

The Cypress Creek Watershed

Know Your Watershed

Cypress Creek is a tributary of the Upper Blanco River in Hays County. The upper portion of the creek is dominated by rugged, undeveloped terrain. The lower portion contains a concentration of urban land as it passes through the towns of Woodcreek and Wimberley, before meeting the Blanco River. Jacob's Well, an iconic artesian spring near the City of Woodcreek and the second largest underwater cave in Texas, is the primary water source to the lower creek, the lifeblood of the City of Wimberley. The source of water for Jacob's Well is the Trinity aquifer, an underground reservoir that has been depleted due to recent development in the area, causing the flow at Jacob's Well to diminish.

WHY DOES CYPRESS CREEK NEED A WATERSHED PROTECTION PLAN?

- Population growth is increasing water consumption, which negatively affects aquifer recharge.
- Reduced groundwater affects water quality, limiting swimming and fishing
- Wimberley Valley tourism depends on the health of Jacob's Well, Cypress Creek, and Blue Hole. If they cease to flow with clean & clear water, the local economy will dry up with the creek.
- Property values estimated to drop 25%-40% if the creek stops flowing or is degraded.
- Protecting the creek and watershed lessens impacts of droughts and floods.

WATERSHED FACTS:

DRAINAGE AREA:

38.3 sq miles / 24,486 acres

100-YR FLOODPLAIN AREA:

2.4 sq miles / 1,536 acres

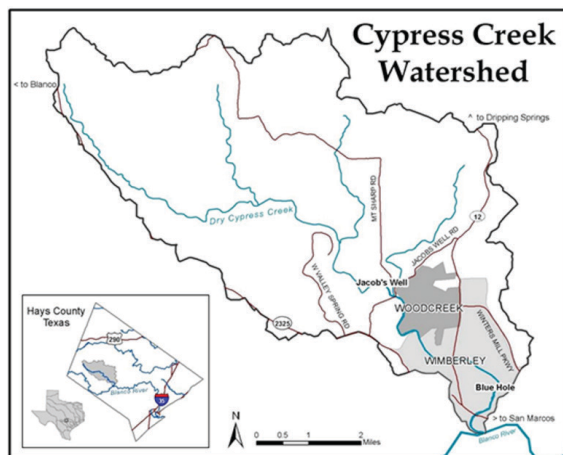
STREAM LENGTH: 15.7 miles

SOIL TYPES:

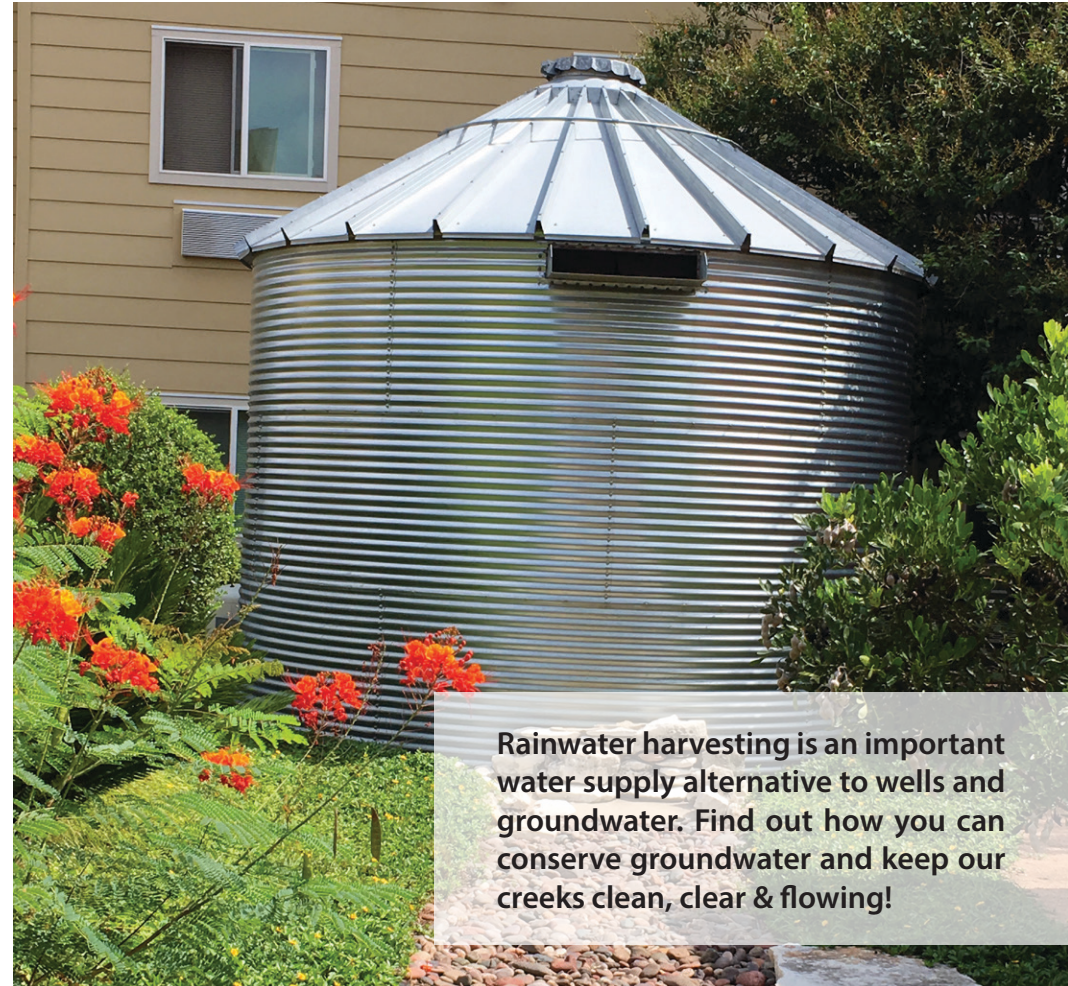
Bolar, Brackett, Comfort, and Doss

LAND COVER:

- 42% Evergreen Forest
- 28% Shrub / Scrub
- 11% Grassland / Herbaceous
- 10% Deciduous Forest
- 9% Developed



Rainwater Harvesting RESOURCE GUIDE



Rainwater harvesting is an important water supply alternative to wells and groundwater. Find out how you can conserve groundwater and keep our creeks clean, clear & flowing!

WWW.CYPRESSCREEKWATERSHED.ORG



**CYPRESS
CREEK**

Let's keep it **clean**, **clear** & flowing



FUNFACT:
See the back page for more information about the watershed protection plan!

FUNFACT:
Annual rainfall in Hays County is about 30 inches.



Cypress Creek Watershed Protection Plan

This resource guide is part of the Cypress Creek Watershed Protection Plan; both are made available through the efforts and resources of the following stakeholders.



Rainwater Harvesting Incentives and Regulations

INCENTIVES

Hays County residents with rainwater harvesting systems can benefit financially in two ways:

- Those purchasing rainwater harvesting equipment and supplies are eligible for an exemption from state sales tax. Please see this link and download form 01-339 (back): <https://comptroller.texas.gov/taxes/exempt/forms/>
- Those with existing systems can apply for a property tax exemption through Hays County by completing and submitting a series of forms including the Hays County Application for Rainwater Harvesting Incentive Form, the Hays Central Appraisal District Application for Water Conservation Initiatives Property Tax Exemption form 50-2070, and the Hays CAD Supplemental Rainwater Application. The property tax exemption application is due by May 1. Here is the link with instructions and contact information: <https://www.watercache.com/main/wp-content/uploads/hays-county-rainwater-harvesting-incentive-application.pdf>

REGULATIONS

If you have an on site sewage facility in Hays County and you intend to harvest rainwater, then minimum lot sizes apply depending on your location relative to the Edwards Aquifer. Please see Table 10-1 at this link for more information: <http://www.co.hays.tx.us/SharedFiles/Download.aspx?pageid=61&mid=65&fileid=7256>

If the source of your drinking water is from a public or private water supply company, such as the Wimberley Water Supply Company or Aqua Texas, and you intend to use rainwater harvesting for indoor potable purposes, check with your water supply company for their requirements. You must provide written notice of your intention to harvest rainwater for potable purposes to the operator of the water supply company who may require installation by a licensed plumber and also may require certain devices to prevent contamination of the water supply, such as a backflow preventer.

OTHER RESOURCES

Texas Manual on Rainwater Harvesting (Texas Water Development Board) http://www.twdb.texas.gov/publications/brochures/conservation/doc/RainwaterHarvestingManual_3rdedition.pdf



FUNFACT:

On average one third of domestic water is used outdoors.

FUNFACT:

Everybody's doing it! There are over 100,000 rainwater systems in the United States.



Rainwater Harvesting + Water Conservation = Savings

In the Texas Hill Country, it is vitally important to conserve water both indoors and out. Harvesting rainwater should always be implemented while observing water conservation practices inside the home and in the landscape. For example, grey water from inside the home may be re-used outdoors. Grey water is water from bathroom sinks, showers and bathtubs, and the laundry that may be used in the landscape.

WATER CONSERVATION INDOORS

Harvesting rainwater should always be implemented while observing water conservation practices inside the home, such as

- using low-flow or composting toilets,
- aerators on bathroom and kitchen sinks,
- low-flow showerheads, and
- high efficiency clothes washers and dishwashers.

WATER CONSERVATION OUTDOORS

1. Planning and Design that considers topography, existing vegetation, and grouping plants and grasses by their watering needs.
2. Soil Improvement to prevent erosion and adding organic material, such as compost to promote water penetration and retention
3. Appropriate Plant Selection such as native and adapted plants that use less water and are more resistant to diseases and pests.
4. Practical Turf Areas: select the appropriate grass species and minimize the size and geometry of turf areas for optimal water use.
5. Efficient Watering by avoiding watering until absolutely necessary and never watering in the heat of the day or on windy days to avoid evaporation.
6. Use of Mulches to cover and shade soil, minimize evaporation, reduce weed growth and soil erosion.
7. Lower Maintenance by avoiding use of pesticides and fertilizers.
8. Grey water re-use to irrigate the landscape.

Rainwater Harvesting in the Cypress Creek Watershed

Rainwater harvesting is the collection and storage of rainfall from roofs or other impermeable surfaces for future use in the landscape or for interior water uses, including potable water uses. Rainwater may be collected in single rain barrels or more complex systems with large cisterns or tanks.

The purpose of this guide is to demonstrate the importance of rainwater harvesting for the Cypress Creek Watershed and to provide resources for those who want to implement rainwater harvesting on their property.

RAINWATER HARVESTING HAS MULTIPLE BENEFITS

The most important benefit of rainwater harvesting for the Cypress Creek Watershed is that it provides an alternative water supply to groundwater. The headwaters of Cypress Creek, Jacob's Well, is negatively impacted by the groundwater demands of the many wells in the watershed. Rainwater harvesting provides an alternative water supply that does not diminish the recharge of groundwater.

The many benefits of rainwater harvesting include:

1. Rainwater provides a water source when groundwater supplies are limited
2. Rainwater harvesting reduces flow to storm water drains and also reduces non-point source pollution
3. The water itself is free; the only cost is for collection and use
4. The end use of harvested water is close to the source, localizing the distribution system
5. Rainwater is superior for landscape irrigation – plants love it!
6. The zero hardness of rainwater prevents scale on appliances and eliminates the need for a water softener.

Rainwater harvesting materials and information are available at the following local businesses:



King Feed Garden and Hardware
14210 Ranch Road 12, P.O. Box 110
Wimberley, Texas 78676
Phone: 512-847-2618
www.kingfeedandhardware.com



Ace Hardware
14307 Ranch Road 12
Wimberley, Texas 78676
Phone: 512-847-2356
www.wimberleyace.com



FUNFACT:
For every 1,000 square foot of roof surface about 500 gallons of water may be harvested for every inch of rainfall!



Rainwater Harvesting Components and Costs

It is strongly recommended that you consult with a design professional or contractor familiar with rainwater harvesting before purchasing materials or equipment. The following is intended to be a guide and costs are approximate.

COMPONENTS

1. **Catchment surface:** the collection surface from which rainfall runs off, such as a roof. Metal roofs are best to maintain harvested rainwater quality, but other types of roofs may still work.
2. **Conveyance:** gutters and downspouts convey water from the roof or collection surface to the tank (storage).
3. **Point of Entry Treatments (POE)** reduce the amount of organic and inorganic contaminants of harvested water prior to storage. A great example of this is the first-flush diverter that captures leaves and other large organic debris.
4. **Storage:** a tank that can range from a 55 gallon plastic barrel to a 20,000 gallon cement cistern and everything in between, such as a metal tank.
5. **Distribution/delivery (pumps, pipes, and valves):** the movement of harvested water to its intended use. A simple distribution system for irrigating the garden would be a ball valve and hose fed by gravity. A more extensive system would include a pump, pressure tank, and pipes.
6. **Point of Use Treatment/purification:** this depends on the harvested water's ultimate use; if it's going to be used as potable water for drinking, then filtration and disinfection will be required; if it's only going to be used in the garden or the landscape, then no point of use treatment will likely be needed.
7. **Usage:** drinking, cooking, bathing, or watering the garden or landscape.

APPROXIMATE MATERIAL AND EQUIPMENT COSTS

- **Storage Tanks and Cisterns:** \$0.35 - \$2.00 per gallon depending on size and material (fiberglass, plastic, metal, concrete)
- **Gutters and Downspouts:** \$0.30/ft for vinyl or plastic; \$6 - \$12/ft for metal
- **Roof Washers** (aka point of entry treatment): \$50 - \$800 for diverter or washer
- **Pumps and Pressure Tanks:** \$400 - \$1100
- **Purification** (filtering and disinfection - only required for drinking water): \$60 (cartridge) - \$1,000 (reverse osmosis) for filters; \$500 - \$1,000 for Ultra Violet (UV) light disinfection

Rainwater Harvesting Systems

Rainwater harvesting systems vary greatly in complexity and cost.

- One of the biggest drivers of cost is the size and type of storage. Fiberglass and metal tanks cost more than plastic tanks, and larger tanks cost more than smaller tanks.
- The other big driver of cost is the number of components in the system. If the water is only to be used to irrigate the landscape using gravity, then the components will be fewer and the system will be less expensive.

RAINWATER HARVESTING SYSTEM DIAGRAM

The diagram below shows that:

- only gutter and downspout, a first flush device and a storage tank are required for gravity fed landscape irrigation.
- a potable water system also requires a pump, pressure tank, filters, and Ultra Violet (UV) disinfection.

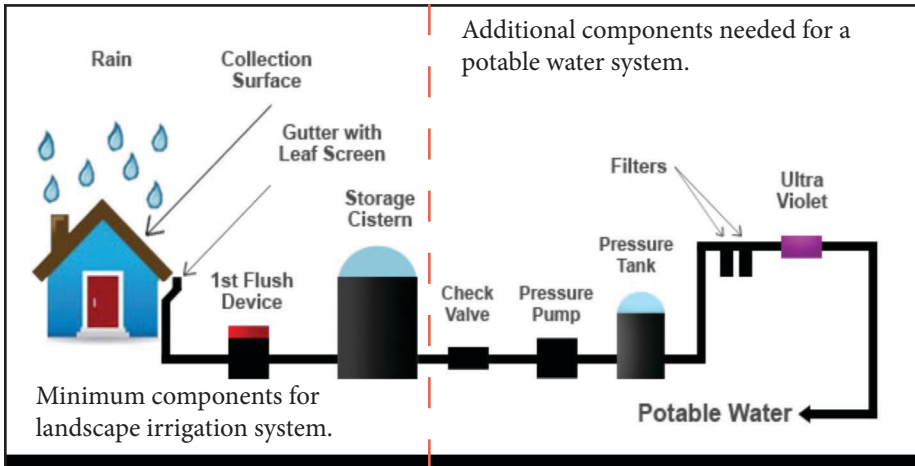


Diagram credit: <https://www.builtsmartresources.com/how-water-catchment-works.html>