

# Seven Techniques for Capturing Rainwater on Your Property



*In RainReady<sup>SM</sup> communities, better water management means that homes, schools, and businesses are prepared for rain—whether too much or too little. RainReady programs keep residences secure and dry, services running, and rivers and lakes clean.*

There are many actions that you can take as a homeowner to manage water more effectively on your property. The seven improvements outlined in this factsheet can reduce the chance of flooding, protect your building's foundation, and reduce runoff that contributes to pollution. They will also conserve water resources, attract wildlife, and beautify your property.

Before making improvements to your yard, you'll need to understand how water currently moves or collects on your property. You can then use this information to help determine an effective and affordable suite of improvements. By creating a more RainReady property, you are protecting yourself and helping your community at the same time.

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## THE PROBLEMS

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There may be several water management issues you are seeking to address:

**TOO MUCH WATER:** Conventional lawns and paved surfaces have a limited ability to absorb water, so they are inadequate for draining water during major rain events. Excess water can flood your building, submerge your yard, or pool against your foundation and cause serious structural problems. Excess water can also flood the properties of your neighbors, or it can become runoff that delivers pollutants from your property to nearby bodies of water.

**TOO LITTLE WATER:** In times of water shortage, dry soil around your home can cause foundation cracking and instability, and it can even cause sinkholes to develop on your property. Because lawns have limited capacity for absorbing water, they need to be continually watered and thus contribute to the depletion of scarce freshwater resources in your region.

**POLLUTED WATER:** As rainwater runs off your yard onto nearby streets and sidewalks, it picks up pollutants such as gasoline, oil, road salt, fertilizer, commercial and industrial waste, and other debris. Instead of filtering into the soil, the polluted water flows into nearby bodies of water, overloaded storm sewers, or developed properties.



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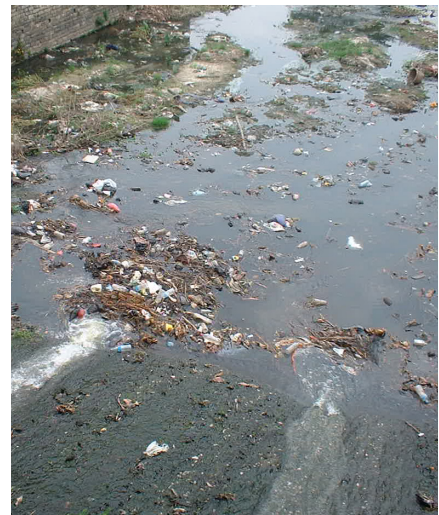


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## THE SOLUTIONS

Yard improvements in your community can reduce these problems by slowing the flow of stormwater, filtering out pollutants, and allowing water to percolate into the soil below. We've outlined seven approaches that you and your neighbors can use to capture rainwater in your yards. These improvements will be most effective if they are coordinated carefully with one another. To accomplish this at a neighborhood scale, encourage your municipality to set up a grant program and Rain Fund. See our corresponding factsheets for further information.

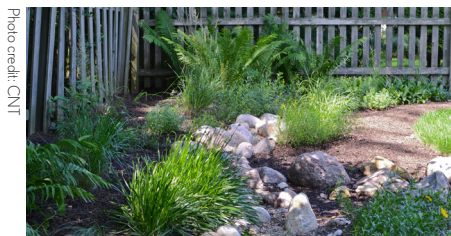


Photo credit: CNT

**RAIN GARDEN:** This is a shallow, heavily vegetated basin that captures stormwater with highly absorbent soil (such as compost) that filters out chemicals, heavy metals, and sediments. Rain gardens should be planted with native, deep-rooted plants, since these allow for easier infiltration of treated water into the soil, require less irrigation, offer greater resilience to drought, and provide a suitable habitat for local wildlife. Property owners can build rain gardens on their own or enlist the help of a specialist.



Photo credit: deech, Flickr Commons

**SWALE:** This is a vegetated, shallowly sloped channel that slows and treats stormwater runoff on your property. Like a rain garden, a swale contains soils and plants that filter pollutants from the stormwater it captures, have minimal watering requirements, and attract local wildlife. Unlike a rain garden, a swale's primary function is to slow and treat water as it continues to flow to an existing stream, rain garden, infiltration drain, or dry well. Be mindful of the water's destination, as you don't want to create new problems for yourself or your neighbors.



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**FRENCH DRAIN:** This is a slightly sloped underground trench that is filled with rocks or gravel in order to move rainwater away from a building. Modern French drains are often laid with a perforated pipe near the bottom in order to maximize how fast they can convey water. The rocks or gravel can reach the surface and simply appear as a landscaping element, or they can be covered with a highly permeable layer of soil and vegetation. French drains can lead to a dry well, rain garden, stream, or other area.



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**DRY WELL:** This is an underground chamber that can hold both rainwater and groundwater while they dissipate into the soil. A dry well can receive water from a grass lawn, swale, rain garden, or other areas through a surface drain. It can also receive water from a sump pump, foundation drain, or gutter downspout through an underground pipe. A simple version of a dry well can consist of a pit filled with gravel or other debris, while a more advanced version can consist of a perforated tank that is buried and surrounded with gravel.



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**RAIN BARREL:** This is a plastic or wooden container connected to your gutter downspout that collects rainwater to be used for irrigating your property. A rain barrel keeps rainwater away from your building foundation, acts as a measure of insurance against water shortage on your property, and also conserves regional water resources. A rain barrel has an overflow port, which should either lead to a secondary barrel or channel water away from your building to a rain garden, swale, dry well, or other permeable area.

Photo credit: CNT



**PERMEABLE PAVING:** This is a type of paving system that allows water to infiltrate the soil below instead of collecting on the surface as runoff. These paving systems consist of a porous surface material—such as special pervious concrete, asphalt, or interlocking pavers—installed atop rock and sediment layers that are designed to absorb water, filter out contaminants, and let the water percolate into the soil. Permeable paving systems are frequently installed in parking lots and low-speed streets, but they are also very effective as driveways, patios, and walkways on residential properties, as they reduce how much gasoline, oil, fertilizer, pet waste, and other debris leaves your property as runoff.

Photo credit: CNT



**GREEN ROOF:** This is a building roof covered with vegetation that absorbs and treats rainwater while also offering numerous other benefits. The vegetation sits atop a set of carefully engineered layers that supports plant growth, filters out pollutants from rainwater, and waterproofs the building. Although green roofs are more expensive to install than standard roofs, they offer long-term financial and social benefits, including reduced costs for building insulation, increased urban agricultural space, improved air quality, reduced air temperatures, improved wildlife habitat, and increased property value.

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