GREEN INFRASTRUCTURE

Naturalizing Our Urban Spaces

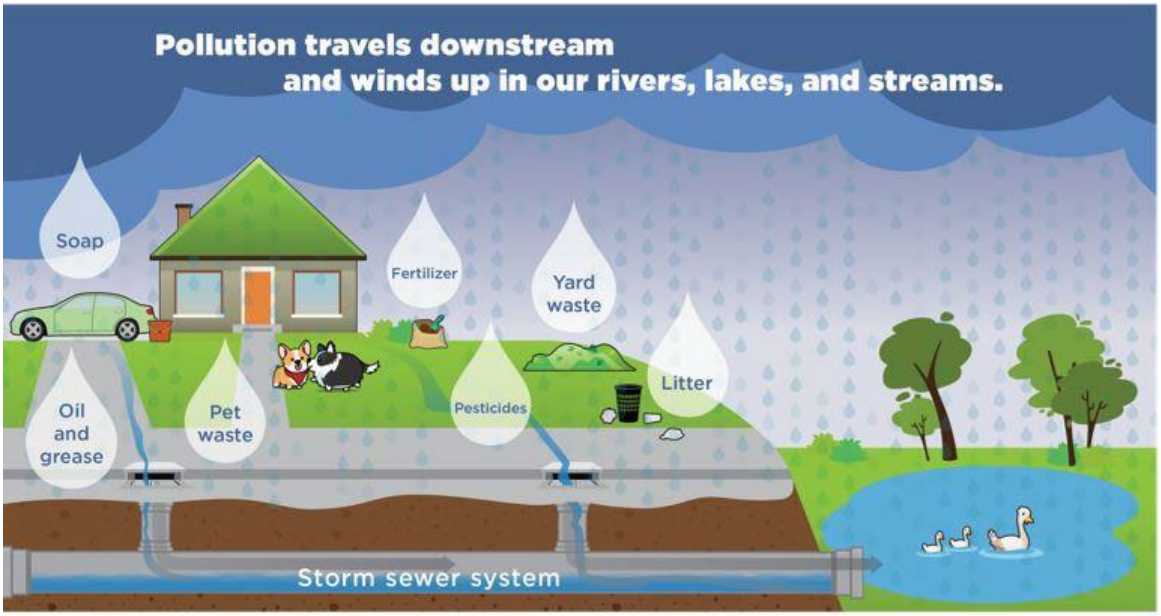
Introduction

Nitrogen pollution has become a growing concern across Long Island. Excess nitrogen from fertilizers, pet waste, and other contaminants can be picked up by stormwater runoff and carried to waterbodies. One tool that can be used to help reduce stormwater runoff and pollutants entering waterbodies is green infrastructure. Green infrastructure reduces and treats rain and stormwater at its source while delivering environmental, social, and economic benefits.

What is Stormwater?

Stormwater runoff is a major cause of water pollution in urban and suburban areas. When rain falls on our roofs, streets, and parking lots, the water cannot soak into the ground as it should. Stormwater travels through gutters and storm sewers and is discharged into nearby water bodies. The stormwater runoff carries trash and other pollutants, like nitrogen, from the urban landscape. Higher flows resulting from heavy rains also can cause erosion and flooding in streams, damaging habitat, property, and infrastructure.

Traditionally, stormwater is contained with “gray” infrastructure such as gutters, storm drains, and concrete, which are designed to move stormwater away from urban and suburban areas. This is the opposite of a natural environment where the water would be absorbed and filtered by soil and plants where it lands.



Stormwater Smart Outreach Tools | US EPA

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https://www.dec.ny.gov/lands/103654.html

NEW YORK STATE | Department of Environmental Conservation

What is Green Infrastructure?

Green infrastructure uses vegetation, soils, and other practices to absorb and filter rainwater where it falls. This restores some of the natural processes required to manage water and can lead to healthier urban and suburban environments. It is a cost-effective, resilient approach to managing rain and stormwater runoff impacts while also providing many community benefits.

What are the benefits?

Some advantages to green infrastructure include improving water and air quality, increasing a community's climate resiliency, improving habitats for wildlife, and providing positive community benefits like increased access to recreation spaces.

Green infrastructure practices can be a cost-effective tool to help address water quality degradation while also improving communities' resiliency and quality of life. Green infrastructure can be one tool that is used across private, residential, and commercial properties to help reduce the amount of nitrogen entering our water.

Stormwater Smart Outreach Tools | US EPA

Green Infrastructure Practices

Rainwater Harvesting: Rainwater harvesting systems reduce stormwater pollution by slowing runoff and collecting rainfall for later use. Rainwater harvesting practices can range from rain barrels to more commercial practices like cisterns.

Rain Gardens: Rain gardens are small, shallow, sunken areas with native plantings that collect stormwater runoff from roofs, streets, and sidewalks. They are designed to mimic the natural ways water flows over and absorbs into land to reduce stormwater pollution. Rain gardens can be a beautiful and functional stormwater reduction practice.

Permeable Pavement: Permeable pavements infiltrate, treat, and/or store rainwater where it falls. They can be made of pervious concrete, porous asphalt, or permeable interlocking pavers. This practice could be particularly cost effective where land values are high, and flooding or icing is a problem.

Bioswales: Bioswales use vegetation or mulch to slow and filter stormwater flows. They are often found along curbs and in parking lots.

Planter Boxes: Planter boxes are urban rain gardens with vertical walls and either open or closed bottoms. Usually found in downtown areas, they collect and absorb runoff from streets, sidewalks, and parking lots. Ideal for areas with limited space, planter boxes can be a useful way to beautify city streets.

Downspout Disconnection: Often downspouts that collect runoff from roofs flow directly onto pavement or into storm drains. Disconnecting your downspout from the storm drain or rerouting it to flow directly into the soil or rainwater harvesting systems, can promote filtration of polluted stormwater, and reduce the amount of pollutants entering our waterways.

These are just a few green infrastructure practices; this is not a comprehensive list. Information from this factsheet came from EPA's Green Infrastructure webpage.