

# Cisterns for Rainwater Catchment

## What are Cisterns?

Cisterns are large storage tanks that collect rainwater from the roofs of houses, barns, businesses and schools. They only differ from rain barrels in their size, and can collect thousands of gallons of water annually. Though Western Washington receives significant annual rainfall, our summers are dry - and climate predictions indicate more prolonged seasonal droughts. Cisterns are an easy, multi-beneficial way to help protect your property and provide a free and abundant source of water for your outdoor uses.

## Benefits of Cisterns:

- Reduce mud and runoff after large rain storms, which can pollute waterways
- Easy to install
- Provide a significant amount of water for irrigation or emergency use
- Conserve water and save money on summer water bills
- Provide optimal water chemistry for plants

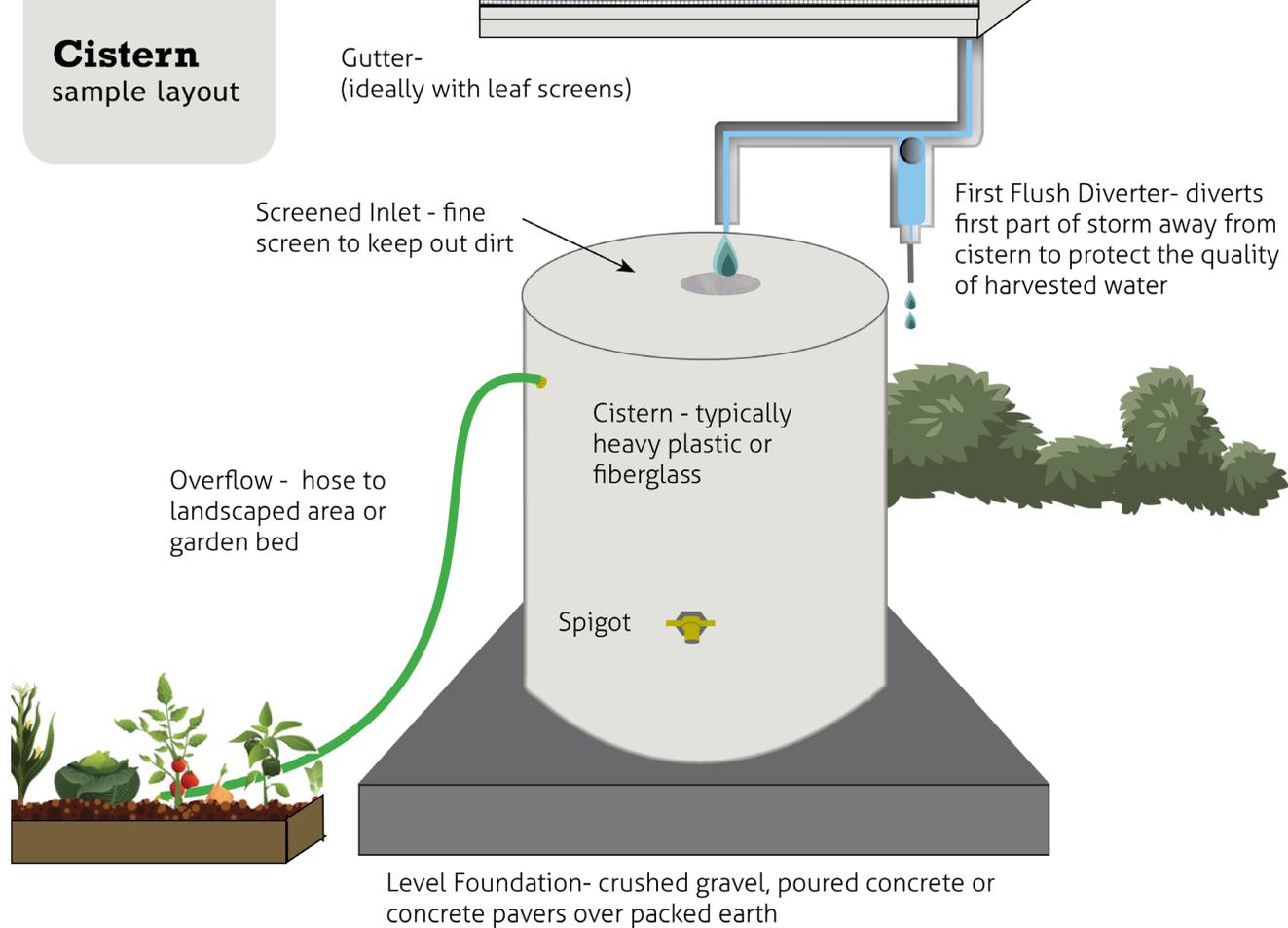
## 5 Steps to Installing a Successful System:

- 1) Look at the roofs on your property, especially those that add to mud or ponding issues. Well-functioning gutters are necessary for an effective rain catchment system. Ensure your preferred location can hold a stable base for your cistern (use crushed gravel, concrete, or cement blocks).
- 2) Consider the distance from the cistern to the end-use area - such as a garden or animal trough. Slight downhill slopes are ideal for gravity flow. For gardens that are uphill or far away, a pump will be needed.
- 3) In Western Washington, the size of your cistern will most likely be limited by cost - not the amount of rainfall. For example, the rain from an average residential roof during one storm would fill a 650 gallon cistern.
- 4) Overflow valves are essential, and excess water should be directed away from any building foundations to other parts of the landscape that can safely absorb water.
- 5) For normal household or farm outdoor use, a permit is not required. For large or complex systems, such as those that filter the water for indoor uses like toilets - check with your local Health District or Planning Department for guidance.



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## Cistern sample layout



## Buying your Cistern

After thinking about these aspects of your system, it's time to look for the right cistern for your site. There are many different designs as well as varying prices. Local hardware, farm and garden stores often have cisterns in stock, or can order them for you. An array of choices are also available from online sources. Be sure to consider the cost of delivery, as well as other parts like base materials, pumps and fittings that you may need.

## Maintaining your Cistern

- When the cisterns are empty, clean the inside walls once a year with a power washer to eliminate any algae build-up.
- Install a 'first flush' diverter to prevent the majority of bird droppings and roof sediment from entering the cistern. This means less maintenance for you and higher quality water.
- Ensure that the inlet screen is free of leaves and debris, and that your gutters flow freely.
- Monitor your cistern during prolonged freezing temperatures. Disconnect any hoses and pumps. For most cisterns, freezing may occur on the top water surface, but will not affect the full tank.

## Frequently Asked Questions

*Can humans safely consume collected rainwater?*

No.

*Can livestock or wildlife safely drink water from a cistern?*

Yes, especially when first flush and other maintenance techniques are used. In-line filters are also available for extra precaution.

*Is my collected rainwater safe for edible plants?*

Yes. Studies have shown that negligible levels of pollutants are absorbed by plants irrigated from typical roofs (with the exception of copper and treated wood shake). If you are concerned, do not directly water leaves or root vegetables with stored water. Fruit trees, berry bushes, tomatoes, pumpkins and similar crops are all very safe to irrigate in this way.

## Questions?

If you have any questions, consult the expertise of a professional, or contact the Community Conservation Team at the Snohomish Conservation District at 425-335-5634 or [ccteam@snohomishcd.org](mailto:ccteam@snohomishcd.org).

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