



GREEN STREETS | GREEN JOBS | GREEN TOWNS INITIATIVE

The Green Streets, Green Jobs, Green Towns Partnership (G3) aims to stimulate the green jobs market and enable families to work where they live and play. Small to mid-sized communities can boost their local economies and protect water resources through the use of watershed planning, design and construction of stormwater best management practices.








ADKINS ARBORETUM

Adkins Arboretum Parking Lot Alive!

This project implemented the design plan that was created in 2017 via a previously funded Green Streets, Green Jobs, Green Towns project. This project involved the implementation of a complex stormwater retention garden system in the Adkins Arboretum parking lot. This garden was installed in the lowest portion of the parking lot, and therefore was the area that flooded in heavy rains. With this new design, water is rerouted into two gabion gardens supplemented with planted garden beds on either side. A wooden platform bridge divides the gabion gardens allowing a clear entrance and pathway for visitors to walk towards the Arboretum entrance bridge and Visitor Center.

welcoming to visitors, but also functional in slowing rainwater runoff and retaining it in the landscape. Beneath the pavers, the gardens are connected via a hydraulic bridge that allows for overflow redundancy in the event of a heavy rain.

Trees have been planted on either side of the gabion gardens offering much needed shade to visitors and nearby plants. By slowing the water and cooling the landscape, the team at Adkins Arboretum hopes to improve the water quality in the Choptank River watershed and serve as a demonstration site for innovative green infrastructure practices.

-  1,060 sq. ft. bioretention area created
-  17,000 native plants installed
-  35 trees planted
-  2,520 sq. ft. pervious surface installed
-  3,580 sq. ft. impervious surface removed

Ultimately, this project converted 3,580 square feet of asphalt into 1,060 square feet of bioretention gardens and 2,520 square feet of permeable pavers. The gabion gardens were planted with rain garden plants that can handle periods of wet and dry conditions. Plants such as *Clethra alnifolia*, *Onoclea sensibilis*, and *Iris versicolor*, once established, will create a lush sunken garden that is both



PROJECT ELEMENTS

- **Bioretention Area** – These features filter, store, and reduce stormwater runoff, allowing it to infiltrate into the ground before it enters into the storm drain system.
- **Native Plants** – Native plants offer numerous benefits. Because native plants are adapted to local environmental conditions, they require far less water. They provide vital habitats for birds, insects and other species of wildlife, prevent water run-off, and improve air quality.
- **Tree Planting** – Native trees and shrubs require less maintenance and absorb rainwater, hold soils in place, and provide food and habitat for birds, pollinators, and other wildlife.
- **Permeable Paving** – This alternative to traditional black top allows surface water to flow into the ground where the volume can be held, infiltrate into the lower soil or conveyed through a stormwater system. Porous paving is a good application for areas that require a hardscape surface and have no viable options for stormwater management. There are various applications and styles making porous asphalt a good aesthetic option as well as functional.
- **Impervious Pavement Removal** – Rain hits impervious surfaces such as parking lots and roads, and because it cannot soak through, it instead runs off into storm drains or directly local waterways.



SUSTAINABILITY & GROWTH

Every month, Adkins Arboretum staff test the water quality of the wetland, which receives any excess water that passes through the parking lot system. These monthly tests have shown that the water quality remains healthy in the wetland and are available by contacting staff at the Arboretum. Caroline County reported the credits from this installation.

Beyond the life of this grant funding, the Arboretum Land Steward is responsible for maintenance and plant care of the newly installed gardens and BMPs. Additionally, the Land Steward manages two seasonal grounds workers and a group of volunteers who can assist with weeding and maintenance as needed. The Arboretum's Executive Director and Board of Trustees also have extensive knowledge in civil engineering and can help advise the Arboretum staff.

This project serves as a demonstration site of a variety of stormwater best management practices. These gardens are open and available to the public, so anyone can visit the parking lot and walk around the gardens. The Arboretum has hosted several groups who were intrigued by the project and have been able to come away with some ideas for their own spaces. One of the team's next steps is to install plant labels in the gardens so that visitors can better identify which native plants do well in various situations. Adkins Arboretum is excited about this new addition to the grounds and plan on incorporating and highlighting it in many of the group tours and visits. One of the Master Naturalists already created a script for a guided walk in the parking lot.

Year Awarded: 2018
Award Amount: \$75,000
Match Amount: \$266,155

Before



After



Project Partners: Adkins Arboretum, American Institution of Certified Planners, Champion Hruby Landscape Architects, Chesapeake Bay Trust, DesignGreen, Unity Landscape Design/Build, U.S. Environmental Protection Agency, University of Maryland Sea Grant Extension Program