns in this wastewater system. 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 Slowhill Copse Marchwood wastewater system**

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

### 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).

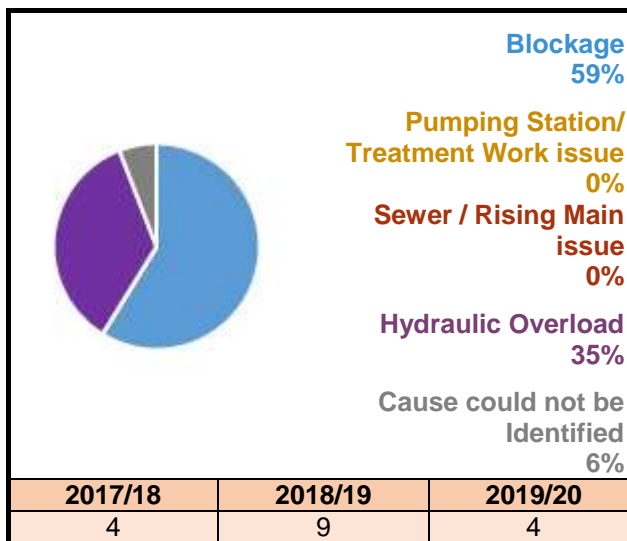


### Planning Objective 1: Internal Sewer Flooding Risk

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 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 59% 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

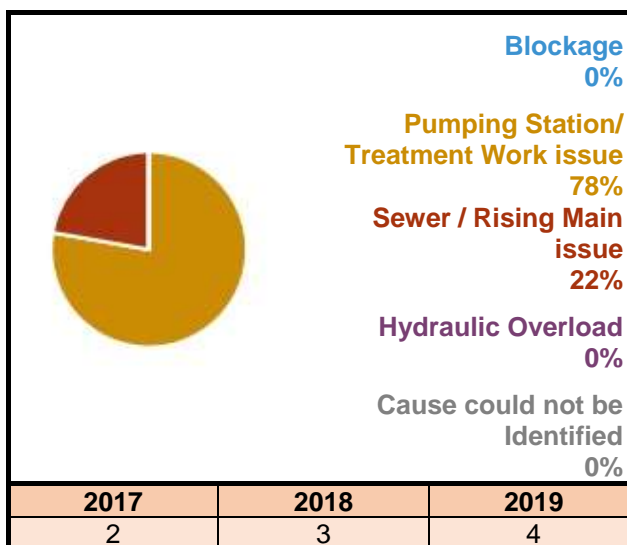


### Planning Objective 2: Pollution Risk

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 'Operational' due to asset operational issues. Asset operational issues at our pumping stations and treatments works are the main cause of incidents, contributing to 78% of all incidents recorded in this wastewater system.

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	0
Rising Main Bursts	2017/18	0
	2018/19	7
	2019/20	6

### 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. This is because our computer model of the sewer network indicate for 2020 that approximately 400 - 500 properties within this wastewater system are in areas that could flood by water escaping from sewers.

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 numbers for the 2050 assessment may be lower than the 2020 assessment. This is because the 2050 figures are predicted from modelling, whereas the 2020 figures are based on actual recorded data and include spills due to blockages or operational issues which cannot be forecast into the future.

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
<b>Shellfish Waters</b>	2 High	1 High	Less than 8	Between 8-10	10 or more
<b>Bathing Waters</b>	0 Medium	0 High	Less than 3	Between 3-10	10 or more
<b>Freshwater</b>	2 Medium	2 Medium	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 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 4.

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

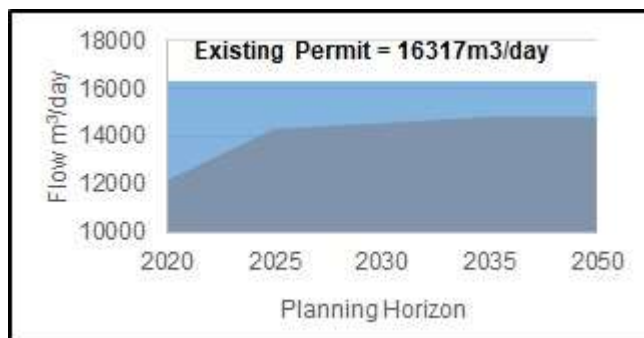
Rainfall Return Period (yr)	Number of Properties at Risk		Annualised per 10,000 connections	
	2020	2050	2020	2050
1 in 1	98	138	62	87
1 in 2	109	162	43	64
1 in 5	175	282	32	51
1 in 10	255	355	24	34
1 in 20	328	450	16	22
1 in 30	373	503	12	16
<b>Total Annualised</b>			<b>189</b>	<b>274</b>

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 moderately significant in 2050, shown in Figure 3. This is because the predicted DWF in 2050 is expected to be between 80% and 100% of the current permit.

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



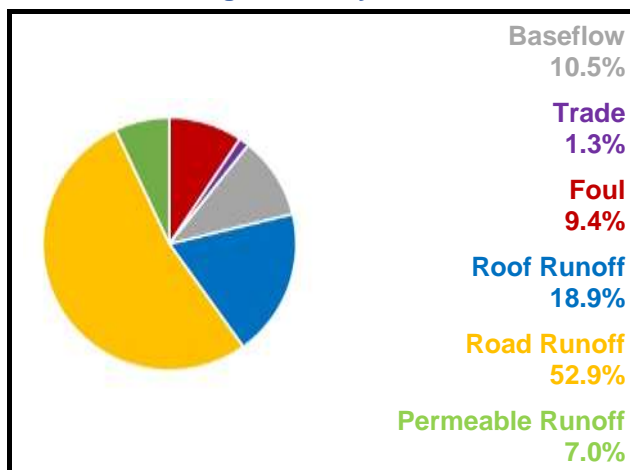
**Planning Objective 9: Good Ecological Status / Good Ecological Potential**

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 78.8% of the flow in the sewers. The total contribution of foul water from homes is 9.4% with business contributing 1.3%. The baseflow is infiltration from water in the ground and makes up 10.5% 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 very 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 5.

**Table 5: Habitat Sites hydraulically linked to wastewater system**

<b>Habitat Sites</b>	
Solent and Dorset Coast	Phosphate permit review required Overflow Spills
Solent & Southampton Water	No Threat/Remedy Identified or Anticipated
Solent Maritime	Phosphate 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 6. The risk of not achieving the faecal standards for shellfish in these designated waters from this wastewater system is very significant. This is because the CEFAS classification for the shellfish waters is in class C, prohibited or seasonal class B or C.

**Table 6: Shellfish Waters linked to wastewater system**

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



# Generic Options Assessment for: Slowhill Copse Marchwood (SLOW)



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	Operational	-		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 <b>quality</b> 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	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	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	-	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		Y	-	Transfer flow to other network or treatment sites; transport sewage by tanker to other sites
PO8	DWF Compliance	0	-	1	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	2	Unknown	2		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	2	Unknown	-						

# Slowhill Copse Marchwood 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	Hazel Grove	PO1, PO5, PO7 - Hydraulic	SLOW.SC01.1	Natural Flood Management	Study / Investigation: Identify suitable location/s for NFMs in the Slowhill Copse Marchwood catchment (update hydraulic model).	Yes	Yes	Yes	Moderate Positive ++	£TBC - With Partners	No	Best Value
Control/ Reduce surface water entering the sewers	Catchment Wide	PO1, PO5, PO7 - Hydraulic	SLOW.SC01.2	Surface Water Separation	Study / Investigation: Identify suitable location/s for surface water separation in the Slowhill Copse Marchwood catchment (update hydraulic model).	Yes	Yes	Yes	Moderate Positive ++	£TBC - With Partners	No	Best Value
Control/ Reduce surface water entering the sewers	North of Catchment	PO1, PO5, PO7 - Hydraulic PO11 and PO14 - Nutrient Neutrality & Shellfish Waters	SLOW.SC01.3	Changes in Rural Land Management	Study / Investigation: Identify suitable location/s for wetland construction in the north of the Slowhill Copse Marchwood catchment (update hydraulic model).	Yes	Yes	Yes	Moderate Positive ++	£TBC - With Partners	No	Best Value
Control / Reduce groundwater infiltration												
Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste)	Central Totton (Commercial Road, Osborne Road, Rumbidge Street) West Totton (Ethelred Gardens, Alfred Close, Calmore Road) Ashurst (Princess Road)	PO1- Internal Flooding	SLOW.SC03.1	Customer Education Programme	Enhanced Customer Education Programme to prevent blockages.	Yes	Yes	Yes	Minor Positive +	£115K	Yes	Best Value
Control / Reduce the quantity / flow of wastewater entering sewer system	SLOWHILL COPSE MARCHWOOD WTW	PO8 (2050)- Dry Weather Flow	SLOW.SC04.1	Water Efficient Appliance / Measures	Southern Water aims to reduce water consumption to 100 l/h/d by 2040.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Fulmar Drive, Princess Road, Jacobs Gutter Lane	PO1- Internal Flooding	SLOW.PW01.1	Additional Storage	Storage in targeted L4 locations to alleviate internal flooding issues.	No						Deliver the required outcome
Network Improvements (eg increase capacity, storage, conveyance)	Downes Park Totton Wps	PO2- Pollution Risk	SLOW.PW01.2	Maintenance Programme WPS	Improve resilience: Review operation and maintenance of Downes Park Totton pumping station to improve resilience.	Yes	Yes	Yes	Minor Negative -	£465K	Yes	Least Cost
Network Improvements (eg increase capacity, storage, conveyance)	Totton Hotspot (Russel Place, Totton; Whitcombe Close, Totton)	PO3- Sewer Collapse	SLOW.PW01.3	Pipe Rehabilitation Programme	Targeted CCTV/Electroscan surveys and proactive sewer rehabilitation to reduce risk of sewer collapse.	Yes	Yes	Yes	Minor Positive +	£1,580K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO8 (2050)- Dry Weather Flow	SLOW.PW01.4	Pipe Rehabilitation Programme	Relining/improving structural grades of sewers across the catchment.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	POLLARDS MOOR CADNAM WPS, NORTH DIBDEN WPS, DOWNES PARK TOTTON WPS, SLOWHILL COPSE MARCHWOOD WTW, ASHURST BRIDGE WPS	PO2- Pollution Risk	SLOW.PW01.5	Pipe Rehabilitation Programme	Programme of works to rehab pipe network in identified L4 locations.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Central Totton (Commercial Road, Osborne Road, Rumbidge Street) West Totton (Ethelred Gardens, Alfred Close, Calmore Road) Ashurst (Princess Road)	PO1- Internal Flooding	SLOW.PW01.6	Jetting Programme	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 +	£115K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC03 Cook's Lane	PO4, PO7 - Growth	SLOW.PW01.7	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£345K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC04 Ashurst Bridge WPS	PO4, PO7 - Growth	SLOW.PW01.8	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£40K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC05 Butts Ash Lane	PO4, PO7 - Growth	SLOW.PW01.9	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£155K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC06 Eling Lane	PO4, PO7 - Growth	SLOW.PW01.10	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£155K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC07 North Dibden	PO4, PO7 - Growth	SLOW.PW01.11	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£150K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC08 Mulberry Road	PO4, PO7 - Growth	SLOW.PW01.12	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£85K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC09 Downes Park Totton	PO4, PO7 - Growth	SLOW.PW01.13	Storage	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC10 Slowhill Copse Marchwood WTW	PO4, PO7 - Growth	SLOW.PW01.14	Storage	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC11 Alexandra Road Hythe	PO4, PO7 - Growth	SLOW.PW01.15	Storage	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC01 - SLOWHILL COPSE MARCHWOOD WTW	PO5 and PO14 - Spill Assessments	SLOW.PW01.16	Storage	Use Hydraulic Model to identify storage volume needed to prevent the high spilling CSO from discharging into Shellfish Waters.	Yes	Yes	Yes	Major Positive +++	£2,560K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC02 - ASHDENE ROAD ASHURST CSO	PO5 - Spill Assessments	SLOW.PW01.17	Storage	Use Hydraulic Model to identify storage volume needed to prevent the high spilling CSO from discharging into Shellfish Waters.	Yes	Yes	Yes	Major Positive +++	£790K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide/Treatment Works	PO5 - Spill Assessment	SLOW.PW01.18	Overflow improvements	Installation of automatic storm tank return valves at CSOs.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	North Dibden WPS/Downes Park Totton WPS/All catchment WPS	PO2 - Pollution Risk (Operational)	SLOW.PW01.19	Pumping Station Improvements	Variable speed drives at pumping stations/refurbish these older ones - standard at all new installations.	Yes	No					Environmental - Strategic Environmental Assessment
Improve treatment (capacity and quality at existing works or develop new WTWs)	SLOWHILL COPSE MARCHWOOD WTW	PO2- Pollution Risk	SLOW.PW02.1	Maintenance Programme WTW	Improve resilience: Identify potential locations across the catchment for surface water removal to enhance the efficacy of the existing tertiary treatment at the works and reducing storm spills.	Yes	Yes	Yes	Major Positive +++	£695K	Yes	Best Value
Improve treatment (capacity and quality at existing works or develop new WTWs)	SLOWHILL COPSE MARCHWOOD WTW	PO8 (2050)- Dry Weather Flow	SLOW.PW02.2	Permit Review	Increase capacity of the Wastewater Treatment Works (WTW).	Yes	Yes	Yes	Minor Positive +	£2,270K	Yes	Best Value
Wastewater Transfer	SLOWHILL COPSE MARCHWOOD WTW	PO8 (2050)- Dry Weather Flow	SLOW.PW03.1	Construct New WPS & Rising Main	Within 10km radius of SLOW is POOD which in 2050 will have approximately 2690m3/day of headroom (until it is above 80% of its DWF permit).	No						Technically feasible
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

## Slowhill Copse Marchwood 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
Mitigate impacts on Water Quality												
Reduce consequences Properties (e.g. Property Flood Resilience)	Fulmar Drive, Princess Road, Jacobs Gutter Lane	PO1- Internal Flooding	SLOW.RC04.1	Property Flood Mitigation / Resistance	Short-term property level protection ahead of flood alleviation scheme - Non-return valves and flood mitigation doors / gates.	No						Risk and uncertainty - future resilience
Study/ investigation to gather more data	Testwood Lane	PO1- Internal Flooding	SLOW.OT01.1	Investigation into causes	Further investigation to identify the cause of the internal flooding incident.	Yes	No					Environmental - Strategic Environmental Assessment
Study/ investigation to gather more data	Catchment Wide	PO8 (2050)- Dry Weather Flow	SLOW.OT01.2	Infiltration Reduction Plan	Relining/improving structural grades of sewers across the catchment.	Yes	No					Operational
Study/ investigation to gather more data	Solent and Dorset Coast Solent & Southampton Water Solent Maritime	PO11 - Nutrient Neutrality	SLOW.OT01.3	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	PO1- Internal Flooding PO5- Storm Overflow PO7- Hydraulic Overload	SLOW.OT01.4	Improve Hydraulic Model	Study / Investigation: Update and re-verify the Slowhill Copse Marchwood Hydraulic Model to improve model confidence.	Yes	Yes	Yes	Minor Positive +	£225K	Yes	Best Value
Study/ investigation to gather more data	SLOW FC01 - SLOWHILL COPSE MARCHWOOD WTW	PO5 and PO14 - Spill Assessments	SLOW.OT01.5	Storage	The DAP model has a confidence score of 3 and was last verified in 1998 to 2012. The key risk between DAP and DWMP models is the model and FEH rainfall used.	Yes	No					Feasibility and Risk
Study/ investigation to gather more data	SLOW FC01 - DOWNES PARK TOTTON WPS	PO5 and PO14 - Spill Assessments	SLOW.OT01.6	Storage	Use Hydraulic Model to identify storage volume needed to prevent the high spilling CSO from discharging into Shellfish Waters.	Yes	Yes	Yes	Major Positive +++	£TBC - With Partners	Yes	Best Value
Study/ investigation to gather more data	Treatment Works/North Dibden WPS	PO2 - Pollution Risk (Operational)	SLOW.OT01.7	Storage	Use Hydraulic Model to identify storage volume needed to prevent the high spilling CSO.	No						Deliver the required outcome
Study/ investigation to gather more data	Treatment Works	PO11 - Nutrient Neutrality	SLOW.OT01.8	Study / Investigations	Investigation of use of treatment works doubling as greenhouses available for the public to use.	Yes	No					Feasibility and Risk

## 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

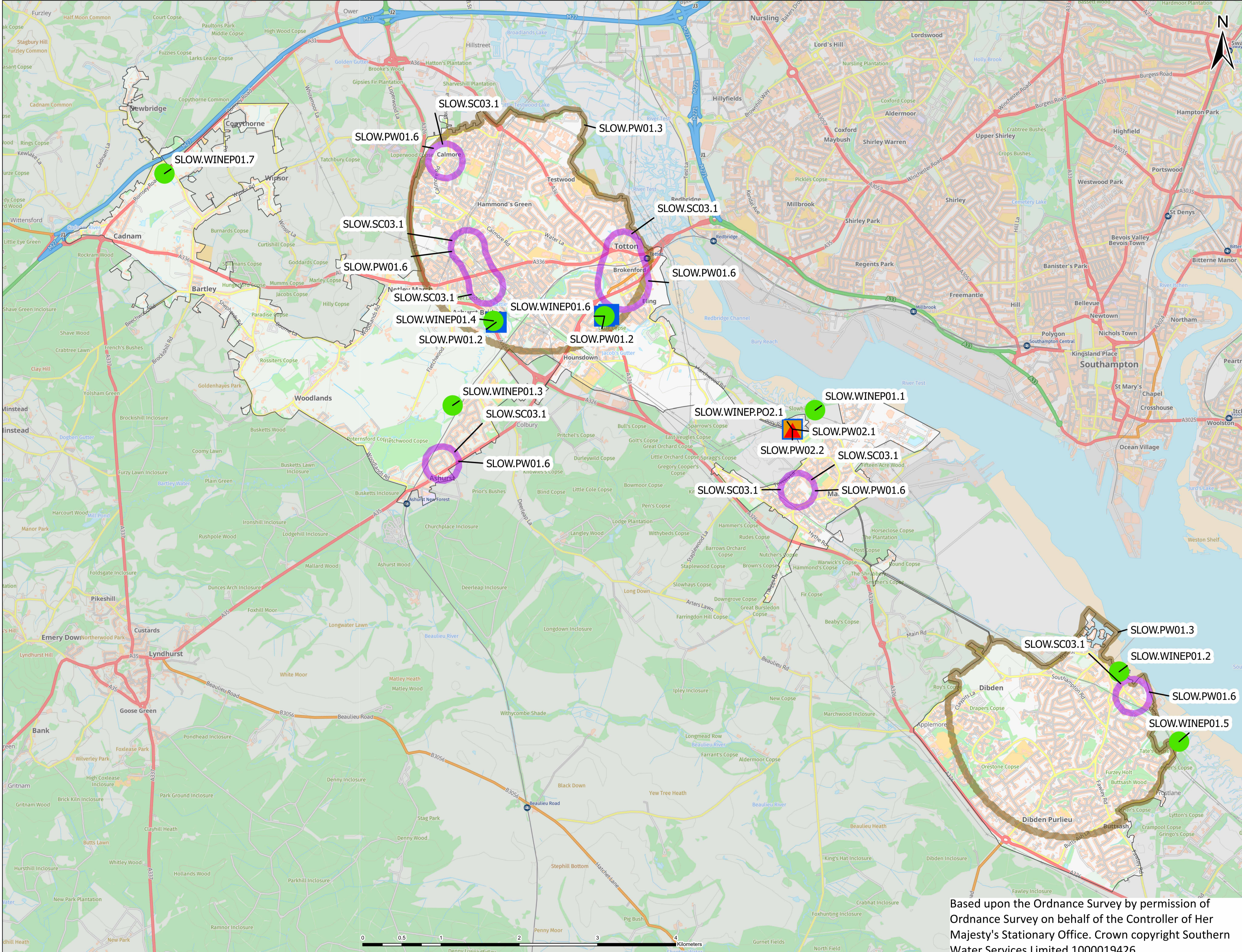
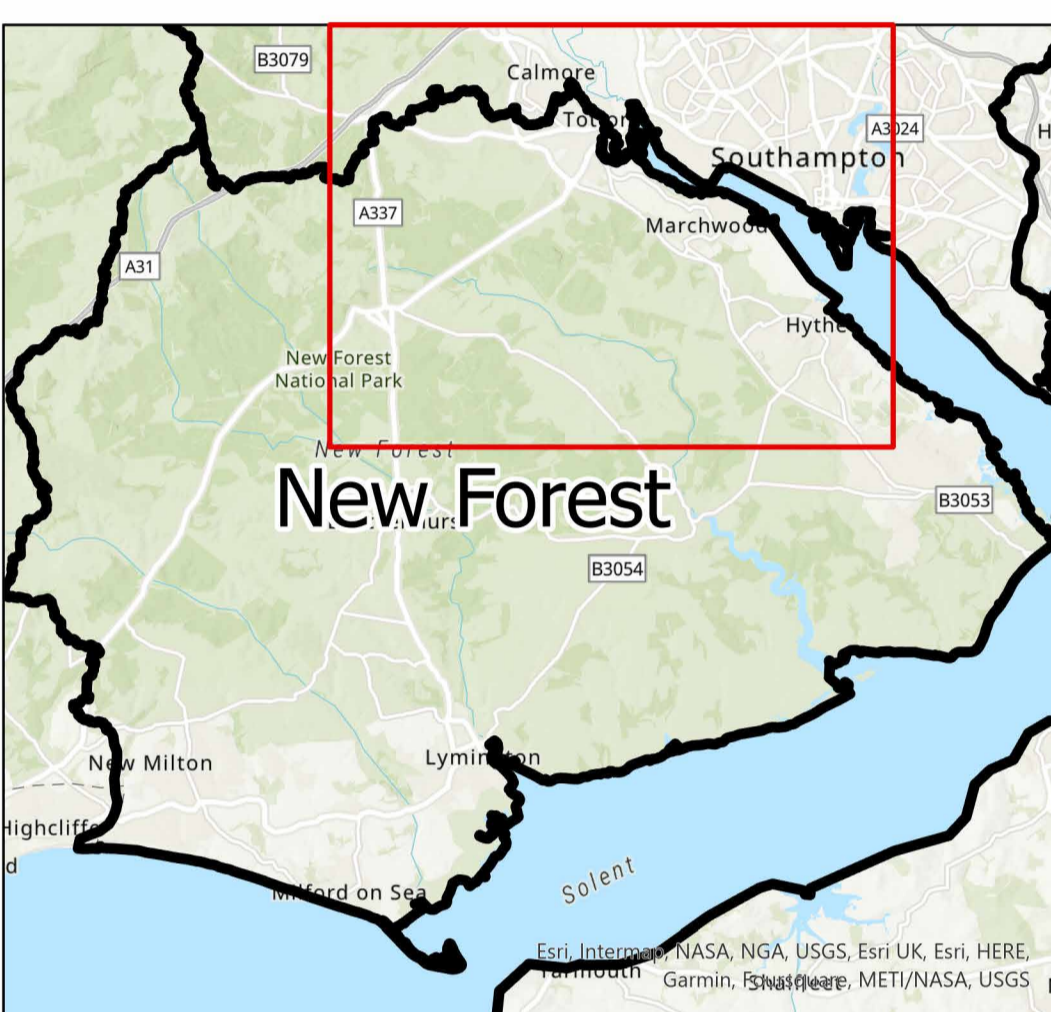
Reference	River Basin (L2)	Wastewater System (L3)	Location	Option	Indicative Cost	Indicative Timescales	Potential Partners	Applicable Planning Objectives
<b>New Forest</b>								
<b>Slowhill Copse Marchwood</b>								
SLOW.CONS01.1	New Forest	Slowhill Copse Marchwood	System Wide	Flood Alleviation: Separate or attenuate excess rainwater in sewer network using Sustainable Drainage Systems (SuDS) to reduce risk of flooding	£TBC	AMP8	New Forest District Council New Forest National Park Authority New Forest Catchment	PO4 PO7
SLOW.SC03.1	New Forest	Slowhill Copse Marchwood	Central Totton (Commercial Road, Osborne Road, Rumbridge Street) West Totton (Ethelred Gardens, Alfred Close, Calmore Road)	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	New Forest District Council New Forest National Park Authority New Forest Catchment	PO1
SLOW.PW01.2	New Forest	Slowhill Copse Marchwood	Downes Park Totton WPS	Improve the operational resilience of wastewater pumping station (WPS) to reduce pollution incidents	£465K	AMP8 onwards	-	PO2
SLOW.PW01.3	New Forest	Slowhill Copse Marchwood	Totton Hotspot (Russel Place, Totton; Whitcombe Close, Totton)	Sewer Rehabilitation: Targeted CCTV or electroscan surveys and sewer rehabilitation to reduce the risk of sewer bursts and collapses	£1,580K	AMP8 onwards	-	PO3
SLOW.PW01.6	New Forest	Slowhill Copse Marchwood	Central Totton (Commercial Road, Osborne Road, Rumbridge Street) West Totton (Ethelred Gardens, Alfred Close, Calmore Road)	Enhanced Sewer Maintenance: Increase targeted sewer jetting to reduce the number of blockages in the network	£115K	AMP8 onwards	-	PO1
SLOW.PW01.7	New Forest	Slowhill Copse Marchwood	Cooks Lane	Growth scheme from our Drainage Area Plan (DAP): Upsize 413m of 225mm to 525mm diameter sewer	£345K	AMP9	-	PO4 PO7
SLOW.PW01.8	New Forest	Slowhill Copse Marchwood	Ashurst Bridge WPS	Growth scheme from our Drainage Area Plan (DAP): Upsize 33m 800mm and 850mm to 1800mm diameter	£40K	AMP9	-	PO4 PO7
SLOW.PW01.9	New Forest	Slowhill Copse Marchwood	Butts Ash Lane	Growth scheme from our Drainage Area Plan (DAP): Upsize 96m 150mm to 1050mm diameter	£155K	AMP9	-	PO4 PO7
SLOW.PW01.10	New Forest	Slowhill Copse Marchwood	Eling Lane	Growth scheme from our Drainage Area Plan (DAP): Upsize 128m 225mm to 675mm diameter	£155K	AMP9	-	PO4 PO7
SLOW.PW01.11	New Forest	Slowhill Copse Marchwood	North Dibden	Growth scheme from our Drainage Area Plan (DAP): Upsize 93m 750mm to 1350mm diameter	£150K	AMP9	-	PO4 PO7
SLOW.PW01.12	New Forest	Slowhill Copse Marchwood	Mulberry Road	Growth scheme from our Drainage Area Plan (DAP): Upsize 100m 150mm to 450mm diameter	£85K	AMP9	-	PO4 PO7
SLOW.PW02.1	New Forest	Slowhill Copse Marchwood	Slowhill Copse Marchwood WTW	Improve the operational resilience of wastewater pumping station (WPS) to reduce pollution incidents	£695K	AMP8 onwards	New Forest District Council New Forest National Park Authority New Forest Catchment	PO2
SLOW.PW02.2	New Forest	Slowhill Copse Marchwood	Slowhill Copse to Marchwood WTW	Increase capacity to allow for planned new development	£2,270K	AMP9	Environment Agency	PO8
SLOW.OT01.4	New Forest	Slowhill Copse Marchwood	System Wide	Improve the Hydraulic Model: Surveys and reverification of model to improve confidence and accuracy	£225K	AMP8	-	PO1 PO5 PO7

Reference	River Basin (L2)	Wastewater System (L3)	Location	Option	Indicative Cost	Indicative Timescales	Potential Partners	Applicable Planning Objectives
SLOW.WINEP01.1	New Forest	Slowhill Copse Marchwood	SLOWHILL COPSE MARCHWOOD SSO	Reduce the number of storm discharges from SLOWHILL COPSE MARCHWOOD SSO by a combination of SuDS and storage options	£14,240K	AMP8	-	PO4 PO5 PO7 PO14
SLOW.WINEP01.2	New Forest	Slowhill Copse Marchwood	ALEXANDRA ROAD HYTHE H CSO	New or improved screen to reduce aesthetics impacts from storm discharges at ALEXANDRA ROAD HYTHE H CSO	£130K	AMP10	-	PO5
SLOW.WINEP01.3	New Forest	Slowhill Copse Marchwood	ASHDENE ROAD ASHURST CSO	Reduce the number of storm discharges from ASHDENE ROAD ASHURST CSO by creating below-ground storage	£1,465K	AMP10	-	PO5
SLOW.WINEP01.4	New Forest	Slowhill Copse Marchwood	ASHURST BRIDGE CEO	New or improved screen to reduce aesthetics impacts from storm discharges at ASHURST BRIDGE CEO	£130K	AMP12	-	PO5
SLOW.WINEP01.5	New Forest	Slowhill Copse Marchwood	TATES COPSE HYTHE H CEO	New or improved screen to reduce aesthetics impacts from storm discharges at TATES COPSE HYTHE H CEO	£130K	AMP11	-	PO5
SLOW.WINEP01.6	New Forest	Slowhill Copse Marchwood	DOWNES PARK TOTTON CEO	New or improved screen to reduce aesthetics impacts from storm discharges at DOWNES PARK TOTTON CEO	£130K	AMP12	-	PO5
SLOW.WINEP01.7	New Forest	Slowhill Copse Marchwood	POLLARDS MOOR CADNAM CEO	New or improved screen to reduce aesthetics impacts from storm discharges at POLLARDS MOOR CADNAM CEO	£130K	AMP12	-	PO5
SLOW.WINEP.PO2.1	New Forest	Slowhill Copse Marchwood	Slowhill Copse Marchwood WTW	Expansion of existing denitrifying biological treatment to achieve 10mg/l Total N permit. (WINEP OAR 08SO103996)	£15,235K	AMP8	-	PO11

# Drainage and Wastewater Management Plan: Location of Potential Options SLOWHILL COPSE MARCHWOOD Wastewater system in New Forest 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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