Drainage and Wastewater Management Plans (DWMPs)

Investment Needs Workshop for the Cuckmere and Pevensey Levels River Basin Catchment

Thursday 31 March 2022

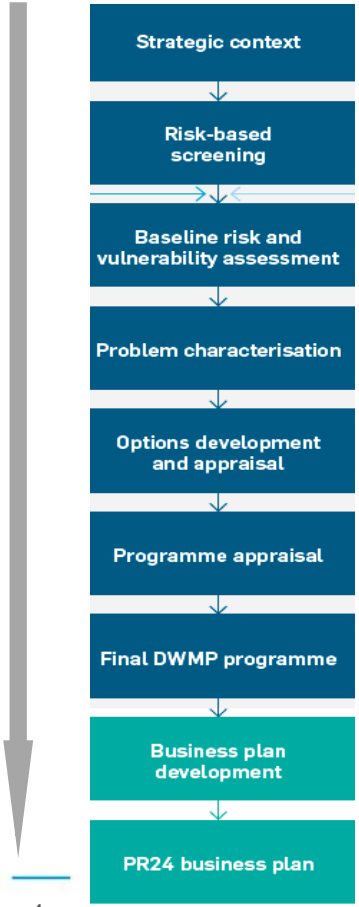
from Southern Water

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 …



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IN PROGRESS

Working with others:

Aug 2020	Webinars: What is a DWMP?
Sept 2020	Workshops: RBCS and Planning Objectives
Dec 2020	Webinars: National BRAVA results
March 2021	Webinars: Additional BRAVA Results
May 2021	Workshops: Problem Characterisation & ODA
Aug-Oct 2021	Workshops: Identifying Unconstrained Options
Sept 2021	Initial public consultation
Dec 2021	Webinars: Water Company funding
Jan 2022	Webinar: FCERM Partnership Funding
March 2022	Workshops: Investment Needs
June 2022	Public consultation
March 2023	Publish final DWMP

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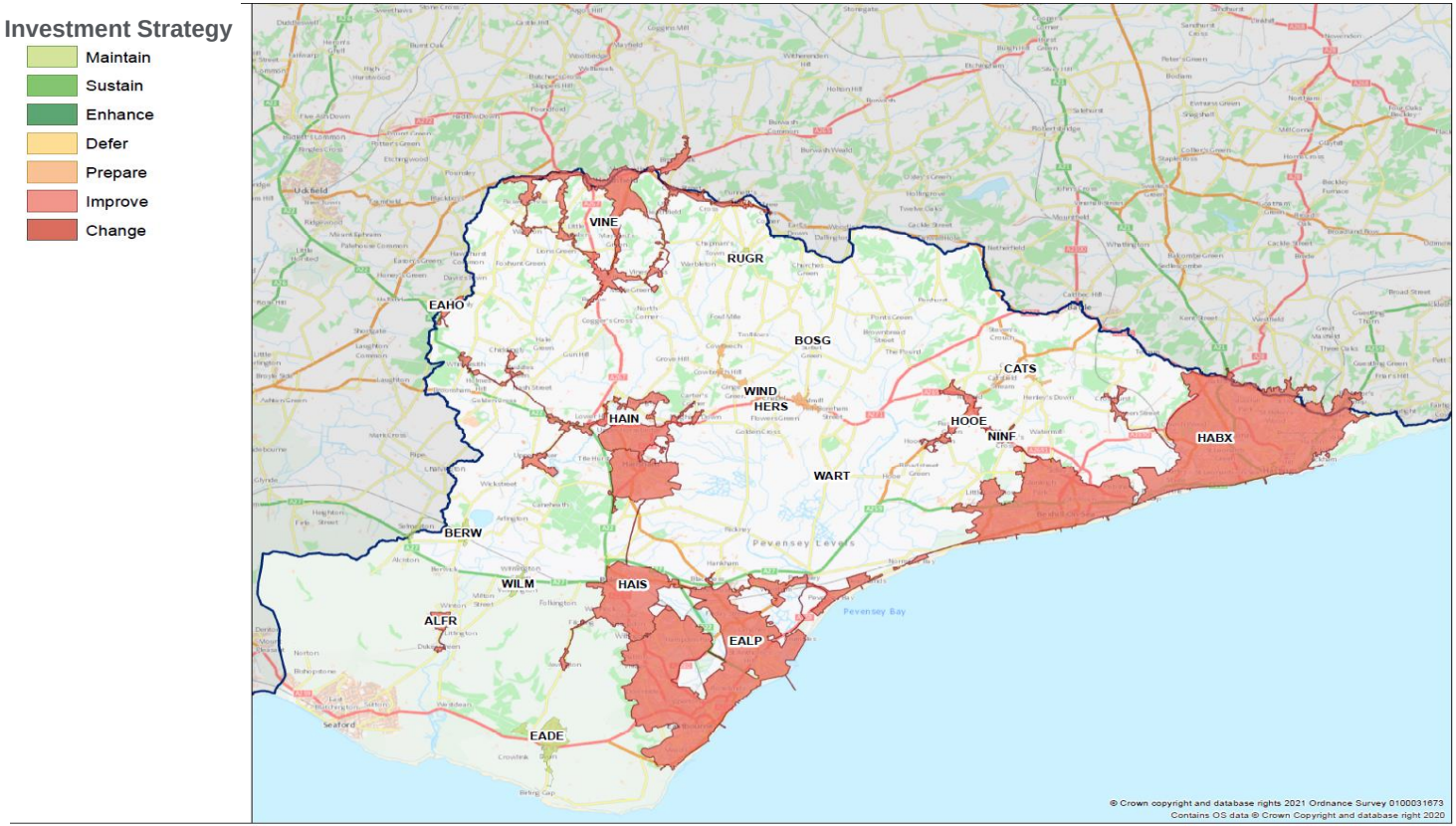
Purpose of Today's Workshop

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 Cuckmere & Pevensey Levels



- 18 sewer catchments
- 18 WTWs
- 255 WPS
- 2798km sewers
- 18% area
- 97% homes connected

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BRAVA Results: Cuckmere and Pevensey Levels River Basin Catchment

Wastewater Catchment Reference	Wastewater System	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
HABX	BEXHILL AND HASTINGS	141,300	1,225.180	1	1	2	1	2	0	0	0	1	1	2	0	2	NA
EALP	EASTBOURNE	116,948	914.856	1	1	0	2	2	0	2	0	0	2	NA	1	2	NA
HAIS	HAILSHAM SOUTH	29,543	265.007	0	2	1	1	2	1	2	0	0	1	NA	0	NA	NA
VINE	VINES CROSS	13,683	163.650	1	2	2	1	1	0	1	0	2	0	NA	0	NA	NA
HAIN	HAILSHAM NORTH	12,023	100.163	1	2	2	1	2	0	2	0	1	1	0	0	NA	NA
WIND	WINDMILL HILL HERSTMONCEUX	2,146	22.843	0	0	0	2	0	0	0	0	0	0	0	0	NA	NA
EADE	EAST DEAN	1,624	31.886	0	0	0	0	0	0	0	0	0	0	NA	0	0	NA
HOOE	HOOE	1,533	23.070	0	0	0	0	NA	0	1	0	1	0	1	0	NA	NA
EAHO	EAST HOATHLY	1,061	7.352	0	0	0	0	1	0	1	0	1	0	NA	0	NA	NA
ALFR	ALFRISTON	816	10.212	0	0	0	0	2	0	0	1	0	0	NA	0	NA	NA
CATS	CATSFIELD	645	9.227	0	0	0	0	0	0	0	0	0	0	1	0	NA	NA
BERW	BERWICK	300	10.629	0	0	0	0	0	0	0	0	0	0	NA	0	NA	NA
NINF	LUNSFORDS CROSS	248	4.993	0	0	0	0	1	0	0	0	1	0	1	0	NA	NA
WILM	WILMINGTON	202	4.075	0	0	0	0	NA	NA	0	0	0	0	NA	0	NA	NA
RUGR	RUSHLAKE GREEN	152	3.677	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA
BOSG	BODLE STREET GREEN	62	0.765	0	0	0	0	NA	NA	0	0	0	0	0	0	NA	NA
WART	WARTLING	55	0.350	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
HERS	LIME PARK HERSTMONCEUX	44	0.543	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF

Results shown for 2020 only

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

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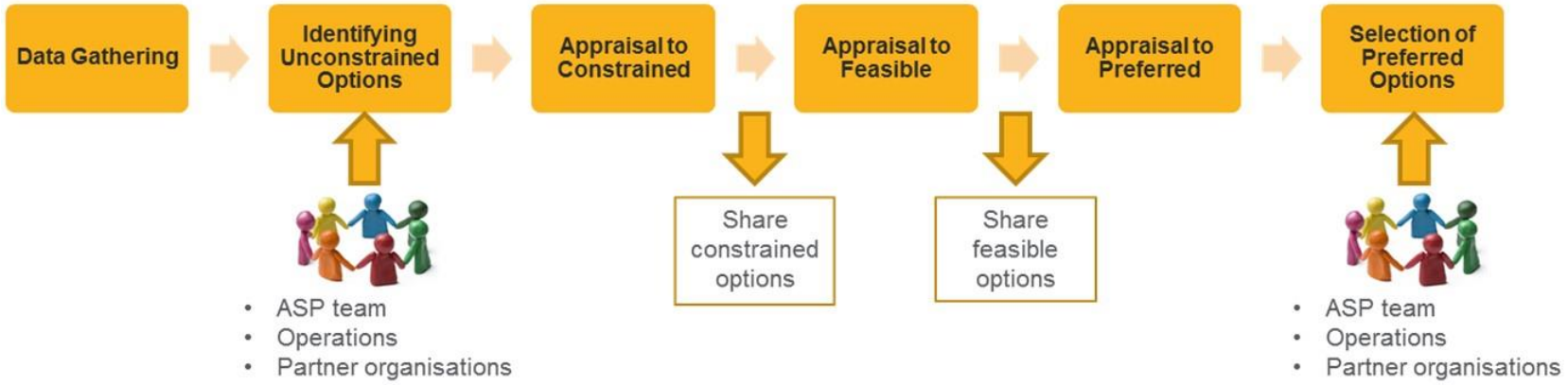
Options Development and Appraisal



Cuckmere and Pevensey Levels River Basin :

Unconstrained Option Development meetings held on:

- Bexhill & Hastings 04 October 2021
- Eastbourne 24 August 2021
- Hailsham North 08 September 2021
- Hailsham South 08 September 2021

Options Development Process
Unconstrained Options

Source
Pathway
Receptor

Location of Risk	Description of Risk	Unconstrained Option	Option Description	Option Referer	GO Outp	L4 Area	Source of the UO
Source Demand Measures							
Control/ Reduce surface water entering the sewers				CHIC.SC01	Yes		
CHICHESTER WTW Overflow	**PO5- Sewer Overflows** Bathing Water 2020 Spilling CSO (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		Chichester WTW and Catchment Wide	EDM data via BRAVA PO5 Hydraulic Model Data
Pathway (Supply) Measures							
Network Improvements				CHIC.PW01	Yes		
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: 1100	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 DWMP models are: model network used, rainfall, ground infiltration and levels files applied Option solution: Upsize pipes	CHIC.PW01.4			DAP Option Position statement: CHICGR001 Option 1 Plan 1.1
Receptor Measures							
Mitigate impacts on Water Quality				CHIC.RC03	Yes		
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 udertaken in agreement with the Environment Agency.	CHIC.RC03.1		CHICHESTER WTW	
Other							
Study/ investigation to gather more data				CHIC.OT01	Yes		
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 Natrural England's revised Common Standards Monitoring Guidance (rCSMG) targets Total Phosphorus (TP) and Total Nitrogen (TN) on the Chichester and Langstone Harbours, Solent and Dorest Coast and Solent Maritime.	CHIC.OT01.2		Catchment Wide	Natural England supplied 'Water Dependent Habitat Sites' Table via BRAVA PO11

All options identify the BRAVA Planning Objective risk they address

(*this is an extract of the table*)

Options identified by:

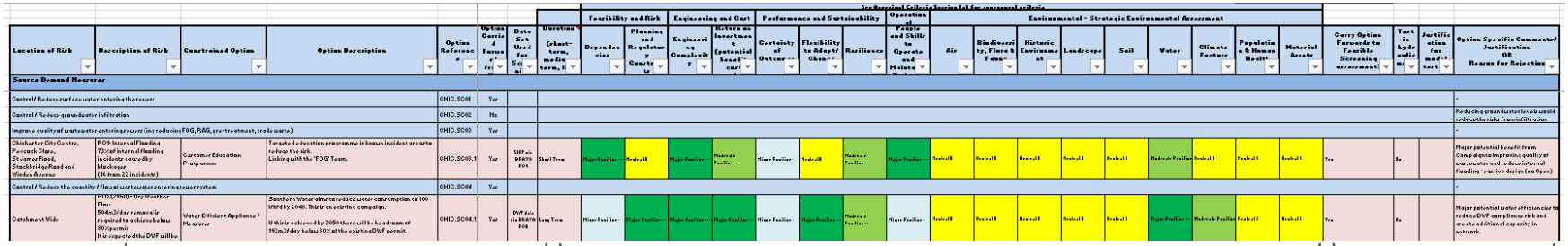
Technical Team

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

Our staff and partners

Options Development Process
Benefits Screening

Multi-criteria sustainability appraisal of potential benefits – enables screening and selection of ‘best benefit’ options



Carry forward constrained options

Appraises constrained options for the five areas identified by the national DWMP framework:
1) Feasibility and Risk (2 Questions)
2) Engineering and Cost (2 Questions)
3) Performance and Sustainability (3 Questions)
4) Operational (1 Question)
5) Environmental (9 questions, aligned to WRMP & SEA)

Options with more than two Minor Negatives (--) or one Major Negative (---) are screened out.

All other options pass to Feasible Option stage for costing

DWMP Appraisal Criteria	Datasets/ Key Themes	Effect	Description
Feasibility and Risk •Dependencies	•Permission for access to land •Need to work in partnership •Dependent upon others taking action (e.g. customers) •Dependent upon other actions / projects being completed	+++	Major Positive
		++	Moderate Positive
		+	Minor Positive
		0	Neutral
		-	Minor Negative
		--	Moderate Negative
		---	Major Negative
		?	Uncertain

Extract from Criteria

Scoring of options uses a +++/ --- approach and includes guidance on interpretation for each appraisal criteria

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Options Development Process
Feasible Options to Preferred Options

DWMP Data Tables

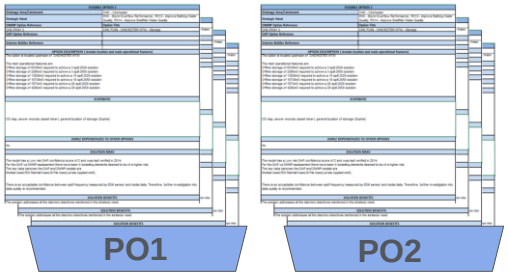
FEASIBLE OPTION 1	
Drainage Area/Catchment	CHIC - Chichester
Strategic Need	PO5 - Storm Overflow Performance, PO13 - Improve Bathing Water Quality, PO14 - Improve Shellfish Water Quality
DWMP Option Reference	Option Title
CHIC_PW01.3	CHIC FC09 - CHICHESTER WTW - Storage
DAP Option Reference	
Scheme Builder 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 achive a 3 spill 2020 solution Offline storage of 2290m3 required to achive a 3 spill 2050 solution Offline storage of 13836m3 required to achive a 10 spill 2020 solution Offline storage of 10738m3 required to achive a 10 spill 2050 solution Offline storage of 7873m3 required to achive a 20 spill 2020 solution Offline storage of 4284m3 required to achive 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



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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 – Bexhill & Hastings (HABX) DRAFT

Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
Warrior Square, St Leonards Marina, Old Town	Internal Flooding - Blockages	Enhanced maintenance: Customer Education	£116k	Short	RDC ESCC HBC
		Enhanced maintenance: Proactive Jetting	£503k	Short	
Coombs Hastings WPS Galley Hill Bexhill WPS	Internal Flooding - Operational	Enhanced maintenance: Wastewater Pumping Stations	£466k	Short	
Warrior Square	Internal Flooding - Collapses / Bursts	Sewer CCTV surveys, integrity checks and re-lining/enforcement	£190k	Short	
Galley Hill Bexhill WPS Rock A Nore Hastings WPS Chestnut Walk Bexhill WPS	Pollution Risk - Operational	Enhanced maintenance: Wastewater Pumping Stations	£698k	Short	
Bexhill & Hastings WTW		Enhanced maintenance: Treatment Works	£6,970k	Short- Medium	
Old Town, West Hill, Warrior Square	Sewer Collapses	Sewer CCTV surveys, integrity checks and re-lining/enforcement	£4,132k	Short- Medium	
Terminus Road Ninfield Road Harold Road Old London Road Elphinstone Road St Helens Wood	Flooding & Drainage	Attenuate excess flows in sewer network using, upsizing sewer, storage tanks and creating new sewers to reduce risk of flooding. (Cost based on storage but surface water separation is the preferred option)	£1,477k - £6,759k Total £16,203k	Short - Medium	RDC ESCC HBC EA (for Separation /SuDS)
Catchment Wide		Study: Model improvements, including flow surveys for storm and dry weather flow, and model calibration.	£325k	Short	
Chestnut Walk Bexhill WPS Peartree Lane Bexhill WPS Bexhill & Hastings WTW Bexhill Down CSO Brockley Road Bexhill CSO Galley Hill Bexhill WPS Hartfield Road Bexhill CSO	Flooding & Drainage - Overflows	Attenuate excess flows in sewer network using storage tanks to reduce risk of spill events. (Average cost assumed to reduce CSO spills to Band 0. Surface water separation is preferred option)	£1,000k Each Total £7,000k	Short	RDC ESCC HBC EA (for Separation /SuDS)
Bexhill & Hastings WTW	Growth- DWF at WTWs	Review permit for the WTW with the EA, and deliver associated works to increase capacity of the works.	£2,213k	Medium-Long	
Doleham Ditch East Stream	Good Ecological Status	Study: Understand the risks and sources that Phosphate, Macrophytes and Phytobenthos have on the linked waterbodies.	£76k	Short	
Hastings Cliff	Nutrients	Develop a nutrient budget to understand the risks and sources impacting Habitat sites.	£76k	Short	

Investment Needs – Hailsham South (HAIS)

DRAFT

Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
Bolney Wood Hailsham WPS Dittons Road No2 WPS	Pollution Risk - Operational	Enhanced maintenance: Wastewater Pumping Stations	£466k	Short	
Hailsham South WTW	Pollution Risk - Operational	Enhanced maintenance: Treatment Works	£6,970k	Short - Medium	
Polegate	Pollution Risk - Collapses / Bursts	Sewer CCTV surveys, integrity checks and re-lining/enforcement	£63k	Short	
Foulride Green, Whiffens Close	Sewer Collapses	Sewer CCTV surveys, integrity checks and re-lining/enforcement	£394k	Short	
Town Farm Dittons Road Golden Jubilee Way Bramley Road Polegate Dittons Road CSO	Growth- Flooding & Drainage	Attenuate excess flows in sewer network using, upsizing sewer, storage tanks and creating new sewers to reduce risk of flooding. (Cost based on storage but surface water separation is the preferred option)	£13,626k	Medium	Wealden District Council East Sussex County Council (for separation/SuDS)
Station Road			£1,176k	Short	
Catchment Wide		Study: Model improvements, including flow surveys for storm and dry weather flow, and model calibration.	£200k	Short	
Hailsham South CEO	Flooding & Drainage- Overflows	Attenuate excess flows in sewer network using storage tanks to reduce risk of spill events. (Nominal costs based on storage but surface water separation is the preferred option)	£1,200k	Short	Wealden District Council East Sussex County Council (for separation/SuDS)
Willingdon No 1 CSO			£1,000k	Short	
Lynholm Road 1 Polegate CSO			£1,000k	Short	
Southfield Polegate CSO			£1,000k	Short	
Bramble Drive Hailsham CSO			£1,000k	Short	
Dittons Road No2 WPS			£1,000k	Short	
Bolney Wood Hailsham CEO			£1,000k	Short	
Hailsham South WTW	Increase Capacity DWF at WTWs	Review permit for the WTW with the EA, and deliver associated works to increase capacity of the works.	£1,357k	Short	

Questions

Review of Investment Needs

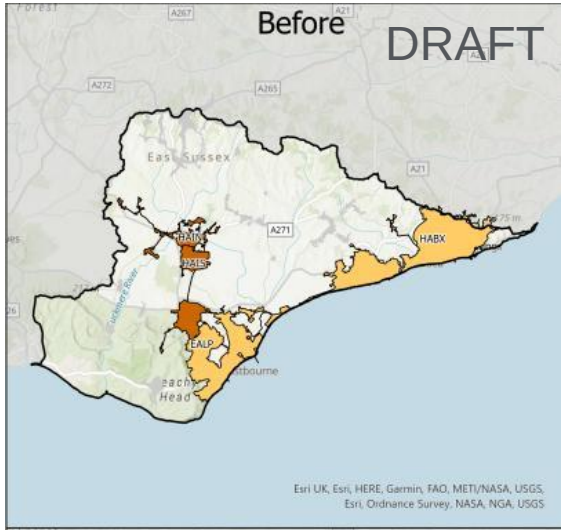
Risks in the Cuckmere & Pevensey Levels

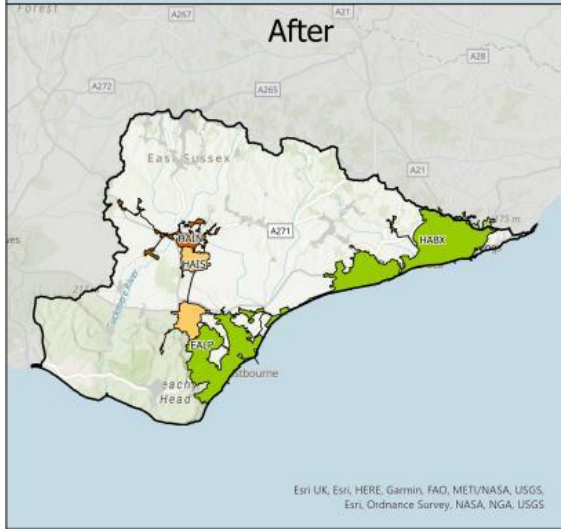
BRAVA Results indicated the main risks in this river basin catchment are for the following Planning Objectives (PO):

- Storm Overflows (PO5)
- Flooding (PO7)
- Pollution (PO2)

PO2 – Pollution Risk

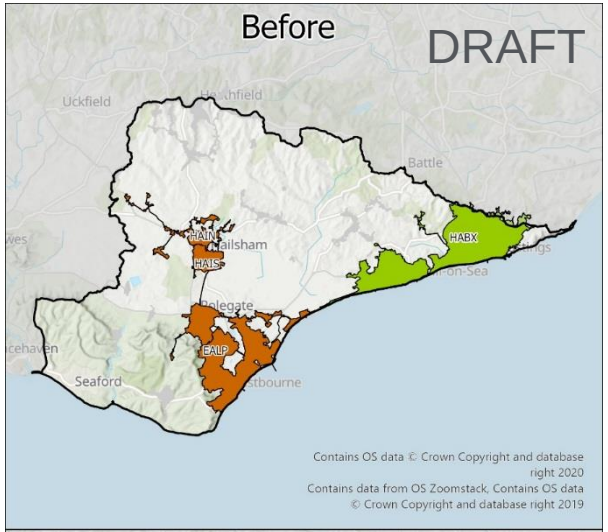
Cuckmere and Pevensey	PO2	Pollution Incidents (Nr in 3yrs)			BRAVA	
Option Type	Est Cost(£)	Solution Reduction	Total	Reduction Req'd for Band 0	Before	After
Bexhill And Hastings						
HABX.PW01.4 - Maintenance Programme WPS	£698 K	5	18	9	1	0
HABX.PW02.1 - Maintenance Programme WTW	£6970 K	7				
Eastbourne						
EALP.PW02.1 - Maintenance Programme WTW	£6970 K	5	10	4	1	0
Hailsham North						
HAIN.SC03.2 - Customer Education Programme	£116 K	~1	5	5	2	2
HAIN.PW01.3 - Maintenance Programme WPS	£233 K	3				
HAIN.PW01.8 - Jetting Programme	£11 K	~1				
Hailsham South						
HAIS.PW01.1 - Maintenance Programme WPS	£466 K	2	5	4	2	1
HAIS.PW01.4 - Pipe Rehabilitation Programme	£63 K	~1				
HAIS.PW02.1 - Maintenance Programme WTW	£6970 K	1				

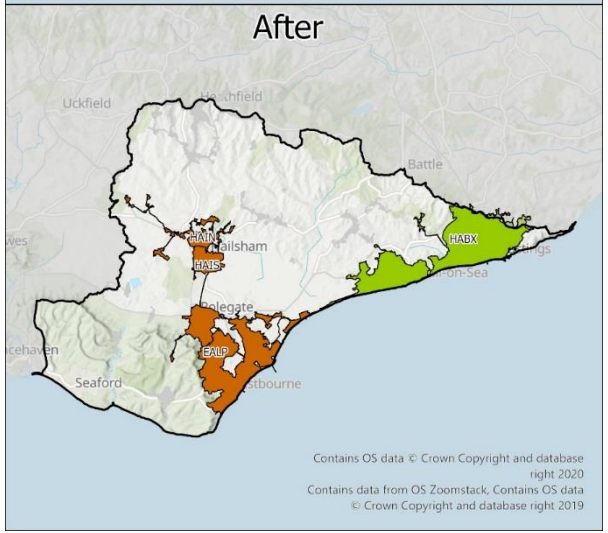




PO7 – Hydraulic Overload

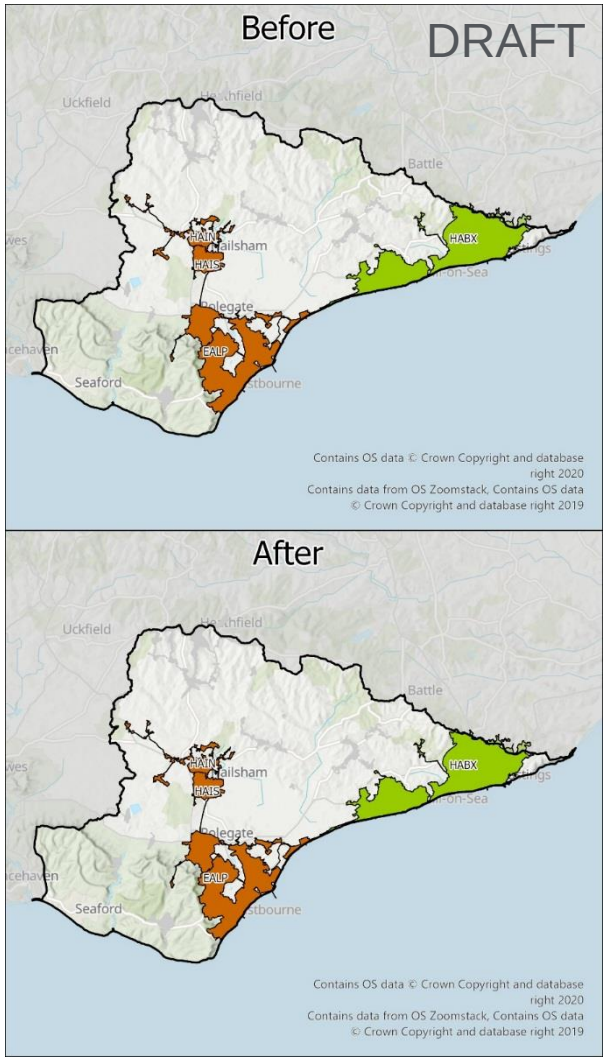
Cuckmere and Pevensey	PO7	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
Bexhill And Hastings		0	0
Eastbourne			
EALP.PW01.9 - Storage	£8579 K	2	2
EALP.PW01.10 - Storage	£81854 K		
EALP.PW01.11 - Storage	£7884 K		
EALP.PW01.12 - Storage	£597 K		
EALP.OT01.5 - Improve Hydraulic Model	£70 K		
Hailsham North			
HAIN.PW01.9 - Upsizing (HAIN011 Option 1)	£9064 K	2	2
HAIN.PW01.11 - Upsizing (HAINGR01 Option 2)	£2266 K		
HAIN.PW01.12 - Upsizing (HAINGR01 Option 2)	£2266 K		
HAIN.PW01.13 - Upsizing (HAINGR01 Option 2)	£2266 K		
HAIN.PW01.14 – Storage	£857 K		
HAIN.PW01.15 – Storage	£2196 K		
HAIN.PW02.1 - Increase Capacity			
HAIN.OT01.5 - Improve Hydraulic Model	£70 K		





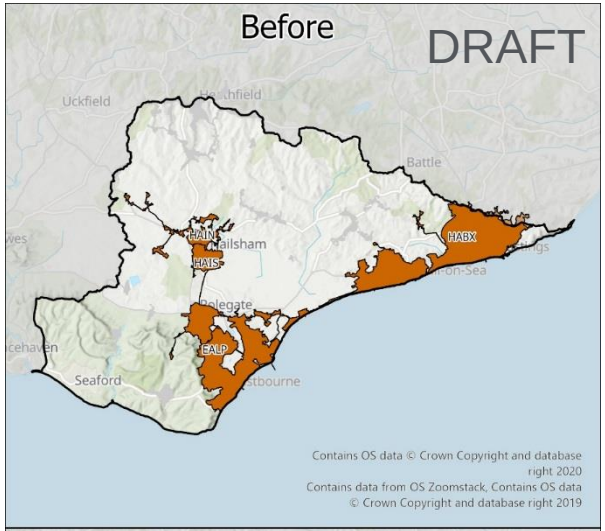
PO7 – Hydraulic Overload

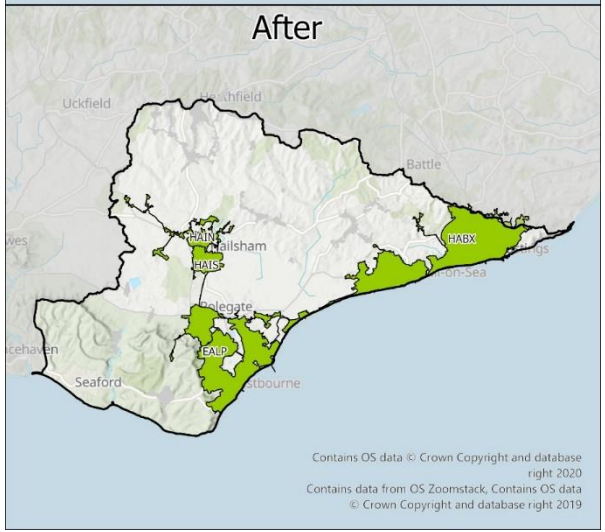
Cuckmere and Pevensey	PO7	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
Hailsham South			
HAIS.PW01.7 - New pumping station and New risisng main	£2271 K	2	2
HAIS.PW01.8 - Upsizing and New sewer	£2271 K		
HAIS.PW01.9 - Upsizing (HAISGR001 Option 2)	£2271 K		
HAIS.PW01.10 - New Sewer (HAISGR001 Option 2)	£2271 K		
HAIS.PW01.11 - New Sewer (HAISGR001 Option 2)	£2271 K		
HAIS.PW01.12 - Storage (HAISGR001 Option 2)	£2271 K		
HAIS.PW01.14 - Storage	£1176 K		
HAIS.OT01.4 - Improve Hydraulic Model	£70 K		
HAIS.OT01.13 - Study/Model investigation	£232 K		



PO5 – Storm Overflow

Cuckmere and Pevensey	PO5	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
Bexhill And Hastings			
HABX.OT01.7 – Storage (Chestnut Walk Bexhill WPS)	£1000 K	2	0
HABX.OT01.8 – Storage (Peartree Lane Bexhill WPS)	£1000 K		
HABX.OT01.9 – Storage (Bexhill & Hastings WTW)	£1000 K		
HABX.OT01.10 – Storage (Bexhill Down CSO)	£1000 K		
HABX.OT01.11 – Storage (Brockley Road Bexhill Road CSO)	£1000 K		
HABX.OT01.12 – Storage (Galley Hill Bexhill WPS)	£1000 K		
HABX.OT01.13 – Storage (Hartfield Road Bexhill CSO)	£1000 K		
Eastbourne			
EALP.OT01.6 – Storage (Eastbourne WTW)	£1000 K	2	0
Hailsham North			
HAIN.OT01.6 - Storage	£1000 K	2	0
HAIN.OT01.7 - Study and Investigation (Upper Dicker WPS)	£1000 K		
Hailsham South			
HAIS.PW01.13 - Storage (Hailsham South Storm CEO)	£1200 K	2	0
HAIS.OT01.5 – Storage (Willingdon CSO)	£1000 K		
HAIS.OT01.6 – Storage (Lynholm Road CSO)	£1000 K		
HAIS.OT01.7 – Storage (Southfield Polegate CSO)	£1000 K		
HAIS.OT01.8 – Storage (Bramble Drive Hailsham CSO)	£1000 K		
HAIS.OT01.9 – Storage (Dittons Road WPS)	£1000 K		
HAIS.OT01.10 – Storage (Bolney Wood Hailsham CEO)	£1000 K		



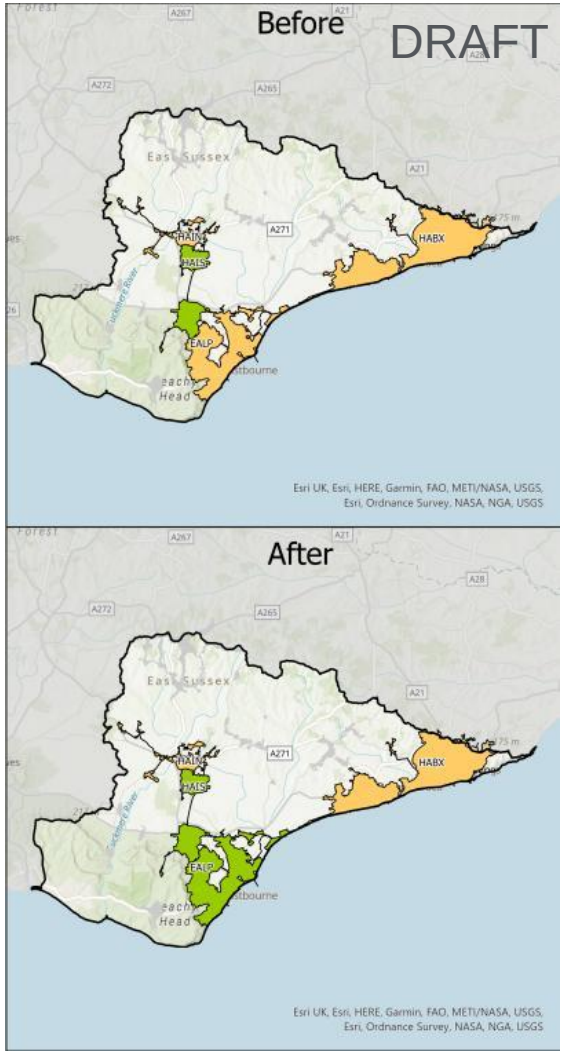


PO13 – Bathing Water

Cuckmere and Pevensey	PO13	BRAVA	
Option Type	Est Cost(£)	Before	After
Bexhill And Hastings			
HABX.OT01.9 – Storage (Bexhill & Hastings WTW)	£1000 K	2	1
HABX.OT01.10 – Storage (Bexhill Down CSO)	£1000 K		
HABX.OT01.12 – Storage (Galley Hill Bexhill WPS)	£1000 K		
Eastbourne			
EALP.OT01.6 – Storage (Eastbourne WTW)	£1000 K	2	1
Hailsham North		NA	NA
Hailsham South		NA	NA

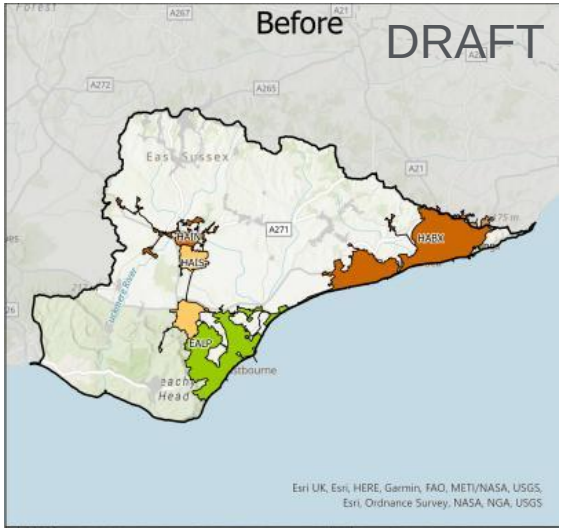
PO1 – Internal Flooding

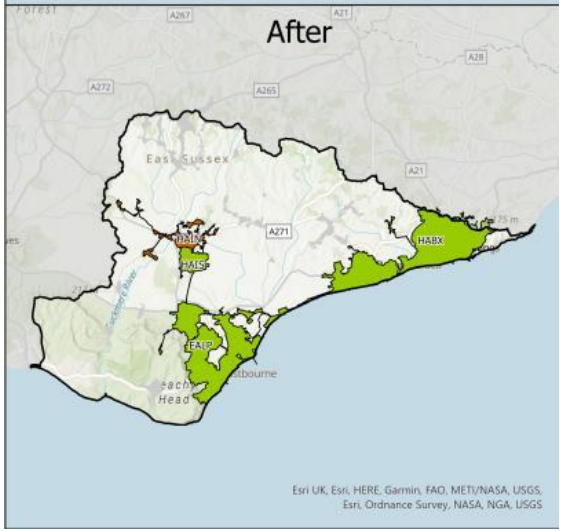
Cuckmere and Pevensey	PO1	Internal Flood Incidents (Nr in 3yrs)			BRAVA	
Option Type	Est Cost(£)	Solution Reduction	Total	Reduction Req'd for Band 0	Before	After
Bexhill And Hastings						
HABX.SC03.1 - Customer Education Programme	£116 K	11	68	36	1	1
HABX.PW01.1 - Maintenance Programme	£466 K	5				
HABX.PW01.3 - Pipe Rehabilitation Programme	£190 K	2				
HABX.PW01.9 - Jetting Programme	£503 K	11				
Eastbourne						
EALP.SC03.1 - Customer Education Programme	£116 K	7	41	15	1	0
EALP.PW01.1 - Maintenance Programme	£233 K	4				
EALP.PW01.7 - Jetting Programme	£297 K	7				
Hailsham North						
HAIN.SC03.1 - Customer Education Programme	£116 K	1	6	4	1	1
HAIN.PW01.1 - Maintenance Programme	£233 K	1				
HAIN.PW01.7 - Jetting Programme	£23 K	1				
Hailsham South					0	0



PO3 – Sewer Collapse

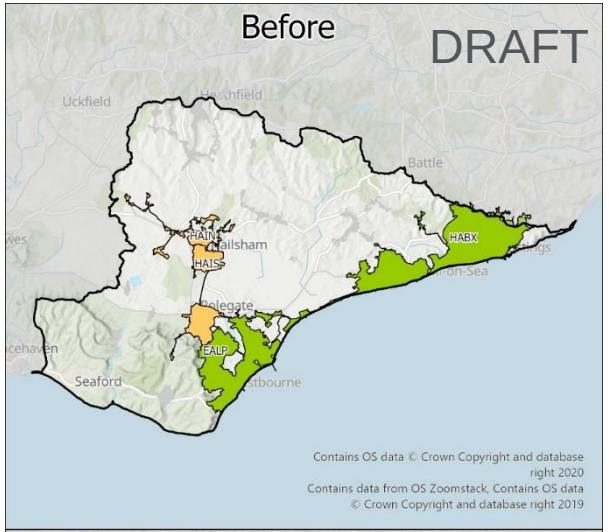
Cuckmere and Pevensey	PO3	Collapses and Bursts (Nr)			BRAVA	
Option Type	Est Cost(£)	Solution Reduction	Total	Reduction Req'd for Band 0	Before	After
Bexhill And Hastings						
HABX.PW01.6 - Pipe Rehabilitation Programme	£4132 K	18	36	15	2	0
Eastbourne					0	0
Hailsham North						
HAIN.PW01.5 - Pipe Rehabilitation Programme	£317 K	~3	5	4	2	2
Hailsham South						
HAIS.PW01.2 - Pipe Rehabilitation Programme	£394 K	~3	5	1	1	0

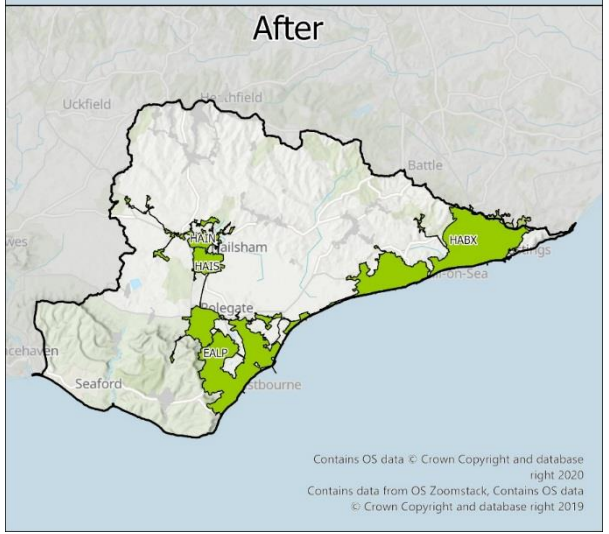




PO6 – WTW Compliance Failure

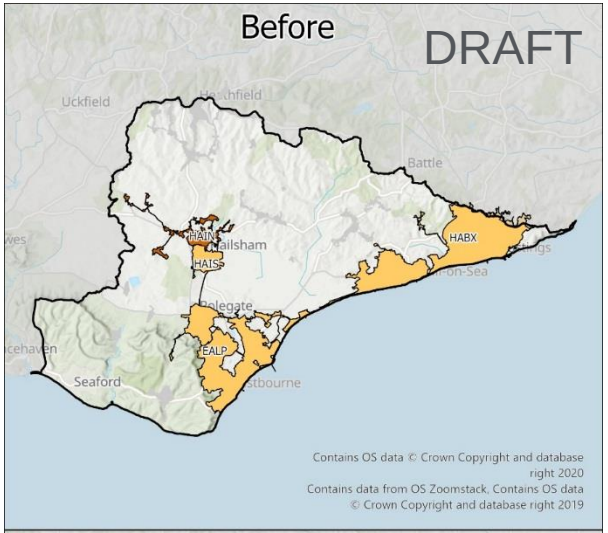
Cuckmere and Pevensey	PO6	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
Bexhill And Hastings		0	0
Eastbourne		0	0
Hailsham North			
HAIN.PW02.1 - Increase Capacity	£16,053 K	1	0
Hailsham South			
HAIS.PW02.2 - Increase Capacity	£1011 K	1	0

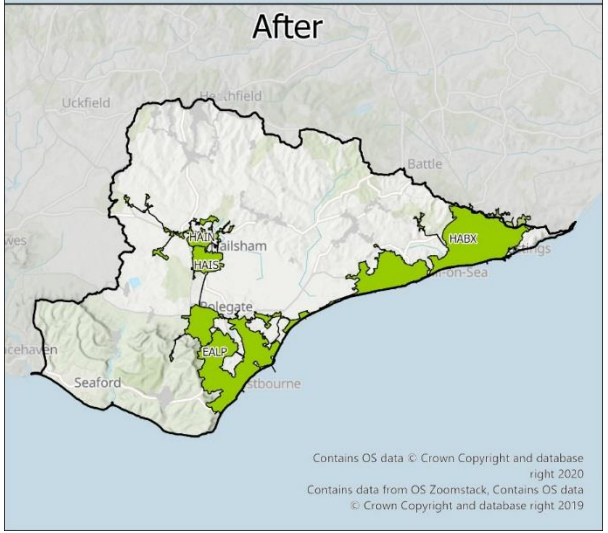




PO8 – DWF Compliance

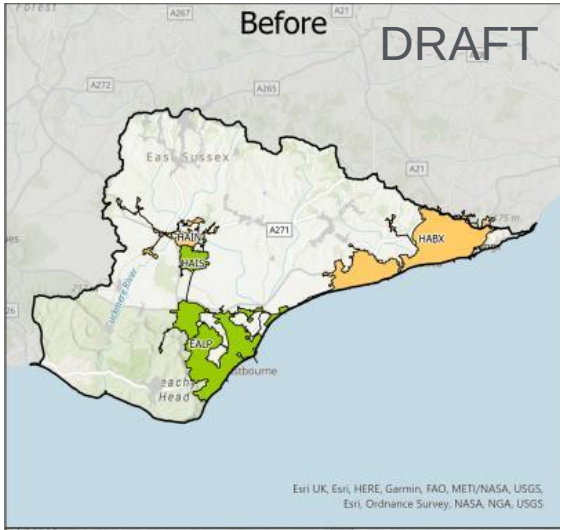
Cuckmere and Pevensey	PO8	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
Bexhill And Hastings			
HABX.PW02.2 - Increase DWF Capacity	£2213 K	1	0
Eastbourne			
EALP.PW02.2 - Increase DWF Capacity	£1446 K	1	0
Hailsham North			
HAIN.PW02.2 - Increase DWF Capacity	£1705 K	2	0
Hailsham South			
HAIS.PW02.3 - Increase DWF Capacity	£1358 K	1	0

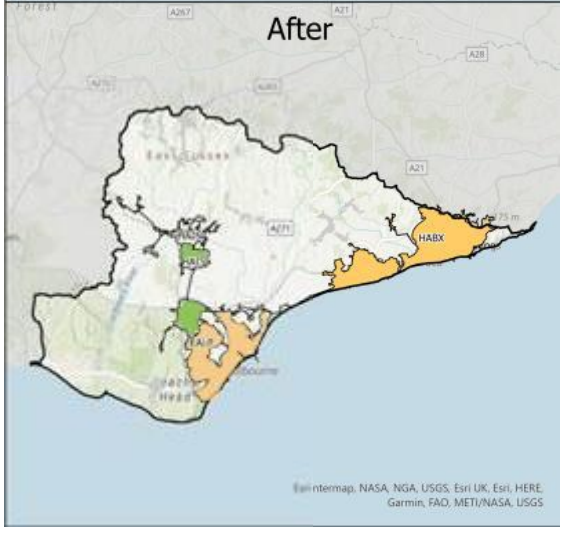




PO9 – Good Ecological Status

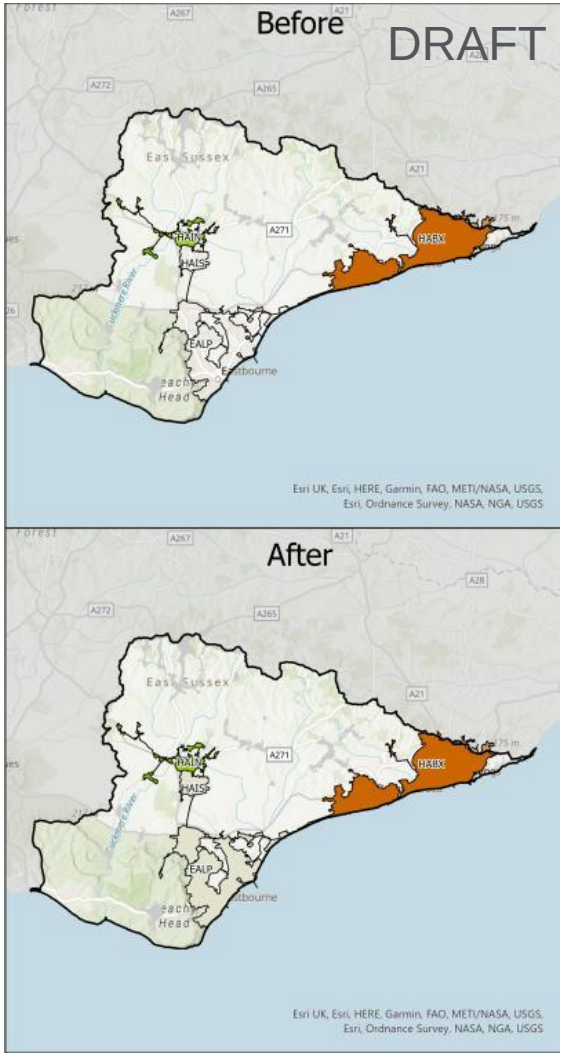
Cuckmere and Pevensey	PO9	BRAVA	
Option Type	Est Cost(£)	Before	After
Bexhill And Hastings			
HABX.OT01.4 - Study and Investigation- Phosphate Macrophytes and Phytobenthos Combined	~£76 K	1	1
Eastbourne		0	0
Hailsham North			
HAIN.OT01.4 - Study and Investigation- Phosphate Macrophytes and Phytobenthos Combined	~£76 K	1	1
Hailsham South		0	0





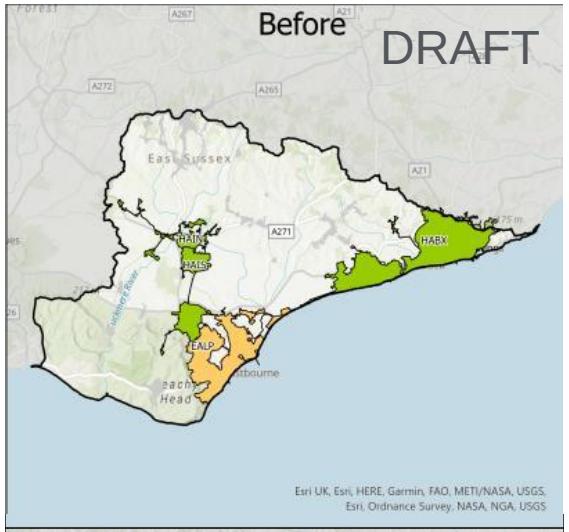
PO11 – Nutrient Neutrality

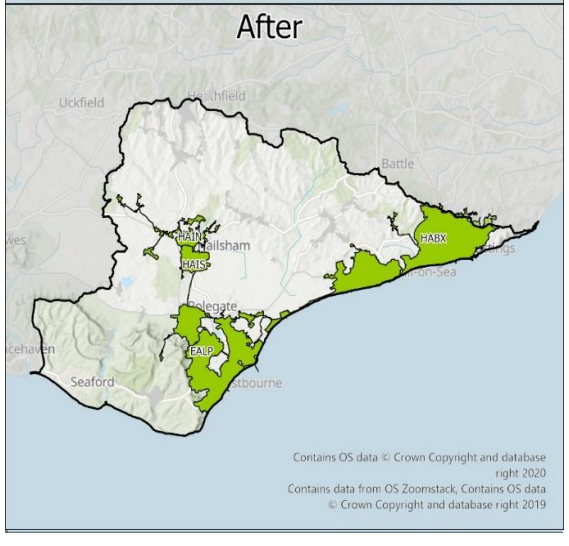
Cuckmere and Pevensey	PO11	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
Bexhill And Hastings			
HABX.OT01.5 - Nutrient Budget	£76 K	2	2
Eastbourne		NA	NA
Hailsham North		0	0
Hailsham South		0	0



PO12 – Groundwater Pollution Risk

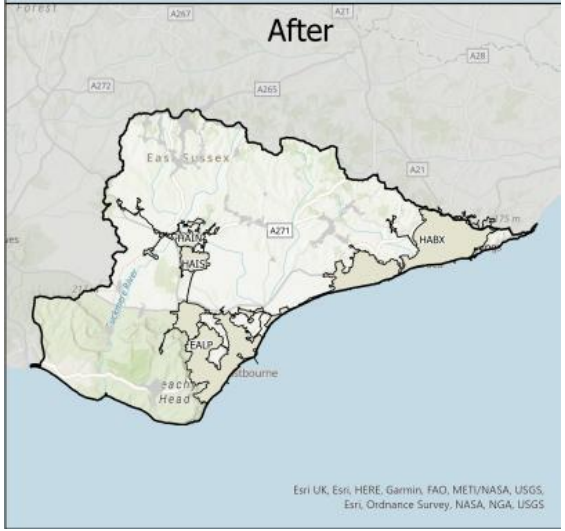
Cuckmere and Pevensey	PO12	BRAVA	
Option Type	Est Cost(£)	Before	After
Bexhill And Hastings		0	0
Eastbourne			
EALP.PW01.6 - Pipe Rehabilitation Programme	£6,495 K	1	0
Hailsham North		0	0
Hailsham South		0	0





PO14 – Shellfish Water

Cuckmere and Pevensey	PO14	BRAVA	
Option Type	Est Cost(£)	Before	After
Bexhill And Hastings		NA	NA
Eastbourne		NA	NA
Hailsham North		NA	NA
Hailsham South		NA	NA

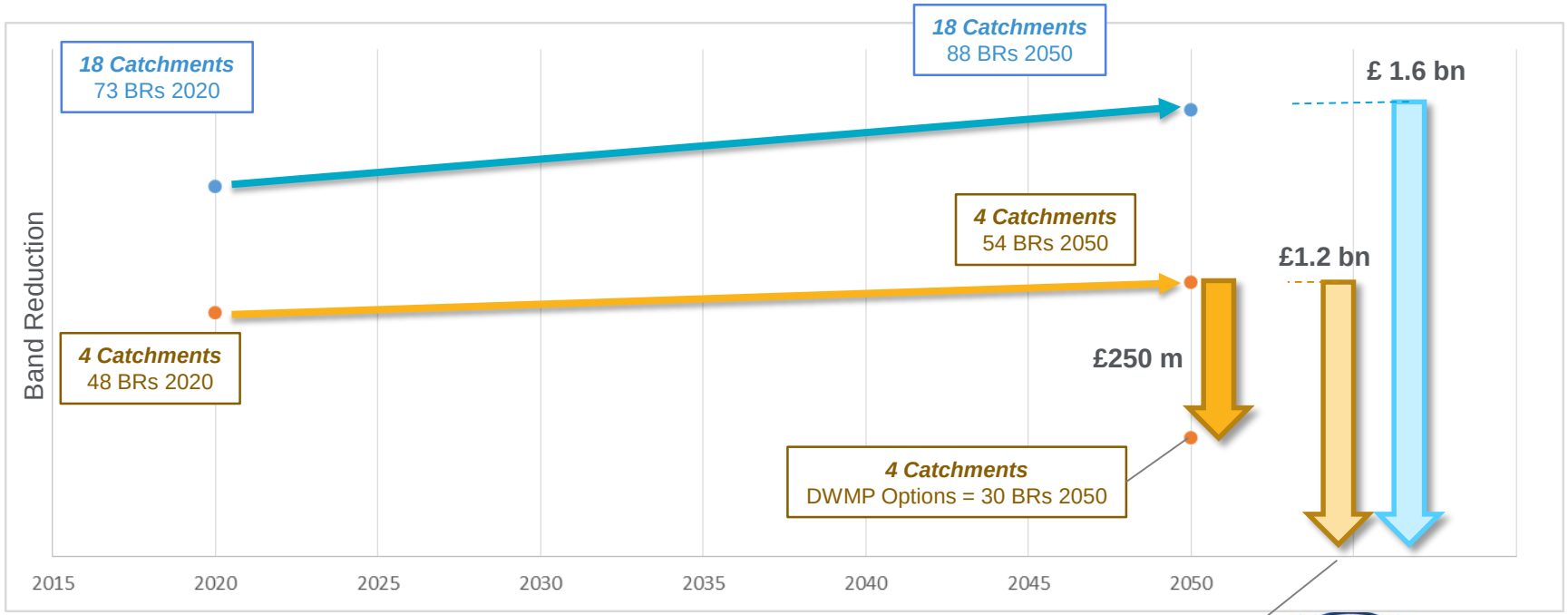


Programme Appraisal

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

Cuckmere & Pevensey Levels: DWMP Cost & Risk Band Reduction



4 catchments = 300,000 population
18 catchments = 322,000 population

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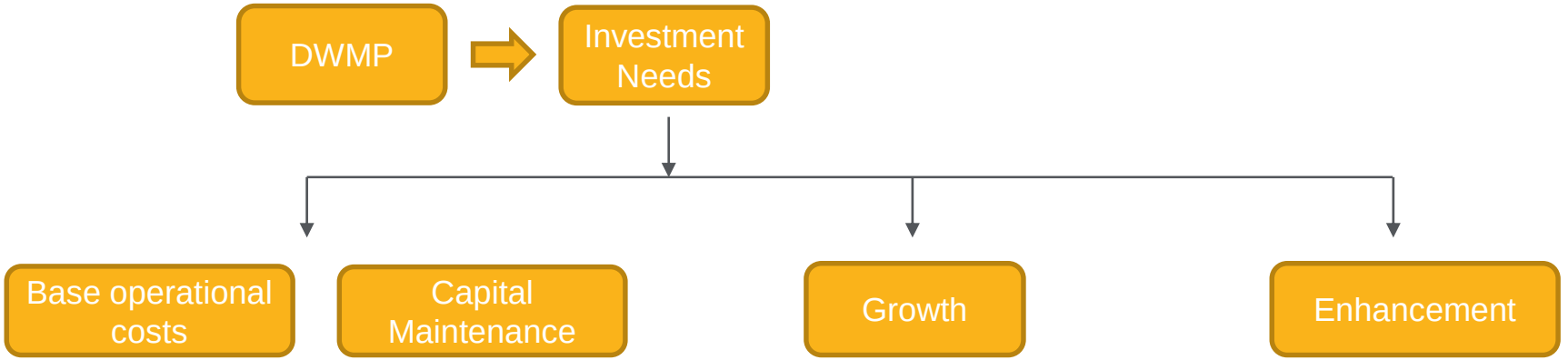
Questions

Delivering the DWMP Investment Needs

Funding the DWMP Investment Needs in PR24



Maintain existing wastewater system to meet expected performance levels

Developer contributions and shareholder investment (included in base for Price Review 2019)

Improve system for better performance, new regulations, climate change etc

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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

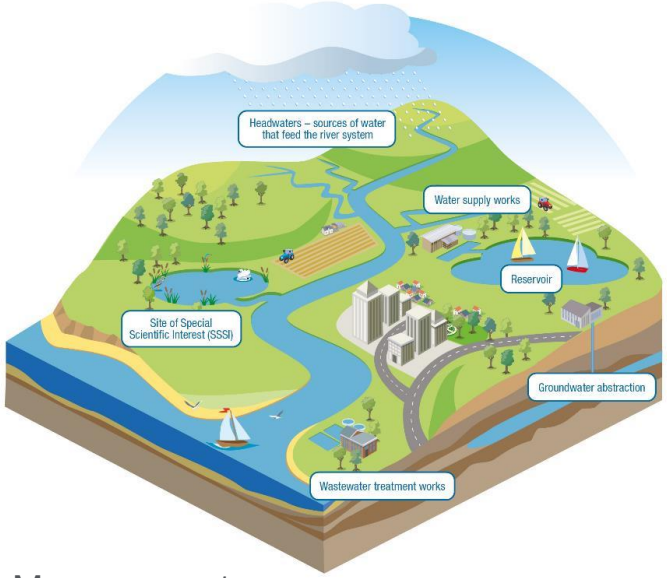
Special cases have a high evidence threshold, and must have:

- ✓ 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)

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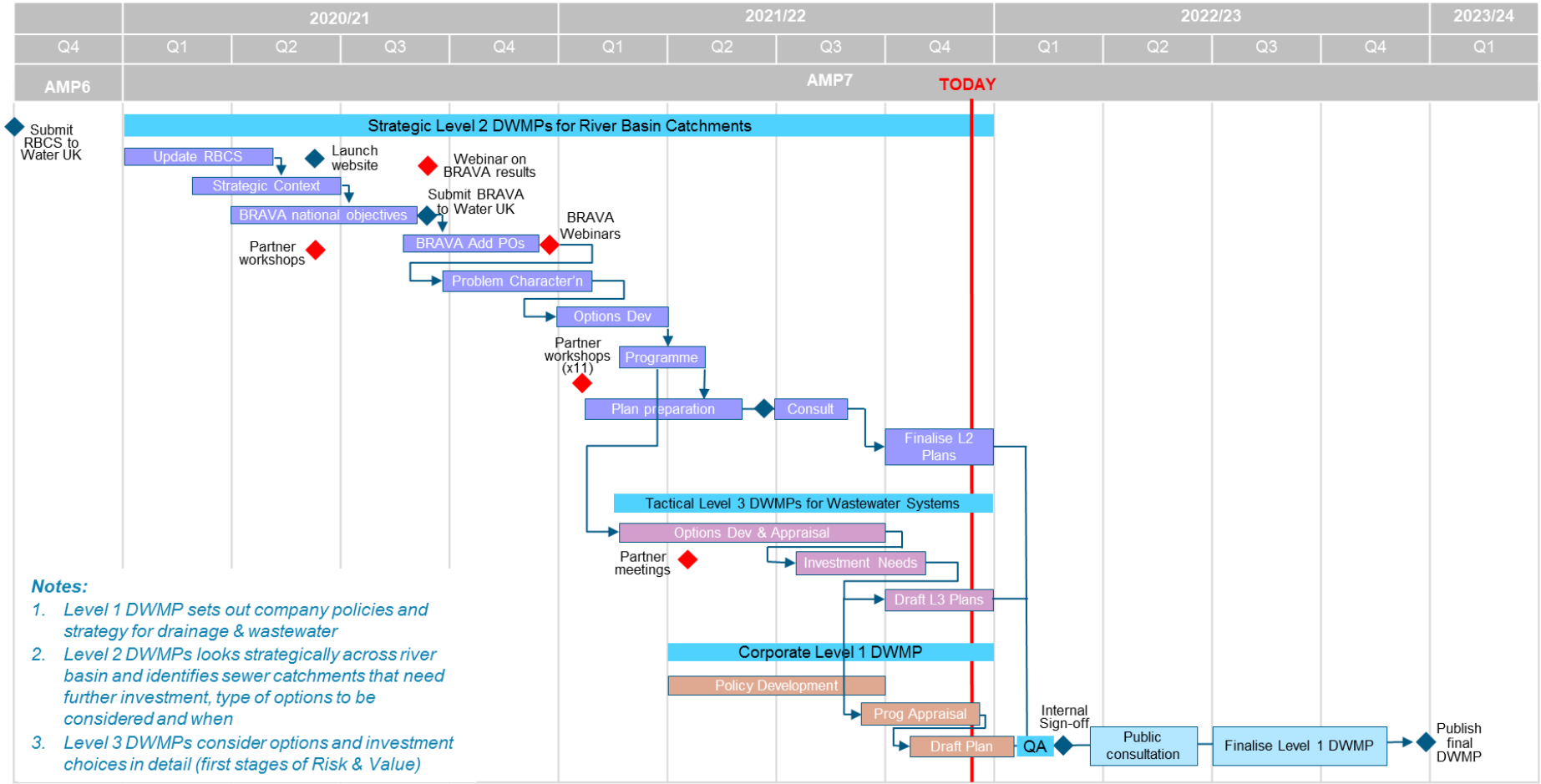
Next Steps

Our DWMP Delivery Programme



Notes:

1. *Level 1 DWMP sets out company policies and strategy for drainage & wastewater*
2. *Level 2 DWMPs looks strategically across river basin and identifies sewer catchments that need further investment, type of options to be considered and when*
3. *Level 3 DWMPs consider options and investment choices in detail (first stages of Risk & Value)*

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 – Hailsham North (HAIN)

DRAFT

Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
Harebeating Crescent	Internal Flooding - Blockages	Enhanced maintenance: Proactive Jetting	£23k	Short	
		Enhanced maintenance: Customer Education	£116k	Short	Wealden DC ESCC
Gournay Road Hailsham WPS	Internal Flooding - Operational	Enhanced maintenance: Wastewater Pumping Stations	£233k	Short	
Upper Dicker WPS	Pollution Risk - Operational	Enhanced maintenance: Wastewater Pumping Stations	£233k	Short	
Upper Dicker, Upper Horsebridge	Pollution Risk- Blockages	Enhanced maintenance: Proactive Jetting	£11k	Short	
		Enhanced maintenance: Customer Education	£116k	Short	Wealden DC ESCC
Upper Horsebridge	Sewer Collapses	Sewer CCTV surveys, integrity checks and re-lining/enforcement	£317k	Short	
Lower Horsebridge	Flooding & Drainage	Attenuate excess flows in sewer network using, upsizing sewer, storage tanks and creating new sewers to reduce risk of flooding. (Cost based on storage but surface water separation is the preferred option)	£9,064k	Medium	Wealden DC ESCC
Battle Road			£857k	Short	
The Dicker			£2,196k	Short-Medium	
Catchment Wide		Study: Model improvements, including flow surveys for storm and dry weather flow, and model calibration.	£200k	Short	
Upper Dicker Lower Horsebridge Amberstone	Growth- Flooding & Drainage	Attenuate excess flows in sewer network using, upsizing sewer, storage tanks and creating new sewers to reduce risk of flooding. (Cost based on storage but surface water separation is the preferred option)	£6,978k	Medium-Long	Wealden DC ESCC
Hailsham North WTW	Flooding & Drainage- Overflows	Attenuate excess flows in sewer network using storage tanks to reduce risk of spill events. (Cost based on storage but surface water separation is the preferred option)	£1,000k	Short	Wealden DC ESCC
Upper Dicker WPS			£1,000k	Short	
Hailsham North WTW	Growth- Increase Capacity DWF at WTWs	Review permit for the WTW with the EA, and deliver associated works to increase capacity of the works.	£1,605k	Medium-Long	
Cuckmere from Warbleton to Lower Horsebridge	Good Ecological Status	Study: Understand the risks and sources that Phosphate, Macrophytes and Phytobenthos have on the linked waterbodies.	£76k	Short	

Investment Needs – Eastbourne (EALP)

DRAFT

Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
Roselands, Langney, Westham	Internal Flooding - Blockages	Enhanced maintenance: Customer Education	£116k	Short	Eastbourne BC East Sussex CC
		Enhanced maintenance: Proactive Jetting	£297k	Short	
Archery Eastbourne WPS	Internal Flooding - Operational	Enhanced maintenance: Wastewater Pumping Stations / Treatment Works	£233k	Short	
Eastbourne WTW	Pollution Risk - Operational	Enhanced maintenance: Treatment Works	£6,970k	Short-Medium	
Upperton, Downside, West Meads	Groundwater Pollution	Sewer CCTV surveys, integrity checks and re-lining/enforcement	£6,495k	Medium	
Gilbert, Whitney, Firle Rd	Flooding & Drainage	Attenuate excess flows in sewer network using, upsizing sewer, storage tanks and creating new sewers to reduce risk of flooding. (Cost based on storage but surface water separation is the preferred option)	£8,579k	Medium	Eastbourne BC East Sussex CC (for Separation/SuDS)
Rise Park			£81,854k	Medium-Long	
Wartling Road			£7,884k	Medium	
Rattle Road			£597k	Short	
Catchment Wide		Study: Model improvements, including flow surveys for storm and dry weather flow, and model calibration.	£150k	Short	
Eastbourne WTW	Flooding & Drainage - Overflows	Attenuate excess flows in sewer network using storage tanks to reduce risk of spill events. (Nominal cost based on storage but surface water separation is the preferred option)	£1,000k	Short	Eastbourne BC East Sussex CC (for Separation/SuDS)
Eastbourne WTW	Growth- DWF at WTWs	Review permit for the WTW with the EA, and deliver associated works to increase capacity of the works.	£1,446k	Medium -Long	