

Using the TR-55 method for estimating runoff depth:

$$Q = \frac{(P - I_a)^2}{P - I_a + s}$$

Where: $I_a = 0.2s$
 $s = (1000/CN) - 10$

Q = runoff depth
 CN = overall curve number for the watershed
 I_a = initial abstraction (inch), the losses before runoff begins (surface depressions, interception by leaves, evaporation, infiltration)
 P = precipitation (inch)
 Q = depth of runoff over entire watershed (inch)
 s = potential maximum watershed water retention after runoff begins (inch).

Runoff volume is then the runoff depth times the area:

Runoff volume in gallons = (Q/12) x Area in square feet x (7.48 gallons/1 cubic foot)

Overall curve number is calculated by the following:

$$A = A_1 + A_2 + A_3 + A_4 + A_5$$

$$CN = \frac{1}{A} [A_1 (CN_1) + A_2 (CN_2) + A_3 (CN_3) + A_4 (CN)_4 + A_5 (CN)_5]$$

The following curve numbers can be used for each of the practices:

<u>Practice/Land Type</u>	<u>CN</u>
Impervious area	98
Downspout disconnection	80
Filter strips	80
Infiltration practices	40
Pocket wetlands	80
Porous pavement	40
Rain barrels/cisterns	75
Rain gardens	35
Soil amendments	60
Tree box filters	85
Vegetated roofs	75
Vegetated swales	60
Tree cover	70
Urban area	90