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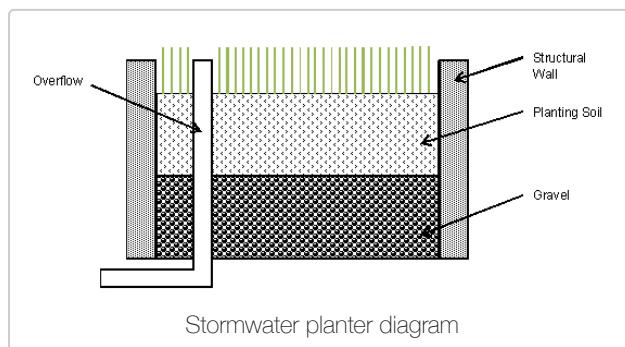
# Stormwater Planters

**Stormwater planters are contained vegetated areas that collect stormwater runoff. Using bioretention practices, these planters collect and filter water through various layers of vegetation and soils. They are commonly seen in cities along streets and sidewalks, and can vary in size, shape, and plant content.**

Stormwater runoff is a major issue in Pittsburgh, which has an old sewage system that carries both runoff and sewage. With even the smallest amount of rain, the sewer system floods and untreated wastewater flows into the three surrounding rivers. When that happens, the rivers become polluted to the point where it is unsafe to be in the water! Stormwater planters help stop this from happening and also reduce the chance of flooding city streets.

## Components of a Stormwater Planter

A typical layout of a stormwater planter is shown below:



It consists of a permeable liner, a gravel layer, and then a planting soil layer on top of that with plants, shrubs, and even trees. Water flows into the planter either through an inlet pipe or naturally from a slope grade. It then seeps into the plants' roots, soil, and gravel, and eventually flows into the groundwater.

system below. In case an overwhelming amount of runoff enters the planter, an overflow pipe is positioned to divert the excess.

### **Benefits of a Stormwater Planter**

- Greatly reduces both the amount and flow rate of stormwater
- Naturally treats the water stream by capturing and removing pollutants
- Improves the aesthetic appeal of sidewalks and streets in public areas
- Requires minimal space
- Provides a cost-effective way to treat and contain runoff
- Offers versatility (can be various shapes and sizes, depending on the location and available space)

### **Installation**



Stormwater Planter (flickr: Philadelphia Water Department)

Before installing a stormwater planter, several factors should be considered first. The initial cost of such a planter averages around \$8 per square foot; however, the overall cost will vary depending on type of vegetation used and planter size. Maintenance costs average around \$400-\$500 per year for a 500-square-foot planter. These also vary depending on size and plant choice.

Stormwater planters can be viewed as typical gardens in terms of upkeep and maintenance. Weeds need to be picked, soil has to be replaced, and captured

pollutants have to be removed from the area. The structure of the planter should also be regularly checked to ensure that it is working properly, especially after larger storms or rain events. Lastly, if any inflow and outflow systems are installed, they should periodically be checked and cleaned to ensure that runoff is properly reaching the planter.

Stormwater planters are designed for small-scale runoff collection and filtration, so should be located in areas where the water flow rate is not too strong. Hills and steep slopes could cause issues since, in such cases, water would overrun planters instead of settling into them. Stormwater planters need to be completely replaced about every 25 years.

### **Organizations**

- [Clean Rivers Campaign](#)
- [Natural Resources Defense Council](#)
- [Philadelphia Water Department](#)
- [Water Environment Federation](#)

### **External Links**

- [Stormwater Planter \(Charles River Watershed Association\)](#)

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