



# RAIN GARDEN MURAL



*Inspiring Nature-based  
Stormwater Solutions*



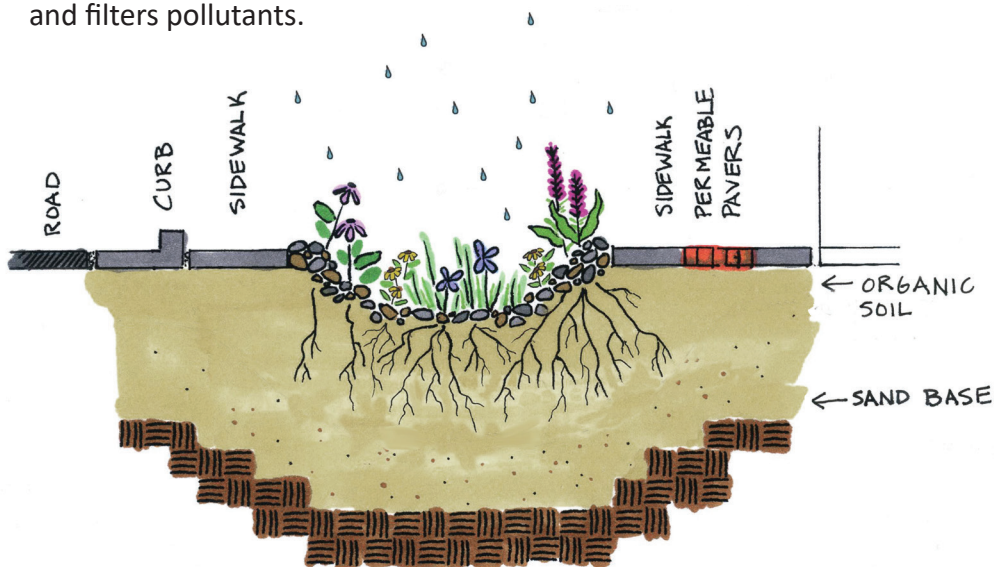
In 2023, Tip of the Mitt Watershed Council contracted artist Sarah Landstrom using generous funding provided by the Oleson Foundation and the Petoskey-Harbor Springs Area Community Foundation to create our Interactive Rain Garden Mural.

Extending across the West side of our building with integrated QR codes, the mural depicts the native Michigan species that live in and benefit from rain gardens. Rain gardens use native plants to help capture and treat stormwater runoff while providing habitat for pollinators and other small species like birds, frogs, and turtles. Stop by our office at 426 Bay Street to take a self-guided tour of our mural and learn more about how rain gardens work. Scan species QR codes with your phone camera or look through the printed guide to learn more.



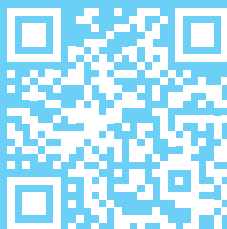
# *What is a Rain Garden?*

Rain gardens are simple solutions to stormwater pollution. While rain gardens may look like regular gardens, they provide a unique function. The excess rainwater from our building's entryway drains to a rain garden at the front of the building, a small depression with plants. Permeable pavers set into the sidewalks around our rain garden allow even more water to pass into the ground below. The rain garden absorbs stormwater and filters pollutants.



When excess rain drains into the garden from nearby hardened surfaces, sediments settle out, nutrients and some other pollutants are taken up by the plants and the volume of water is reduced through plant transpiration. While our rain garden utilizes cobble and stone, not every rain garden will have the same site conditions. Native plants used in our front rain garden, such as blue coneflower, blue flag iris, and blazing star, are typically more resistant to changing conditions in the rain garden and provide habitat to native bird, insect, and mammal species. Native plants also have deeper root systems that increase the ability of soil to absorb and retain water.

If you're interested in learning even more about rain gardens and the mural, check out our website.





# Rain Garden Mural Species

Each of these native Michigan species can be found on our mural. Rain gardens help protect water quality to the benefit of these species.

*Salvelinus fontinalis*

## **Brook Trout**

One of the most popular game fish for anglers and Michigan's state fish, the brook trout is identifiable by the worm-like pattern on its back, which are also called vermiculations.

*Ephemeroptera*

## **Mayfly**

Mayflies are aquatic insects that spend most of their lives in lakes and streams feeding on algae, detritus, or other larvae until they emerge as winged adults to reproduce.

*Glyptemys insculpta*

## **Wood Turtle**

Wood turtles are found in river and stream habitats and can often be found basking in the sun on riverbanks or logs.



*Cyperaceae*

## **Sedges**

Cyperaceae is a family of plants commonly called sedges, and can look like rushes or tall grasses.

*Hymenoxys herbacea*

## **Lakeside Daisy**

The lakeside daisy is a long-lived perennial plant and is endemic to the Great Lakes region, meaning it does not appear anywhere else in the world.

*Danaus plexippus*

## **Monarch Butterfly**

The monarch butterfly is one of the most recognized butterfly species, with brightly colored orange wings with distinct black borders.

*Verbena stricta*

## **Hoary Vervain**

This species is extremely drought resistant and is an important food source for larval butterflies. The seeds also provide food for small birds and mammals.

*Allium cernuum*

## **Nodding Onion**

The nodding onion, also called lady's leek, is a perennial, flowering plant that is widespread across many parts of North America.





*Bombus ternarius*

### **Orange-belted bumblebee**

Also called a tricolored bumblebee, this species is yellow and black with a bright orange abdomen.

*Archilochus colubris*

### **Ruby-throated Hummingbird**

This migratory bird spends the winters in Central America before traveling north in the summer to places like Michigan to breed.

*Monarda*

### **Bee Balm**

Monarda is a genus of the mint family and is made up of 16 species that are all endemic eastern North America.

*Opuntia*

### **Prickly Pear Cactus**

There are about 200 species of this plant, which are identifiable by their flattened stems and sharp spines.

*Hypericum kalmianum*

### **Kalm's St John's Wort**

In June and August, the plant blooms with one to ten small, yellow flowers that complement its blue-green leaves.

*Iris lacustrisnum*

### **Dwarf Lake Iris**

This small species is Michigan's state wildflower. It is almost exclusively found along the northern shores of Lake Michigan and Lake Huron.

*Erythronium americanum*

### **Trout Lily**

In the early Spring before trees fully develop leaves, trout lilies bloom with yellow flowers.

*Antennaria*

### **Pussytoes**

Also called catsfoot, pussytoes' fluffy flowers are often white and resemble cat paws.

*Juniperus horizontalis*

### **Creeping Juniper**

Creeping juniper is a coniferous plant that occurs in the northern hemisphere with scale-like green leaves that change to a purple color in the winter.

*Thuja occidentalis*

### **White Cedar**

This long-lived species is native to the northern Great Lakes region and into Canada, at times living to be over 1,000 years old.

*Shepherdia canadensisnum*

### **Soapberry**

Also called russet buffaloberry, soapberry is a berry-producing shrub that is native across the northern United States and Canada.

*Betula papyrifera*

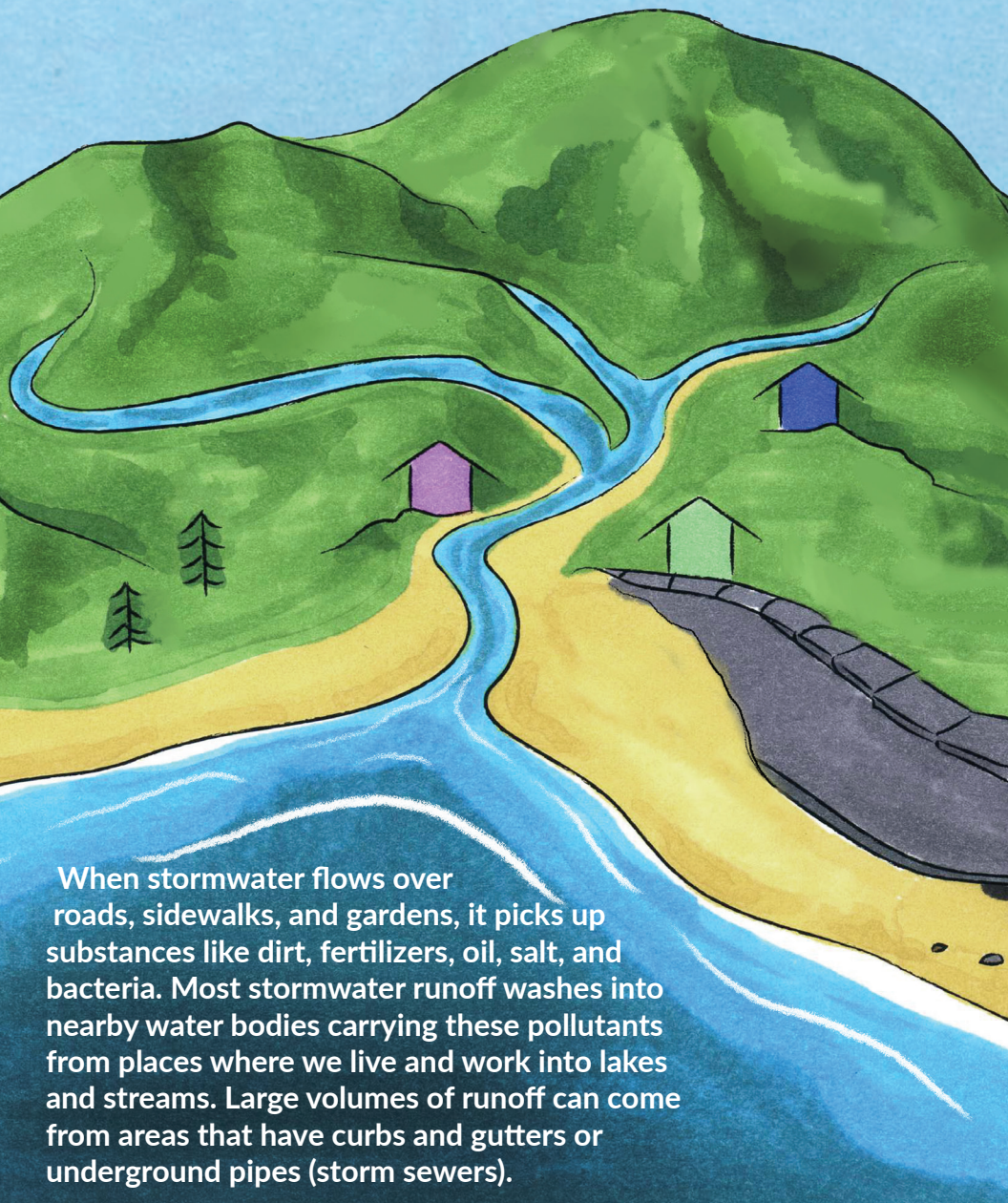
### **Paper Birch**

The paper birch is easily recognizable by its distinct white, paper-like bark that peels away from the trunk.



# ***Stormwater Pollution***

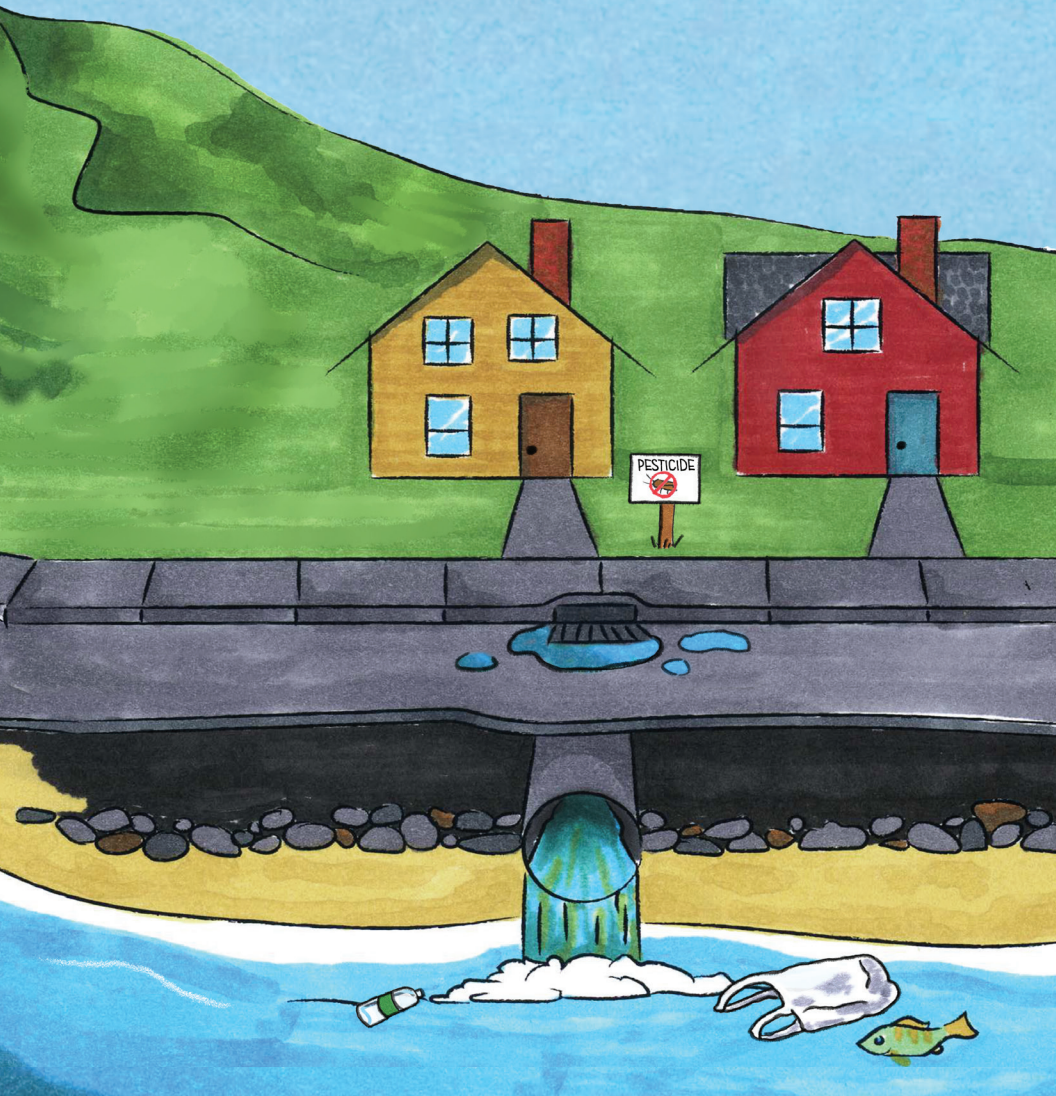
When rain falls or snow melts, the water flows downhill into creeks, streams, and rivers that eventually connect to larger bodies of water like reservoirs or lakes. A watershed is an area of land that drains water into a specific body of water. The Watershed Council building in Petoskey, Michigan is located in the Little Traverse Bay watershed.



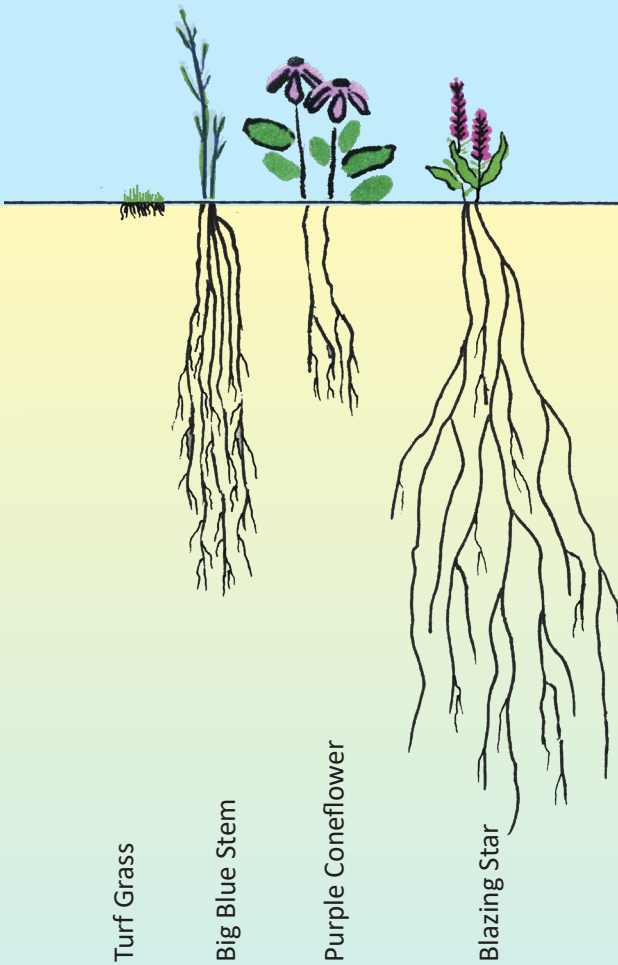


Take a look around the Watershed Council's building or your own home and observe areas that might contribute to polluted stormwater runoff. Walkways, patios, and other hardscapes can contribute to the stormwater footprint. Expansive areas of impervious asphalt or concrete also generate large volumes of stormwater that drain onto the street.

Decreasing the volume of stormwater runoff is important for maintaining the health of our waters. Stormwater can diminish water quality, damage wildlife and fish habitat, and compromise public health, safety, and recreation. Effective stormwater management entails looking at both quality and quantity of runoff. The Watershed Council building uses a variety of structures to treat this runoff.



# Native Roots



Native plant species have deeper root systems that substantially increase the ability of soil to absorb and retain water. As natural vegetation is replaced with popular turf grasses, less stormwater is absorbed into the ground, leading to more stormwater runoff and water pollution.

These native plants oftentimes have greater biomass below the surface of the ground. Look around at the native plants in our rain garden and imagine how large the web of root systems is underground.



Hoary Vervain  
*Verbena stricta*



Maidenhair fern  
*Adiantum*



Joe Pye Weed  
*Eutrochium purpureum*



Prickly Pear Cactus  
*Opuntia cespitosa*



Paper Birch Tree  
*Betula papyrifera*



# *The benefit of native plants*

Take a look around our rain garden and you'll find the plants that inspired our mural, as well as many other native plant species that attract pollinators, treat stormwater runoff, and create a beautiful landscape. If you look carefully, you might also spot some pollinators collecting nectar in the garden.

There are dozens of species to choose from if you're interested in creating your own rain garden. Native plants can be used for every type of environment, from dry and sunny to soggy and shady. They are naturally adapted to soils and weather conditions of the area and need little care once established. With their variety of colors, heights, foliage, and bloom times, they can add beauty to any landscape.

Planting native instead of non-native plants also means that invasive plants are not being spread, as many nurseries still supply invasive species.



Blue Flag Iris  
*Iris versicolor*



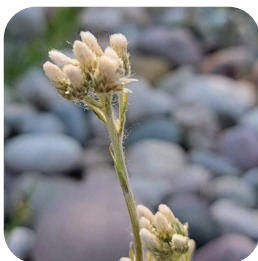
Lakeside Daisy  
*Tetranneuris herbacea*



Nodding Onion  
*Allium cernuum*



Purple Coneflower  
*Echinacea purpurea*



Small Pussytoes  
*Antennaria howellii*



Kalm's St John's Wort  
*Hypericum kalmianum*



Black-eyed Susan  
*Rudbeckia hirta*



Sedges  
*Cyperaceae*

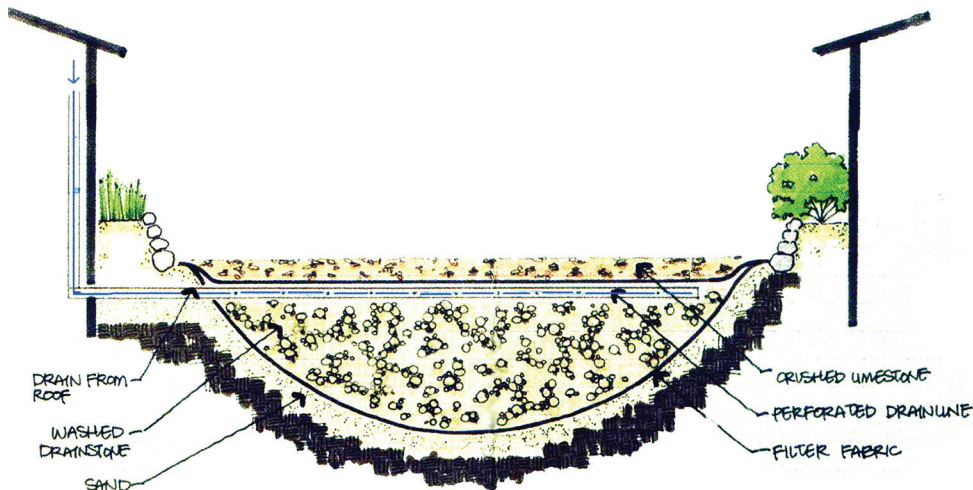


Blazing Star  
*Liatris spicata*

# ***Other nature-based stormwater solutions at the Watershed Council***

Demonstrating how to collect and treat stormwater, the Watershed Council has installed systems that use simple techniques to reduce our impact to Little Traverse Bay from our office. Each of the following techniques plays an important role in reducing pollutants and volume of stormwater from our facility.

## **Infiltration Basin**

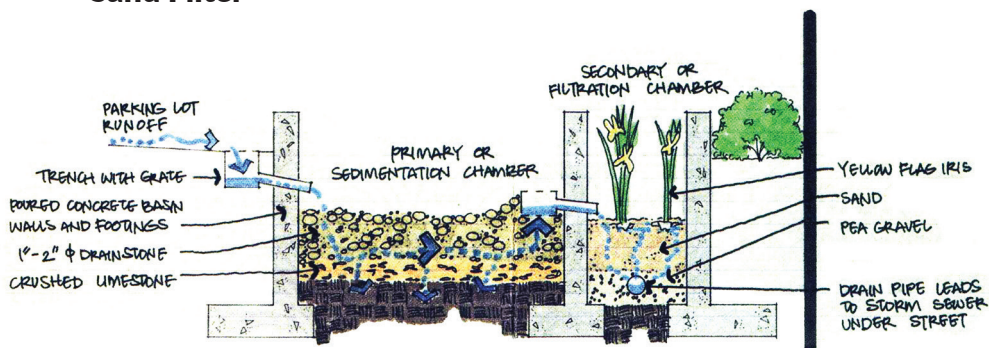


Although it may look like an ordinary gravel parking lot, this area at the back of our building is an effective stormwater runoff treatment structure that treats water from the Freshwater Center's roof. Part of the Watershed Council's roof formerly drained onto the parking lot, where it joined other runoff from nearby hardened surfaces and eventually into Little Traverse Bay.

Construction of the structure began by digging a basin-shaped trench about eight feet deep. Next, the basin was lined with sand and a felt-like synthetic geotextile and then filled within several feet of the surface with washed drainstone. Perforated drain pipes (similar to what is used in a septic system) were laid on top of the drainstone and hooked up to the roof drains. Another layer of filter fabric was added and covered with a layer of crushed limestone, forming a stable surface. Since the infiltration basin was installed in 2001, about 51,000 gallons of water from our roof are successfully handled annually.



## Sand Filter

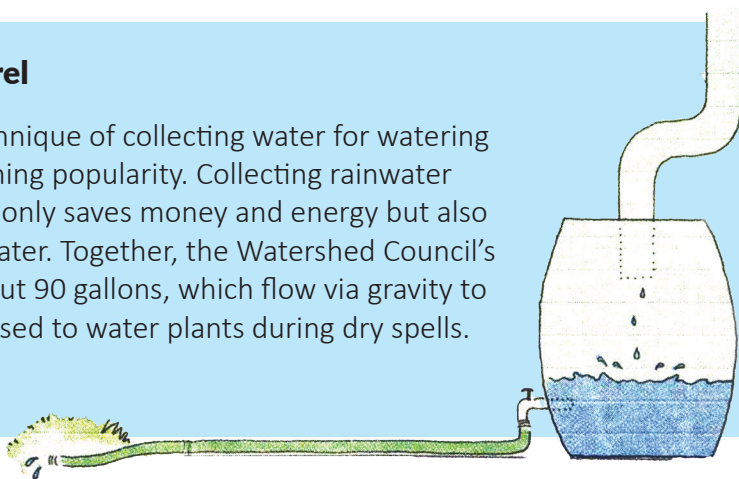


The sand filter was installed to improve the quality of parking lot runoff from the Watershed Council Building. Prior to its creation, roughly 64,000 gallons of untreated runoff from the parking lot flowed annually into Bay Street, down Petoskey's storm sewers, and eventually into Little Traverse Bay; carrying with it sediment, nutrients, heavy metals, petroleum products, toxins, bacteria, and other pollutants.

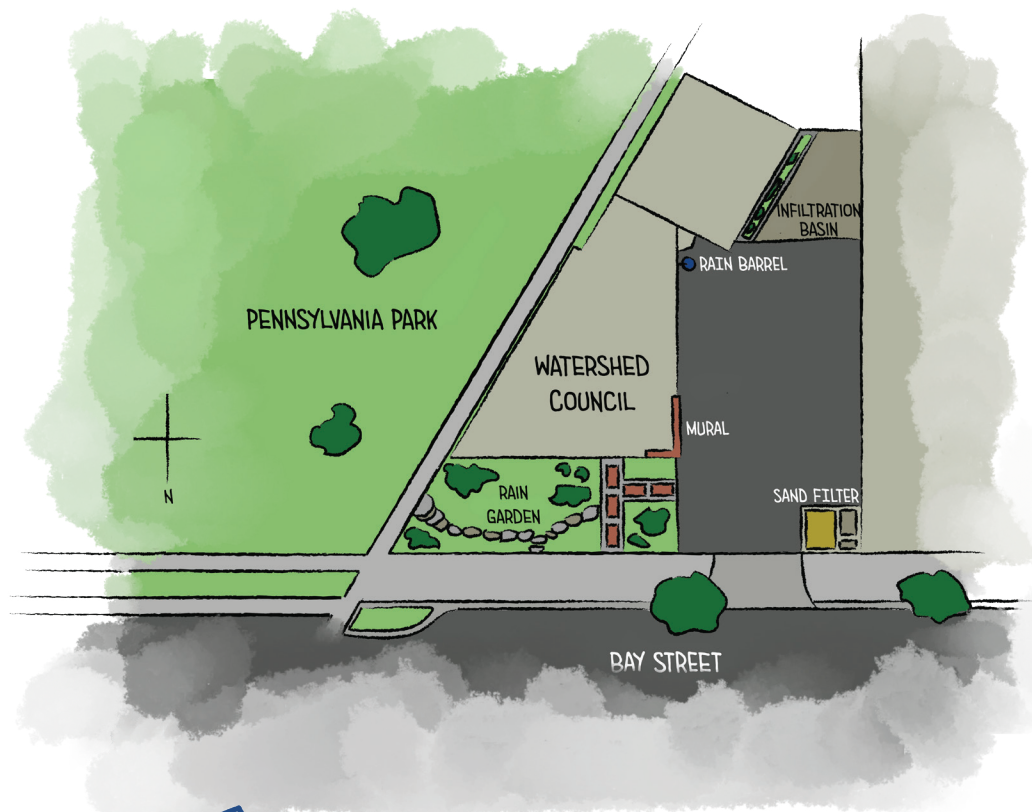
Consisting of two basins or chambers, parking lot runoff first enters the larger chamber, where sand, silt, and other coarse particles, and the pollutants adhering to them are filtered out. It then enters the smaller chamber that is filled with sand over pea gravel, which filters out tiny particles. Yellow flag iris and micro-organisms in the sand provide some biological treatment by taking up nutrients and toxins. Most of the runoff entering the structure soaks into the sandy soils underlying both chambers, with the remaining runoff discharging to the storm sewer system.

## Rain Barrel

This age-old technique of collecting water for watering gardens is regaining popularity. Collecting rainwater with barrels not only saves money and energy but also reduces stormwater. Together, the Watershed Council's barrels hold about 90 gallons, which flow via gravity to an outlet hose used to water plants during dry spells.



# ***Watershed Council Map***



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