



**Adur and Worthing Councils
Joint Overview and Scrutiny Committee
June 16, 2016**

Southern Water



Our customer supply region



About Southern Water



Water



Wastewater



East Worthing Wastewater Treatment Works



- Serves more than 130,000 people in Worthing and the surrounding area.
- On average treats 30 million litres of wastewater every day – rising to more than 71 million litres during wet weather.
- Designed to fully treat up to 830 litres of wastewater a second.
- During storms or emergencies, anything over this amount (up to 2,290 litres a second) can be diverted to sea via the 5km Long Sea Outfall, after being screened to remove solids.
- To prevent flooding of homes and businesses, further excess flows can be diverted to sea via the 1km Short Sea Outfall.

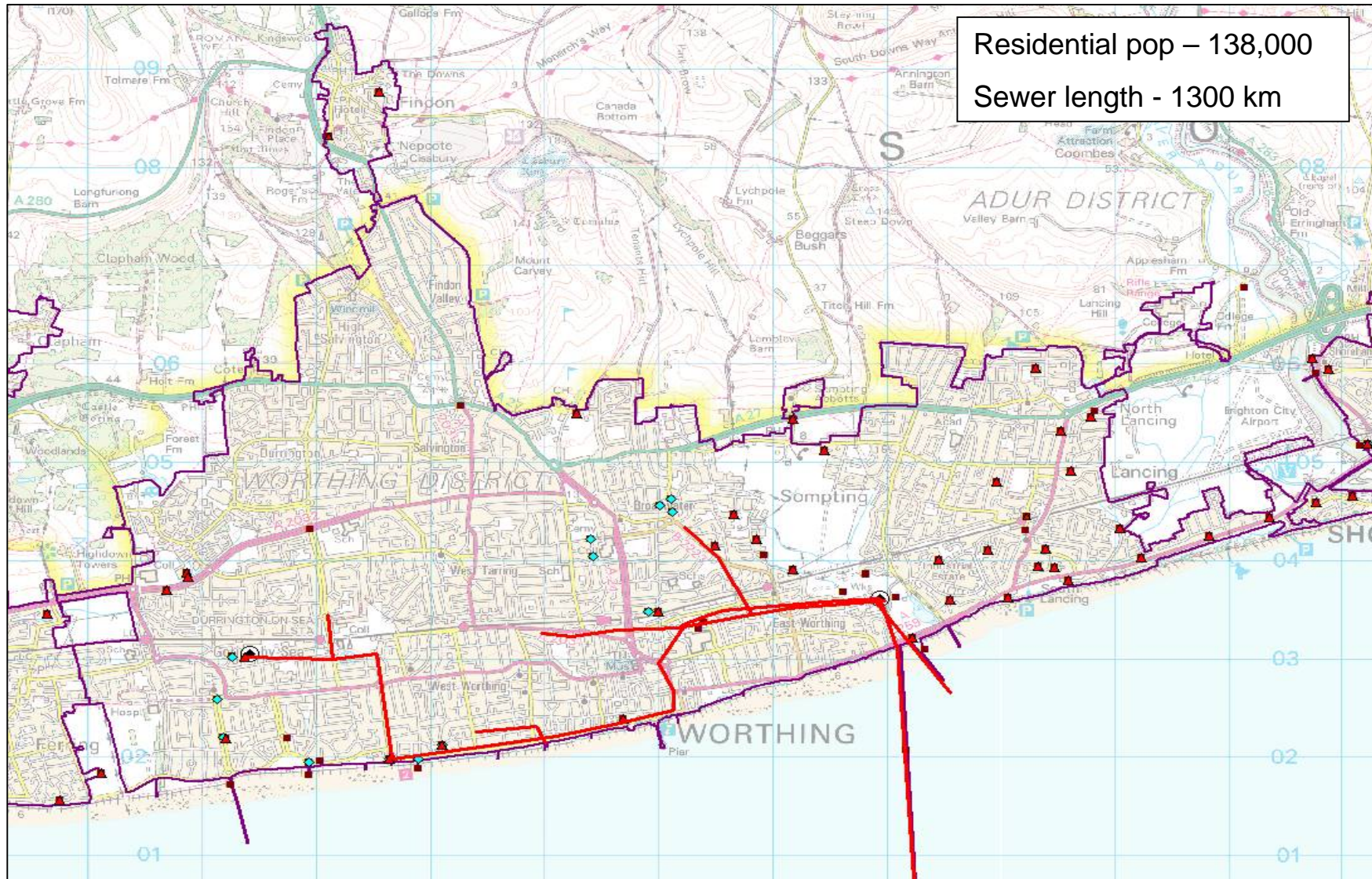


Removing wastewater
effectively



Looking after
the environment

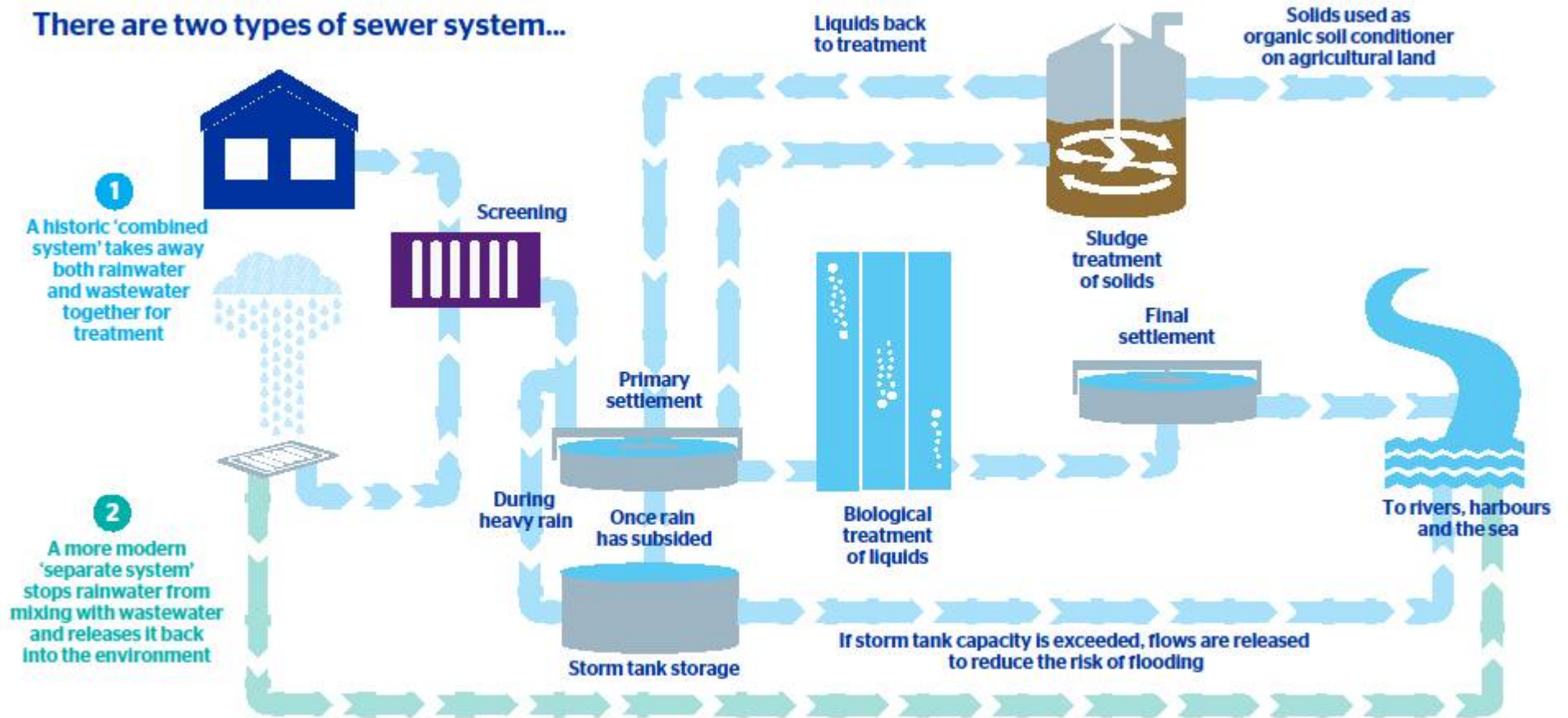
Catchment layout



Trunk sewers	
Pumping station (30)	
Operational Overflows (6)	

The wastewater treatment process

There are two types of sewer system...



What happened in September 2012?



- The pollution, on September 1, 2012, was caused by mechanical and electrical issues in the final stage of the treatment process.
- A level controller, which measures the amount of treated wastewater in a tank, failed. This meant the three pumps which transport treated flows down the Long Sea Outfall ran dry, overheated and two of them stopped working completely.
- This led to wastewater, which flows into the site 24 hours a day, backing up in the system and in danger of flooding Worthing Hospital and nearby homes.
- To protect the Hospital and properties in the area from flooding, we took the tough decision to deliberately release wastewater out to sea.
- The Hospital has been flooded by rainwater several times in the past as it is one of the lowest lying areas in the catchment.
- We were concerned that the building could be flooded if the sewer was overwhelmed by the backed-up wastewater.

Our response to the emergency



- We put into place a full emergency response and worked hard to minimise the environmental impact as much as possible.
- The third pump continued to operate partially allowing the site to continue treating some wastewater as normal and returning it to the sea via the Long Sea Outfall.
- Half of the remaining flows entering the site were either treated or stored on site or taken away by a fleet of more than 30 tankers for treatment elsewhere.
- The other half was released to sea through the Short Sea Outfall, unscreened, to prevent flooding.
- We worked around the clock and, by September 3, a temporary set-up enabled all flows to be treated and released as normal through the Long Sea Outfall.
- We kept the council, other local stakeholders and the media updated.
- The council put up warning signs on beaches between Ferring and Shoreham on September 3. These were removed four days later when tests confirmed the water had returned to bathing water standards.

Improvements at the site



A comprehensive £8 million refurbishment programme was already under way when the 2012 incident occurred.

This programme was subsequently expanded to include new areas of the site and to reduce the risk of a repeat incident. The investment now totals £20 million.

The work included:

- Replacing the faulty ultrasonic level monitor system with a new radar system with a hard-wired backup.
- Refurbishing the three treated effluent pumps and four dry weather flow pumps.
- Replacing one of the site's nine-ton, 45ft long screens and refurbishing the other two – keeping one on site as a spare.
- Installing extra screens to remove debris from the wastewater that enters the site which can cause blockages.
- Installing a permanent extra pump on site to ensure the works continues to be able to release stormwater to sea during heavy rain to prevent flooding.
- A new control system and penstocks at the inlet, where wastewater enters the site, to better manage its flow through to the treatment process.
- Clearing a build-up of around 2,000 tons of wet wipes, sanitary products and other material from the main trunk sewer leading to site.

Some of the improvements at the site



The court case



- The Environment Agency prosecuted us for breaching our environmental permit.
- While we freely admitted that the wastewater was released, we pleaded not guilty as it was done to protect customers.
- We argued a Section 40 Environmental Defence – which allows for a breach of permitting regulations to avoid danger to human health.
- We maintain this defence was appropriate as the Hospital was at risk of being flooded with wastewater.
- The case took some time to progress through court. We were eventually sentenced in September last year and fined £160,000.
- Two further charges relating to the maintenance of our site and equipment were dismissed by the judge.

Bathing water quality

Worthing is one of 21 bathing waters being investigated as part of our Bathing Water Enhancement Programme.

It will bring water quality at a further seven beaches up to “excellent” by 2020.

Investigations are being carried out this year to better understand the various sources and pathways of pollution affecting water quality and what interventions may be required.

We are already working closely with the council on this project.

The investigations will reveal which of the 21 bathing waters, and the communities they serve, would benefit most.

Seven will be progressed to intervention in early 2017.

The work is the first stage in our aim of bringing all 83 coastal waters at bathing beaches in the region up to the standard required to achieve Blue Flag status by 2040. We will work with other agencies, communities and landowners to achieve this.



Our Keep It Clear campaign



More than two-thirds of sewer blockages are caused by items like wet wipes and sanitary products flushed down toilets and cooking oils put down kitchen sinks.

We encourage customers to protect their own pipes and the public sewers by only flushing the three Ps – pee, poo and paper. Everything else should go in the bin.

We are holding workshops at Worthing secondary schools this autumn which will focus on sewer blockages and the impact of “unflushables”.

We would welcome further assistance from the council to help us spread the messages of this campaign – a reduction in blockages brings benefits for all.



www.southernwater.co.uk/keepitclear

In summary



- We apologise for the failure which, although unforeseeable, caused the pollution.
- We deliberately released wastewater to sea to protect the Hospital and other properties from flooding.
- We worked hard to minimise the impact of the release.
- We have invested a significant amount of time and money to ensure the particular circumstances of the incident cannot happen again and to improve resilience.
- Releases from the site, like thousands of others across the country, will always be required to prevent flooding during heavy rain.
- These stormwater releases, which are permitted by the Environment Agency, are diluted with rainwater and screened.
- We take our environmental responsibilities seriously and take great pride in providing a high quality, essential service to our customers.
- We welcome the opportunity to present to you today and to reassure the councils and our customers of our continued efforts to protect the communities we serve.