



Pros and Cons of Rain Harvesting

By Dr. Larry Sunn and Dr. Steven Grainger

At a recent presentation we were asked several questions about “pros and cons” of rain harvesting. One question was phrased, “What are the ***real good and bad*** elements of rain harvesting?” What an interesting way to phrase the question. Several sources, including the Texas Water Development Board cite several real benefits of collecting rain including:

- The water is practically free: the only cost is the initial funds to collect and store it, as well as the annual cost of treating it.
- Materials and labor for capturing rain is all sales tax free in Texas. At time and point of purchase a buyer needs only to present a completed backside of the *Texas Sales and Use Tax Exemption Certificate*, form 01-339.
- The end use of the collected rain is often located close to the source of capture, thereby eliminating the need for costly distribution systems and rights of way.
- Rain provides a private source of water when a more traditional source such as groundwater is unavailable or the quality is unacceptable.
- The zero hardness of rain helps prevent scale building up on fixtures and appliances and so extends the life of appliances.
- Rain is free of sodium and minerals. At 30” per year here in the Hill Country, 5,000 square feet of roofing collects 93,000 gallons of water each year.
- Rainwater is superior for landscape use; plants thrive on rainwater.
- Rain harvesting reduces run-off flow to storm sewers and reduces the threat of local flooding.
- Rain harvesting for interior or exterior use helps reduce public utilities’ peak demands during hot, dry summer months.
- By harvesting rain—even if for just landscaping, homeowners can reduce their utility bills while slowly releasing the collected water that ultimately helps recharge the aquifer.

The real limitations of rainwater harvesting include:

- Potable water system maintenance costs are about \$150 per year for filter and UV light replacement.
- Appraisers may not properly value a rain harvesting system and underwriters may not accept this system as the sole source of household water, although it has become more common for new homes with rain collection systems to receive conventional bank financing.
- While rainfall events are highly unpredictable, rain harvesting can be relied on as a long-term, drought-proof source of water supply if sufficient supply is stored on site. Typically, a 2–3-month harvested supply meets a family’s needs of roughly 50 gallons of water per person per day.
- The capital cost for a rainwater harvesting system is typically higher than the cost of obtaining water from a centralized public distribution system. However, it is often less expensive than the cost of drilling and installing a new well.
- Rainwater harvesting systems require care (covering pipes in freezing weather) and maintenance (cleaning or changing filters and UV lights) after installation. This may not be suitable for all homeowners.
- Rainwater storage tanks may take up valuable space around the house. HOAs may also add a cost for shielding the tank from view.
- The local Health Department may require that the rainwater system does not contribute to mosquito breeding by having an uncovered cistern.
- In Texas, rainwater harvesting systems are not subject to state building code and the absence of clear construction guidelines may discourage homeowners and developers from installing these systems.

- Some authorities, such as the city of Bulverde, require an approved building permit prior to installing a rain harvesting system. Check with your local governing district before contracting or installing a rain harvesting system.