

In order to provide rainwater collection as a realistic option, there was an attempt to make them as small as possible while still providing satisfactory performance as a part of an overall stormwater design. The main idea of the cistern design we have included is that it is manually operated as a detention vault during storm events, then drained during drier weather. From the sizing table, a 500 sq. ft. area would require a 1,100 gallon cistern.

During a 2 inch storm event the cistern would receive about 700 gallons of water, becoming about 2/3 full. During the next dry period it would be drained through the 1/2 spigot which would drain the tank in a slow and controlled manner. As long as the owner operates the cistern correctly, the BMP is effective. If the owner leaves the spigot open it still will slow the water down filling the cistern to some extent depending on the intensity, but then draining during and after the storm event. Only a neglected cistern would have no stormwater benefit, as all the stormwater would overflow upon collection. The design table is designed for about one 3 inch storm event.

Clearly training is important for owners for optimum operation, I'm not sure if this should be done in the manual. If the project is engineered, a clear design and operation sheet would provide this. Remember engineering is recommended for all cistern systems and is required for cistern systems over 2,200 gallons. If the county wants, they can require engineering on all cisterns or have the engineering threshold lower than 2,200 gals.

One of the major benefits of cisterns is rainwater use. By keeping the spigot shut and filling up the tank, water is stored for irrigation during drier periods. This is really only useful in the Spring, and maybe early summer.

The section on cisterns is problematic. Legal and technical issues are not easily answered, but cisterns are in the Puget Sound Action Teams LID Manual and are not being subject to water rights enforcement to my knowledge, call the Dept. Of Ecology for details. I hope this helps answer the questions you have.

Best,

Peter Landry, P.E.,L.G.  
KCD