

FACT SHEET- RAINWATER HARVESTING

Universal BMP

RAINWATER HARVESTING

Also known as: Rain Barrel, Cistern, and Rainwater Collection



DESCRIPTION

Rainwater harvesting is the practice of collecting and using rainwater from impervious surfaces such as roofs and patios. Rain barrels, or cisterns, are containers or tanks that are typically designed to capture rainwater runoff for irrigation. Rain barrels are inexpensive, easy to install and maintain, and well suited for small-scale residential sites. Cisterns are larger and can be installed above or below ground depending upon design requirements and site conditions.

ADVANTAGES

- Can provide volume capture if collected water is used for irrigation or allowed to infiltrate.
- Attenuates peak flow and provides hydromodification benefits.
- Can be used as part of a treatment train with other BMPs.
- Low maintenance requirements (for above ground installations).
- Good for sites where infiltration is limited.
- Provides another source for irrigation water.

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- Prioritized as a “Universal LID feature.”

LIMITATIONS

- Limited storage capacity.
- Does not provide water quality treatment.
- May require infrastructure (pumps or valves) to use stored water.
- Inadequate maintenance can result in mosquito breeding and/or algae production.
- May require building permits. Contact the governing agency for requirements.

KEY DESIGN FEATURES

- Roof surfaces and downspouts shall not include copper or materials treated with fungicides or herbicides.
- Gutters, if present, must be fully screened and installed at continuous grade.
- Storage containers, tank liners, and tank coatings must be listed as food grade, or be approved for potable water storage.
- Containers must be opaque, water tight, vented, completely covered and screened.
- Screen all openings.
- For above-ground systems, spigot and/or hose bib for drawing water must be at least 2 inches from the bottom and must be labeled “NONPOTABLE”.
- Overflow device must be equal in size to the total of all inlets and must lead to an approved discharge location with approved air gap.
- First flush diverter must be automatic self-draining with a clean out.
- Safety labels (non-potable, vector hazard, drowning hazard icons) should be included as applicable.
- Outdoor spigots must have an atmospheric vacuum breaker attached.
- Prior to installation, roofs must be cleaned, and downspouts disconnected from the storm drain system.
- All municipal water service lines to facilities with rainwater harvesting systems require the installation of an approved backflow prevention device. This condition may be met if the backflow prevention was installed as part of the fire sprinkler system.
- Not permitted within the front yard setback.
- Tanks up to 8 feet in height are permitted within the rear and side yard setbacks.
- Tanks in excess of 8 feet in height, shall be subject to the same setbacks as a detached residential accessory structure.
- Both rain barrels and above-ground cisterns must be sited in a stable, flat area. Rain barrels and cisterns may not block the path of travel for fire safety access.



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- Overflow locations, such as rain gardens, swales, or the downstream storm drain system, must be designed to both direct outflow away from building foundations and prevent nuisance flows to adjacent properties.
- Overflow may not discharge water across a public right-of-way.
- Regular use of the water stored in systems between rain events is critical to ensure that storage is available for the next storm event.

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SIZING DESIGN GOALS AND REQUIREMENTS

- ***For projects that increase the amount of impervious surface, but create or replace less than a total of one acre:*** The **Delta Volume Capture** component requires that any increase in volume due to development for the water quality design storm must be infiltrated and/or reused on site. Further discussion of the Treatment and Delta Volume Capture requirements and the accompanying formulas can be found in Chapter 6.
- ***For projects that create or replace one acre or more of impervious surface:*** These larger projects must mitigate their impacts by meeting the **Hydromodification Requirement** by capturing 100% of the post development volume generated by the water quality rain event.
- All calculations shall be completed using the “Storm Water Calculator” available at www.srcity.org/stormwaterLID.

INSPECTION AND MAINTENANCE REQUIREMENTS

A maintenance plan shall be provided with the Final SWLID Submittal. The maintenance plan shall include recommended maintenance practices, state the parties responsible for maintenance and upkeep, specify the funding source for ongoing maintenance with provisions for full replacement when necessary and provide site specific inspection checklist. At a minimum maintenance shall include the following:

- Inspect twice annually to confirm that all the parts are operable and not leaking.
- Debris and clear all screens to prevent mosquitoes and other vectors from breeding.
- Test all backflow prevention assemblies annually by the system owner using an approved certified tester.
- Regular use of the water stored in systems between rain events is critical to ensure that storage is available for the next storm event.
- Clear roof gutter screens and first flush diverters.