



Pilot Study: Optimizing Stormwater Management in the Area of the Wastewater Association Mittleres Jagsttal

Within the parent funding „Aktionsprogramm Jagst“ to improve the water quality and ecological status of the river Jagst, this project aims to improve the management of combined sewer systems based on measured data.

The study area is the catchment of the wastewater union Mittleres Jagsttal. This area is drained almost completely in a combined sewer system. Containing 15 combined sewer overflow (CSO) tanks, six combined sewer overflows (CSOs) and one stormwater tank, the area provides a good basis for optimization. In all tanks the filling and overflow behavior is monitored automatically based on water level measurements. Additionally magnetic-inductive outflow measurements record the continuation flow in ten of the CSO tanks.

The objective of this project is to use the data that is already documented to operate urban drainage systems more economically and to reduce their environmental impact. The optimization of continuation flows is usually based on simulations. Whereas this project is aimed to develop an innovative approach based on measured parameters. This way measured information is replacing the most uncertain parameters of these simulations.

The first optimization goal is to reduce the overflow volume of the entire system. In an additional approach, we implement waterbody specific requirements to develop a catchment specific overflow distribution. To be able to include catchment specific information on the overflow quality, we conduct an 18 months measurement campaign with online UV/Vis spectrometers. To reconstruct the spatial and temporal variations of rainfall on the overflow behavior of the system, four rain gauges record precipitation continuously. Furthermore, the GefaÖ investigates the influence of CSO on the receiving water body.

The aim is to develop an approach to optimize combined sewer systems based on measured data. This approach will be applicable to other catchments and will enhance an economical and environmental management of combined sewer systems.



Figure: Tipping bucket flushing a CSO tank

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