

# A Short Introduction to Stormwater Management

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# Background on Urban Stormwater Management

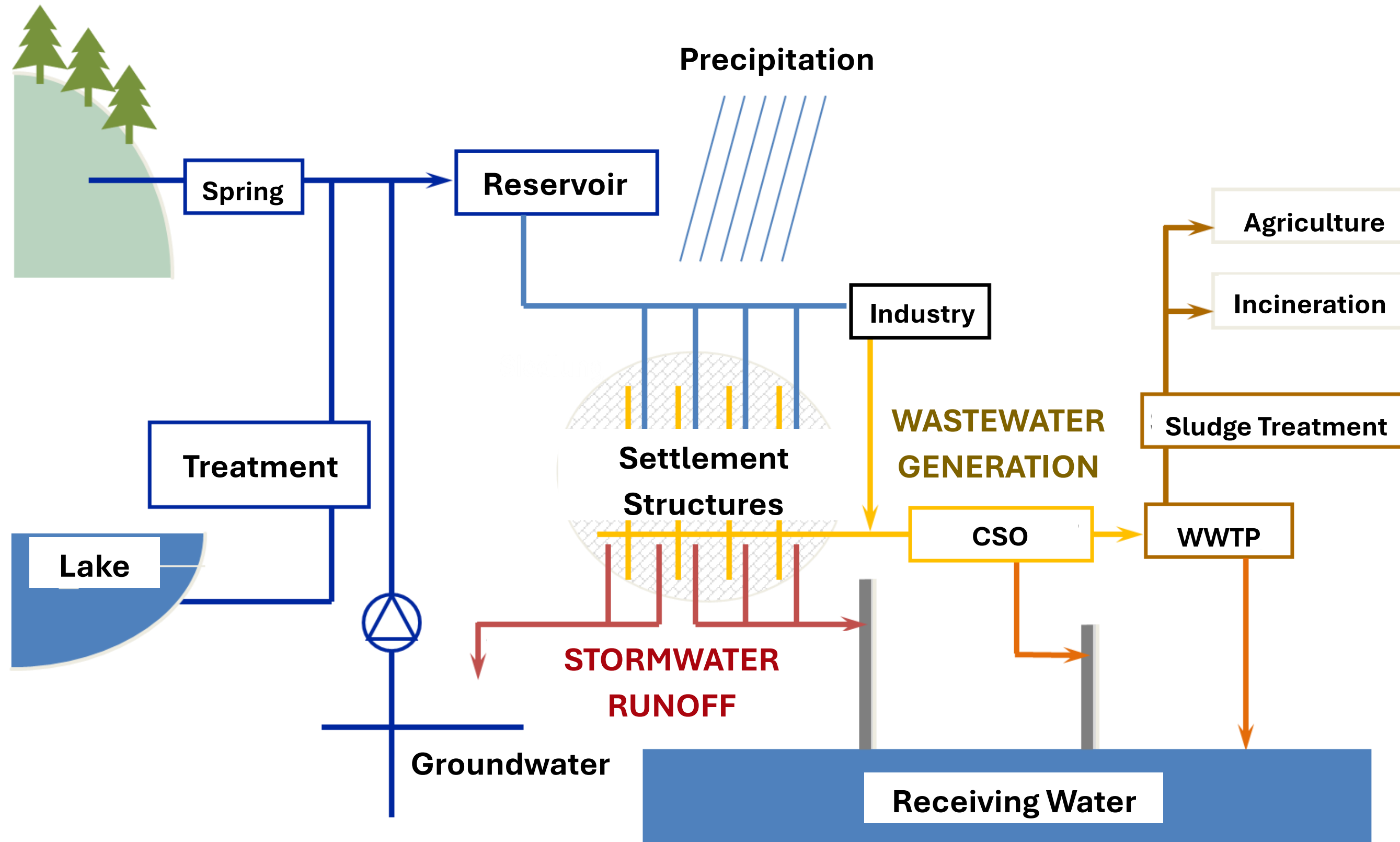


Fig.: Urban Water Management (© Weissenbacher, BOKU-SIG, adapted)

# Conventional vs. Innovative Stormwater Management

Tab.: Comparison of conventional and innovative stormwater approaches (own presentation)

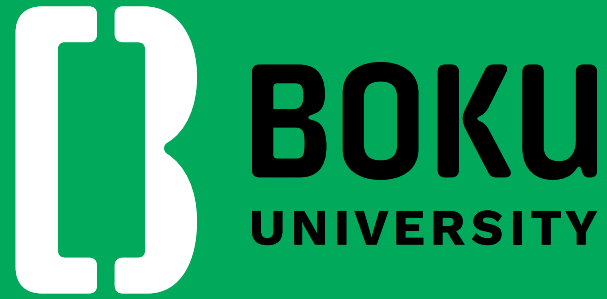
Characteristics	Conventional (grey)	Innovative (blue-green/nature-based)
Structural design/components	underground pipe network and structures	Mainly above-ground structure, often incl. vegetation
Main aim	Pluvial flood protection, human health	Hydraulic relief of the existing sewerage system, urban heat island mitigation, human recreation, living space for flora and fauna
Main function(s)	Discharge	Infiltration, storage/retention, Evapo(transpi)ration
Main challenges	Increasing surface sealing, increased heavy rainfall events, sewer overload, impact on the (small) water cycle, impact on receiving water	Space availability, water scarcity, investment costs, institutionalisation, operation and maintenance

# Recast of EU's Wastewater Treatment Directive

- Open points in the “old” directive:
  - Remaining pollution from urban sources: heavy rains, new pollutants, etc.
  - Gaps in relation to the Green Deal: renewable energy, energy efficiency, circularity, etc.
  - Optimisation potential in governance: transparency, operator's performance, monitoring and reporting, etc.
- Stormwater relevance and blue-green/nature-based solutions:
  - Stormwater pollution (e. g. stormwater inlets and combined sewer overflows)
  - Stormwater reuse (e. g. substitution of drinking water for non-potable usage)
  - Stormwater monitoring (e. g. CSO monitoring)

# Take Home Messages

- Climate change is a major challenge for urban stormwater management (extreme storm events and long dry periods).
- A combination of existing conventional (grey) and innovative (blue-green/nature-based) solutions appear most promising.
- Integrated thinking, an appropriate institutional framework and life-cycle concepts for the management of the innovative assets is imperative (also to properly tackle the challenges of EU's new wastewater treatment directive).



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