



# Rainwater Harvesting For Landscape Irrigation

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*Part of a series of documents created by Tim Guishard Enterprises discussing relevant subjects in the groundwater industry.*

This document details factors should be considered when considering the installation of a rainwater harvesting or collection system in Southern California.



## INTRODUCTION:

Every time we get significant rainfall after no rain for many months, I get calls for tanks to store irrigation water. I need to stop here and state: RAINWATER HARVESTING SYSTEMS ARE NOT COST EFFECTIVE FOR LAWN and LANDSCAPE IRRIGATION IN SOUTHERN CALIFORNIA. That being said, here are the reasons.

**FACT:** A small yard in inland communities like El Cajon, or Santee, can require easily between 300-500 gallons per day. A larger yard in the eastern communities like Jamul and Alpine, might require 10x that or 3000-5000 gallons per day. For the typical annual irrigation period of 9 months in our area, the small yard might need 100,000 gallons, whereas the larger yards would need closer to 1,000,000 gallons.

**FACT:** During a rain event of 1" of rain, A 1600 Sq/Ft home with all gutters directed into storage can only collect almost 1,000 gallons of water. A larger home of say 5,000 Sq/Ft can collect a little more than 3,000 gallons of water.

**FACT:** Since on average, the homes closer to the coast only get about 10" of rainfall per year, the most water that they can collect all year from the roof is about 10,000 gallons. With a larger home located at the higher elevations, they might get 19" of rain per year, so they can collect almost 600,000 gallons from their roofs.

**FACT:** If one could store all the water they could collect in a year, then they would be able to use "free water" for about 25 days in the coastal areas. The inland properties could water significantly longer, or for about 5 months. The rest of the time these tanks would be empty and rotting away.

**FACT:** A 10,000 gallon tank is about 12' in diameter, and 12' tall, and a medium quality tank costs about \$6,000.00. A 600,000 gallon tank can be 80' in diameter and 16' tall, and easily cost over \$800,000 dollars. Zoning regulations would probably prohibit these sizes of tanks in their relevant residential settings.

**FACT:** The electricity to pump that water into your landscape will cost about 20% of what you would pay in water costs.

**FACT:** On average, homes turn over in ownership every 10 years. You cannot harvest enough water in this time period to payback the: initial, power and related maintenance costs.

If you want to install a 55 gallon "rain barrel" to water your vegetable garden, or house plants, this is cost effective, and will even be good for the plants grown indoors. The barrels of up to 300 gallons (like those shown on the cover of this document) may also be cost effective. Installing an electric pump to then pump water to these plants is not cost effective, as the pumps will probably not last more than 1-2 seasons, and you better be mechanically handy to remove debris from the pump impellers.