

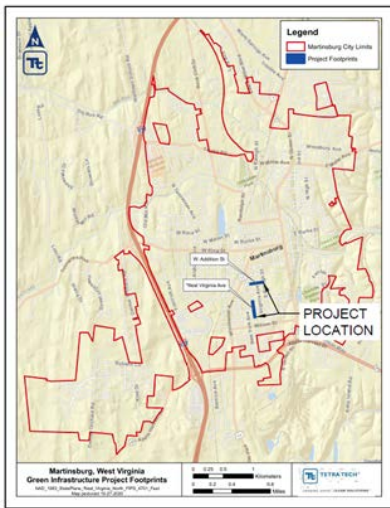


GREEN STREETS | GREEN JOBS | GREEN TOWNS INITIATIVE

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.

CITY OF MARTINSBURG

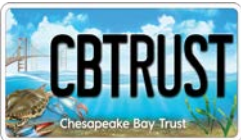
Engineered Design - ReGrowing Green City of Martinsburg



1 design plan created

5 local green jobs supported during construction

1 workshop with 34 attendees



The City of Martinsburg is home to around 17,000 residents and experiences significant stormwater management concerns and recurring flooding issues throughout the city. Within the drainage area contributing to the pump station at West Addition Street and South Raleigh Avenue, the lowest part of the hilly neighborhood, flooding occurs during significant rainfall events prior to the pump conveying stormwater farther through the system.

The stormwater infrastructure is limited and once implemented, this will be among the first green solutions in the City. To mitigate some of the runoff volume reaching inlets throughout the system, Tetra Tech designed green infrastructure in key locations in the contributing drainage area. The planned BMPs run along the frontage of 3 City blocks and will also serve to enhance the curb appeal in those areas.

This project was initiated with a design workshop and public meeting facilitated by Tetra Tech in January 2020 to describe the benefits of green infrastructure,

identify locations throughout the drainage area that are suitable for green infrastructure, and allow the City and other stakeholders to provide feedback into the proposed designs. Community members and City leaders helped to canvas the sites and plan various ideas for BMP designs. The charrette was discussed on live radio to inform listeners about the public event and the project.

The selected project sites chosen by the City are green streets along West Virginia Avenue and West Addition Street. These areas were selected for their ability to reduce stormwater runoff in the immediate vicinity of each practice, as well as contribute to a reduction in volume reaching the pump station. Each project site includes a combination of pervious pavement, swales and bioretention that will improve the aesthetic appeal of each street while also managing stormwater.

PROJECT ELEMENTS

- **Design plan** – The plan created by Tetra Tech included details for bioretention areas, place to plant trees and implement permeable paving, and overall create green infrastructure in the city.
- **Bioretention areas** – these features filter, store, and reduce stormwater runoff, allowing it to infiltrate into the ground before it enters into the storm drain system
- **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. Permeable 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 permeable asphalt a good aesthetic option as well as functional.
- **Green street** – Green Streets minimize the impact on the surrounding area through a natural system approach that incorporates a variety of water quality, energy-efficiency, and other environmental best practices.

Year Awarded: 2019
Award Amount: \$30,000
Match Amount: \$21,378



Figure 4. View of West Addition Street from South Raleigh Street. Note wide street and few street trees.



Figure 8. Participants discussing the concept design plans for each project location and illustrating the preferred GI options with game pieces and mark-ups.



Figure 3. Overview of the area of West Addition Street evaluated during the site tour.

SUSTAINABILITY & GROWTH

The City of Martinsburg has a Comprehensive Plan on storm water management. The purpose of the Comprehensive Plan is to identify the type of future planning and development that may be undertaken within the community based upon historic, current, and projected future conditions and the anticipation of desired outcomes. The City must be proactive in encouraging responsible development and adopting regulations that limit the ability of pollutants to reach surface waters. Evaluation of minimum parking requirements, street widths, and incorporating green infrastructure into road/street design rather than solely using traditional infrastructure is a solid first step in preventing many of the negative consequences of the development process. Managing stormwater at its sources, rather than using central facilities such as dry or wet ponds, must be given top priority during new development.

This project supported the local government by solving stormwater runoff quantity and quality issues in a heavily flooded area when grey infrastructure has historically been implemented. The design of the practices includes straight curbs that are easy to plow and BMPs which can be maintained by Public Works.



Figure 6. Participants discussing the drainage at West New York Avenue and Berry Street.

Project Partners: Chesapeake Bay Trust, City of Martinsburg WV, Eastern Panhandle Planning and Development Council, Tetra Tech, Triad Engineering, U.S. Environmental Protection Agency,