Supplementary Material

Multi-Objective Optimization for Urban Drainage or Sewer Networks Rehabilitation through Pipes Substitution and Storage Tanks Installation

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Supplementary Material

In the manuscript referred above, a case study was used to present the validity of the method described. It is the aim of the authors to allow any researcher to be able to reproduce the results obtained. For this reason, the data and the results are included in this supplementary material.

The network of E-Chicó is presented in the Figure S1 below.

For the network described above, three different rehabilitation scenarios were performed depending on the selection of the decision variables. The results of these scenarios for the case of not having flooding are also presented.
1. Case Study Data

Table S1. Data for nodes and subcatchments in the network used as a case study.

<table>
<thead>
<tr>
<th>Node ID</th>
<th>Invert Elevation (m)</th>
<th>Max. Depth (m)</th>
<th>Flooding Area (m²)</th>
<th>Sub-Catchment Area (ha)</th>
<th>Impervious Area (%)</th>
<th>Width (m)</th>
<th>Slope (%)</th>
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Table S2. Data for conduits in the network used as a case study.

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<th>Diameter (m)</th>
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**Figure S2.** Design storm based on the Alternating Blocks Method.

**Table S3.** Time series for the design storm used in the case study.
### Table S4. Series of suitable diameters and their associated for the case study.

<table>
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<th>Diameter (m)</th>
<th>Unit Cost (€/m)</th>
<th>Diameter (m)</th>
<th>Unit Cost (€/m)</th>
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### 2. Results of the Case Study

Next, the results of these scenarios for the case of not having flooding are presented.

### Table S5. Results for scenario 1, all 35 conduits are suitable to change their diameters.

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Table S7. Results for scenario 3, all 35 conduits are suitable to change their diameters and all 35 nodes are suitable locations for detention tanks.

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