Solent Forum

13 March 2025

Dan Ross

Environment Strategy Manager

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Environment & Water Quality Lead

Clean Rivers & Seas Taskforce

Agenda

Proposed Strategy

Planning & Investment

Clean Rivers and Seas Task Force

Three Harbours

Proposed strategy map 2025

For cocreation consultation

ICEG
INDEPENDENT CLIMATE & ENVIRONMENT GROUP

WATER for LIFE
from Southern Water

Southern Water corporate vision, purpose, & values.

Our purpose

"To provide water for life to our customers, to enhance and protect the environment and to sustain the economy".

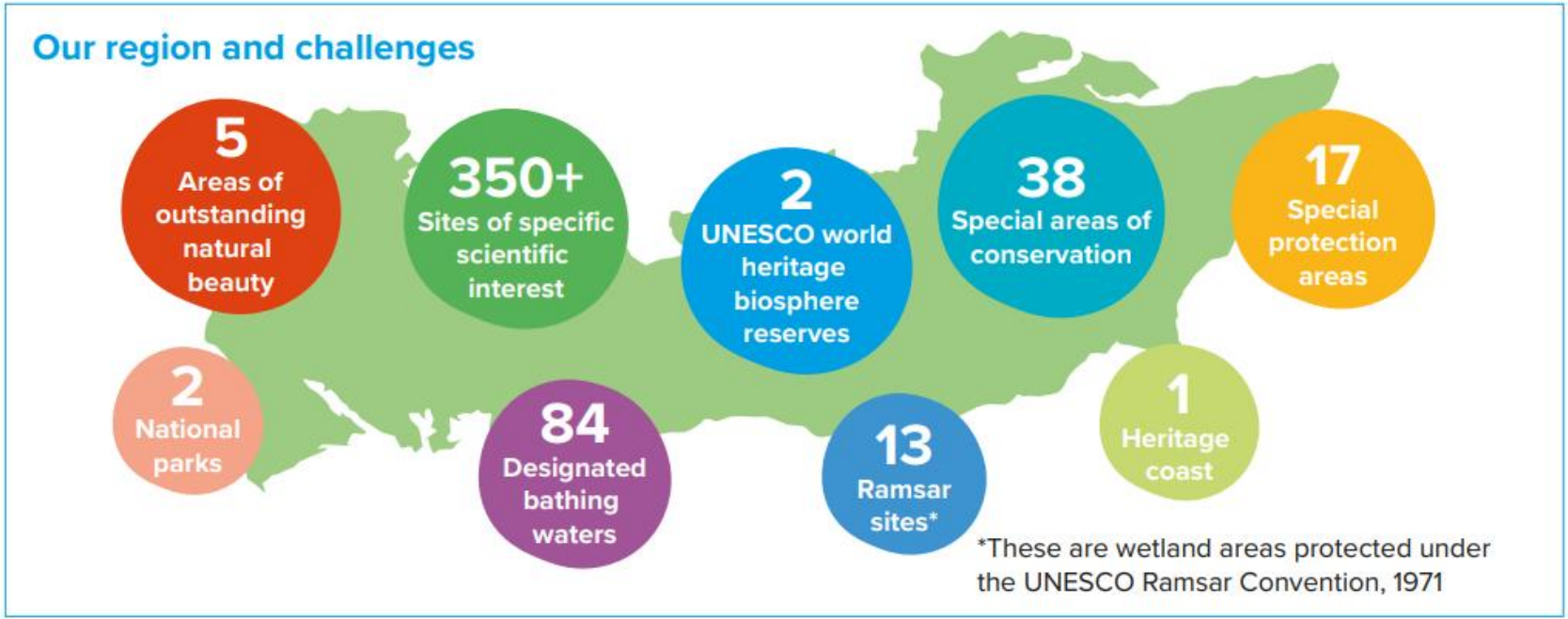
Our Vision

"To create a resilient water future for our customers in the South East".

- Doing the right thing
- Succeeding Together
- Always Improving
- Working with care

Southern Water regional context

Environmental designations



Key facts about Southern Water

	Our Regulators
defra	Defra
dwi	DWI
Ofwat	Ofwat
CCW	CCW
Environment Agency	Environment Agency
NATURAL ENGLAND	Natural England

Who are we?
4.7million waste water customers, 2.5 Million water customers across Kent, Sussex (East & West), Hampshire and Isle of Wight.
700 miles of coastline
365 waste water treatment works, 89 water treatment works, 2375 pumping stations, 14,000km water pipes, 40,000km sewers.
2500 Ha of estate across Hampshire, Isle of Wight, East & West Sussex, and Kent.
2500 employees
70% ground water source, 23% rivers, 7% reservoirs.

Our Business plan headlines and status

- SW has 5 year investment / business plan cycles – Asset Management Plans (AMP 8 is 2025-30)

- AMP 8 includes over 8.5bn investment – with three key focus areas:

  - Reliable high quality water supply £3.4bn investment– eg in our x 4 largest water supply works, reduce by 10% water taken from environment, water recycling, water efficiency etc.
  - Trusted and easy customer service - £348 mil investment in customer related services.
  - Protect and improve environment esp across Rivers and Seas. £4.1 bn investment – eg – reducing storm overflows, pollutions, improving 1000km river water quality

- SW are appealing their Final Determination - to the CMA. This will delay plans implementation up to 1 yr.

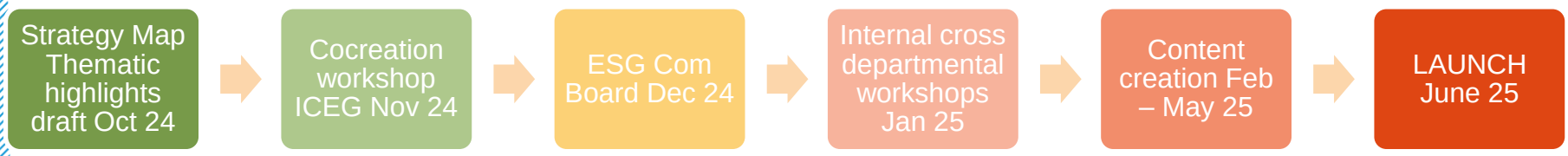
Why do we need a corporate Environment Strategy?

- Define ambition clearly across a complex business with multiple regulatory and legislative programmes - stretching beyond current.
- Join up regulatory silos – build efficiency
- Define ambition and routes to delivery in clear language
- Our stakeholders, partners, customers and communities are demanding this clarity.

Building a corporate Environment Strategy

- Working with ICEG / internally to cocreate
- Building partnerships to deliver
- Defining Environmental Ambition
- embedding customer and investor expectation
- Joining regulatory drivers / gaps
- Mapping accountability and delivery
- monitoring framework internally
- The next pages are a draft Plan on a page

Environment Strategy co-creation and time line



Environment Strategy Map

Our Environmental Strategy Vision

We are a responsible custodian of the water cycle, helping to create a resilient water future through our actions with others.
We maintain and enhance a thriving environmental system, minimising our carbon footprint and increasing the wellbeing of our customers.

Strategic goals

- Building action and resilience to tackle climate change and build adaption strategies to protect our assets
- Healthy catchments rivers and seas
- Thriving nature and communities
- Sustainable drinking water supplies
- Efficient use and recycling of our resources

Enabling principles

- Partnerships
- Systems thinking and innovation
- Natural solutions first
- Strong evidence base and smart use of technology
- Diversification of income and investment streams

Becoming nature positive by restoring and regenerating our natural environment through our actions

OKR's Link to Corporate strategic Objective (Common)
Be Nature Positive

Key Result: Meet Biodiversity Performance Commitment
Reduce Carbon Emissions

Building action and resilience to tackle climate change and build adaption strategies to protect our assets

Ambition statement	Rationale	Delivery mechanism	Proposed headline targets and metrics	Internal accountability mapping

Thriving nature and communities

Ambition statement	Rationale
Protect and enhance biodiversity -our priority habitats (chalk streams etc) and designated site will be restored / enhanced to achieve favourable condition.	Becoming Nat… restoring syste… functioning hea… Biodiversity is … Our operations … ecosystem and… Support Specia… habitats
Develop comprehensive biosecurity protocols to minimise spread of Invasive non native species.	Regulator prog… Prevent spread… certain species… INNS directly c… decline of nativ… can have signi… impacts on our…

Sustainable drinking water

Ambition statement
Reduce our abstractions that adversely impact on the environment
Reduce customer and business consumption
Reduce wastage/leakage

Health catchments, rivers and seas

Ambition statement
Reduce pollutions from storm overflows and serious pollutions
Measurably improved bathing waters in rivers and seas
Reduced flood risk from all sources

Efficient use of our resources.

Ambition statement	Rationale	Delivery mechanism	Proposed headline targets and metrics	Internal accountability mapping
We will progress to net zero in our operations	Investor expectation Regulatory Legislative	Net Zero plan, Scope 1, 2, 3 emissions plan TCFD		
We will recover and recycle energy from our processes and sites – e.g. Biogas, Solar.	Cost benefit – energy stability – reduce electricity bill Innovation potential huge	Energy/solar/process emissions recovery Energy Strategy?		
We will recycle by-products from our operations to create circular closed systems (where possible)	Legislative Regulatory	Bioresources plan – innovation required as PFAS and contaminants affecting Bioresource sludge agricultural spread. EMS programmes – and accreditation Recycling programmes- circular economy and ESG sustainability frameworks across large (ops) and small scale (office supply chain)		

Next Steps

- Map clear rationale, delivery mechanisms & programmes.
- Confirm current AMP 8 targets if in place
- Identify key gaps to delivery ambition statements
- Develop stretch targets for AMP 9 and beyond.
- Map accountability and build monitoring tracker

Planning and Investment

Drainage and Wastewater Management Plan (DWMP)

looks at the investment needs over the next 25 years to provide safe, resilient wastewater services to customers and protect the environment

Future Challenges

Climate Change

Population Growth

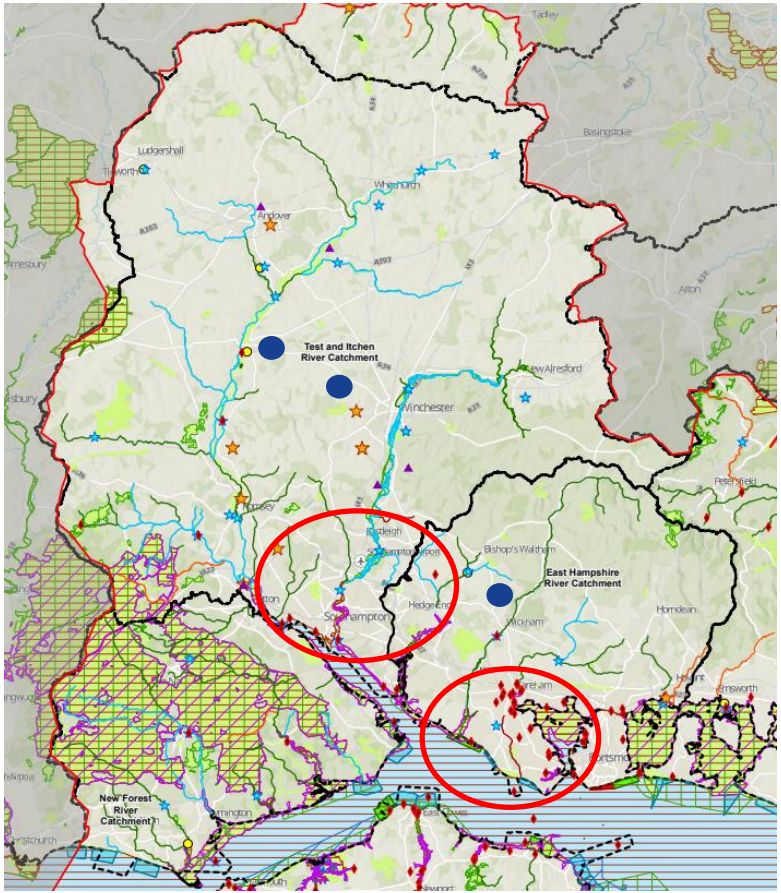
Environmental Capacity & Resilience

Affordability

Delivering our services

- Network flow management to reduce flooding and spills
- Recycling wastewater and nutrient removal
- Asset health and resilience
- Bioresources

Investment plan: 2025-30 (AMP 8) to support Hampshire growth



Growth:

- **19** wastewater network catchments currently in modelling and optioneering phase. **2** in Hampshire:
  - Chickenhall (Eastleigh)
  - Peel Common
- **3** growth schemes at treatment works in Hampshire are planned:
  - Bishops Waltham
  - Fullerton
  - Stockbridge

The Clean Rivers & Seas Task Force

The Clean Rivers and Seas Task Force was set up in 2021, **our aim is to reduce storm overflows** to ensure a healthy environment and a resilient future for water.

The task force is responsible for **delivering pathfinder projects** through an **accelerated programme.**

We've built our Clean Rivers and Seas (regional) plan.

Our history

2021
Clean Rivers and Seas Task Force established

2022
Pathfinder projects set up with £7 million funding

Apr 2023
Accelerated funding of £35 million agreed

Nov 2023
Clean Rivers and Seas Plan launched

Mar 2024
Accellerated funding of additional £10 million agreed

Now
Starting AMP 8 work early, focussing on priority areas

AMP 8 2025 - 2030
Continue delivering overflow reduction over the next 5-year asset

Our progress

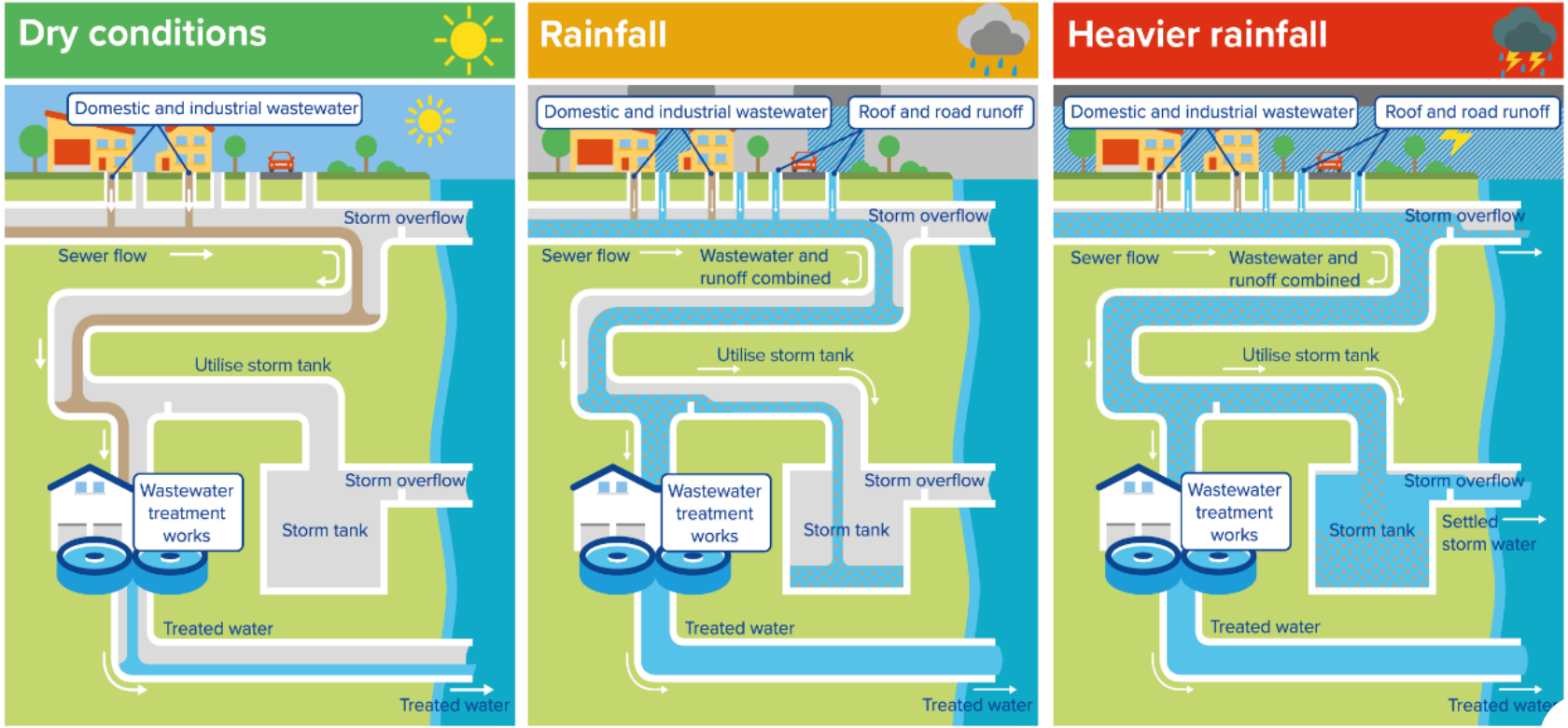
500+ storm overflow releases saved so far last year.

Over and above the target set

300,000m2 of impermeable area managed.

Equivalent of over 50 football pitches

What are storm overflows?



Overflows in Hampshire

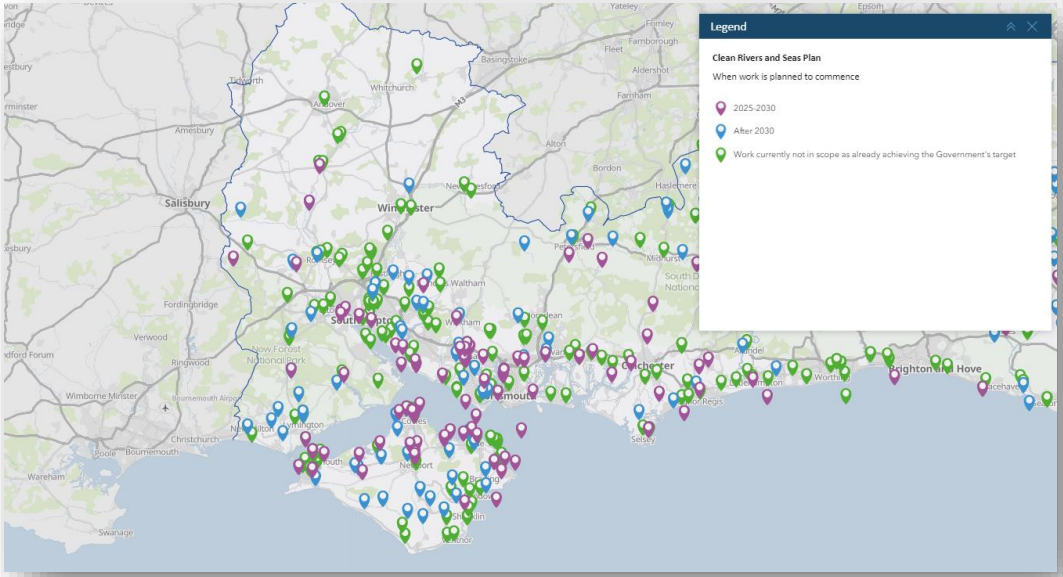
Key stats

186 Storm Overflows in Hampshire

89 Require work/investment to achieve Govt. targets before 2050

73 Overflows working on before 2035

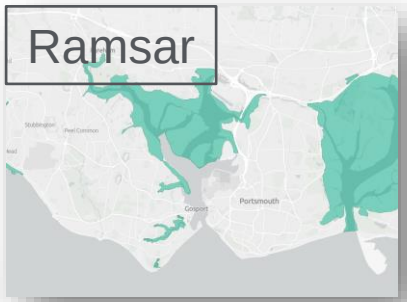
50 Overflows working on between 2025-2030

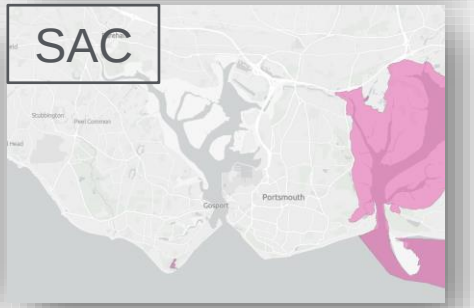


southernwater.co.uk/water-for-life/clean-rivers-and-seas-plan/map

Portsmouth Harbour Project

38 overflows, £162m, Complete by 2027





Working in partnership

Rivers & Seas Watch from Southern Water

SHAPING PORTSMOUTH

Rivers and Seas Watch full launched – near-real time information for all storm overflow, including inland. Co-created with stakeholders and users

Working with Hampshire County Council, Portsmouth City Council and Southampton Council to explore potential highway SuDS schemes – held multiple workshops and exploring pilot areas in Fareham and Portsmouth. Aim is to manage surface water in communities

Become members of Shaping Portsmouth and working closely with Portsmouth's Green Partnership – includes MoD, Airbus, NHS, and other partners

Work so far…

50 homes, 4 industrial units and 1 car park disconnected from the combined sewer system

Over 1 Hectare of stormwater removed from the foul system in Fareham

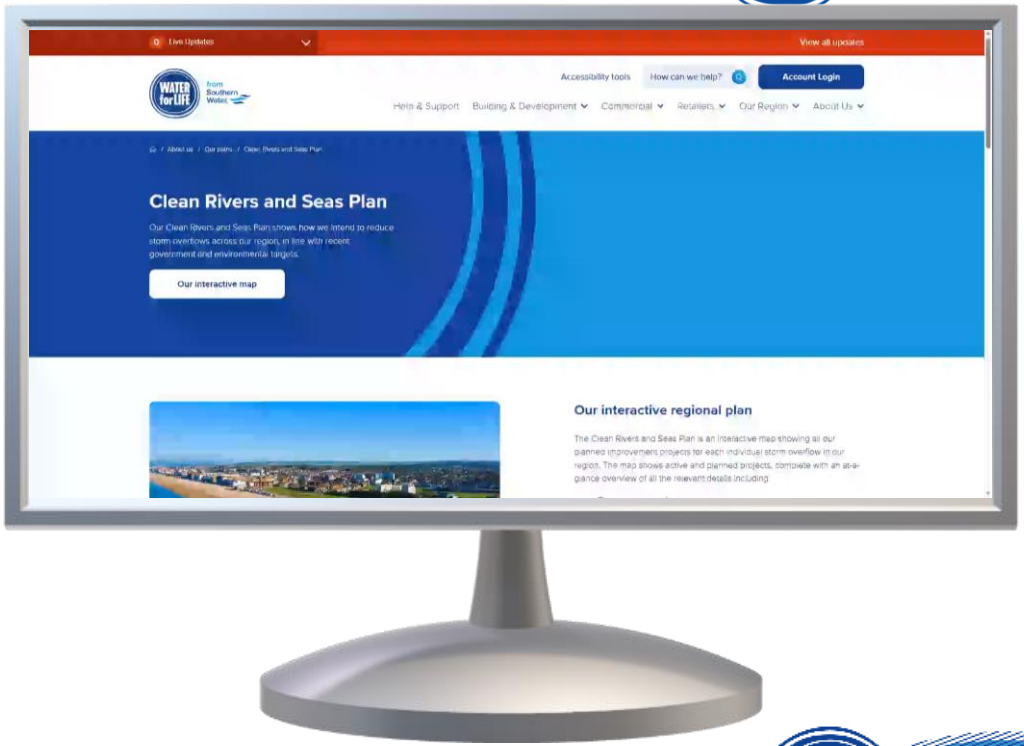
1000 tonnes of water during a 10mm storm.

Work now started in Gosport

Clean Rivers and Seas Plan

Purpose

To keep the public informed of our upcoming plans to reduce storm overflows.



Rivers and Seas Watch

The new and improved Beachbuoy

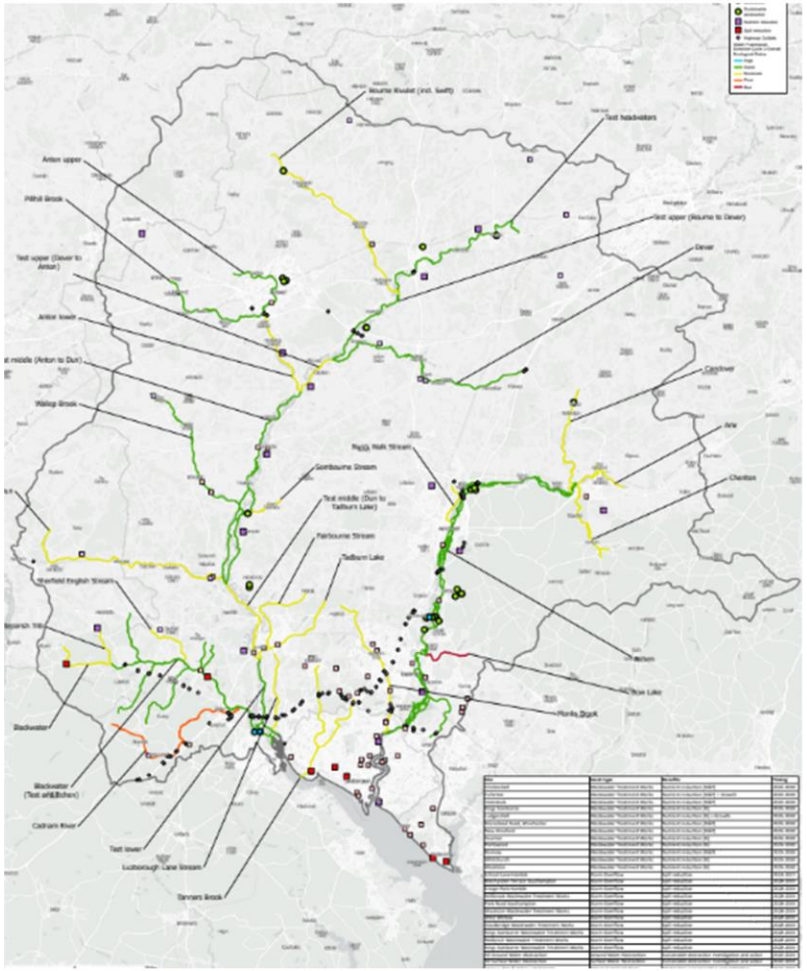
Improvements including:

- All inland outfalls
- Search bar and current location feature
- Integrated improvement plans
- Improved usability including mobile use
- New information page

These improvements were informed by:

- An independent expert review of Beachbuoy
- Advice from a host of relevant specialists
- Our Beachbuoy working and beta testing groups
- Customer feedback

The Test & Itchen catchment – our commitments



Site	Asset type	Benefits	Timing
Chickenhall	Wastewater Treatment Works	Nutrient reduction (N&P)	2025-2030
Fullerton	Wastewater Treatment Works	Nutrient reduction (N&P) + Growth	2025-2030
Harestock	Wastewater Treatment Works	Nutrient reduction (N&P)	2025-2030
Kings Somborne	Wastewater Treatment Works	Nutrient reduction (N)	2025-2030
Ludgershall	Wastewater Treatment Works	Nutrient reduction (N) + Growth	2025-2030
Morestead Road, Winchester	Wastewater Treatment Works	Nutrient reduction (N&P)	2025-2030
New Alresford	Wastewater Treatment Works	Nutrient reduction (N&P)	2025-2030
Overton	Wastewater Treatment Works	Nutrient reduction (N)	2025-2030
Portswood	Wastewater Treatment Works	Nutrient reduction (N)	2025-2030
Romsey	Wastewater Treatment Works	Nutrient reduction (N&P)	2025-2030
Whitchurch	Wastewater Treatment Works	Nutrient reduction (N)	2025-2030
Woolston	Wastewater Treatment Works	Nutrient reduction (N)	2025-2030
School Lane Hamble	Storm Overflow	Spill reduction	2024-2027
Blechynden Terrace Southampton	Storm Overflow	Spill reduction	2028-2035
Ensign Park Hamble	Storm Overflow	Spill reduction	2028-2035
Millbrook Wastewater Treatment Works	Storm Overflow	Spill reduction	2028-2035
Park Road Southampton	Storm Overflow	Spill reduction	2028-2035
Woolston Wastewater Treatment Works	Storm Overflow	Spill reduction	2028-2035
West Wellow	Storm Overflow	Spill reduction	2028-2035
Stockbridge Wastewater Treatment Works	Storm Overflow	Spill reduction	2028-2035
Kings Somborne Wastewater Treatment Works	Storm Overflow	Spill reduction	2028-2035
Redlynch Wastewater Treatment Works	Storm Overflow	Spill reduction	2028-2035
Kings Somborne Wastewater Treatment Works	Storm Overflow	Spill reduction	2028-2035
All Ground Water Abstraction	Ground Water Abstraction	Sustainable abstraction investigation and action	2020-2035
All Surface Water Abstraction	Surface Water Abstraction	Sustainable abstraction investigation and action	2020-2035
Various Test & Itchen catchments	Nature based solutions	Abstraction compensation and mitigation	2025-2035
Water for Life Hampshire	New water resources	Sustainable abstraction investigation and action	2020-2033

State of Our Rivers Report

Our rivers are far from healthy. Restoring rivers is climate action, supports wildlife, protects communities, and is urgently needed.

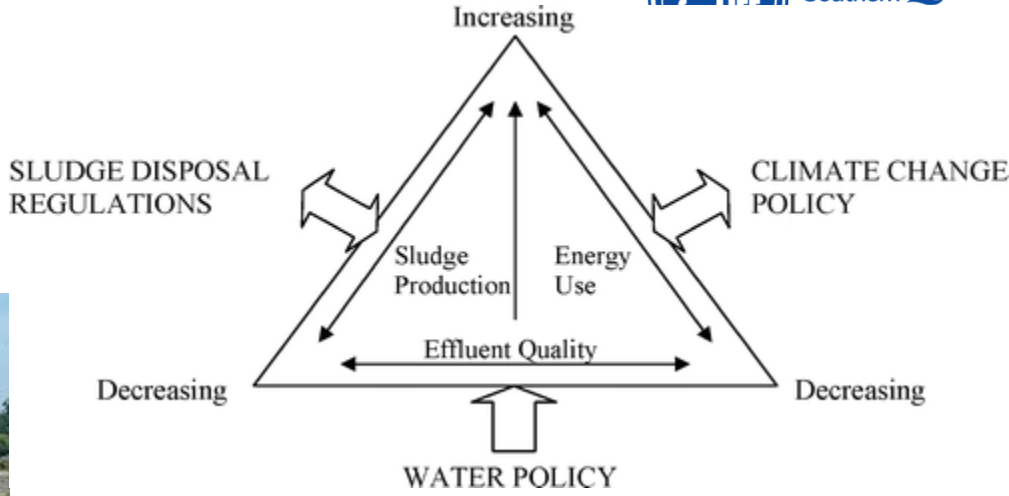
2024. The Rivers Trust

Rivers in England:
Reasons for Not Achieving Good Ecological Status by Sector and Activity

Source: The Environment Agency Catchment Data Explorer, September 2021

High | Good | Moderate | Poor | Bad | No data

Oliver A. H. Jones (2007) Questioning the Excessive Use of Advanced Treatment to Remove Organic Micropollutants from Wastewater. *Environ. Sci. Technol*, 41, 14, 5085–5089



Three Harbours Project

High-level programme plan

Includes 2028 outputs and year one plan (by Sept 2025)

Some elements are resourced, some require resourcing

The plan will remain iterative, but initial version included in the strategy

Includes but not limited to:

- Collaborative public engagement programme
- Initiating an Integrated Blueprint for Water Quality
- Develop three flagship nature recovery projects
- Establish and maintain Integrated Recovery Plan (to map all partner projects)

Key achievements so far

- Developing a water quality monitoring programme focussed on nutrients as part of joint working group with CHaPRoN and supported by SW research project on the design of the programme.
- Initiating a trial of nutrient leaching tool with farmers from the Manhood Farming Cluster
- Agreement to develop a Masterplan for nature restoration and a flagship project for Langstone Harbour
- Working SW consultants to scope development of a masterplan for the Manhood peninsula
- Baseline survey of (recently discovered) seagrass colonies at Medmerry (completed last weekend)
- Investigating opportunities for Beneficial use of dredged sediment in Langstone harbour

Three Harbours Project –
AMP 8 Investigation Action Specification Form

Three Harbours and wider Solent collaborative working.

- ASF focuses on the initial 2 year investigation work required to facilitate a more integrated approach to managing and identifying strategic and project related opportunities for collaborative working with others over an extended timeframe.
- Key objective is to establish a long-term monitoring and evaluation approach in the harbours based on 5 - 10 years of data. Long term data is needed to show trends and understand how things are changing in designated sites
- Investigation should focus on ‘what’ should be monitored so we can fully understand the issues impacting condition in the 3 Harbours

Three Harbours Project –
AMP 8 Investigation Action Specification Form

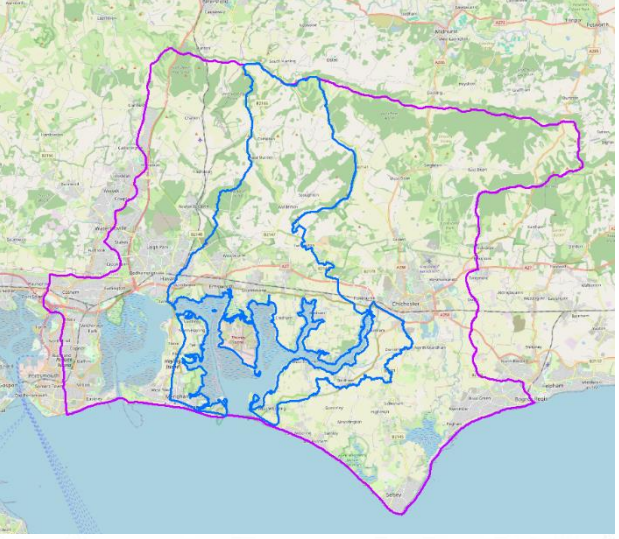
This work will improve understanding of

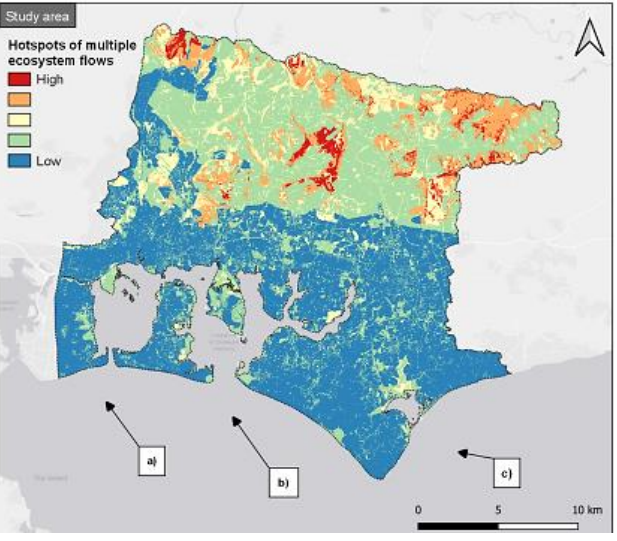
- Pathways and processes that lead to water quality impacts in harbours and protected / designated sites listed above
- Types of pollutants and nutrients present within the 3 harbours and their potential impact on designated sites conservation status.
- The source apportionment of pollutants and nutrients
- Hydrological processes in catchments and Harbours and their impact on 1 to 3 above

Harbours Catchment Scheme

Tom Ormesher

catchmentschemes@southernwater.co.uk





PR24 – Biodiversity Duty Driver

Priorities

1. Reduction of DIN in surface water flows entering Chichester Harbour

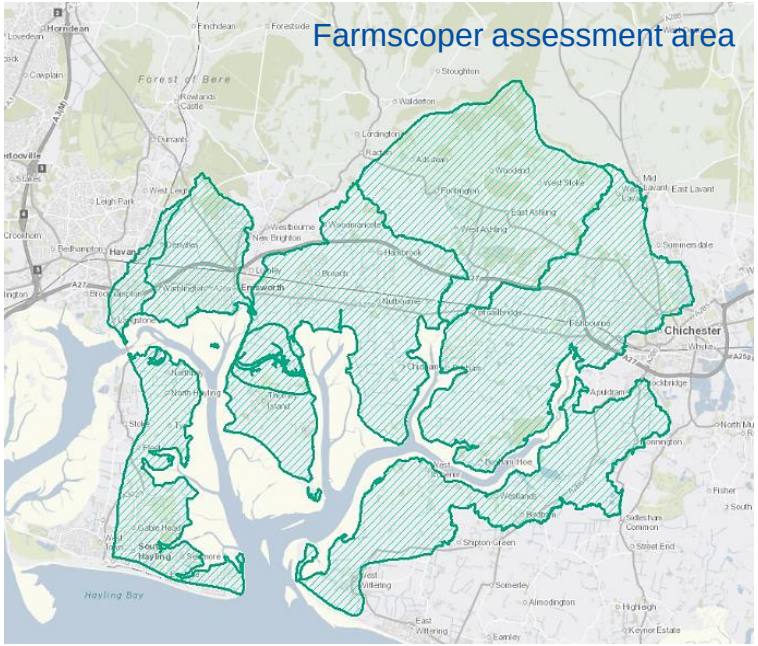
2. Enhancement of habitat connectivity enabling improved blue/green infrastructure serving all three designated sites

3. Support awareness raising and community understanding

Submission based on farmscoper assessment, pilot EIF programme, NE condition review, NCR 2021, CHAPRON long list

WATER for LIFE from Southern Water

EIF Pilot Farming Measures 2022-2025

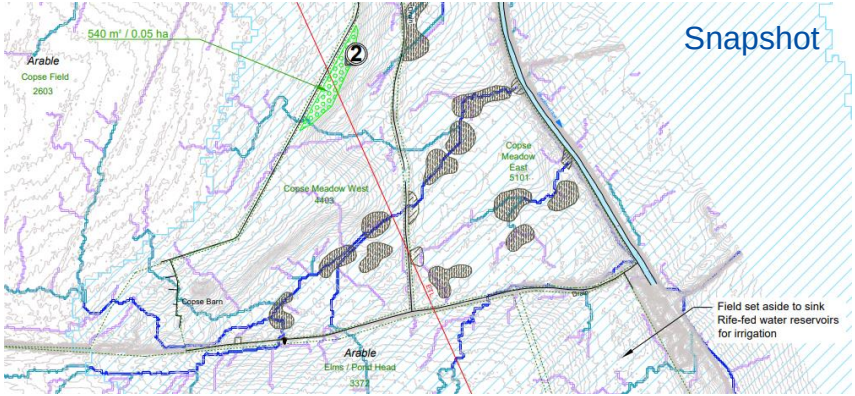


		Advice & Testing	Variable rate nitrogen	Overwinter cover	Kg N/yr
2022/23	Area	278	26	731	**15,046**
	Fields	32	4	87	
2023/24	Area	478	261	539	**11,391**
	Fields	64	28	68	
2024/25	Area	480	345	439	**8,981**
	Fields	55	26	58	

Modelled 35,418 kg N reduction over three years (32 kg N/day)

+ 21 Farm Capital Grants (£130,000)

Emerging AMP8 Habitat Project



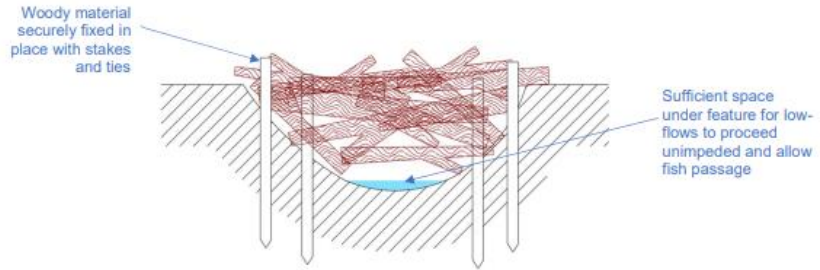


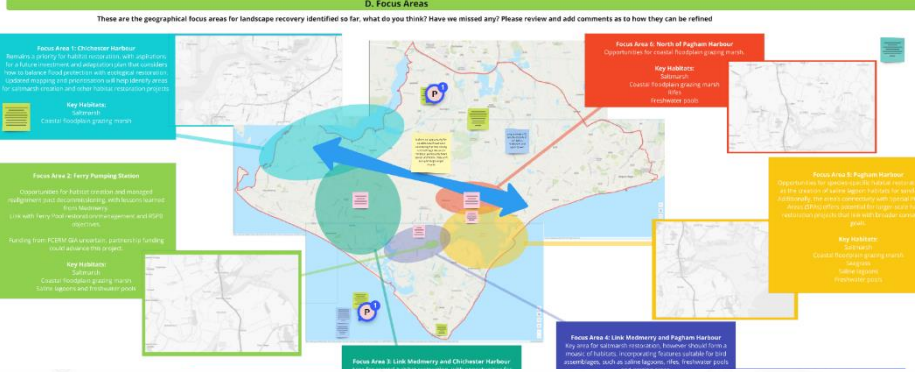
Figure 6.3 Example cross-section of a leaky dam in-channel feature.

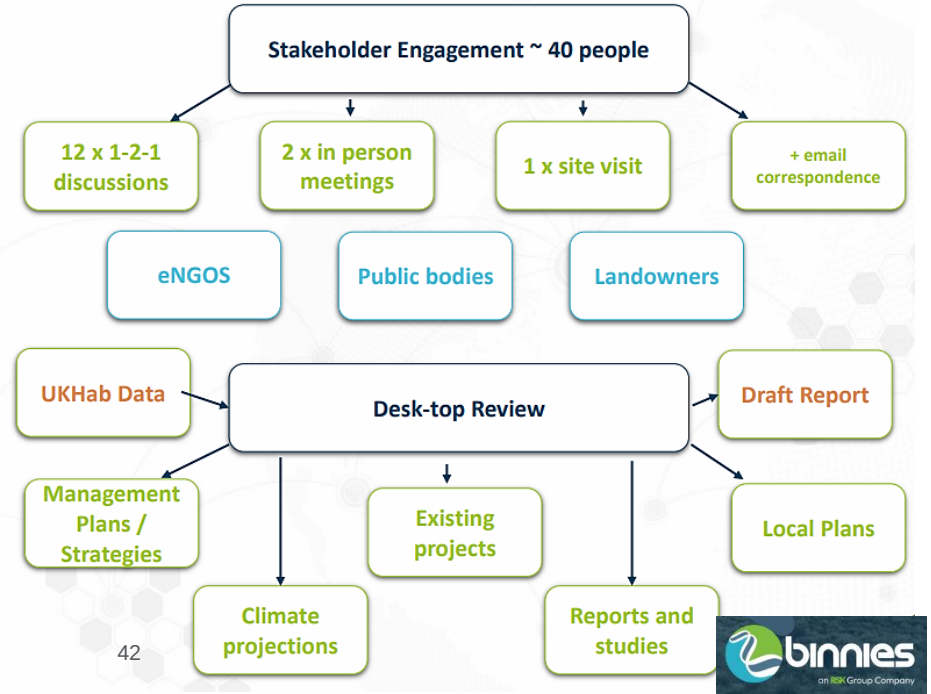
Detailed design completion April 2025

Delivery summer 2026 subject to planning

- Bank lowering along Keynor Rife to re-connect the floodplain
- In-filling or blocking of sections of the existing ditch network
- Lowering of areas of grassland to expand the quantity of seasonally wet habitat
- Placement of in-channel leaky dam features to create pond habitats and flow diversity
- Riverine and tree planting.

WATER for LIFE from Southern Water





Manhood Landscape Recovery Project

Phase 1 - Local Priorities

- Making space for water
- Re-connecting habitats
- Enhancing soil health and resilient farming
- Supporting resilient coasts

Development and optimisation of a pollutant source apportionment approach, utilising cutting-edge source tracking tools.

Sara Tajrourti Supervisors: Dr Sarah Purnell, Prof James Ebdon and Dr Andrew Hesketh

Faecal and nutrient inputs into estuarine environments can lead to declines in ecological status and risk to public health. In order to put into place prevention and mitigation, we require a sound understanding of the origin and relative contributions of pollution sources.

The **aim** of this research is to use a 'toolbox of methods', utilising cutting-edge source tracking tools to development and optimise a pollutant source apportionment approach.

Sources of pollution under investigation

- Catchment/rivers
- Vessels
- Wastewater final effluent
- Stormwater discharges
- Birds
- Private discharges

18 month monitoring programme

- Sample collection from Southern Waters 7 final effluent WTW's within the study sites twice a month.
- Stormwater discharge monitoring.
- Catchment monitoring of the main tributaries entering Langstone, Chichester and Pagham Harbours once a month.

Faecal and nutrient analysis

Water Quality parameters:

Microbial analysis:

- Bacterial markers: *E. coli* and Enterococci
- Viral markers: Somatic Coliphage and GB124

Nutrient analysis:

- Nitrate
- Phosphate.

Birds, Vessels and private discharges

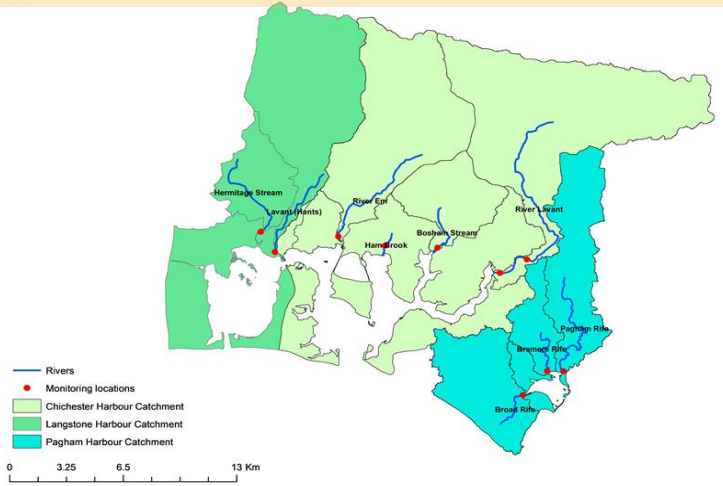
- Bird Surveys – How often do they migrate, large flocks, identify zones and seasonal patterns. Faecal loads of specific species.
- Collecting better information on vessels that are used in the harbour. Number of vessels, toilets or no toilets.
- Updating evidence on private discharges.

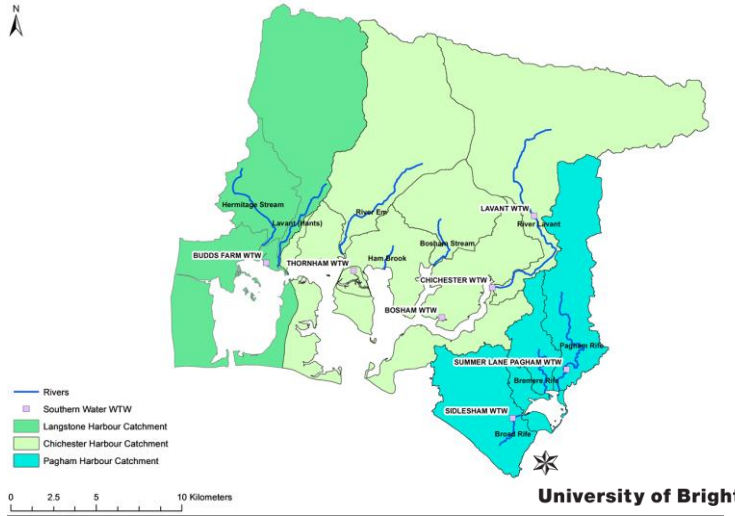
DNA Sequencing - Metagenomics

A novel microbial source tracking (MST) approach, focusing on surveillance of whole microbial communities and identifying specific genetic patterns. This project will directly apply genomic approaches to better understand sources of pollution to the harbour environments.

Source apportionment model

A source apportionment model will be constructed using all information gathered in the project. This will include concentration data from monitoring, flow data and calculated estimates using most recent science literature. Creating confidence in apportionment calculations and estimates. The output will include annual and seasonal nutrient and faecal





University of Brighton