Trees Tame Stormwater

RAIN REFRESHES THE LAND AND NOURISHES THE GREEN LANDSCAPE. But as houses, stores, schools, roads and parking lots spread and natural tree cover is lost, so is the absorbing effect of vegetation and soil. The welcome rain becomes costly stormwater runoff. Without the benefit of trees and vegetated infrastructure, waterways are polluted as oils, heavy metal particles and other harmful substances are washed away. Fish and wildlife suffer, drinking water becomes expensive or impossible to reclaim, property values are reduced, and our living environment is degraded.

Trees make a difference and every tree matters. It's never too late for municipalities, homeowners, businesses, and schools to plant abundant trees to retain more water on site, enhance percolation into the soil, reduce the expense of pipes and treatment plants, and protect environmental quality. For more information, including an interactive version of these pages, please visit **arborday.org/stormwater.**

Few Trees

1 Treeless Parking Lots are unsightly, add to stormwater runoff and are a source of heat that is not only uncomfortable but increases air pollution.

2 Treeless Streets deprive the community of social benefits and ecological services. Following storms, water rushes along the street sides.

3 Asphalt Playgrounds are unnatural places for children to play, contributing to a disconnect with nature. The solid surface also prevents rain from slowly re-charging groundwater, instead adding extra volume to runoff.

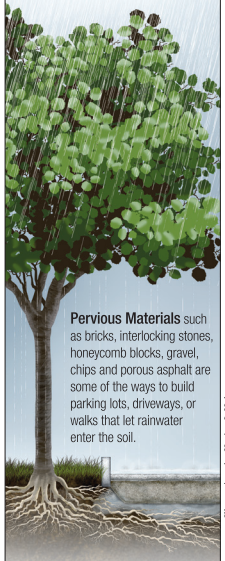
4 Treeless Homes and Yards reduce property values, increase energy costs and allow rainfall to rush into gutters.

5 Erosion-prone Rivers eat away at adjoining property, destroy fish habitat and fill in reservoirs and waterways with silt.

6 Compacted Lawns without trees are not only less appealing, they often can't soak up heavy rains fast enough. Excessive runoff flows across sidewalks and down driveways and streets.

7 Overwhelmed Sewage Systems can lead to untreated sewage being swept into waterways. Upgrades are expensive, adding to local tax burdens.

Leaves break the force of falling rain and reduce soil erosion. They retain 2 – 7 percent or more of the water produced by a short downpour, allowing it to slowly evaporate back into the atmosphere. As leaves decompose on the ground, they help build a spongy layer of topsoil that retains water and contributes to plant growth.



Pervious Materials such as bricks, interlocking stones, honeycomb blocks, gravel, chips and porous asphalt are some of the ways to build parking lots, driveways, or walks that let rainwater enter the soil.

Tree Roots bind the soil and guard against erosion. They also take up quantities of water that would otherwise be added to runoff.

Illustrations by Karina I. Helm

TREE CITY USA®

Abundant Trees

1 Well-Landscaped Parking Lots can be designed to slow storm runoff and beautify the community. They cool parked cars, reducing evaporated gasoline that contributes to air-polluting ozone. Tree shade also adds longevity to paved surfaces.

2 Tree-lined Streets retain large volumes of rainfall, reducing and cleansing runoff. They also increase property values, encourage shopping and business, reduce air pollution, calm traffic and lower noise levels.

3 Nature Explore Classrooms at schools can be combined with nearby community gardens and natural areas to serve as neighborhood parks. Their unpaved surfaces increase rainwater retention as they provide nature-rich play and learning spaces for children.

4 Shaded Homes and Tree-filled Yards make urban life more pleasant and provide practical benefits such as lower heating and air conditioning costs and increased re-sale values. The tree canopy is also a major contributor to stormwater runoff reduction.

5 Riparian Buffers consisting of trees and shrubs along waterways slow flood waters, reduce erosion, cool the water for fish, and filter harmful runoff from adjoining land.

6 Rain Gardens hold water onsite, reducing wasteful runoff and providing moisture for tree roots and flower beds. They also filter chemicals draining from walks, driveways and streets.

7 Manageable Stormwater Runoff results from abundant trees, multi-use catch basins and rain gardens, reduced impervious surfaces, and increased ground vegetation. The benefits are lower costs and a more livable, sustainable environment.

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