

<b>Measurement procedure and tool</b>	Modelling through Medina del Campo surface water allocation model.
<b>Scale of measurement</b>	Groundwater Body scale (Medina del Campo Groundwater Body)
<b>Data source.</b>	
<b>Required data</b>	Climatic data from local meteorological stations including rainfall, runoff, evapotranspiration, infiltration.
<b>Data input type</b>	Historical data series
<b>Data collection frequency</b>	Annual
<b>Level of expertise required</b>	
<b>Synergies with other indicators</b>	Groundwater availability due to the surface-groundwater connections
<b>Connection with SDGs</b>	SDG 6
<b>Opportunities for participatory data collection</b>	
<b>Additional information</b>	
<b>References</b>	NAIAD, Deliverable D6.2, From hazard to risk: models for the DEMOs. Part 1: Spain– Medina del Campo. SC5-09-2016 Operationalising insurance value of ecosystems. Grant Agreement n° 730497

#### 4.36 Volume of water removed from water treatment system

**Project Name:** URBAN GreenUP (Grant Agreement no. 730426)

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<b>Volume of water removed from water treatment system</b>	<b>Water Management</b>
<b>Description and cation</b>	Green infrastructure can prevent rainfall from entering the water treatment system by allowing it to soak into the soil or to evaporate back into the air.

<b>Definition</b>	This KPI evaluates the volume removed from the water treatment services (e.g., in m <sup>3</sup> /y) that can also be translated into monetary values.
<b>Strengths and weaknesses</b>	+ This KPI calculation is simple if public data are available - A specific software can be required to calculate the monetary values
<b>Measurement procedure and tool</b>	This KPI requires the measure of water flow pre and post intervention, and discharge data for storm water. With this data, it can be created a local urban catchment hydrograph. A specific software can be used (GI-Val tool 2.1) to model the savings into monetary values. Create local urban catchment hydrograph for demonstration site. Model projected savings (Euro) using GI-Val. Discharge data for storm water (m <sup>3</sup> ) from United Utilities.
<b>Scale of measurement</b>	City
<b>Data source</b>	
<b>Required data</b>	Volume of water treated in the city, and volume from stormwater.
<b>Data input type</b>	Quantitative: Numeric data (tables).
<b>Data collection frequency</b>	Pre and post intervention.
<b>Level of expertise required</b>	Technical/basic
<b>Synergies with other indicators</b>	The volume of water retained by the NBS can be estimated through KPI Run-off coefficient in relation to precipitation quantities, and KPI Absorption capacity of green surfaces, bioretention structures and single trees.
<b>Connection with SDGs</b>	This KPI is directly related with SDG 6 and SDG 11 and indirectly is related with SDG 13 (promotes a more efficient use of water resources).
<b>Opportunities for participatory data collection</b>	This is not a KPI open to participatory collaboration.
<b>Additional information</b>	
<b>References</b>	<p>URBAN GreenUP Deliverable D2.4 - Monitoring program to Valladolid.  <a href="https://www.urbangreenup.eu/insights/deliverables/d2-4---monitoring-program-to-valladolid.kl">https://www.urbangreenup.eu/insights/deliverables/d2-4---monitoring-program-to-valladolid.kl</a></p> <p>URBAN GreenUP Deliverable D3.4 - Monitoring program to Liverpool  <a href="https://www.urbangreenup.eu/insights/deliverables/d3-4---monitoring-program-to-liverpool.kl">https://www.urbangreenup.eu/insights/deliverables/d3-4---monitoring-program-to-liverpool.kl</a></p>

	<p>URBAN GreenUP Deliverable D4.4 – Monitoring program to Izmir  <a href="https://www.urbangreenup.eu/insights/deliverables/d4-4--monitoring-program-to-izmir.kl">https://www.urbangreenup.eu/insights/deliverables/d4-4--monitoring-program-to-izmir.kl</a></p> <p>URBAN GreenUP Deliverable D5.3: City Diagnosis and Monitoring Procedures  <a href="https://www.urbangreenup.eu/insights/deliverables/d5-3-city-diagnosis-and-monitoring-procedures.kl">https://www.urbangreenup.eu/insights/deliverables/d5-3-city-diagnosis-and-monitoring-procedures.kl</a></p> <p>The Mersey Forest &amp; The University of Manchester (2011). STAR tools: surface temperature and runoff tools for assessing the potential of green infrastructure in adapting urban areas to climate change. Part of the EU Interreg IVC GRaBS project.  <a href="http://www.qinw.co.uk/climatechange">www.qinw.co.uk/climatechange</a>.</p>
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### 4.37 Volume of water slowed down entering sewer system

**Project Name:** URBAN GreenUP (Grant Agreement no. 730426)

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Volume of water slowed down entering sewer system	Water Management system
<b>Description and cation</b>	<p>The parameters under principle investigation are discharge (<math>\text{m}^3 \text{sec}^{-1}</math>) and flow velocity (<math>\text{m sec}^{-1}</math>), which when plotted on a storm-hydrograph, ought to demonstrate the following changes between the baseline and post GI scenario:</p> <ul style="list-style-type: none"> <li>• An increased lag-time (L), the time of peak rainfall to peak discharge and,</li> <li>• Reduced peak discharge (<math>Q_p</math>)</li> </ul>
<b>Definition</b>	Rate change in runoff production at field or plot scale.
<b>Strengths and weaknesses</b>	<p>+ ET represents system losses of groundwater, potentially lowering wetted fringe and water table that is hypothesized to reduce soil moisture and increase infiltration – a useful GI service if permeable paving is installed.</p> <p>- Evapotranspiration (ET) (<math>\text{mm sec}^{-1}</math>) and interception rates will not be directly observed under this KPI, through various processes, both are implicit in reducing inflow rates into sewers.</p>
<b>Measurement procedure and tool</b>	Precipitation data will be collected, and water inputs and outputs will be monitored at a number of points of interest throughout the NBS interventions. These data are mapped and evaluated to obtain flow patterns by creating a model. The