

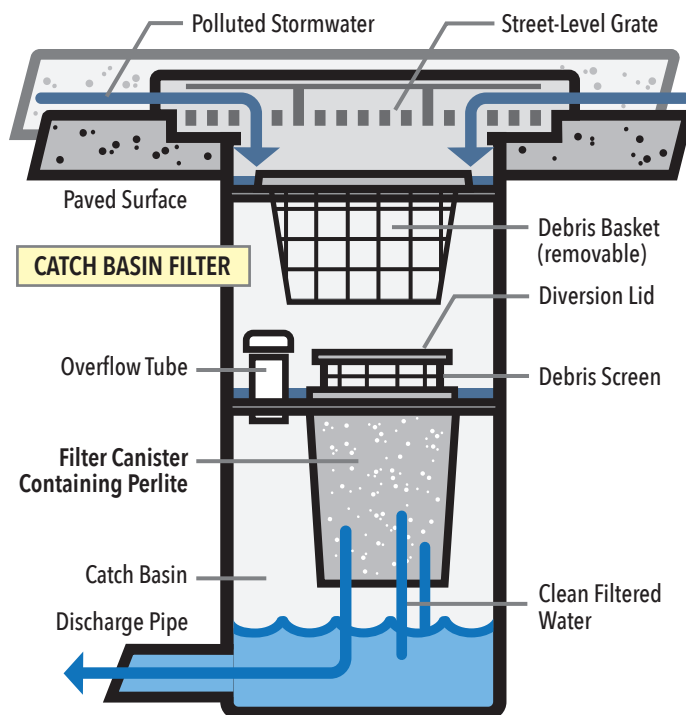
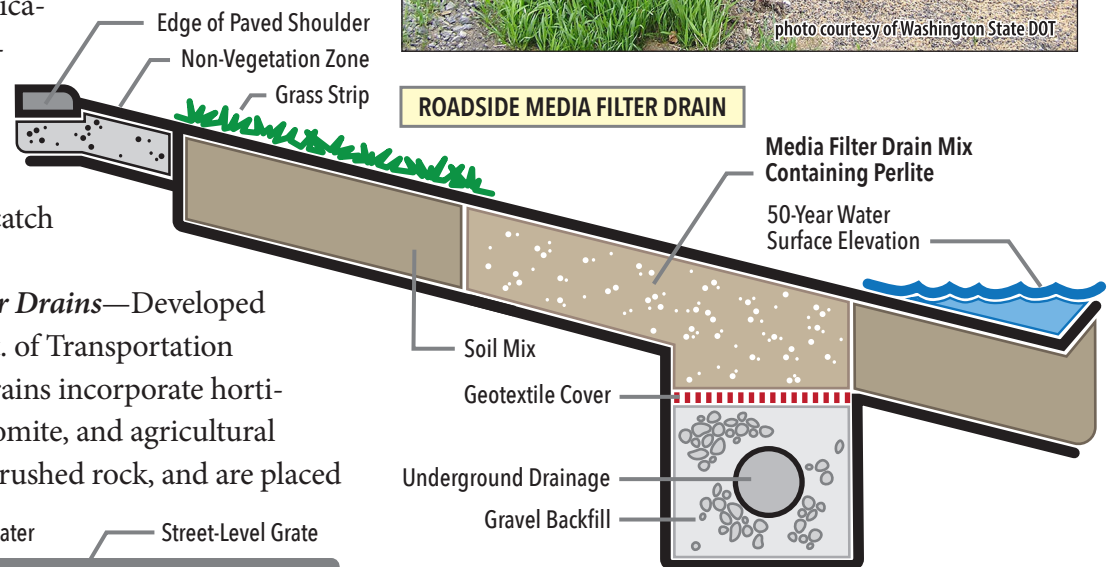
# Perlite for Water Quality Management

The physical character of expanded perlite lends itself to a variety of special purposes—including various applications in the broad category of water quality management. *For a detailed explanation of perlite expansion see info-sheet: Why Perlite Works.*

## Storm Water Filtration

Due to its high surface area, neutral pH and irregular, porous surface texture, expanded perlite is ideally suited for a variety of applications in storm water filtration; most notably as a component in media filter drain mixes, and another as an element of catch basin filter media.

**Roadside Media Filter Drains**—Developed by Washington State Dept. of Transportation (WSDOT), media filter drains incorporate horticultural grade perlite, dolomite, and agricultural gypsum held in place by crushed rock, and are placed



*Top: A roadside Media Filter Drain containing perlite and other aggregates for filtering storm water contaminants.*

*Above: Cross section of a typical roadside Media Filter Drain project, based on a design contained in the 2014 Washington State Dept of Ecology Stormwater Management Manual.*

*Left: A cross-section of a storm drain showing roadway runoff being purified before discharge by a filter canister containing perlite.*

along roadways to filter suspended solids and other pollutants from roadway runoff.

**Catch Basin Filters**—Various filtration media—including expanded perlite—are used to remove contaminants from storm water runoff passing through catch basins before being released to local sewer systems and waterways.

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## Rainwater Surge Reduction & Green Roofs

Horticultural perlite is used as a light weight constituent of soil mixes that make up vegetated roofs. Among the benefits of these roof-top gardens, is the ability to temporarily hold and slow the surge of rainwater encountered during heavy or prolonged rain events. Many municipalities offer credits or other incentives to developers when eco-roofs are incorporated into new building designs. Also see info-sheets: *Gardens in the Sky* and *Gently on the Roof*.

*Roof-top gardens designed with lightweight perlite growing media, reduce the rate of discharge to catch basins and sewers, improving turbidity levels overall in local streams and rivers.*

## Soil Stabilization and Liquid Waste Solidification

Tests have shown that the porous structure of fine grades of expanded perlite allows it to absorb up to 8 times its weight in water. This ability underlies its use to stabilize highly saturated soils, water from well drilling services, and other hazardous, liquid wastes. Also see info-sheet: *Perlite as a Sludge Absorbent*.

## Filtration

Perlite's role in filtration of liquids is well documented (and described in detail elsewhere on [perlite.org](http://perlite.org)). It plays an important role in municipal and industrial water treatment systems where it is used in conjunction with a rotary vacuum drum filter to remove solids and other contaminants from polluted waste water.

*Left: Industrial laundry services use a rotary vacuum drum filter coated with perlite filter aid to strain and recycle waste water.*



photo courtesy of Supreme Perlite Co.