

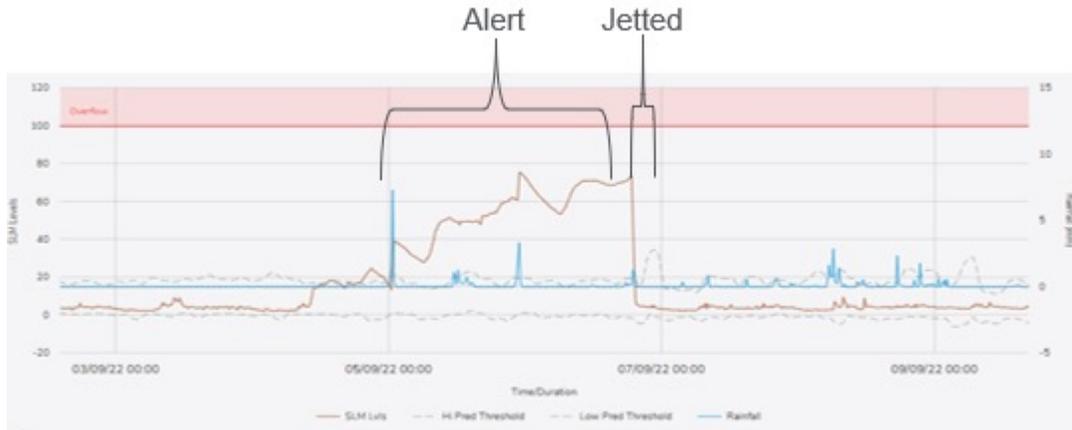
Flooding in Cosham

6th October 2022

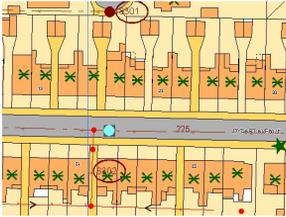


from
**Southern
Water** 

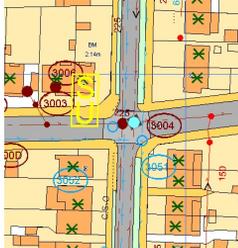
Sewer Level Monitors (Storm Harvester)



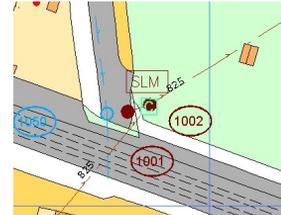
Sewer Level Monitor Locations



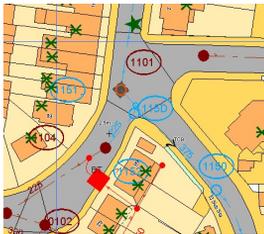
Dysart Avenue



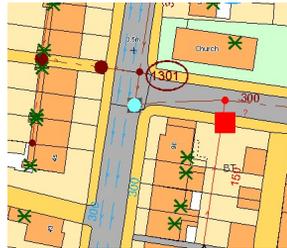
Station Road/Grove Road



Knowsley Creslent/Allotments



Knowsley Road/Salisbury Road



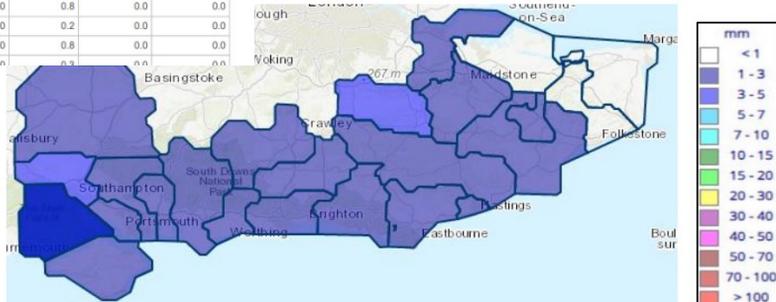
Hilary Avenue/Salisbury Road

Storm and wet weather Notification



How to share our forecast outlook to allow residents with flood barriers to prepare?

Forecast totals					
Name	Wed 05/10	Thu 06/10	Fri 07/10	Sat 08/10	Sun 09/10
Alliston WTW	2.4	0.0	0.4	0.0	0.0
Ashford	1.1	0.0	0.2	0.0	0.0
Aylesford	1.0	0.0	0.4	0.0	0.0
Bishops Waltham	2.9	0.0	1.0	0.0	0.0
Brighton	2.4	0.0	0.4	0.0	0.0
Budds Farm	2.2	0.0	0.8	0.0	0.0
Canterbury	0.8	0.0	0.2	0.0	0.0
Chichester	2.2	0.0	0.8	0.0	0.0
Chubbington	1.1	0.0	0.3	0.0	0.0

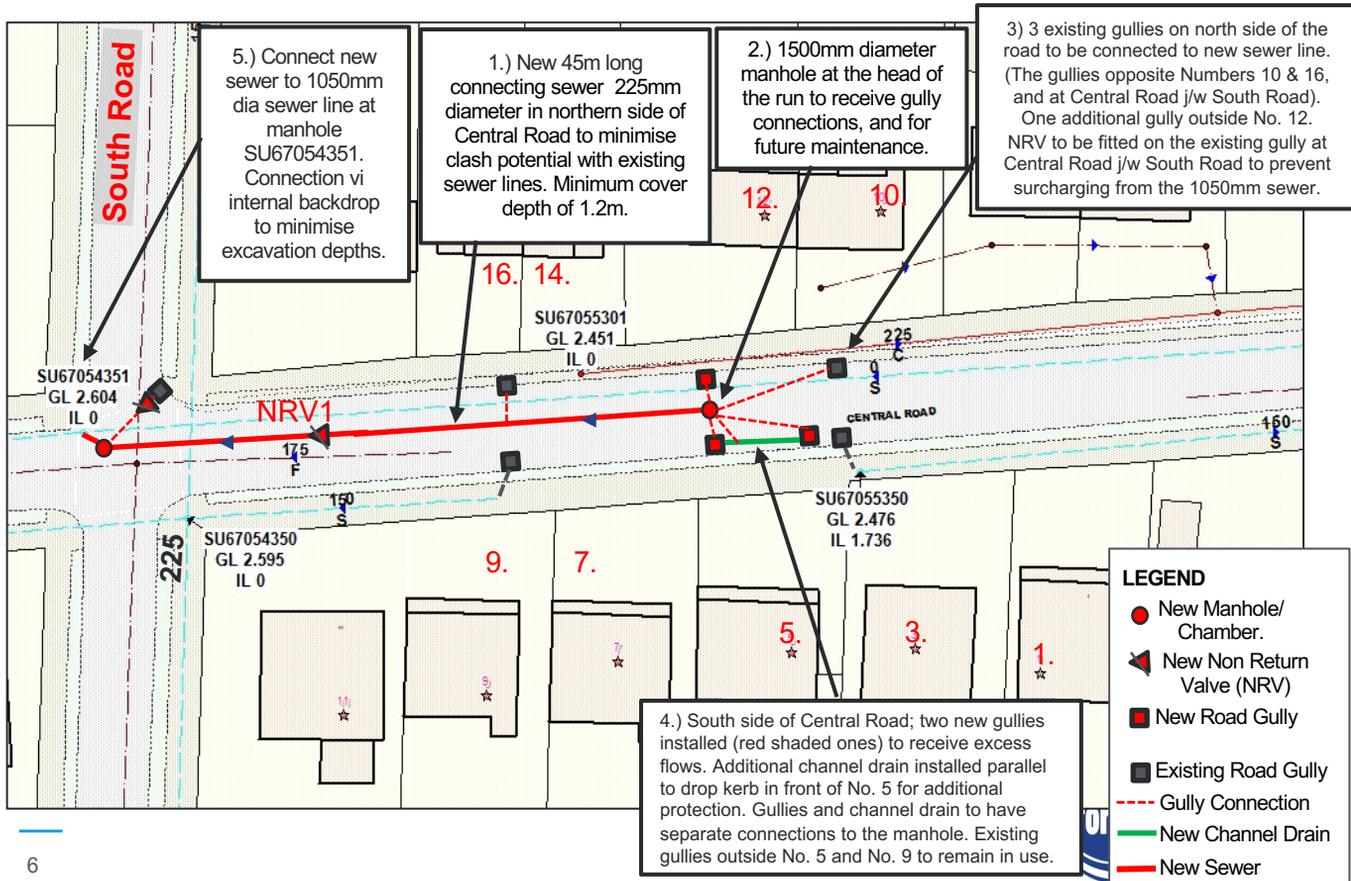


Completed work to reduce flooding: Central Road

- Properties on Central Road were internally & externally flooded in heavy rain
- Work was completed by the end of May, slightly delayed due to clash with gas supply having to be diverted
- Heavy rainfall events since completion occurred on 16th & 25th August & 8th September.
- No flooding occurred, SW staff visited site & residents were contacted, they reported that the water was draining away well.

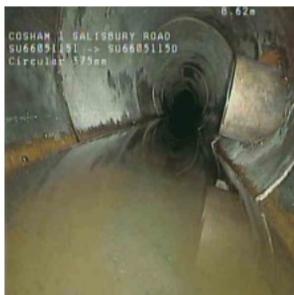
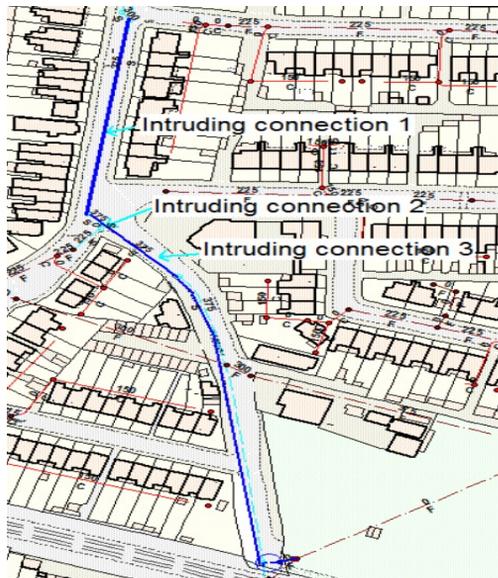


Central Road



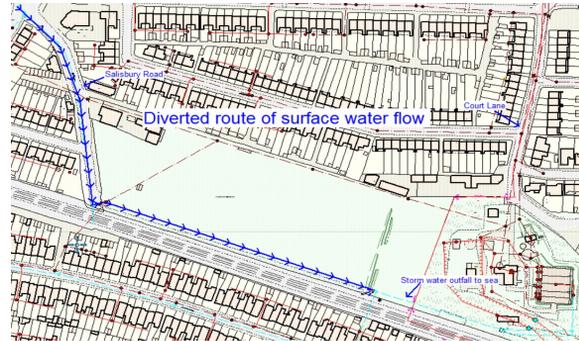
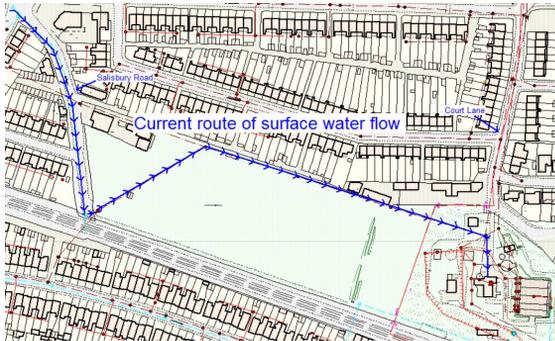
Completed work to reduce flooding: Salisbury Road

- CCTV survey was carried out in March 2022 along Salisbury Road to identify any defects – 3 intruding connections & build up of debris found – all now removed & annual cleaning task set up
- Flood protection at property level installed



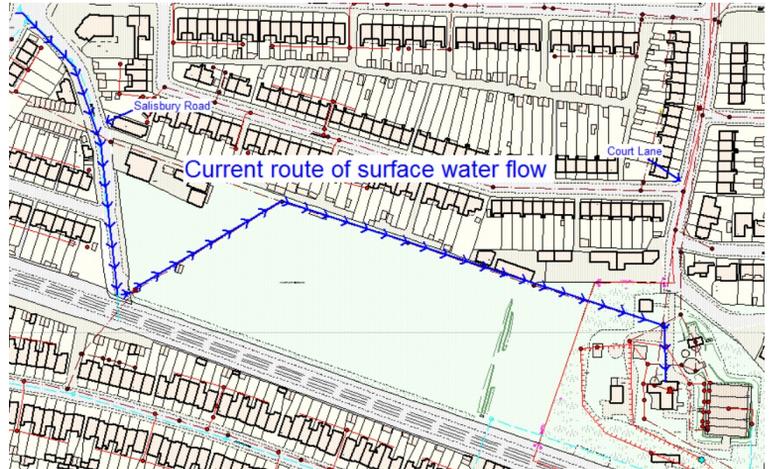
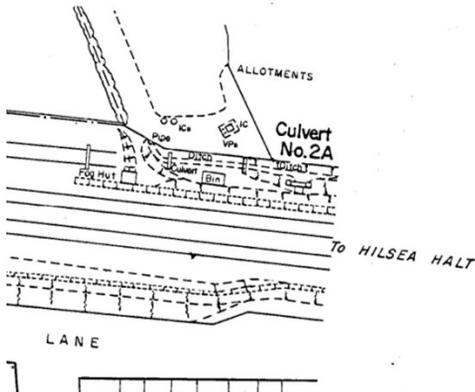
Surface water diversion

- An initial idea to reduce flooding was to divert the surface water line away from the combined system and to join the outfall from Court Lane wps
- The level survey carried out to check the gradient showed that at high tides the sea level is higher than manholes along Salisbury Road and would cause flooding

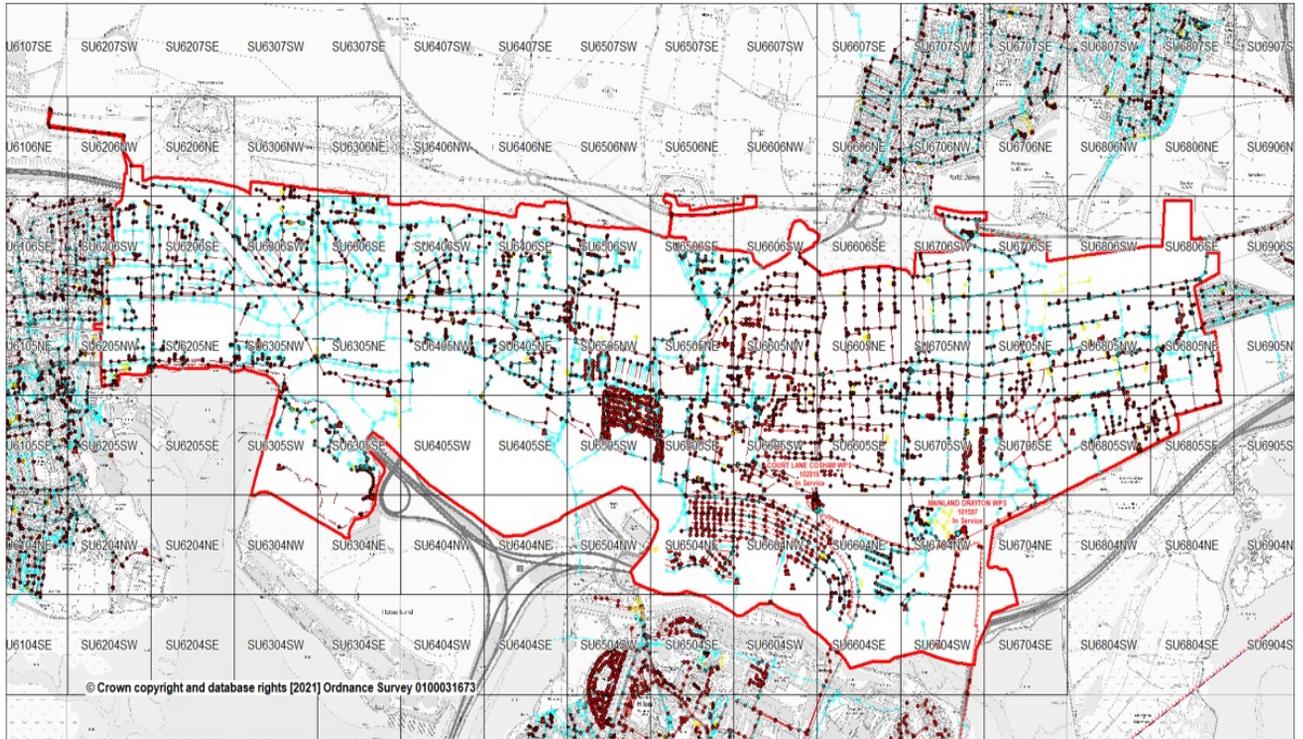


Drainage Culvert under the railway

- There is a disused culvert running under the railway near the surface water line at the end of Salisbury Road
- Southern Water have worked with Network Rail to check the feasibility of diverting the flows



Court Lane & Mainland Drayton Catchments



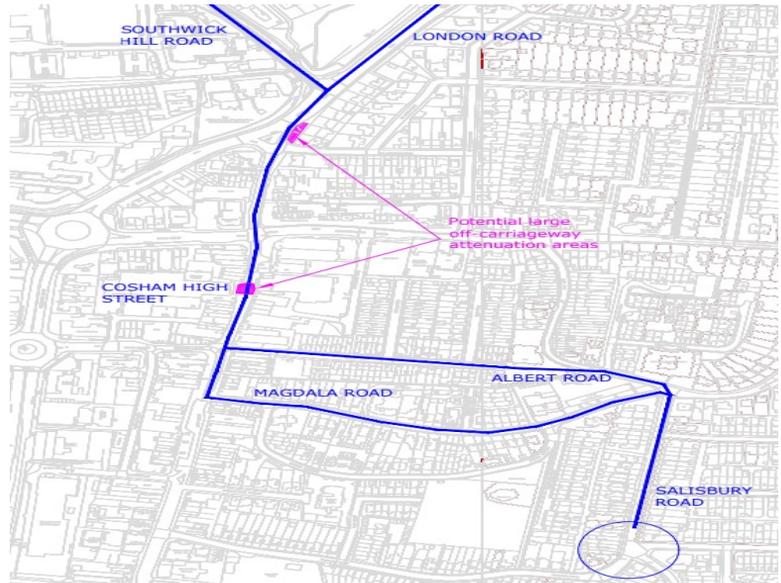
Source of overland flows

Overland flow originate from London Road on the hill and Southwick Hill Road

These join then continue down London Road onto Cosham High Street, gathering more run-off along the way. At the junction with Albert Road part of the flow appears to deviate east,

the remainder of run-off continues down and follows the kerbline and topography east onto Magdala Road and then onto Salisbury Road.

All the route is likely to have tributary overland flows from driveways & paths. Salisbury Road suffers from overland flooding & hydraulically overloaded sewers



Flood and Coastal Erosion Risk Management Scheme

We will pool funding resources between Southern Water, Portsmouth City Council the EA and utilize support from the Flood and Coastal Erosion Risk Management (FCERM) grant in aid scheme. This collaborative and more innovative approach is likely to be more effective when focusing on holistic options that deliver multiple outcomes.

This study will dig into local detailed modelling to determine where we can best achieve localised SuDS (Sustainable Drainage Systems) to reduce overland to sewer flows, with added benefits to the environment and local ecology. We aim to keep all SuDS assets within the Adopted Highway for ease of future maintenance and access.

Information already gathered by SW on possible locations to disconnect the surface water system will be used in the hydraulic modelling and feasibility of surface water removal.



Flood and Coastal Erosion Risk Management Scheme

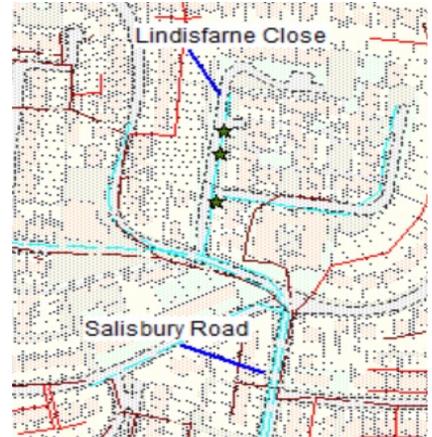
- The previous modelling work by Portsmouth CC to take surface water to Farlington marshes found that there are no easy solutions to relieving the local surface water and sewer flood risk of Cosham and Drayton, primarily due to the gradient being too shallow.
- The aim of this scheme is to ‘slow the flow’ to reduce flooding and develop long term solutions to take into account climate change and growth
- Southern Water are contributing £150k
- Environment Agency are contributing £100k
- Portsmouth CC are contributing £50k

Description of milestone	Estimated start date (DD/MM/YYYY)	Estimated end date (DD/MM/YYYY)
Identify surface water modelling target areas	10/10/2022	4/11/2022
Review findings and share internally	07/11/2022	11/11/2022
Undertake GI	14/11/2022	16/12/2022
Review findings internally	19/12/2022	6/1/2023
Consultation	06/01/2023	03/03/2023



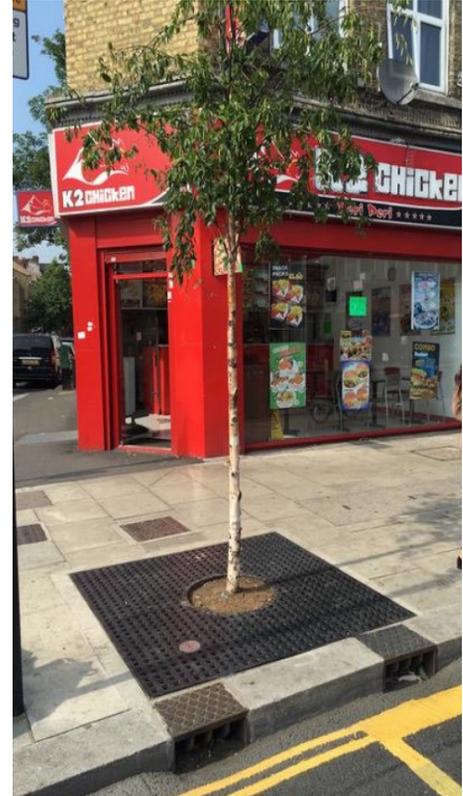
Example of possible SuDS location

At the initial FCERM meeting between SW & Portsmouth CC a survey identified 3 locations where tree pits could be installed to capture rainfall which would otherwise flow to Salisbury Road. The scheme will further identify possible locations which will have soakaway tests to confirm if the location is suitable.



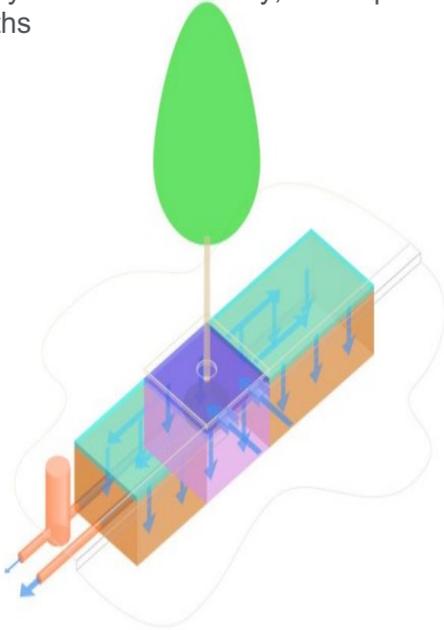
SuDS - Tree pits

Traditional highway gullies are removed and kerb inlets are installed. These inlets are linked directly to the tree pits (beneath the tree grille) and direct surface water from the carriageway into the tree pits over the surface of the tree pit soil. This ensures that the trees receive rainwater everytime it rains (even in short summer rainfall events), and that litter and silt were managed in an accessible location, the surface of the tree pit, beneath the tree grille. Once the tree pit has filled with the 'first flush' of runoff, it passes over a weir surrounding the tree pit and through a layer of permeable sub-base replacement beneath the pavement. This allows the flow of runoff to spread over the whole root zone and infiltrate down into the soil. A perforated pipe running at the base of the root zone collects the runoff as it reaches the base of the installation and directs it to a flow control chamber which restricts discharge to the combined sewer. A second pipe connected to the upper level of the tree pit allows free overflow to the sewer once the storage capacity of the installation is exceeded.



Tree Pits

Other utilities such as gas, electricity & internet can affect the buildability of tree pits, increasing the cost if they need to be diverted. Portsmouth CC have a list of redundant tree pits, they need to be surveyed to check viability, it is hoped that these can be bought back into service within 3 to 4 months



Other Suds which could be used

- Permeable driveways – new houses
- Detention ponds – vegetation, holds rainfall which slowly drains away
- Wetlands – shallow ponds & marshland
- Permeable paving
- Green roofs
- Swale – shallow, broad channels to store & drain water
- Smart water butts



Pathfinder projects

- Ahead of the changes in permitted Storm overflow performance Southern Water has a 'Pathfinder' project on the Isle of Wight for the Sandown catchment which covers 90% of the island.
- The project is looking at all aspects to reduce storm water discharges.
- The Pathfinder team will join us in our work at Cosham so we can use what they have learnt so we can deliver more effectively



Drainage & Wastewater Management Plans

- DWMPs are new plans that set out how water and wastewater companies intend to extend, improve and maintain a robust and resilient drainage and wastewater system. The plans are developed using the framework & guidance set out by Defra, Ofwat & the Environment Agency
- 14 Planning objectives are used in the DWMP process to assess the current and future performance of the drainage and wastewater systems, and identify where action and/or future investment is required. The performance is considered as a risk to failure that could have an impact on people or the environment.
- The planning objectives enable us to consider and identify the issues that we, and the organisations we are working with, care about in each river basin catchment, such as flooding and pollution.
- Risk analysis was carried against current performance and options developed for investment needs to improve performance.
- These options will inform our future business plans as part of the Ofwat periodic review process to secure the finance to implement these options
- Investment needs are published on the Southern water website



Drainage & Wastewater Management Plans

- The Planning objectives are classed in bands:
- Band 0 : Not significant : Maintain
- Band 1 : Moderately significant : Monitor
- Band 2 : Very Significant : Improve
- Cosham is in the Budds Farm wastewater treatment works catchment which has band 2 Planning objectives for
 - Sewer flooding
 - Storm overflow performance
 - Nutrient neutrality
 - Surface water management
- 57 Locations identified from the DWMP work to reduce flooding.
- Work to reduce flooding includes an enhanced customer education programme to prevent blockages, sewer maintenance & separation of flows

- <https://www.southernwater.co.uk/dwmp>



Storm overflows – Defra guidance

1. **Headline target:** Water companies shall only be permitted to discharge from a storm overflow where they can demonstrate that there is no local adverse ecological impact. This must be achieved for all storm overflow sites by 2050.
 - a. The headline target must be achieved for most (75%+) storm overflows discharging in or close to high priority sites by 2035.
 - b. It must be achieved for all (100%) overflows discharging in or close to high priority sites by 2045.
 - c. Water companies must plan to achieve this target for all remaining storm overflow sites by 2050.
2. **Headline Target:** For storm overflows discharging into and near designated bathing waters, water companies must significantly reduce harmful pathogens by either applying disinfection, such as with ultraviolet radiation, or reduce the frequency of discharges to meet Environment Agency spill standards by 2035.
3. **Headline Target:** Storm overflows must not discharge above an average of 10 rainfall events per year by 2050.

