

## **Development of an Intelligent Decision Support System to Assess the Management of Combined Sewer Overflows at River Basin Scale**

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Traditionally, wastewater infrastructures have been managed individually without considering relations among them –sewer systems and Wastewater Treatment Plants (WWTPs)– neither the receiving media. However, pursuing the good ecological status of the water bodies, in 2000, the European Union approved the Water Framework Directive (WFD). This Directive changed the conventional wastewater infrastructure practice for a more integrated management approach. Consequently, the collection, transport, treatment and disposal of urban and industrial wastewater and rainfall must be done considering the correct performance of the different wastewater infrastructures but specially minimizing the impacts on the receiving media to maintain or improve its ecological state. According to this new tendency, Combined Sewer Overflows (CSOs) must be minimized without unleashing WWTP overloading. To support the management of CSOs, an Intelligent Decision Support System (IEDSS) has been designed and developed. This IEDSS identifies and quantifies the CSOs, estimates their effects on the water body, and proposes actions (e.g. to change the set points of the automatic controllers of the wastewater infrastructures) to minimize these impacts. The poster will present this IEDSS, emphasizing the outputs provided: identification and characterization of sewage overflows, and management actions.