

Drainage and Wastewater Management Plans (DWMPs)

Investment Needs Workshop for the
Test and Itchen River Basin Catchment

Tuesday 29 March 2022



from
**Southern
Water** 

The logo graphic for Southern Water, featuring three stylized blue waves of varying lengths, with the longest wave on the right.

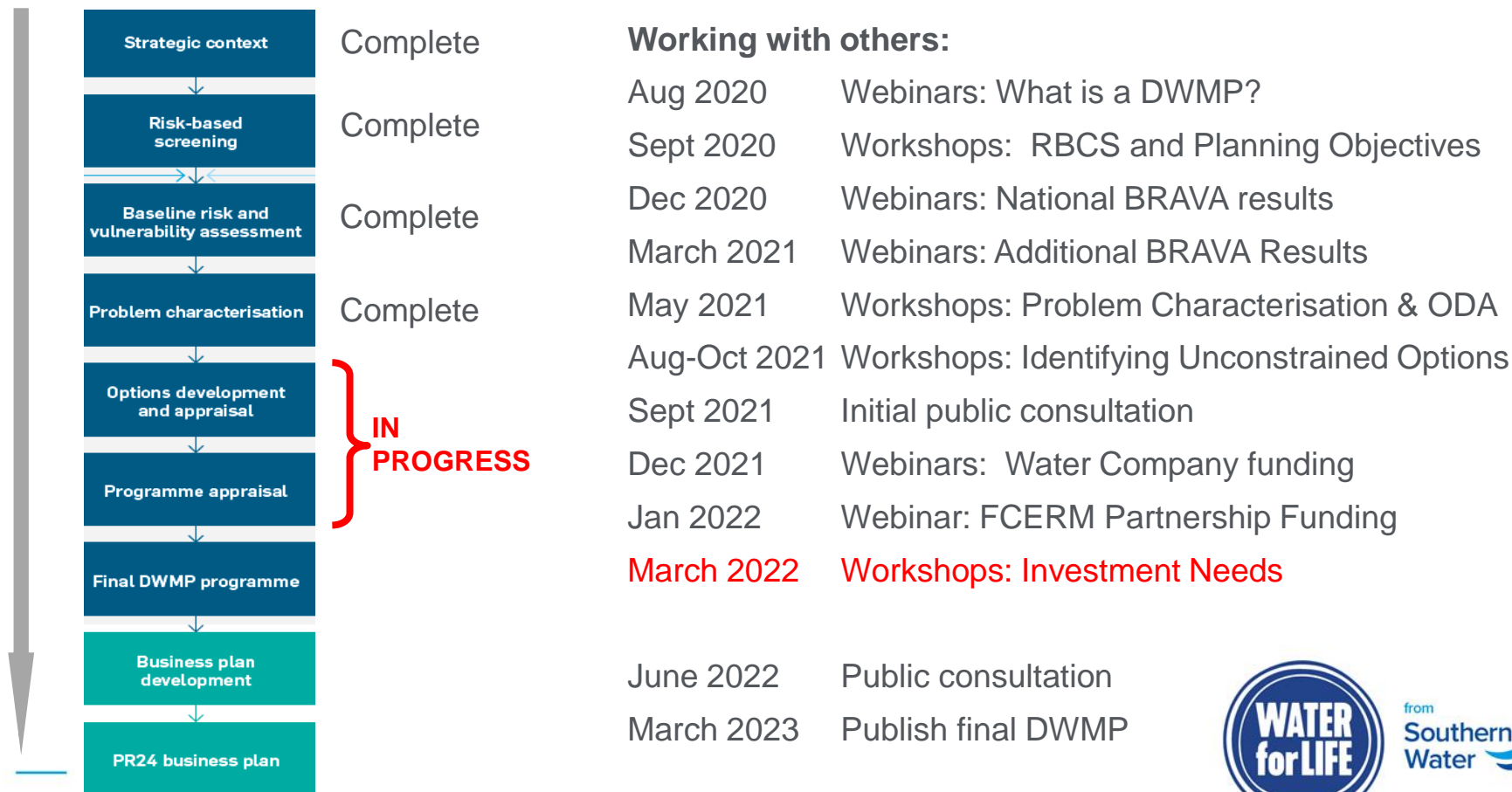
Agenda

1. Welcome and Purpose
2. Presentation: Investment Planning Process
3. Review of Investment Needs
4. Programme Appraisal
5. Delivering the DWMP Investment Needs
6. Next steps

Welcome and Purpose



Our Journey So Far ...



Purpose of Today's Workshop

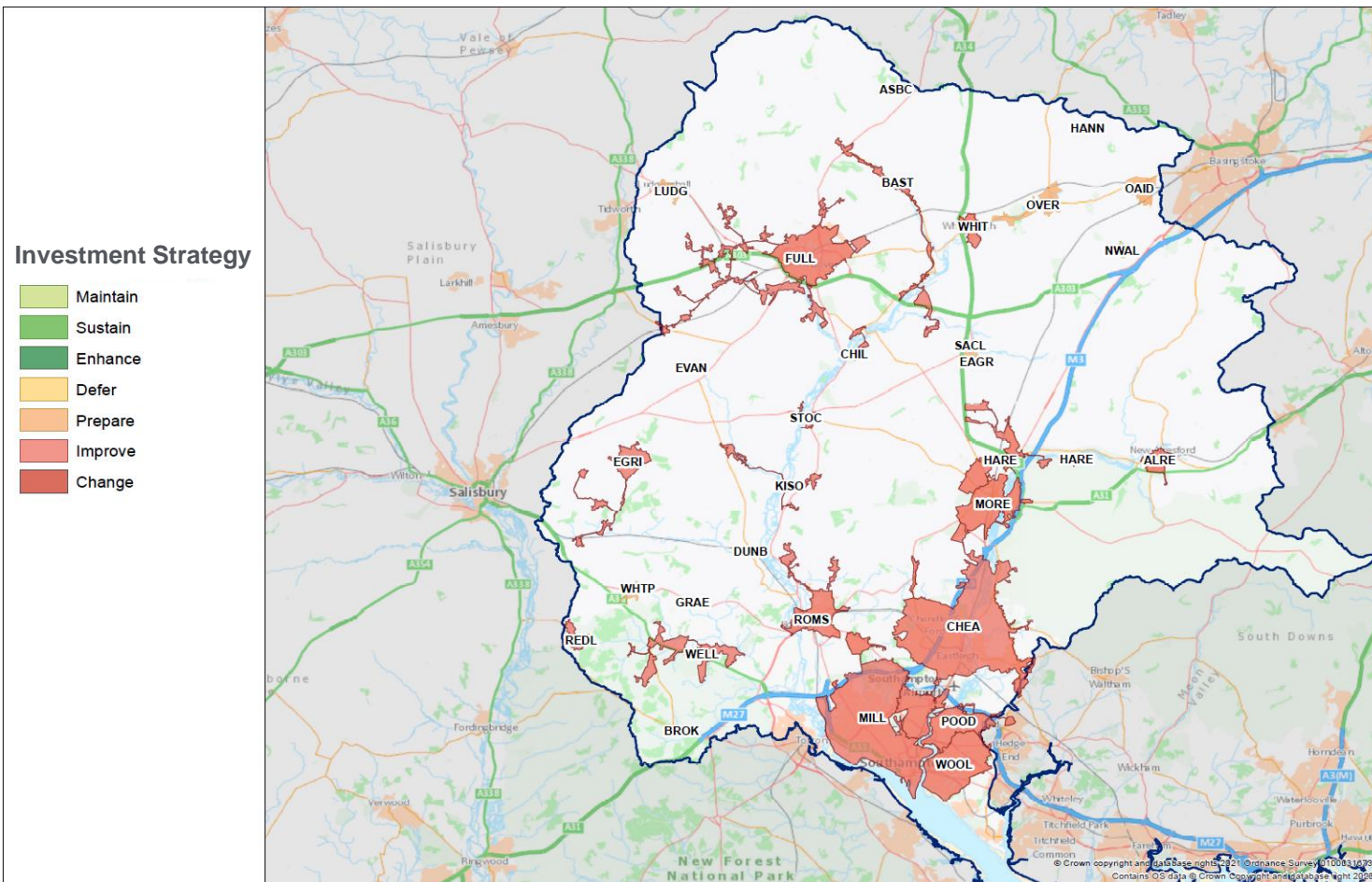
Our aim today is to:

- Discuss and refine the investment needs identified in the draft DWMP
- Flag any missing investment needs
- Discuss prioritisation and timing for investment needs
- Review opportunities to co-create and co-deliver solutions
- Look at total investment needs across the river basin

Presentation: Investment Planning



Wastewater Catchments in the Test and Itchen Catchment



- 31 sewer catchments
- 31 WTWs
- 301 WPS
- 4571km sewers
- 11% area
- 93% homes connected



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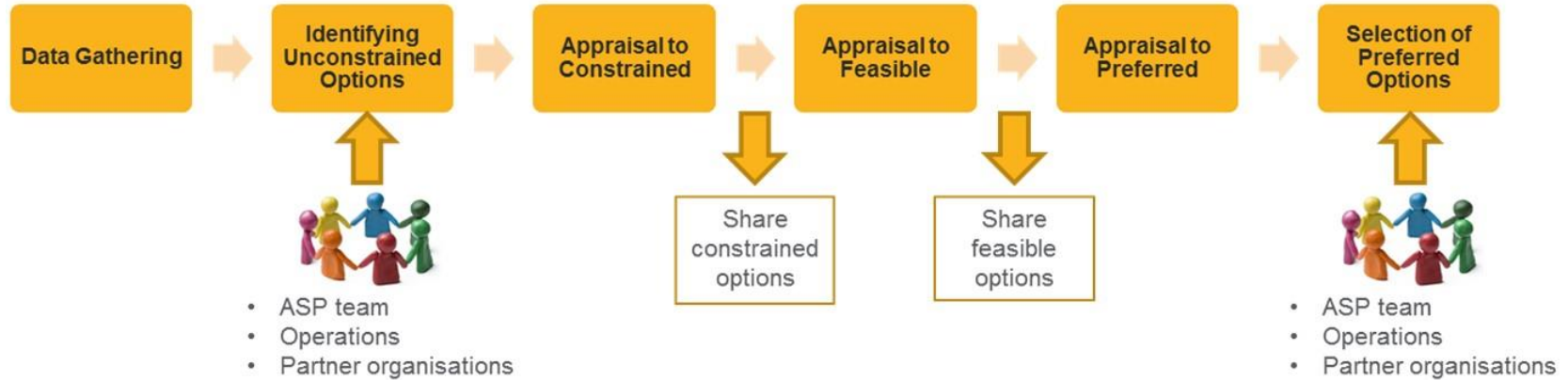
BRAVA Results: Test and Itchen

NF	Not Flagged *
NA	Not Applicable **
0	Not Significant
1	Moderately Significant
2	Very Significant

Wastewater Catchment Reference	Wastewater Catchment Reference	Population Equivalent	Sewer Length (KM)	Planning Objective													
				Internal Sewer Flooding Risk	Pollution Risk	Sewer Collapse Risk	Risk of Sewer Flooding in a 1 in 50 year storm	Storm Overflow performance	Risk of WTW Compliance Failure	Risk of flooding due to Hydraulic Overload	Dry Weather Flow Compliance	Good Ecological Status / Potential	Surface Water Management	Nutrient Neutrality	Groundwater Pollution	Bathing Waters	Shellfish Waters
				2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020
MILL	MILLBROOK	140,442	1,089.551	1	0	0	1	2	0	1	0	0	1	2	0	NA	2
CHEA	CHICKENHALL EASTLEIGH	97,014	922.026	1	1	0	1	1	0	1	0	0	1	2	1	NA	0
POOD	PORTSWOOD	79,637	585.150	1	2	0	1	2	1	1	0	0	1	2	0	NA	0
WOOL	WOOLSTON	68,457	534.664	1	1	1	2	2	0	2	0	0	1	2	0	NA	2
FULL	FULLERTON	55,810	360.434	0	2	0	0	0	0	0	1	0	0	1	2	NA	NA
MORE	MORESTEAD ROAD WINCHESTER	39,351	228.536	1	1	0	1	0	0	1	0	0	0	1	0	NA	NA
ROMS	ROMSEY	19,056	209.598	1	0	0	0	0	0	1	0	0	0	1	0	NA	0
HARE	HARESTOCK	18,094	140.185	0	2	0	1	0	0	0	0	0	0	1	2	NA	NA
ALRE	NEW ALRESFORD	5,878	48.990	0	0	0	1	0	0	2	0	0	0	1	0	NA	NA
OAID	IVY DOWN LANE OAKLEY	5,163	37.145	0	0	0	2	NA	0	0	0	0	0	1	0	NA	NA
WHIT	WHITCHURCH	4,934	32.167	0	0	0	2	0	0	2	0	0	0	1	0	NA	NA
WELL	WEST WELLOW	4,715	80.712	0	1	0	1	2	0	2	0	0	0	2	0	NA	0
OVER	OVERTON	4,704	39.433	0	0	0	0	0	0	0	0	0	0	1	0	NA	NA
LUDC	LUDGERSHALL	4,206	20.662	0	0	0	2	NA	0	0	0	0	0	1	0	NA	NA
BAST	BARTON STACEY	3,437	56.935	2	2	0	2	NA	0	2	0	0	0	1	2	NA	NA
EGRI	EAST GRIMSTEAD	3,147	61.737	0	0	0	1	0	0	0	0	0	0	2	0	NA	NA
KISO	KINGS SOMBORNE	2,342	38.597	0	0	0	1	0	0	1	0	0	0	2	0	NA	NA
SHBE	SHIPTON BELLINGER	1,475	7.502	0	0	0	0	NA	0	0	0	0	0	1	0	NA	NA
CHIL	CHILBOLTON	1,231	12.703	0	0	0	0	0	0	1	0	0	0	1	0	NA	NA
WHTP	WHITEPARISH	1,102	16.144	0	0	0	0	0	0	0	0	0	0	2	0	NA	NA
EAGR	EAST GRATTON	1,009	1.274	0	0	0	0	NA	0	0	0	0	0	2	0	NA	NA
NWAL	NORTH WALTHAM	886	5.687	0	0	0	0	NA	0	0	0	0	0	0	0	NA	NA
REDL	REDLYNCH	855	15.398	0	0	0	0	2	0	1	1	0	0	1	0	NA	NA
STOC	STOCKBRIDGE	824	13.166	0	0	0	0	0	0	0	2	0	0	1	0	NA	0
EVAN	EVANS CLOSE OVER WALLOP	516	-	0	0	0	0	NA	0	0	0	0	0	1	0	NA	NA
DUNB	DUNBRIDGE	107	1.041	0	0	0	0	NA	0	0	0	0	0	1	0	NA	NA
GRAE	GRAEMAR COTTAGES	99	-	0	0	0	0	NA	0	0	0	0	0	1	0	NA	NA
HANN	HANNINGTON	56	-	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
BROK	CANTERTON LANE BROOK	51	0.345	0	0	0	0	NA	2	0	0	0	0	1	0	NA	NA
SACL	SADDLERS CLOSE SUTTON SCOTNEY	50	0.751	0	0	0	0	NA	2	0	0	0	0	1	0	NA	NA
ASBC	BARN CLOSE ASHMANSWORTH	20	0.160	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF

Results shown for 2020 only

Options Development and Appraisal



Test and Itchen River Basin :

Unconstrained Option Development meetings held on:

- | | | | |
|-------------------------|--------------|---------------------------|--------------|
| • Barton Stacey | 19 Aug 2021 | • Morestead Rd Winchester | 14 Oct 2021 |
| • Chickenhall Eastleigh | 30 Sept 2021 | • Portswood | 02 Sept 2021 |
| • Fullerton | 30 Sept 2021 | • Romsey | 14 Oct 2021 |
| • Harestock | 30 Sept 2021 | • Stockbridge | 14 Oct 2021 |
| • Kings Somborne | 14 Oct 2021 | • Whitchurch | 16 Sept 2021 |
| • Millbrook | 02 Sept 2021 | • Woolston | 07 Sept 2021 |



Options Development Process

Unconstrained Options

Source
Pathway
Receptor

Location of Risk	Description of Risk	Unconstrained Option	Option Description	Option Referral	GO Out	L4 Area	Source of the UO
Source Demand Measures							
Control/Reduce surface water entering the sewers							
CHICHESTER WTW Overflow	PO5 - Sewer Overflows Bathing Water 2020 Spilling CSD (also above in-land river spilling threshold) Spill Volume - Xm3	Surface Water Separation	Surface Water Removal (40%) will reduce the total predicted flood volume by 77%.	CHIC.SC01 1	Yes	Chichester WTW and Catchment Wide	EDM data via BRAVA POS Hydraulic Model Data
Pathway (Supply) Measures							
Network Improvements							
CHIC FC01 Summersdale Road	PO4 and PO5 - Growth Projected population for CHIC catchment by 2040: 35550 Development population for CHIC catchment by 2040: 2402 Number of houses to be completed by 2040 at CHIC catchment: 100	Upsizing	Growth solutions developed for the DAP have not been assessed for suitability. Potential erroneous data includes, but is not limited to, developments completed since DAP, change of connection location and development size. The DAP model has a confidence score of 2 and was last verified in 2014 The key risks between DAP and DvMMP models are: model network used, rainfall, ground infiltration and levels files applied Option solution: Upsize pipes	CHIC.PW01 4	Yes		DAP Option Position statement: CHICGR001 Option 1 Plan 11
Receptor Measures							
Mitigate impacts on Water Quality							
CHICHESTER WTW	PO11 - Nutrient Neutrality Chichester and Langstone Harbours, Solent and Dorest Coast, Solent Maritime	River enhancement and mitigation	Reduce consented permit levels for nutrients and solids in the final effluent from treatment works. This would have to be undertaken in agreement with the Environment Agency.	CHIC.FC03 1	Yes	CHICHESTER WTW	
Other							
Study/ investigation to gather more data							
Chichester and Langstone Harbours, Solent and Dorest Coast, Solent Maritime	PO11 - Nutrient Neutrality Chichester and Langstone Harbours, Solent and Dorest Coast, Solent Maritime (Include reason for Banding)	Nutrient Budget for investigations.	Study/ investigation required to understand the impact of wastewater discharges and achieve or prevent deterioration from Natural England's revised Common Standards Monitoring Guidance (CSMG) targets Total Phosphorus (TP) and Total Nitrogen (TN) on the Chichester and Langstone Harbours, Solent and Dorest Coast and Solent Maritime.	CHIC.OT01 2	Yes	Catchment Wide	Natural England supplied 'Water Dependent Habitat Sites' Table via BRAVA PO11

Options identified by:

Technical Team

Previous plans and modelling (e.g. Drainage Area Plans)

Our staff and partners

All options identify the BRAVA Planning Objective risk they address

(this is an extract of the table)

Options Development Process

Feasible Options to Preferred Options

DWMP Data Tables

FEASIBLE OPTION 1	
Drainage Area/Catchment	CHIC - Chichester
Strategic Need	PO5 - Storm Overflow Performance, PO13 - Improve Bathing Water Quality, PO14 - Improve Shellfish Water Quality
DWMP Option Reference	Option Title
CHIC PW01.3	CHIC FC09 - CHICHESTER WTW - Storage
DAP Option Reference	
Scheme Builder Reference	
OPTION DESCRIPTION (include location and main operational features)	
The option is located upstream of CHICHESTER WTW	
The main operational features are: Offline storage of 6539m3 required to achieve a 3 spill 2020 solution Offline storage of 2290m3 required to achieve a 3 spill 2050 solution Offline storage of 13836m3 required to achieve a 10 spill 2020 solution Offline storage of 10736m3 required to achieve a 10 spill 2050 solution Offline storage of 7873m3 required to achieve a 20 spill 2020 solution Offline storage of 4284m3 required to achieve a 20 spill 2050 solution	
SCHEMATIC	
OS map, sewer records (asset miner), general location of storage (Sophie)	
LINKS/ DEPENDENCIES TO OTHER OPTIONS	
No	
SOLUTION RISKS	
The model has a Low risk DAP confidence score of 2 and was last verified in 2014. For the DAP vs DWMP assessment there have been 4 modelling elements deemed to be of a higher risk. The key risks between the DAP and DWMP models are Models Used, FEH Rainfall Used, GI File Used, Levels Applied mAD.	
There is an acceptable confidence between spill frequency measured by EDM sensor and model data. Therefore, further investigation into data quality is recommended.	
SOLUTION BENEFITS	
The solution addresses all the planning objectives mentioned in the strategic need.	

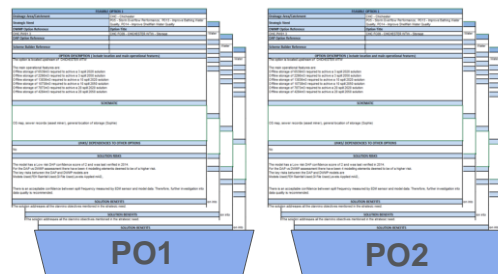
Each Wastewater System may have multiple feasible options.

Some Options may:

- address multiple BRAVA risks
- need to be combined to fully mitigate a BRAVA risk

“Preferred Options” are best value options

“Baskets of Measures” are created for the preferred option where more than one feasible option is required to reduce the risk for a planning objective to band 0



Outputs from Options Development Stage

- Table of Investment Needs for the Wastewater Catchment
- Each Investment Need assessed in terms of risk band reduction

Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners

Definitions:

- Location: Specific known location of the risk e.g. hotspot, high spilling CSO
- Issues: Description of the issue the option is tackling e.g. flooding
- Indicative Cost: Our initial estimate of the investment needed to deliver the option
- Indicative Timescale: Based upon when the risk occurs (now or in the future)
- Potential Partners: Opportunities to work with others



Investment Needs – Portswood (POOD) – page 1 of 4

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		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	POOD.SC 03.4	Midanbury Portswood Bitterne	Flooding	Enhanced Customer Education Programme, particularly the large student population, to prevent blockages in this catchment	£120k	Short to Medium	SCC UoS
2	POOD.PW 01.7	Portswood WTW	Flooding	Enhanced maintenance: Review operation and maintenance of Portswood WTW to improve resilience	£7,000k	Short	
3	POOD.PW 01.18	Midanbury Portswood Bitterne	Flooding	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall.	£240k	Short to Medium	
4	POOD.SC 03.5	Bassett, Harefield, Townhill Park	Pollution Risk	Enhanced Customer Education Programme to prevent pollution incidents	£120k	Short to Medium	
5	POOD.PW 01.17	Harefield	Pollution Risk	Targeted CCTV/Electroscan surveys and proactive sewer rehabilitation to reduce pollution risk.	£60k	Short to Medium	
6	POOD.PW 01.19	Bassett, Harefield, Townhill Park	Pollution Risk	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall.	£80k	Short to Medium	



Investment Needs – Portswood (POOD) – page 2 of 4

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		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
7	POOD.PW 01.20	Glen Eyre Road	Flooding (Growth)	Upsize and offline storage	£7,000k	Medium	
8	POOD.PW 01.21	Meggesson Avenue	Flooding (Growth)	New sewer and manhole	£490k	Medium	
9	POOD.PW 01.22	Portwood Cricket Ground	Flooding (Growth)	Online tank, new sewer and manhole	£445k	Medium	
11	POOD.PW 01.24	Burgess Road	Flooding (Growth)	Online storage	£325k	Medium	
12	POOD.OT 01.2	Portswood WTW	Storm Overflows	Surface water separation to reduce spills from Portswood WTW (average cost assumed to reduce CSO spills to Band 0)	~£1,000k	Short to Medium	SCC
13	POOD.OT 01.3	Sirdar Road Southampton CSO	Storm Overflows	Surface water separation to reduce spills from Sirdar Road Southampton CSO (average cost assumed to reduce CSO spills to Band 0)	~£1,000k	Short to Medium	SCC
14	POOD.PW 02.1	Portswood WTW	WTW Compliance	Increase capacity of the Wastewater Treatment Works to meet compliance.	£5,000k	Short to Medium	EA

Investment Needs – Portswood (POOD) – page 3 of 4

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		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
15	POOD.OT 01.4	Solent and Dorset Coast, Solent & Southampton Water	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	~£76k	Short	SCC EA NE
16	POOD.OT 01.5	Catchment Wide	Flooding	Study / Investigation: Build and verify the Portswood Hydraulic Model to improve model confidence	£175k	Short to Medium	
17	POOD.SC 01.3	Catchment Wide	Flooding	Study / Investigation: Identify suitable locations for SuDS / attenuation opportunities across the catchment working in partnership with Southampton City Council and Hampshire Highways.	£TBC	Short to Medium	SCC HH
18	POOD.SC 01.4	University of Southampton Campus / Location of halls of residences	Flooding	Study / Investigation: Identify suitable location/s in the Portswood Catchment for installation of green roofs on larger property (update hydraulic model)	£TBC	Short to Medium	SCC UoS

Investment Needs – Portswood (POOD) – page 4 of 4

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		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
19	POOD.PW 01.4	North of Catchment / Upstream Landowners	Flooding	Study / Investigation: Identify suitable locations to the north of the catchment and upstream of the catchment for NFMs (update hydraulic model)	£TBC	Medium to Long	SCC Defence Estates
20	POOD.OT 01.1	Catchment Wide	Flooding	Study / Investigation: Sharing of flood data to ensure flooding locations identified by SWS and SCC match	£TBC	Short	SCC
21	POOD.PW 02.2	Portswood WTW	Nutrients	Study / Investigation: Identify whether N removal at Portswood WTW is a feasible option	£TBC	Long	
22	POOD.PW 02.3	Portswood WTW	Nutrients	Study / Investigation: Identify whether Portswood WTW can be converted to a terminal pumping station, with the effluent flows being transferred to CHEA WTW - a solution for nutrients	£TBC	Long	
23		Riverside Park	Nutrients	Study / Investigation: Identify potential opportunities to designate Riverside Park an inland bathing water	£TBC	Medium to Long	SCC EA

Other Issues from the DWMP Feedback / Input Log

- Tide locking along west side of catchment impacting surface water outfalls – this will need investigating during cycle 2 of the DWMP
- Close links with Water for Life Hampshire and the WRMP on water reuse / repurposing – in hand but needs more join up
- Involving Highway Authorities in addressing road run off for the DWMP process



Questions

Review of Investment Needs

Risks in the Test and Itchen River Basin Catchment

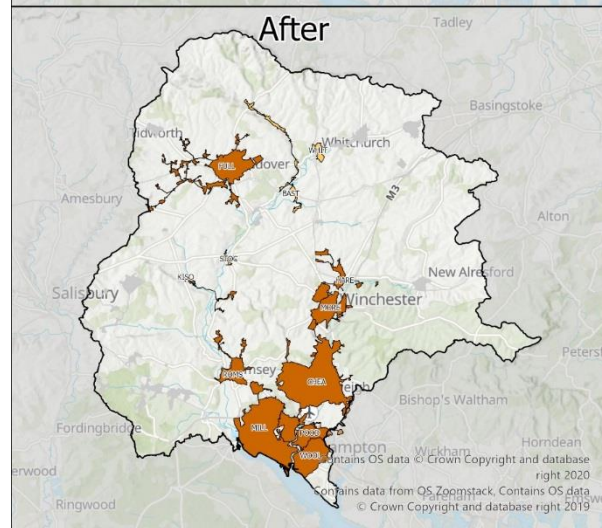
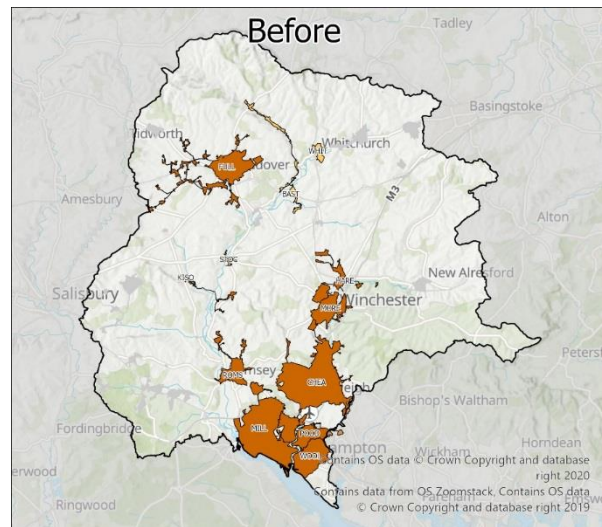
BRAVA Results indicated the main risks in this river basin catchment are for the following Planning Objectives (PO):

- Nutrients (PO11)
- Flooding (PO7)
- Pollution (PO2)

PO11 – Nutrient Neutrality

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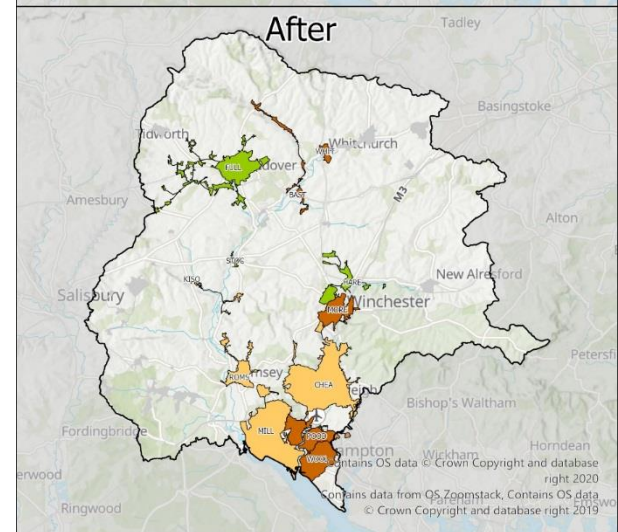
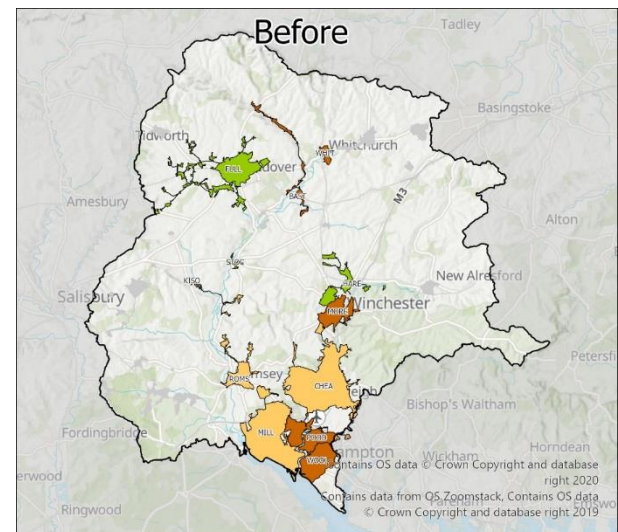
Test and Itchen	PO11	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
Barton Stacey			
BAST.OT01.3 - Nutrient Budget	£76 K	1	1
Chickenhall Eastleigh			
CHEA.OT01.3 - Nutrient Budget	£76 K	2	2
Fullerton			
FULL.OT01.5 - Nutrient Budget	£76 K	2	2
Harestock			
HARE.OT01.3 - Nutrient Budget	£76 K	2	2
Kings Somborne			
KISO.OT01.1 - Nutrient Budget	£76 K	2	2
Millbrook			
MILL.OT01.4 - Nutrient Budget	£76 K	2	2
Morestead Road Winchester			
MORE.OT01.3 - Nutrient Budget	£76 K	2	2
Portswood			
POOD.OT01.4 - Nutrient Budget	£76 K	2	2
Romsey			
ROMS.OT01.2 - Nutrient Budget	£76 K	2	2
Stockbridge			
STOC.OT01.2 - Nutrient Budget	£76 K	1	1
STOC.OT01.3 - Improve Hydraulic Model	£300 K		
Whitchurch			
WHIT.OT01.1 - Nutrient Budget	£76 K	1	1
Woolston			
WOOL.OT01.4 - Nutrient Budget	£76 K	2	2



PO7 – Hydraulic Overload

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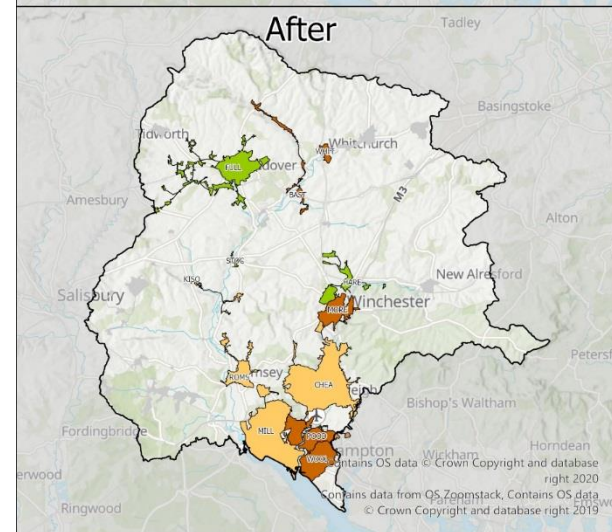
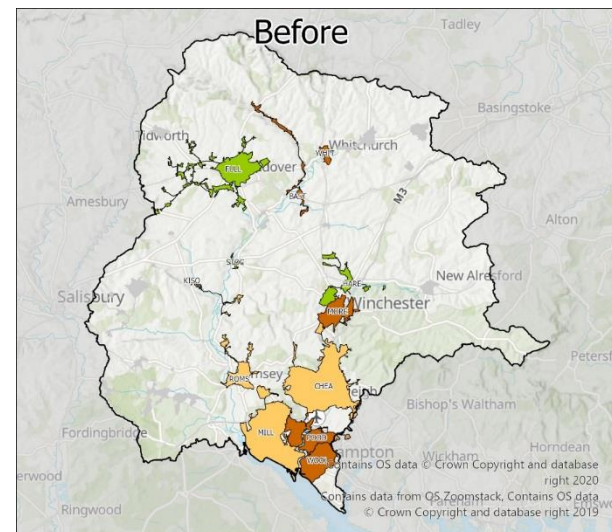
Test and Itchen		PO7	Hydraulic Overload - Residual Properties			BRAVA (2050)	
Option Type		Est Cost(£)	Solution Reduction	Total	Reduction Req'd for Band 0	Before	After
Barton Stacey							
	BAST.OT01.5 - Improve Hydraulic Model	£225 K	0	106	103	2	2
Chickenhall Eastleigh							
	CHEA.OT01.5 - Improve Hydraulic Model	£200 K	0	341	242	1	1
Fullerton						0	0
Harestock						0	0
Kings Somborne							
	KISO.OT01.2 - Improve Hydraulic Model	£300 K	0	0	N/A	1	1
Millbrook							
	MILL.OT01.5 - Improve Hydraulic Model	£225 K	0	1051	896	1	1
Morestead Road Winchester							
	MORE.PW01.5 - Sewer upsize and reduce storm sewer size	£TBC K	1	310	268	2	2
	MORE.PW01.6 - Sewer upsize and reduce storm sewer size	£TBC K	1	310	268		
	MORE.PW01.7 - Sewer upsize and reduce storm sewer size	£TBC K	1	310	268		
	MORE.PW01.8 - Sewer upsize and reduce storm sewer size	£TBC K	1	310	268		
	MORE.PW01.9 - New weir, new storm sewer, storage and pump return	£1153 K	1	310	268		
	MORE.PW01.10 - Sewer upsize and reduce foul sewer size	£232 K	1	310	268		
	MORE.PW01.11 - New PS at Pitt Manor and Bushfield Camp with new rising main, new foul sewer	£973 K	1	310	268		
	MORE.PW01.12 - Storage of 1763m3	£1723 K	1	310	268		
	MORE.OT01.4 - Improve Hydraulic Model	£200 K	0	310	268		
Portsmouth							
	POOD.PW01.20 - Upsize and offline storage	£7003 K	7	1068	991	2	2
	POOD.PW01.21 - New sewer and manhole	£490 K	7	1068	991		
	POOD.PW01.22 - Online tank, new sewer and manhole	£4452 K	7	1068	991		
	POOD.PW01.23 - New sewer	£2 K	0	1068	991		
	POOD.PW01.24 - Online storage	£325 K	7	1068	991		
Romsey							
	ROMS.OT01.3 - Improve Hydraulic Model	£300 K	0	57	33	1	1
Stockbridge						0	0
Whitchurch							
	WHIT.OT01.2 - Improve Hydraulic Model	£225 K	0	725	720	2	2



PO7 – Hydraulic Overload

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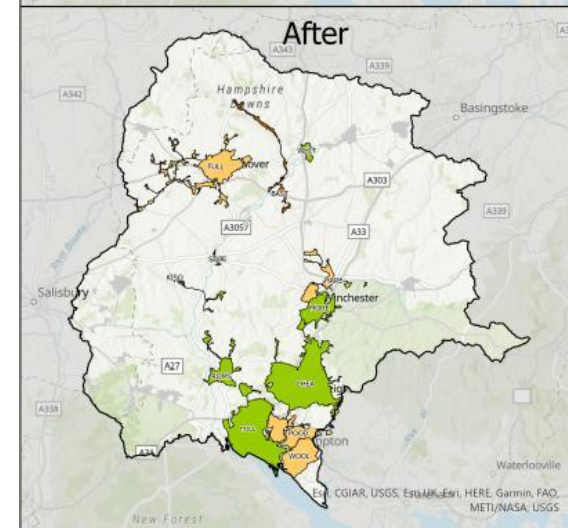
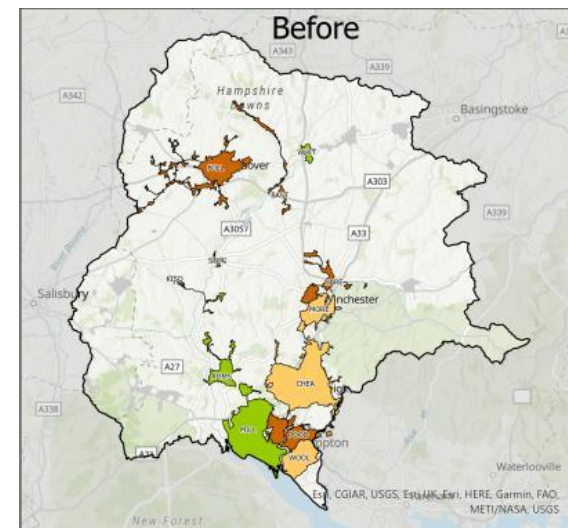
Test and Itchen	PO7	Hydraulic Overload - Residual Properties			BRAVA (2050)	
Option Type	Est Cost(£)	Solution Reduction	Total	Reduction Req'd for Band 0	Before	After
Woolston						
WOOL.PW02.2 - Storage	£594 K	42	3289	3214	2	2
WOOL.PW02.3 - Storage	£2214 K	155	3289	3214		
WOOL.PW02.4 - Storage	£2363 K	220	3289	3214		
WOOL.PW02.5 – Storage	£2157 K	180	3289	3214		
WOOL.PW02.6 – Storage	£2781 K	105	3289	3214		
WOOL.PW02.7 – Storage	£3011 K	148	3289	3214		
WOOL.PW02.8 – Storage	£822 K	79	3289	3214		
WOOL.PW02.9 – Storage	£1464 K	247	3289	3214		
WOOL.PW02.10 – Storage	£576 K	6	3289	3214		



PO2 – Pollution Risk

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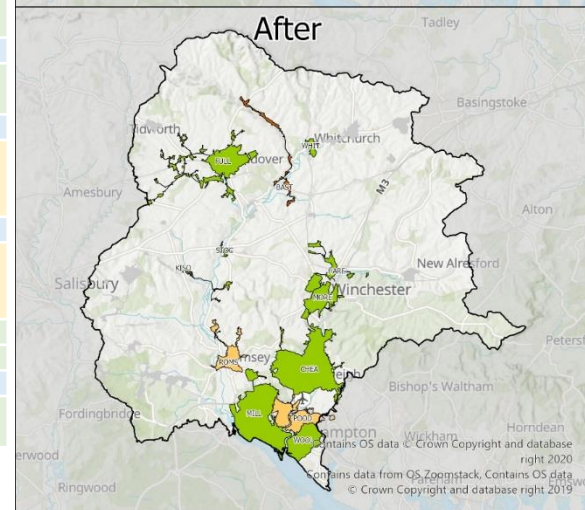
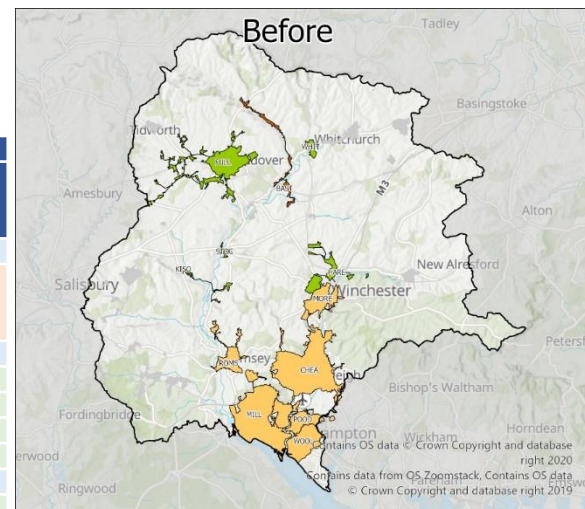
Test and Itchen	PO2	Pollution Incidents (Nr in 3yrs)			BRAVA	
Option Type	Est Cost(£)	Solution Reduction	Total	Reduction Req'd for Band 0	Before	After
Barton Stacey						
BAST.PW01.6 - Maintenance Programme WPS	£233 K	2	3	3	2	2
BAST.PW01.8 - Pipe Rehabilitation Programme	£422 K	0.5				
Chickenhall Eastleigh						
CHEA.SC03.2 - Customer Education Programme	£116 K	1	13	7	1	0
CHEA.PW01.3 - Maintenance Programme WPS	£931 K	5				
CHEA.PW01.9 - Jetting Programme	£34 K	1				
CHEA.PW02.1 - Maintenance Programme WTW	£6970 K	1				
Fullerton						
FULL.PW01.2 - Maintenance Programme WPS	£233 K	2	7	5	2	1
Harestock						
HARE.SC03.2 - Customer Education Programme	£116 K	1	3	2	2	1
HARE.PW01.3 - Jetting Programme	£11 K	1				
HARE.PW02.1 - Maintenance Programme WTW	£6970 K	1				
HARE.OT01.1 - Pollution Investigation	£232 K	0				
Kings Somborne						
Millbrook						
Morestead Road Winchester						
MORE.PW01.2 - Maintenance Programme WPS	£233 K	1	2	1	1	0
Portswood						
POOD.SC03.5 - Customer Education Programme	£116 K	2	11	7	2	1
POOD.PW01.17 - Pipe Rehabilitation Programme	£422 K	1				
POOD.PW01.19 - Jetting Programme	£80 K	2				
Romsey						
Stockbridge						
STOC.PW01.2 - Improved Jetting Programmed		-	0	-	0	0
Whitchurch						
Woolston						
WOOL.SC01.2 - Customer Education Programme	£116 K	1	6	3	1	1
WOOL.PW01.16 - Pipe Rehabilitation Programme	£422 K	1	6	3		
WOOL.PW01.20 - Jetting Programme	£34 K	1	6	3		



PO1 – Internal Flooding

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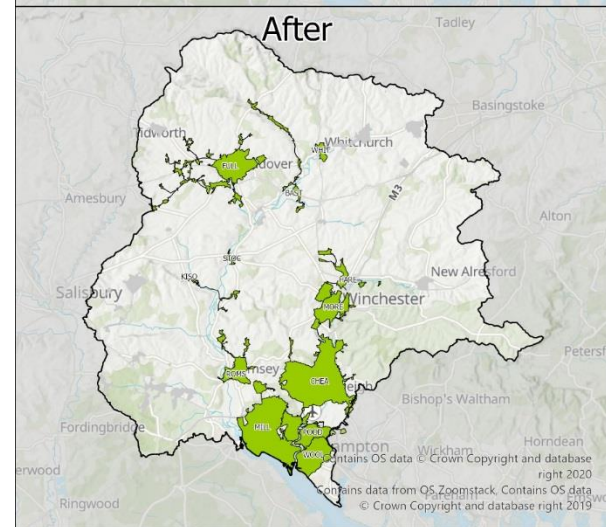
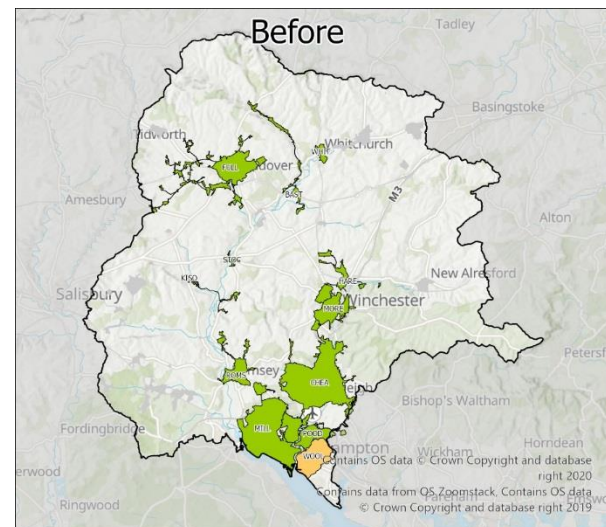
Test and Itchen	PO1	Internal Flood Incidents (Nr in 3yrs)			BRAVA	
Option Type	Est Cost(£)	Solution Reduction	Total	Reduction Req'd for Band 0	Before	After
Barton Stacey						
BAST.SC03.1 - Customer Education Programme	£116 K	1				
BAST.PW01.5 - Jetting Programme	£23 K	1	4	4	2	2
BAST.PW01.7 - Maintenance Programme	£233 K	1				
Chickenhall Eastleigh						
CHEA.SC03.1 - Customer Education Programme	£116 K	4	22	3	1	0
Fullerton					0	0
Harestock					0	0
Kings Somborne					0	0
Millbrook						
MILL.SC03.1 - Customer Education Programme	£116 K	9	43	12	1	0
MILL.PW01.12 - Jetting Programme	£377 K	9				
Morestead Road Winchester						
MORE.SC03.1 - Customer Education Programme	£116 K	3	11	3	1	0
MORE.PW01.3 - Jetting Programme	£103 K	3				
Portswood						
POOD.SC03.4 - Customer Education Programme	£116 K	6	33	18	1	1
POOD.PW01.7 - Maintenance Programme	£6970 K	1				
POOD.PW01.18 - Jetting Programme	£240 K	6				
Romsey						
ROMS.SC03.1 - Customer Education Programme	£116 K	2	9	5	1	1
ROMS.PW01.1 - Jetting Programme	£91 K	2				
ROMS.OT01.3 - Improve Hydraulic Model	£300 K	0				
Stockbridge					0	0
Whitchurch					0	0
Woolston						
WOOL.SC01.1 - Customer Education Programme	£116 K	3	20	6	1	0
WOOL.PW01.15 - Jetting Programme	£137 K	3				



PO3 – Sewer Collapse

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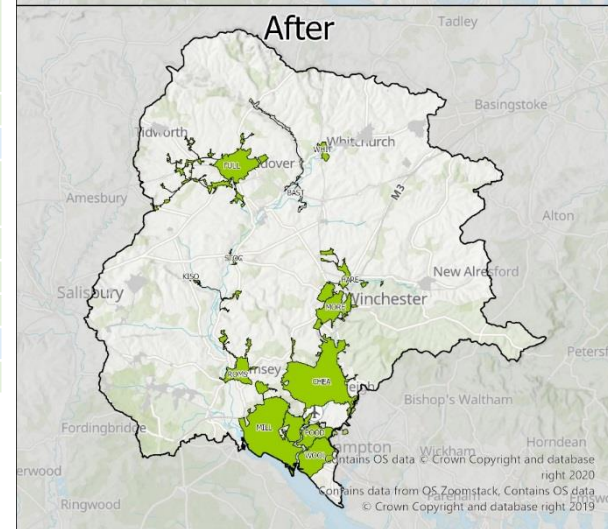
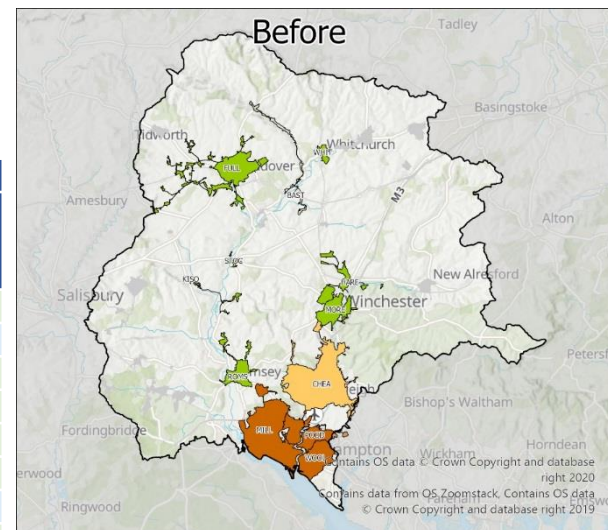
Test and Itchen	PO3	Collapses and Bursts (Nr)			BRAVA	
Option Type	Est Cost(£)	Solution Reduction	Total	Reduction Req'd for Band 0	Before	After
Barton Stacey					0	0
Chickenhall Eastleigh					0	0
Fullerton					0	0
Harestock					0	0
Kings Somborne					0	0
Millbrook					0	0
Morestead Road Winchester					0	0
Portswood					0	0
Romsey					0	0
Stockbridge					0	0
Whitchurch					0	0
Woolston						
WOOL.PW01.3 - Pipe Rehabilitation Programme	£634 K	5	10	1	1	0



PO5 – Storm Overflow

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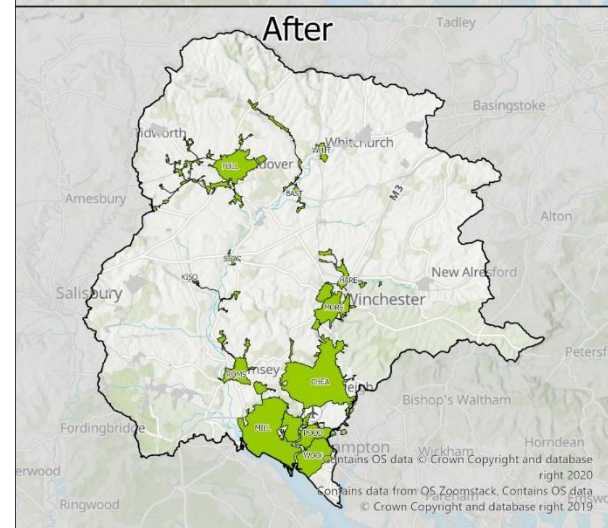
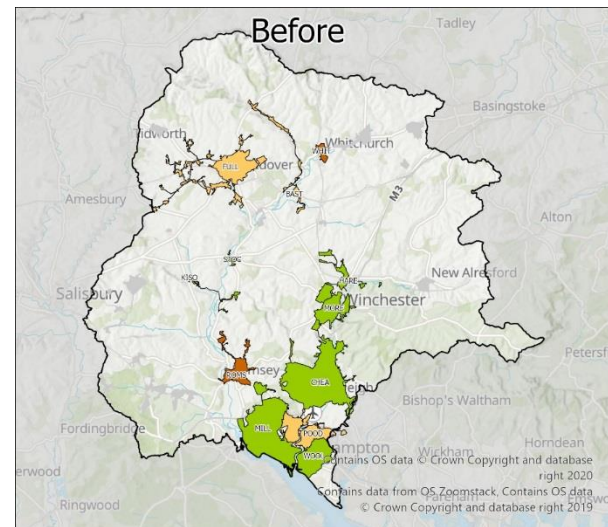
Test and Itchen	PO5	BRAVA (2050)	
Option Type	Est Cost (£)	Before	After
Barton Stacey		0	0
Chickenhall Eastleigh			
	CHEA.OT01.6 - Storage	1	0
Fullerton		0	0
Harestock		0	0
Kings Somborne		0	0
Millbrook			
	MILL.PW01.25 - Storage (FC01 - BLECHYNDEN TERRACE SOUTHAMPTON CSO)	2	0
	MILL.PW01.26 - Storage (FC02 - MILLBROOK WTW)		
Morestead Road Winchester		0	0
Portwood			
	POOD.OT01.2 - Storage	2	0
	POOD.OT01.3 - Storage		
Romsey		0	0
Stockbridge		0	0
Whitchurch		0	0
Woolston			
	WOOL.OT01.7 - Storage (FC01 - WOOLSTON WTW)	2	0



PO6 – WTW Compliance Failure

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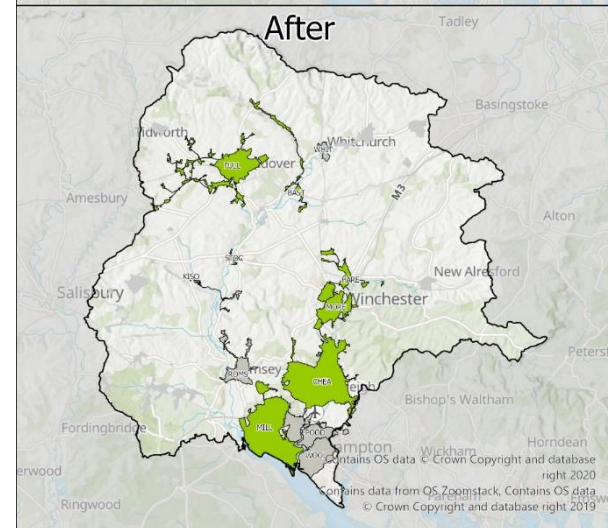
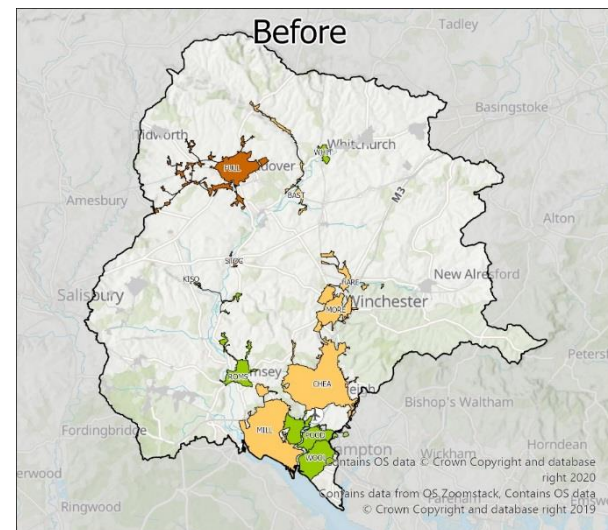
Test and Itchen	PO6	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
Barton Stacey			
BAST.PW02.2 - Increase Capacity	£731 K	1	0
Chickenhall Eastleigh		0	0
Fullerton			
FULL.PW02.1 - Increase Capacity	£35098 K	1	0
Harestock		0	0
Kings Somborne		0	0
Millbrook		0	0
Morestead Road Winchester		0	0
Portswood			
POOD.PW02.1 - Increase Capacity	£4719 K	1	0
Romsey			
ROMS.PW02.1 - Increase Capacity	£2009 K	2	0
Stockbridge		0	0
Whitchurch			
WHIT.PW02.1 - Increase Capacity	£1148 K	2	0
Woolston		0	0



PO8 – DWF Compliance

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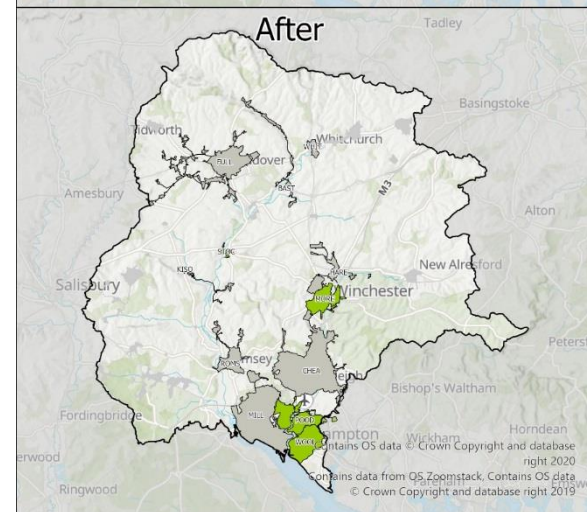
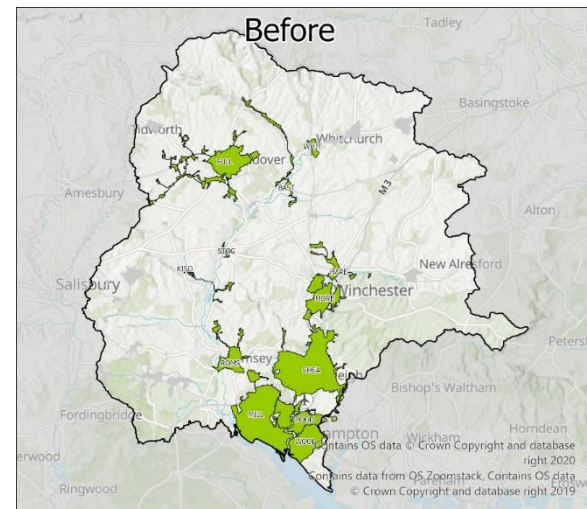
Test and Itchen		PO8	BRAVA (2050)	
Option Type		Est Cost (£)	Before	After
Barton Stacey				
	BAST.PW02.3 - Increase DWF Capacity	£1543 K	1	0
Chickenhall Eastleigh				
	CHEA.PW02.2 - Increase DWF Capacity	£2570 K	1	0
Fullerton				
	FULL.PW02.2 - Increase DWF Capacity	£2968 K	2	0
Harestock				
	HARE.PW02.2 - Increase DWF Capacity	£1507 K	1	0
Kings Somborne			0	0
Millbrook				
	MILL.PW02.4 - Increase DWF Capacity	£2553 K	1	0
Morestead Road Winchester				
	MORE.PW02.1 - Increase DWF Capacity	£1730 K	1	0
Portwood			0	0
Romsey			0	0
Stockbridge				
	STOC.PW02.1 - Increase DWF Capacity	£1500 K	2	0
Whitchurch			0	0
Woolston			0	0



PO9 – Good Ecological Status

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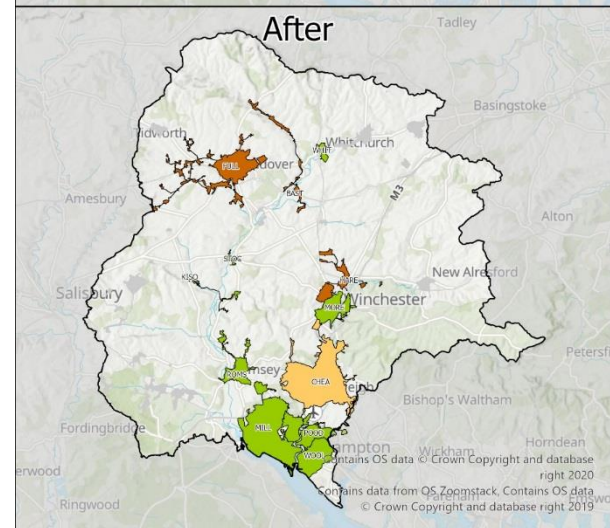
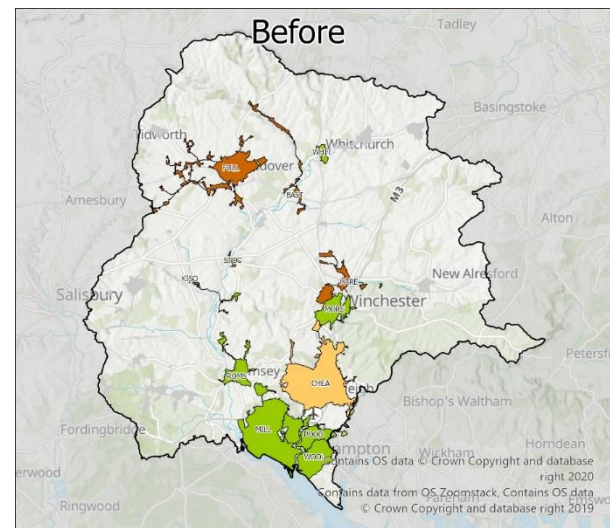
Test and Itchen	PO9	BRAVA	
Option Type	Est Cost (£)	Before	After
Barton Stacey		0	0
Chickenhall Eastleigh		0	0
Fullerton		0	0
Harestock		0	0
Kings Somborne		0	0
Millbrook		0	0
Morestead Road Winchester		0	0
Portswood		0	0
Romsey		0	0
Stockbridge		0	0
Whitchurch		0	0
Woolston		0	0



PO12 – Groundwater Pollution Risk

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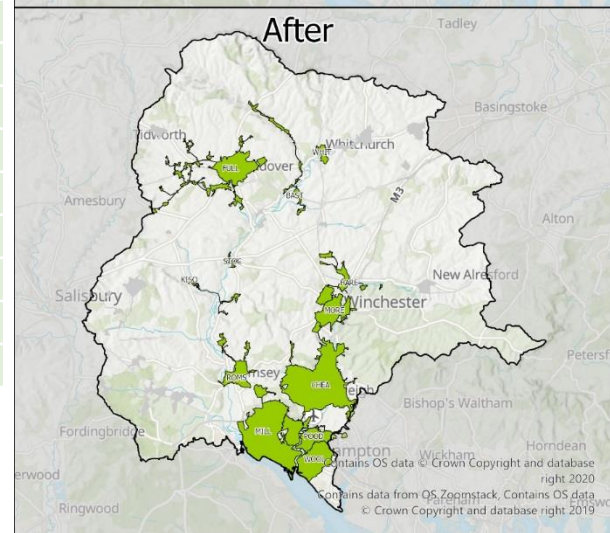
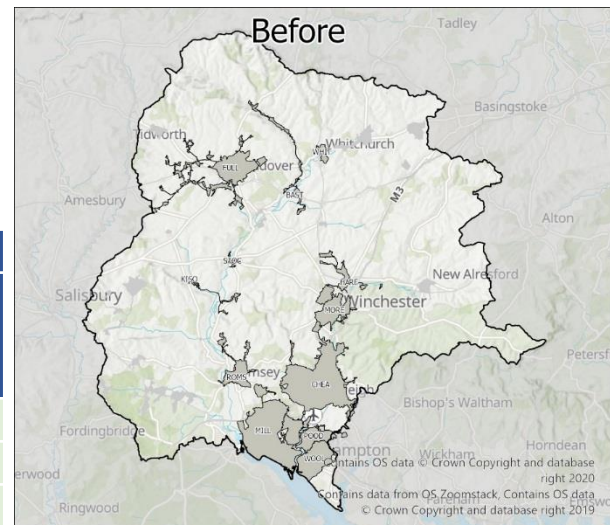
Test and Itchen	PO12	BRAVA	
Option Type	Est Cost (£)	Before	After
Barton Stacey			
BAST.PW01.4 - Pipe Rehabilitation Programme	£975 K	2	2
Chickenhall Eastleigh			
CHEA.PW01.10 - Pipe Rehabilitation Programme	£2,837 K	1	1
Fullerton			
FULL.PW01.5 - Pipe Rehabilitation Programme	£5,594 K	2	2
Harestock			
HARE.PW01.2 - Pipe Rehabilitation Programme	£5,282 K	2	2
Kings Somborne		0	0
Millbrook		0	0
Morestead Road Winchester		0	0
Portswood		0	0
Romsey		0	0
Stockbridge		0	0
Whitchurch		0	0
Woolston		0	0



PO13 – Bathing Water

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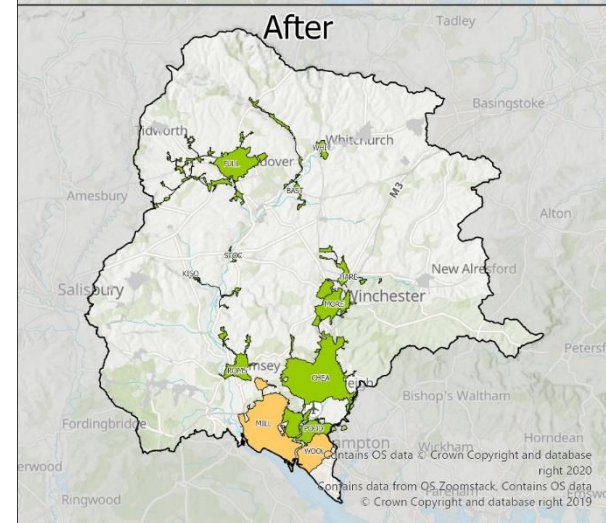
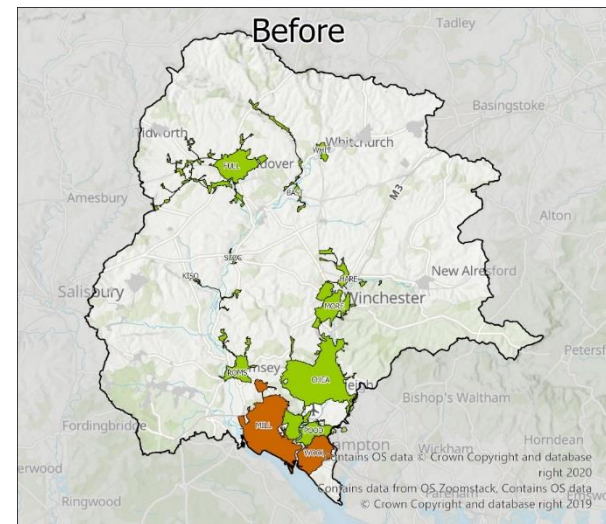
Test and Itchen	PO13	BRAVA	
Option Type	Est Cost (£)	Before	After
Barton Stacey		0	0
Chickenhall Eastleigh		0	0
Fullerton		0	0
Harestock		0	0
Kings Somborne		0	0
Millbrook		0	0
Morestead Road Winchester		0	0
Portswood		0	0
Romsey		0	0
Stockbridge		0	0
Whitchurch		0	0
Woolston		0	0



PO14 – Shellfish Water

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Test and Itchen Option Type	PO14	BRAVA	
	Est Cost (£)	Before	After
Barton Stacey		0	0
Chickenhall Eastleigh		0	0
Fullerton		0	0
Harestock		0	0
Kings Somborne		0	0
Millbrook			
MILL.PW01.25 - Storage (FC01 - BLECHYNDEN TERRACE SOUTHAMPTON CSO)	£1000 K	2	1
MILL.PW01.26 - Storage (FC02 - MILLBROOK WTW)	£1000 K		
Morestead Road Winchester		0	0
Portswood		0	0
Romsey		0	0
Stockbridge		0	0
Whitchurch		0	0
Woolston		0	0



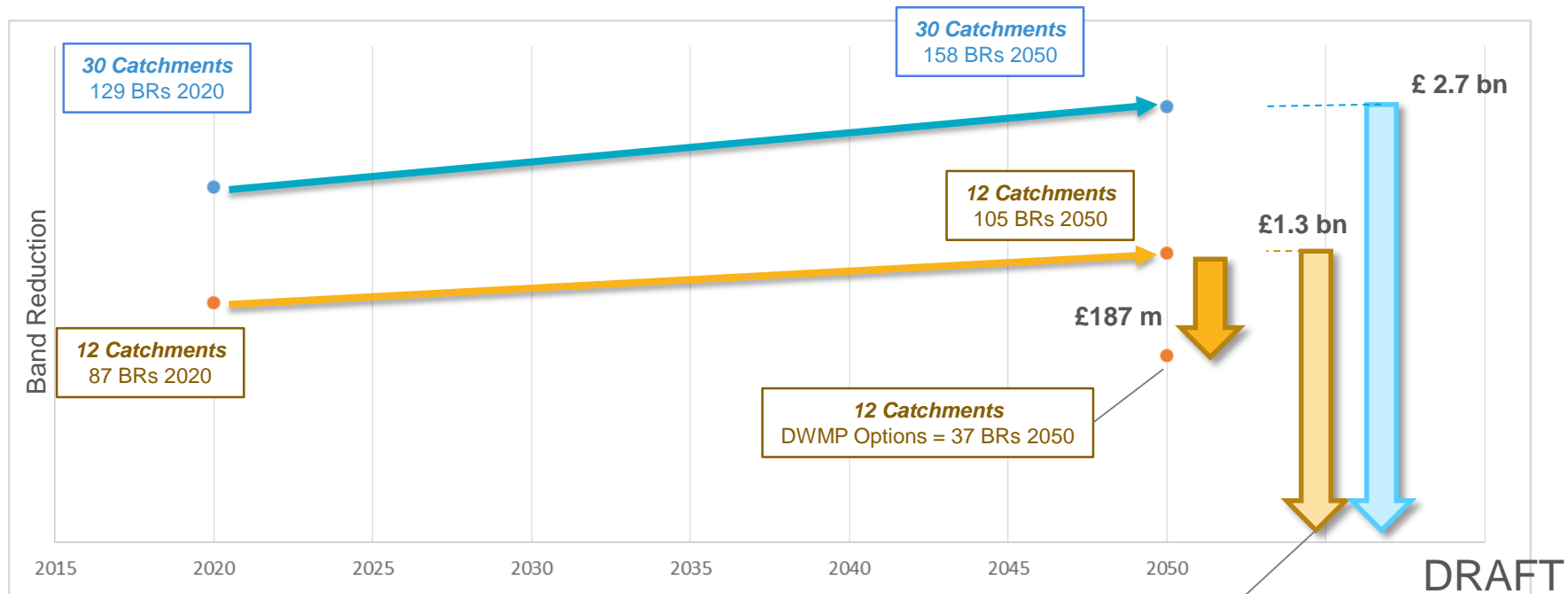
Programme Appraisal

Programme Appraisal

- Purpose: to develop an optimised 'best value' plan of measures to achieve the planning objectives
- Process: Collated all the investment needs from the 61 wastewater catchments, with information on costs and risk band reductions (across all 14 planning objectives)
- Extrapolated investment needs to other wastewater catchments in the river basin based on average cost per band reduction for each planning objective
- Optimise and prioritise investment needs for the final DWMP consultation



Test & Itchen: DWMP Cost & Risk Band Reduction



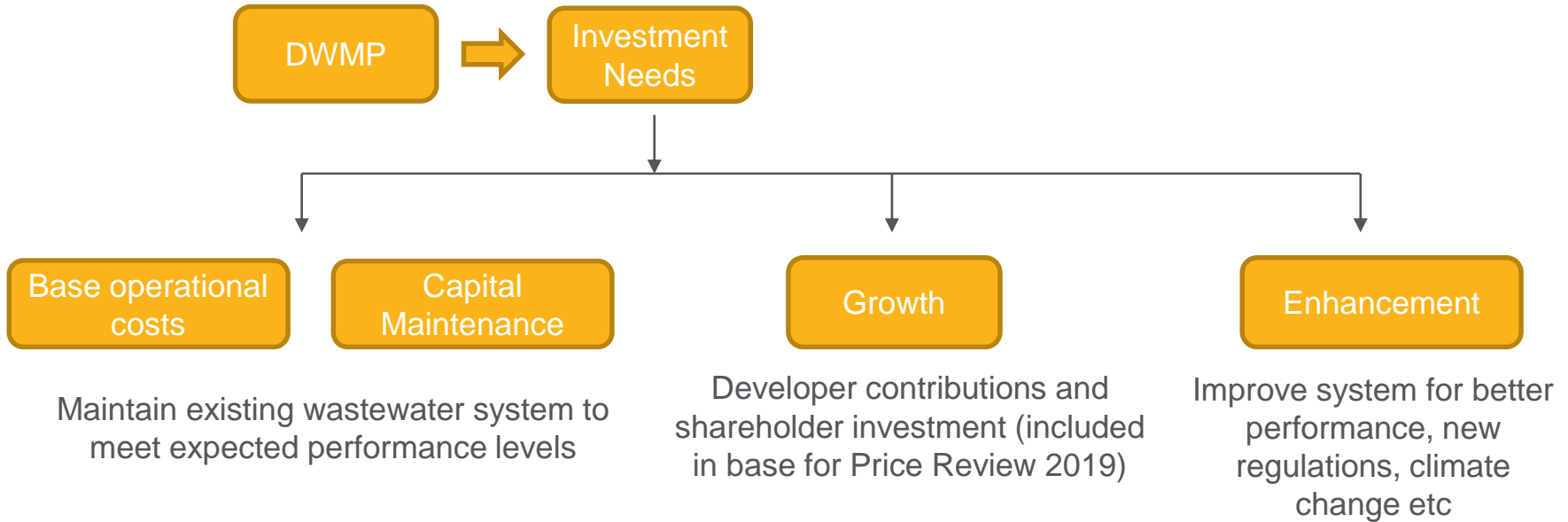
12 catchments = 529,000 population
 30 catchments = 563,000 population



Questions

Delivering the DWMP Investment Needs

Funding the DWMP Investment Needs in PR24



Examples of Enhancement Spend

- New environmental requirements
- New or emerging water quality risks or tightening of regulations
- Other new statutory or regulatory requirements

- Customer supported improvements – special cost cases
- Level of service improvement beyond upper quartile performance – special cost cases supported by customers



How to Fund Enhancements?

WINEP

Water Industry National Environment Programme: Owned by the EA
Potential for funding through this route if investment needs meet specific drivers set by the EA

Or

Special Cases

To meet customer needs

Special cases have a high evidence threshold, and must have:

- ✓ A clear need
- ✓ Clear efficient cost of delivery
- ✓ Customer support – Including a clear willingness to pay extra for it
- ✓ Clear cost benefit + proven environmental & social value
- ✓ Customer protection from non-delivery or significant underspend



Catchment and nature-based solutions

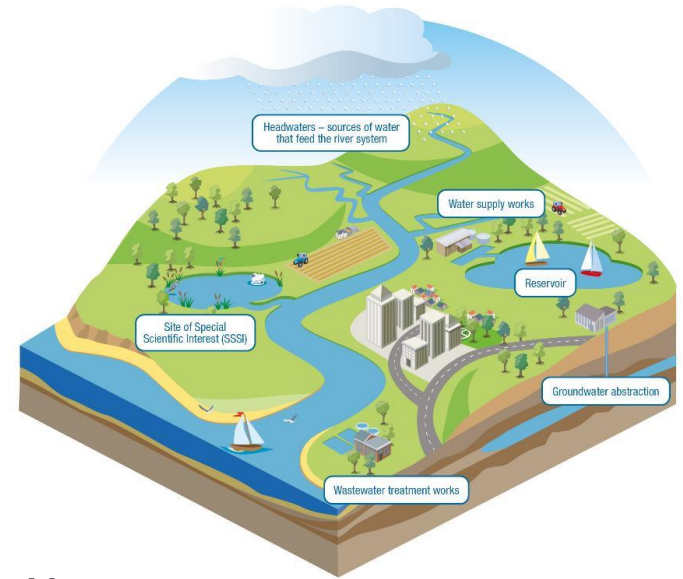
Key findings from our DWMP:

- Significant percentage of rainfall in sewers
- Need to tackle sewer flooding and storm overflows at source – surface water separation / attenuation
- Potentially huge benefits to people & the environment

Pathfinder projects in AMP7 – pioneering solutions in AMP7 to support our business cases for next Business Plan (PR24)

Catchment portfolios have been developed in our Water Resources Management Plan (WRMP), which include solutions such as:

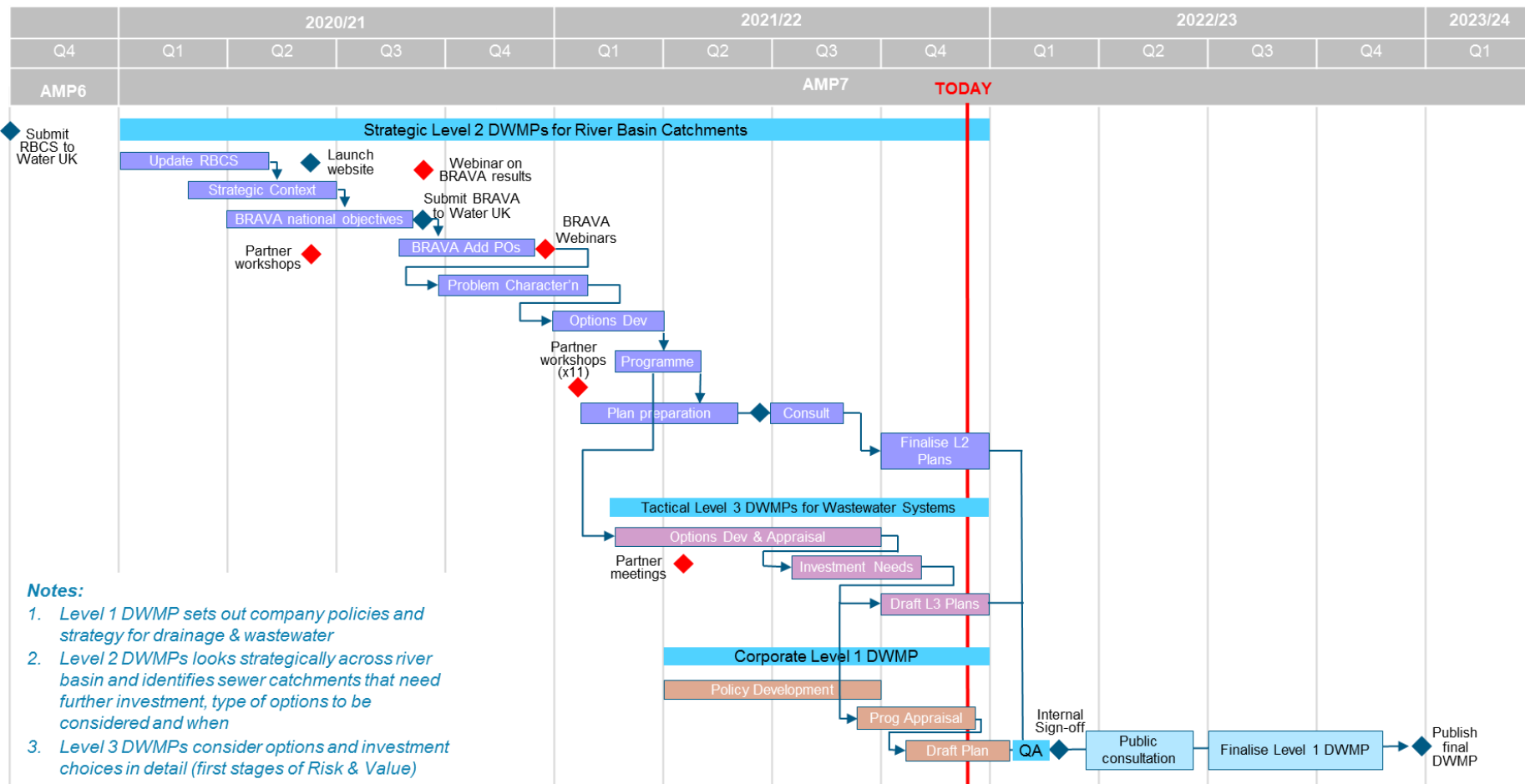
- River restoration
- Nutrient and sediment reduction
- Working with farmers to improve land management practices
- Sustainable drainage systems (SuDS)



Next Steps



Our DWMP Delivery Programme



Questions

Summary



Summary of Workshop

Our aim today was to:

- Discuss and refine the investment needs identified in the draft DWMP
- Flag any missing investment needs
- Discuss prioritisation and timing for investment needs
- Review opportunities to co-create and co-deliver solutions
- Look at total investment needs across the river basin

Poll



Thank you for participating today

Website: www.southernwater.co.uk/dwmp

Contact us: DWMP@southernwater.co.uk



from
**Southern
Water** 

Investment Needs for other wastewater catchments

Investment Needs – Barton Stacey (BAST)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	BAST.SC03.1	Gangbridge Lane	Flooding	Enhanced Customer Education Programme to prevent blockages	~£120k	Short to Medium	HCC TVBC
2	BAST.PW01.5	Gangbridge Lane	Flooding	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall.	~£20k	Short to Medium	
3	BAST.PW01.7 & BAST.PW01.6	St Mary Bourne WPS	Flooding, Pollution Risk	Enhanced maintenance: Review operation and maintenance of St Mary Bourne pumping station to improve resilience	£250k	Short	
5	BAST.PW01.8	Hurstbourne Park Estate (On Bourne Rivulet)	Pollution Risk	Targeted CCTV/Electroscan surveys and proactive sewer rehabilitation to reduce risk of pollution	£500k	Short	
6	BAST.OT01.5	Catchment Wide	Flooding	Study / Investigation: Build and verify the Barton Stacey Hydraulic Model to improve model confidence	£225k	Short to Medium	
7	BAST.PW02.2	Barton Stacey WTW	WTW Compliance	Increase capacity of the Wastewater Treatment Works to meet compliance.	£750k	Medium	

Investment Needs – Barton Stacey (BAST)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
8	BAST.PW02.3	Barton Stacey WTW	Growth	Increase capacity of the Wastewater Treatment Works (WTW). Optimisation or extension of site to allow for the approximately extra 250m3 DWF required due to the connection of Sutton Scotney services and growth in catchment	£1,500k	Medium	EA
9	BAST.OT01.3	Solent Maritime, Solent & Southampton Water, Solent and Dorset Coast	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	~£76k	Short	HCC TVBC NE
10	BAST.OT01.4	Andover-Outer Zone TCZ; Barton Stacey-Outer Zone TCZ	Groundwater Pollution	Targeted CCTV/Electroscan surveys and proactive sewer rehabilitation to reduce risk of groundwater pollution.	£1,000k	Long	
11		Catchment Wide	Flooding, Pollution Risk, Groundwater Pollution	Study / Investigation: Identify locations of private lateral connections across the catchment, to better understand whose maintenance responsibility they are	£TBC	Medium	HCC TVBC
12		Catchment Wide	Pollution Risk, Groundwater Pollution	Study / Investigation: Understand and investigate the impact of trade effluents/H2S on the sewer system.	£TBC	Medium	HCC TVBC

Investment Needs – Chickenhall Eastleigh (CHEA) DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	CHEA.SC03.1	Hotspot 1 - Hittingbury / Chandler's Ford	Flooding	Enhanced Customer Education Programme to prevent blockages	~£120k	Short to Medium	HCC EBC
2		Hotspot 2 - Knightwood Park					
3		Hotspot 3 - Central Eastleigh					
4		Hotspot 4 - Fair Oak					
5		Hotspot 5 - Chestnut Avenue					

Investment Needs – Chickenhall Eastleigh (CHEA) DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
6	CHEA.SC03.2	Hotspot 1 - Hildingbury	Pollution Risk	Enhanced Customer Education Programme to prevent blockages	£120k	Short to Medium	HCC EBC
7		Hotspot 2 - Fair Oak					
8		Hotspot 2 - Twford					

Investment Needs – Chickenhall Eastleigh (CHEA) DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
9	CHEA.PW01.3	Botley Road Horton Heath WPS	Pollution Risk	Enhanced maintenance: Review operation and maintenance of Botley Road Horton Heath WPS pumping station to improve resilience	£1000k	Short	
10		Chickenhall Eastleigh WTW		Enhanced maintenance: Review operation and maintenance of Chickenhall Eastleigh WTW pumping station to improve resilience			
11		Kiln Lane Brambridge WPS		Enhanced maintenance: Review operation and maintenance of Kiln Lane Brambridge WPS pumping station to improve resilience			
12		Chestnut Avenue Eastleigh WPS		Enhanced maintenance: Review operation and maintenance of Chestnut Avenue Eastleigh WPS pumping station to improve resilience			

Investment Needs – Chickenhall Eastleigh (CHEA) DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
13	CHEA.PW01.9	Hotspot 1 - Hiltingbury / Chandler's Ford	Pollution Risk	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall.	£35k	Short	
14		Hotspot 2 - Knightwood Park					
15		Hotspot 3 - Central Eastleigh					
16		Hotspot 4 - Fair Oak					
17		Hotspot 5 - Chestnut Avenue					

Investment Needs – Chickenhall Eastleigh (CHEA) DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
18	CHEA.PW02.1	Chickenhall Eastleigh WTW	Pollution Risk	Enhanced maintenance: Review operation and maintenance of Chickenhall Eastleigh WTW to improve resilience	£7,000k	Short	
19	CHEA.OT01.5	Catchment Wide	Flooding	Study / Investigation: Build and verify the Chickenhall Eastleigh Hydraulic Model to improve model confidence	£200k	Short to Medium	
20	CHEA.OT01.6	Chickenhall Eastleigh WTW	Storm Overflow	Surface water separation to reduce spills from Chickenhall Eastleigh WTW (average cost assumed to reduce CSO spills to Band 0)	~£1000k	Short to Medium	
21	CHEA.PW02.2	Chickenhall Eastleigh WTW	Growth	Increase capacity of the Wastewater Treatment Works (WTW). Optimisation or extension of site to allow for the approximately extra 3600m3 DWF required due to growth in catchment	£2,500k	Medium	EA
22	CHEA.OT01.3	Solent Maritime, Solent & Southampton Water, Solent and Dorset Coast	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	~£76k	Short	HCC EBC NE

Investment Needs – Chickenhall Eastleigh (CHEA) DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
23	CHEA.PW01.10	Otterbourne- Inner & Outer Zone TCZ, Twyford- Inner & Outer Zone TCZ	Groundwater Pollution	Targeted CCTV/Electroscan surveys and proactive sewer rehabilitation to reduce risk of groundwater pollution.	£3,000k	Long	
24	CHEA.SC01.1	Fair Oak Road	Flooding	Study / Investigation: Identify suitable locations for SuDS / attenuation	£TBC	Short to Medium	HCC EBC SA
25		River Itchen	Flooding	Study / Investigation: Identify suitable location/s for wetland construction along with River Itchen in partnership with the EA (update hydraulic model)	£TBC	Medium	HCC EBC EA

Investment Needs – Fullerton (FULL)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	FULL.PW01.2	Furzedown Lane Amport WPS	Pollution Risk	Enhanced maintenance: Review operation and maintenance of Furzedown Lane Amport pumping station to improve resilience	£250k	Short	
2	FULL.PW02.1	Fullerton WTW	WTW Compliance	Increase capacity of the Wastewater Treatment Works to meet compliance.	£35,000k	Medium	
3	FULL.PW02.2	Fullerton WTW	Growth	Increase capacity of the Wastewater Treatment Works (WTW). Optimisation or extension of site to allow for the approximately extra 5750m3 DWF required due to growth in catchment	£3,000k	Medium	EA
4	FULL.OT01.5	Solent Maritime, Solent & Southampton Water, Solent and Dorset Coast	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	~£76k	Short	HCC TVBC NE
5	FULL.PW01.5	Andover- Inner & Outer Zone TCZ	Groundwater Pollution	Targeted CCTV/Electroscan surveys and proactive sewer rehabilitation to reduce risk of groundwater pollution.	£6,000k	Long	
6		Catchment Wide	Flooding, Pollution Risk, Groundwater Pollution	Study / Investigation: Identify locations of private lateral connections across the catchment, to better understand whose maintenance responsibility they are	£TBC	Medium	HCC TVBC
7		Catchment wide	Flooding, Storm Overflow	Study / Investigation: Identify suitable location/s for NFMs in the Fullerton catchment (update hydraulic model)	£TBC	Short to Medium	HCC TVBC

Investment Needs – Harestock (HARE)

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		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	HARE.SC03.2	Kings Worthy	Pollution Risk	Enhanced Customer Education Programme to prevent blockages	£120k	Short to Medium	HCC TVBC
2	HARE.PW01.3	Kings Worthy	Pollution Risk	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall.	£11k	Short	
3	HARE.PW02.1	Harestock WTW	Pollution Risk	Enhanced maintenance: Review operation and maintenance of Harestock WTW to improve resilience	£7,000k	Short	
4	HARE.OT01.1	Easton	Pollution Risk	Study / Investigation: Identify causes of pollution incidents (currently unknown)	£250k	Short to Medium	
5	HARE.OT01.5	Catchment Wide	Flooding	Study / Investigation: Build and verify the Harestock Hydraulic Model to improve model confidence	£325k	Short to Medium	
6	HARE.PW02.2	Harestock WTW	Growth	Increase capacity of the Wastewater Treatment Works (WTW). Optimisation or extension of site to allow for the approximately extra 425m ³ DWF required due to growth in catchment	£1,500k	Medium	EA



Investment Needs – Harestock (HARE)

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		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
7	HARE.OT01.3	River Itchen, Solent Maritime, Solent & Southampton Water, Solent and Dorset Coast	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	~£76k	Short	HCC TVBC NE
8	HARE.PW01.2	Easton- Outer Zone TCZ, Chilbolton- TCZ, Otterbourne- TCZ	Groundwater Pollution	Targeted CCTV/Electroscan surveys and proactive sewer rehabilitation to reduce risk of groundwater pollution.	£5,500k	Long	

Investment Needs – Kings Somborne (KISO)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	KISO.OT01.2	Catchment Wide	Flooding	Study / Investigation: Build and verify the Kings Somborne Hydraulic Model to improve model confidence	£300k	Short to Medium	HCC TVBC
2	KISO.OT01.1	Solent Maritime, Solent & Southampton Water, Solent and Dorset Coast	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	£76k	Short	HCC TVBC NE
3	KISO.SC01.1	New community developments	Flooding	Study / Investigation: identify suitable location/s for separate foul and surface water systems within new community developments in the Kings Somborne catchment (update hydraulic model)	£TBC	Short to Medium	HCC TVBC Developers
4	KISO.PW01.1	Catchment Wide	Flooding	Study / Investigation: Identify suitable location/s to for sewer relining to prevent groundwater infiltration in the Kings Somborne catchment (update hydraulic model)	£TBC	Short to Medium	HCC TVBC

Investment Needs – Millbrook (MILL)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	MILL.SC03.1	Freemantle	Flooding	Enhanced Customer Education Programme to prevent blockages	~£120k	Short to Medium	SCC
		Maybush					
		Bevois Town					
		Newtown Nicholstown					
		St. Marys					
2	MILL.OT01.5	Catchment Wide	Flooding, Storm Overflows	Study / Investigation: Build and verify the Millbrook Hydraulic Model to improve model confidence	£225k	Short to Medium	
3	MILL.PW01.2 5	Blechynden Terrace Southampton CSO	Storm Overflows, Shellfish Waters	Surface water separation to reduce spills from Blechynden Terrace Southampton storm overflow (average cost assumed to reduce CSO spills to Band 0)	~£1000k	Short to Medium	

Investment Needs – Millbrook (MILL)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
4	MILL.PW01.2 6	Millbrook WTW	Storm Overflows, Shellfish Waters	Surface water separation to reduce spills from Millbrook WTW storm overflow (average cost assumed to reduce CSO spills to Band 0)	~£1000k	Short to Medium	
5	MILL.OT01.4	Solent and Dorset Coast, Solent & Southampton Water	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	~£76k	Short	SCC NE
6	MILL.PW02.4	Millbrook WTW	Growth	Increase capacity of the Wastewater Treatment Works (WTW). Optimisation or extension of site to allow for the approximately extra 4000m3 DWF required due to growth in catchment	£2,500k	Medium	EA
7	MILL.SC01.4	North Baddesley	Flooding	Study / Investigation: Identify suitable locations in the North Baddesley part of the catchment for SuDS / NFMs (update hydraulic model)	£TBC	Medium	SCC
8	MILL.SC01.6	Mayflower Park	Flooding	Study / Investigation: Identify suitable locations at Mayflower Park for SuDS / NFMs (update hydraulic model)	£TBC	Medium	SCC
9	MILL.PW02.2	Millbrook WTW	Flooding	Study / Investigation: Installation of tertiary treatment at Millbrook WTW, such as UV treatment or treatment via reedbeds and finer screens for Shellfish Waters	£TBC	Medium	

Investment Needs – Millbrook (MILL)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
10	MILL.PW02.3	Millbrook WTW	Growth	Study / Investigation: Working with the EA to introduce nitrogen and P treatment at the wastewater treatment works	£TBC	Medium	EA
11		Millbrook WTW	Growth	Study / Investigation: Removal of silt at Millbrook WTW to increase capacity	£TBC	Medium	

Investment Needs – Morestead Road Winchester (MORE)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	MORE.SC03.1	South Winchester (St. Cross Road)	Flooding	Enhanced Customer Education Programme to prevent blockages	~£120k	Short	HCC TVBC
2	MORE.SC03.1	Central Winchester (Victoria Road, High Street, Great Minster Street, Eastgate Street)					
3	MORE.PW01.3	South Winchester (St. Cross Road)	Flooding	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall.	~£100k	Short	
4	MORE.PW01.3	Central Winchester (Victoria Road, High Street, Great Minster Street, Eastgate Street)					



Investment Needs – Morestead Road Winchester (MORE)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
5	MORE.PW01.2	Garnier Road Winchester WPS	Pollution Risk	Enhanced maintenance: Review operation and maintenance of Garnier Road Winchester WPS pumping station to improve resilience	£250k	Short	
6	MORE.OT01.4	Catchment Wide	Flooding	Study / Investigation: Update and re-verify the Morestead Road Winchester Hydraulic Model to improve model confidence	£200k	Short to Medium	
7	MORE.OT01.5	Catchment Wide	Flooding	Study / Investigation: Identify locations of misconnections, reducing the unknown sources of flow into the catchments sewer systems.	£250k	Short	HCC TVBC
8	MORE.PW02.1	Morestead Road WTW	Growth	Increase capacity of the wastewater treatment Works (WTW). Optimisation or extension of site to allow for the approximately extra 700m3 DWF required due to growth in catchment	£1750k	Medium	EA
9	MORE.OT01.3	Solent Maritime, Solent & Southampton Water, Solent and Dorset Coast	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	~£76k	Short	HCC TVBC NE

Investment Needs – Morestead Road Winchester (MORE)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
10	MORE.SC01.3	Hotspot 1 - North of catchment (Leisure Centre)	Flooding & Pollution Risk	Study / Investigation: Identify suitable location/s in the Morestead Road Winchester Catchment for installation of green roofs on larger property (update hydraulic model)	£TBC	Short to Medium	HCC TVBC
11		Hotspot 2 - South West (Hospital, Prison, and University)		Study / Investigation: Identify suitable location/s in the Morestead Road Winchester Catchment for installation of green roofs on larger property (update hydraulic model)			
12		Hotspot 3 - North East (Industrial Estate - Winnal - including large Tesco)		Study / Investigation: Identify suitable location/s in the Morestead Road Winchester Catchment for installation of green roofs on larger property (update hydraulic model)			
13	MORE.SC03.4	South West of Catchment (Badger Farm/Road leading down hill towards city centre)	Flooding	Study / Investigation: Identify suitable locations for new road layouts to divert flow from the south west of the catchment away from the city centre (update hydraulic model)	£TBC	Short to Medium	HCC TVBC



Investment Needs – Morestead Road Winchester (MORE)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
14	MORE.SC01.2	Lower Catchment (grounds by River Itchen)	Flooding	Study / Investigation: Identify suitable locations in the lower catchment for NFMs (update hydraulic model)	£TBC	Medium to Long	HCC TVBC EA
15	MORE.PW01.5	Middle Brook Street	Flooding & Growth	Sewer Upsize Reduce storm sewer size	£TBC	Short	
16	MORE.PW01.6	The Broadway & Colebrooke Street					
17	MORE.PW01.7	Romsey Road					
18	MORE.PW01.8	Airlie Road					
19	MORE.PW01.9	Garnier Road WPS	Flooding & Growth	Sewer Upsize New Weir at Garnier WPS New storm sewer Install Storage of 956m3 Pump return	~£1200k	Short	
20	MORE.PW01.10	Upstream trunk sewer at Garnier Roas WPS	Flooding & Growth	Sewer Upsize Reduce foul sewer size	~250k	Short	



Investment Needs – Morestead Road Winchester (MORE)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
21	MORE.PW01.11	Pitt Manor, Romsey Road along Badger Farm Road to Garnier WPS	Flooding & Growth	New PS at Pitt Manor and Bushfield Camp with new rising main New foul sewer	~£1000k	Short	
22	MORE.PW01.12	Morestead Road Winchester WTW	Flooding & Growth	Install approximately 1750m3 of storage	£2000k	Short	

Investment Needs – Romsey (ROMS)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	ROMS.SC03.1	Central Romsey (Abbey Water, Tadburn Road, Chambers Avenue)	Flooding	Enhanced Customer Education Programme to prevent blockages	~£120k	Short	HCC TVBC
2	ROMS.SC03.1	East Romsey (Addison Close, Winchester Road)					
3	ROMS.SC03.1	St. Andrews Close					
4	ROMS.PW01.1	Hotspot 1 - Central Romsey (Abbey Water, Tadburn Road, Chambers Avenue)	Flooding	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall.	~£90k	Short	
5		Hotspot 2 - East Romsey (Addison Close, Winchester Road)					
6		Hotspot 3 - St. Andrews Close					

Investment Needs – Romsey (ROMS)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
7	ROMS.OT01.3	Catchment Wide	Flooding	Study / Investigation: Update and re-verify the Romsey Hydraulic Model to improve model confidence	£300k	Short to Medium	
8	ROMS.OT01.1	Solent Maritime; Solent & Southampton Water; Solent and Dorset Coast	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	£76k	Short	HCC TVBC NE
9	ROMS.PW02.1	Romsey WTW	WTW Compliance	Increase capacity of the Wastewater Treatment Works to meet compliance.	£2000k	Medium to Long	
10	ROMS.SC01.1	Catchment Wide	Flooding	Study / Investigation: Identify suitable location/s for flood alleviation schemes in the Romsey catchment (update hydraulic model)	£TBC	Medium	HCC TVBC Developer s
11	ROMS.SC01.2	New Development - South of Catchment (Ashfield Estate)	Flooding	Study / Investigation: Identify with partners and developers suitable location/s to construct SuDS within new developments in the Romsey catchment, for example, on the Ashfield Estate (update hydraulic model)	£TBC	Medium	HCC TVBC Developer s
12	ROMS.PW01.2	Catchment Wide	Flooding	Study / Investigation: Identify suitable location/s for sewer relining to prevent groundwater infiltration in the Romsey catchment (update hydraulic model). Infiltration is currently estimated at approximately 35%	£TBC	Medium	
13	ROMS.PW01.3	South West of Catchment (Saddlers Mill and Cromwell Arms)	Flooding & Pollution Risk	Enhanced maintenance: Review operation and maintenance of Rising Mains close to the River Test in the southwest of the catchment - potential for high scale pollution incidents.	£TBC	Medium	



Investment Needs – Romsey (ROMS)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
14	ROMS.SC01.3	Catchment Wide	Flooding	Study / Investigation: Identify suitable location/s for surface water separation in the Romsey catchment to aid potable water supply issue concerns in the catchment/region (update hydraulic model)	£TBC	Short to Medium	
15	ROMS.PW02.2	Romsey WTW	Nutrients	Installation of UV removal tertiary treatment at Romsey WTW. With the aim of creating an inland bathing water in the Lower River Test.	£TBC	Medium	

Investment Needs – Stockbridge (STOC)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	STOC.PW02.1	Stockbridge WTW	Growth	Increase capacity of the Wastewater Treatment Works (WTW). Optimisation or extension of site to allow for the approximately extra 275m ³ /day DWF required due to growth in the catchment	£1500k	Medium	EA
2	STOC.OT01.3	Catchment Wide	Flooding	Study / Investigation: Update and re-verify the Stockbridge Hydraulic Model to improve model confidence	£300k	Short to Medium	HCC TVBC
3	STOC.OT01.2	Solent Maritime, Solent & Southampton Water, Solent and Dorset Coast	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	£76k	Short	HCC TVBC NE
4	STOC.PW01.2	High Street, Stockbridge	Pollution Risk	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall	£TBC	Short	

Investment Needs – Whitchurch (WHIT)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	WHIT.OT01.2	Catchment Wide	Flooding	Study / Investigation: Build and verify the Whitchurch Hydraulic Model to improve model confidence	£225k	Short to Medium	
2	WHIT.PW02.1	Whitchurch WTW	Flooding	Increase Capacity at the WTW.	£1,200k	Medium	
3	WHIT.OT01.1	Solent Maritime, Solent & Southampton Water, Solent and Dorset Coast	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	~£76k	Short	HCC TVBC NE

Investment Needs – Woolston (WOOL)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
1	WOOL.SC01.1	Hotspot 1 - Itchen	Flooding	Enhanced Customer Education Programme to prevent blockages	~£120k	Short to Medium	SCC
2		Hotspot 2 - Woolston					
3		Hotspot 3 - Weston					
4		Hotspot 4 - Sholing					
5	WOOL.PW01.15	Hotspot 1 - Itchen	Flooding	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall, specifically by jetting known gravel issues in these sewers.	£150k	Short	
6		Hotspot 2 - Woolston					
7		Hotspot 3 - Weston					
8		Hotspot 4 - Sholing					
9	WOOL.SC01.2	Hotspot 1 - Harefield	Pollution Risk	Enhanced Customer Education Programme to prevent pollution incidents	£120k	Short to Medium	SCC
10	WOOL.PW01.16	Woolston	Pollution Risk	Targeted CCTV/Electroscan surveys and proactive sewer rehabilitation to reduce pollution risk.	£500k	Short	



Investment Needs – Woolston (WOOL)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
11	WOOL.PW01.20	Hotspot 1 - Harefield	Pollution Risk	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall, specifically by jetting known gravel issues in these sewers.	£35k	Short	
12	WOOL.PW01.3	Hotspot 1 - Harefield	Sewer Collapse Risk	Targeted CCTV/Electroscan surveys and proactive sewer rehabilitation to reduce risk of sewer collapse.	£650k	Short	
13		Hotspot 2 - Newtown					
14	WOOL.SC01.3	Dena Road and Pound Street	Flooding	Separation Solution	£TBC	Medium to Long	SCC EA
15	WOOL.PW02.2			Storage Solution	£600k	Short	
16	WOOL.SC01.4	Sunningdale Gardens and Somerset Avenue	Flooding	Separation Solution	£TBC	Medium to Long	SCC EA
17	WOOL.PW02.3			Storage Solution	£2,250k	Short	
18	WOOL.SC01.5	Canon Place and Napier Road	Flooding	Separation Solution	£TBC	Medium to Long	SCC EA
19	WOOL.PW02.4			Storage Solution	£2,500k	Short	
20	WOOL.SC01.6	Butts Road and South East Road	Flooding	Separation Solution	£TBC	Medium to Long	SCC EA
21	WOOL.PW02.5			Storage Solution	£2,000k	Short	

Investment Needs – Woolston (WOOL)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
22	WOOL.SC01.7	Squirrel Drive	Flooding	Separation Solution	£TBC	Medium to Long	SCC EA
23	WOOL.PW02.6			Storage Solution	£3,000k	Short	
24	WOOL.SC01.8	Lawrence Grove, Swift Road, Obelisk Road	Flooding	Separation Solution	£TBC	Medium to Long	SCC EA
25	WOOL.PW02.7			Storage Solution	£3,000k	Short	
26	WOOL.SC01.9	Swift Road and Swift Gardens	Flooding	Separation Solution	£TBC	Medium to Long	SCC EA
27	WOOL.PW02.8			Storage Solution	£1,000k	Short	
28	WOOL.SC01.10	Blacthorn Road, Peartree Avenue, and Merridale Road	Flooding	Separation Solution	£TBC	Medium to Long	SCC EA
29	WOOL.PW02.9			Storage Solution	£1,500k	Short	
30	WOOL.SC01.11	Braeside Road	Flooding	Separation Solution	£TBC	Medium to Long	SCC EA
31	WOOL.PW02.10			Storage Solution	£600k	Short	



Investment Needs – Woolston (WOOL)

DRAFT

		Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
32	WOOL.OT01.7	Woolston WTW	Storm Overflows	Surface water separation to reduce spills from Woolston WTW storm overflow (average cost assumed to reduce CSO spills to Band 0)	~£1000k	Short to Medium	
33	WOOL.OT01.4	Solent and Dorset Coast, Solent & Southampton Water	Nutrients	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites	~£76k	Short	SCC NE
34		Catchment Wide	Flooding	Study / Investigation: Sharing of flood data to ensure flooding locations identified by SWS and SCC match	£TBC	Short	SCC
35		Catchment Wide	Flooding	Study / Investigation: Identify locations of misconnections, reducing the unknown sources of flow into the catchments sewer systems.	£250k	Short	SCC