

Swalecliffe Pathfinder

Initial study report summary



from
Southern
Water 

Rainwater management and sewer systems

Effective urban drainage is a complex and shared problem.

The challenge evolved over time but perhaps began with the Victorians. Around 150 years ago a new 'modern' combined sewer system was established where both wastewater and rainwater were to be processed together at a Sewage Treatment Site. Today, there are over 100,000 kilometres of these combined sewers still in existence in the UK.

Rainfall runoff from roofs, roads, driveways, etc. can significantly increase the volume of water within the combined network, increasing 'Dry Weather Flow' 30-fold in some areas. This makes it very challenging to effectively treat the contents of the sewer. To prevent homes, businesses, and roads from flooding, storm overflows were built into the combined sewer system to release excess water to rivers and seas when network capacity is exceeded.

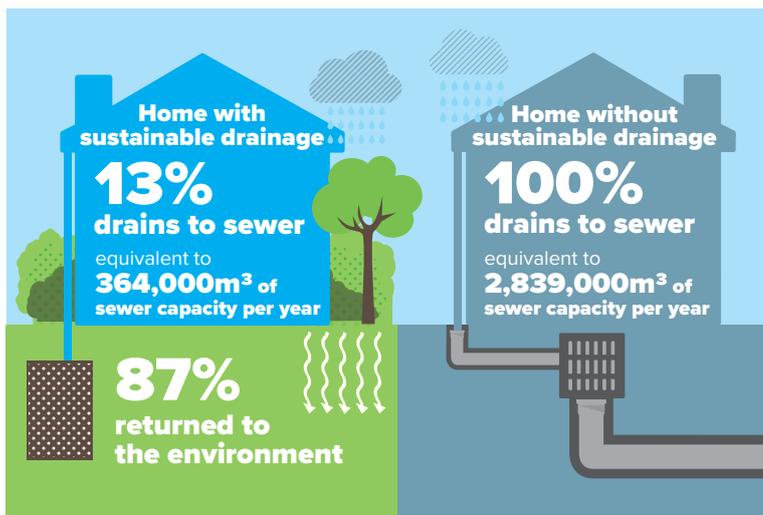
In November 2021, we set up the **Storm Overflow Task Force**. This is a dedicated team responsible for driving our ambitious targets to significantly reduce storm overflows by 2030. The team are piloting schemes across our region, building long-term cross-industry partnerships, and developing a regional plan to ensure we have a sustainable system fit for the future. Swalecliffe catchment is one of five innovative **pathfinder projects** the task force is currently working on. Our aim is to significantly reduce storm overflow releases in Swalecliffe (Whitstable), from the 2020 baseline.



Swalecliffe (Whitstable) drainage system

Approximately half of the sewers serving Whitstable are separate foul and surface water pipes, the other half are combined sewers. Houses are protected from flooding of the combined system using seven storm overflows. Working in partnership with communities and other agencies, we're working to reduce the pressure on the combined sewer system, find alternative means to effectively drain our urban spaces and observe the Government's two rainwater management principles.

- Rainwater should be treated as a resource to be valued for the benefit of people and the environment, not mixed with sewage or other contaminants.
- Rainwater should be discharged back to the environment as close as possible to where it lands or channeled to a close watercourse without first mixing it with sewage.



Water run-off for a development of 10,000 homes. Based on 90mm of rainfall per year.

There are around 15,000 storm overflows in England. The frequency that they operate and release to the environment varies widely, ranging from infrequent (less than 10 spills per annum) to frequent (greater than 100 spills per annum). The Government is currently consulting on a reduction plan.

Southern Water's plan to reduce storm overflow releases and manage catchments flows

We agree with the Government position that better rainwater management is key to achieving a reduction in storm overflow releases, a reduced risk of flooding, and reduced water scarcity. This will better protect our environment and help ensure rivers and seas remain healthy.

Type of intervention

Better rainwater management provides an opportunity for utilities, councils, and communities to improve our urban places.

Features such as urban wetlands, planters, roadside swales, and rain gardens provide habitat for wildlife and recreational benefits for the local community.

Alongside these measures designed to slow and/or divert the rainwater from draining into our combined sewers, we are also looking at two other types of intervention:

1. Making better use of existing drainage features within the catchment e.g. our assets, roadside gullies, private water pipes, etc.
2. Adding additional treatment capacity to our existing drainage infrastructure.

Due to the nature of the drainage system in Swalecliffe (Whitstable), we are exploring a mix of interventions to reduce storm releases. These include improvements to our Wastewater Treatment Works, optimisation of pumping stations in the catchment, identification and removal of surface water pipes that have been misconnected into the combined sewer, and removal of impermeable land where rainfall runoffs into the combined system.



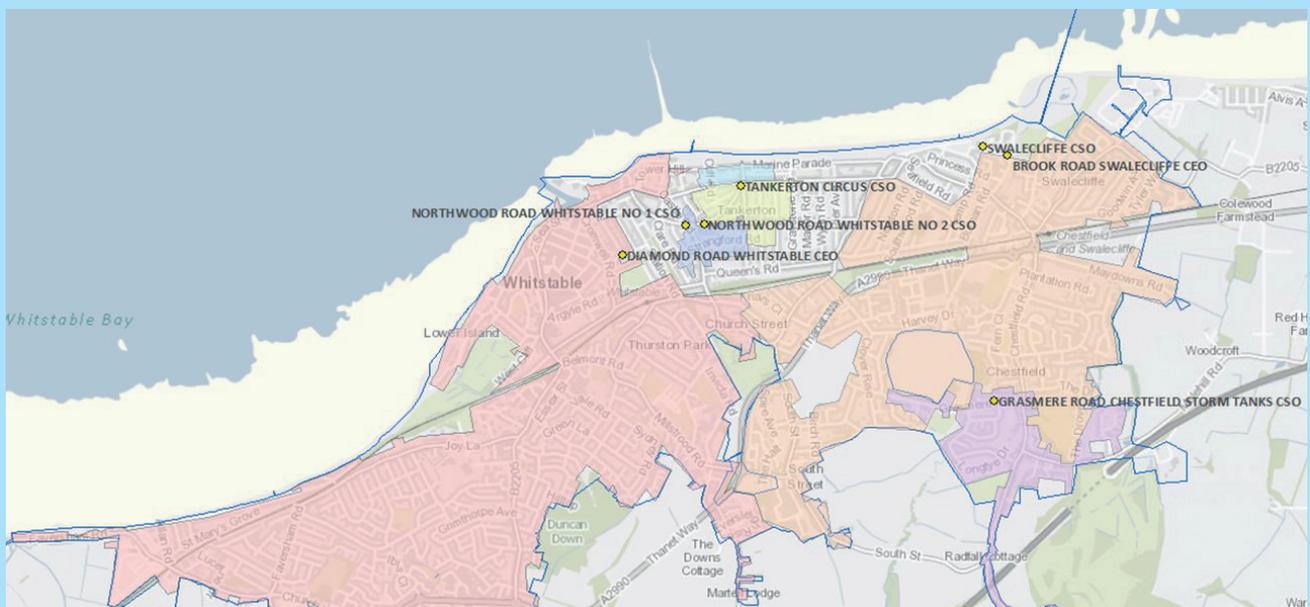
Swalecliffe Wastewater Treatment Works

Rainwater management – scale of interventions required

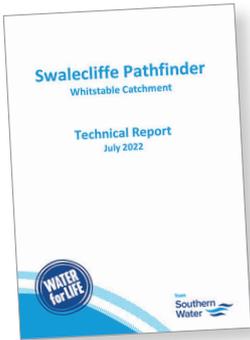
Water companies are not solely responsible for drainage. They are one of many organisations involved in ensuring communities stay protected. Changes are impacting all sectors of UK society, from intensifying weather conditions, to increased urban development, and a greater demand on water as a resource.

To achieve what is needed, utilities, councils and communities need to work together to achieve mutual benefits. We want to act as a catalyst, proactively engaging with partner organisations and the community to collaboratively address the challenges.

Map of Swalecliffe (Whitstable) catchment and storm overflows



Next steps



The full technical report sets out types of interventions that could be implemented to reduce storm releases in Swalecliffe (Whitstable). While some actions can be put in place immediately, some will require design and procurement time or trialing. Residents should expect to see early interventions autumn 2022, with regular progress updates posted on our website.



Impermeable area opportunities



Get in touch

You can also find out more about what we're doing to reduce the use of storm overflows across the region on our website at southernwater.co.uk or on our social media channels:

 twitter.com/SouthernWater

 facebook.com/SouthernWater

If you have any questions or want to get in touch, please email:
nicole.mcnab@southernwater.co.uk



Water quality testing buoy launched offshore at Tankerton