

DESIGN GUIDE FOR RAIN BARRELS

Rain barrels capture and store roof runoff.

Calculate “Stormwater Runoff Volume” created by new impervious cover.

- a. Calculate the square footage of the drainage area (the new impervious cover)

Length ____ (feet) x width ____ (feet) = drainage area (square feet, ft²)

- b. If multiple drainage areas (D.A.) are being created (more than one area of new impervious cover), calculate the square footage of each drainage area then add them together.

D.A. No. 1 ____ (ft²) + D.A. No. 2 ____ (ft²) = Total D.A. ____ (ft²)

- c. Calculate the volume of stormwater from the drainage area created by 1-inch of rainfall

Total D.A. ____ (ft²) x 1 inch x 1ft/12 inches = “stormwater runoff volume” ____ (cubic feet, ft³)

Determine the number of rain barrels needed to store the “stormwater runoff volume”*

- a. Check the manufacturer or label to determine the capacity of the rain barrel you have chosen

1 rain barrel = ____ (gallons)

- b. Convert the “stormwater runoff volume” (section ‘c’ above) from cubic feet to gallons.
1 cubic foot (ft³) = 7.48 gallons

“Stormwater runoff volume” ____ (ft³) x 7.48 = stormwater runoff volume ____ (gallons)

- c. Calculate the number of rain barrels you need based on the “stormwater runoff volume”

“Stormwater runoff volume” ____ (gal) / capacity of 1 rain barrel ____ (gal) = ____ barrels

* rain barrels should be used as the sole means of storing the ‘stormwater runoff volume’ only if drywells and rain gardens are not feasible due to existing restrictions on the property. If the 1” storm creates the need for an excessive number of rain barrels, contact the Township.

Example

A 20 foot by 30 foot detached garage is proposed.

Calculate “Stormwater Runoff Volume” created by new impervious cover.

- a. Calculate the square footage of the drainage area (the new impervious cover)

Length 20 (feet) x width 30 (feet) = drainage area = 600 square feet, (ft²)

- b. If multiple drainage areas (D.A.) are being created (more than one area of new impervious cover), calculate the square footage of each drainage area then add them together.

D.A. No. 1 600 (ft²) + D.A. No. 2 0 (ft²) = Total D.A. 600 (ft²)

- c. Calculate the volume of stormwater from the drainage area created by 1-inch of rainfall

Total D.A. 600 (ft²) x 1 inch x 1ft/12 inches = "stormwater runoff volume" 50 (cubic feet, ft³)

Determine the number of rain barrels needed to store the "stormwater runoff volume"*

- a. Check the manufacturer or label to determine the capacity of the rain barrel you have chosen.
For this example 1 rain barrel has a capacity of 55 gallons.

1 rain barrel = 55 gallons

- b. Convert the "stormwater runoff volume" (section 'c' above) from cubic feet to gallons.
1 cubic feet (ft³)= 7.48 gallons

"Stormwater runoff volume" 50 (ft³)x7.48 gallons/ft³ = stormwater runoff volume = 374 gallons

- c. Calculate the number of rain barrels you need based on the "stormwater runoff volume"

"Stormwater runoff volume" _____ (gal) / capacity of 1 rain barrel _____ (gal) = _____ barrels
374 gallons / 55 gallons per rain barrel = 6.8 rain barrels or **7 barrels**