Albemarle County Service Authority

Serving Conserving

Rainwater Harvesting

Rainwater harvesting is a very old concept with a new application! A rain barrel or other storage device collects and stores rainwater from rooftops to be used for non-drinking purposes later. Rainwater is ideal for many applications, including watering vegetable gardens, raised planter beds, indoor tropical plants like ferns and orchids, car washing and cleaning windows, siding, and lawn and patio furniture. Plants thrive from irrigation with stored rainwater. Most importantly from the public utility's standpoint, rainwater harvesting reduces summer demand peaks, reduces demand for treated tap water, and helps decrease the burden on water treatment facilities. Proper harvesting and storage of this excess water also reduces stormwater runoff. In addition to all of these great reasons to capture and reuse your roof runoff, you can save money by lowering your monthly water bill!

During a rainfall when only ¼ inch falls, runoff from an average roof will completely fill one 55-gallon rain barrel. Most homes already have the collection system (gutters and downspouts); all that is needed is the container, and a downspout diverter, to catch this free, natural resource. ***In addition to rainwater, consider adding a separate barrel to reroute your air conditioner condensate drain hose to a barrel! This source can easily produce up to five gallons of water per day, during the summer's hottest months.

Rebate for Purchase of Rain Barrel

The ACSA Board of Directors has approved an incentive program whereby you can receive up to two $30 rebates for purchase of rain barrels. You may choose any vendors on the enclosed list, or from another source. Purchase receipt is required.

Guidelines to Participate

In order to participate in the rebate program, you must be a customer of the Albemarle County Service Authority. If, upon inspection, ACSA finds the rain barrel is not connected and in use, the full amount of your rebate may be charged against your water account.

Rainwater Harvesting System Components

Catchment Surface – the roof of a building or house is the obvious first choice. The quantity of rainwater that can be collected from a roof is, in part, a function of the roof texture: the smoother the better. Slate's smoothness makes it ideal for a catchment surface, while composite shingles have an approximated 10-percent loss due to inefficient flow or evaporation.

Gutters and Downspouts – will channel water from the roof to the barrel(s). A roof "valley" occurs where two roof planes meet. A roof valley concentrates rainfall runoff from two roof planes before the collected rain reaches a gutter. Observe your roof configuration to take advantage of these valleys, placing your rain barrel(s) to both catch the most runoff, and also to divert excess rain overflowing from your barrel(s) to an efficient spot nearby: attaching a soaker hose to the overflow to divert to a garden or cluster of trees or shrubs, to a water feature such as fish pond or fountain, or to a hill with vegetation whose roots can absorb the water quickly, minimizing runoff.

Downspouts will channel the water from the gutters, down the side of your home and, with the fitting of an elbow or diverter, drop the water over the screened opening of the rain barrel(s). There are many ways to screen the drop outlet of the downspout so that debris does not enter and possibly clog the flow of water. Depending upon the amount and type of tree litter and dust accumulation, you may have to experiment to find the method that works best. (Leaf screens must be regularly cleaned to be effective, so if access to the outlet on a regular basis is a problem, it may be best to allow debris to accumulate on top of the rain barrel). A daily check to ensure free flow into the barrel is recommended.

Rainwater Diverter – This component can be a simple, flexible elbow available at home improvement stores, or a manufactured diverter, placed in-line in the downspout, which allows you to raise or lower a channel to the barrel. This diverter is available locally at some garden supply stores or through the Rivanna Conservation Society.

How Much Can You Collect From Your Roof?

In order to properly determine how much FREE water can be captured, you will need to determine your ***roof footprint.*** In other words, regardless of the pitch of your roof, the effective collection surface is the area covered by the **guttered** roof (length times width of the roof from eave to eave and front to rear)**.** In theory, approximately 0.62 gallons per square foot of roof, per inch of rainfall, can be collected. Since roof surfaces are different on homes, some more or less efficient, it is suggested that you apply a reduction factor of 0.85 to account for splash, evaporation, or inefficient shingle materials.

To Determine Gallons of Rainwater Generated

___ in. of rain x _____ sq. ft. of roof x 0.62 gals./in. rain/sq. ft x 0.85 = _____ gals. that can be generated

Measuring Supply & Demand

Now that you know just how much water can be generated from a rainfall (and how much money you can potentially save on your water bill!) you might want to determine how much water you regularly need to water vegetation and to use for other outdoor needs. This can be accomplished by using a hose meter to completely irrigate all vegetation one time, or some other measure (one full barrel, 55 gallons, etc). Once you have calculated this information, you may decide to add an additional rain barrel, or several, in order to maintain an adequate supply for your individual needs. You can keep an inventory of your use as an example of just how much you have saved – we'd love to hear from you! This can be a great family project!

Stores that sell Rain Barrels ***Rain Barrel Rebate Application***

Rain barrels are intended for **non-potable** use only.