

# Kent Flood Risk Management Committee

## 12 July 2023

Southern Water Clean Rivers and Seas Taskforce Update

Jon Yates, Programme Delivery Lead - East



# What is the Clean Rivers and Seas Task Force?

- Southern Water initiative set up in November 2021, with the aim of reducing the use of storm overflows.
- Responsible for delivering pathfinder projects over the next two years, as well as delivering a regional plan to reduce storm overflows between now and 2030.

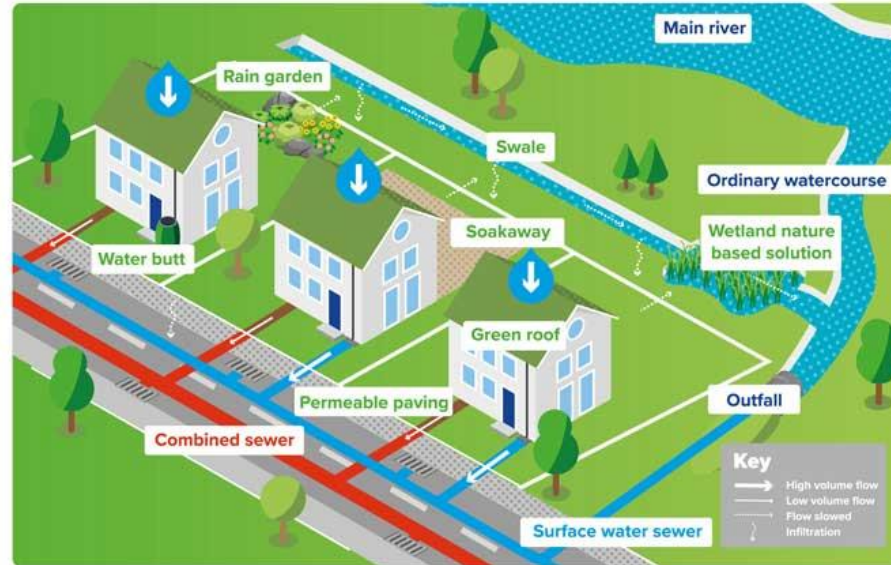
**Sustainable drainage**

The risk of flooding and storm overflows can be reduced by slowing surface water runoff reaching the sewer. There are a number of ways we can do this...



Permeable paving and soakaways   Green roofs   Swales and wetlands

Rain gardens   Water Butts



Link to  
Southern  
Water  
website:  
[Clean  
Rivers and  
Seas Task  
Force](#)



# Our task force is exploring ways to reduce storm overflows via our pathfinder projects

The Clean Rivers and Seas Task Force is a dedicated team that is working to significantly reduce the use of storm overflows by 2030. **It is delivering six pathfinder projects over the next two years.**

## Pan Parishes

- Sealing private pipework with an innovative chemical called Tubogel, as well as sealing the public sewer network to reduce groundwater infiltration.
- Exploring the creation of a local wetland.



## Swalecliffe

- Working to reduce Swalecliffe's 74 hectares of hard surfaces.
- Separating the surface water and sewer network.
- Hotspot mapping shows us where to target solutions.



## Margate

- Finding opportunities to increase surface water drainage with local councils. For example, reducing the amount of hard surfaces across Margate.
- Looking at opportunities to separate the surface water and sewer network and improve drainage.



## Sandown

- Enhancing wastewater pumping station control, surface water removal and storage solutions.
- Trialling slow-drain water butts in Havenstreet.

Pan Parishes

HAMPSHIRE

Sandown

ISLE OF WIGHT

WEST SUSSEX

EAST SUSSEX

KENT

Fairlight

Swalecliffe

Margate

Deal

## Deal

- Installing smart or passive water butts or rain planters.
- Working with the local councils and highways to introduce roadside verges, parks and gardens and more green spaces.
- Engaging with schools.
- Surveying surface water connections.
- Introducing rainfall monitors and tracking the flow of surface water.
- Improving our Golf Road pumping station.
- Increasing our storm tank capacity.



# There are broadly 3 main types of intervention to reduce storm overflow use:

## 1. **Source control** (removing and slowing the flow of rain water)

Rainwater harvesting, Permeable paving, Green roofs, Soakaways (includes tree pits), Rain garden (swales), Planters

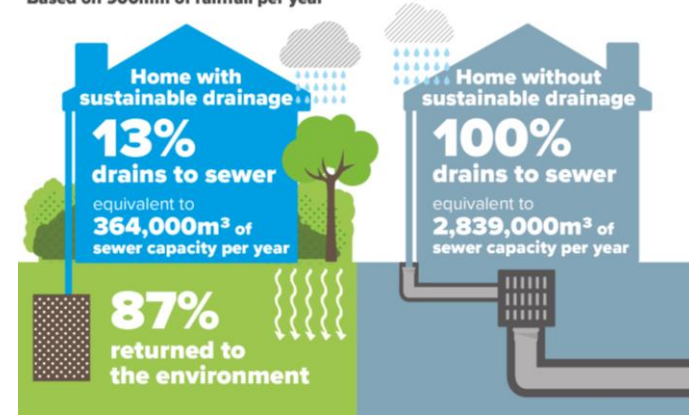
## 2. **Optimisation of existing infrastructure**

Optimisation, tweaking of connected systems and interface, Different mechanical and electrical equipment (e.g. pumps), Improvements in pumping station and storm tank use and control, Smart network control with increased digitalisation

## 3. **Build bigger infrastructure** (building larger pipes, pumping stations, etc.)

Wetlands treatment (Groundwater), Sewer lining/sealing (Groundwater), Larger sewers, Large storm tanks, Large treatment works

**Water run-off for a development of 10,000 homes:**  
Based on 900mm of rainfall per year





# Kent Catchment Update

# Optimisation

Whitstable and Deal

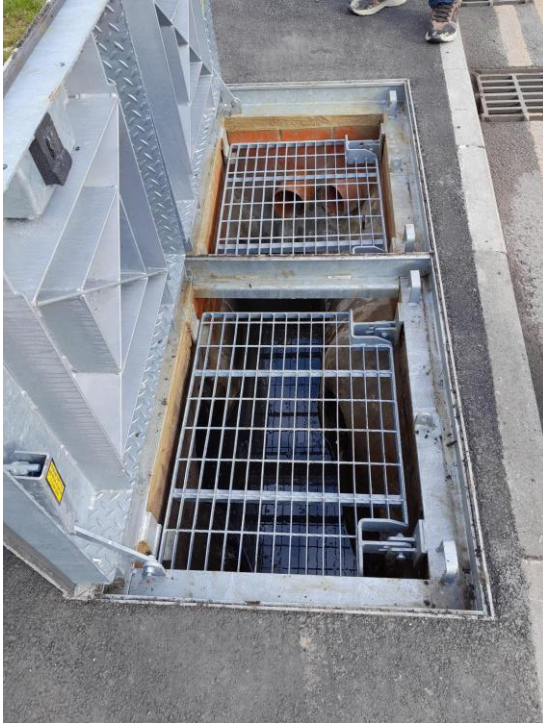




# Albert Road

Dear Max,  
I hope that you are well.  
I took this photo yesterday after some fairly heavy rain - so am quite relieved that the new pipe work and gullies along the road appear to be functioning. I don't care to remember when we first got involved!  
Anyhow, I am wondering what the status of the works at Pumping station are. SW have mentioned in the past that there was an upgrade planned but I'm not sure who to ask. The Task Force remit was I understand to follow up on these items. Is there an update available yet?  
Kind regards

Peter Wyatt

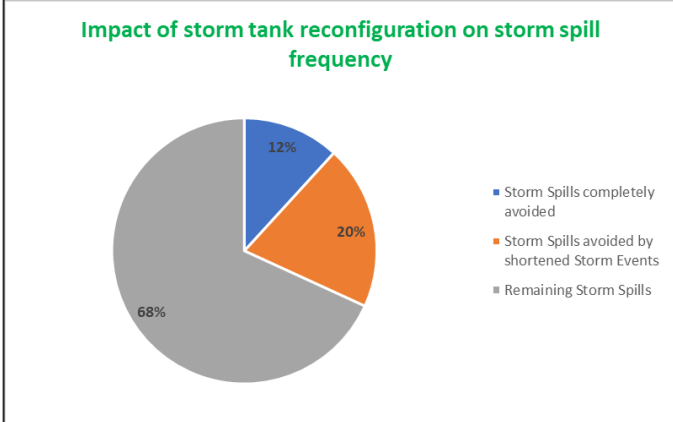
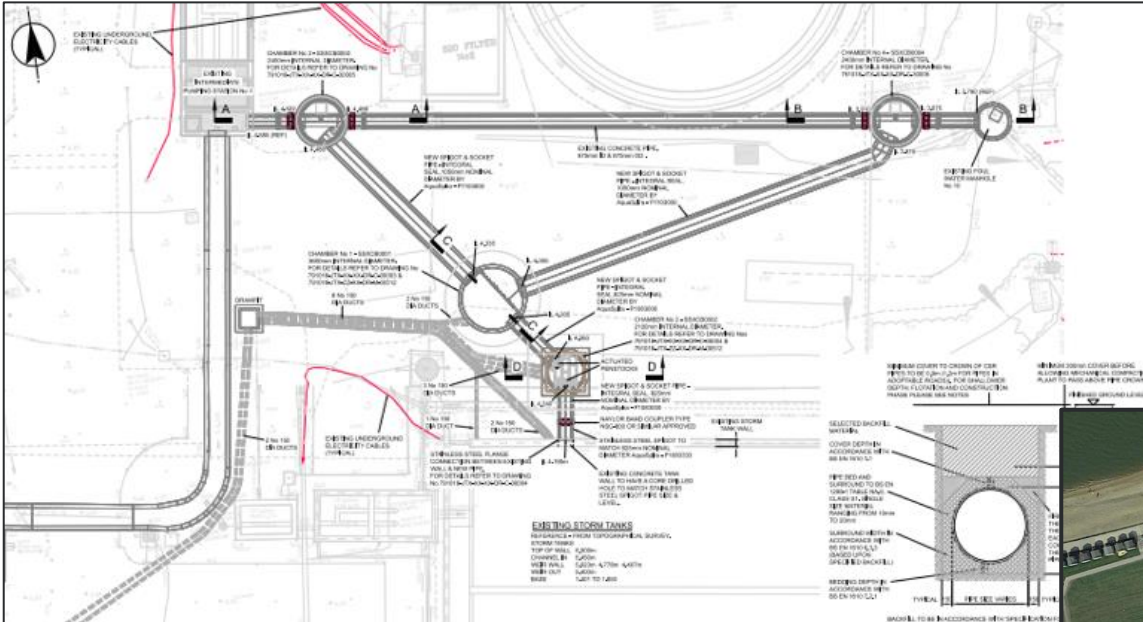


Construction works  
completed November 2022

Flood risk resilience  
increase in Albert Road  
Deal.



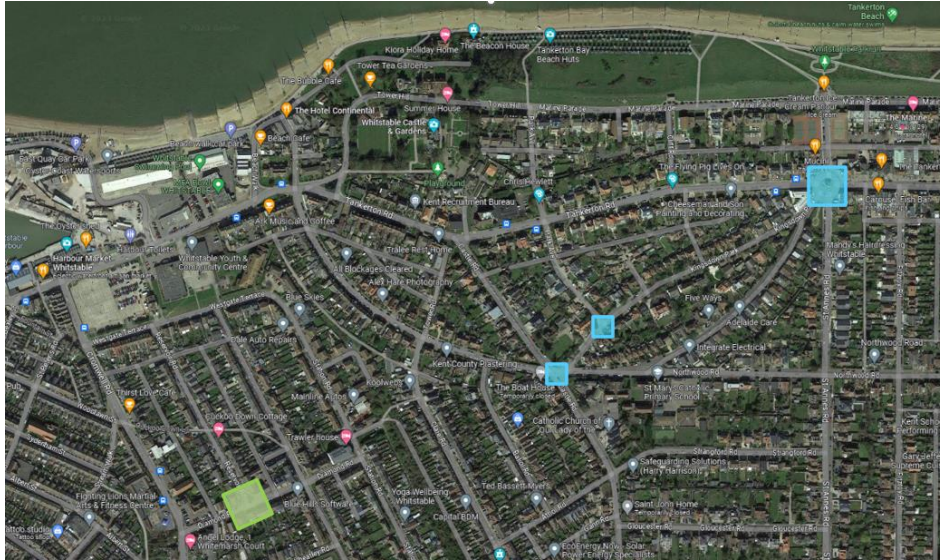
# Swalecliffe Treatment Works



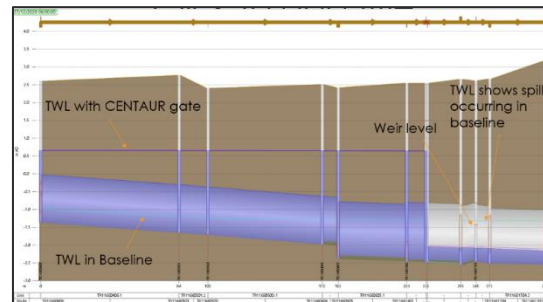
Construction works completed May 2023.  
 Permit Variation acceptance for the trail with the Environment Agency for review.



# Centaur Gates



- Diamond Road CSO, modelled c60% reduction in spill
- Tankerton Circus CSO, modelled c40% reduction in spill



# Misconnections

Whitstable and Deal





# Misconnections



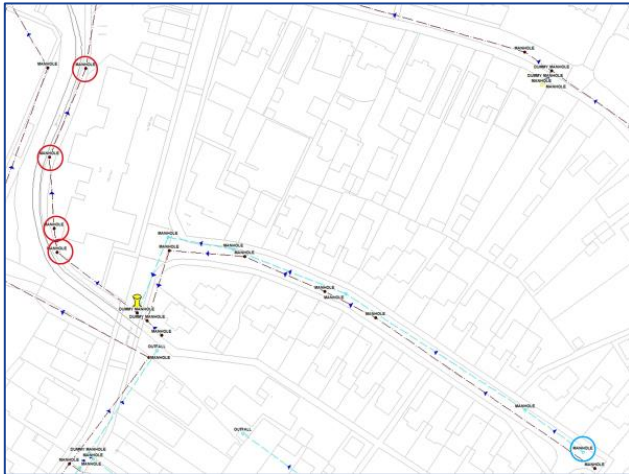
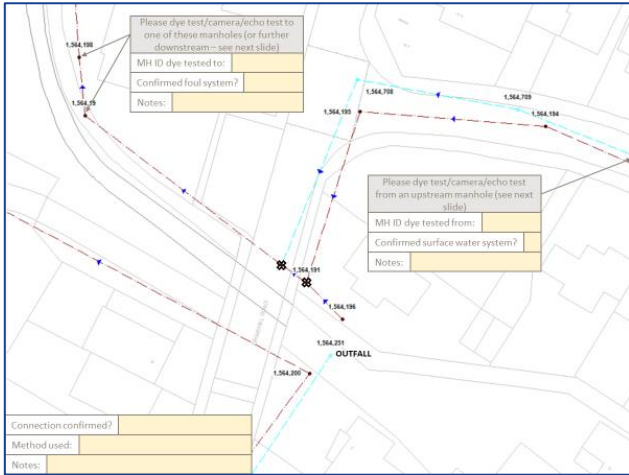
Whitstable



Deal



# Surface Water Connections



## Misconnection Methodology

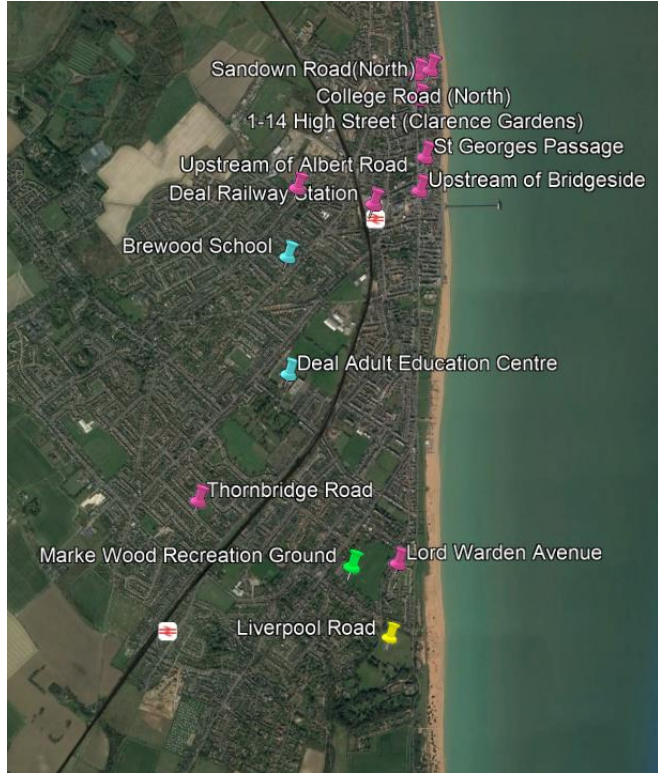
- Once potential location identified, the network is dye traced and route mapped.
- Ecology and Environmental desktop study to identify potential opportunities and risk of misconnection. Review of Flood Risk Activity Permit requirements.
- Fluidion test (E-Coli) and Merc Test (ammonia) of the surface water line at the connection point and upstream on the surface water.
- Realignment of the misconnection (Construction)
- Testing and monitoring of the misconnection post construction

# SuD's Schemes

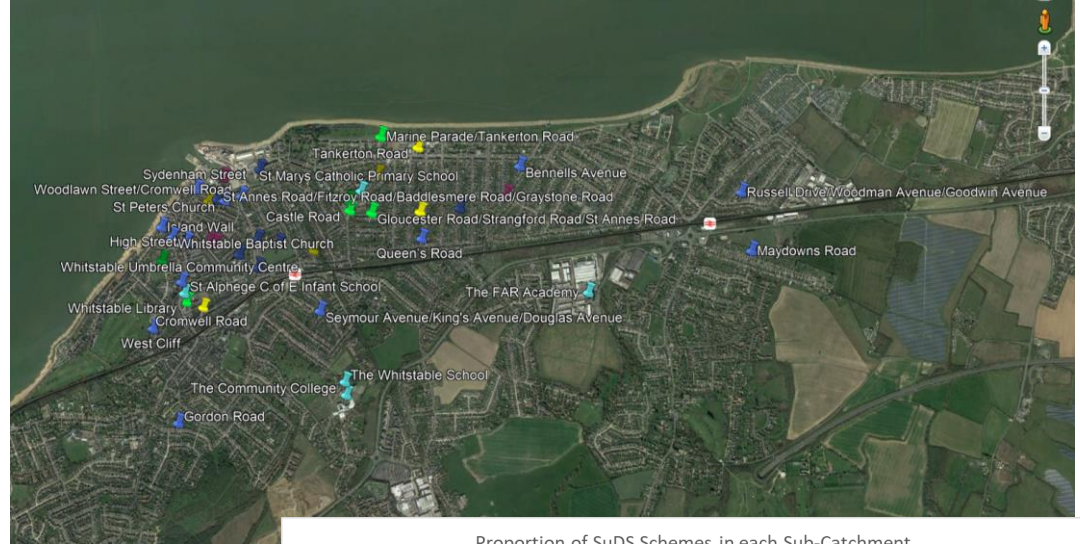
Whitstable, Deal and Margate



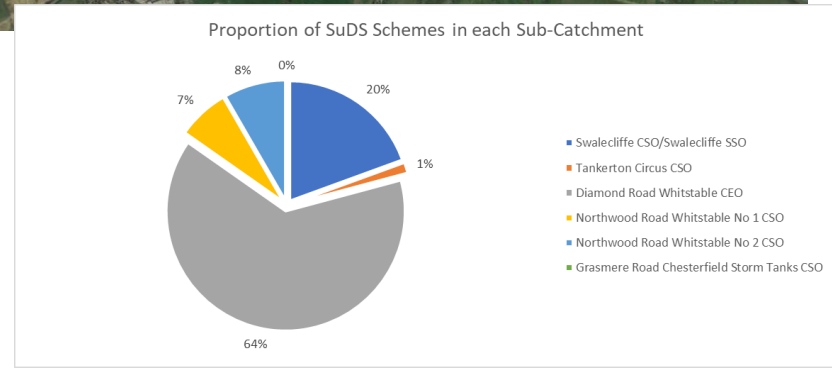
# SUDS Scheme Locations



Deal

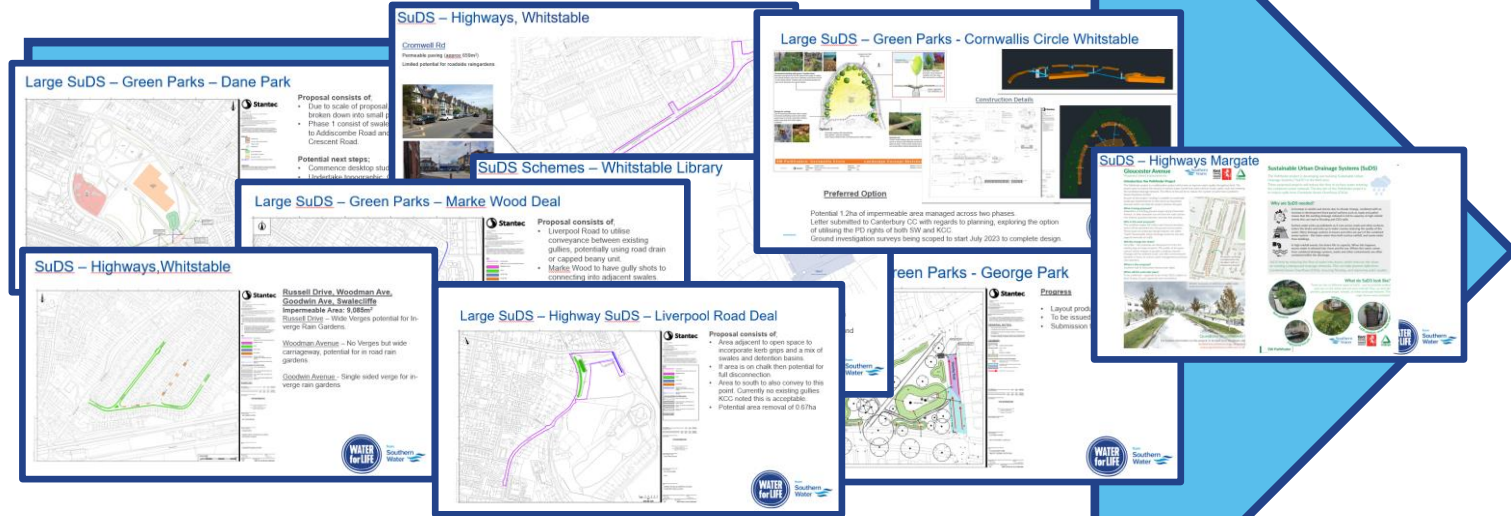


Whitstable





# Route to Delivery



- Identified Schemes are moving from concept design to outline
- Surveys are underway to gather more details
- A wider integrated team inclusive of KCC has been established to review schemes and integrate development

# SuDS – Highways Margate

## Gloucester Avenue

Proposed street improvements



### Introduction: the Pathfinder Project

The Pathfinder project is a collaborative project which aims to improve water quality throughout Kent. The project aims to reduce the amount of surface water runoff from hard surfaces (roads, paths, roofs etc) entering the combined drainage network. The effect of this will be to reduce the number of spills from Combined Sewer Overflows (CSOs)

As part of this project, funding is available to undertake landscape improvements to sites (such as Gloucester Avenue) which can help the project achieve this goal.

#### What is being proposed?

Adaptation of existing grassed verges along Gloucester Avenue, to take rainwater run-off from the road surface into shallow, grassed channels, and new tree planting.

#### Why is this work proposed?

The modified verges will collect and channel rainwater, which will be absorbed into the ground and by plants. These types of Landscape design features are called "SuDS" (Sustainable Urban Drainage Systems). See next page for more info on SuDS.

#### Will this change the street?

Very little - the proposals are designed to fit into the existing layout/verge footprint. The profile of the grass surface will be shaped to provide a shallow channel. Changes will be relatively small, and offer environmental benefits in terms of surface water management and flood risk reduction.

#### Where is this proposed?

Southern half of Gloucester Avenue (see right)

#### When will the work take place?

To be confirmed - expected to be in late 2023, subject to Kent County Council approvals and consultation.



ABOVE: Impression of what the proposed swales along Gloucester Avenue will look like.

### Questions or comments?

For further information on the project, or to have your say please visit [details@becconfirmed.co.uk](mailto:details@becconfirmed.co.uk), or contact [address@details@becconfirmed.co.uk](mailto:address@details@becconfirmed.co.uk).

## Sustainable Urban Drainage Systems (SuDS)

The Pathfinder project is developing and building Sustainable Urban Drainage Systems ("SuDS") in the Kent area.

These proposed projects will reduce the flow of surface water entering the combined sewer network. The key aim of the Pathfinder project is to reduce spills from Combined Sewer Overflows (CSOs).



### Why are SuDS needed?



A increase in rainfall and storms due to climate change, combined with an increase in development (hard paved surfaces such as roads and paths) means that the existing drainage network is full to capacity. In high rainfall events this can lead to flooding and CSO spills



Surface water picks up pollutants as it runs across roads and other surfaces, enters the drains and ends up in water courses reducing the quality of the water. Many drainage systems in towns and cities are part of the combined sewer system - this takes water from both surface rainfall, and waste water from buildings.



In high rainfall events, the drains fill to capacity. When this happens, excess water is released into rivers and the sea. Where this water comes from combined drainage systems, waste and other contaminants are often contained within the discharge.

SuDS help by reducing the flow of water into drains, which reduces the strain on existing underground drainage networks. This can help prevent spills from Combined Sewer Overflows (CSOs), reducing flooding, and improving water quality.

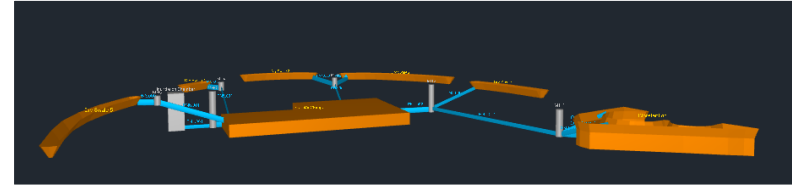
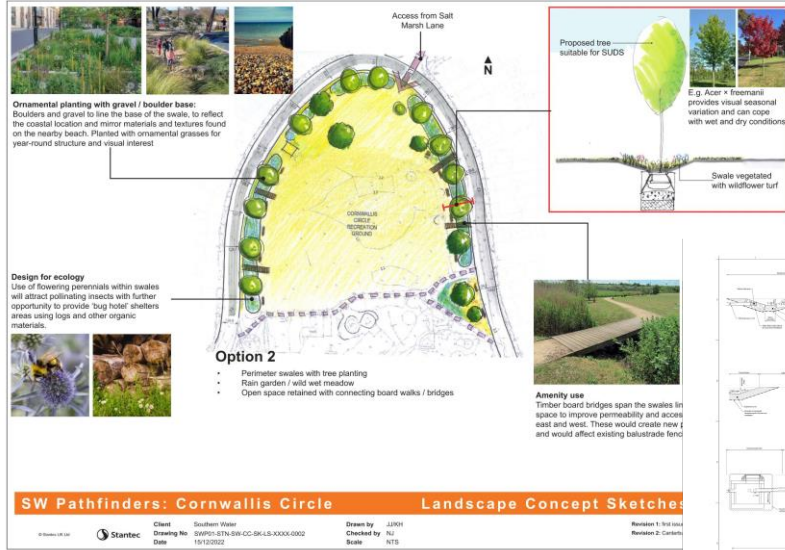
### What do SuDS look like?

There are lots of different types of SuDS - you've probably walked past one on the street and not even noticed! They can look like planters, grassed verges, tree pits, or other landscape features. This page shows some examples:

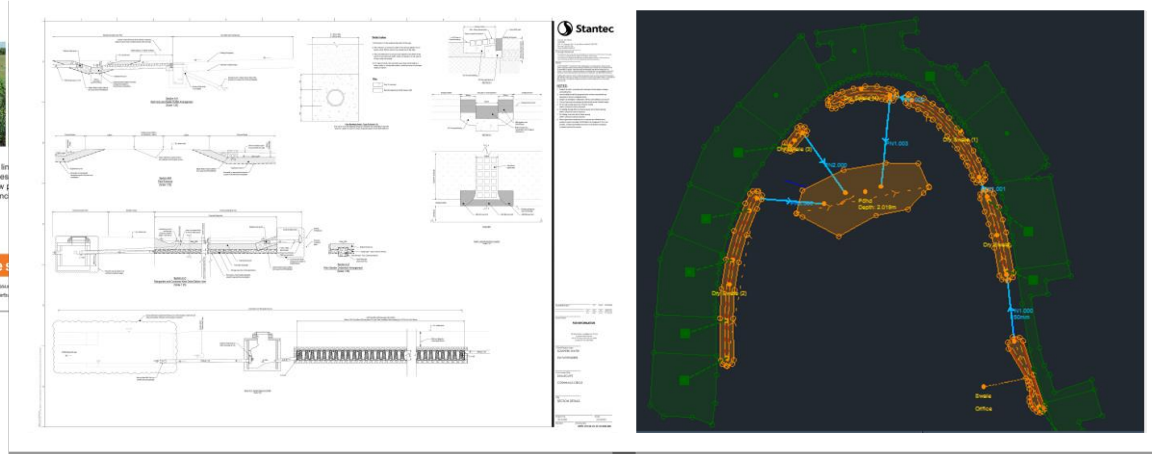


from Southern Water

# Large SuDS – Green Parks - Cornwallis Circle Whitstable



## Construction Details



## Preferred Option

Potential 1.2ha of impermeable area managed across two phases.  
Utilising the Permitted Development Right of both Kent County Council and Southern Water – Application for a Certificate of Lawful Development Underway



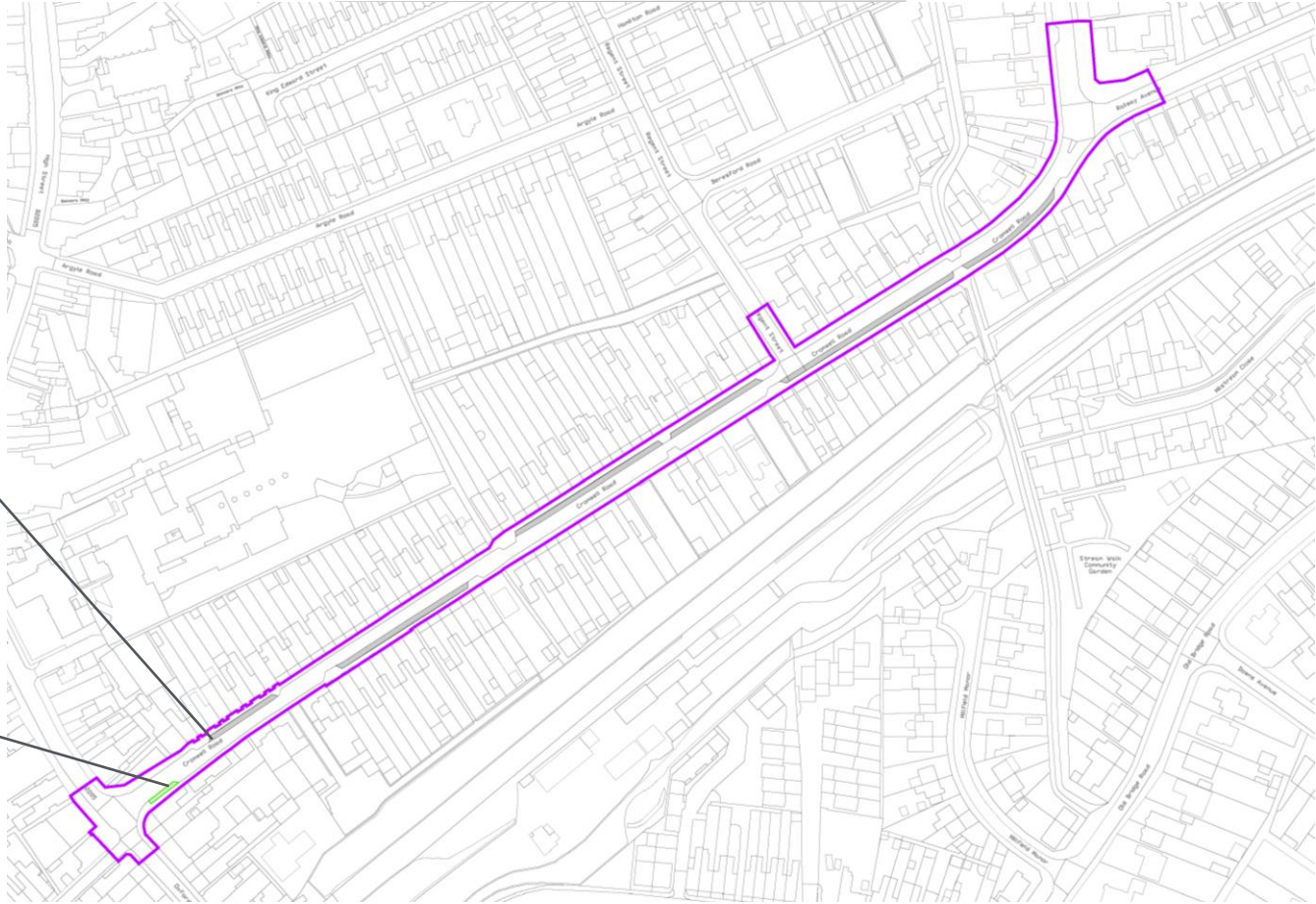


# SuDS – Highways, Whitstable

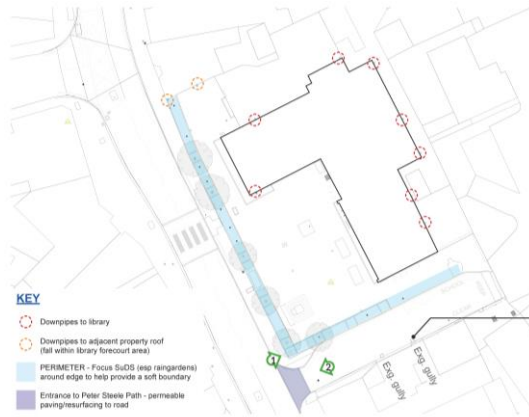
## Cromwell Rd

Permeable paving (approx 659m<sup>2</sup>)

Limited potential for roadside raingardens.



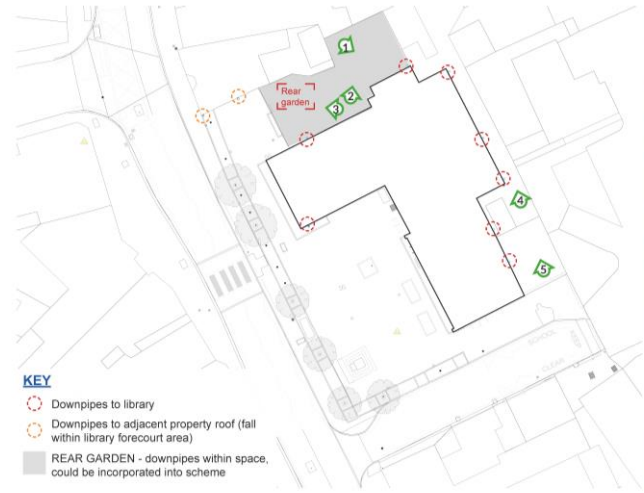
# SuDS Schemes – Whitstable Library



- KEY**
- Downpipes to library
  - Downpipes to adjacent property roof (fall within library forecourt area)
  - PERIMETER - Focus SuDS (esp. rain gardens) around edge to help provide a soft boundary
  - Entrance to Peter Steele Path - permeable paving/resurfacing to road



Road gullies to South edge of Peter Steele Path (could fall away from edge with library)



- KEY**
- Downpipes to library
  - Downpipes to adjacent property roof (fall within library forecourt area)
  - REAR GARDEN - downpipes within space, could be incorporated into scheme



Potential 0.11ha of impermeable area managed.  
 Excellent opportunity of educational and community links



# SuDS – Highways, Whitstable



## Russell Drive, Woodman Ave, Goodwin Ave, Swalecliffe

**Impermeable Area: 9,085m<sup>2</sup>**

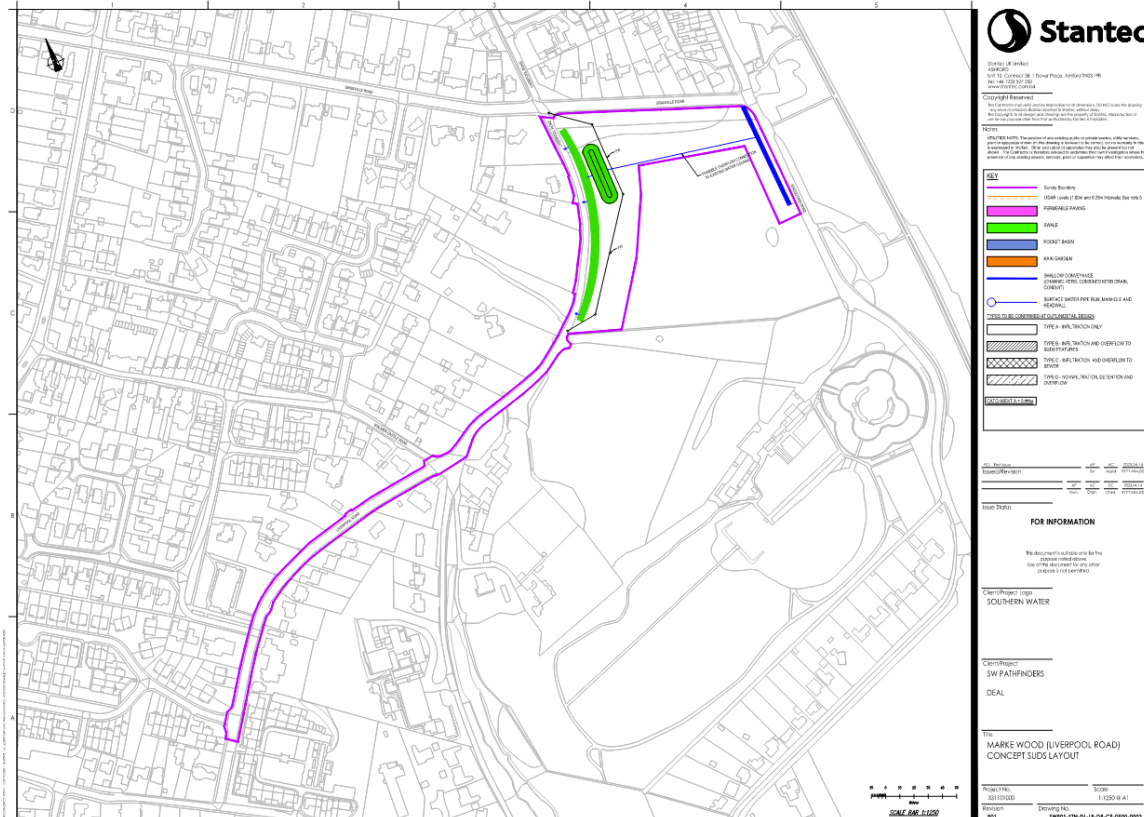
Russell Drive – Wide Verges potential for In-  
verge Rain Gardens.

Woodman Avenue – No Verges but wide  
carriageway, potential for in road rain  
gardens.

Goodwin Avenue - Single sided verge for in-  
verge rain gardens



# Large SuDS – Highway SuDS – Liverpool Road Deal



Proposal consists of;

- Area adjacent to open space to incorporate kerb grips and a mix of swales and detention basins.
- If area is on chalk then potential for full disconnection.
- Area to south to also convey to this point. Currently no existing gullies
- Potential area removal of 0.67ha



# Large SuDS – Green Parks – Marke Wood Deal

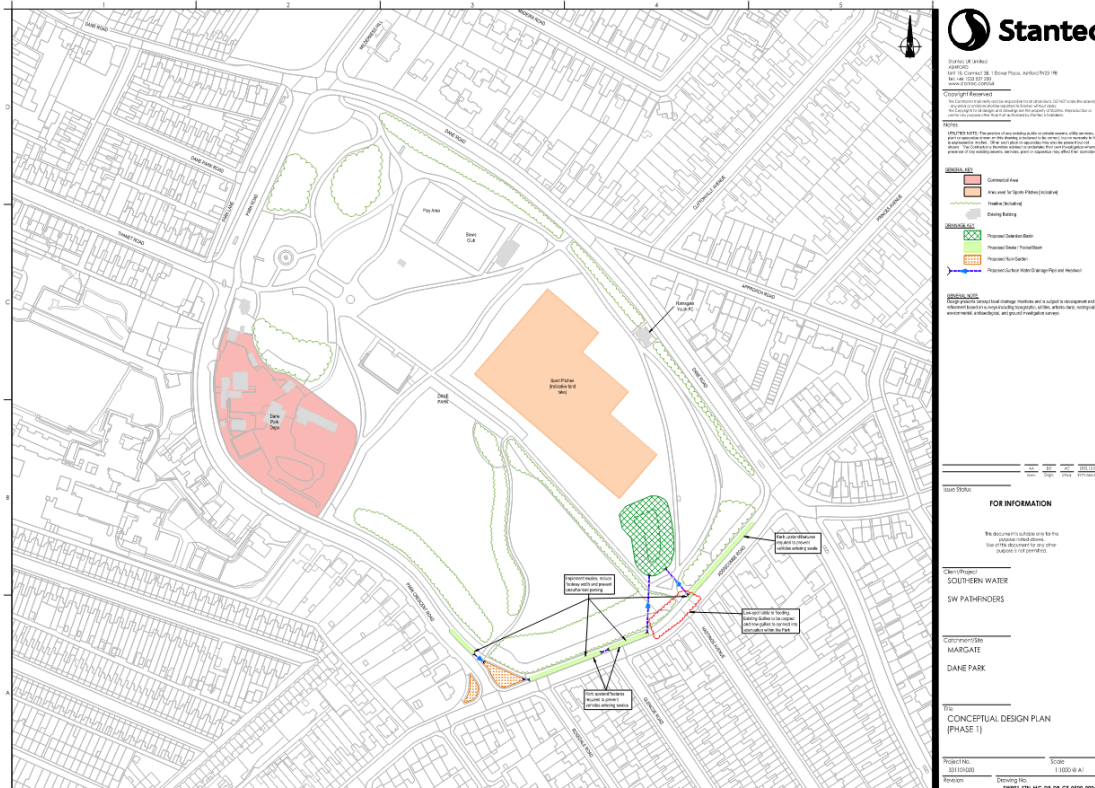


Proposal consists of;

- Liverpool Road to utilise conveyance between existing gullies, potentially using road drain or capped beany unit.
- Marke Wood to have gully shots to connecting into adjacent swales.



# Large SuDS – Green Parks – Dane Park



## Proposal consists of;

- Due to scale of proposal, scheme broken down into small phases.
- Phase 1 consist of swales adjacent to Addiscombe Road and Park Crescent Road.

## Potential next steps;

- Commence desktop studies.
- Undertake topographic, GPR/EML surveys.
- Ground Infiltration testing.



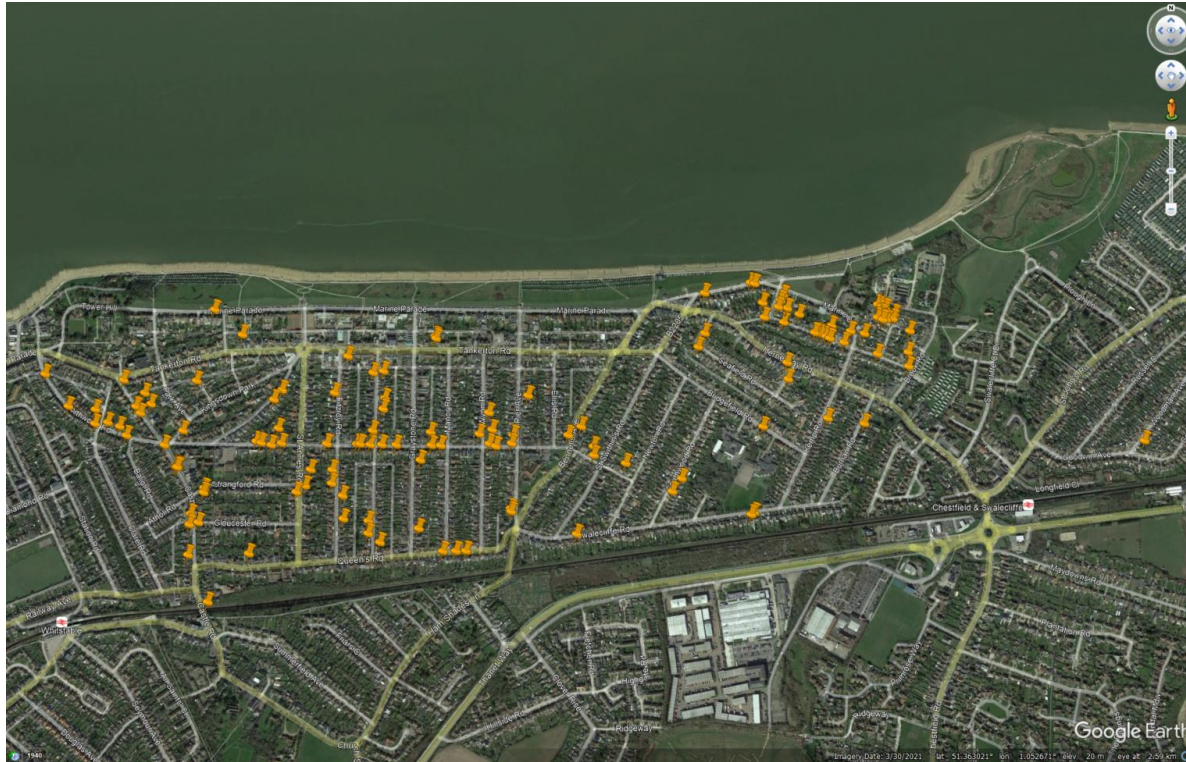


# Planters and Water butts

Whitstable



# Planters and Water Butts – Target 300



from Southern Water  
 Date: April 2023  
 Contact: 0330 303 0368

Dear Customer

**"Slow the Flow" – Water butt installations**

Southern Water is working hard to reduce Combine Sewer Overflow uses in Whitstable and we are introducing evidence-based solutions to help slow the flow of water within the catchment.

One of our initiatives is the installation of free water butts to residents and business within Whitstable, these will store and slow the flow of rainfall from entering the sewer network.

For this initiative to be successful we need our customers support and accept a free water butt system.

Rescue 2 will be installing these butts on behalf of Southern Water throughout April and May 2023.

If you would like to receive a Slow the flow water butt, please book a survey with Rescue 2:

Please email your full name, address, and contact number to [utilities@rescue2.co.uk](mailto:utilities@rescue2.co.uk) alternatively call on 01903 871105 and we will arrange a survey/installation.

Alternatively, visit our Storm Overflow pages on our website or contact us on the details below.

Telephone: 0330 303 0368 quoting Clean Rivers and Sea Task Force – Whitstable  
 Email: [CustomerServices@southernwater.co.uk](mailto:CustomerServices@southernwater.co.uk) quoting Clean Rivers and Sea Task Force – Whitstable

in Whitstable, and we are hoping to achieve at least a 20 per cent reduction in total storm overflows in these areas by spring 2025.

We are already taking action to make improvements to our treatment works in Swalecliffe and we are in the process of installing a storm reconfiguration system, where we utilise our onsite storage before using our long sea outfall, this will reduce long sea outfall events.

Yours Sincerely

Jon Yates  
 Pathfinder Delivery Lead

Southern Water, Southern House, Yarmouth Road, Worthing BN13 3JG  
 Southern Water Ltd  
 Southern House Limited, Regent Office, Southern House, Yarmouth Road, Worthing BN13 3JG Registered in England No. 088875



Target 300 – 300 water butts installed in the CSO catchments in May 2023



# Planters and Water Butts – The Next steps



Water butt second wave



Planter opportunities





# SuDS for Schools

Margate



from  
Southern  
Water 

# SuDS for Schools - Margate

- 13 schools participated in Cat A programme
- Other schools were removed from the project if they weren't connected into the foul sewer with two schools, Holy Trinity and St John's Church of England Primary School and St Anthony's School refusing the planters despite being connected
- Dane Court Grammar School in Broadstairs is our Kent Cat C school

Margate  Cat A	Bromstone Primary School, Broadstairs
	Callis Grange Nursery and Infant School
	Cliftonville Primary School
	Drapers Mills Primary Academy
	Garlinge Primary School and Nursery
	Palm Bay Primary School
	Salmestone Primary School
	St Gregory's Catholic Primary School
	St Mildred's Primary Infant School
	St Peter-in-Thanel CofE Junior School
	Upton Junior School
	Hartdown Academy
	Cliftonville Primary School

Cat C	Dane Court Grammar School
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# SuDS for Schools

- Year one project is now complete, with 43 schools receiving 5 free raingarden planters which were installed on site – Cat A schools
- 4 schools are having SuDS schemes designed and signed off next month, ready for work to commence over the summer – Cat C schools
- In total, 22 Kent schools participated in Cat A programme and 1 school in the Cat C
- We've started holding education sessions with the schools involved, including 6 schools in Kent. This part of the project will be ongoing until the summer
- Successful DfE bid to work with another 50 schools this financial year (April 2023 – March 2024). The list of schools is TBC but will \_\_\_\_\_predominately focus on the Pathfinder areas

