

Environmental Health Services Division

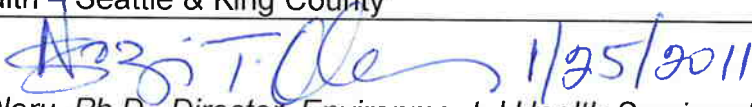
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**King County
Department Policies and Procedures****General Department Policies & Procedures**

Title:	Document Code No. <i>Product/Method #10-004</i> <i>(Replaces #07-001)</i>
Rainwater Harvesting and Connection to Plumbing Fixtures	Effective Date: <i>January 25, 2011</i>
Department/Issuing Agency Public Health – Seattle & King County	
Approved:  <i>1/25/2011</i>	
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1.0 Purpose.

1.1 The purpose of this policy is to facilitate conservation of valuable water resources by accommodating the use of harvested rainwater to supply certain types of plumbing fixtures in structures while maintaining the standards for adequate public health protection against the hazards posed by the improper use or application of reclaimed rainwater.

1.2 This policy does not apply to non-pressurized rainwater harvesting systems of any size where all tanks and equipment are located wholly outside of any structure except a sun barrier and the harvested rainwater is used only for landscape irrigation.

2.0 Authority.

2.1 Revised Code of Washington (RCW) Chapter 70.05, Local Health Departments, Boards, Officers-Regulations.

2.2 Uniform Plumbing Code as adopted and amended by the State of Washington, and where applicable, by the City of Seattle and King County.

3.0 Overview.

3.1 A rainwater harvesting system begins at the point of collection and terminates as waste after the water collected has been used in plumbing fixtures including domestic clothes washers, industrial applications, water features, or irrigation. When used for irrigation, harvested rainwater may infiltrate into the soil rather than end in the wastewater collection system. The parts of the collection and distribution system include:

3.1.1 The roof surface or other approved impervious surface

3.1.2 Gutters and downspouts

3.1.3 The cistern(s)

3.1.4 A pump(s)

3.1.5 The piping system

4.0 Scope.

4.1 This policy applies to systems intended to capture and store rainwater from roof surfaces for supply to plumbing fixtures. Systems that supply untreated rainwater to serve non-potable fixtures may be used in both residential and non-residential occupancies. Systems that treat rainwater for potable use may be used only in detached single-family dwellings or in a townhouse provided that the rainwater system captures only rainwater from one unit and is connected only to the plumbing of the same unit. A rainwater harvest system used for potable water supply purposes may be supplemental to another approved water supply source, but not as a primary source of supply for the purposes of compliance with RCW 19.27.097.

5.0 General provisions.

5.1 Commercial applications for rainwater harvesting are unique for each application. For this reason, each rainwater harvesting system proposed for use in structures other than single family residences must be engineered and site specific, except where it can be demonstrated that the extent of the system does not exceed the parameters of a typical single family residential application and the requirement for

the system to be designed by an engineer has been waived by the authority having jurisdiction.

5.2 Rainwater systems shall be subject to plan review and applicable fees through the building and plumbing permit processes of the authority having jurisdiction. Said plans shall include details and calculations of the entire rainwater harvesting system from the point of capture to the supply at the fixture or outlet.

5.3 All components of the system unless specifically addressed herein shall meet all applicable provisions of the Plumbing Code.

5.4 To ensure proper system installation, the Plumbing Code, this guide, and any applicable manufacturer's installation instructions must be followed.

5.5 Engineered systems shall be installed in accordance with plans and specifications prepared by the engineer of record, or by the designer where the design does not require an engineer per Section 5.1.

5.6 Harvested rainwater that is not treated to potable standards may only be used for water closets, urinals, hose bibs, industrial applications, domestic clothes washing, irrigation and water features. Other usages may be allowed when first approved by the authority having jurisdiction.

5.7 Rainwater shall only be harvested from roof surfaces. Rainwater shall not be harvested from the following locations:

5.7.1 Any vehicular or pedestrian area

5.7.2 Surface water runoff; or

5.7.3 Any bodies of standing water.

5.7.4 Other non-roof areas except where first approved and subject to engineered design.

6.0 Permits.

6.1 Rainwater harvesting systems shall require a *water reuse* permit in addition to any plumbing permits required for installation of fixtures or piping that is not part of the rainwater harvesting system as described in Section 3.0. The water reuse permit shall include the system itself and all outlets being served by the system. The following permits may be required for the installation of a rainwater harvesting system:

6.1.1 An electrical permit for the pump or other electrical controls.

6.1.2 Building permits for cistern footings, foundations, enclosures and roof structures.

6.1.3 Grading permits, +/- erosion control, may be necessary for underground tanks.

6.1.4 A critical areas determination may be required.

7.0 Zoning requirements.

7.1 Rainwater harvesting systems must comply with applicable provisions of the local planning and zoning regulations including design review requirements.

8.0 Application.

8.1 The following information must be provided with each plumbing permit application involving a rainwater harvesting system:

8.1.1 Site or plot plan, including elevations.

8.1.2 Isometric drawing of rainwater harvesting system (including piping and section diagrams) and domestic potable water systems, including sizing and dimensions.

8.1.3 Specifications and manufacturer's installation instructions for:

8.1.3.1 Cistern(s).

8.1.3.2 Pump(s).

8.1.3.3 Filtration and/or disinfection.

8.1.4 Rain water harvest system that are intended for potable uses must include plans prepared by a licensed professional engineer licensed to practice in Washington and who is experienced in designing drinking water systems, a Group B water system designer licensed by Public Health Seattle King County or an individual holding a valid certificate or accreditation issued by the American Rainwater Catchment System Association.

8.1.4.1 Plans for systems intended for potable purposes, in addition to items addressed in 8.1.1 through 8.1.3, must include plans and specification for filtration and disinfection sufficient to assure continuous removal or inactivation of pathogenic contaminants including parasitic organisms, bacterial and viral contaminants. In general, filtration to 2 microns and ultraviolet disinfection sized to the anticipated flow rate is deemed sufficient. Filtration and treatment must occur downstream of the primary storage system.

8.1.4.2 Plans for systems intended for potable purposes must include documents recorded with the property title that indicate that the water supply:

- Receives a portion of its supply from harvested rainwater;
- Continuous treatment is required in order to assure that the water supply remains potable;
- Manufacturers requirements for equipment maintenance must be followed;
- Back flow devices/cross connection control measures must be inspected and reported to the authority having jurisdiction on an annual basis;

8.2 Installations, including but not limited to the following systems, may require structural engineering and are subject to permit, review and inspection by the building department:

8.2.1 Cisterns which are located on or within a building structure or platform.

8.2.2 Cisterns which are located on sloping sites.

8.3 Information in addition to that listed above may be necessary in some instances. The size and complexity of the building, site and system will determine the necessity for additional information.

9.0 System maintenance.

9.1 Rainwater harvesting systems shall be maintained in functioning order for the life of the system. It is the property owner's responsibility to maintain the system until the system is abandoned as prescribed in Section 1632.0 of the plumbing code. Permits and inspections for system abandonment shall be required as outlined in the plumbing code.

9.2 Future modifications to the rainwater harvesting system shall be in accordance with these guidelines.