

RAIN BARRELS

A HOMEOWNER'S GUIDE



Florida-Friendly Landscaping™

Collecting rainwater is one of the many water conservation practices involved in the Nine Principles of the Florida-Friendly Landscaping™ (FFL) program.

A Florida-Friendly Landscape is a quality landscape that is designed, installed, and maintained according to the nine FFL principles. The nine principles seek to reduce environmental impact from landscaping by properly applying water, fertilizer and pesticides, creating wildlife habitat, preventing erosion, recycling yard waste, and employing other practices based on University of Florida research.

If cared for according to the nine principles found on page 6, a Florida-Friendly Landscape can produce aesthetically pleasing, low maintenance results that add value to your property while helping to protect the state's natural resources.



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Introduction

This booklet is designed to educate homeowners about collecting and storing rainwater for non-potable (not for drinking) outdoor uses as a supplement to natural rainfall and other sources of irrigation. During periods of below-normal rainfall, having extra water on hand is a good idea. Storing rainwater also helps reduce stormwater runoff, which can lower levels of pesticides and fertilizers in stormwater ponds, streams, lakes, and bays.

In this booklet, the terms barrel, storage tank, and container are used interchangeably and only indicates a difference in size.

Before you get started, a few things to consider:

Do I need a permit?

Most local governments do not prohibit the installation of a small rain barrel for non-potable uses, such as landscape watering. However, if you live in an area or subdivision with deed restrictions, you should review them before installing a rain barrel in your yard. Some deed restrictions do prohibit them.

When constructing a larger cistern, either above or below ground, check with your local plumbing, building, and health departments to see if a permit or backflow prevention device is required or if there are recommended guidelines.

If you plan to connect a pump or attach plumbing or irrigation lines to your rain barrel or cistern, contact your local plumbing or building department. A backflow prevention device may be required on the potable water service line in these situations.



Stored rainwater is not potable water and should not be used for drinking, bathing, pets, on edible plants, or for recreation.

Where to find a barrel?

To find food grade barrels or drums to convert into rain barrels, check the internet for local drum, barrel suppliers, or feed stores. Pre-constructed rain barrels can be purchased from big-box stores and online. Local plumbing suppliers and home centers will have the necessary fittings such as spigots, PVC adapters, and piping to finish the assembly.



**Collected rainwater is NOT
for pet or human consumption,
nor edible gardening.**

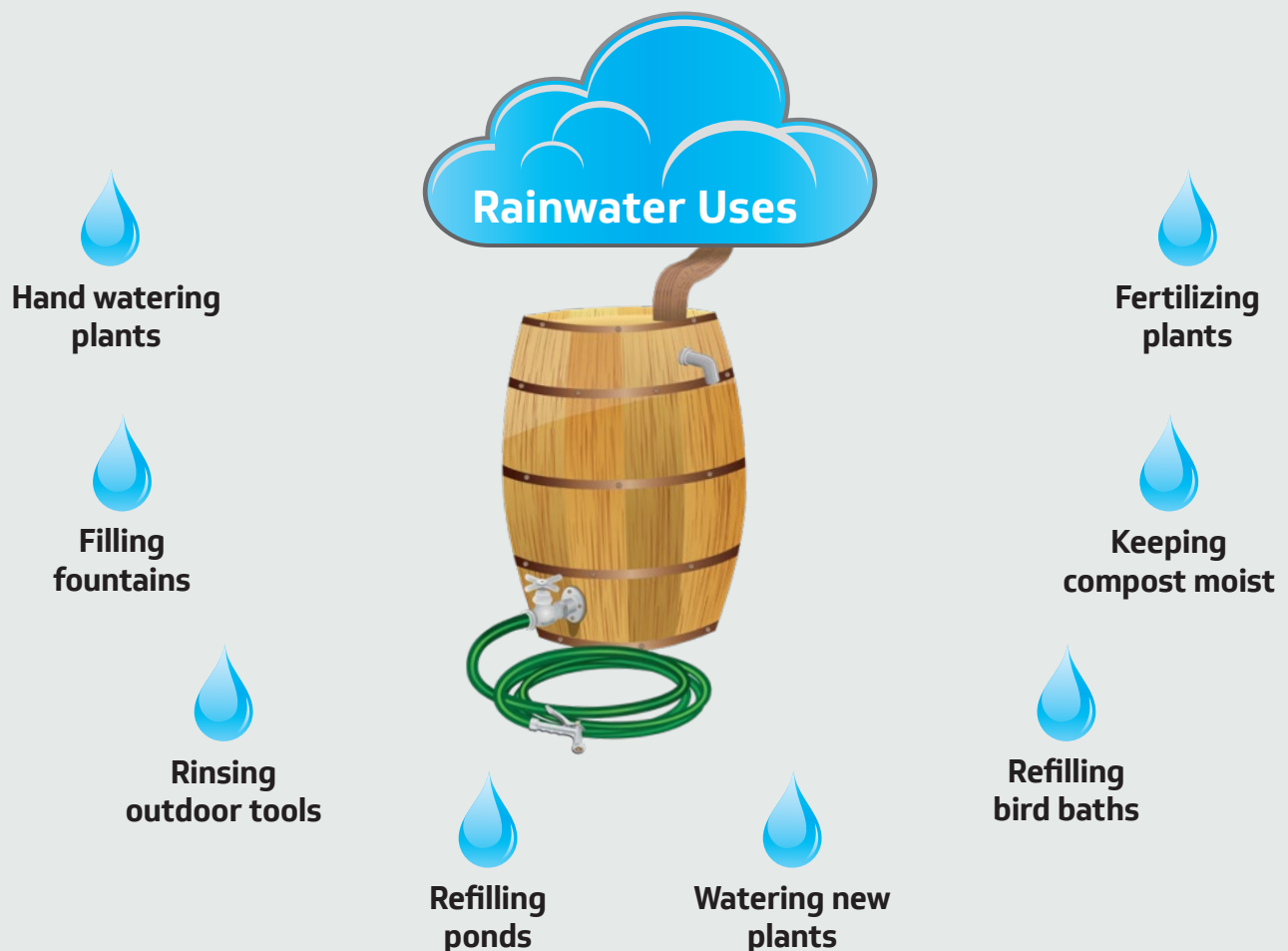
Benefits of Collecting Rainwater

Harvesting rainwater for non-potable uses such as watering plants has many potential benefits for you and your community:

- Reduces the use of high quality potable (drinking) water for outdoor, non-drinking purposes
- Minimizes soil erosion by directing rain runoff to collection areas – where you want it to go
- Decreases the amount of pollutants running off your property and entering water bodies such as local lakes, ponds, creeks, and bays
- Lessens a property's impact on the community's stormwater system and environment

The water savings from using stored rainwater rather than potable water can be substantial over a period of time. A rain barrel can also help reduce the amount of water that may settle around the foundation of your home, which could lead to building, walkway, and pest damage.

Although a small rain barrel may not provide all the water needed to sustain your plant material, it can certainly supplement your current watering methods. Planter beds, flower gardens, and potted plants can easily be watered with collected rainwater.



There are many factors that should be considered when designing a rainwater collection system – planning ahead of time will save time, money, and hard work in the future. For instance, you want it to be as large as you can afford and your location will allow. Will the container(s) be located near where you need the water? Are individual barrels enough or will a larger container, such as a 275 gallon or larger “IBC Tote” (steel cage water tank) or larger cistern be better? This guide will help to answer these questions.

Rain Barrels and Your Florida-Friendly Landscape

Florida-Friendly Landscaping™ means using low-maintenance plants and environmentally sustainable practices following the nine principles shown below. A rain barrel can be an integral part of any Florida Friendly Landscape by conserving potable water, reducing stormwater runoff, and providing plants with a natural source of water.

The Nine Principles

1 Right Plant, Right Place

Select plants suited for a specific location. Plants in the right place will thrive on minimal amounts of water, fertilizer, and pesticides.



2 Water Efficiently

Water only when your lawn and landscape show wilt signs. Water during cooler times of day and check your irrigation system regularly for leaks and clogs.



3 Fertilize Appropriately

Apply fertilizers with at least 30% slow-release nitrogen (N) at the right times and in the right amounts to prevent leaching and runoff into ground and surface waters. Never fertilize before a heavy rain.



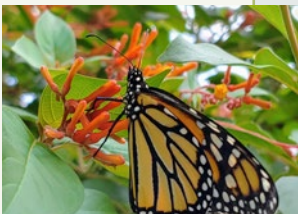
4 Mulch

Maintain a 2-3" layer of mulch on landscape beds to retain soil moisture, prevent erosion, and suppress weed germination.



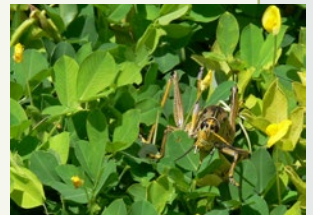
5 Attract Wildlife

Choose plants with fruits or berries to attract birds or other pollinators. Leave snags and increase vertical layering to provide wildlife habitat.



6 Manage Yard Pests Responsibly

Practice Integrated Pest Management (IPM) for a healthy, sustainable approach to keeping your landscape safe from pest insects.



7 Recycle

Return valuable nutrients to the soil and reduce waste disposal by composting grass clippings, raked leaves, and pruned tree and plant parts.



8 Reduce Stormwater Runoff

Use features like earth shaping and rain gardens to keep rainwater on your landscape, rather than letting it run off into storm drains, carrying fertilizers, pesticides, soil, and other debris.



9 Protect the Waterfront

Protect the water body you live on from chemicals and debris. Designate a 10' maintenance-free zone between the shoreline and your landscape and do not fertilize, mow, or apply pesticides in that area.





Rainwater collection systems can come in many shapes and sizes.

Components of a Rainwater Collection System

Whether you install a large cistern or a small rain barrel, there are basic components involved in every rainwater collection system. These are:

1. Catchment Area
2. Conveyance System
3. Filtration
4. Storage Tank
5. Water Distribution

1. Catchment Area

A catchment area can be any area that collects or sheds rainwater. Due to its already existing slope and height, a roof makes a perfect catchment area by using gravity to direct the water.



Rainwater shedding off this roof can still be captured, even without gutters.



The large surface area of this roof provides a great catchment area for rainwater. Notice how the rain barrel blends into the landscape.

2. Conveyance System

Once the catchment area has been identified, the next step is to transport that water into the storage tank. Many homes and commercial buildings are equipped with a guttering system that can easily be adapted to funnel water to a storage tank. If guttering does not exist, it can be added to the side of the house or building that will be used for rainwater collection. If guttering is not an option, a rain barrel could be placed under a section of your roof that channels rainwater.



For houses without roof gutters, a rain barrel can be placed beneath a valley in the roof to catch rainwater.



Roof gutters and piping transport rain to the storage tank.

3. Filtration

Generally, for outdoor water use, rainwater does not need to be filtered or treated. As water sheds off a roof or other catchment area, it may pick up leaf debris, bird droppings, or chemical agents from the roof material, but these are not harmful to plants. Filtration is recommended where the water enters the conveyance system (guttering) and/or just before the storage tank (downspouts or tank opening). A screen mesh to keep out leaf debris, wildlife, and insects is strongly suggested.



Screen placed over the barrel opening will keep leaves and other debris out of the barrel. For screw top barrels (left), the screen can be held in place with the screw top lid. For other barrel types (right), the screen can be held in place with a rope or stretch cord.

First Flush Diverter (optional)

In addition to screening out debris, you can install a first flush diverter. This diverter captures the “first flush” of rainwater from a roof which contains the most debris and bacteria. Some diverters drain and reset automatically, others have to be manually drained and reset after each rainfall event. These diverters can be purchased online, or at big box and plumbing stores.

Although a screen and optional first flush diverter will keep out most debris, a small amount will enter the rain barrel. Periodic cleaning of the rain barrel is recommended to avoid a large buildup of debris on the bottom.

The highlighted section of pipe will capture the “first flush” of rainwater off of the roof. When this section of pipe becomes full, additional rainwater will then divert to the rain barrel. After each rainfall event, this section of pipe can be emptied by removing the plug/cap at the bottom.



Kim Counts Morganello, ©2015 Clemson Extension

4. Storage Tank

Many homeowners are making rain barrels out of 50 to 55 gallon food-grade containers that were used to carry food products, such as juices, olives, pickles, etc. Another option is a larger 275 gallon food-grade tote. These containers are affordable, readily available at most feed stores, drum or barrel suppliers, and are small enough to fit on most residential or commercial lots.



Some common containers used for rain barrels are (left to right): 50 gallon sealed barrel, 275 gallon IBC tote (juice container), 50 gallon open top barrel.

5. Water Distribution

Getting the water to your plants is the final step of the rainwater collection system. Due to low water pressure from most rain barrel applications, water distribution will be limited to filling watering cans or buckets, or to garden hoses. The typical residential set up will not be adequate for use with a traditional in-ground irrigation system.

Water pressure at the tank outlet directly depends on the height or level of the water that is stored in the tank, so water pressure will vary. The higher the water level in the tank, the greater the water pressure will be. Elevating the tank on a sturdy, level platform, such as cinder blocks, can generate a small increase in pressure, as well as clearance for connecting a hose or filling a watering can. For small storage tanks, water pressure is minimal and not enough to operate most low-volume irrigation devices.



Slightly raising a rain barrel off the ground can help increase water pressure and provide easy access to spigot connections.



Utilizing a pump with this 275-gallon container would provide additional uses for the water.

If greater pressure is needed for watering, adding a submersible pump may be an option. When choosing a pump, use the pump's flow rate (gallons per minute) to calculate how quickly the rain barrel will drain, and determine if it is practical for your watering needs. Having a pump on a large tote, such as this 275-gallon juice container, pictured on the left, may enable the use of low-volume irrigation devices such as inline drip tubing, mist sprays, or drip emitters.

External on-demand pumps, which only activate when there is a demand for water, are available in 110/120 Volt, 12 Volt, and even solar powered configurations. Pump kits specifically designed for rain barrel use are also available. These pumps can supply enough flow and pressure for garden hoses and low pressure irrigation systems.



This is one example of a small submersible pump that can be used inside a rain barrel.



It is essential to keep any plumbing attachments to your rainwater storage tank independent from your existing house piping or sprinkler system piping.

This will prevent a cross-connection and potential contamination of your potable water. For guidance on this type of use, contact a licensed plumber, irrigation contractor, or local plumbing inspector.

How Much Rainwater Can I Collect?

In West Central Florida, the annual average rainfall is 50-52 inches, with much of that occurring between June and October. While most rain events are less than 1 inch, larger rain events are becoming common, so planning ahead for such events is highly recommended.

For a general calculation, you can collect an average of 0.623 gallons of water per square foot of roof area during a 1 inch rainfall. To calculate your volume of water, use only that portion of the roof or catchment area that is actually feeding your storage tank. It is important to note that about 20 percent of the roof rainwater is lost due to evaporation, runoff, and splashing. See a calculation example below. To get a more accurate figure on the gallons collected, you would have to take the slope of the roof into account. A roof with a steep slope would collect less rainwater than a flatter roof, even if they both have the same square footage.

CALCULATION EXAMPLE

STEP 1:

How much roof area are you collecting rain from?

$30 \text{ ft.} \times 40 \text{ ft.} = 1,200 \text{ sq. ft.}$

$1,200 \text{ sq. ft.} / 4 \text{ downspouts} = 300 \text{ sq. ft.}$

Each downspout will collect 300 sq. ft. of rainwater.

STEP 2:

How much rainwater can you collect from one downspout during a 1" rain?

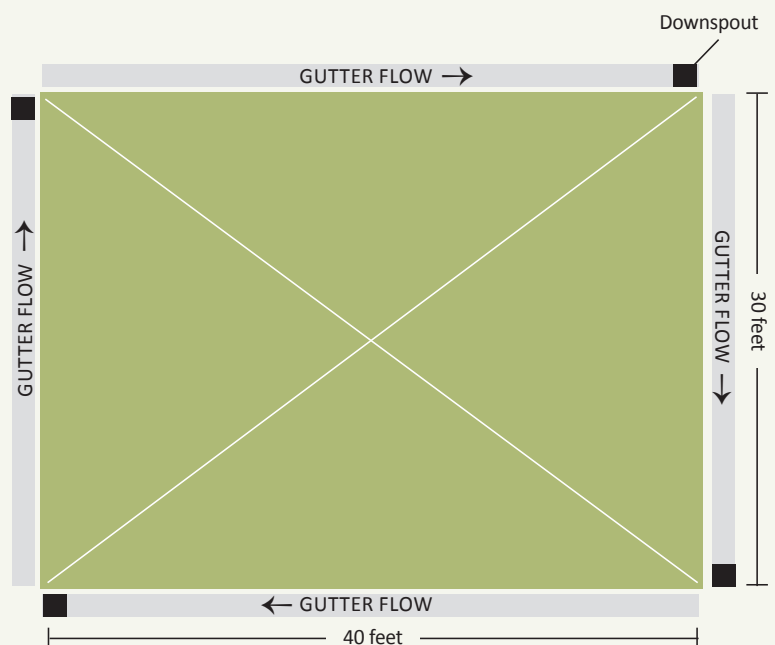
$300 \text{ sq. ft.} = \text{roof area of 1 downspout}$

$300 \text{ sq. ft.} \times 0.623 \text{ gal.} = 187 \text{ gal.}$

STEP 3:

In reality only 80% of the rain will be collected, so:

$187 \text{ gal.} \times 0.80 = 150 \text{ gal.}$



As you can see from this example, it would only take 1/3 inch of rainfall to fill a 50 gallon barrel ($1'' = 150 \text{ gallons}$, $1/3'' = 50 \text{ gallons}$). On an annual basis, the rainfall on a 1,200-square-foot roof could easily amount to nearly 25,000 gallons, enough to fill a 50 gallon rain barrel 500 times. With such a large amount of rainfall each year, it may be beneficial to design your system larger than initially planned to provide more storage volume for these larger rain events.

The addition of a large-diameter overflow outlet/pipe near the top of the barrel is strongly recommended. This will divert any excess water to another part of the yard, such as a rain garden, and reduce the amount of water that settles around the foundation of your house, avoiding possible erosion problems.

To store even more rainwater, multiple rain barrels can be linked together with PVC or flexible tubing at least 1.5" in diameter. This size will be able to carry away rainwater quickly during a heavy storm and help prevent water from backing up into the gutter's downspout or flowing out of the barrel(s). Steps to connect an overflow outlet and link barrels together are covered later in this booklet.

Rain Barrel Construction

Getting Started

First decide where to place the barrel(s). This, along with your budget, will determine the size and number of barrels desired. Remember, try to obtain the largest container the location will allow. This will enable you to do more things with the water by having more water volume and possibly more water pressure.

When choosing a location, keep in mind how the water is going to flow from your catchment area to the rain barrel. Most rain barrels will be placed adjacent to the home to tie into existing downspouts. You can also collect from other roofed structures, such as a shed or detached garage. Placing your rain barrel closer to the area you want to water, such as your garden or planter bed, may provide easier access to the water. Do not place your rain barrel near electrical components, windows, dryer vents, or other fixtures.

If you do not have gutters and do not want to add them to the house, the rain barrel can be placed directly under an area of the roof that sheds a lot of water (such as a valley in the roof). In this case, a screen can be placed securely over the barrel to keep out debris, small animals, and insects. This type of barrel can also be placed in any part of the yard to collect falling rain. It will take a lot longer to fill, but may be more practical if the area you want to water is far from your house.

Assembly and Installation Steps

Plan ahead for all aspects dealing with where the barrel(s) will be installed and how. The following are basic steps on how to install a rain barrel or similar storage tank on your property. All rain barrels or cisterns, regardless of size, will need an inlet for the water (usually a gutter downspout or similar piping) and an outlet (hose spigot, valve, bulkhead fitting, etc.).

Step 1. Clean the rain barrel

Be sure to select only food grade containers. Do not use containers that held any chemicals or oil-based products. Before installing your rain barrel, take a few minutes to rinse the inside of the barrel. Many barrels have food or juice remnants that should be removed before using it to store water. Use environmentally-friendly products, such as white vinegar or dish soap with water as a cleaning solution.



Dish soap or vinegar can be used to clean the rain barrel. Rinse thoroughly.

Step 2. Installing the outlet (hose spigot)

In this application, we are going to install a 3/4 inch brass spigot. A quarter-turn spigot is preferred over a traditional multiple-turn type for ease of use. You will need to drill a 15/16 inch hole for the spigot threading. Drill the hole 6 inches from the bottom of the barrel. This, along with the elevated platform, will provide a few inches of clearance for attaching a hose or filling a watering can. This also allows room for debris that enters the barrel, such as leaves, to settle below the level of the outlet, which prevents clogging. Plastic spigots are not recommended as they can become brittle over time and will need replacement.



First, drill a hole 6 inches from bottom of barrel. Make sure drill is perpendicular to avoid creating an oval hole.



Next, apply teflon tape to threads, then screw in the hose spigot about halfway. Make sure the threading is going in straight, as this will help prevent leaking.



When the spigot is in halfway, apply a liberal amount of PVC cement to the exposed threads. Continue to screw in the spigot until it is snug.



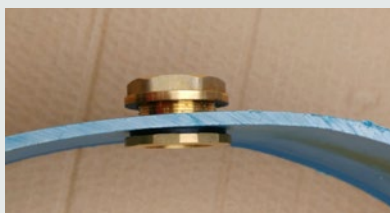
The spigot can be installed pointing straight down, or a little off-center to allow more space to fill a watering can. The rain barrel is now complete.

How to Correct a Drilling Mistake

If you drill the hole incorrectly and end up with an oval or non-circular hole, there are options to correct this situation. Adding a rubber or felt washer or caulking to your spigot may help seal the connection. You can also use a bulkhead fitting which has two pieces that, when connected, will seal the hole.



This two piece bulkhead fitting has a rubber washer which will seal any irregular hole. The side with the washer goes inside the barrel, the nut is threaded on outside the barrel to complete the seal.



This cross section of a rain barrel side shows how to assemble the bulkhead fitting. The side with the washer goes inside the barrel, then the nut is threaded on the end of the fitting on the outside of the barrel. When tightened together, it will seal any irregular shaped hole.



The spigot can then be screwed into the fitting. Use teflon tape as an added measure to prevent leaks.

Step 3. Building the platform

Confirm the location of your rain barrel. Having a level platform is essential as a full 55-gallon rain barrel can weigh over 450 pounds. Concrete cinder blocks provide a strong, stable platform for your rain barrel. Start by removing all grass, rock and other debris so the platform can sit on bare ground. Next, tamp the ground until a smooth, level surface is achieved. Stack blocks on level ground, and if more than one layer of blocks is needed, stack them in a crisscross pattern and add a large paver stone (optional) for added stability. Center the barrel on the stacked cinder blocks, with the spigot overhanging the edge of the platform for access.



This spot will use an existing gutter and downspout.



Ground should be level and clear of debris.



Stack blocks in a crisscross pattern for stable platform.



A flat paver stone can be placed on top of stacked block for added stability.

Step 4. Barrel opening

Generally, there are two barrel types. One has a removable lid that exposes the entire barrel opening, the other has a sealed top that needs to have an opening cut into it.

For sealed-top barrels, cut a hole larger than the size of the downspout. A hand saw, jig saw, or reciprocating saw can be used.

Regardless of the type of barrel, screen is needed to cover the opening. This minimizes debris entering the barrel and helps prevent mosquitoes. For barrels without a removable lid to hold the screen, you can cover the entire top of the barrel with screening held in place with a stretch cord or rope. For barrels with removable lids, discard or repurpose the insert, install screen and replace the outer lid.



For barrels with a removable lid, unscrew the retainer ring and separate it from the inner lid, place screen over barrel opening, replace just the retainer ring to hold the screen in place, and trim excess screen material around the outside of retainer ring.



For sealed-top barrels, cut a hole for just the down spout or remove the entire top, then cover with screen to keep out debris.

Step 5. Downspout to barrel connection

Once you have your barrel positioned and at its set height, measure where you need to cut or disconnect your downspout. In most cases, you can disassemble the downspout at the gutter by taking out screws or drilling out rivets. This will avoid cutting the gutter or downspout. If you do have to make a cut, use a fine-toothed hacksaw blade or a pair of tin snips (be careful of sharp edges).

To make the transition from the gutter/downspout to your opening in the rain barrel, you can fabricate a crosspiece out of downspout material or purchase a flexible downspout extender. The flexible downspout extender eliminates the need for exact measurement because it bends and stretches to the length you need. Make sure the diameter of the downspout extender matches the dimensions of your downspout as they come in different sizes.

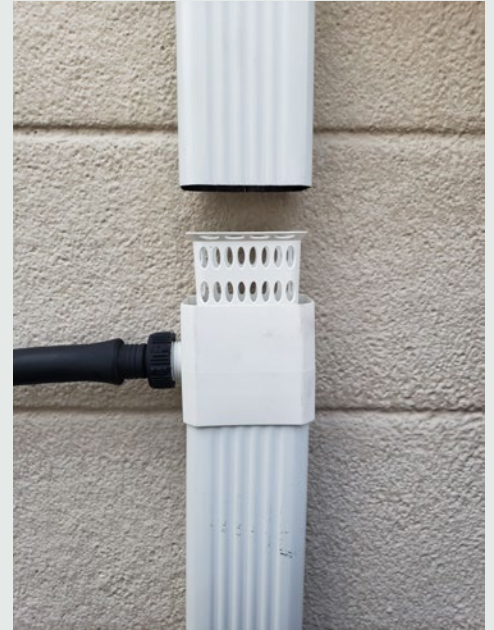


Based on the height of barrel, mark and cut downspout, then securely attach the pipe or flexible downspout attachment with sheet metal screws or rivets.



Place the barrel on top of blocks and place the gutter attachment on top of barrel opening.

Another option to capture rainwater from the downspout is to install a downspout diverter kit. This diverter easily installs in the existing downspout by cutting out a small section of the downspout where the diverter will insert. As rainwater flows downward through the downspout, a portion of the rainwater gets diverted into the rain barrel, typically through a garden hose or flexible hose attached to the side of the diverter. Another type is a split downspout which provides the option of switching (by a flap inside the diverter) the rainwater flow to either the rain barrel, or continue on through the downspout as usual. Some diverters have built in screens or grids to keep debris from entering the rain barrel and can be disassembled for cleaning.



These downspout diverters are installed in-line with the downspout. A portion of the rainwater flow will be diverted to the rain barrel through the hose attachment. Some come with built in screens to keep out debris.



This diverter has a flap at the top which can be switched to allow flow to go into the rain barrel (right downspout) or flow as usual through the downspout onto the ground (left downspout).

Step 6: Overflows and Multiple Barrels

Now that you have your first rain barrel installed, you should connect an overflow pipe that will carry excess water to another part of the yard, a rain garden, or into another rain barrel. Diverting excess water to another part of your yard can reduce the amount of water around the foundation of your house during a rainstorm.

An overflow pipe of at least 1-1/2 inch is recommended, to handle the flow. In this example, we will use 2 inch PVC pipe as our overflow. The overflow pipe diameter should be the approximate diameter of the downspout/inflow pipe to handle even the biggest storms. PVC cement is not needed because the pieces should fit tightly together. It also makes it easier to disassemble the pieces for cleaning or maintenance.



Direct the overflow pipe away from the house foundation. This is a completed installation for one rain barrel.

For this 2 inch overflow pipe, a 2-3/16 inch hole saw was used. A 2 inch PVC elbow was screwed in the hole to attach the piping.

Step 7: Linking Multiple Barrels Together (optional)

There are various methods you can use to connect rain barrels. The process is similar to making the overflow outlet, but the pipe will lead to another barrel instead of another part of the yard. Remember to provide a stable, level platform for all of the barrels. The connections between barrels can be made at the top or at the bottom. Follow the steps for adding the overflow outlet and make the connections using the same diameter piping as the inflow. You can link as many barrels together as space allows, but there should be an overflow pipe on the last barrel.

If you make the connections at the top of the barrels, you will need to have a spigot on each barrel (once the water level drops below the connection pipe, there will be no other way for the water to drain out of the barrel without an additional spigot). If the connection is made at the bottom of the barrels (at or below the height of the spigot), only one barrel will need a spigot because the water level in the connected barrels will drop equally as water is let out. For either option, you will still need to install an overflow pipe.



Drill a hole in each barrel for a connector. For a 2 inch PVC male adapter, a 2-3/16 inch hole saw was used. Pick a flat spot on each barrel so connection is level.



Place 2 inch PVC male adapters in each barrel.



Attach 2 inch PVC pipe to connect the barrels.



Place an overflow outlet on the second barrel (or last barrel if multiple barrels are connected together). Installation is complete.

Mosquitoes and Rainwater Collection

The best prevention against mosquitos breeding in your rain barrel is to have screen over the barrel opening. However, if you find the occasional mosquito larvae in your barrel, here a few steps you can take:

- After each rainfall, remove some water from the barrel so water does not touch the top screen.
- Keep roof gutters clean of debris and standing water where mosquitos can breed.
- Use mosquito control products such as biological pesticides that contain *Bacillus thuringiensis israelensis* (Bti). It is safe enough to be labelled for use in bird baths, flower pots, and water gardens. Bti comes in a

tablet or granular form, although tablets are easiest to use for rain barrels as they won't get washed out. For a 50-55 gallon barrel, just place one-quarter tablet in a porous bag and hang it inside the barrel water once a month. Follow label instructions for safe handling and storage of this product. Bti is not to be used to treat water for human consumption.



Regular maintenance is needed to prevent your rain barrel from becoming a home for mosquito larvae.



If necessary, control mosquitoes by using tablets containing Bti.

Painting Your Rain Barrel



When it comes to being creative, you're only limited by your imagination. Painting your rain barrel is a fun project and many parents, grandparents, teachers, and others like to have their children and students paint rain barrels as a decoration in their gardens and landscapes.

Any rain barrel can be painted, but painting is highly recommended if the barrel is white plastic, as this will prevent algae growth due to light penetrating the barrel. Darker barrels do not allow light to penetrate the surface, so you do not need to paint those barrels; however, you can if you want.

Painting Steps:

1. Preparation

- Clean the exterior of barrel with a 1:1 mixture of vinegar and water.
- Use a fine to medium grade sandpaper to "rough up" the surface of the plastic barrel.
- Wipe off the sanding residue with a dry cloth.
- Apply primer for plastic, dry and sand again with grade paper, if desired.



- Some paints will adhere to plastic without using primer. Read the can carefully for this information.

2. Painting

- Try to use paints that are designed for exterior use that will adhere to plastic. If not, a primer coat may be needed. You can even use the same exterior paint as your house so the barrel will blend in.
- Let your personal style and your imagination be your guide. Use pre-made stencils, patterns, or even use leaves or palm fronds as stencils. Porous sponges can be used to apply the paint.



A spray can trigger attachment makes painting easier and cleaner.

3. Finishing

- Add a clear polyurethane sealer to protect the paint against the elements.
- Skipping this step may mean that you will need to renew your paint job more often.



Adding a basecoat before final design.

Rain Barrel Maintenance

Regular Maintenance

- Avoid stagnation of water – Use It!
- Clean all screens
- Clear leaves, twigs, etc. from gutters, downspouts, and top of barrel
- If using a “first flush diverter,” drain water from the diverter’s collection chamber after each rain event

Biannual Maintenance (before and after rainy season):

- Flush out downspouts
 - Drain and rinse out barrel(s) to remove sediment, etc.
 - Ensure stability of barrel platform
 - Check all fittings for leaks and repair them
-

Cisterns - A Level Above

Cisterns are another option for those who are serious about harvesting rainwater. While the storage volume of a typical rain barrel is 55 gallons, cisterns range from 500 to 15,000 gallons or larger. Harvesting and storing such a large volume of rainwater can provide water for outdoor uses while measurably reducing a customer’s utility bill. Cisterns help conserve the potable water supply and reduce stormwater pollution. They can be installed on residential and commercial properties, both above or below ground. With the addition of a pump, cisterns can provide pressurized water for a variety of outdoor needs, from watering landscapes to washing vehicles.

Due to their size and complexity, installation of a cistern will require the help of licensed contractors and plumbers. Cistern systems need to be designed carefully and with professional assistance. Cisterns may require permits and may be subject to local building and/or plumbing codes. Well before making a purchase or beginning construction, contact your local building and health departments.



*Examples of larger rainwater collection systems:
left, 500 gallons each;
center, 2000 gallons;
above, 1000 gallons (partially buried)*

Rain Barrel Best Practices

Do:

- Install an overflow to avoid erosion around your barrel and home.
- Perform regular and biannual maintenance.
- Check your homeowner association's deed restrictions and/or local ordinances.
- Use paint for plastic and seal the final design with polyurethane.
- Make sure that all openings are covered to help with mosquito control.



DO keep rain barrel openings covered. Clean gutters and screen insert regularly.

DO install an overflow pipe on your rain barrel.



Don't:

- Use the water for animal or human consumption, swimming pools, or edible gardening.
- Harvest rainwater in barrels that contained chemicals or oil-based products.
- Place your rain barrel near electrical components, windows, dryer vents, or other fixtures for safety and access.
- Clean the barrel with chlorine bleach.



DON'T allow gutters and downspouts to become filled with leaf clutter or growing weeds.



DON'T create an unstable platform for your rain barrel.

[illegible][illegible]

For more information, contact:

Hillsborough County Public Utilities

925 E. Twiggs Street
Tampa, FL 33602
Phone: (813) 272-5977
HCFLGov.net/Water



**Hillsborough
County** Florida

St. Petersburg Water Resources

1650 Third Avenue North
St. Petersburg, FL 33713
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StPete.org/WaterConservation



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