

Appendix 1. Values.

Table A1.1. Runoff values used for the study area.

Land use and coverage	Runoff
forests	0.2
grasses	0.4
woods	0.35
agricultural use	0.3
swamp	0.8
urban - high density	0.75
urban - medium density	0.6
urban- low density	0.5

Table A1.2. Manning values used for the study area.

Soil type	Manning
Road in rural area	0.08
Road in urban area	0.06
Grasses	0.18
Forest in floodplain area	0.15
Forest in slope area	0.25