

Supplementary data

Table A. Parameters for calibration and their allocated uncertainties

Parameter notation	Name	Assigned uncertainty value (%)
Imperv. %	Impervious percentage	60
Width	Sub-catchment width	100
N Perv and Imperv	Manning's roughness for pervious and impervious area	50
Dstore Perv and Imperv	Depression storage for pervious and impervious area	80
Max. and Min. Infl. rate	Maximum and minimum infiltration rate	100
Decay constant	Decay constant	100
Dry time	Dry time	100
Geom.	Geometry and maximum depth of conduits	50
A1, A2 and B1, B2	Ground water flow coefficients and exponents	100
Roughness	Manning's roughness of conduits	50

Table B. Calibrated parameter values of PCSWMM of the Lucas Creek catchment

Parameter notation	Name	Calibrated value
N Perv	Manning's roughness for pervious area	0.5
N Imperv	Manning's roughness for impervious area	0.005
Dstore Perv	Depression storage for pervious area	0.5
Dstore Imperv	Depression storage for impervious area	0.1
Max. Infl. rate	Maximum infiltration rate	18
Min. Infl. rate	Minimum infiltration rate	0.5
Decay constant	Decay constant	1
Dry time	Dry time	1.4
Roughness	Manning's roughness of conduits	0.01
A1	Ground water flow coefficient	0.018
A2	Ground water flow coefficient	1E-05
B1	Ground water flow exponents	0.4
B2	Ground water flow exponent	0.587
UEF	Upper evaporation fraction	0.2
LGLR	Lower groundwater loss rate	0.0001
UZM	Upper zone moisture	0.45
TS	Tension slope	1
C	Conductivity	0.25
CS	Conductivity slope	10