

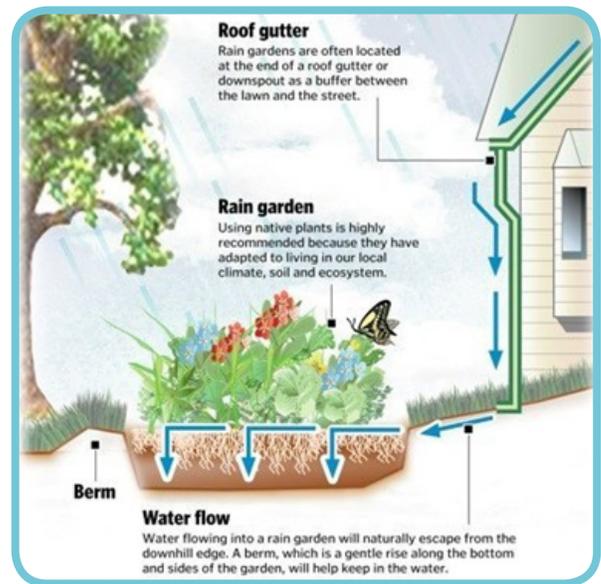
GREEN STORMWATER INFRASTRUCTURE 101

WHAT IS GREEN STORMWATER INFRASTRUCTURE (GSI)?

Green Stormwater Infrastructure is a cost-effective, resilient approach to managing wet weather impacts that provides many community benefits. While single-purpose gray stormwater infrastructure—conventional piped drainage and water treatment systems—is designed to move urban stormwater away from the built environment, green infrastructure reduces and treats stormwater at its source while delivering environmental, social, and economic benefits.

WHY IS GSI IMPORTANT?

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



HOW DOES GSI WORK?

When rain falls in natural, undeveloped areas, the water is absorbed and filtered by soil and plants. Stormwater runoff is cleaner and less of a problem. Green infrastructure uses vegetation, soils, and other elements and practices to restore some of the natural processes required to manage water and create healthier urban environments. At the city or county scale, green infrastructure is a patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the neighborhood or site scale, stormwater management systems that mimic nature soak up and store water.

GREEN STORMWATER INFRASTRUCTURE 101 KEY POINTS

- GSI delivers environmental, social, economic benefits.
- GSI reduces water pollution in urban areas.
- GSI helps create natural areas that assist in stormwater management.

TYPES OF GSI PRACTICES



Bioretention Basin



Rain Garden



Bioswale



Rain Barrels



Stormwater Cistern



Subsurface Storage



Green Roofs



Permeable Pavers

BENEFITS OF GSI

SOCIAL

- Improves quality of life and aesthetics through beautification
- Reduces stress by providing calming natural areas and green space
- Increases green/open space and recreational opportunities
- Reduces noise pollution

ECONOMIC

- Reduces the need for more expensive grey infrastructure
- Lowers or eliminates costs associated with reduction in flood damage
- Reduces the amount and costs of energy needed for disinfection and treatment at wastewater plants
- Increases property value
- Can increase green job opportunities
- Can reduce building energy costs

ENVIRONMENTAL

- Improves water quality (healthier drinking water)
- Provides habitat for wildlife including migrating birds and pollinators, which are needed for food production
- Improves air quality by absorbing noxious substances like sulfur dioxide and particulate matter
- Captures green house gases, particularly carbon dioxide and ozone
- Reduces urban heat island effect