Electronic Supplementary Material (ESI) for Environmental Science: Water Research & Technology.

Supplementary Information

Table S1: System subcatchment and storage asset physical characteristics.

Controllable Storage Asset	Directly Contributing Subcatchment Area (km^2)	Diameter of In-line Conduit (m)
2	1.66	4.48
3	5.78	2.74
4	21.67	4.27
5	2.64	4.72
6	0.00	4.72
7	0.00	4.72
8	6.64	4.72
9	5.08	3.73
10	13.60	4.72
11	3.54	3.20
12	6.68	3.51

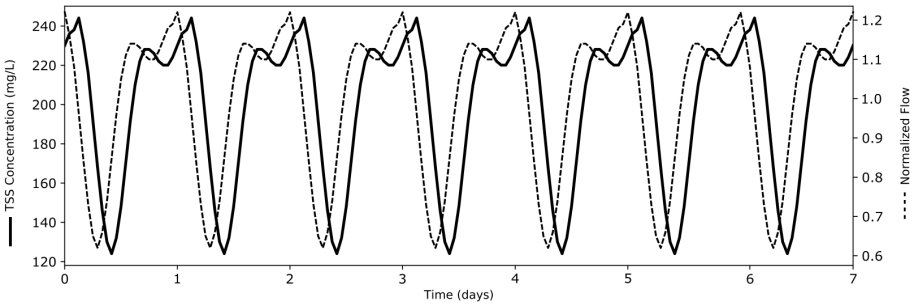

Figure S1: Dry-weather inputs to the sewer network. The flow and TSS concentration dynamics at each network inlet follow diurnal wastewater patterns, where the magnitude of flow (scaled from the normalized flow shown here) is dictated by the corresponding subcatchment area and TSS has an average concentration of 200 mg/L.

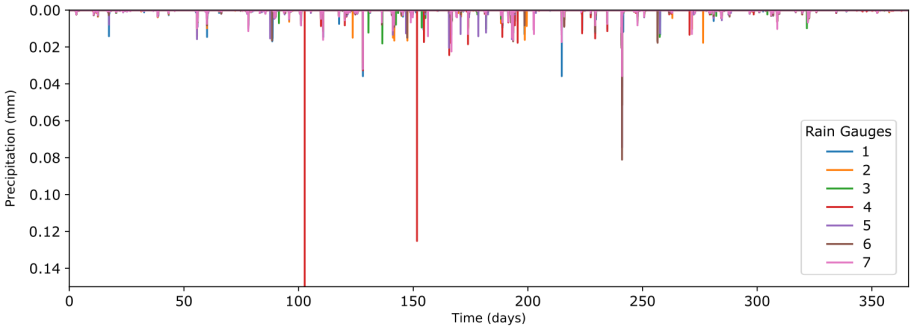

Figure S2: Precipitation data used for wet-weather inputs into sewer network. Each subcatchment receives precipitation from one of the seven rain gauges.

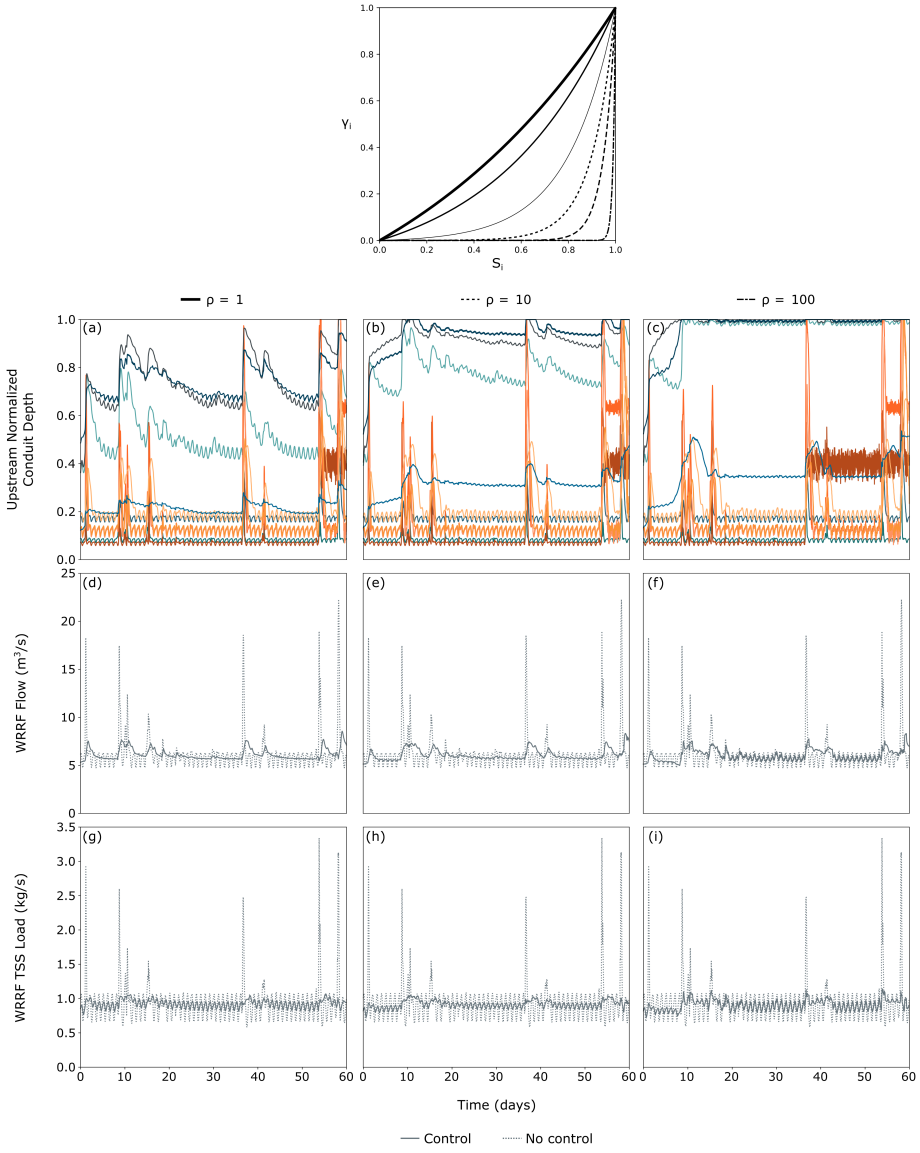

Figure S3: Comparison of control performance with system importance values $\alpha_1^q = 5.0$ and $\alpha_1^{tss} = 5.0$ during the first two months of the simulation period. Three ρ values used in the state-dependent instantaneous importance γ_i are shown in the columns; the upstream normalized depth behind the storage assets, flow at the network outlet, and TSS load at the network outlet are shown in the rows. Dashed and solid lines in (d)–(i) denote uncontrolled and controlled cases, respectively.