



# Strategy for a better environment based on a benchmark simulation model for integrated urban wastewater systems

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# OUTLINE

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# INTRODUCTION

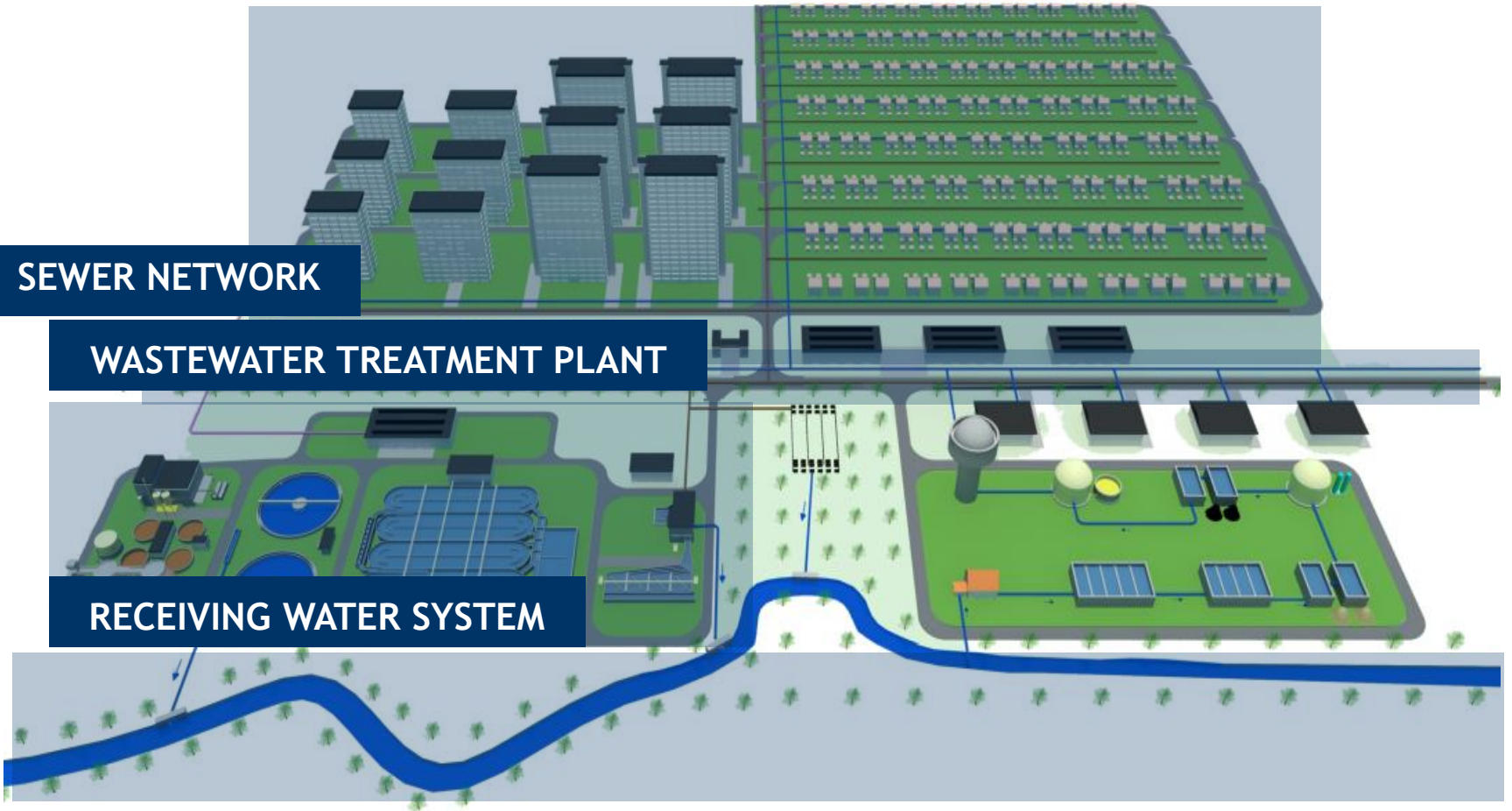
## URBAN WASTEWATER SYSTEM

CATCHMENT

SEWER NETWORK

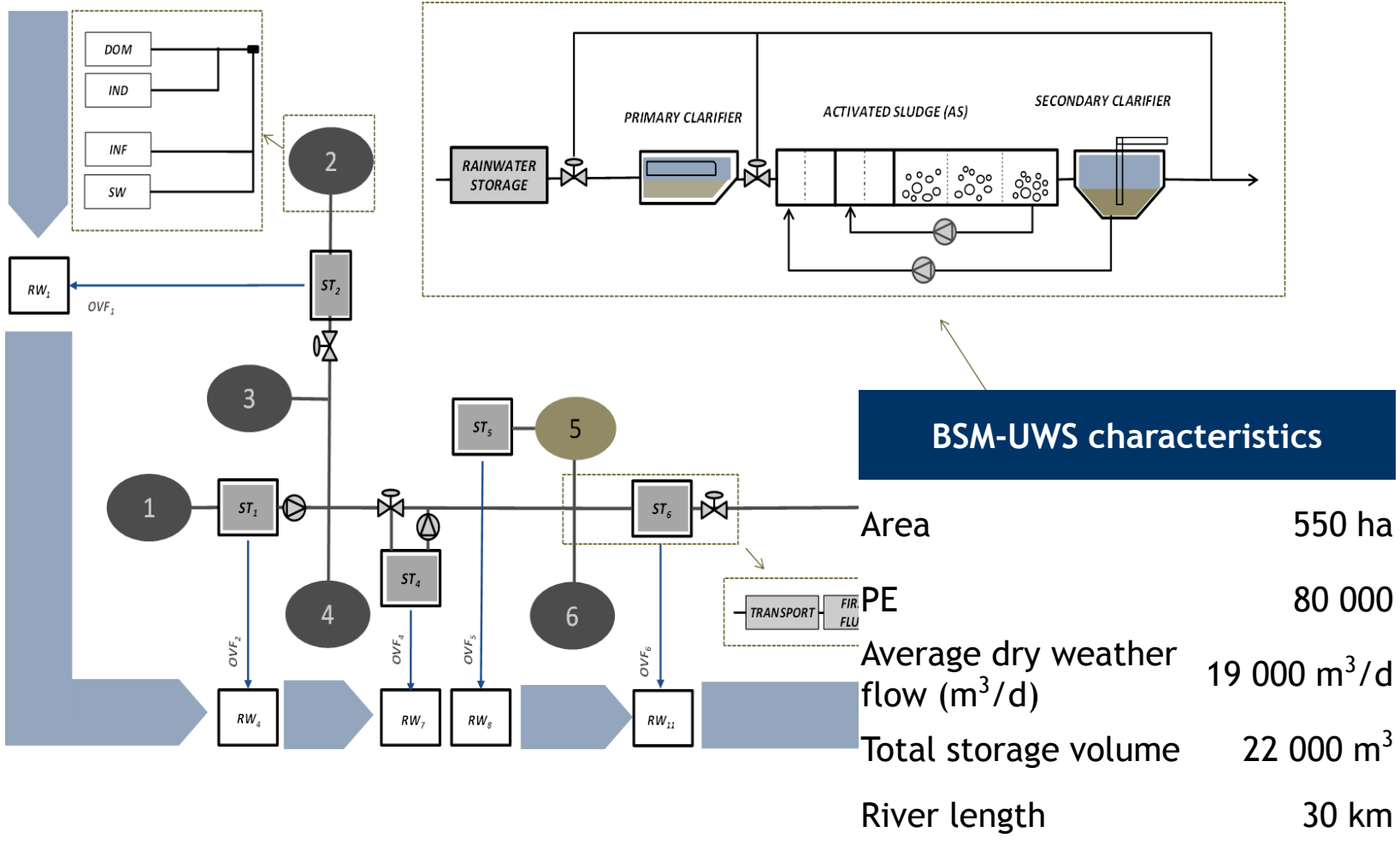
WASTEWATER TREATMENT PLANT

RECEIVING WATER SYSTEM



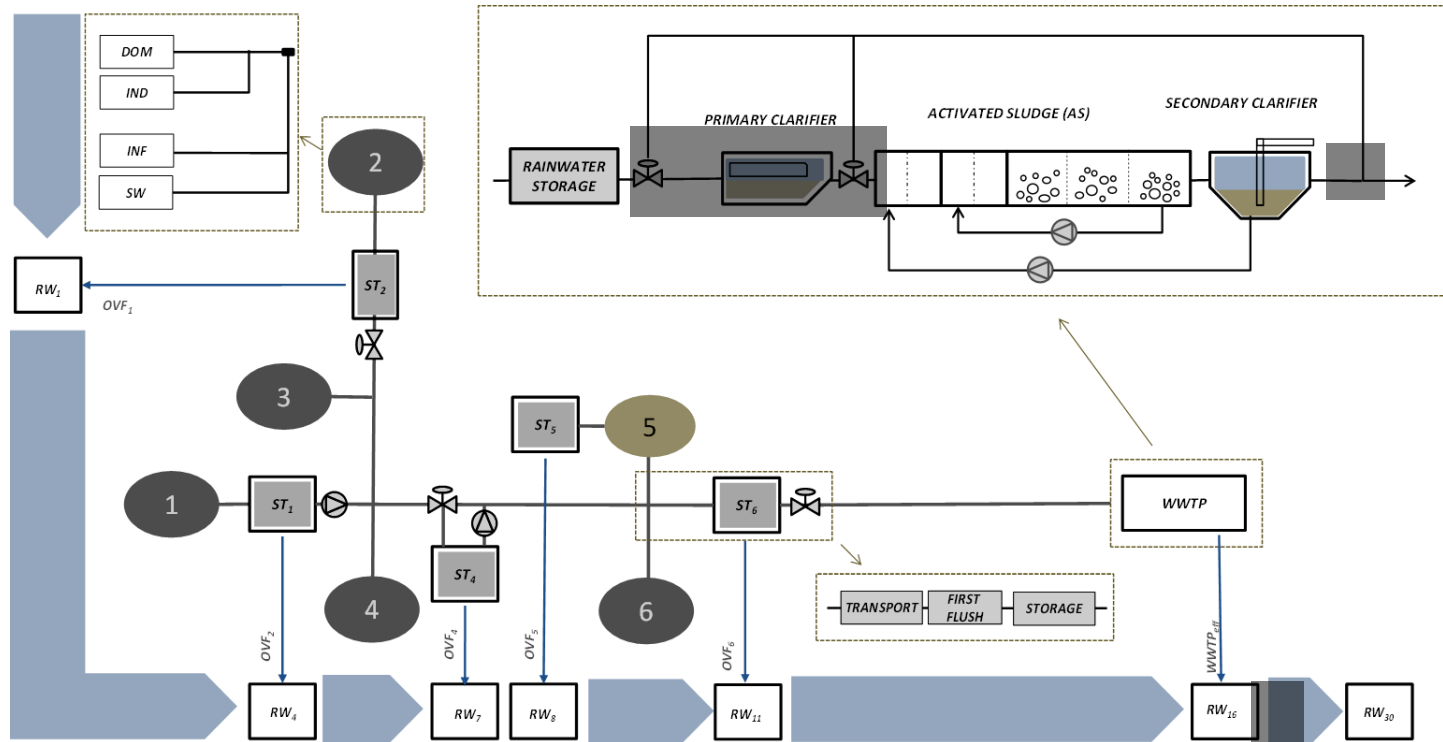
# INTRODUCTION

## BSM-UWS



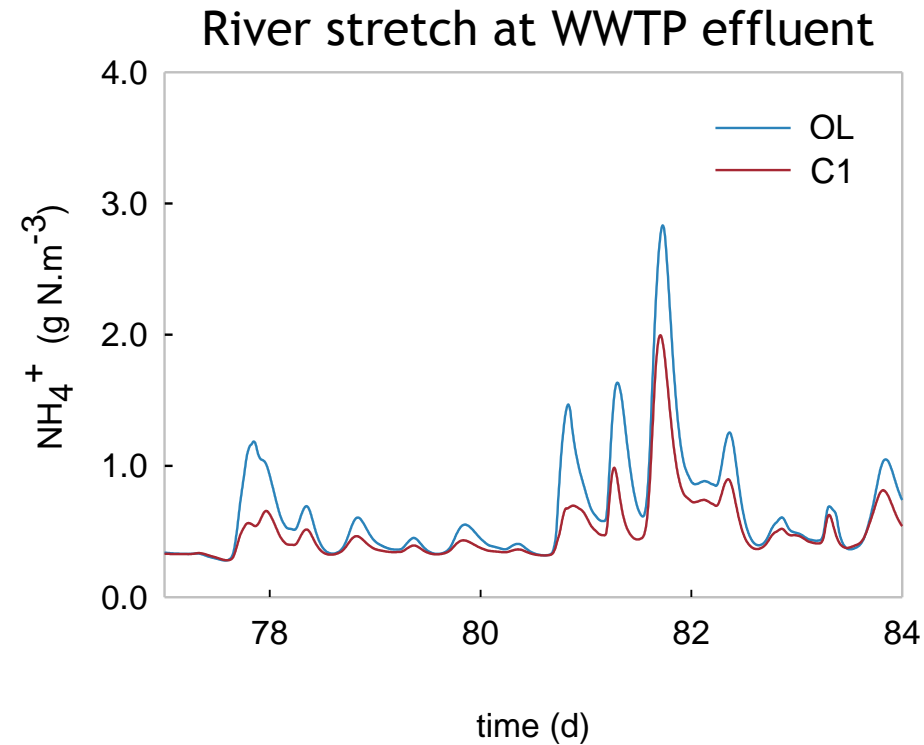
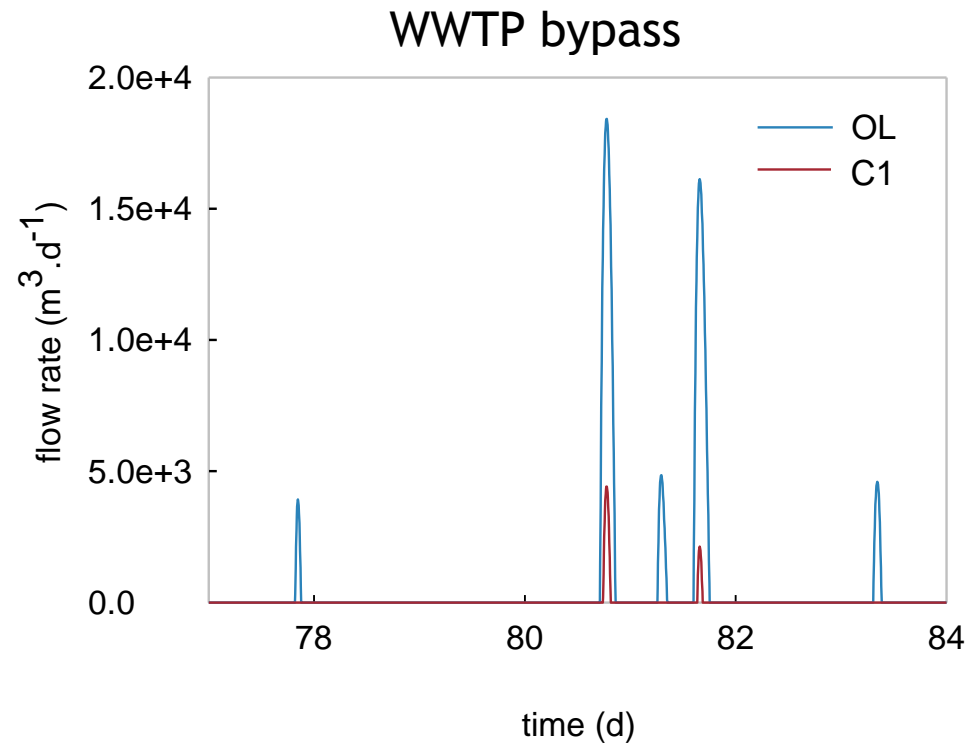
# CASE 1: INTEGRATED CONTROL

Modifying the bypass at WWTP based on river water quality



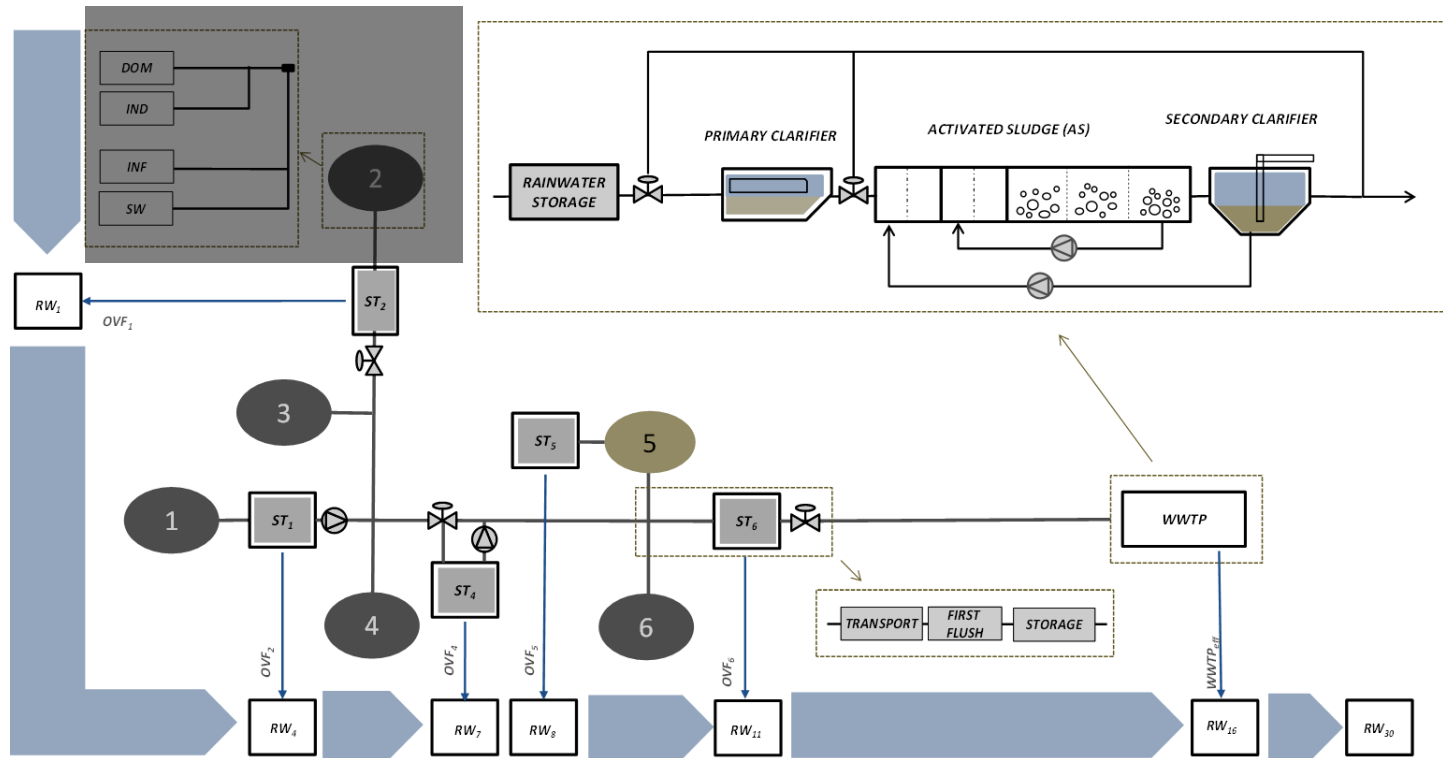
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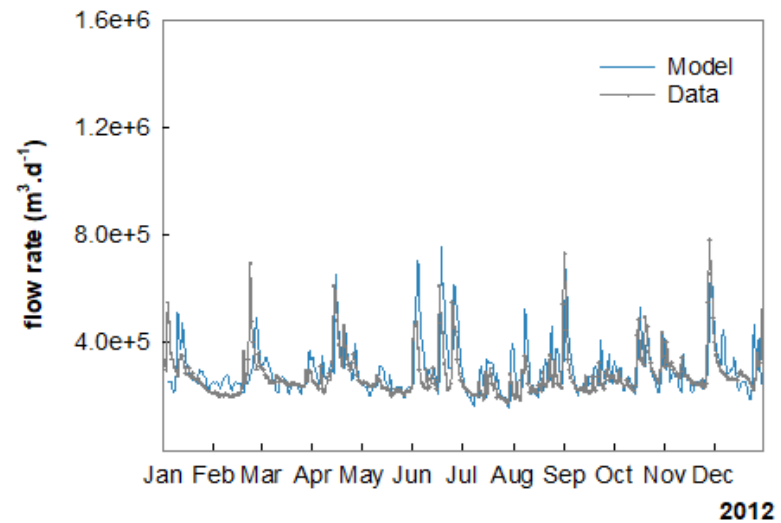
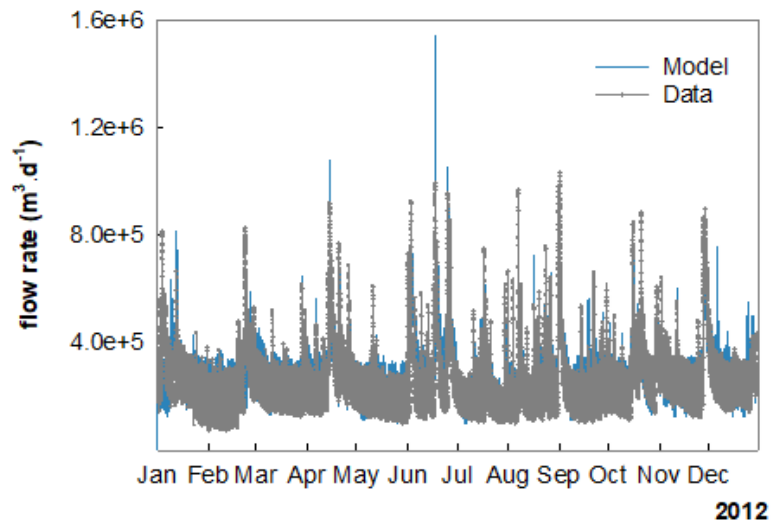
# CASE 2: INFLUENT GENERATION

## Influent generation for Henriksdal WWTP, Stockholm



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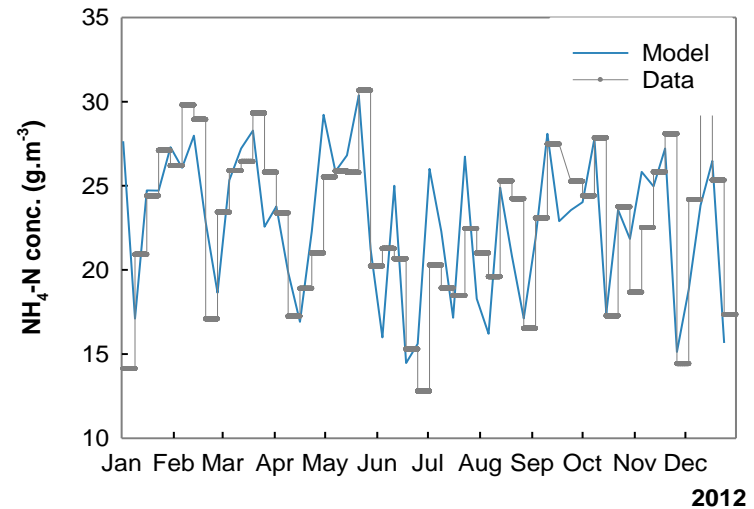
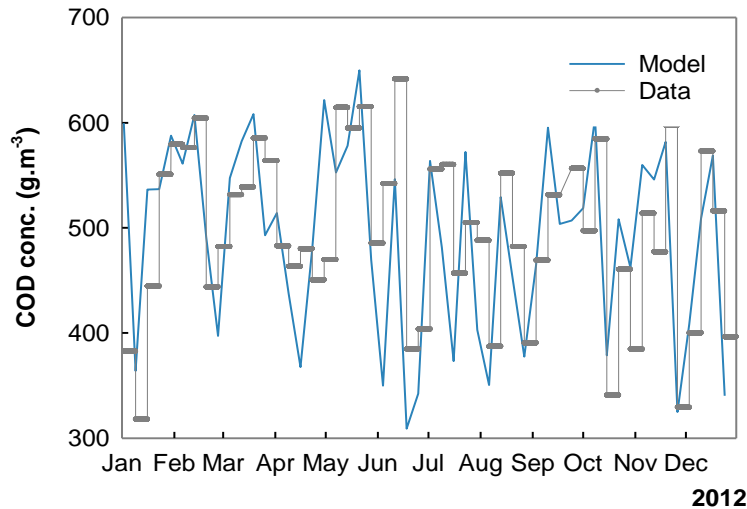


Calibration results for the influent flow rate at Henriksdal WWTP at 15 min intervals (left) and daily average values (right) for the year 2012.



# CASE 2: INFLUENT GENERATION

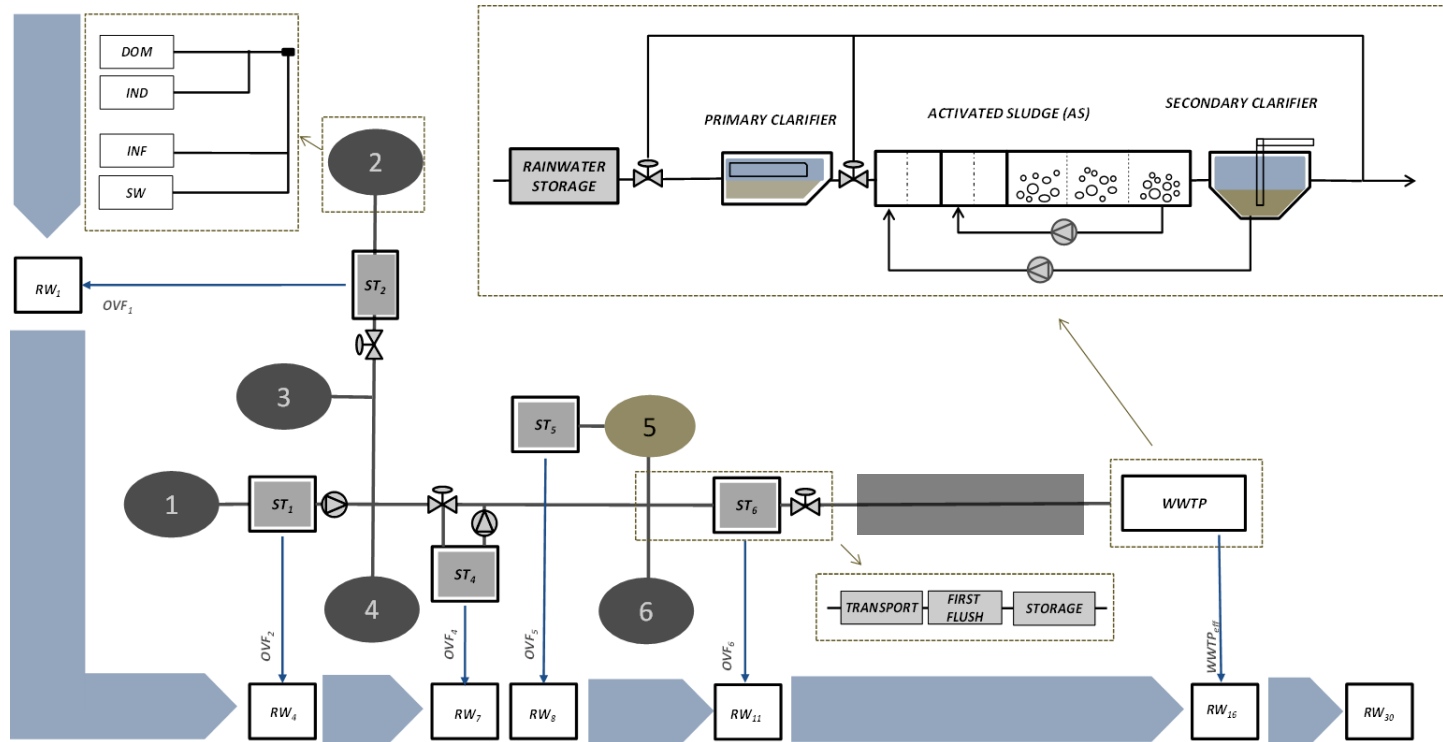
## Influent generation for Henriksdal WWTP, Stockholm



Weekly average influent COD (left) and NH<sub>4</sub>-N (right) concentrations predicted by the model (blue) compared to the weekly composite measurements (grey) at Henriksdal WWTP for the year 2012.

# CASE 3: NEW MODEL DEVELOPMENT

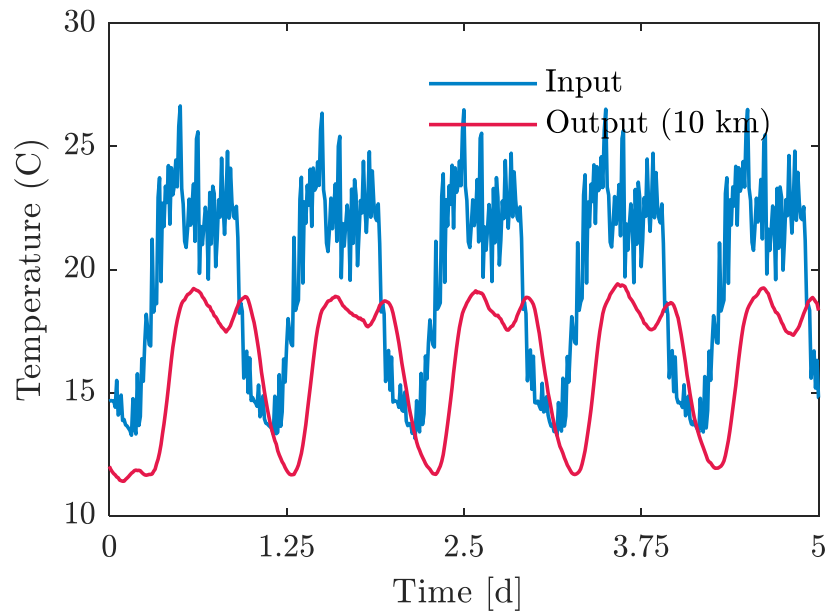
## Modelling heat transfer in sewer system



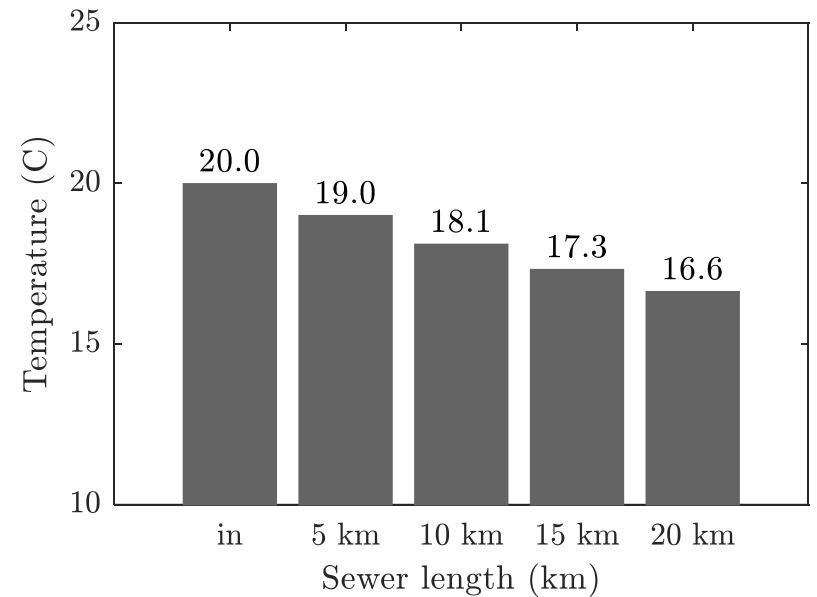
# CASE 3: NEW MODEL DEVELOPMENT

## Modelling heat transfer in sewer systems

Modelled temperature variation



Change in temperature with sewer length



**THANK YOU**