**Low impact development practices mitigate urban flooding and non-point pollution under climate change**

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Climate change-induced extreme rainfall events exacerbate the failure in stormwater hydraulic and water quality management. As a promising alternative for stormwater management, the low impact development (LID) performance under the impact of climate change was analyzed in this study. The hydraulic and water quality models were integrated and the hydrological inputs were derived from downscaled general circulation model (GCM) projections. Results demonstrated that the LID practices in the given areas mitigated runoff volume, peak flow, and non-point pollution by 45–80%, 39–60%, and 31–82%, respectively. Scenario analysis showed that the LID hydraulic performance declined under all three future climate scenarios (RCP 2.6, RCP 4.5, and RCP 8.5), while the LID water quality performance fluctuated among different climate patterns. Uncertainty analysis suggested that the climate change caused wide-range uncertainties on LID performance, the uncertainty of LID water quality performance was larger than that of LID hydraulic performance. Spatial analysis indicated that the LID performance was spatially heterogeneous under climate change, and the heterogeneity was related to the land-cover distribution of the given area. In addition, sensitivity analysis suggested that the impact of climate change on the short-term performance of LID practices was stronger than that on the long-term performance. Accordingly, the methods and findings provided herein could assist sustainable urban water management by investigating the LID performance under climate change.