Margate Pathfinder

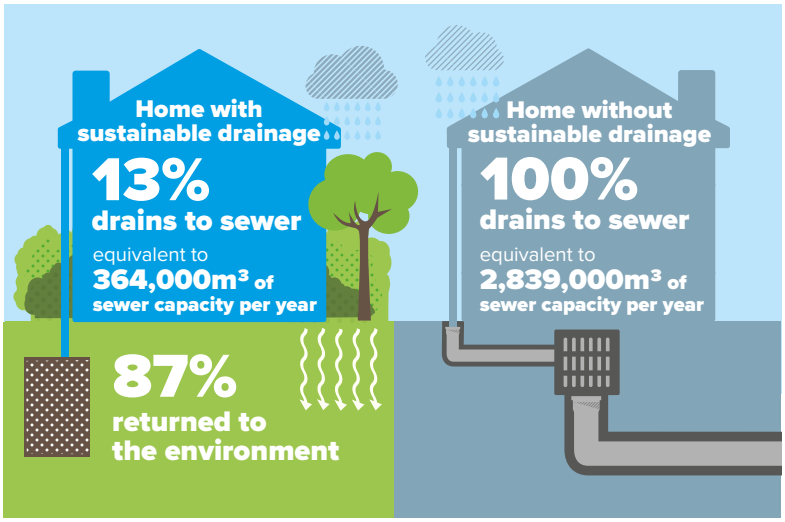
Initial study report summary

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.



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. How often 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 water flows within catchments

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.

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. Margate 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 Margate, from the 2020 baseline.

Margate drainage system

Almost all of the sewers serving Margate are combined. Wastewater arriving at Margate Pumping Station can quickly jump from a 'Dry Weather Flow' of 250 litres per second, to over 8,000 litres per second in a matter of minutes. This system is representative of many similar towns which would benefit from better rainwater management. The underlying geology of Margate is predominantly chalk which has natural drainage capacity. 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.

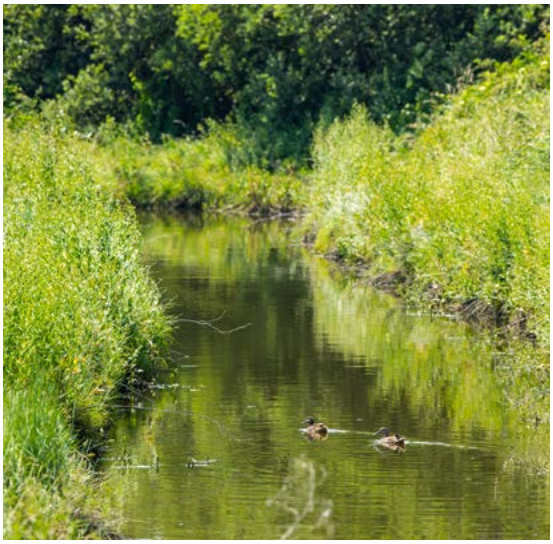
Type of intervention

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 a habitat for wildlife as well as recreational benfits 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.



As well as slowing rainwater flow into combined sewers, urban wetlands provide many benefits for wildlife and recreation.

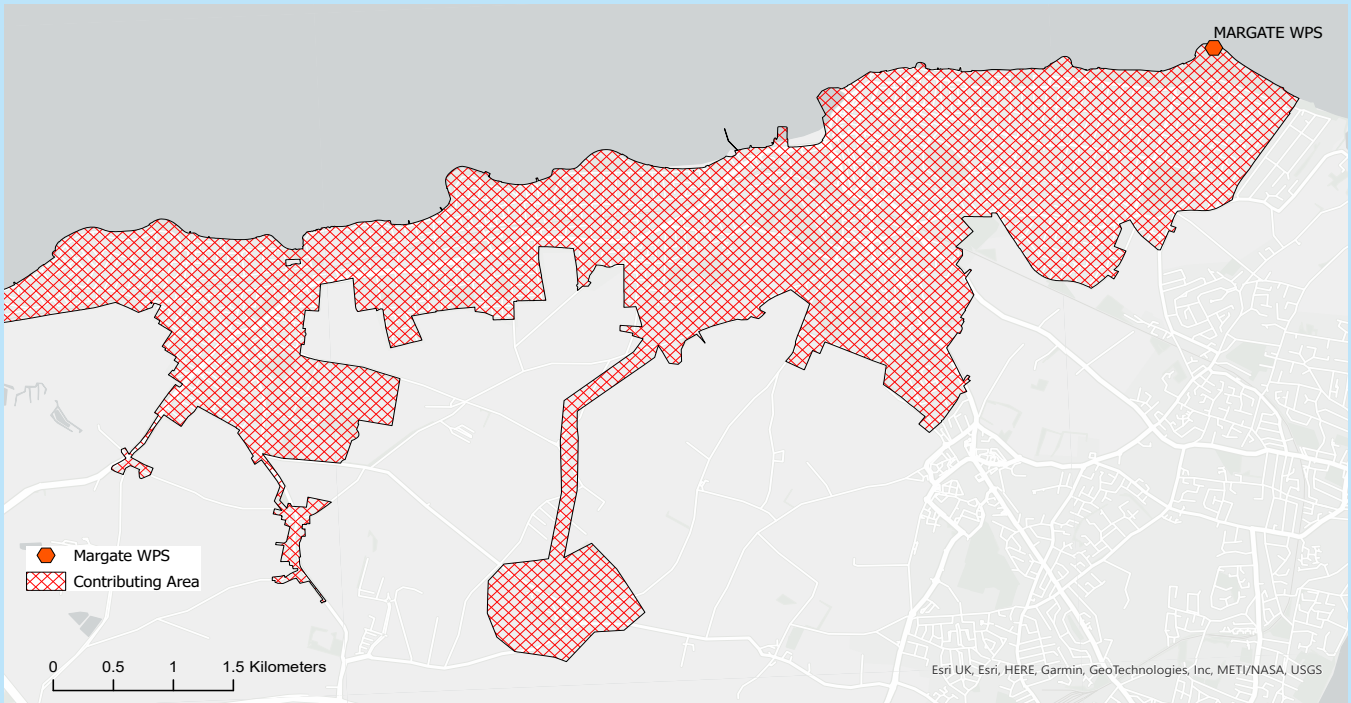
Rainwater management - scale of interventions required

The current network model for the combined system for Margate shows that across the total catchment there is about 221 hectares of impermeable area that drains into the system. To make an impact on storm overflow releases we would need to manage between 15 to 90 hectares of this area.

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.

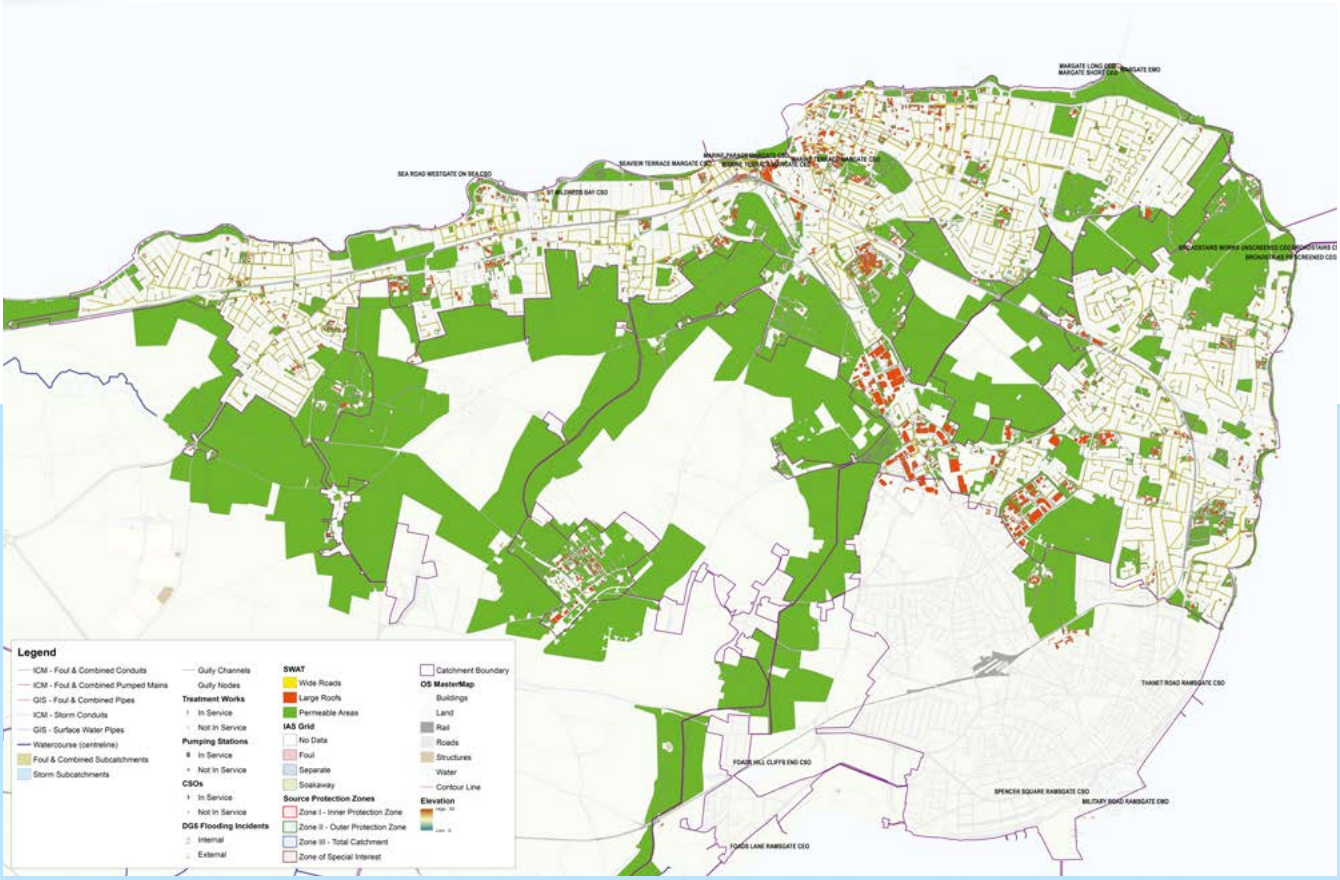
To achieve what is needed utilities, councils and communities need to work together to achieve mutual benefits. We want to act as a catalyst, proactively engaging with partner organisations and the community to collaboratively address the challenges.

Map of the contributing catchment for Margate Wastewater Pumping Station (WPS)



Next steps

The **full technical report** sets out types of interventions that could be implemented to reduce storm releases in Margate. While some actions can be put into place immediately, some will require design and procurement time or trialing. Residents should expect to see early interventions during summer and 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:
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Margate WPS

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