

# RAIN BARRELS AND CISTERNS

## Fact Sheet SDM-7

Also known as: Rainwater Harvesting, and Rainwater Collection

### DESCRIPTION

Rainwater harvesting is the practice of collecting, conveying, and storing rainfall for future indoor and outdoor use such as landscape irrigation, toilet flushing, and vehicle washing. The purpose of this harvesting is to collect high quality runoff to offset potable water demands while simultaneously reducing storm water runoff volumes. Rooftop runoff is the storm water most often harvested for use because it typically contains lower pollutant loads than surface runoff and provides accessible locations for collection. However, runoff from other clean impervious surfaces, such as driveways, walkways, and patios, may also be harvested effectively.

Rainwater harvesting typically utilizes rain barrels or cisterns:

- Rain barrels are small containers, typically ranging from 50 to 100 gallons installed adjacent to individual downspouts to capture rainwater runoff from roofs. Rain barrels are inexpensive, easy to install and maintain, and well suited to small-scale sites.
- Cisterns are typically much larger than rain barrels, ranging from 200 gallons for small installations to 10,000 gallons or more for large facilities. They can be installed above or below ground, or even on the roof, depending upon site conditions.

The irrigation of harvested rainwater may utilize a simple gravity system for small systems or use pumps for larger systems. The pump and wet well should be automated with a rainfall sensor to provide irrigation only during periods when required infiltration rates can be realized.

### INSPECTION AND MAINTENANCE REQUIREMENTS

A maintenance plan shall be provided with the SWQP. The maintenance plan shall include recommended maintenance practices, state the parties responsible for maintenance and upkeep, specify the funding source for ongoing maintenance, and provide a site specific inspection checklist. Maintenance requirements for rainwater harvesting systems vary according to use. At a minimum, maintenance shall include the following:

- Perform regular inspections every six months during the spring and fall seasons for the following:
  - o Confirm that all the parts, pumps, and valves are operable and not leaking;
  - o Keep leaf screens, roof gutters, and downspouts free of leaves and other debris;
  - o Check screens and patch holes or gaps;
  - o Clean and maintain first flush diverters and filters, especially those on drip irrigation systems;
  - o Inspect and clean storage tank lids, paying special attention to vents and screens on inflow and outflow spigots; and
  - o Replace damaged system components as needed.
- Clean tanks annually with a non-toxic cleaner, such as vinegar and dispose of wash water in a sink, bathtub or sewer cleanout.
- Flush cisterns annually to remove sediment. For buried structures, vacuum removal of sediments is required.
- Test all backflow prevention assemblies for proper function annually.
- Regular use of the water stored in systems between rain events is critical to ensure that storage is available for the next storm event.

If applicable, contact the proprietary product manufacturer for specific maintenance requirements.



Source: EPA

# RAIN BARRELS AND CISTERNS

---

## Fact Sheet SDM-7

### REFERENCES

California Storm water Quality Association (CASQA). 2003. California Storm Water BMP Handbook – New Development and Redevelopment. BMP Factsheet TC-12: Retention/Irrigation. Available online at: <https://www.casqa.org/sites/default/files/BMPHandbooks/>

Low Impact Development Center, Inc. 2010. Low Impact Development Manual for Southern California: Technical Guidance and Site Planning Strategies. Available online at: <https://www.casqa.org/resources/lid/socal-lid-manual>

San Francisco Public Utilities Commission, et al. 2010. San Francisco Storm Water Design Guidelines. Appendix A, Storm water BMP Fact Sheets. Available online at: <http://www.sfwater.org/Modules/ShowDocument.aspx?documentID=2779>

Santa Clara Valley Urban Runoff Pollution Prevention Program. 2012. Rain Barrels and Cisterns, Storm Water Control for Small Projects. Available online at: [http://www.scvurppp-w2k.com/pdfs/1213/BASMAA\\_Rain\\_Barrel\\_Fact\\_Sheet\\_082312\\_APPROVED\\_online\\_ver.pdf](http://www.scvurppp-w2k.com/pdfs/1213/BASMAA_Rain_Barrel_Fact_Sheet_082312_APPROVED_online_ver.pdf)