

Rational Method Runoff Coefficients	
Categorized by Surface	
Forested	0.059—0.2
Asphalt	0.7—0.95
Brick	0.7—0.85
Concrete	0.8—0.95
Shingle roof	0.75—0.95
Lawns, well drained (sandy soil)	
Up to 2% slope	0.05—0.1
2% to 7% slope	0.10—0.15
Over 7% slope	0.15—0.2
Lawns, poor drainage (clay soil)	
Up to 2% slope	0.13—0.17
2% to 7% slope	0.18—0.22
Over 7% slope	0.25—0.35
Driveways, walkways	0.75—0.85
Categorized by Use	
Farmland	0.05—0.3
Pasture	0.05—0.3
Unimproved	0.1—0.3
Parks	0.1—0.25
Cemeteries	0.1—0.25
Railroad yard	0.2—0.40
Playgrounds (except asphalt or concrete)	0.2—0.35
Business Districts	
Neighborhood	0.5—0.7
City (downtown)	0.7—0.95
Residential	
Single-family	0.3—0.5
Multi-plexes, detached	0.4—0.6
Multi-plexes, attached	0.6—0.75
Suburban	0.25—0.4
Apartments, condominiums	0.5—0.7
Industrial	
Light	0.5—0.8
Heavy	0.6—0.9

Lindeburg, M. R. (1994). *Civil engineering reference manual* (9th ed.). Belmont, CA: Professional Publications, Inc.

Runoff Coefficient Adjustment Factor	
Return Period	C_f
1, 2, 5, 10	1.0
25	1.1
50	1.2
100	1.25