

A Green Stormwater Infrastructure Demonstration Site for Many Audiences

UGA Griffin - Research and Education Gardens - 129 Ellis Rd. Griffin, GA 30223

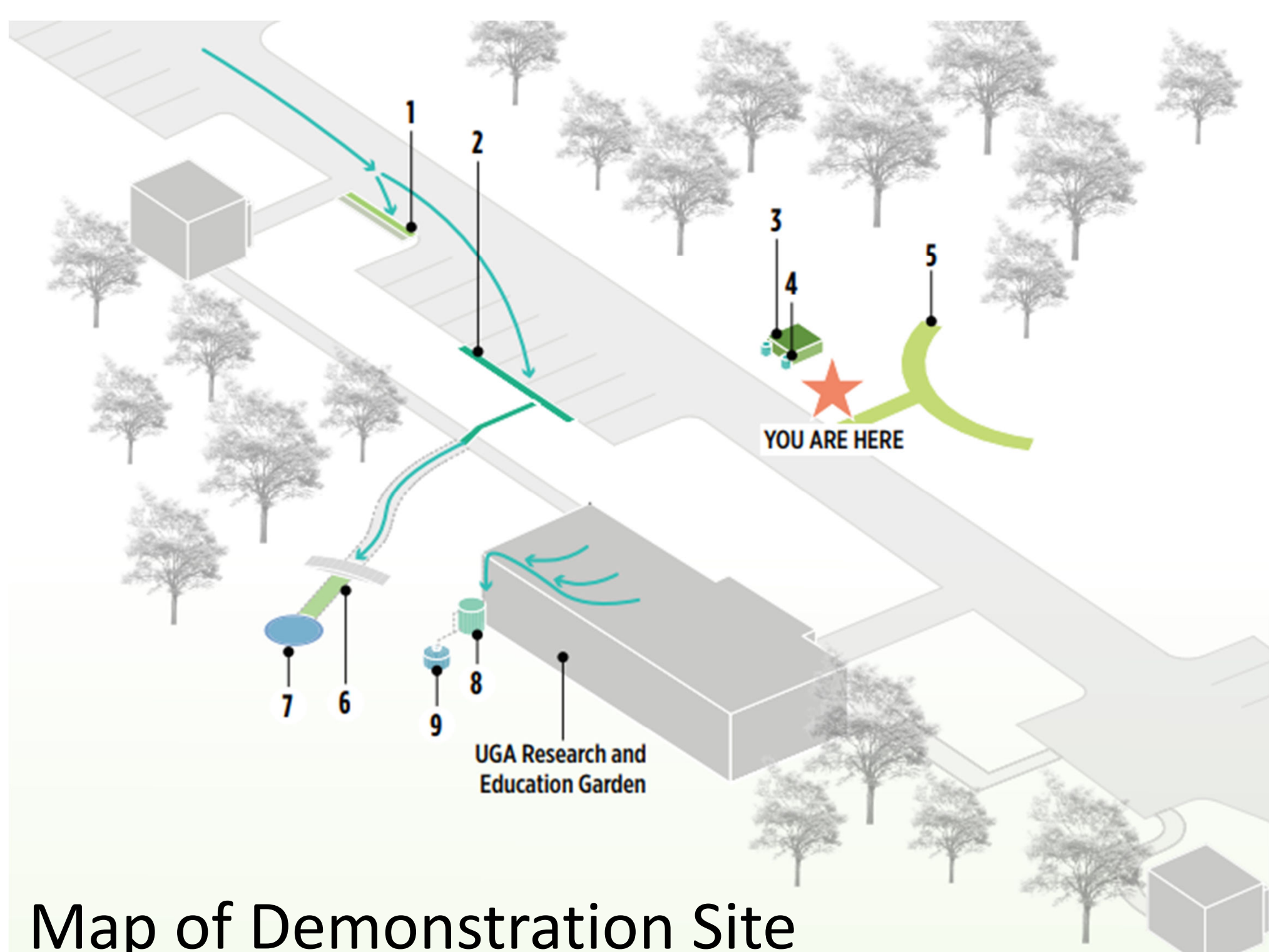
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Need and Goal Statement

Urban development continues to expand outward from Georgia cities into metro-suburban sprawl, increasing stormwater flow off of impervious surfaces. Green stormwater infrastructure (GSI) is an alternative approach to stormwater control that reduces rainfall runoff from urban and suburban landscapes, reduces flooding and pollution, and recharges the surface aquifer. An educational demonstration site for GSI introduces property owners, landscaping companies and municipal managers to these alternative practices, so they can see them in action and request Extension's guidance for their stormwater control projects.

Project Description

The UGA Center for Urban Agriculture installed a green stormwater infrastructure demonstration site at the UGA Griffin Research and Education Gardens surrounding the education building and grounds. GSI promotes rainwater infiltration into engineered soil and stone media to prevent soil erosion and water pollution. The demonstration displays consist of landscape materials of soil, stone, plants, and engineered hardscaping to form the 9 stormwater practices shown on the map below. The demonstration site serves as a training tool for the landscape industry, homeowners, municipal managers, and UGA Extension agents and volunteers. Workshops, lectures, and self-guided tours are available at the site. Accompanying online publications provide education outreach statewide. UGA Extension faculty and volunteers can deliver the online education materials to their clients in residential communities, expanding the reach of this program.



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|----------------------------|-------------------|
| 1 GRASS GRID & GRAVEL GRID | 6 BIOSWALE |
| 2 FRENCH DRAIN | 7 RAIN GARDEN |
| 3 GREEN ROOF DISPLAY | 8 CISTERN |
| 4 RAIN BARRELS | 9 DRY WELL |
| 5 PERVIOUS PAVER BLOCK | → STORMWATER PATH |



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Photo Captions

1. Installation of the cistern and dry well tied into the building downspout.
2. Installation of the French drain that accepts stormwater flow from parking area.
3. Horizon Roofscapes provided green rooftop plant modules and container system.
4. A pervious paver block sidewalk was installed near the education gardens.
5. A rain garden is preceded by a bioswale channel and dry creek bed to accept overflow from the French drain.
6. Classroom presentation for a group of Extension Master Naturalists



Visit the companion Green Stormwater Demonstration website



Rationale

Urban and suburban development continues to increase around all cities in Georgia's urban counties. This increases impervious surfaces in the landscape which results in greater stormwater flow into local rivers and lakes. Stormwater runoff delivers more sediment, nutrient, and roadway contaminant pollution into Georgia's surface waters. The Fourth National Climate Assessment predicts rainfall in the southeast U.S. will occur more often in intense heavy precipitation events that are expected to continue to increase in frequency over the coming century. Such rainfall patterns will increase stormwater flow and pollution problems, indicating a need for more implementation of stormwater control measures in the landscape.

Green stormwater infrastructure can reduce stormwater flow volume and pollutant loads from urban environments. Stormwater control is needed in urban population centers where impervious surfaces cover much of the landscape. Some of the largest urban centers in Georgia are in the piedmont region, where erosion-prone sloped terrain is common.

A green stormwater infrastructure training program and demonstration site for landscapers and homeowners will help encourage installation of these stormwater control measures in Georgia, resulting in less stormwater pollution entering Georgia's surface waters. Incorporating these practices in Georgia will help improve local water quality, reduce flood damage in urban areas, and reduce irrigation demands in landscapes with green stormwater measures. Landscape industry audiences will learn how to incorporate green stormwater infrastructure practices into their customer services.

Project Supporters

The organizations and companies below provided funding or contributions of materials and services for the GSI Demonstration Site installation. The Environmental Protection Division of the Department of Natural Resources, State of Georgia, funded this project through a grant from the U.S. Environmental Protection Agency under provisions of Section 319(h) of the Federal Water Pollution Control Act, as amended.

Outreach and Impact

Since the GSI Demonstration Site was completed, over 100 participants have attended training sessions and field study of the stormwater measures. Audiences have included urban farm managers, homeowners, Master Gardener Extension Volunteers, and Extension Master Naturalists. They acquired knowledge in soil and water conservation practices that help improve water quality, reduce flooding, and conserve water while increasing groundwater supplies. Incorporating even a few green stormwater infrastructure practices in the landscape will provide at least a 10% reduction in annual stormwater amounts from a property. This translates to annual community savings for the municipal stormwater agency of \$1,000 per acre of property with stormwater controls in place. These cost benefits are a result of reduced infrastructure maintenance, improved water quality, reduced flood damage, and environmental protection. The demonstration site is located in a public Research and Education Garden on the University of Georgia, Griffin GA, campus. Countless numbers of visitors have already walked the stormwater path on a self-guided journey to learn about green infrastructure in the landscape. Also, an email newsletter article about this project was published by the College of Agricultural and Environmental Sciences, University of Georgia, reaching over 5,000 subscribers statewide.