

Rainwater Harvesting for Landscape Irrigation



Dick Peterson
www.DickPeterson.com

Our Most Precious Resource



Supply & Demand



Supply & Demand

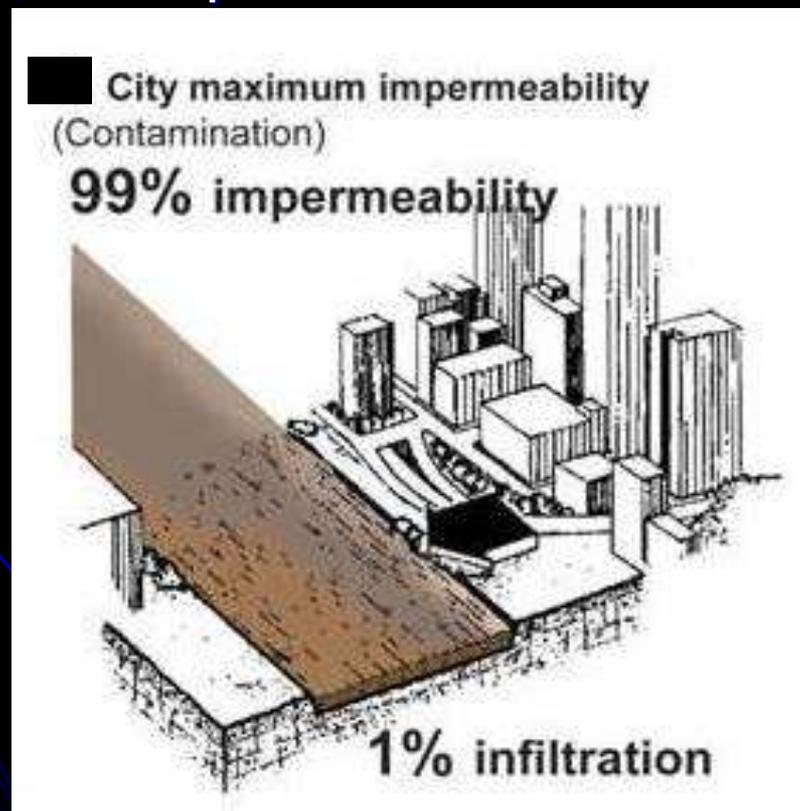


Storm water Run-off

Just how much?

- 1" of rain on 1 acre generates 27,000 gal. of water
- 1" of rain on a 20 x 50 mile heavily urbanized city will generate 17.4 billion gal. of water!
- 1" of rain on a 1,000 sq. ft. roof can STORE 600 gal. of water!

This...



or This?



The Perfect Marriage of Two Effective Strategies



Rain Barrels

+

Rain Gardens

Green Solutions for Stormwater Runoff



The Perfect Marriage of Two Effective Strategies



Rain Barrels

+

Ponds

Rainwater Through The Ages

- 🌐 Rainwater harvesting practiced for over 4,000 years in desert of southern Israel
- 🌐 Ancient Roman had cisterns and aqueducts
- 🌐 Early 1900's farms and ranches had cisterns
- 🌐 Current resurgence of rainwater collection:
 - Lady Bird Johnson Wildflower Center
 - 🌐 At one time, the U.S. largest 72,000 gallon capacity Advanced Micro Devices
 - 🌐 1,500,000 gallons!
 - 🌐 Many Caribbean nations mandate rainwater harvesting



Ancient Concepts



Why Collect Rainwater?

- 🌍 Rainwater pH is almost neutral
- 🌍 Plants, Ponds and Pescados love it
- 🌍 Rainwater does not have dissolved minerals from the soil
- 🌍 Or chemicals from water treatment plants
- 🌍 Harvesting reduces erosion
- 🌍 Reduces water bill – you do not use as much expensive potable water on your landscape and water features

In Texas, rainwater harvesting systems are sales tax exempt

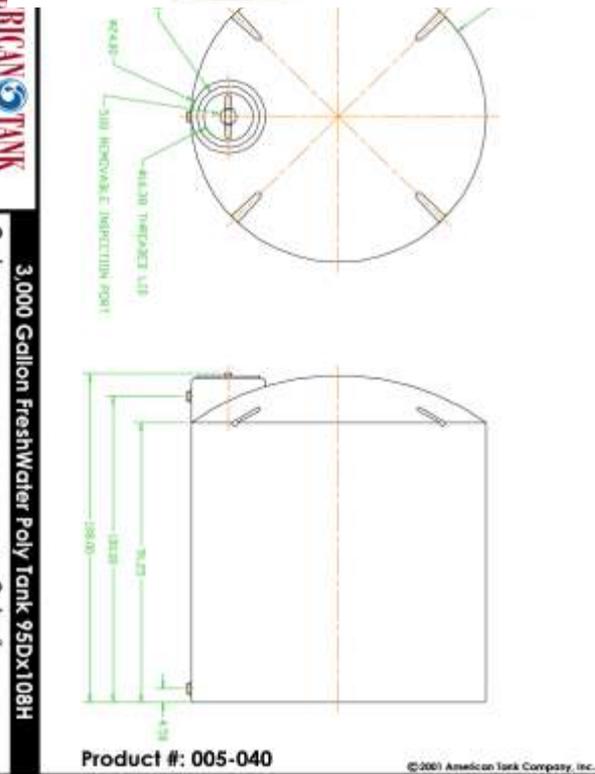
Tax Code Section 151.355(1) provides an exemption for the recycling system if purchased on or after September 1, 2001.

Sec. 151.355. WATER-RELATED

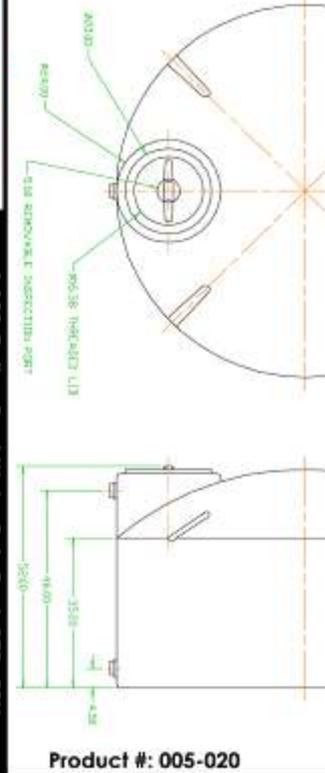
EXEMPTIONS. The following are exempted from taxes imposed by this chapter:

*(1) **rainwater** harvesting equipment or supplies, water recycling and reuse equipment or supplies, or other equipment, services, or supplies used to reduce or eliminate water use....*

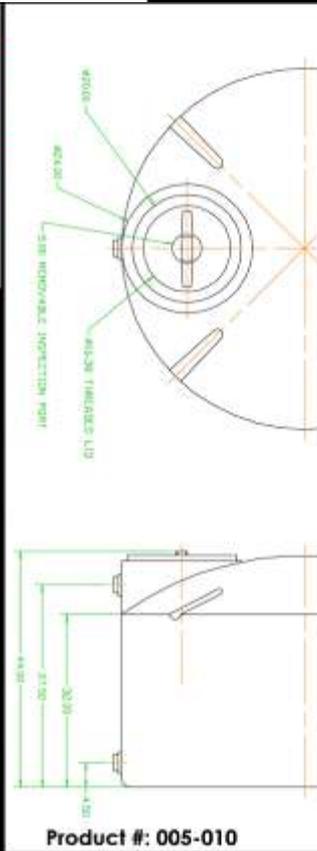
Tanks are available in many sizes and configurations



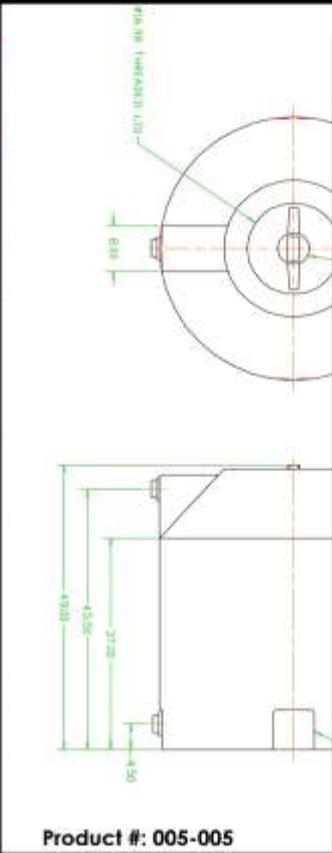
AMERICAN TANK COMPANY, INC.
 (800) 555-9100 www.american-tank.com
 Customer: _____ Order #: _____
 Approvals: _____ Date: _____



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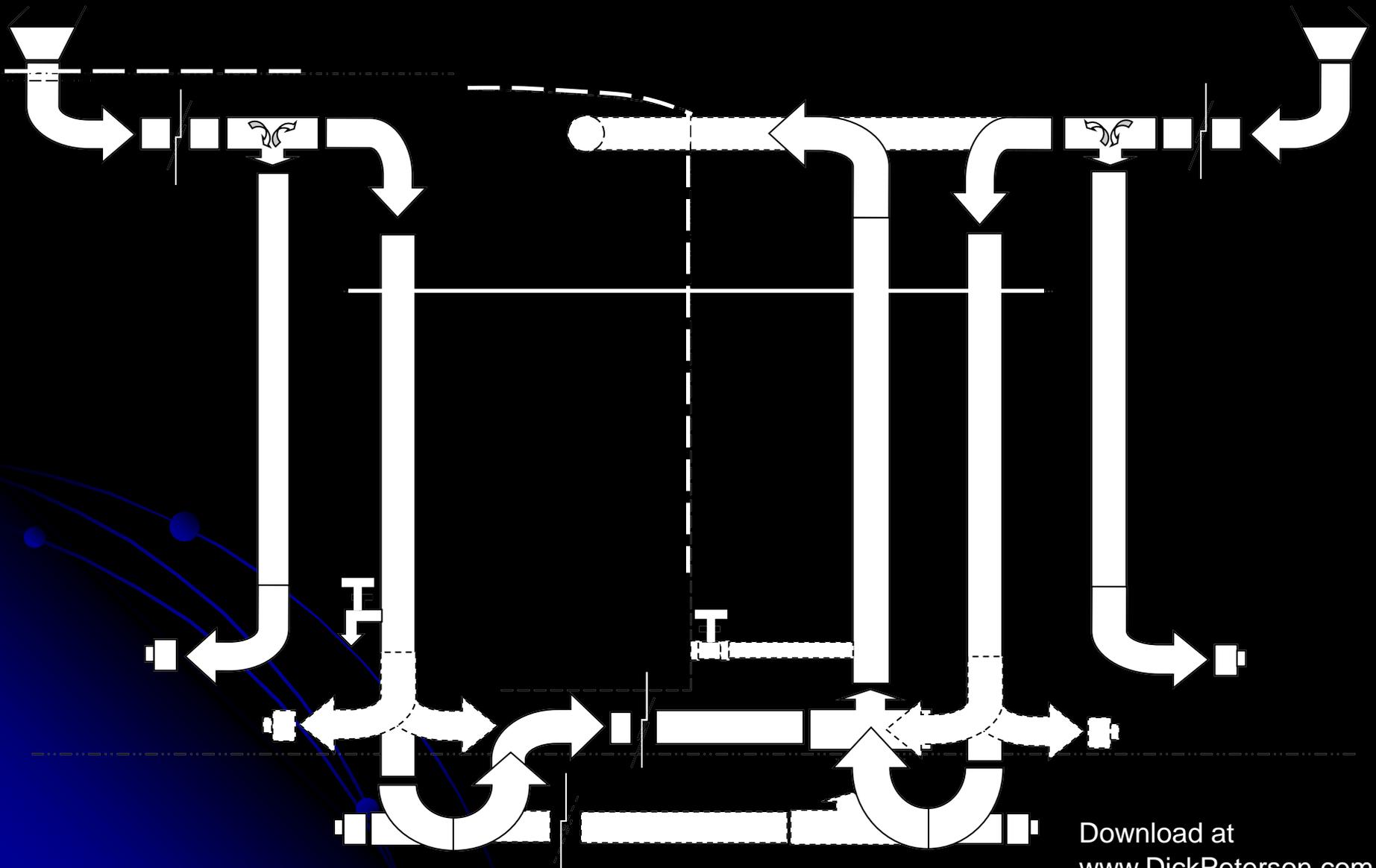


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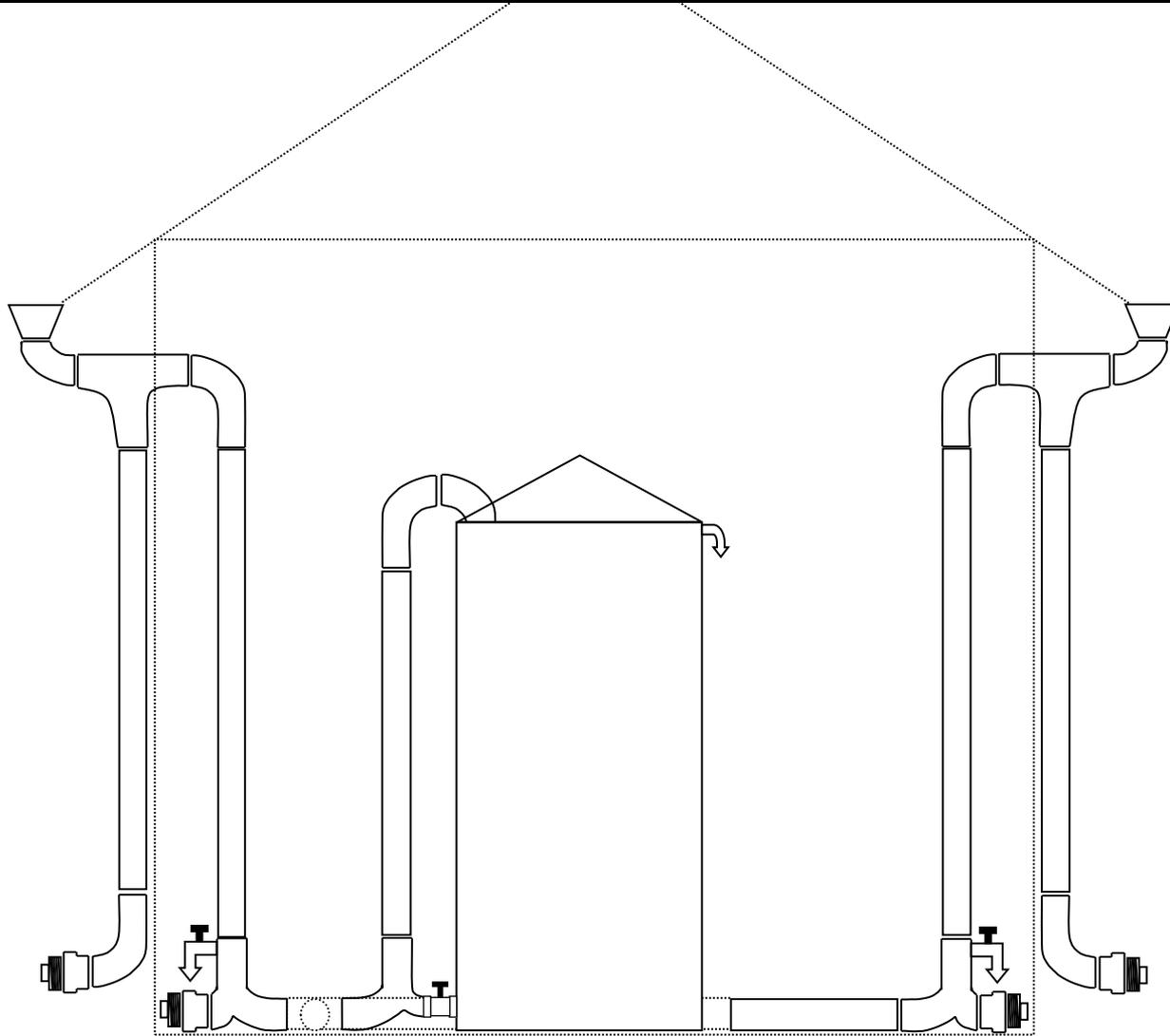


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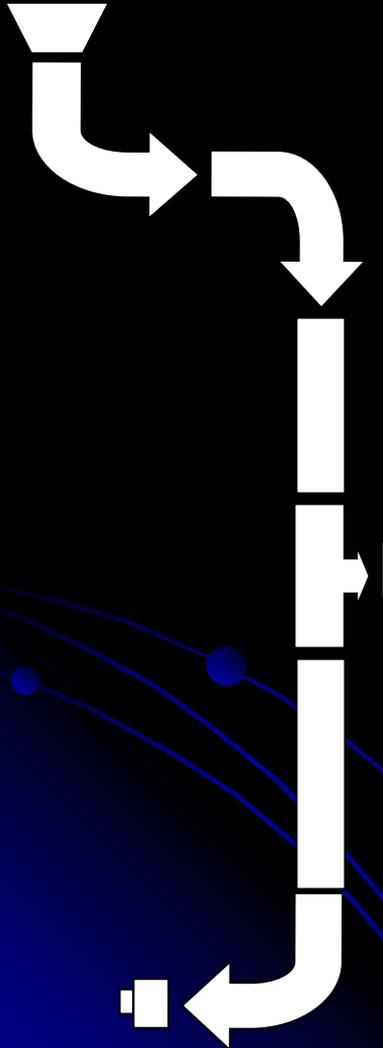
Simple System Options



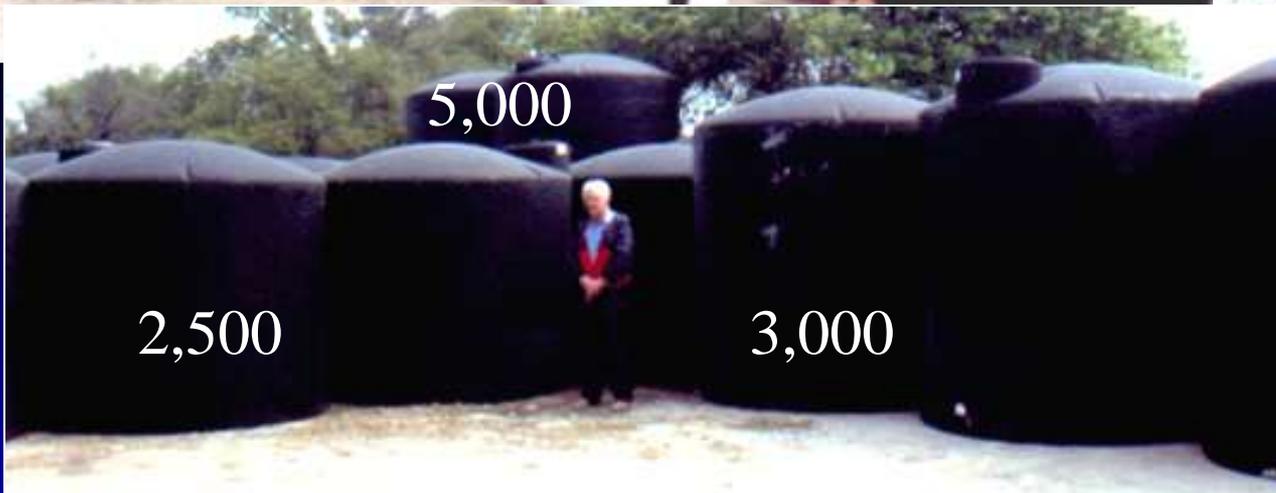
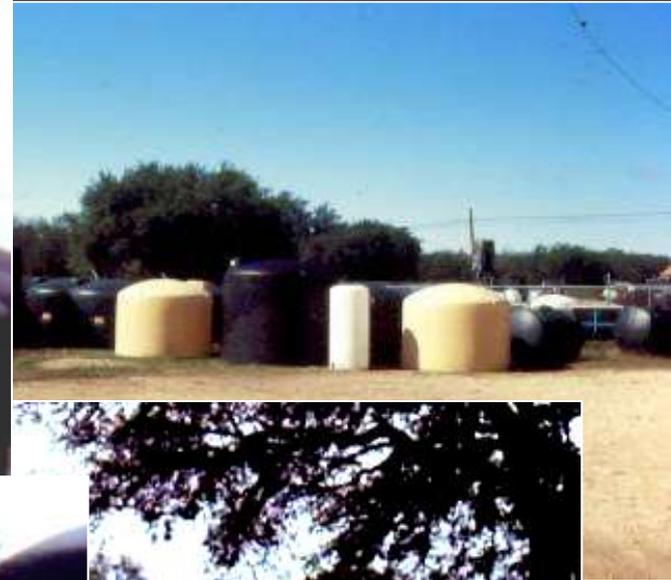
Simple System Diagram



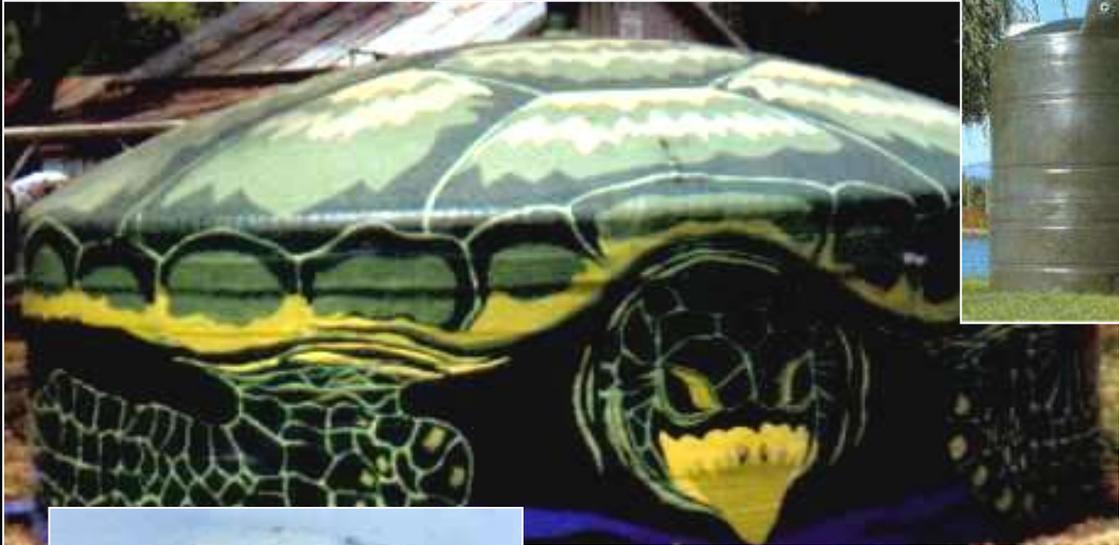
How about a fishpond tank?



Good source of tanks are “feed and ranch” stores



To reduce algae, tanks should be black, green, covered, or painted



Recycled drums come in various shapes, sizes and materials



Recycled drums come in various shapes, sizes and materials



Larry Gilig

These IBC Totes are covered with landscape fabric and plastic fence



STORE REFRIGERATED. DO NOT FREEZE.
86001868
HAWAIIAN PUNCH
HAWAIIAN PUNCH FRUIT JUICY RED 80X BASE

Other Containers at My House



Zilker Botanical Garden Master Gardener Greenhouse



A 10' x 10' garden shed can collect
60 gallons in just a 1" rain



750 gallon fiberglass tank

New Underground Systems

Rainwater harvesting with Aquascape's

RainXchange
Rainwater Harvest Systems

shown with
Pondless® Waterfall

Please note: The numbers represented in this drawing show the stages of rain water harvest.

1 IRRIGATION SYSTEM

- Natural water is loaded with micronutrients and compounds that will make your plants flourish.
- A healthy garden consumes more greenhouse gases and properly irrigated soils allow for greater water infiltration and better overall soil profiles.

2 AQUATIC PLANTS

- Providing food and shelter for a great number of birds, insects and amphibians and the cornerstone for maintaining our biodiversity.

3 BIOLOGICAL FILTER

- Beneficial bacteria and enzymes reduce organic wastes and pollutants to less toxic substances that can be absorbed by plants, thereby creating a perfect cycle of nutrient re-use.

1 RAIN FILTER

- Captures and removes pollutants flushed into the system during a rain event.
- Coarse filter screen removes leaves, twigs, and seeds.
- Smaller suspended particles are captured in a fine mesh which can easily be removed for cleaning.

2 MODULAR STORAGE BASIN

- Modular design can be configured to fit a wide variety of applications and settings.
- The storage basin consists of modular plastic tanks that are assembled on-site.
- EPDM rubber membrane creates a water-tight basin.

2 CONNECTING PIPE

- Carries the water via gravity to the main storage chamber. (sold separately)

3 FLEXIBLE PVC

- Easy installation with minimal head pressures, which equates to overall efficiency.

4 SNORKEL™ VAULT & CENTIPEDE™ MODULE

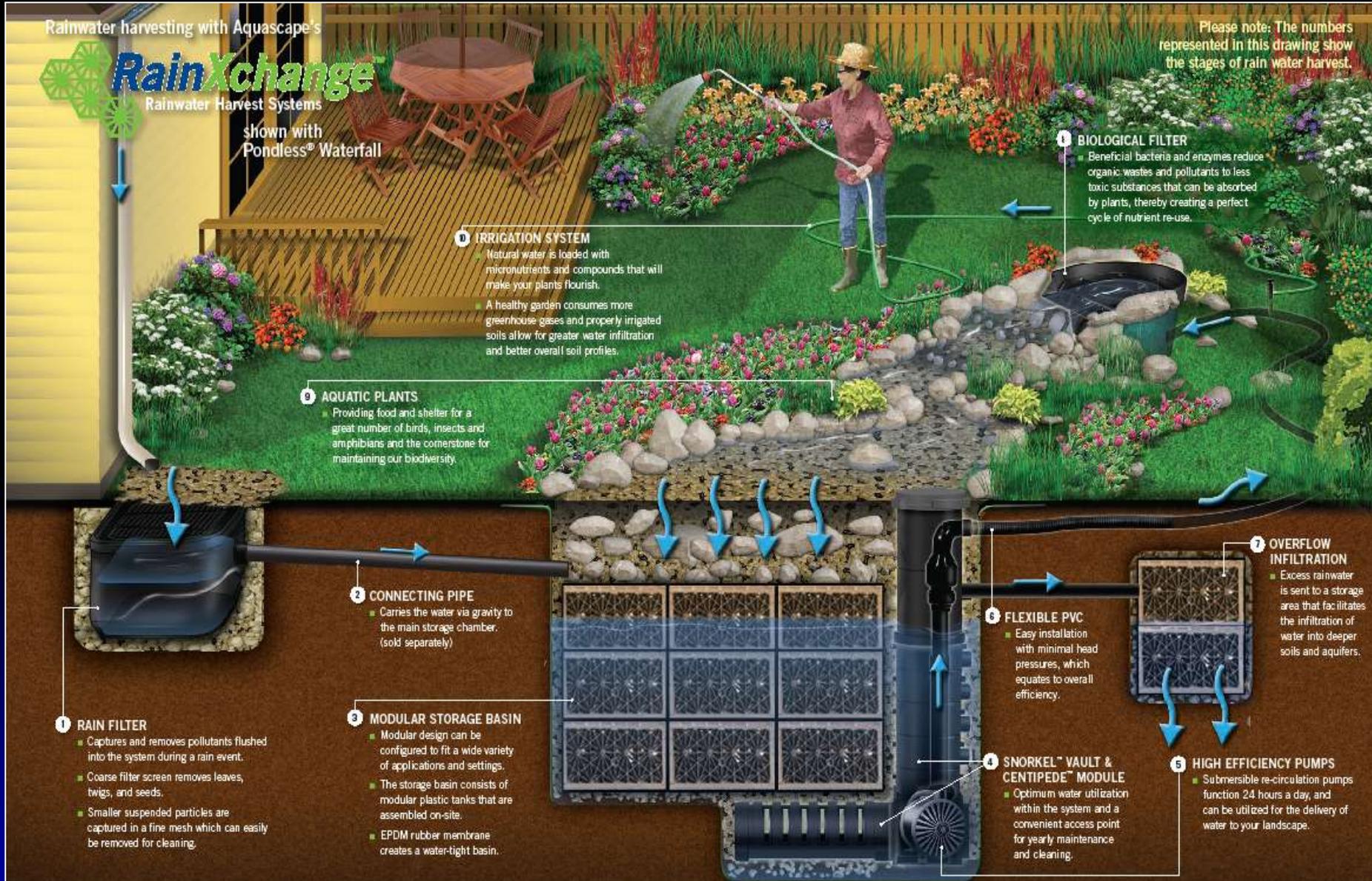
- Optimum water utilization within the system and a convenient access point for yearly maintenance and cleaning.

7 OVERFLOW INFILTRATION

- Excess rainwater is sent to a storage area that facilitates the infiltration of water into deeper soils and aquifers.

5 HIGH EFFICIENCY PUMPS

- Submersible re-circulation pumps function 24 hours a day, and can be utilized for the delivery of water to your landscape.



New Underground Systems



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New Underground Systems



Design Options



Design Options



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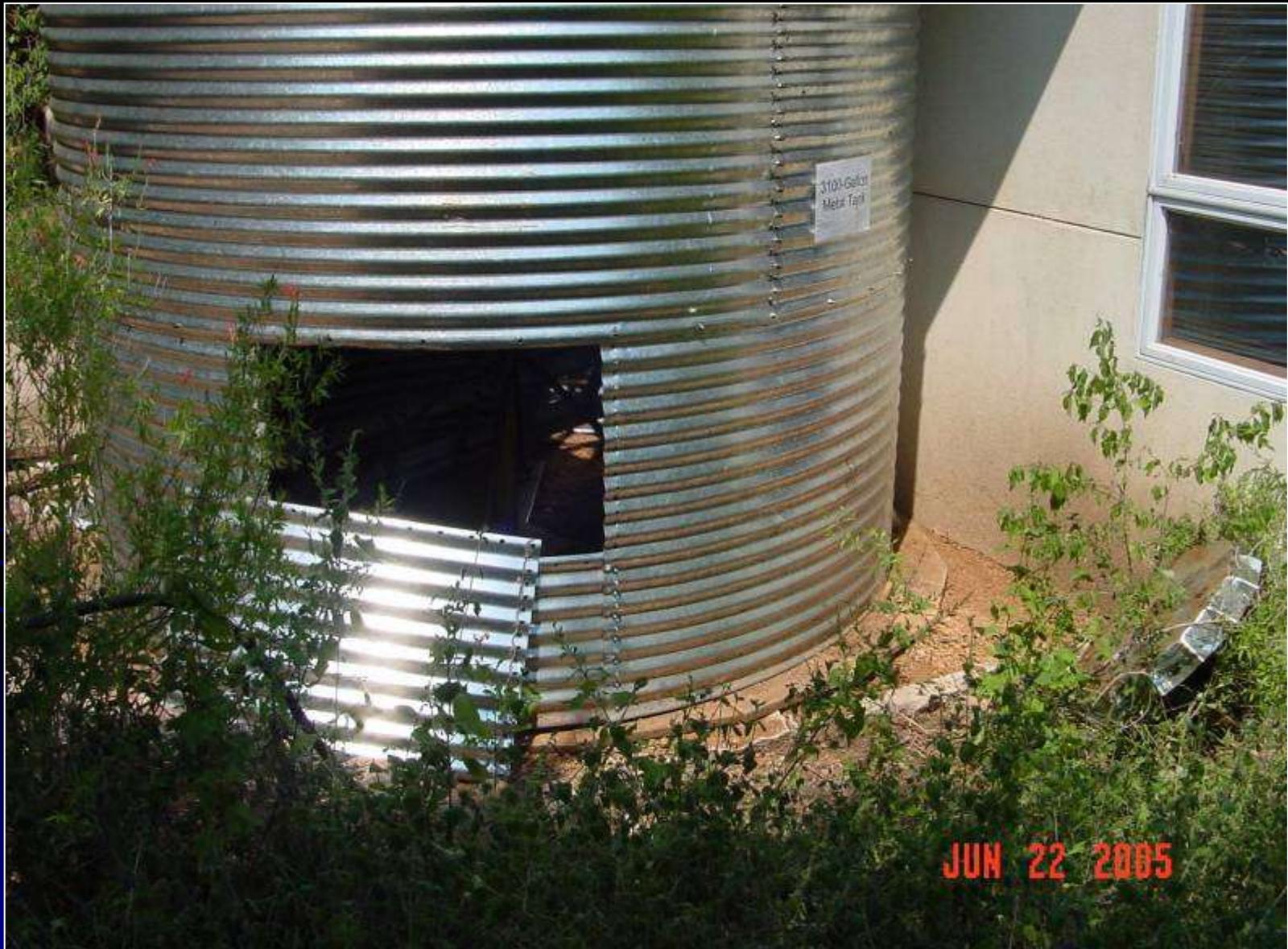
Design Options



Design Options



Design Options



Components



Components



Components



Components



Components



David, is this eligible for the pressurized system rebate?

Components



“My Cistern. My plan is to mount a 55-gal barrel around 10-ft off the ground, and pedal if full every other day or so (I’m pretty sure I can pump that high at better than 2 gpm) – then have a drip irrigation system to allow it to seep out on the garden. I hooked a water pump to a bicycle trainer and use it to pump water out of my rainwater catchment’s cistern. It takes about 30 minutes to empty a COA rain barrel at a fairly leisurely pace.” Larry Gilig (gilg@dieproducts.org)

Components



Components



Components



Vortex Filter

complements
Joe Wheeler

Components



Vortex Filter

complements
Joe Wheeler

Components



Vortex Filter

complements
Joe Wheeler

Design Options



Joe Wheeler

Design Options



Joe Wheeler

Design Options



Thanks, Joe!

Design Options



Bt-Biological Mosquito Control



Whisky is for drinkin'...
Water is for fightin' over!

Mark Twain

Water is a precious resource...

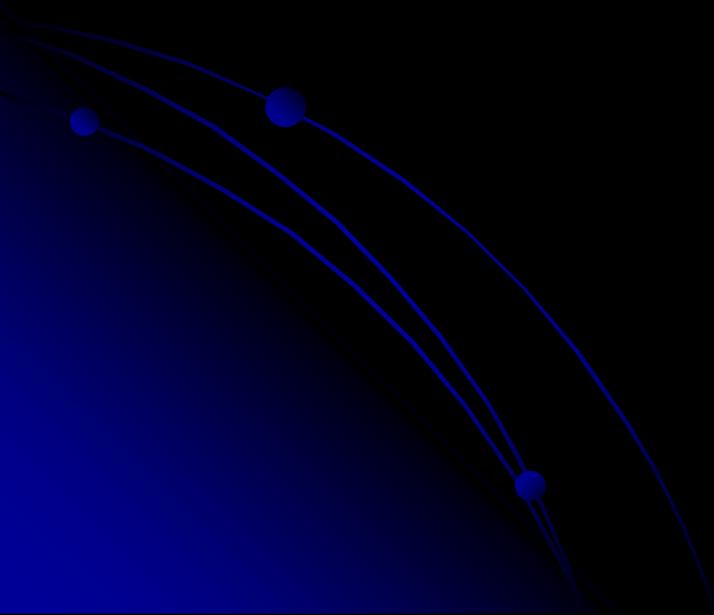
Use it wisely...

Harvest rainwater!



Austin History Center, St. Edward's cadet straddling Lake Austin

Make sure you follow the plumbing code in your jurisdiction before using rainwater for anything other than landscaping!



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