

# **A TUTORIAL: HOW TO CONTROL RESIDENTIAL YARD FLOODING**

*By Judy Batson; January 2016*

For obvious reasons, there is no single solution to flooding in low lying residential areas, such as South Tampa, but there are some measures that the homeowner can take to help control the water from heavy rainfall (not storm surge from a hurricane) by capturing it, directing it, taking advantage of it, and preventing it from invading homes.

I became a South Tampa homeowner in 1968, first in Hyde Park, then Parkland Estates and now in Maryland Manor, the southern-most neighborhood for me, and (no surprise) the one most vulnerable to flooding. This comes not just from being the basin of the South Tampa peninsula, but from having some of the City's oldest storm water drain systems. And, lucky me, I happen to live right in the middle of that basin. Some of my methods and solutions may not pertain to every property, so anyone reading this summary should not panic, but instead pick and choose that which seems most likely to work for them.

## **Step 1: Determining the lay of the land**

Before deciding what to do if you end up with five inches of water in the family room, after a heavy rainfall, mop up the water, then call a surveyor, the one who did the survey when you bought your home is the first choice, to request a topographical survey. This will show you, and any contractor you may hire to complete your plan, the highs and lows, the way water would naturally flow on your property. This will show you where any water flowing on to your property comes from, and where it settles, and where it would or should naturally drain. In turn, it will give you a picture of the problem areas that need to be corrected.

Not every surveyor is qualified to do a topo, so be sure the one you ask to do this for you has the proper credentials. The cost of his services will vary on the size of your lot, but it should be in the area of \$300 - \$500. This may end up being your most important land related document.

## **Step 2: Look at your home**

There are some remedies that you can take with minimal cost, which I suggest you do first, before hiring a contractor to do any major work. Who knows, these simple remedies may be all that is needed in your particular situation.

### **a. Guttering**

If your house doesn't already have roof gutters, this should be your first step. Go outside while it is raining and watch to see where the rain water is falling off your roof. Certain areas will be a given, such as the low edge of a gable roof, but there may be other places, such as an off-set roof over a back door, that could be the low point of two or more roof angles, which would qualify for special attention. Then look at the ground to see if there are any areas where lots of water has created a depression, a bare spot, obviously where water falls heavily.

Gutters are just one part of the equation. The placement of the downspouts is equally if not more important. The gutters will be installed to slope one way or another and the downspout will be at

the end of the line. But there are many circumstances where downspouts should be placed intermittently along the line to allow for excessive water not to build up in the gutters and overflow. Fortunately, it is easy to install additional downspouts after the fact, if more are needed.

The third part of a good guttering system will address the distribution of water at the bottom of the downspout. You do not want it to puddle around the foundation of your home, which could create a multitude of other problems. There are several inexpensive devices to select to direct the water two or three feet away from the foundation. However, if the run-off water is major, we move to the next step, discussed further in this document.

The fourth and major part of any guttering system is to keep the gutters free of debris (read leaves). This means periodic cleaning of the roof to remove excessive leaf build up which will end up in the gutters in a heavy rain, and cleaning of the gutters. There are several so called gutter guards that purport to keep the gutters clean. They get clogged with leaves on top preventing water from getting in the gutters. The only remedy I have found that works is a section of hardware cloth to fit down on top of the opening to the downspout to prevent leaves from clogging the spouts. That one piece is easily removed for cleaning and then snugged back into place.

#### b. Plants and foliage

Natural water control comes in part from plants whose root system can absorb a lot of water. In South Tampa, most always the water coming into your yard from other properties, follow the natural flow of water, from north to south, so your northern most property line is the area that would most likely be the place to plant additional vegetation to help to absorb some of the excessive water flowing into your yard. From ground cover to trees and everything in between, there are many plants to choose from. I would suggest a visit to one of the nurseries near you to ask for suggestions that will fit your budget and your basic yard motif or décor.

#### c. Patios, driveways and sidewalks

Concrete does not absorb water. If you are in the process of planning to install any solid areas, such as patios, driveways or sidewalks, design it to include wide spaces between the solid areas for water to drain to the soil beneath. Installing pavers is a bit costly, but you can accomplish the same result by putting large spacers in a pattern when pouring concrete.

If you already have a large area of concrete or asphalt, look into drilling holes in the areas where water tends to puddle. Drill a hole large enough to accommodate a 3 inch PVC pipe, and about ten inches deep, pound the pipe vertically into the ground and then fill the inside of those pipes with large pebbles to help prevent them from filling up with dirt. This helps direct water deep into the soil where it is more easily disseminated than water standing closer to the surface.

A few years ago, the City had funds available to install sidewalks in parts of South Tampa, and my street was one of many that received this so-called bonus. That sidewalk, on the southern front line of my yard, was higher than the surface of the yard and so it created a dam that

prevented the flow of water to the street. The end of that story is the City paid to install a drain pipe under the sidewalk from my yard to the street. Every action has a reaction and when it comes to water, you need to know the reaction before planning the action.

### Step 3: Corrective measures for a licensed contractor .

#### a. Underground drain systems

This is likely to be the most important element of assisting water to flow off your property and into the street where it will (hopefully) flow to a storm water drain. He will install what is sometimes called a French drain, basically a hole in the ground (a catch basin) at the lowest points in your yard, and then attach perforated piping that will run from those catch basin to the street. He will connect all the downspouts from your gutters to the piping system. I have over 400 feet of piping with seven catch basins in my yard, with three outlets to the street. It is a precise job, to determine the right slope to create drainage. The perforations in the piping also allows water to seep out along the way, to spread the influx of water over a large underground area.

#### b. Concrete culverts

There may be areas right next the foundation of your home where the water tends to collect, especially if your home was built back in the 1950's or 1960's, when most houses were built on a slab at ground level, as opposed to two or three courses above the ground. The general contractor can dig a gully about four inches deep, 12 to 16 inches wide, creating a culvert, lining it with concrete, to help direct water to a connection to the underground piping system.

#### c. Cutting slices in the curbing

As silly as it may sound, the concrete curbing that runs along the front of your property can also be holding the water in your yard from draining to the street. Ask the contractor to cut slits in the curb, every two feet to below the level of your yard, which will allow for a huge increase in the drainage from your yard.

### 4. Other things you can do

#### a. Rain barrels

These are 55 gallon drums designed to catch rain water, from a downspout to use to water your plants at some later time. I have three rain barrels that collect the overflow that the gutters and downspouts cannot handle during South Tampa's famous downpours. Each has a hose to direct the collected water either to a culvert or an underground drain.

#### b. Build a pergola

Hard to describe, but it is basically a structure just below the roof line to direct the overflow from the gutter to a point somewhat distant from the edge of the building.



This is on the northern side of my yard, where there is a screened – in porch that would flood until I had this pergola installed. The top is heavy duty visqueen on top of lattice work supported by cross beams, to a basic structure of aluminum posts, set in concrete. It will be easy to replace the visqueen as it weathers. It directs the water to the green area beyond the porch.

c. Build a deck, not a patio

Where there had been a concrete patio, I had a wooden deck installed, which still gives space for tables and chairs but allows for water to drain into the ground.



The basic lesson to be learned here is to study the lay of the land where you live, watch what happens to the water when it rains, and using some of these measures, make a plan to help to control the waters that fall on your property. South Tampa is going to be a flood basin.... no way to change that. But, with due diligence, you can change how it affects you.

*Judy Batson, now 80 and retired, spent many years in the construction industry, helping to design residential communities for two prominent home builders, has been a licensed real estate associate, assistant sales manager for a national heavy equipment dealer, and world traveler. January, 2016.*

