



Rainwater Frequently Asked Questions

Why use rainwater?

Rainwater harvesting systems can be as simple as using a barrel to capture water or as complex as installing a large underground cistern or storage tank. By capturing any amount of rainwater and reusing it, you can help reduce the need to use drinking water for landscape irrigation and toilet flushing.

Is it safe to use rainwater?

Yes, rainwater is safe to use for watering plants. However, it is not advised to drink rainwater since most rainwater harvesting systems do not filter and disinfect the water collected from roof tops, which may contain animal poop or tar from roof shingles.

How do I determine the size cistern or the number of barrels I need?

The size of your system depends on a number of factors: how big your roof is, how much space you have available for rainwater storage, and what you intend to use the water for. A rough rule of thumb is that you can collect 600 gallons of water for every 1,000 square feet of roof area for every inch of rain. San Francisco receives an average of 21 inches of rain per year, so for 1,000 square feet of roof that can add up to over 12,000 gallons of rainwater. See how much rainwater you can capture by using our [Rainwater Harvesting Calculator](#).

How much water can I save using rainwater?

Water savings vary depending on the size of your rainwater harvesting system and annual rainfall.

What happens when my rain barrel overflows?

Overflow water should be directed to a drain or suitable rain garden that can absorb water onsite at an appropriate rate. Overflow must be directed away from your home or neighboring properties.

Do I need a permit?

For rain barrels and cisterns, a permit is required if you need to disconnect a downspout that is currently connected to the sewer system. However, a permit is not required if you install a diverter kit that diverts rainwater into a rain barrel or cistern and, when full, flows back into the downspout and into the sewer system.

Additionally for cisterns, if your downspout is disconnected from the sewer system you do not need a permit from DBI as long as your cistern meets the following requirements:

- Cistern capacity is less than 5,000 gallons
- Height to width ratio is less than 2-to-1
- Captured rainwater is only used for non-spray irrigation
- Cistern is supported directly on grade
- Rainwater system does not require power or a makeup water supply connection

For rainwater harvesting projects that require a permit from DBI, the SFPUC offers a rebate up to \$225 toward the cost of your permit fee. Visit www.sfwater.org/rainwater for more information.

What extra steps do I need to take if I want to use rainwater for toilet flushing?

Indoor use of rainwater requires a permit from the DBI. For more information on indoor systems, please visit DBI's website at www.sfdbi.org or call 415.558.6570.

How long can I hold rainwater in my barrel or cistern?

As long as your rainwater harvesting system is opaque (of such color and thickness that sunlight cannot penetrate the barrel), shaded, and screened, and you use the water only for non-potable purposes, there is no strict limit on how long the water can sit in your system. Be sure to inspect your system often and clean it as needed. You can clean your system annually with a non-toxic cleaner such as vinegar. If you intend to water edibles with your rainwater, you must install a first flush diverter.

What is a first-flush diverter?

It's a device that diverts the first, most polluted flow of rainwater away from your rain barrel.

Will my rainwater system run out of water during the dry months?

It depends on the size of your system. If you have enough space to accommodate a large cistern and your water needs are low, your catchment system could hold rainwater for all your summer needs. If you are using a small rainwater harvesting system, the rainwater will run out quickly. Anecdotally, a local SF rain harvester has reported capturing 60 gallons of water from a summer's worth of fog and condensation from her roof!

How much maintenance is required for a rainwater harvesting system?

Rain barrels and cisterns do not require much maintenance once they are installed. Here are simple steps to ensure your rainwater harvesting system functions as its best:

- Inspect catchment area every six months to remove debris, algae growth, or any other obstruction from the surface.
- Before and after the rain season (typically Oct-Apr), ensure downspouts are clear, and clean roof gutters, screens, overflow outlets, and filters on your barrel to prevent clogging.
- Once a year, flush out any debris or buildup that may have accumulated on the bottom of the cistern. For tough buildup, you may scrub the bottom using vinegar or another non-toxic cleaner.
- Maintain clear access to the cistern and outlets for regular maintenance.
- Repair leaks or holes immediately.

Where can I get more information on the code requirements for installing a rainwater harvesting system?

Full code requirements can be found in Chapter 17 of the 2013 California Plumbing Code.

Where can I take a course or learn more about rainwater capture and use?

The SFPUC sponsors free workshops which are held at the Garden for the Environment, a half-acre organic community garden located at the corner of [Lawton Street and 7th Avenue](#). For a list of upcoming workshops, please visit www.gardenfortheenvironment.com.

Other resources include:

- American Rainwater Catchment Systems Association: www.arcsa.org
- Greywater Action: www.greywateraction.org
- Rainwater Harvesting for Drylands and Beyond, Volumes 1 and 2. Brad Lancaster, 2008 edition. www.harvestingrainwater.com
- WhollyH2O: www.whollyh2o.org
- NSF-certified rainwater harvesting products: <http://www.nsf.org/consumer-resources/green-living/rainwater-collection/>