



*Salmon Protection And Watershed Network
& Marin Municipal Water District's
"10, 000 Rain Gardens Project"*
www.SpawnUSA.org
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**MARIN MUNICIPAL
WATER DISTRICT**

A Primer on Safety and Legal Considerations for Rainwater Harvesting in the MMWD service area

Purpose of this Guide:

This guide is developed for educational purposes only, not as a definitive source on the installation of rainwater harvesting systems. SPAWN and MMWD strongly recommend that each property owner and/or owner builder consult with his/her local building department to ensure compliance with all local and state regulations regarding installation these systems. It is the responsibility of the property owner to know and follow all applicable state and local laws, codes, and regulations for their jurisdiction, and to hire licensed, bonded, and insured professionals when necessary to carry out tasks beyond the scope of what an owner-builder is willing or able to do on his or her own.

An owner-builder is a property owner who builds his or her own system. An owner-builder is allowed to perform the majority of work on a rainwater harvesting system, though certain circumstances will require professional engineering or contractor services to ensure proper design and construction, and secure permits, if applicable. Renters should check with their landlord before beginning any work.

Marin County is earthquake territory with areas of steep terrain, unstable ground, susceptibility to flooding and fire, and urban development. While a building permit is not required in every instance, proper precautions in designing and installing a rainwater harvesting system must be taken to ensure the health and safety of the community. Designs should be carefully conceived with adequate information about local conditions, regulations, and specific system location.

Building Permits

Set Back requirements vary by jurisdiction and specific property zoning. The owner-builder should check with the local building department for applicable criteria.

An owner-builder can do most site preparation without an engineer or contractor, but some conditions may require hiring one or consulting with a geologist, or professional engineer. For example, any concrete pads, retaining systems, or seismic stability strapping will generally require professional design and permitting.

Tank Management & Cautions

All tanks must be able to be drained for routine maintenance and inspection. An overflow pipe that is equal to or larger than the inflow pipe must be included in all systems, and this overflow should be treated as a resource. Tank overflow is considered stormwater, and must be managed to local stormwater discharge regulations as applicable. Access lids shall be secured as required by applicable building and safety codes, and a sign shall be placed on all tanks with language similar to: "DANGER: Confined Space, Do Not Enter." Additional signage denoting "Non-Potable Water - Do Not Drink" shall be placed at all spigots and outflows, and piping shall be labeled appropriately along the length to avoid any future confusion. Tanks must have adequate venting.

All piping should be designed to withstand tank settling and seismic activity. Flex Connectors are available from retailers, or multiple elbows can be used to provide flexibility.

Earthworks Cautions

Earthwork applications designed to enhance water infiltration, such as rain gardens, infiltration basins, and swales, should be located at least 10 feet away from building foundations. Ensuring an adequate slope of at least 1% away from buildings will provide further protection. Infiltrating rainwater into or near any septic tank and/or leach field should be avoided.

Standing Water

To avoid providing mosquito habitat, soils with adequate percolation are required to ensure that water does not remain standing on the surface for more than 24 hours. Gutters and tanks should have proper screening to prevent mosquitoes and other living things or debris from gaining entry.

Before Digging

Always check for underground utility lines before digging. A free utility locating service from USA North is available by calling 811 or 800-227-2600 a few days before any digging occurs.

If rainwater piping is to be buried, a safe distance must be maintained from existing utility lines, usually 18 inches. Pipes should be buried a sufficient depth, usually 12-18 inches, to avoid accidental puncturing from future digging, and should be placed on a bed of sand or similar material to minimize impacts of settling or potential punctures.

Underground tanks must be rated to meet the soil loads of a given site and require ballasting designed to prevent the tank from popping up. This type of system requires an engineer, architect, or contractor as well as applicable permits.

Plumbing Permits

A plumbing permit and/or licensed plumbing contractor may be required for systems used to supply indoor water uses, even if non-potable. SPAWN and MMWD strongly recommend consulting with your local building department before commencing construction of a rainwater harvesting system.

Cross-Connections

A cross-connection refers to an actual or potential connection between a potable and non-potable system, and poses a serious potential health and safety risk. MMWD is requiring all rainwater harvesting systems that involve tanks or barrels to install a backflow prevention device at the water main. Backflow prevention devices must be installed by a licensed professional, and require annual inspection and testing. Please consult the MMWD Backflow Prevention website: www.marinwater.org/controller?action=menuclick&id=522 or contact MMWD at (415) 945-1571, (415) 945-1559 or backflow@marinwater.org for more information.

Disclaimer

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In no event will SPAWN or MMWD be liable for any loss or damage including without limitation, indirect or consequential loss or damage, or any loss or damage whatsoever arising from loss of data or profits arising out of, or in connection with, the use of this guideline.

For Further Information

For a more extensive overview of Rainwater Harvesting Guidelines, please visit the American Rainwater Catchment Systems Association (ARCSA) website www.arcsa.org, and click on *October 2009: Updated Draft of RWH Guidelines*.