



Drainage and Wastewater Management Plan

**Budds Farm Havant
Wastewater System Plan**



from
**Southern
Water** 

Contents

Wastewater System Map

Problem Characterisation

Generic Options

Outline Option Appraisal

Investment Needs

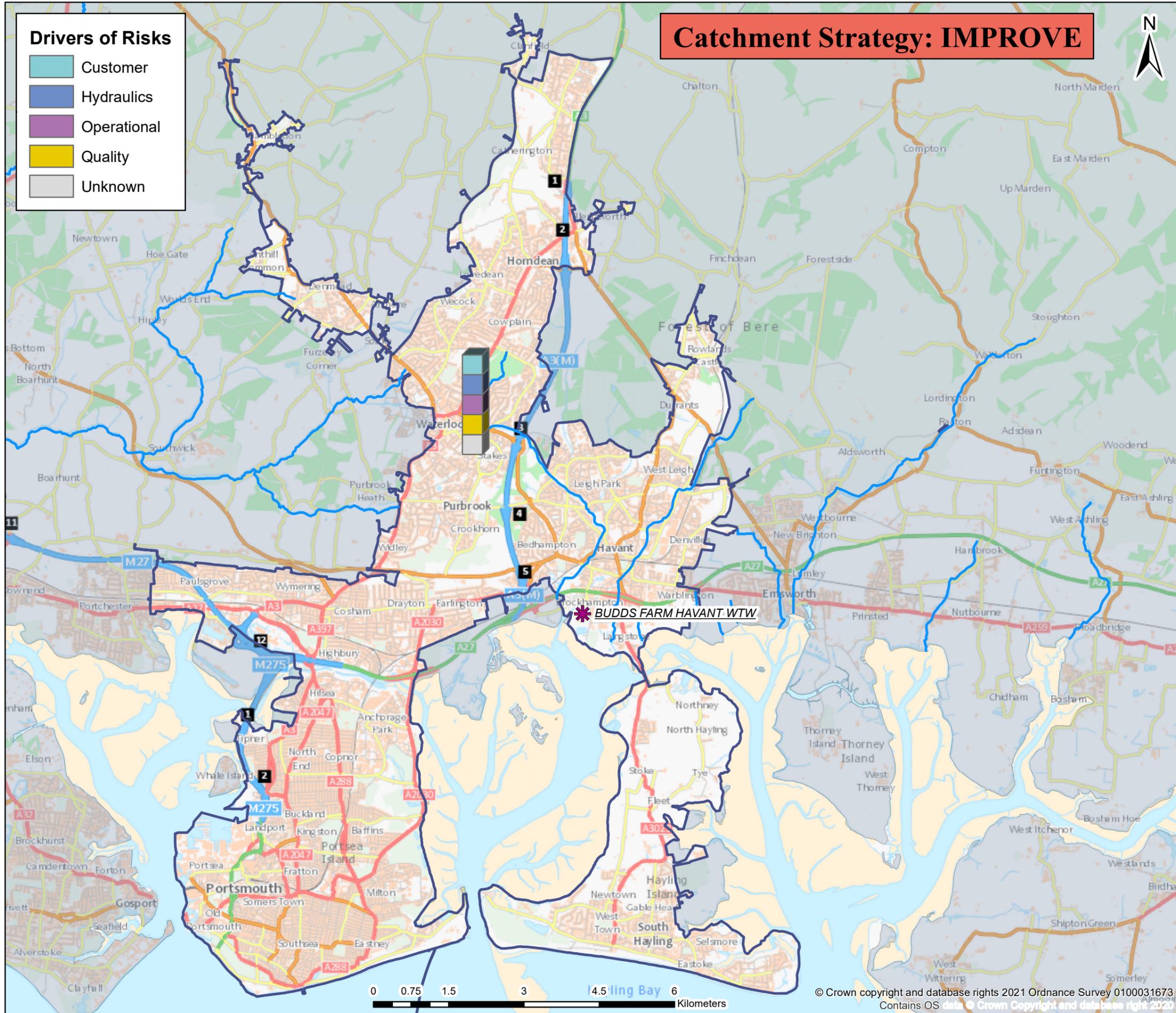
Location of Potential Options

Budds Farm Havant wastewater system: map and key facts



Population Equivalent (PE)	365,496
Discharge Waterbody	Long sea outfall into the Solent
Number of Pumping Stations	125
Number of Overflows	32
Length of Sewer (km)	2984.3
Catchment Reference	BUDD

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





Problem Characterisation

Budds Farm Havant (BUDD)

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 Budds Farm Havant wastewater system

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

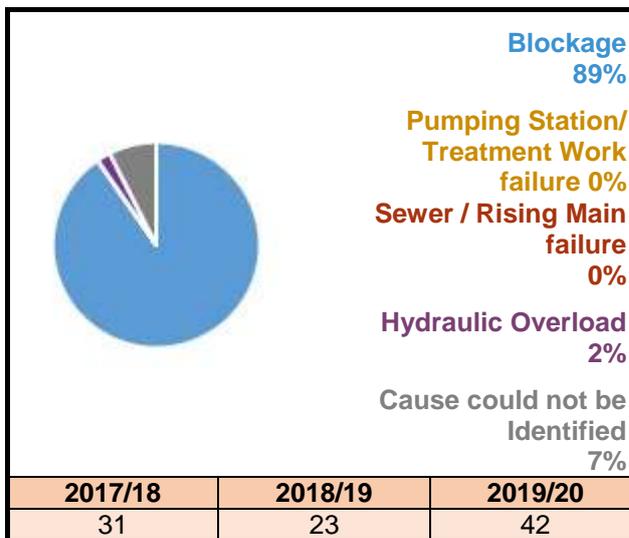


Planning Objective 1: Internal Sewer Flooding Risk

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 89% of all incidents recorded in this wastewater system. Blockages are often caused by fats, oils, greases, 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

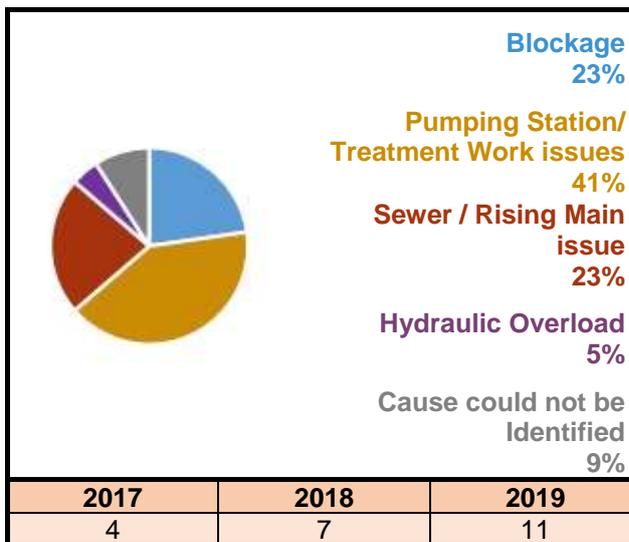


Planning Objective 2: Pollution Risk

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 between 24.51 and 49.01 incidents per 10,000km per year (a threshold set by Ofwat) so the risk is in the 'moderately 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 41% 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 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	11
	2018/19	10
	2019/20	11
Rising Main Bursts	2017/18	2
	2018/19	4
	2019/20	3

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

The risk of flooding in a 1 in 50 year storm is very significant in 2020 and 2050. This is because our computer model of the sewer network indicates for 2020 that approximately 19600 - 19700 properties within this wastewater system are in areas that could flood by water escaping from sewers. The model prediction for 2050 does not identify a notable increase.

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
Shellfish Waters	6 High	5 High	Less than 8	Between 8-10	10 or more
Bathing Waters	1 High	2 High	Less than 3	Between 3-10	10 or more
Freshwater	2 High	2 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 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 very significant in 2020. The annualised number of properties in areas at risk of flooding is shown in Table 4.

This indicates that the existing capacity of the wastewater network can already be exceeded during 1 in 30 year storms (or more frequent events).

Table 4: Estimated number of properties at risk from flooding

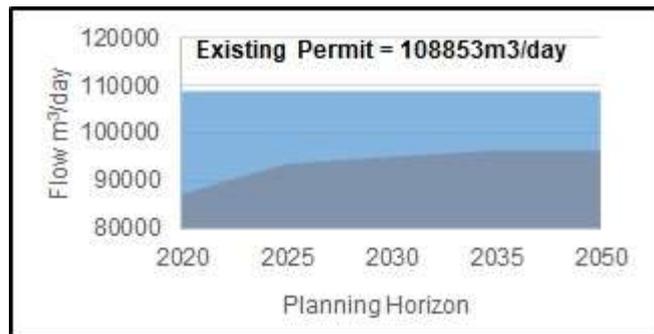
Rainfall Return Period (yr)	Number of Properties at Risk	Annualised per 10,000 connections
	2020	2020
1 in 1	622	393
1 in 2	1052	414
1 in 5	4382	794
1 in 10	7896	751
1 in 20	12565	613
1 in 30	15726	516
Total Annualised		3481

Planning Objective 8: Wastewater Treatment Works Dry Weather Flow Compliance

The risk of Wastewater Treatment Works Dry Weather Flow Compliance is moderately significant for both 2020 and 2050. This is because the average annual dry weather flow for 2017, 2018 and 2019 has been between 80% and 100% of the current permit, shown in Figure 3. The predicted DWF in 2050 is also expected to remain below 100% of the current permit.

The primary driver is 'Quality' due to the permit and capacity at the treatment work.

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



Planning Objective 9: Good Ecological Status / Good Ecological Potential

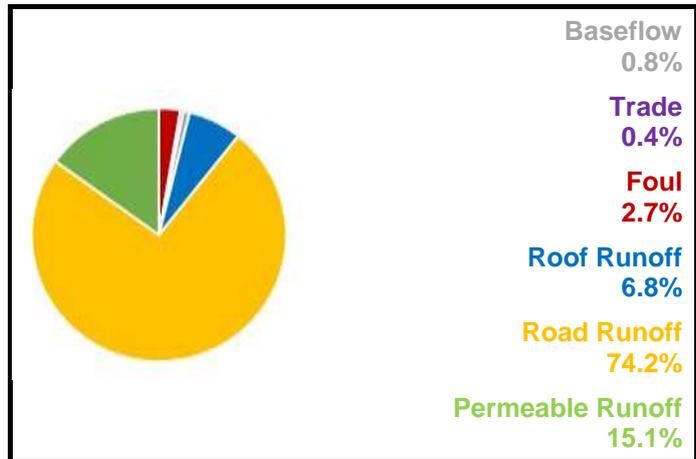
This wastewater system is not hydraulically linked to a waterbody where wastewater operations are contributing to not achieving GES/GEP, therefore the risk is not significant.

Planning Objective 10: Surface Water Management

Our initial high level assessment indicated that there is very significant interaction between surface water flooding and flooding from sewers in this wastewater system. The cause of this localised flooding is the capacity of the drainage network in these areas to convey both wastewater and surface water run-off.

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 96% of the flow in the sewers. The total contribution of foul water from homes is 2.7% with business contributing 0.4%. The baseflow is infiltration from water in the ground and makes up 0.8% 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

Habitat Sites	
Chichester and Langstone Harbours	Phosphate permit review required Overflow Spills
Solent and Dorset Coast	Phosphate permit review required Overflow Spills
Solent Maritime	Phosphate permit review required Overflow Spills

Planning Objective 12: Groundwater Pollution

The risk of Groundwater Pollution is very significant. The wastewater system network of sewers extends across geographical areas that are designated as a Source Protection Zone (SPZ) for water supply. Sewer survey data indicates that parts of the sewer network are in poor condition and might leak sewage.

The primary driver is 'Operational' due to condition of our assets.

Planning Objective 13: Bathing Waters

The designated bathing waters that could be affected by discharges from this wastewater system are shown in Table 6, along with the current classification from the Environment Agency. The risks from this wastewater system on Southsea East bathing water has led to an assessment of moderately significant.

Table 6: Bathing Water annual results

Bathing Waters	Annual Results		
	2017	2018	2019
Southsea East	Sufficient	Excellent	Excellent
Beachlands West	Excellent	Excellent	Excellent
Beachlands Central	Excellent	Excellent	Excellent
Eastney	Excellent	Excellent	Excellent
Eastoke	Excellent	Excellent	Excellent

The primary driver is 'Customer' due to evidence of agriculture affecting the bathing water in this wastewater system.



Planning Objective 14: Shellfish Waters

The discharges from this wastewater system might affect the designated shellfish waters shown in Table 7. The risk of not achieving the faecal standards for shellfish in these designated waters from this wastewater system is moderately significant. This is because the CEFAS classification for the shellfish waters is Long Term Class B.

Table 7: Shellfish Waters linked to wastewater system

Shellfish Waters
Portsmouth Harbour Sw
Langstone Harbour Sw
Chichester Harbour (Emsworth)
Spithead & Stokes Bay

Generic Options Assessment for: Budds Farm Havant (BUDD)



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	1	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	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	2	Hydraulic	2		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	-	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	2	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	1	Quality	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	2	Hydraulic	-		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	2	Operational	-	Other	Study / Investigation		Y	-	Additional data required; hydraulic model development; WQ monitoring and modelling
PO13	Improve Bathing Water Quality	1	Customer	-						
PO14	Improve Shellfish Water Quality	1	Unknown	-						

Budds Farm Havant 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	Denmead	PO1, PO2, PO4, PO5, PO7, PO9, PO10, PO14	BUDD.SC01.1	Natural Flood Management	Study / Investigation: Identify suitable location/s for NFMs on the Southwick estate in the Budds Farm Havant catchment (update hydraulic model).	Yes	Yes	Yes	Moderate Positive ++	£TBC - With Partners	No	Best Value
Control/ Reduce surface water entering the sewers	Havant	PO1, PO2, PO4, PO5, PO7, PO9, PO10, PO14	BUDD.SC01.2	Natural Flood Management	Study / Investigation: Identify suitable location/s for wetland construction/reed beds, in partnership with the EA, in the Havant Area in the Budds Farm Havant catchment (update hydraulic model).	Yes	Yes	Yes	Moderate Positive ++	£TBC - With Partners	No	Best Value
Control/ Reduce surface water entering the sewers	Waterlooville	PO1, PO2, PO4, PO5, PO7, PO9, PO10, PO14	BUDD.SC01.3	SuDS	Study / Investigation: Identify suitable location/s for surface water separation, specifically SuDS, on the new development in the Purbrook area of the Budds Farm Havant catchment (update hydraulic model).	Yes	Yes	Yes	Moderate Positive ++	£TBC - With Partners	No	Best Value
Control/ Reduce surface water entering the sewers	Paulsgrove/Cosham Area	PO1, PO2, PO4, PO5, PO7, PO9, PO10, PO14	BUDD.SC01.4	Natural Flood Management	Attenuation ponds close to the top of Portsdown hill to lessen the flow rate down it.	No						Cost Effective and Do customer support it
Control/ Reduce surface water entering the sewers	Catchment Wide	PO1, PO2, PO4, PO5, PO7, PO9, PO10, PO14	BUDD.SC01.5	SuDS	Study / Investigation: Identify suitable location/s for separating Highways Drainage/use of SuDS from the foul water system in the Budds Farm Havant 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, PO2, PO4, PO5, PO7, PO9, PO10, PO14	BUDD.SC01.6	Rainwater Harvesting	Green roofs across the catchment - particular focus on larger properties.	No						Risk and uncertainty - future resilience
Control/ Reduce surface water entering the sewers	Hotspot 1 - North End Hotspot 2 - Southsea	PO4 and PO7 Flooding	BUDD.SC01.7	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£73,590K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 3 - Tipner	PO4 and PO7 Flooding	BUDD.SC01.8	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£69,645K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 4 - Tipner	PO4 and PO7 Flooding	BUDD.SC01.9	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£580K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotpost 5 - South Hayling Hotpost 6 - Drayton Hotpost 7 - Southsea	PO4 and PO7 Flooding	BUDD.SC01.10	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£19,165K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 8 - Portsea	PO4 and PO7 Flooding	BUDD.SC01.11	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,070K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 9 - Eastney	PO4 and PO7 Flooding	BUDD.SC01.12	Surface Water Separation	DAP Option.	No						
Control/ Reduce surface water entering the sewers	Hotspot 10 - Hayling Island	PO4 and PO7 Flooding	BUDD.SC01.13	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,825K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 11 - Hayling Island	PO4 and PO7 Flooding	BUDD.SC01.14	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£3,200K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 12 - Hayling Island	PO4 and PO7 Flooding	BUDD.SC01.15	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£4,480K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 13 - Hayling Island	PO4 and PO7 Flooding	BUDD.SC01.16	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,045K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 14 - Drayton Hotspot 15 - Cosham Hotspot 16 - Portchester Hotspot 17 - Paulsgrove	PO4 and PO7 Flooding	BUDD.SC01.17	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£29,070K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 18 - Portchester	PO4 and PO7 Flooding	BUDD.SC01.18	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£750K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 19 - Havant and Waterlooville	PO4 and PO7 Flooding	BUDD.SC01.19	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£146,055K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 20 - Waterlooville	PO4 and PO7 Flooding	BUDD.SC01.20	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£147,485K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 21 - Waterlooville	PO4 and PO7 Flooding	BUDD.SC01.21	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£7,225K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 22 - Waterlooville	PO4 and PO7 Flooding	BUDD.SC01.22	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£5,245K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 23 - Waterlooville	PO4 and PO7 Flooding	BUDD.SC01.23	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£4,835K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 24 - Waterlooville	PO4 and PO7 Flooding	BUDD.SC01.24	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,130K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 25 - Waterlooville	PO4 and PO7 Flooding	BUDD.SC01.25	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£25,590K	No	Best Value
Control/ Reduce surface water entering the sewers	Hotspot 26 - Waterlooville	PO4 and PO7 Flooding	BUDD.SC01.26	Surface Water Separation	DAP Option.	Yes	Yes	Yes	Major Positive +++	£139,785K	No	Best Value
Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste)	Hotspot 1 - Baffins Hotspot 2 - Denmead Hotspot 3 - Fratton	PO1- Internal Flooding	BUDD.SC03.1	Customer Education Programme	Enhanced Customer Education Programme to prevent blockages.	Yes	Yes	Yes	Minor Positive +	£115K	Yes	Best Value
Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste)	Hotspot 1 - BUDDs Farm WTW Hotspot 2 - Farlington Hotspot 3 - Havant	PO2- Pollution Risk	BUDD.SC03.2	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	BUDDs FARM HAVANT WTW	PO8 (2050)- Dry Weather Flow	BUDD.SC04.1	Water Efficient Appliance / Measures	Southern Water aims to reduce water consumption to 100 l/h/d by 2040.	No						
Network Improvements (eg increase capacity, storage, conveyance)	48 HIGH STREET PORTSMOUTH MPS	PO1- Internal Flooding	BUDD.PW01.1	Maintenance Programme	Improve resilience: An efficient maintenance programme for pumping stations and/Treatment works to eliminate the risk of a pollution incident due to an operational failure.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Eastney Road	PO1- Internal Flooding	BUDD.PW01.2	Additional Storage	Additional storage for internal flooding at Eastney Road.	No						Do customer support it and Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Westbrook Grove Purbrook Wps, Mainland Drayton WPS, Paulsgrove Wps, Stoke Hayling Island Wps, Henderson Road Eastney WPS, Court Lane Cosham Wps,	PO2- Pollution Risk	BUDD.PW01.3	Maintenance Programme WPS	Improve resilience: An efficient maintenance programme for pumping stations to eliminate the risk of a pollution incident due to an operational failure.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO2- Pollution Risk	BUDD.PW01.4	Additional Storage	Will need to be investigated if not covered in DAP options.	No						Risk and uncertainty - future resilience

Budds Farm Havant 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
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO8 (2050) - Dry Weather Flow	BUDD.PW01.5	Pipe Rehabilitation Programme	Relining/improving structural grades of sewers across the catchment.	No						Technically feasible, Cost Effective and Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO12- Ground Water Pollution	BUDD.PW01.6	Pipe Rehabilitation Programme	Total length of sewer within protection zones-431.	Yes	Yes	Yes	Minor Positive +	£22,930K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO2- Pollution Risk	BUDD.PW01.7	Pipe Rehabilitation Programme	Study / Investigation: Identify suitable location/s in Cosham for sewer relining to prevent saline intrusion (update hydraulic model) Relining/improving structural grades of sewers across the catchment.	Yes	Yes	Yes	Minor Positive +	£315K	No	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO1- Internal Flooding	BUDD.PW01.8	Jetting Programme	Improved Jetting Programme to clear blockages at L4 locations.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO2- Pollution Risk	BUDD.PW01.9	Jetting Programme	Improved Jetting Programme to clear blockages at L4 locations.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	BUDD FC01 - COURT LANE COSHAM CEO	PO5 and PO14 - Spill Assessments	BUDD.PW01.10	Storage	The DAP model has a confidence score of 2 and was last verified in 2014.	Yes	Yes	Yes	Major Positive +++	£2,300K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	BUDD FC02 - PIER ROAD SOUTHSEA WPS	PO5, PO13 and PO14 - Spill Assessments	BUDD.PW01.11	Storage	The DAP model has a confidence score of 2 and was last verified in 2014.	Yes	Yes	Yes	Major Positive +++	£1,915K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	BUDD FC01 No.1 Penrose Close, Portsmouth	PO4 & PO1 - Flooding PO7	BUDD.PW01.12	Upsizing and New Trunk Sewer	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	Hordean	PO1, PO2, PO4, PO5, PO7, PO10, PO14	BUDD.PW01.13	Sewer Upgrades	Sewer upgrades in the Hordean area.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Tipner/Mile End Area	PO1, PO2, PO4, PO5, PO7, PO10, PO14	BUDD.PW01.14	Separate Flows	Create surface water sewer system at Tipner to collect road runoff.	No						Cost Effective and Do customer support it
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 1 - North End Hotspot 2 - Southsea	PO4 and PO7 Flooding	BUDD.PW01.15	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£7,790K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 3 - Tipner	PO4 and PO7 Flooding	BUDD.PW01.16	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£2,150K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 4 - Tipner	PO4 and PO7 Flooding	BUDD.PW01.17	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£530K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotpost 5 - South Hayling Hotpost 6 - Drayton Hotpost 7 - Southsea	PO4 and PO7 Flooding	BUDD.PW01.18	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£2,975K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 8 - Portsea	PO4 and PO7 Flooding	BUDD.PW01.19	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£690K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 9 - Eastney	PO4 and PO7 Flooding	BUDD.PW01.20	Storage Option	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 10 - Hayling Island	PO4 and PO7 Flooding	BUDD.PW01.21	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£765K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 11 - Hayling Island	PO4 and PO7 Flooding	BUDD.PW01.22	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,575K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 12 - Hayling Island	PO4 and PO7 Flooding	BUDD.PW01.23	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,785K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 13 - Hayling Island	PO4 and PO7 Flooding	BUDD.PW01.24	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£580K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 14 - Drayton Hotspot 15 - Cosham Hotspot 16 - Portchester Hotspot 17 - Paulsgrove	PO4 and PO7 Flooding	BUDD.PW01.25	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£8,505K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 18 - Porchester	PO4 and PO7 Flooding	BUDD.PW01.26	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£500K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 19 - Havant and Waterlooville	PO4 and PO7 Flooding	BUDD.PW01.27	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£7,415K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 20 - Waterlooville	PO4 and PO7 Flooding	BUDD.PW01.28	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£9,785K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 21 - Waterlooville	PO4 and PO7 Flooding	BUDD.PW01.29	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£595K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 22 - Waterlooville	PO4 and PO7 Flooding	BUDD.PW01.30	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,510K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 23 - Waterlooville	PO4 and PO7 Flooding	BUDD.PW01.31	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,985K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 24 - Waterlooville	PO4 and PO7 Flooding	BUDD.PW01.32	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£665K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 25 - Waterlooville	PO4 and PO7 Flooding	BUDD.PW01.33	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£3,030K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Hotspot 26 - Waterlooville	PO4 and PO7 Flooding	BUDD.PW01.34	Storage Option	DAP Option.	Yes	Yes	Yes	Major Positive +++	£505K	Yes	Best Value
Improve treatment (capacity and quality at existing works or develop new WTWs)	BUDDS FARM HAVANT WTW	PO2- Pollution Risk	BUDD.PW02.1	Maintenance Programme WTW	Improve resilience: An efficient maintenance programme for the treatment works to eliminate the risk of a pollution incident due to an operational failure.	No						Do customer support it and Risk and uncertainty - future resilience
Improve treatment (capacity and quality at existing works or develop new WTWs)	BUDDS FARM HAVANT WTW	PO8 (2050) - Dry Weather Flow	BUDD.PW02.2	Permit Review	Increase capacity of the Wastewater Treatment Works (WTW).	Yes	Yes	Yes	Minor Positive +	£2,765K	Yes	Best Value
Wastewater Transfer	BUDDS FARM HAVANT WTW	PO8 (2050) - Dry Weather Flow	BUDD.PW03.1	Construct New WPS & Rising Main	No other WTWs are within a 20km radius of BUDDS FARM HAVANT WTW with spare capacity to take DWF.	No						Technically feasible, Cost Effective, Deliver the required outcome, Do customer support it and Risk and uncertainty - future resilience
Mitigate impacts on Air Quality (e.g. Carbon neutrality, noise, odour)						No						Not included in the first round of DWMPs
Improve Land and Soils						No						Not included in the first round of DWMPs
Mitigate impacts on Water Quality						No						
Reduce consequences Properties (e.g. Property Flood Resilience)	Eastney Road	PO1- Internal Flooding	BUDD.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						Environmental risk mitigatable, Do customer support it and Risk and uncertainty - future resilience

Budds Farm Havant 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
Study/ investigation to gather more data	Hotspot 1 - Hilsea Hotspot 2 - Denmead Hotspot 3 - Fratton Hotspot 4 - Southsea	PO1- Internal Flooding	BUDD.OT01.1	Investigation into causes	Study / Investigation: Identify causes of internal flooding incidents (currently unknown).	Yes	Yes	Yes	Minor Positive +	£230K	Yes	Best Value
Study/ investigation to gather more data	Mainland Drayton WPS Hambledon Road, Waterlooville	PO2- Pollution Risk	BUDD.OT01.2	Investigation into causes	Study / Investigation: Identify causes of pollution incidents (currently unknown).	Yes	Yes	Yes	Minor Positive +	£230K	Yes	Best Value
Study/ investigation to gather more data	Catchment Wide	PO8 (2050)- Dry Weather Flow	BUDD.OT01.3	Infiltration Reduction Plan	Relining/improving structural grades of sewers across the catchment.	No						Cost Effective
Study/ investigation to gather more data	Chichester and Langstone Harbours Solent and Dorset Coast Solent Maritime	PO11 - Nutrient Neutrality	BUDD.OT01.4	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	PO12- Ground Water Pollution	BUDD.OT01.5	Study and Investigations	Total length of sewer within protection zones-901.	No						Cost Effective
Study/ investigation to gather more data	Catchment Wide	PO1 - Internal Flooding PO4- 1 in 50 year PO5- Storm Overflow PO7- Hydraulic Overload PO10- Surface Water Management	BUDD.OT01.6	Improve Hydraulic Model	Study / Investigation: Update and re-verify the Budds Farm Havant Hydraulic Model to improve model confidence.	Yes	Yes	Yes	Minor Positive +	£750K	Yes	Best Value
Study/ investigation to gather more data	BUDD FC01 - BUDDS FARM HAVANT WTW	PO5, PO13 and PO14 - Spill Assessments	BUDD.OT01.7	Storage	The DAP model has a confidence score of 2 and was last verified in 2014.	Yes	Yes	Yes	Major Positive +++	£TBC - With Partners	Yes	Best Value
Study/ investigation to gather more data	BUDD FC02 - ST ANDREWS ROAD PORTSMOUTH CSO	PO5 and PO14 - Spill Assessments	BUDD.OT01.8	Storage	The DAP model has a confidence score of 2 and was last verified in 2014.	Yes	Yes	Yes	Major Positive +++	£TBC - With Partners	Yes	Best Value
Study/ investigation to gather more data	BUDD FC03 - MILE END ROAD PORTSMOUTH NO 2 CSO	PO5 and PO14 - Spill Assessments	BUDD.OT01.9	Storage	The DAP model has a confidence score of 2 and was last verified in 2014.	Yes	Yes	Yes	Major Positive +++	£TBC - With Partners	Yes	Best Value
Study/ investigation to gather more data	BUDD FC04 - WIDLEY ROAD PORTSMOUTH CSO	PO5 and PO14 - Spill Assessments	BUDD.OT01.10	Storage	The DAP model has a confidence score of 2 and was last verified in 2014.	Yes	Yes	Yes	Major Positive +++	£TBC - With Partners	Yes	Best Value
Study/ investigation to gather more data	Paulsgrove/Cosham Area	PO1, PO2, PO4, PO5, PO7, PO9, PO10, PO14	BUDD.OT01.11	Surface Water Separation	Study / Investigation: Identify potential to connect surface water runoff directly into the long sea outfall at Eastney, without first taking it to Budds Farm WTW.	Yes	Yes	Yes	Minor Positive +	£TBC - With Partners	No	Best Value
Study/ investigation to gather more data	Paulsgrove/Cosham Area	PO1, PO2, PO4, PO5, PO7, PO9, PO10, PO14	BUDD.OT01.12	Investigations	Further studies and meetings with PCC to identify whether land north of motorway is below mean high water level.	No						Deliver the required outcome
Study/ investigation to gather more data	Old Portsmouth Area	PO1, PO2, PO4, PO5, PO7, PO9, PO10, PO12, PO14	BUDD.OT01.13	Investigations	Investigate option to manage groundwater infiltration in such an old network.	No						Cost Effective, Deliver the required outcome and Risk and uncertainty - future resilience
Study/ investigation to gather more data	Budds Farm Catchment Wide	PO1, PO2, PO4, PO5, PO7, PO9, PO10, PO12, PO14	BUDD.OT01.14	Investigations	Study / Investigation: Develop final effluent recycling plan in the Budds Farm Havant catchment.	Yes	Yes	Yes	Minor Positive +	£TBC - With Partners	No	Best Value
Study/ investigation to gather more data	HAMBLEDON ROAD DENMEAD WPS	PO5 Storm Overflow	BUDD.OT01.15	Storage	Surface water separation to reduce spills from Hambledon Road, Denmead emergency overflow (average cost assumed to reduce CSO spills to Band 0).	Yes	Yes	Yes	Major Positive +++	£TBC - With Partners	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
East Hampshire								
Budds Farm Havant								
BUDD.SC01.9	East Hampshire	Budds Farm Havant	Victory Green	Growth scheme from our Drainage Area Plan (DAP): Surface Water Separation (0.2 Ha) and sustainable drainage systems (SuDS) to attenuate storm runoff (45 m3)	£580K	AMP9	Catchment Partnership Fareham Borough Council Hampshire County Council Havant Borough Council	PO4 PO7
BUDD.SC01.11	East Hampshire	Budds Farm Havant	St. Georges Road	Growth scheme from our Drainage Area Plan (DAP): Surface Water Separation (0.01 Ha) and sustainable drainage systems (SuDS) to attenuate storm runoff (284 m3)	£1,070K	AMP9	Catchment Partnership Fareham Borough Council Hampshire County Council Havant Borough Council	PO4 PO7
BUDD.SC01.13	East Hampshire	Budds Farm Havant	Woodlands Lane, West Lane, Manor Road and Station Road	Growth scheme from our Drainage Area Plan (DAP): Surface Water Separation (0.16 Ha) and sustainable drainage systems (SuDS) to attenuate storm runoff (375 m3)	£1,825K	AMP9	Catchment Partnership Fareham Borough Council Hampshire County Council Havant Borough Council	PO4 PO7
BUDD.SC01.14	East Hampshire	Budds Farm Havant	Flat 8, Bayview Court, 85	Growth scheme from our Drainage Area Plan (DAP): Surface Water Separation (0.85 Ha) and sustainable drainage systems (SuDS) to attenuate storm runoff (1493 m3)	£3,200K	AMP9	Catchment Partnership Fareham Borough Council Hampshire County Council Havant Borough Council	PO4 PO7
BUDD.SC01.15	East Hampshire	Budds Farm Havant	Eastoke Avenue, Haven Road	Growth scheme from our Drainage Area Plan (DAP): Surface Water Separation (0.63 Ha) and sustainable drainage systems (SuDS) to attenuate storm runoff (1816 m3)	£4,480K	AMP9	Catchment Partnership Fareham Borough Council Hampshire County Council Havant Borough Council	PO4 PO7
BUDD.SC01.18	East Hampshire	Budds Farm Havant	Raymond Road, Hamilton Road, Portsvie Avenue	Growth scheme from our Drainage Area Plan (DAP): Surface Water Separation (0.7 Ha) and sustainable drainage systems (SuDS) to attenuate storm runoff (16 m3)	£750K	AMP9	Catchment Partnership Fareham Borough Council Hampshire County Council Havant Borough Council	PO4 PO7
BUDD.SC01.23	East Hampshire	Budds Farm Havant	Anmore Road, Little Mead, Hambledon Road, School Lane etc.	Growth scheme from our Drainage Area Plan (DAP): Surface Water Separation (1.2 Ha) and sustainable drainage systems (SuDS) to attenuate storm runoff (2007 m3)	£4,835K	AMP9	Catchment Partnership Fareham Borough Council Hampshire County Council Havant Borough Council	PO4 PO7
BUDD.SC01.24	East Hampshire	Budds Farm Havant	Hatchmore Road and Inhams Lane	Growth scheme from our Drainage Area Plan (DAP): Surface Water Separation (0.5 Ha) and sustainable drainage systems (SuDS) to attenuate storm runoff (253 m3)	£1,130K	AMP9	Catchment Partnership Fareham Borough Council Hampshire County Council Havant Borough Council	PO4 PO7
BUDD.SC03.1	East Hampshire	Budds Farm Havant	Hotspot 1 - Baffins Hotspot 2 - Denmead Hotspot 3 - Fratton	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	Catchment Partnership Fareham Borough Council Hampshire County Council Havant Borough Council	PO1
BUDD.SC03.2	East Hampshire	Budds Farm Havant	Hotspot 1 - BUDDs Farm WTW Hotspot 2 - Farlington Hotspot 3 - Havant	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	Catchment Partnership Fareham Borough Council Hampshire County Council Havant Borough Council	PO2
BUDD.PW01.6	East Hampshire	Budds Farm Havant	Source Protection Zones - North of system	Sewer Rehabilitation: Targeted CCTV or electroscan surveys to check the integrity of sewers and reline or renew them to reduce the risk of groundwater pollution	£22,930K	AMP9 to AMP10	-	PO12
BUDD.PW01.15	East Hampshire	Budds Farm Havant	Bernards Estate agents LRD, India Arms and Portsmouth Finance Corporation LTD	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)	£7,790K	AMP9	-	PO4 PO7
BUDD.PW01.16	East Hampshire	Budds Farm Havant	Twyford Avenue, Gruneisen Road, Penrose Close, Wilson Road, Winstanley Road, Wilson Road, London Road	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)	£2,150K	AMP9	-	PO4 PO7
BUDD.PW01.17	East Hampshire	Budds Farm Havant	Victory Green	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)	£530K	AMP9	-	PO4 PO7

Reference	River Basin (L2)	Wastewater System (L3)	Location	Option	Indicative Cost	Indicative Timescales	Potential Partners	Applicable Planning Objectives
BUDD.PW01.18	East Hampshire	Budds Farm Havant	Marine Walk, Sea View Road and Elm Grove	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)	£2,975K	AMP9	-	PO4 PO7
BUDD.PW01.19	East Hampshire	Budds Farm Havant	St. Georges Road	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)	£690K	AMP9	-	PO4 PO7
BUDD.PW01.21	East Hampshire	Budds Farm Havant	Woodlands Lane, West Lane, Manor Road and Station Road	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)	£765K	AMP9	-	PO4 PO7
BUDD.PW01.22	East Hampshire	Budds Farm Havant	Flat 8, Bayview Court, 85	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)	£1,575K	AMP9	-	PO4 PO7
BUDD.PW01.23	East Hampshire	Budds Farm Havant	Eastoke Avenue, Haven Road	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)	£1,785K	AMP9	-	PO4 PO7
BUDD.PW01.24	East Hampshire	Budds Farm Havant	Church Road	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)	£580K	AMP9	-	PO4 PO7
BUDD.PW01.25	East Hampshire	Budds Farm Havant	Station Road, Central Road, Drayton Lane, Salisbury Road, Mousehole Road, Newbolt Road, Allaway Avenue, Beverston Road	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)	£8,505K	AMP9	-	PO4 PO7
BUDD.PW01.26	East Hampshire	Budds Farm Havant	Raymond Road, Hamilton Road, Portsvie Avenue	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)	£500K	AMP9	-	PO4 PO7
BUDD.PW01.27	East Hampshire	Budds Farm Havant	Priorsdean Crescent, Brookside Road, Maylands Road, Purbrook Way, Park Lane, New Road, Hulbert Road etc.	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)	£7,415K	AMP9	-	PO4 PO7
BUDD.PW01.28	East Hampshire	Budds Farm Havant	Catherington Lane, London Road, Spring Vale, Portsmouth Road, Dorset Close etc.	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)	£9,785K	AMP9	-	PO4 PO7
BUDD.PW01.29	East Hampshire	Budds Farm Havant	Greenfield Crescent, Erica Close, Erica Way	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)	£595K	AMP9	-	PO4 PO7
BUDD.PW01.30	East Hampshire	Budds Farm Havant	Coralin Grove and Ramblers Way	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)	£1,510K	AMP9	-	PO4 PO7
BUDD.PW01.31	East Hampshire	Budds Farm Havant	Anmore Road, Little Mead, Hambledon Road, School Lane etc.	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)	£1,985K	AMP9	-	PO4 PO7
BUDD.PW01.32	East Hampshire	Budds Farm Havant	Hatchmore Road and Inhams Lane	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)	£665K	AMP9	-	PO4 PO7
BUDD.PW01.33	East Hampshire	Budds Farm Havant	Serpentine Road, Shaftesbury Avenue, Geoffrey Avenue etc.	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)	£3,030K	AMP9	-	PO4 PO7

Reference	River Basin (L2)	Wastewater System (L3)	Location	Option	Indicative Cost	Indicative Timescales	Potential Partners	Applicable Planning Objectives
BUDD.PW01.34	East Hampshire	Budds Farm Havant	Laburnum Road, Regency Gardens and London Road	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)	£505K	AMP9	-	PO4 PO7
BUDD.PW02.2	East Hampshire	Budds Farm Havant	Budds Farm Havant WTW	Increase capacity to allow for planned new development	£2,765K	AMP9	Environment Agency	PO8
BUDD.OT01.1	East Hampshire	Budds Farm Havant	Hotspot 1 - Hilsea Hotspot 2 - Denmead Hotspot 3 - Fratton	Study and Investigation: Investigation to identify the root cause of internal flooding and measures to reduce the number of incidents	£230K	AMP8 to AMP10	-	PO1
BUDD.OT01.2	East Hampshire	Budds Farm Havant	Mainland Drayton WPS Hambledon Road, Waterlooville	Study and Investigation: Investigate pollution incidents to identify root causes and potential measures to resolve them	£230K	AMP8	-	PO2
BUDD.OT01.6	East Hampshire	Budds Farm Havant	System Wide	Improve the Hydraulic Model: Surveys and reverification of model to improve confidence and accuracy	£750K	AMP8	-	PO1 PO4 PO5 PO7 PO10
BUDD.WINEP01.1	East Hampshire	Budds Farm Havant	BUDDS FARM HAVANT SSO	Reduce the number of storm discharges from BUDDS FARM HAVANT SSO by a combination of SuDS and storage options	£293,583k	AMP8 to AMP10	-	PO4 PO5 PO7 PO13 PO14
BUDD.WINEP01.2	East Hampshire	Budds Farm Havant	HENDERSON ROAD EASTNEY CSO	Reduce the number of storm discharges from HENDERSON ROAD EASTNEY CSO by a combination of SuDS and storage options	£17,550K	AMP8	-	PO4 PO5 PO7 PO14
BUDD.WINEP01.3	East Hampshire	Budds Farm Havant	BUDDS FARM HAVANT SE7 CEO	New or improved screen to reduce aesthetics impacts from storm discharges at BUDDS FARM HAVANT SE7 CEO	£130K	AMP12	-	PO5
BUDD.WINEP01.4	East Hampshire	Budds Farm Havant	PIER ROAD SOUTHSEA CSO	Reduce the number of storm discharges from PIER ROAD SOUTHSEA CSO by a combination of SuDS and storage options	£7,170K	AMP8	-	PO4 PO5 PO7 PO14
BUDD.WINEP01.5	East Hampshire	Budds Farm Havant	FOREST ROAD DENMEAD NO 1 CSO	Reduce the number of storm discharges from FOREST ROAD DENMEAD NO 1 CSO by a combination of SuDS and storage options	£1,065K	AMP10	-	PO4 PO5 PO7
BUDD.WINEP01.6	East Hampshire	Budds Farm Havant	MAINLAND DRAYTON SSO	Reduce the number of storm discharges from MAINLAND DRAYTON SSO by a combination of SuDS and storage options	£3,450K	AMP8	-	PO4 PO5 PO7 PO14
BUDD.WINEP01.7	East Hampshire	Budds Farm Havant	KIRTLEY CLOSE DRAYTON CSO	New or improved screen to reduce aesthetics impacts from storm discharges at KIRTLEY CLOSE DRAYTON CSO	£130K	AMP12	-	PO5
BUDD.WINEP01.8	East Hampshire	Budds Farm Havant	FISHERY LANE HAYLING ISLAND NO 2 CEO	New or improved screen to reduce aesthetics impacts from storm discharges at FISHERY LANE HAYLING ISLAND NO 2 CEO	£130K	AMP11	-	PO5
BUDD.WINEP01.9	East Hampshire	Budds Farm Havant	GREEN LANE HAYLING ISLAND CSO	New or improved screen to reduce aesthetics impacts from storm discharges at GREEN LANE HAYLING ISLAND CSO	£130K	AMP11	-	PO5
BUDD.WINEP01.10	East Hampshire	Budds Farm Havant	NORTH END AVENUE PORTSMOUTH CSO	Reduce the number of storm discharges from NORTH END AVENUE PORTSMOUTH CSO by a combination of SuDS and storage options	£975K	AMP8	-	PO4 PO5 PO7 PO14

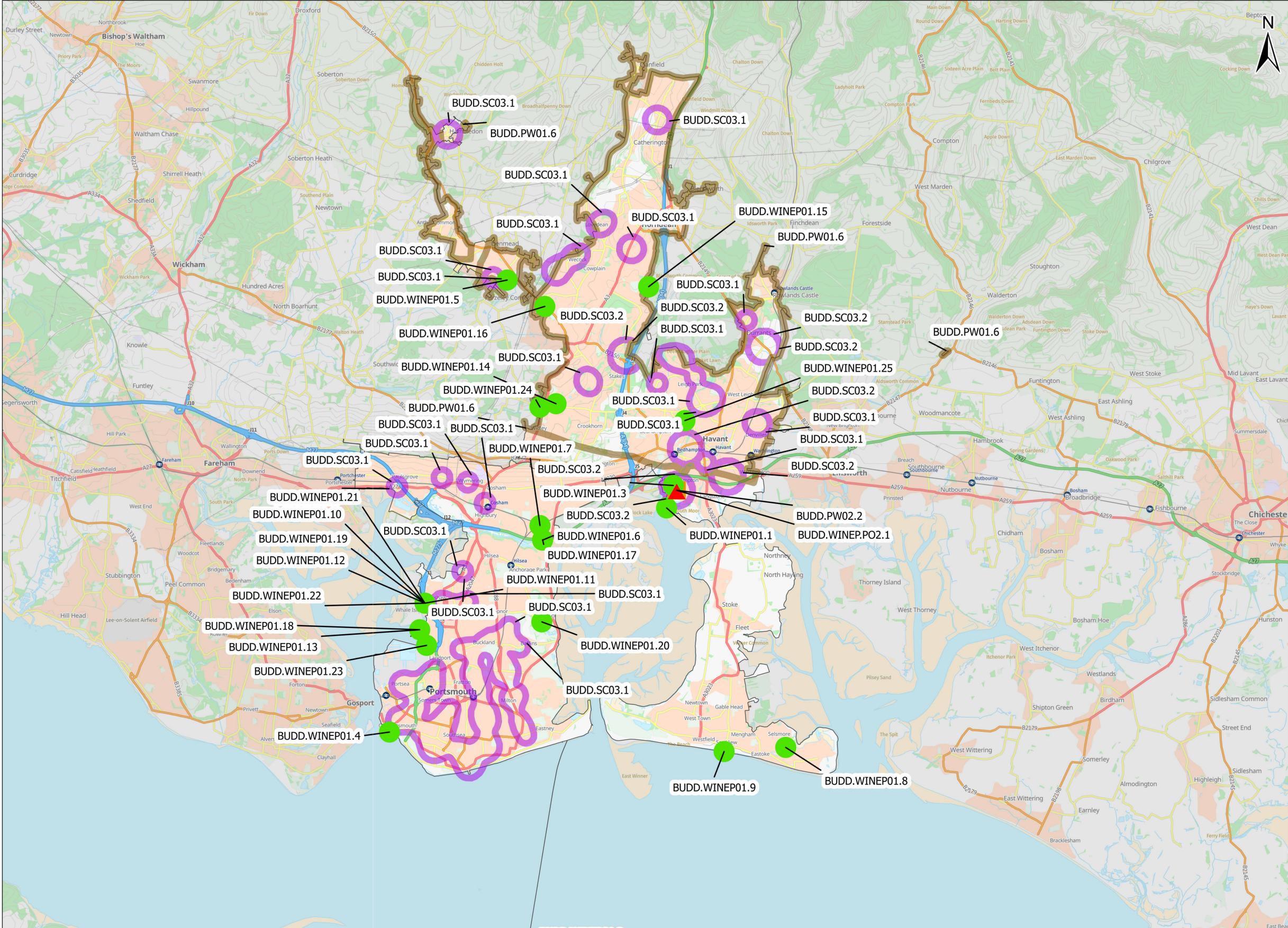
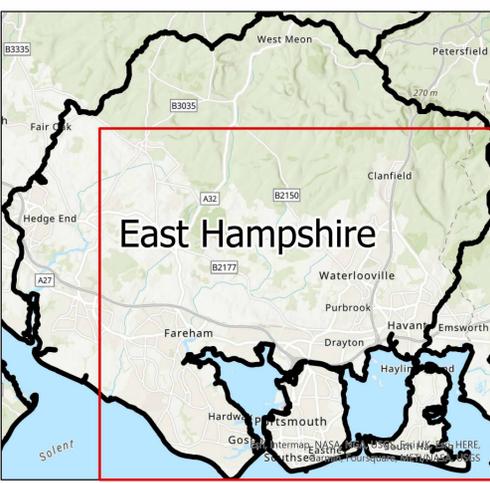
Reference	River Basin (L2)	Wastewater System (L3)	Location	Option	Indicative Cost	Indicative Timescales	Potential Partners	Applicable Planning Objectives
BUDD.WINEP01.11	East Hampshire	Budds Farm Havant	GLADYS AVENUE PORTSMOUTH CSO	Reduce the number of storm discharges from GLADYS AVENUE PORTSMOUTH CSO by creating below-ground storage	£840K	AMP8	-	PO5 PO14
BUDD.WINEP01.12	East Hampshire	Budds Farm Havant	STAMSHAW ROAD PORTSMOUTH CSO	New or improved screen to reduce aesthetics impacts from storm discharges at STAMSHAW ROAD PORTSMOUTH CSO	£130K	AMP11	-	PO5
BUDD.WINEP01.13	East Hampshire	Budds Farm Havant	MILE END ROAD PORTSMOUTH NO 1 CSO	Reduce the number of storm discharges from MILE END ROAD PORTSMOUTH NO 1 CSO by a combination of SuDS and storage options	£2,660K	AMP8	-	PO4 PO5 PO7 PO14
BUDD.WINEP01.14	East Hampshire	Budds Farm Havant	WESTBROOK GROVE PURBROOK CEO	New or improved screen to reduce aesthetics impacts from storm discharges at WESTBROOK GROVE PURBROOK CEO	£130K	AMP12	-	PO5
BUDD.WINEP01.15	East Hampshire	Budds Farm Havant	RAMBLERS WAY WATERLOOVILLE CEO	New or improved screen to reduce aesthetics impacts from storm discharges at RAMBLERS WAY WATERLOOVILLE CEO	£130K	AMP12	-	PO5
BUDD.WINEP01.16	East Hampshire	Budds Farm Havant	HAMBLEDON ROAD WATERLOOVILLE CSO	New or improved screen to reduce aesthetics impacts from storm discharges at HAMBLEDON ROAD WATERLOOVILLE CSO	£130K	AMP12	-	PO5
BUDD.WINEP01.17	East Hampshire	Budds Farm Havant	ST ANDREWS ROAD PORTSMOUTH CSO	Reduce the number of storm discharges from ST ANDREWS ROAD PORTSMOUTH CSO by a combination of SuDS and storage options	£1,825K	AMP8	-	PO4 PO5 PO7 PO14
BUDD.WINEP01.18	East Hampshire	Budds Farm Havant	MILE END ROAD PORTSMOUTH NO 2 CSO	Reduce the number of storm discharges from MILE END ROAD PORTSMOUTH NO 2 CSO by a combination of SuDS and storage options	£2,465K	AMP8	-	PO4 PO5 PO7 PO14
BUDD.WINEP01.19	East Hampshire	Budds Farm Havant	WIDLEY ROAD PORTSMOUTH CSO	Reduce the number of storm discharges from WIDLEY ROAD PORTSMOUTH CSO by a combination of SuDS and storage options	£3,015K	AMP8	-	PO4 PO5 PO7 PO14
BUDD.WINEP01.20	East Hampshire	Budds Farm Havant	BURRFIELDS ROAD PORTSMOUTH CSO	New or improved screen to reduce aesthetics impacts from storm discharges at BURRFIELDS ROAD PORTSMOUTH CSO	£130K	AMP12	-	PO5
BUDD.WINEP01.21	East Hampshire	Budds Farm Havant	NEWCOMEN ROAD PORTSMOUTH CSO	New or improved screen to reduce aesthetics impacts from storm discharges at NEWCOMEN ROAD PORTSMOUTH CSO	£130K	AMP11	-	PO5
BUDD.WINEP01.22	East Hampshire	Budds Farm Havant	WINSTANLEY ROAD PORTSMOUTH CSO	New or improved screen to reduce aesthetics impacts from storm discharges at WINSTANLEY ROAD PORTSMOUTH CSO	£130K	AMP11	-	PO5
BUDD.WINEP01.23	East Hampshire	Budds Farm Havant	HOLBROOK ROAD PORTSMOUTH CSO	Reduce the number of storm discharges from HOLBROOK ROAD PORTSMOUTH CSO by a combination of SuDS and storage options	£2,915K	AMP12	-	PO4 PO5 PO7
BUDD.WINEP01.24	East Hampshire	Budds Farm Havant	LONE VALLEY WATERLOOVILLE CSO	Reduce the number of storm discharges from LONE VALLEY WATERLOOVILLE CSO by a combination of SuDS and storage options	£2,310K	AMP12	-	PO4 PO5 PO7
BUDD.WINEP01.25	East Hampshire	Budds Farm Havant	PRIORSDEAN CRESCENT HAVANT CSO	Reduce the number of storm discharges from PRIORSDEAN CRESCENT HAVANT CSO by a combination of SuDS and storage options	£4,185K	AMP12	-	PO4 PO5 PO7

Drainage and Wastewater Management Plan: Location of Potential Options BUDDS FARM HAVANT

Wastewater system in East Hampshire 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.



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

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 1000019426

Contains OS data © Crown Copyright and database right 2022. Contains data from OS Zoomstack