

Harvesting
rainwater
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Rainwater is a precious resource, vital to sustaining life, and people have been collecting rainwater throughout history. Yet in the modern built environment, it is typically piped off-site. Rainwater harvesting is a strategy of capturing rain, storing it over time, and re-using it on-site. Rainwater systems can be as simple as putting rain barrels under gutter downspouts, or as complex as constructing an under ground cistern and water pump system. You can include rainwater harvesting in the design for a new building or incorporate it into an existing building. Rainwater can be used for irrigation, indoor non-potable purposes such as washing clothes and flushing toilets, and, if properly designed, drinking water.



The WaterShed, © Blue Rhino Studios

Why Harvest Rainwater?

Even in a climate like Eugene's with an apparent abundance of water, there are several benefits to rainwater harvesting. Rain picks up pollutants from roofs and pavement and carries it into storm drains and eventually into our streams. Re-directing rain from rooftops to a collection system for later use on-site decreases the volume and rate of storm water runoff and associated water pollution, flooding and erosion. If used for irrigation, it can recharge groundwater.

Rainwater harvesting also reduces the amount of water taken from the McKenzie Watershed that is then treated and pumped to your home for uses that don't require treated drinking water, such as irrigation and flushing toilets. Rainwater harvesting also conserves energy: water from a centralized municipal system must be pumped throughout a vast service area before it can be piped to your house, which requires a significant amount of energy. Rain is a naturally soft water and does not contain harmful minerals, chlorine, and other chemicals. For this reason, plants respond very well to rainwater. And once you have your system set up, it's free!



Cistern at a house, © Habitats, Inc.

Things to Consider

Proper design is key to rainwater harvesting systems. You should consider Eugene's dry summer climate, your intended uses for rainwater, and your site capacity for collecting rainwater before investing in a rainwater system. You should design your system to specifically address the quality and quantity of water needed for your intended uses, and protect the public water supply from potential contamination originating in your rainwater harvesting system. Finally, regular maintenance is crucial to success.

Waste Prevention & Green Building



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Rain Barrels, Cisterns & Irrigation

Rain barrels are containers that divert and collect rain water. Water captured in rain barrels is typically used for irrigation. Eugene gets about 49 inches of rainfall annually and typically we receive about 90% of that rainfall from October to May – a time of year when we don't need extra water to water our gardens or lawns. A standard-sized (50-gallon) rain barrel will likely not be large enough to meet your outdoor watering needs throughout the summer, unless those needs are minimal.

Because of the seasonal rainfall pattern, and their limited storage capacity, individual rain barrels are not the most effective water conservation or stormwater capture method for our region. However, multiple barrels can be connected to increase capacity, and rain barrels coupled with other water conservation measures such as drip-irrigation and drought tolerant plantings can reduce your municipal water consumption.

Better yet, to significantly reduce your use of potable water, use larger containers like **cisterns**. Cisterns are larger and more permanent than rain barrels, ranging in size from 100 to 10,000 gallons, and can be placed above-ground, underground or on a reinforced roof.

Other strategies to intercept rainwater to replenish natural systems include rain gardens, planter boxes, permeable pavers and green roofs.



Cistern lid, © Habitats, Inc.

Permits and Regulations

Small residential rainwater harvesting systems (less than 5,000 gallons) used for outside irrigation only that do not alter the existing private stormwater system generally do not require a permit. Larger or more complex systems used for irrigation may require building permit and storm water review. Such systems should not be connected to the public water system unless backflow protection is installed. Contact the Eugene Water & Electric Board (EWEB) for more information.

To use rainwater for indoor non-potable uses, like flushing toilets and clothes washing, you'll need to apply for:

- A plumbing permit to prevent contamination of drinking water;
- An electrical permit for the pump or other electrical controls;
- Building permits for cistern or underground tank installation may be required. Grading or erosion control review may also be needed for underground tanks.

To use rainwater for drinking water, you'll need to apply for the permits described above and meet standards set by the Oregon Building Codes Division. The water must be treated to meet Federal safe drinking water standards.

Resources

A guide for rainwater harvesting is posted online at:

www.cbs.state.or.us/external/bcd/pdf/3660.pdf

There are several other resources about rainwater harvesting on the internet, including:

www.arcsa.org/resources.html

How can I get help?

Contact Public Works and Permit Information Staff at the Permit and Information Center (PIC) to get help:

- **In person:** 99 W 10th Ave. (Atrium Building) from 9 a.m. to 5 p.m. Mon – Fri
- **Voice-mail:** (541) 682-8400 (Public Works) or (541) 682-5505 (Permit Information)
- **E-mail:** cwepic@ci.eugene.or.us
- **Web:** www.eugene-or.gov/stormwater

City of Eugene Waste Prevention & Green Building Program

Promoting sustainable practices in waste prevention and the built environment