

Drainage and Wastewater Management Plans (DWMPs)

Investment Needs Workshop for the Adur and Ouse
River Basin Catchment

Tuesday 15 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.

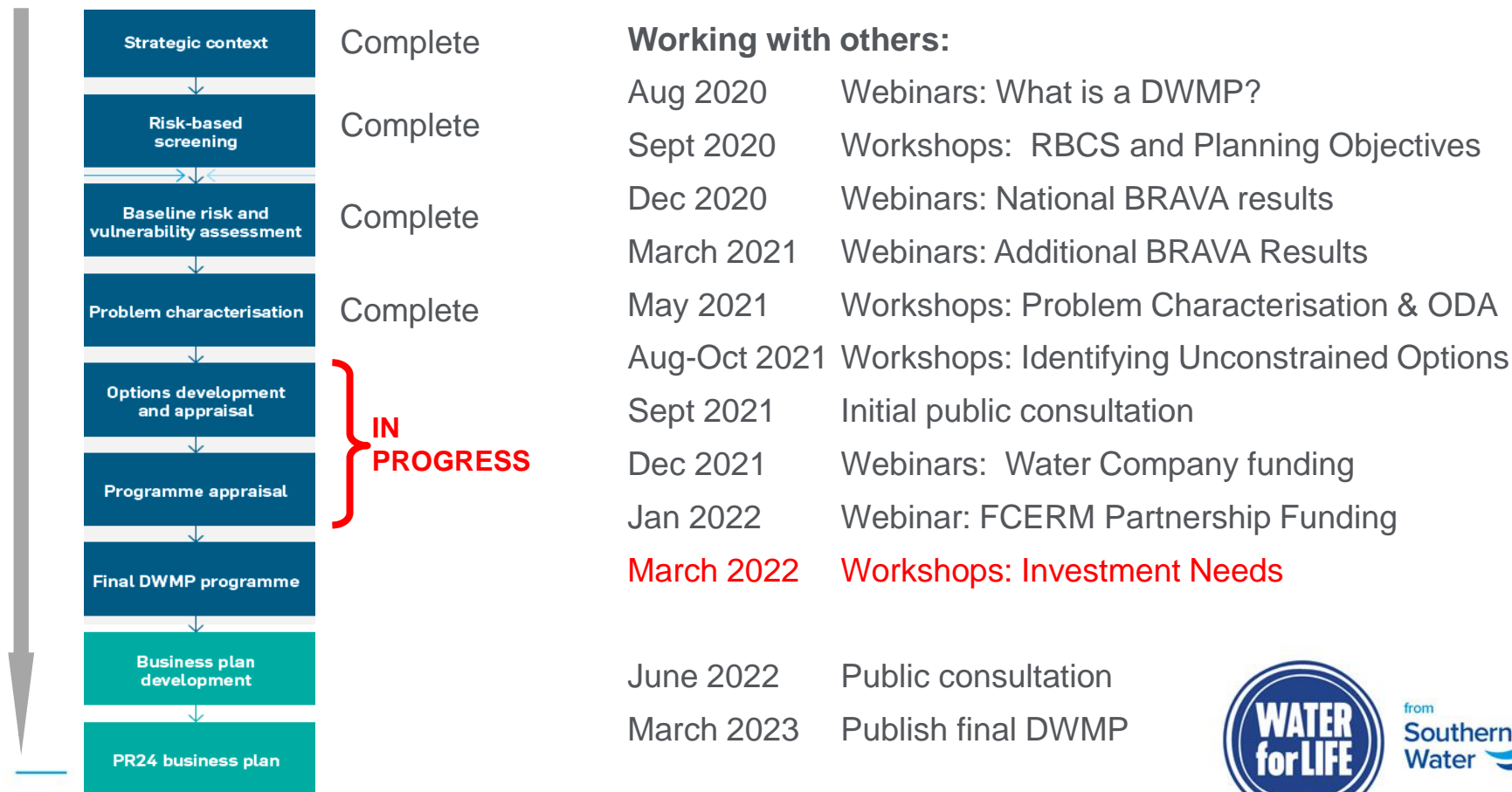
Agenda

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



BRAVA Results: Adur and Ouse

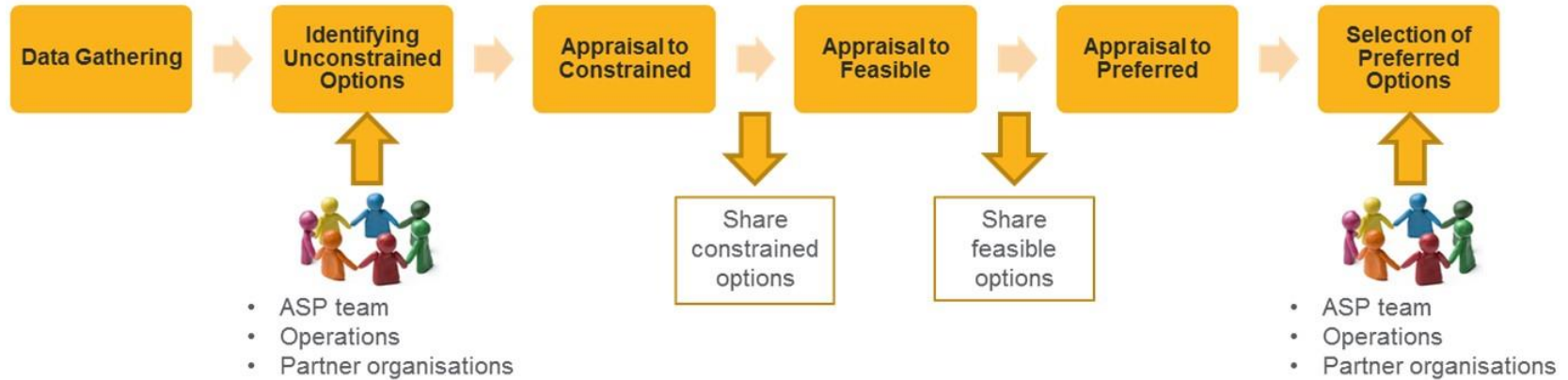
NF	Not Flagged *
NA	Not Applicable **
0	Not Significant
1	Moderately Significant
2	Very Significant

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
BRIG	PEACEHAVEN	297,284	1,405.969	1	0	0	2	2	0	1	0	0	2	NA	2	1	NA
WEOA	EAST WORTHING	142,261	1,167.163	1	0	0	2	1	0	2	0	0	2	NA	1	2	NA
PORT	SHOREHAM	55,458	408.670	0	0	0	2	2	0	2	0	0	2	NA	0	NA	NA
NEWE	NEWHAVEN EAST	58,325	400.218	0	1	2	1	2	0	2	0	0	1	NA	1	0	NA
BURG	GODDARDS GREEN	49,686	363.017	0	2	2	1	2	0	1	0	0	1	NA	0	NA	NA
SCAY	SCAYNES HILL	39,458	298.144	1	1	2	1	1	1	1	0	0	1	NA	0	NA	NA
UCKF	UCKFIELD	17,629	160.796	0	2	2	1	0	0	1	0	0	0	NA	0	NA	NA
STEY	STEYNING	9,887	76.796	0	0	2	0	0	0	0	0	0	0	NA	0	NA	NA
RINL	NEAVES LANE RINGMER	5,216	73.793	0	1	0	1	2	0	0	0	0	0	NA	0	NA	NA
ASHI	ASHINGTON	3,770	52.519	0	0	0	0	2	0	0	0	1	0	2	0	NA	NA
HENF	HENFIELD	5,615	47.145	0	0	0	2	0	1	2	0	1	0	NA	0	NA	NA
BANE	BARCOMBE NEW	3,581	41.482	0	2	0	1	2	0	0	0	0	0	NA	0	NA	NA
NEWI	NEWICK	3,753	38.292	0	0	0	1	1	0	1	0	0	0	NA	0	NA	NA
CUNL	CUCKFIELD	3,614	32.310	0	0	0	2	0	1	0	0	0	0	NA	0	NA	NA
BUXT	BUXTED	2,306	26.653	0	0	0	1	2	0	0	0	0	0	NA	0	NA	NA
BALC	BALCOMBE	1,651	24.172	0	0	0	0	1	2	0	0	0	0	NA	0	NA	NA
MARE	MARESFIELD	1,862	23.172	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA
PART	PARTRIDGE GREEN	2,347	20.700	0	0	0	1	0	0	1	0	0	0	NA	0	NA	NA
BARN	BARNS GREEN	1,075	18.512	0	0	0	1	1	0	0	0	0	0	NA	0	NA	NA
WIVE	WIVELSFIELD	1,721	18.279	0	0	0	0	0	0	0	0	2	0	NA	0	NA	NA
DANE	DANEHILL	1,250	17.727	0	0	0	0	2	2	1	0	0	0	0	0	NA	NA
DITC	DITCHLING	1,664	17.528	0	0	0	0	0	0	0	0	0	0	NA	0	NA	NA
BLBO	BLACKBOYS	1,098	17.179	0	0	0	0	1	0	0	0	0	0	NA	0	NA	NA
KING	KINGSTON HOLLOW	1,031	15.561	0	0	0	0	0	0	0	0	0	0	NA	0	NA	NA
COWF	COWFOLD	1,279	8.890	0	0	0	0	2	0	1	0	0	0	NA	0	NA	NA
ARDI	ARDINGLY	1,464	8.793	0	0	0	1	0	0	0	0	0	0	NA	0	NA	NA
HOKE	HORSTED KEYNES	1,240	7.790	0	0	0	0	0	1	0	0	0	0	0	0	NA	NA
HAND	HANDCROSS	1,214	7.614	0	0	0	0	NA	1	1	1	0	0	NA	0	NA	NA
SMAL	SMALL DOLE	814	7.066	0	1	0	0	1	0	1	0	0	0	NA	0	NA	NA
HALL	HALLAND	460	6.033	0	0	0	1	2	0	0	0	0	0	NA	0	NA	NA

Results shown for 2020 only



Options Development and Appraisal



Adur and Ouse River Basin :

Unconstrained Option Development meetings held on:

- East Worthing 3 August 2021
- Shoreham 1 September 2021
- Peacehaven Brighton 9 September 2021
- Newhaven East 16 September 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.RC03 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.	

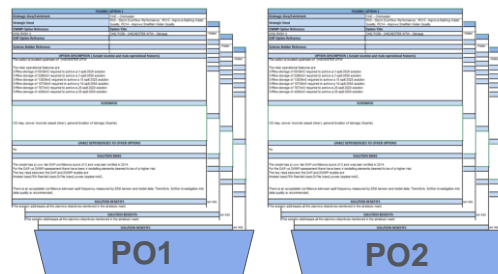
Each Wastewater System may have multiple feasible options.

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 – Peacehaven Brighton (BRIG)

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Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
Catchment Wide	Internal Flooding - Blockage	Enhanced maintenance: Customer education	£116k	Short	ES DC /BCC
		Enhanced maintenance: Proactive jetting	£812k	Short	
Goldstone, Lewes Road, Patcham, Balsdean, Housedean	Groundwater Pollution - Exfiltration	Pipe rehabilitation programme: CCTV surveys, sewer integrity checks and re-lining to reduce exfiltration within Groundwater Protection Zones.	£51,993k (TBC)	Medium -Long	
Middle Road	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)	£365k - £8,757k Total= £61,113K	Medium	ES DC (Separation)
The Ridgeway					
Tongdean Lane					
South Coast Road					
Preston / New England Rd					
Wilbury Crescent					
Warmdene Road					
Clarendon Villas					
Godwin Road					
Millyard Crescent					
Ovingdean Road					
Stanmer Villas					
Woodland Drive					
Montreal Close					
Clarendon Villas					
Woodland Drive					
Preston Road					
Millyard Crescent, Ovingdean Road					
Montreal Close					
Brighton Marina					
Catchment wide	Flooding & Drainage	Study: Model improvements, including flow surveys for storm and dry weather flow, and model calibration.	£400k	Short	
Marine Drive Brighton WPS	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	ES DC (Separation)

Investment Needs – East Worthing (WOEA)

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Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
Catchment Wide (excluding Goring-by-Sea and Coastal areas until Lancing Beach)	Groundwater Pollution - Exfiltration	Pipe rehabilitation programme: CCTV surveys, sewer integrity checks and re-lining to reduce exfiltration within Ground Water Protection Zones	£60,939k (TBC)	Medium - Long	
Catchment wide	Internal Flooding-Blockages	Enhanced maintenance: Customer education	£116k	Short	WBC WSCC
East Worthing WTW (Tunnel) system	Flooding & Drainage	Enhanced maintenance: Siltation Removal	£TBC	Short	
Old Shoreman Road	Flooding & Drainage	Attenuate excess flows in sewer network using storage tanks to reduce risk of flooding. (Cost based on storage but surface water separation is the preferred option)	£1,854k	Short - Medium	
Ham Road			£872k		
Durington Lane			£3,236k		
Alinora Crescent			£4,197k		
Alinora Avenue	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)	£154,694k (TBC)	Medium - Long	WBC WSCC (separation)
Marine Crescent					
West Parade					
Victoria Road/ Winchester Road					
Merton Terrace					
Ham Road/ Ladydell Road/Homefield Road/Lyndhurst Road/Brougham Road					
Lose Lane					
Penfold Road/Dominion Road					
Old Shoreman Road/Grindstead Lane/West way/New Salts Farm Road					
Goring street/Romany Road					
East Worthing WTW	Growth - DWF Capacity	Review permit for the WTW with the EA, and deliver associated works to increase capacity of the works.	£1,503k	Medium - Long	
East Worthing 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 - Medium	WBC WSCC (separation)
Sea Lane Goring			£1,000k		
Sompting Road Worthing Outside			£1,000k		
Catchment Wide	Flooding & Drainage	Study: Model improvements, including flow surveys for storm and dry weather flow, and model calibration.	£225k	Short	

Investment Needs – Newhaven East (NEWE)

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Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
Ham Lane Lewes New WPS	Pollution Risk - Operational	Enhanced maintenance: Wastewater Pumping Station	£233k	Short	East Sussex County Council (Separation)
Newhaven East WTW		Enhanced maintenance: Wastewater Treatment Works	£6,970k	Short - Medium	
Lewes Town Centre, Southover	Sewer Collapse / Rising Main Bursts	Pipe rehabilitation programme: CCTV surveys, sewer integrity checks and re-lining to increase intergrity.	£1,309k	Medium	
Southover	Groundwater Pollution - Exfiltration	Pipe rehabilitation programme: CCTV surveys, sewer integrity checks and re-lining to reduce exfiltration within Ground Water Protection Zones	£23,294k	Medium - Long	
Cliff End Seaford WPS	Growth - Flooding & Drainage Overflows	Attenuate excess flows in sewer network using storage tanks to reduce risk of spill event. (Cost based on storage but surface water separation is the preferred option)	£1,000k	Medium - Long	
Ham Lane Lewes New WPS	Flooding & Drainage Overflows		£1,000k	Short - Medium	
Newhaven Main WTW	Flooding & Drainage	Attenuate excess flows in sewer network using storage tanks to reduce risk of flooding. (Cost based on storage but surface water separation is the preferred option)	£1,000k	Short - Medium	
Blatchington Road			£586k – £1,865k		
Riverside			Total= £8,494k		
Vale Road					
Chyngton Gardens					
Avis Way					
Newhaven East WTW	Growth - DWF Capacity	Review permit for the WTW with the EA, and deliver associated works to increase capacity of the works.	£2,132k	Medium - Long	
Catchment Wide	Flooding & Drainage	Study: Model improvements, including flow surveys for storm and dry weather flow, and model calibration.	£225k	Short	

Investment Needs – Shoreham (PORT)

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Location	Issues	Option	Indicative Cost	Indicative Timescale	Potential Partners
Catchment Wide <i>(excluding part of Shoreham Beach and the Harbour)</i>	Groundwater Pollution - Exfiltration	Pipe rehabilitation programme: CCTV surveys, sewer integrity checks and re-lining to reduce exfiltration within Groundwater Protection Zones.	£23,226k	Medium -Long	
Albion Street	Flooding & Drainage	Attenuate excess flows in sewer network using storage tanks to reduce risk of flooding. (Cost based on storage but surface water separation is the preferred option)	£825k - £10,687k Total = £18,383k	Short - Medium	West Sussex County Council
Trafalgar Road					
Station Road					
Brighton Road					
Old Shoreham Road					
Catchment Wide	Flooding & Drainage	Study: Model improvements, including flow surveys for storm and dry weather flow, and model calibration.	£175k	Short	
The Green Southwick	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)	£514k	Short - Medium	West Sussex County Council
Upper Shoreham Road			£1,000k		
Shoreham WTW			£1,000k		
Old Shoreham Road	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)	£48,106k	Medium -Long	West Sussex County Council
High Street/Brighton Road					
Upper Shoreham Road					
Dolphin Road					
Kingstone Lane					
Albion Street					
Wellington Road					
Shoreham WTW	Growth - DWF Capacity	Review permit for the WTW with the EA, and deliver associated works to increase capacity of the works.	£1,756k	Medium -Long	

Other Issues from the DWMP Feedback / Input Log

- Tide locking around Brighton and Worthing
- Potential use of parks and allotments for rain gardens / NBS for surface water attenuation
- Greening urban areas using water harvesting measures
- Investigating upstream areas of the Downs for flow attenuation
- Modelling the impact of sea level rise on outfalls
- Higher standards of sewer construction in areas of high groundwater
- Strategic review of who owns private sewers
- Misconnections
- Odour issues in East Worthing



Questions

Review of Investment Needs

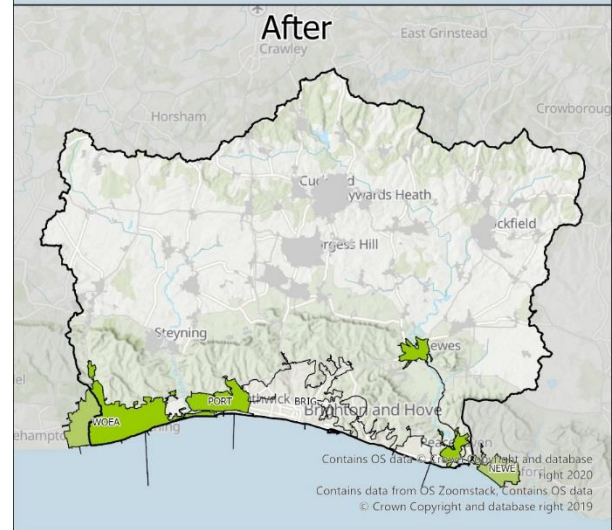
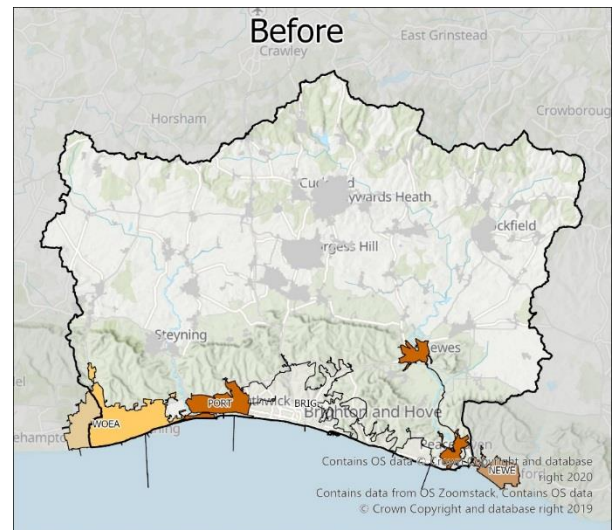
Risks in the Adur and Ouse Catchment

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

- Storm Overflows (PO5)
- Flooding (PO7 and PO4)
- Sewer Collapse (PO3)
- Pollution (PO2)

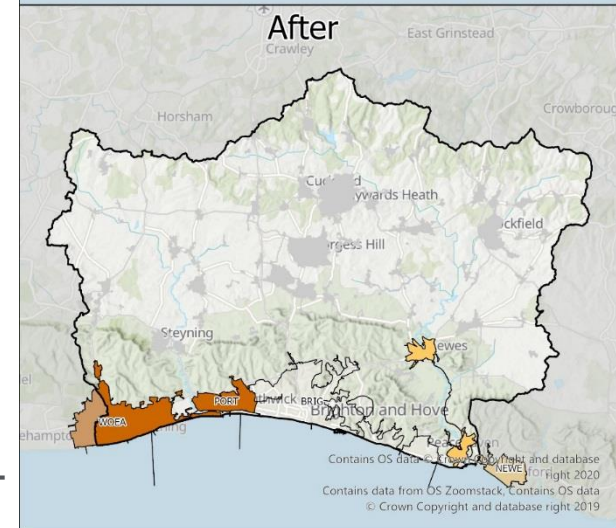
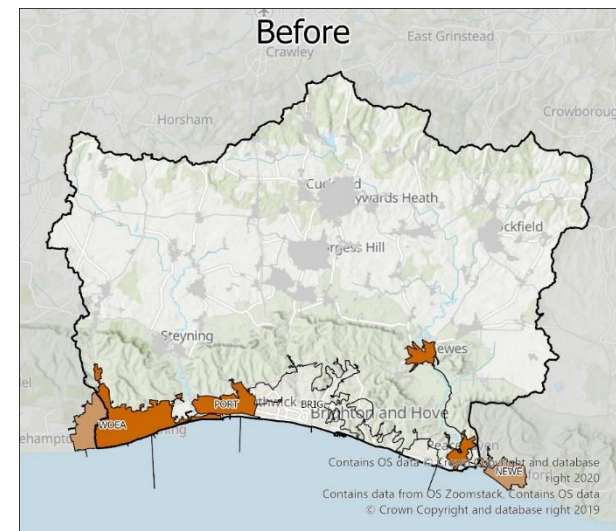
PO5 – Storm Overflow

Adur and Ouse	PO5	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
East Worthing			
WOEA.OT01.4 – Storage (East Worthing WTW)	£1000 K	1	0
WOEA.OT01.6 – Storage (Sea Lane Goring)	£1000 K		
WOEA.OT01.7 – Storage (Sompting Road)	£1000 K		
Newhaven East			
NEWE.OT01.4 – Storage (Ham Lane Lewes New WPS)	£1000 K	2	0
NEWE.OT01.6 – Storage (Cliff End Seaford WPS)	£1000 K		
NEWE.OT01.7 – Storage (Newhaven Main WTW)	£1000 K		
Portabello Brighton			
		0	0
Shoreham			
PORT.OT01.4 - Storage (UPPER SHOREHAM ROAD SHOREHAM CSO)	£1000 K	2	0
PORT.OT01.5 – Storage (Shoreham WTW)	£1000 K		
PORT.PW01.3 - Storage (THE GREEN SOUTHWICK CSO)	£514 K		



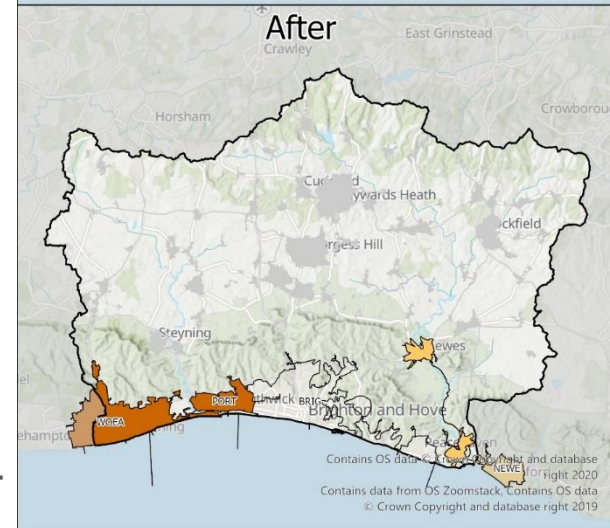
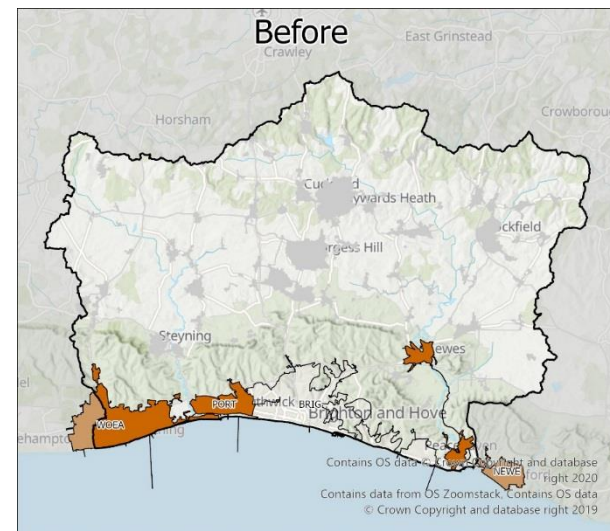
PO7 – Hydraulic Overload

Adur and Ouse	PO7	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
Shoreham			
PORT.OT01.3 - Improve Hydraulic Model	£175 K		
PORT.PW01.11 - Storage	£10687 K		
PORT.PW01.12 - Storage	£3017 K		
PORT.PW01.13 - Storage	£2869 K		
PORT.PW01.14 - Storage	£985 K		
PORT.PW01.15 - Storage	£825 K		
PORT.PW01.4 - Upsizing (Growth)	£6872 K	2	2
PORT.PW01.5 - Upsizing, new sewer and online storage (Growth)	£6872 K		
PORT.PW01.6 - Upsizing (Growth)	£6872 K		
PORT.PW01.7 - Upsizing (Growth)	£6872 K		
PORT.PW01.8 - Upsizing and offline storage (Growth)	£6872 K		
PORT.PW01.9 - Upsizing (Growth)	£6872 K		
PORT.PW01.10 - Upsizing (Growth)	£6872 K		



PO7 – Hydraulic Overload

Adur and Ouse		PO7	BRAVA (2050)	
Option Type		Est Cost (£)	Before	After
East Worthing				
	WOEA.OT01.8 - Improve Hydraulic Model	£225 K		
	WOEA.PW01.17 - Storage	£1854 K	2	2
	WOEA.PW01.18 - Storage	£872 K		
	WOEA.PW01.19 - Storage	£3236 K		
	WOEA.PW01.20 - Storage	£4197 K		
Newhaven East				
	NEWE.OT01.5 - Improve Hydraulic Model	£225 K	2	1
	NEWE.PW01.10 - Storage	£541 K		
	NEWE.PW01.11 - Storage	£1059 K		
	NEWE.PW01.12 - Storage	£591 K		
	NEWE.PW01.6 - Storage	£1865 K		
	NEWE.PW01.7 - Storage	£1396 K		
	NEWE.PW01.8 - Storage	£2456 K		
	NEWE.PW01.9 - Storage	£586 K		
Portabello Brighton				
			0	0



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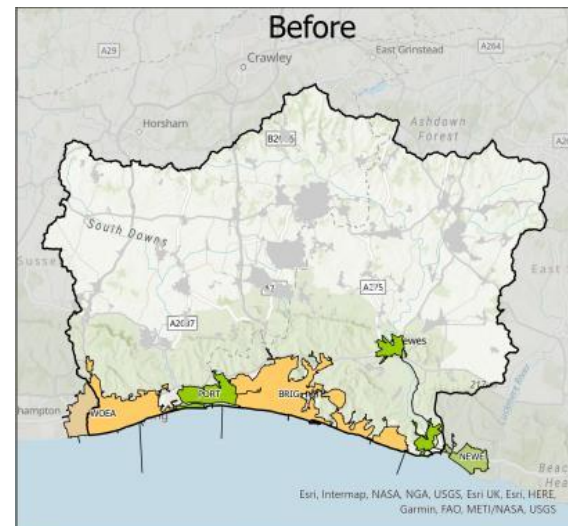
PO3 – Sewer Collapse

Adur and Ouse	PO3	Collapses and Bursts (Nr)			BRAVA	
Option Type	Est Cost (£)	Solution Reduction	Total	Reduction Req'd for Band 0	Before	After
East Worthing					0	0
Newhaven East						
NEWE.PW01.2 - Pipe Rehabilitation Programme	£1,309 K	9	17	11	2	1
Portabello Brighton					0	0
Shoreham					0	0



PO1 – Internal Flooding

Adur and Ouse	PO1	Internal Flood Incidents (Nr in 3yrs)			BRAVA	
Option Type	Est Cost (£)	Solution Reduction	Total	Reduction Req'd for Band 0	Before	After
East Worthing						
WOEA.SC03.1 - Customer Education Programme	£116 K	9	40	7	1	0
Newhaven East					0	0
Portabello Brighton					0	0
Shoreham					0	0



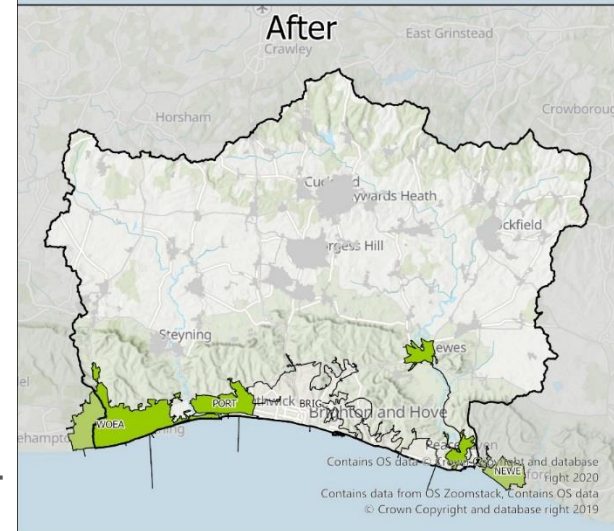
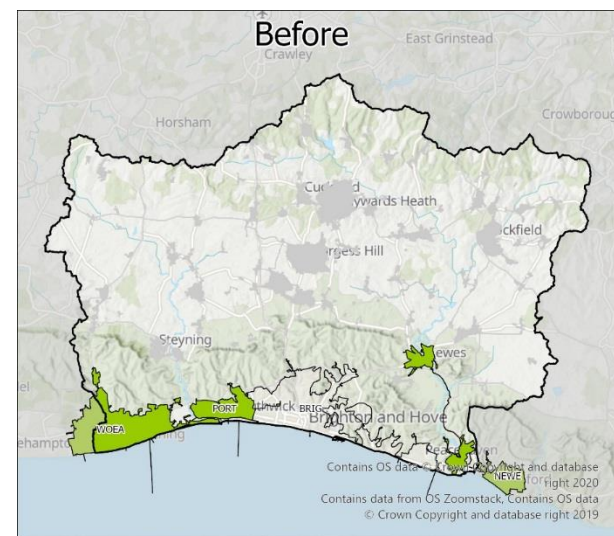
PO2 – Pollution Risk

Adur and Ouse	PO2	Pollution Incidents (Nr in 3yrs)			BRAVA	
		Est Cost(£)	Solution Reduction	Total	Reduction Req'd for Band 0	Before
Option Type						
East Worthing					0	0
Newhaven East						
NEWE.PW01.1 - Maintenance Programme WPS	£233 K	2	5	3	1	0
NEWE.PW02.1 - Maintenance Programme WTW	£6,970 K	2			0	0
Portabello Brighton					0	0
Shoreham					0	0



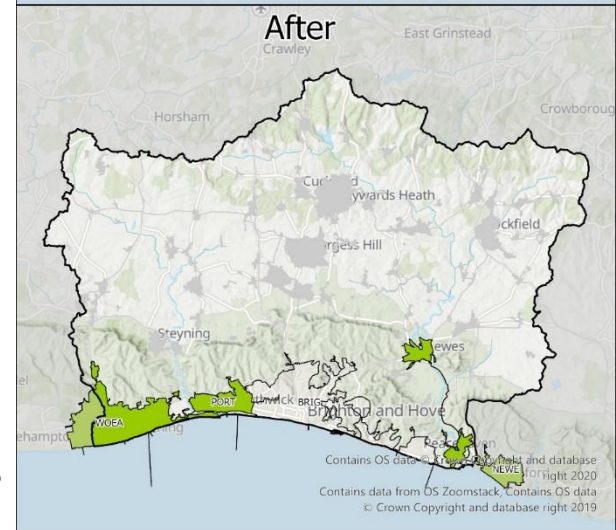
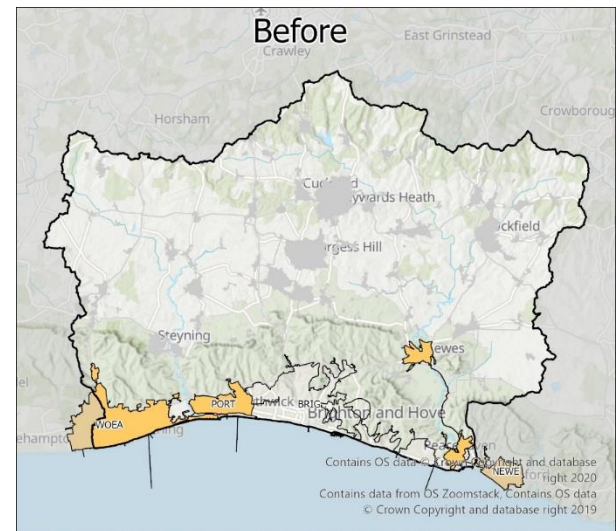
PO6 – WTW Compliance Failure

Adur and Ouse	PO6	BRAVA (2050)	
Option Type	Est Cost (£)	Before	After
East Worthing		0	0
Newhaven East		0	0
Portabello Brighton		0	0
Shoreham		0	0



PO8 – DWF Compliance

Adur and Ouse	PO8	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
East Worthing			
WOEA.PW02.1 - Increase DWF Capacity	£1,503 K	1	0
Newhaven East			
NEWE.PW02.2 - Increase DWF Capacity	£2,132 K	1	0
Portabello Brighton		0	0
Shoreham			
PORT.PW02.1 - Increase DWF Capacity	£1,756 K	1	0



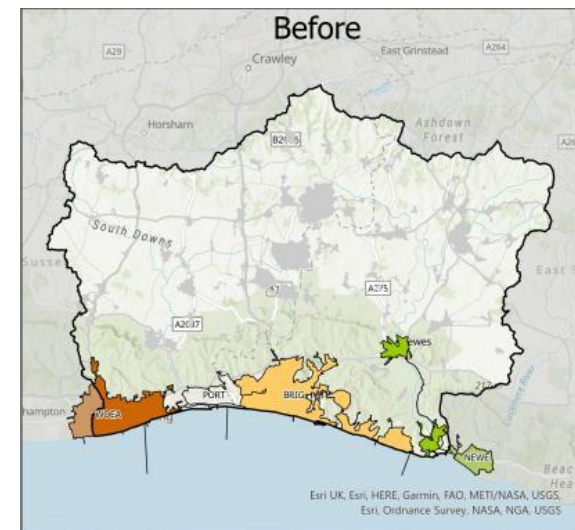
PO12 – Groundwater Pollution Risk

Adur and Ouse	PO12	BRAVA	
Option Type	Est Cost(£)	Before	After
East Worthing			
WOEA.PW01.2 - Pipe Rehabilitation Programme	£60,939 K	2	1
Newhaven East			
NEWE.PW01.4 - Pipe Rehabilitation Programme	£23,294 K	1	0
Portabello Brighton			
		0	0
Shoreham			
PORT.PW01.2 - Pipe Rehabilitation Programme	£23,226 K	1	0



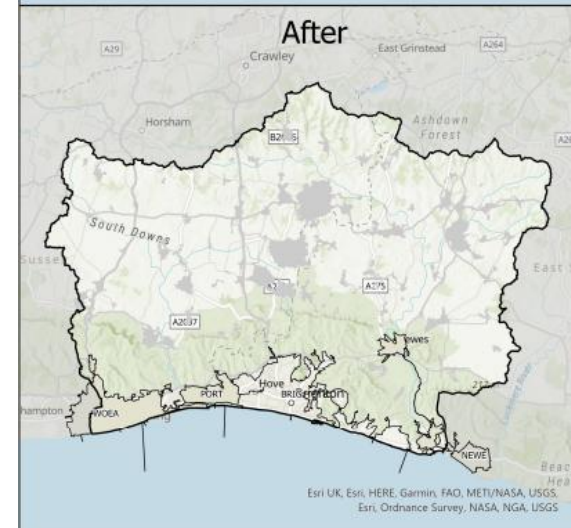
PO13 – Bathing Water

Adur and Ouse	PO13	BRAVA	
Option Type	Est Cost (£)	Before	After
East Worthing			
WOEA.OT01.4 – Storage (East Worthing WTW)	£1000 K	2	1
WOEA.OT01.6 – Storage (Sea Lane Goring)	£1000 K	2	1
Newhaven East		0	0
Portabello Brighton		0	0
Shoreham		0	0



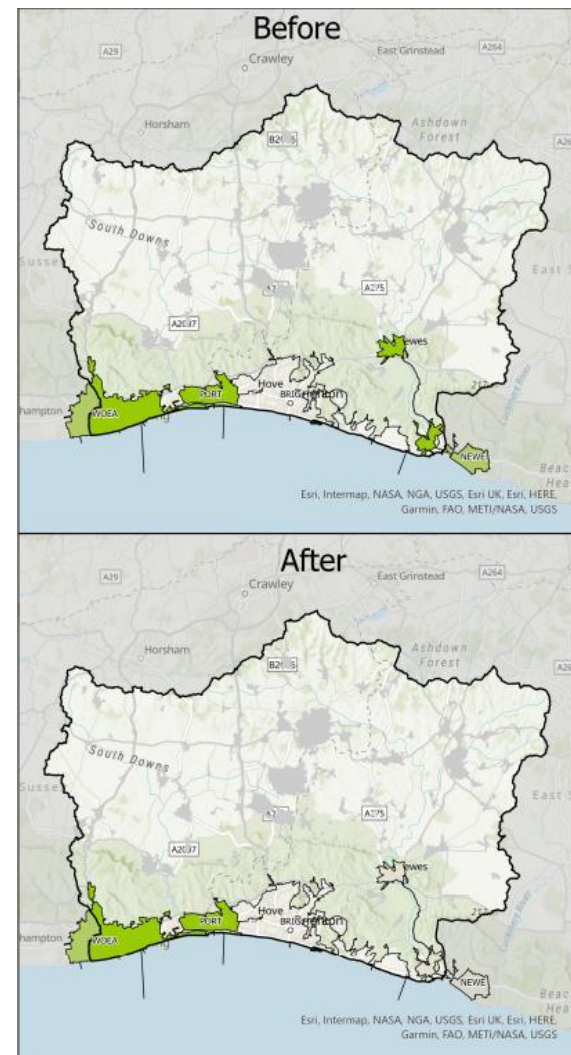
PO14 – Shellfish Water

Adur and Ouse	PO14	BRAVA	
Option Type	Est Cost (£)	Before	After
East Worthing		0	0
Newhaven East		0	0
Portabello Brighton		0	0
Shoreham		0	0



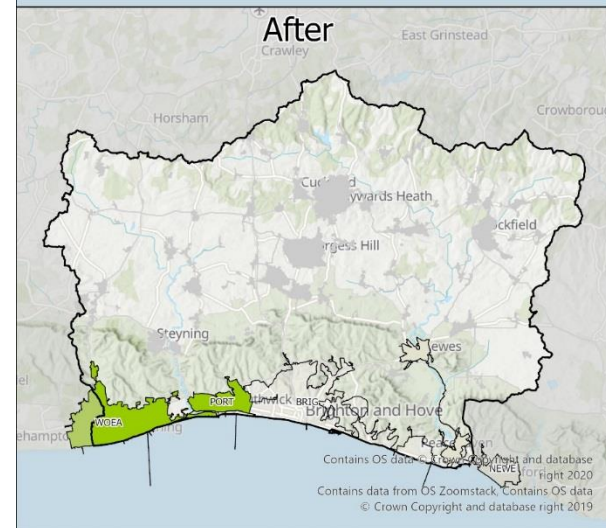
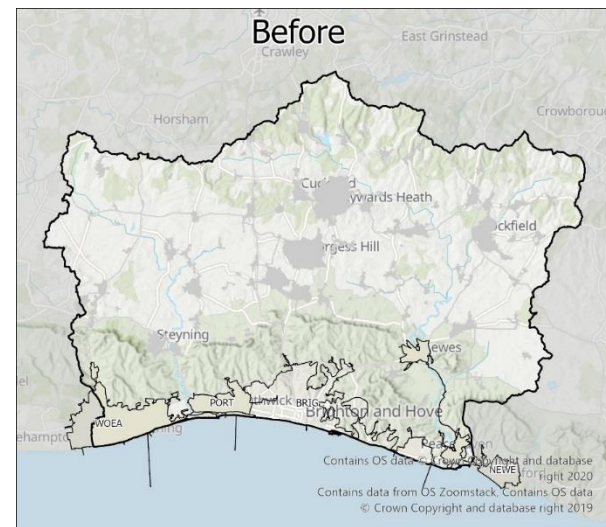
PO9 – Good Ecological Status

Adur and Ouse	PO9	BRAVA	
		Before	After
Option Type	Est Cost(£)	Before	After
East Worthing		0	0
Newhaven East		0	0
Portabello Brighton		0	0
Shoreham		0	0



PO11 – Nutrient Neutrality

Adur and Ouse	PO11	BRAVA (2050)	
Option Type	Est Cost(£)	Before	After
East Worthing		0	0
Newhaven East		0	0
Portabello Brighton		0	0
Shoreham		0	0



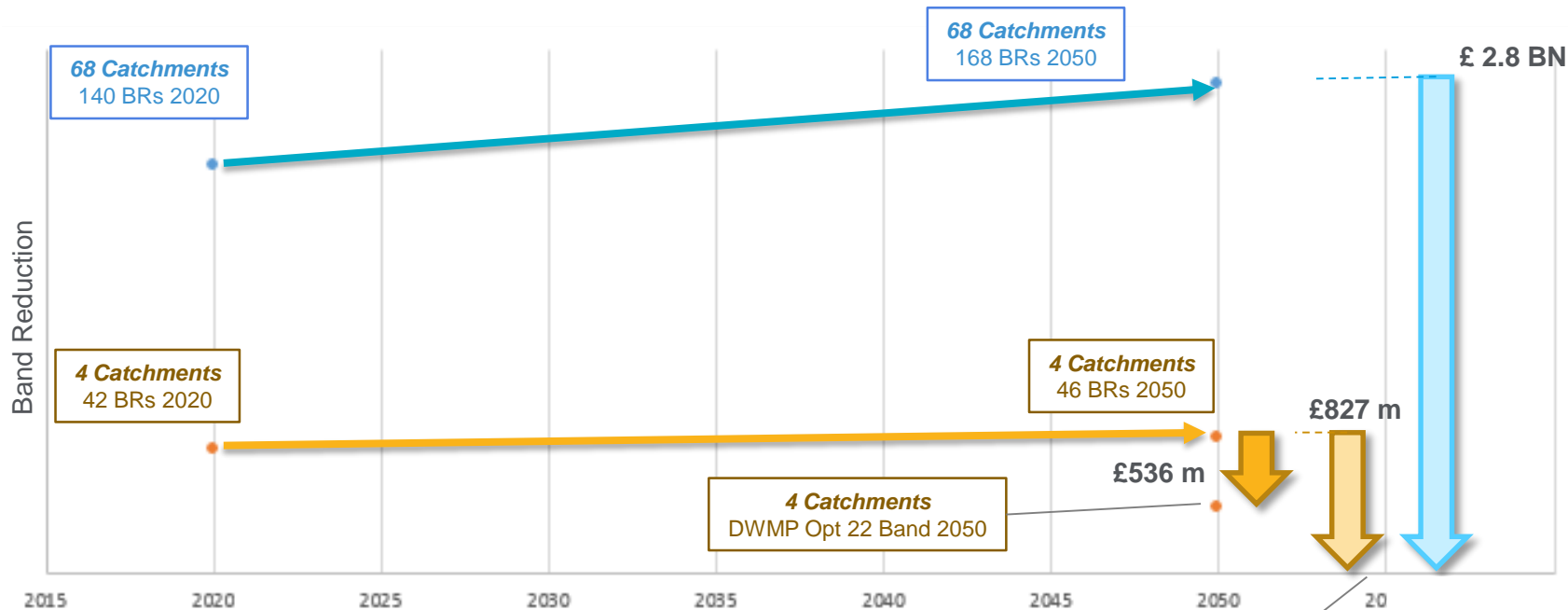
Programme Appraisal

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



Adur & Ouse: Cost & Risk Band Reduction



4 catchments: Population = 553,000
 68 catchments: Population = 723,000

DRAFT

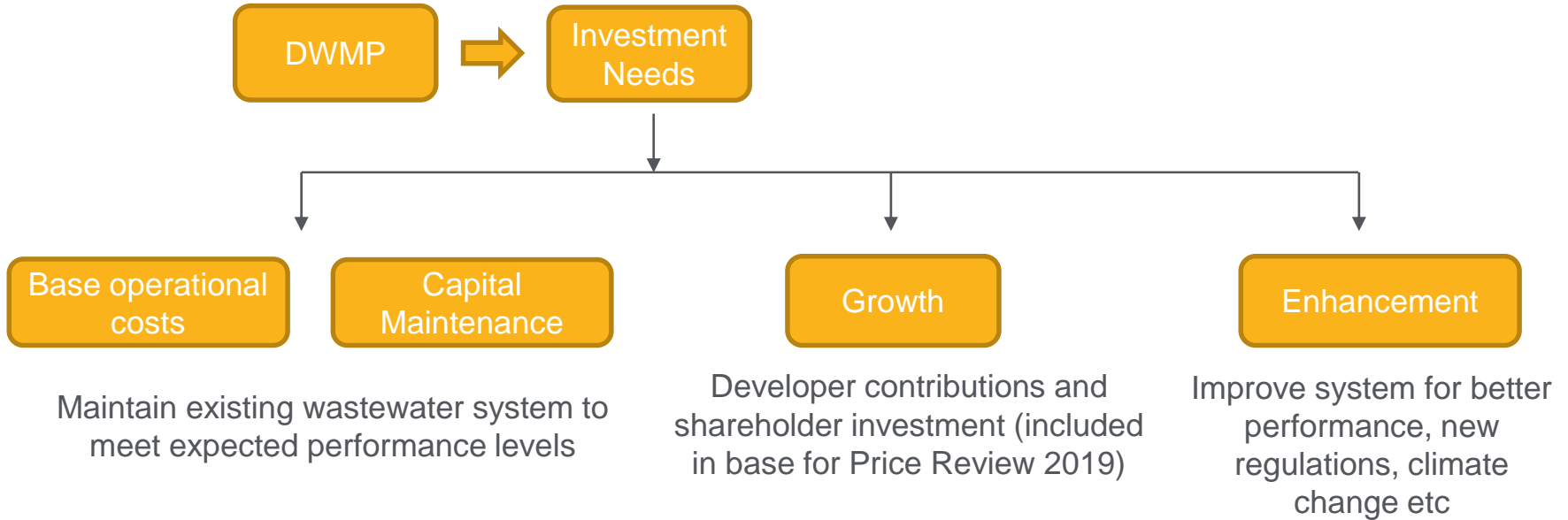


from Southern Water

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

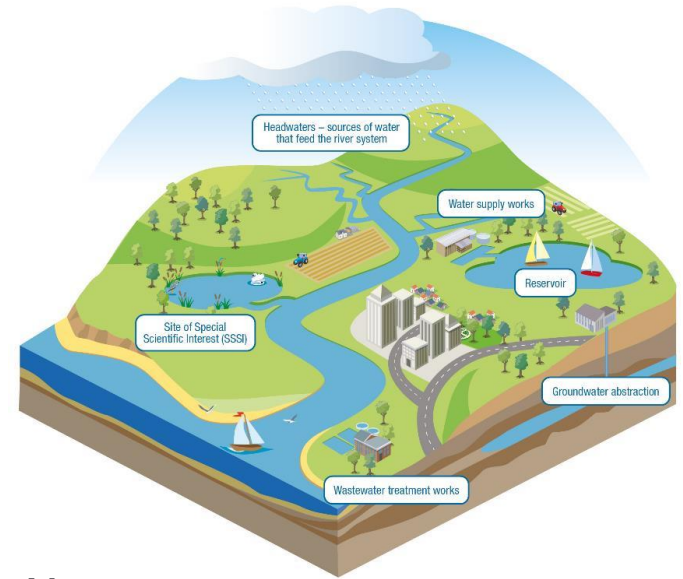
Key findings from our DWMP:

- 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:

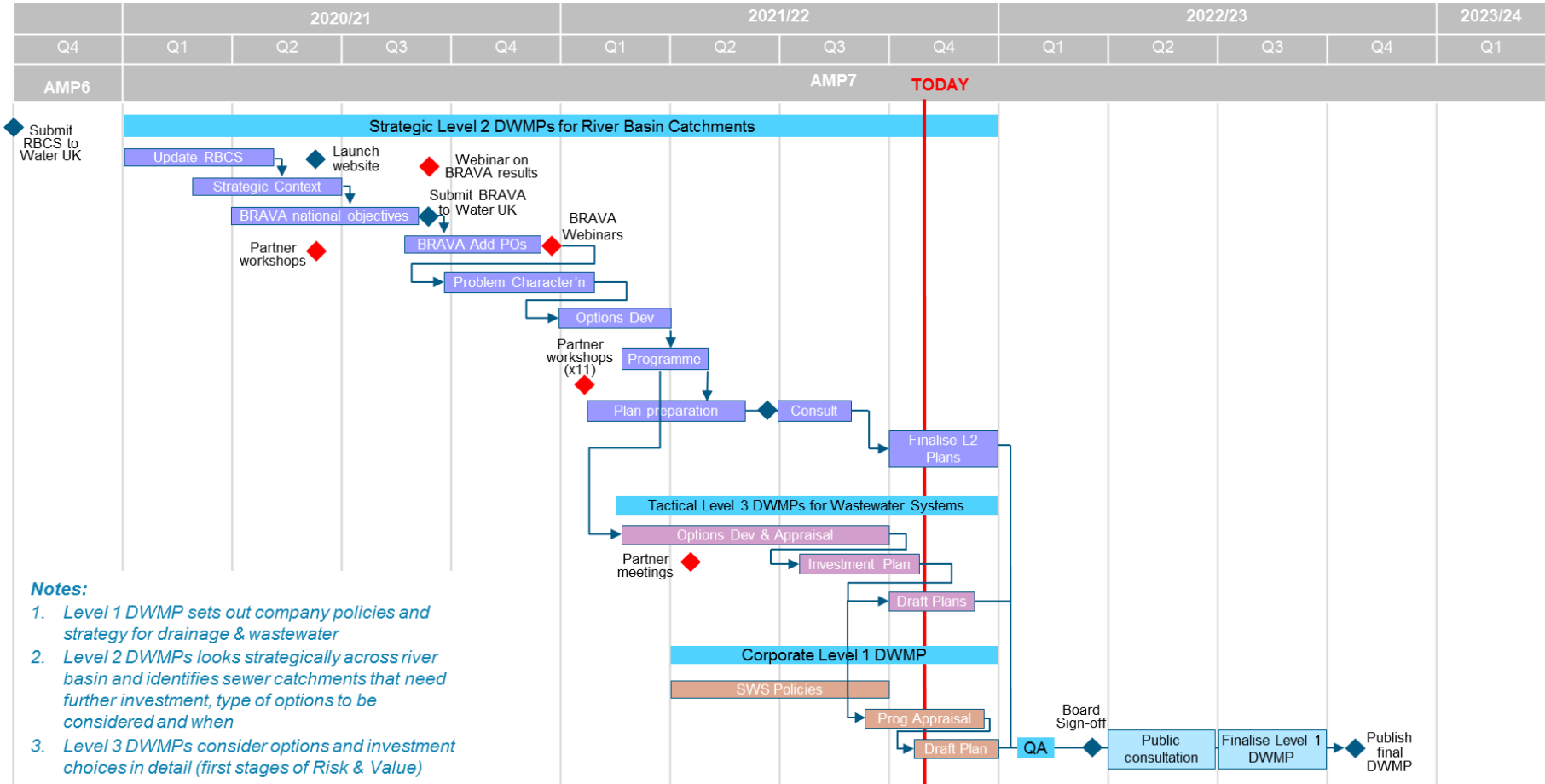
- River restoration
- Nutrient and sediment reduction
- Working with farmers to improve land management practices
- Sustainable drainage systems (SuDS)



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** 

The Southern Water logo graphic consists of three stylized, wavy blue lines of varying lengths, positioned to the right of the text "Southern Water".