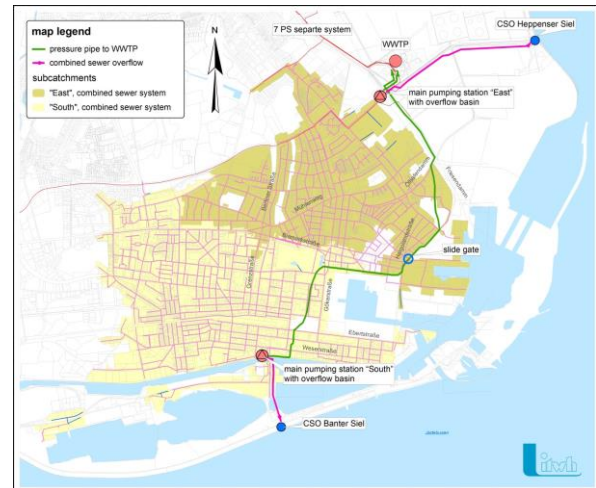


# INTEGRATED CONTROL SYSTEM OF SEWER SYSTEM AND WWTP WILHELMSHAVEN

## Assignment

In 2010 itwh GmbH implemented a sewer control system in the city of Wilhelmshaven to reduce combined sewer overflows. The main objective in controlling the sewer system is to reduce the number of overflows and the volume at a combined sewer overflow (CSO), located close to a bathing beach. Based on online measurements, the operation mode of two pumping stations is modified. This approach allows to safely activate free storage volume in the sewer system without constructive measures. Additionally, the fuzzy-based RTC strategy combines this control of the sewer system with the control of the inflow to the WWTP. To avoid critical situations in the treatment process, the inflow to the treatment plant is automatically reduced to a defined value if high inflows to the treatment plant occur in combination with unfavourable conditions on the secondary clarifiers during rainfall events. As disturbance values, existing measurements from the self-monitoring concept are used. Further improvement is achieved by using online measurements.

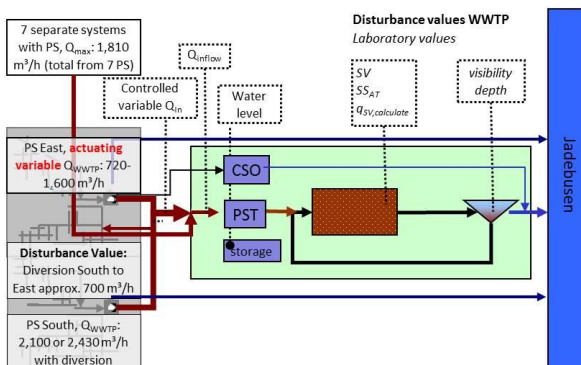
The designed control system allows the optimum use of the available treatment capacities.



Combined Sewer System Wilhelmshaven and location of the CSOs at PS South and PS East

## Scope

- Collection and analysis of measurement data.
- Design and implementation of the fuzzy-based control system; including model-based tests.



### Inflow control system of the WWTP

- Large-scale implementation and design of a visualization.
- Monitoring to verify functioning (measurements, control values, rules)

## Short description

**Client** TBW Wilhelmshaven

**Project period** 2012 - 2013

**Fee** 86,500 €

### Characteristics

Conception & full-scaled implementation of an Integrated Control System

Integrated simulation with HYSTEM-EXTRAN, itwh.CONTROL and SIMBA (design tool)

Training & monitoring

**Project number** 40918

**Institut für technisch-wissenschaftliche Hydrologie GmbH (itwh)**

Engelbosteler Damm 22, 30167 Hannover

Tel: +49 511 97193-0, Fax: +49 511 97193-77

E-Mail: itwh@itwh.de Internet: www.itwh.de