

# Southern Water EDM & U\_MON4 Programme

## event duration monitoring and flow passed forward upgrades to 97 sites for Southern Water

by Trant Engineering

The Water Industry National Environment Programme (WINEP), developed by the Environment Agency, Defra, Natural England and Ofwat, is a regulatory framework that outlines the environmental obligations for water companies in contributing to the wider national objectives for the natural environment. One of its aims is to ensure that pollution incidents resulting from spills of untreated wastewater are better monitored and managed. The most significant requirement in this context is the retrofitting of event duration monitoring at sewage treatment works. EDM records the time and duration of storm water releases into rivers, lakes, oceans, or the surrounding land from combined sewer overflows (designated as U\_MON1 under WINEP), when stormwater is diverted to a storm storage facility before being returned to the treatment process (U\_MON3) and recording the flow being passed forward for treatment (U\_MON4).



Settled storm overflows (SSO) radars and junction box at South Street East Barming WwPS - Courtesy of Trant Engineering



Full flow to treatment (FFT) radar and flow to storm (FTS) radar at Cowden WwTW - Courtesy of Trant Engineering

### The programme

Southern Water required the delivery of UMON\_4, final stages of UMON\_3, and MCERTS qualification for all monitoring equipment on spill overflow points by 31 March 2025.

Initially, Southern Water contacted Trant Engineering to carry out U\_MON4 and EDM installations at 20 wastewater treatment works to be completed in AMP7, with Trant having previously installed 645 EDM and U\_MON monitors for Southern Water in AMP5 and AMP6.

Prior to beginning design work, detailed site surveys were carried out to establish existing assets, the details of power, communications and telemetry hardware and to ensure that the new installations would not interfere with any other site processes. Design work was all conducted by Trant's inhouse electrical engineers working closely with Southern Water's team to ensure a 'right first time' approach.

### Challenges

Installing flow metering and EDM equipment sounds straightforward but, as is always the case in engineering, challenges arise. Although the concept design was identical for each site, the detail varied depending on individual site conditions: civil works, cable ducts, flow meter positioning, power supplies and many other factors.

Initial scoping is required to identify environmental considerations, including wildlife which may need to be moved or invasive species and the effect on programme. For example, a colony of bats had taken up residence in one of the existing kiosks, but fortunately, after careful monitoring, by the time installation was due to commence the colony had moved on.

Another challenge was that completed installations had to be certified by Environmental Flow (one of only four independent MCERTS approved bodies in the UK). With so many EDM schemes



being installed around the country, Environmental Flow Ltd was very busy, so any missed scheduled sign-off date could have resulted in long delays. Thus, commissioning was completed strictly to a year-long rolling programme.

### Project management

Installations were made ready for switchover in a brief window to ensure that reporting time would not be compromised. Installation and commissioning at several sites were carried out simultaneously and the region was split into two sectors. Each with its own delivery team including electrical, installation along with civils, and mechanical operatives to enable the delivery to be met.

To cover all the work in such a condensed time, staff were allocated allowing back-to-back design, installation and commissioning. The programme evolved collaboratively with Southern Water as the requirements become known, and Trant was able to build, invest and recruit into the programme.

Some of the sites had a history of power outages, which created some concerns for Southern Water about potential loss of data reporting. As a result, Trant proposed to install individual uninterruptible power supplies (UPS) to maintain power for 12 hours. Southern Water decided that the additional cost presented real value in terms of security and their MCERT coordinator was sufficiently impressed to request that a UPS be installed on all the schemes, including retrofitting at those already completed.

### Undertakings

Running many small, live sites concurrently meant a large volume of paperwork to ensure that there was minimal interruption to normal service: risk-assessed method statements, permits to work had to be submitted in a timely manner, and this needed close cooperation between all stakeholders. Trant demonstrated organisational proficiency as further sites were given with the final 35 sites to be completed in an eight-week period to meet tight accelerated WINEP deadline of 31 March 2025. Following which, Southern Water awarded Trant a further 40 sites. Later increasing to 91.

### EDM & U\_MON4 Programme Supply chain: Key participants

- **Client:** Southern Water
- **Principal designer & contractor:** Trant Engineering
- **Civil design:** Godsell Arnold Partnership Ltd
- **Electrical installation:** SRE Services Ltd
- **Civil installation:** DR Clark Services
- **MCERT inspections:** Environmental Flow Ltd
- **FFT instrumentation:** Vega Controls Ltd
- **Flow meters:** Siemens

### Project success

Whilst Trant were completing the initial schemes, Oliver Lockwood Southern Water's Capital Delivery Project Manager was impressed by the performance.

*"The Trant team has delivered incredible work across the U\_MON projects, their exceptional efforts over AMP7, successfully delivering our U\_MON3 regulatory outputs, as well as the challenging U\_MON4 project while simultaneously finishing the final EDM programme deliverables. The work has not gone unnoticed."*

*"The team has demonstrated flexibility under numerous pressures and collaborated seamlessly with Southern Water and other delivery partners. Your experience has been a significant factor to the overflow monitoring performance, and I can confidently say that the successes of these projects would not have been possible without your collective skill and dedication."*

In all, Trant completed a total of 496 EDM installations for Southern Water during AMP7 by the regulatory date of 31 March 2025 and have now delivered over 1,000 such monitoring installations over the past three regulatory periods for Southern Water.

Southern Water's EDM & U\_MON4 Programme provides full visibility of events from every overflow in Southern Water's network as well as monitoring Flow to Full Treatment (FFT) to meet the regulatory deadlines. The works saw just under 100 sites upgraded across Kent, Hampshire, the Isle of Wight, and East & West Sussex.

*The editor and publishers would like to thank Trant Engineering for providing the above article for publication.*



FFT Radar at Petersfield WwTW - Courtesy of Trant Engineering



Instrument board including new FFT monitor, FTS monitor and storm return MAG - Courtesy of Trant Engineering



New Storm Return MAG Sensor at Cowfold WwTW  
Courtesy of Trant Engineering