

# RUTGERS

New Jersey Agricultural  
Experiment Station

## Build-a-Rain Barrel Workshop

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# Workshop Background

- This program was developed by Rutgers Cooperative Extension and is based on the Clean Virginia Waterways Rain Barrel program.



- This workshop is part of a research project conducted by Rutgers Cooperative Extension to determine whether rain barrels encourage adoption of other environmental best management practices by residents. Participation is voluntary and is open to all New Jersey residents. If you do not want to participate in this study disregard the workshop survey. Additionally, a signup sheet has been made available for those who do not want to participate in this research project. For further information contact Michele Bakacs at 732-398-5274 or [bakacs@njaes.rutgers.edu](mailto:bakacs@njaes.rutgers.edu).”

# Why Rain Barrels?

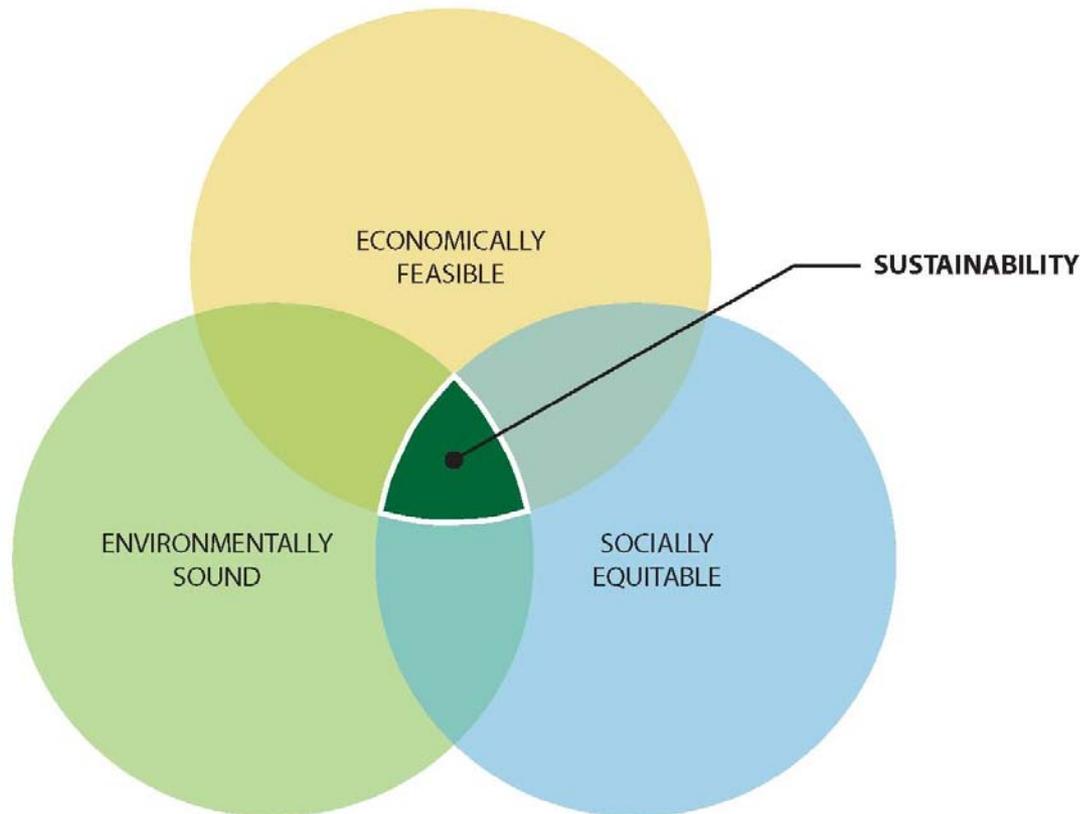
Your actions are part of a bigger movement towards ***SUSTAINABLE LIVING:***

- Water Conservation
- Capturing Rain Water Runoff
- Reducing Water Pollution

# What is Sustainability?

***“Actions and practices that meet the needs of the present without compromising the ability of future generations to meet their own needs.”***

- Brundtland Report, *Our Common Future* (1987)



# Why Rain Barrels?

Actions and practices for SUSTAINABLE LIVING:

- **Water Conservation**
- Capturing Rain Water Runoff
- Reducing Water Pollution



# The Need for Water Conservation

While NJ is a “water-rich” state receiving over 40 inches of rainfall each year:

- New Jersey is also the most densely populated state in the country
- The average New Jersey resident uses **100** gallons of water per day
- Residents engaging in outdoor watering & irrigation increase their average water use up to **185** gallons per day in the summer months

# The Need for Water Conservation

- Saves money on utility bills
- Helps prevent water pollution
- extends the life and reliability of septic systems as well as public and private infrastructure
- prevents or postpones the need to fund and build expanded public works systems



# How much water can you harvest from one rooftop?

Using a roof area of 800 ft<sup>2</sup> (40' x 20' )

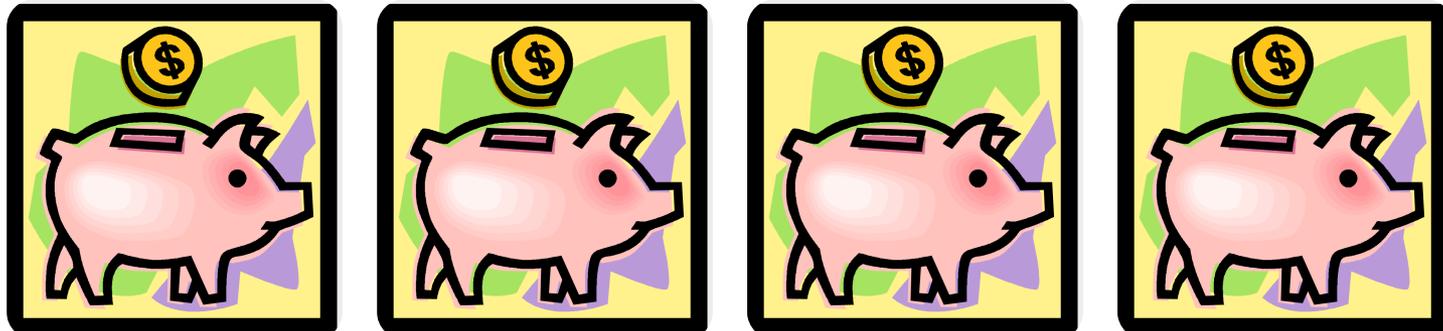


Photo by: SharkeyinColo

1" rainfall event = 500 gallons  
42" rainfall per year = 20,950 gallons

# Saving Water Saves You Money

One rain barrel can save you gallons of non-potable water in peak summer months



# Other ways to conserve water

## Outdoor

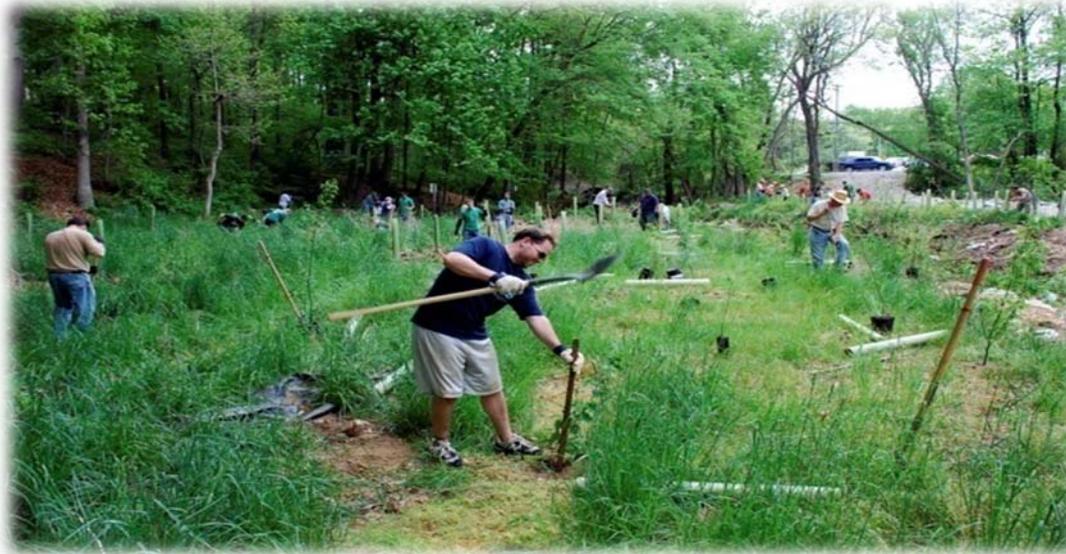
- Adjust watering as conditions change
- Native plants
- Mulch around plants
- Water early in the morning

## Indoor

- Look for EPA WaterSense logo
- WaterSense toilets (20% less water)
- Energy efficient dishwashers and washing machines (50% less water)
- WaterSense showerheads (40% less water)
- Faucet aerators



# Other ways you can do your part



**Plant Trees**



**Install Porous Pavers**



**Install Rain Gardens**

# Why Rain Barrels?

Actions and practices for SUSTAINABLE LIVING:

- Water Conservation
- **Capturing Rain Water Runoff**
- Reducing Water Pollution



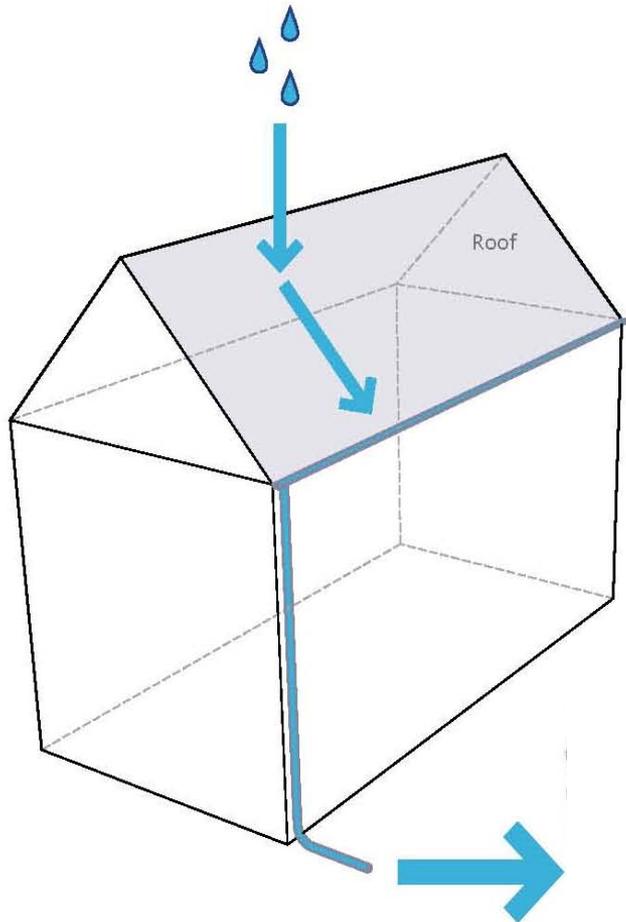
# Reduce Rain Water Runoff



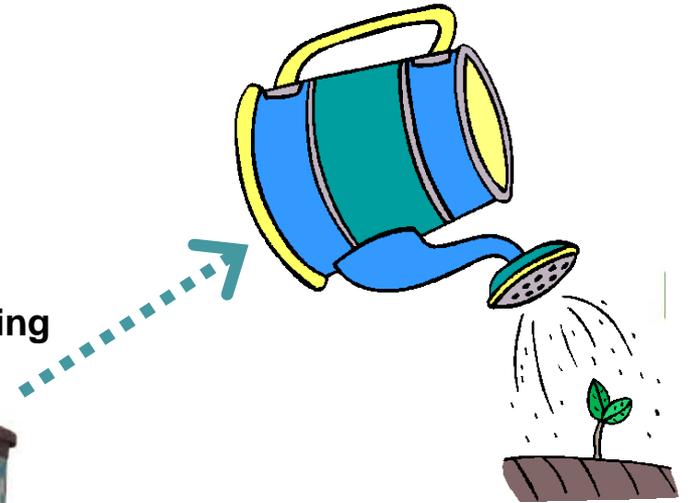
# Reduce Rain Water Runoff



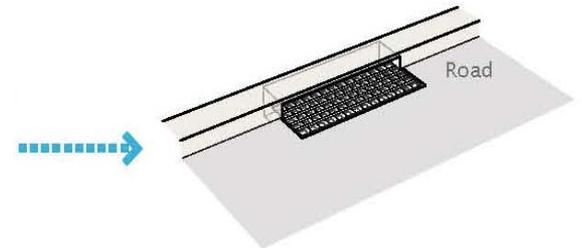
# Reduce Rain Water Runoff



Disconnect your  
downspout by installing  
a rain barrel



REDUCE THE AMOUNT  
OF RUNOFF ENTERING  
STORM SEWERS



# Reduce Rain Water Runoff



For example:

$$20 \text{ Rain Barrels} \times 1300 \text{ gallons/year} = 26,000 \text{ gallons per year!!}$$

# Downspout Disconnection/Redirection



# Why Rain Barrels?

Actions and practices for SUSTAINABLE LIVING:

- Water Conservation
- Capturing Rain Water Runoff
- **Reducing Water Pollution**



# Reducing Water Pollution



**Nonpoint source (NPS) pollution**, or people pollution:  
dirt, litter, pesticides, fertilizers, oil and grease, pathogens

# Other rain barrel benefits

Your plants will love it

- No salts or chemicals, slightly acidic pH



# Other rain barrel benefits

Protect valuable landscape plants during times of drought



**No Rain Barrel**



**With Rain Barrel**

# Rain Barrel Use and Care

- Do not use rain barrel water for cooking or drinking
- Do not collect rain water if you have used a moss-killer on your roof



# Use of Rain Barrel Water

- Use water within a week or two to discourage algae growth
- Use water before next rain is expected or connect to soaker hose in garden



# Use of Rain Barrel Water

In addition to watering shrubs, trees & gardens:

- Wash the dog, car or muddy feet
- Use in toilet tanks when well pump is not working
- Use in birdbaths

# Use of Rain Barrel Water

- Vegetable Gardens
- Ponds

**Have water tested!**

Recommended tests include:  
metals (zinc, lead, chromium, arsenic),  
polycyclic aromatic hydrocarbons (PAHs),  
and pathogens (fecal coliform, and *E. coli*).

Metals and hydrocarbon tests are important if you have asphalt shingles or if you live in a very urban area.



# Care of Your Rain Barrel

- Keep screen on top and a garden hose attached to the overflow to prevent mosquitoes – change screen every 2 years
- Remove debris from screen after storms
- Disconnect the barrel in winter – store inside or outside with a cover
- Clean out with long brush and water/ dilute bleach solution (~3%)



# So Many Barrels to Choose From...



# Where to get barrels

## Food grade, 55 gallon, High Density Polyethylene Plastic (HDPE)

### Sources:

- New- Barrel and drum manufacturers online or phonebook
- Used- internet, barrel recyclers, local industries  
examples:
  - Pickling companies
  - Beverage companies
  - Car washers
- County Build A Rain Barrel Workshops

### Cleaning

- Used barrels should be washed with soap and triple rinsed.



# Train-the-Trainer Program

Providing resources for local individuals to conduct community workshops

- Training materials
- Technical support
- Make barrels available when requested
- Provide conversion kits / supplies



# Let's Build a Rain Barrel!

Overflow



Faucet



# Supplies and Tools

- ✓ Brass Faucet
- ✓ Hose adapter (male,  $\frac{3}{4}$ " )
- ✓ Sealing locknut,  $\frac{3}{4}$  in
- ✓ Fiberglass screen
- ✓ Plumbers tape
- ✓ Silicone caulk
- ✓ Pliers
- ✓ Power drill with 1 in. hole saw
- ✓ Gloves for spreading caulk



# Safety



Safety glasses are required to be worn when:

- Using a power drill
- Steadying a barrel for someone drilling.

# Drill hole for faucet and overflow



**Drill where barrel is flat, not near a seam.**

**Faucet-** Drill about 5 inches from base.

**Overflow-** do not drill your hole on the back

# Put thread seal tape on faucet



Put caulk  
around  
outside of hole



# Screw faucet in



Keep the faucet straight as you screw it in

# Sealing lock nut on other end of faucet



But how????

# Screw sealing lock nut on other end of faucet



Flashlight and paper towels are useful

# Caulk around inside and outside of faucet



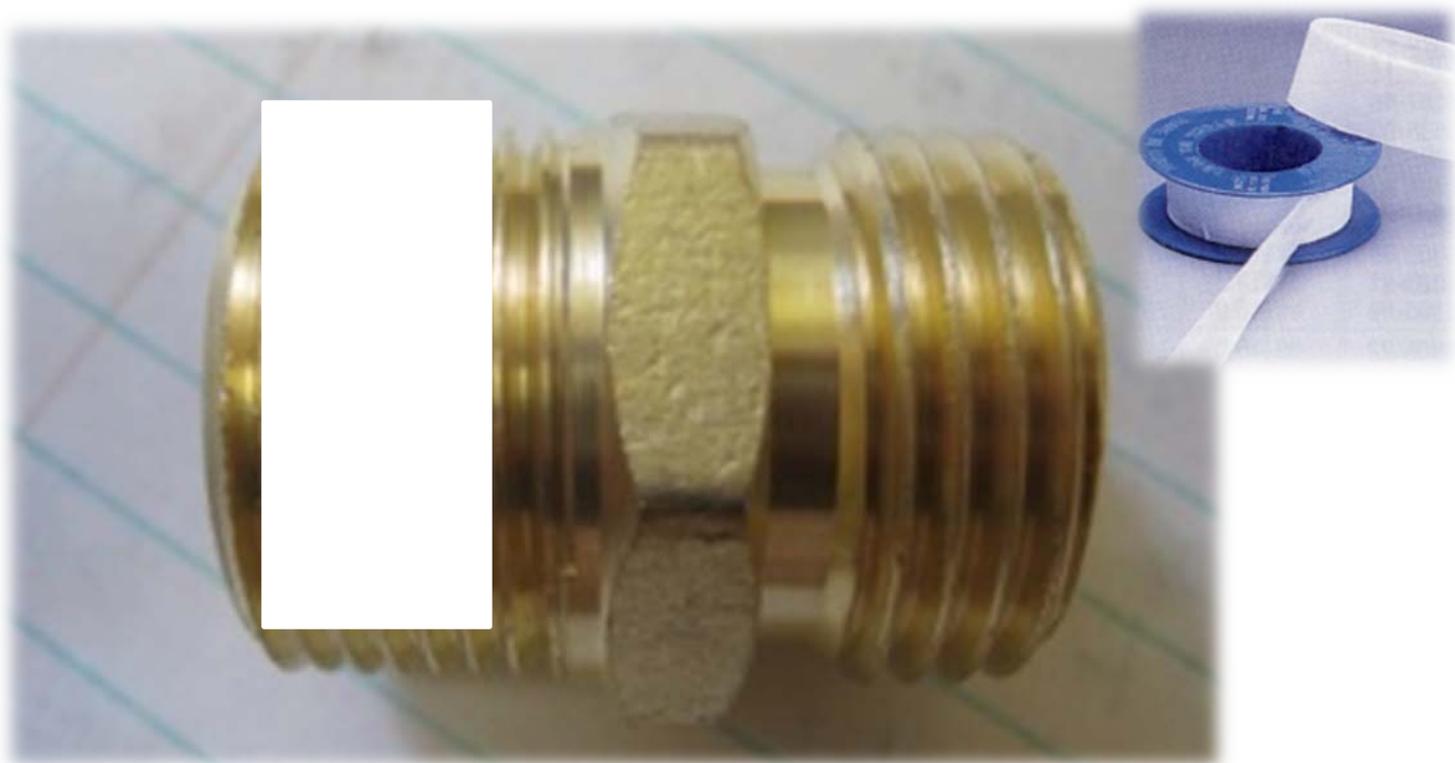
Faucet is complete!

# Overflow



Think before you drill!  
What side do you want your overflow on?

# Put thread seal tape on hose adapter

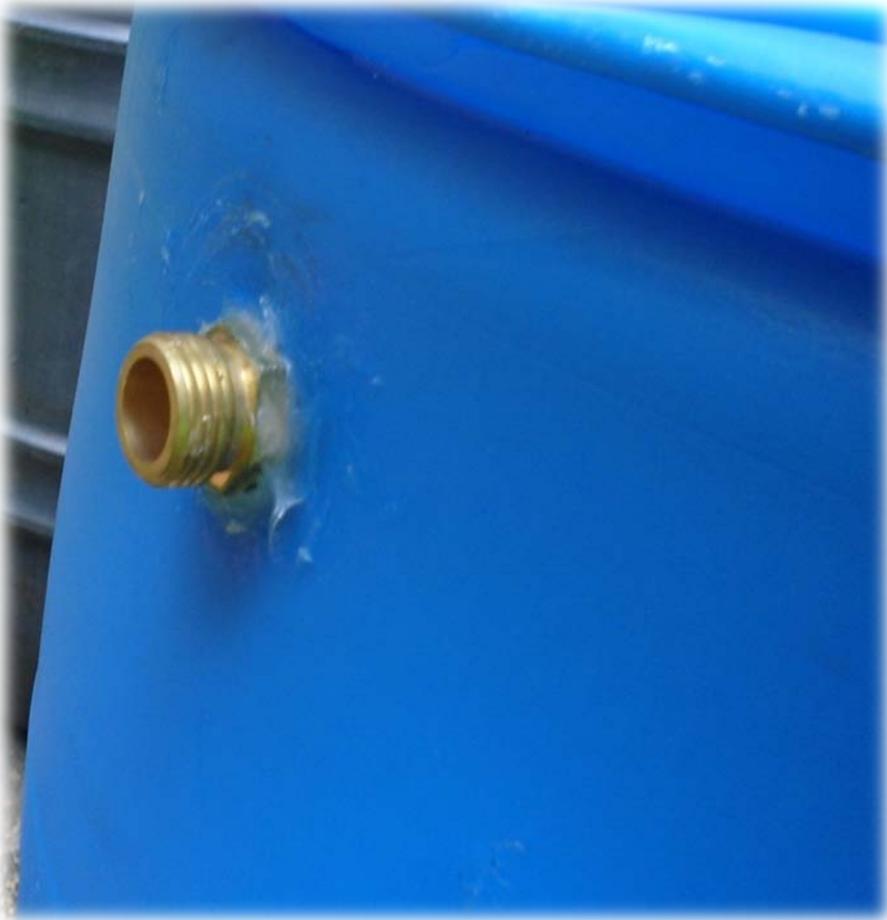


Seal tape goes on longer side.  
Longer side is screwed into overflow hole.

# Caulk around outside of hole



# Screw overflow in



Caulk around outside of overflow fitting



Caulk around inside of overflow fitting



Screw lock nut over screen on the inside of overflow fitting.

# Caulk around inside and outside



Overflow is done!

# Screw the lid onto the barrel, holding screen in place



# Rain barrel is done!



**When you get your  
rain barrel home...**

# Shopping List

- ✓ Sand or gravel to help level area for rain barrel
- ✓ Bricks, cinder blocks, or pressure treated wood to create a platform for rain barrel
- ✓ Hacksaw or sabersaw to cut downspout
- ✓ Downspout strap, screws and screw driver to reattach downspout
- ✓ Garden hose for overflow
- ✓ Mosquito “dunk” or vegetable oil
- ✓ Long brush to clean rain barrel periodically



# 1. Prepare the Area Under Your Downspout for the Rain Barrel



- ✓ Level the dirt under your downspout
- ✓ Add some sand, gravel or crushed stone

# 1. Prepare the Area Under Your Downspout for the Rain Barrel



*Water  
is heavy!*

*50 gallons  
weighs  
nearly  
400 lbs!*



- ✓ Rain barrel needs to be higher than ground level
- ✓ Create a platform using bricks, cinder blocks, or pressure treated wood

## 2. Cut Off Part of Downspout



- ✓ Measure twice, cut once!
- ✓ Use hacksaw or sabresaw



Hacksaw

### 3. Put the Rain Barrel in Place and attach the Curved Downspout End Piece



## 4. Re-attach the Downspout Strap



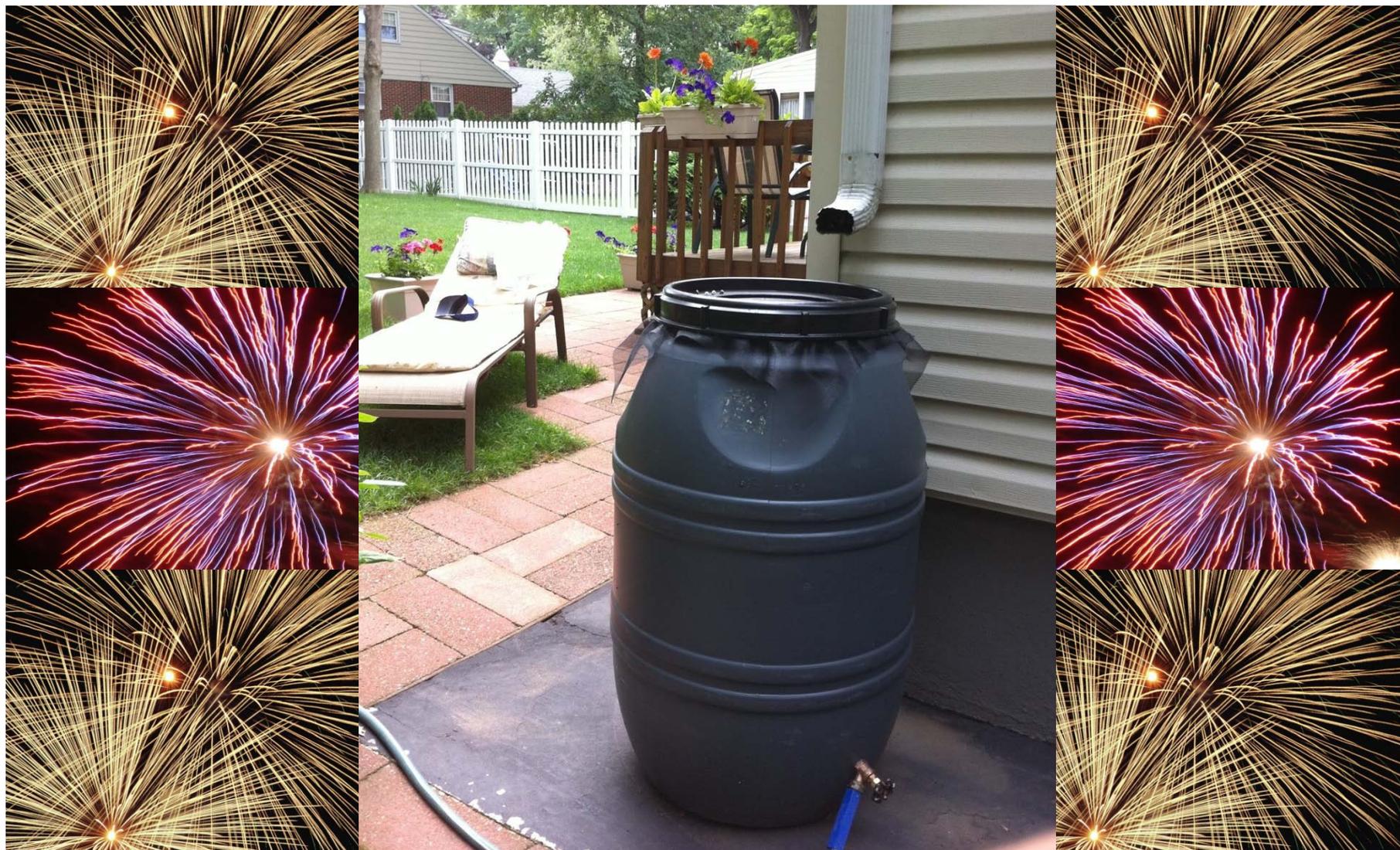
# 5. Attach Garden Hose to Overflow



# 6. Add Mosquito Dunk or Vegetable Oil



# Congratulations! You're Done!



# Some Tips

- Increase storage capacity by using rain barrels in a series
- Modify the installation design for your needs
- Paint or landscape around your barrel



# One Barrel at a Time Co-op



Artist: Edwin Messey



Artist: April Lippet



Artist: Joan M. Horn



Artist: Abigail Miranda



Artist: Dorothy Cohen



# Credits

- Rutgers Cooperative Extension
- NJDEP Division of Water Supply
- Environmental Protection Agency
- *Stormwater Management in Your Backyard* program
- Arlington County Department of Environmental Services
- Clean Virginia Waterways
- New Jersey Water Conservation Program
- New Jersey Sea Grant
- USDA CSREES Regional Water Program



# QUESTIONS?

