

Water Harvesting

We all love to see the rain come so that our lawns and flowers flourish but water from the sky can be a major problem. Many of us in the stormwater management business view the rain with a love-hate relationship. Rain is great for the growth of vegetation but rain water can collect pollutants as it flows and deposit them into our waterways. As you can imagine, North Carolina waterways are important to the residents of the state. Do you like to fish? How about swimming? How many of us depend on the money these waterways generate through tourism? Many don't realize it but most of us are indirectly affected by tourism revenue. Because of this, the residents of the state of North Carolina depend on clean water.

Stormwater can collect nitrogen and phosphorus from fertilizers we use on our lawns, hydrocarbons from the oil our vehicles leave on the roadways and heavy metals such as zinc and copper from road surfaces and deposit them in our waterways. One way to address this issue is to better control stormwater resulting in less of a chance for sediments and pollutants to make their way into our lakes and streams.

One practice for stormwater management is called *water harvesting*, something in which we can all participate. This is the process by which stormwater is collected as it falls from the sky before it makes it to the ground. This is done by collecting the water as it runs off impervious surfaces, surfaces incapable of absorbing water such as roof tops, and storing it in a device known as a *cistern*. A cistern is any type of storage tank that can hold rain water. The water is then used during dryer periods to water vegetation.

This practice was recently implemented by the Town of Leland in an effort to not only reduce stormwater runoff and erosion on Town property but to reduce the cost of irrigating Town vegetation. A very successful water harvesting project was designed and headed up by Public Works Director Steven Spruill. Mr. Spruill, with the help of the Brunswick County Soil & Water Conservation District, developed a dual-cistern system that is now in place at the rear of the Recreation building behind Town Hall. The design employs two 2,500 gallon holding tanks which are fed by a system of drain pipes attached to the gutters on the Recreation building. The water is screened to eliminate large debris such as leaves and sticks before it enters the tanks. A pump on the ground adjacent to the tanks draws the water from the tanks and fills irrigation equipment that is used to water plants and grass throughout the Town.

How much water falls from the sky? A 1" rainfall results in a little more than a half gallon of water per square foot of surface. Even though this doesn't seem like much at first, the roof on the Recreation building has a 4400 square foot surface area which

translates to 2,640 gallons of water for every inch of rainfall. As you can see, there is a lot of water coming off impervious surfaces that can cause damage by eroding our soils and putting sediment into our lakes and streams. It is everyone's responsibility to do their part to minimize the damage that stormwater can do so that we can all enjoy clean water.

For more information on this subject, go to the North Carolina Department of Environment and Natural Resources website at <http://www.ncstormwater.org/>. Also, stop by anytime at Town Hall to see how the water harvesting system works.