

## Federalsburg, MD

### Background

Federalsburg, Maryland is an approximately 2-square-mile town of about 2,700 people located in Caroline County, Maryland. The literal and figurative core of the community is Marshyhope Creek. Flowing through downtown Federalsburg past the Federalsburg Recreation Park and Marina and the VFW Boat Ramp, the Creek forms the headwaters of the Northwest Fork of the Nanticoke River.

Federalsburg has a long and proud history. The town, incorporated in 1823, was named for the Federalist Party, which met in the town in 1821. In 1868 the Seaford and Cambridge Division of the Pennsylvania Railroad was opened for traffic and marked a new era for Federalsburg as the railroad, with its refrigeration accommodation, made urban markets accessible to the town and the rest of the Eastern Shore and beyond, spurring industrial and warehouse facilities to locate in the town. To this day, production is an important component of Federalsburg’s economy with companies such as Solo Cup, Jack and Jill Ice Cream, and Stove Top Stuffing all calling the town home.

However, this history of industrialization and the subsequent decline of these facilities and infrastructure assets posed challenges to addressing stormwater issues for a town the size of Federalsburg with limited resources. The history of the community and expertise located in Federalsburg, however, offered a unique opportunity for stormwater management to be a catalyst for urban redevelopment through the use of engineering and leveraging the intellectual and entrepreneurial “problem solving” spirit. Using this information in a way that informed decision-making to allocate resources enabled investment in stormwater and water quality improvement that provided a foundation for redevelopment and revitalization.



*Marshyhope Creek as seen from VFW Park in Federalsburg*

### HIGHLIGHTS

**Location:** Maryland

**Jurisdiction Type:** Town

**Population:** 2,739 (2010)

**MS4 Permit:** Unpermitted

**Project Period:** 2013-2014

**Funders:** Maryland DNR

### Approach

The first step in this process was the development of an inventory of Federalsburg’s existing stormwater infrastructure. The Environmental Finance Center (EFC) at the University of Maryland used this engineering foundation, along with geographic information analysis and financial analysis, to gather, organize, and synthesize data about stormwater, as well as provide the town with recommendations and a basis with which to make informed decisions about project planning and resource allocation in the future. With such an inventory, along with engineered data and plans, Federalsburg would be armed to

make informed decisions and allocate resources in planning future projects.

In this project, student interns from the A. J. Clark School of Engineering at the University of Maryland at College Park conducted field investigations to confirm the location and sizes of the existing stormwater system structures and pipes. The students collected the data in order to develop a Master Stormwater Plan, ultimately to be used in the administration of the Town's Stormwater Management Ordinance and for use in the future development of a stormwater capital maintenance budget and plan. Robert Rauch, of the Eastern Shore engineering firm Rauch and Associates, supervised the students. The data that was gathered, organized, and developed through the engineering work resulted in the identification of over 190 drainage areas. Total square footage was derived for each drainage area as well as total square footage of the impervious area within each drainage area.

Because the impervious area was calculated, the protocol outlined in "Costs of Stormwater Management Practices in Maryland Counties" prepared for the Maryland Department of the Environment (MDE) was used to determine a range of "planning level" cost estimates for implementing stormwater best management practices in the drainage areas. For each of the drainage areas, estimated total project costs for 20 years, as well as annual costs, were developed using this method.

## Key Findings and Recommendations

The engineering study identified approximately 87 total acres of impervious area in the drainage areas. Applying the method outlined in "Costs of Stormwater Management Practices in Maryland Counties" yielded a cost range of \$4 million to \$18 million over 20 years, or \$208,000 to \$911,000 annually, to adequately manage the stormwater runoff from this impervious area. To establish a path to meeting these costs and better manage stormwater in the Town of Federalsburg, the EFC made the following recommendations:

- **Catalyze:** Raise topic awareness and community expectations by stating goals, communicating data, soliciting citizen feedback, and efficiently allocating the Town of Federalsburg's resources.
- **Continue to measure and evaluate:** Continue the process begun in this project, annually working to update, identify, inspect, and map the Town of Federalsburg stormwater infrastructure including inlets, culverts, tide gates and outfalls; and, pinpoint sources and quantities of pollution.
- **Plan and prioritize:** Develop and then review annually a stormwater master plan that will strategically implement projects to reduce the severity and frequency of flooding as well as mitigate pollution.
- **Budget and implement:** Make stormwater planning and associated capital improvement projects a regular, on-going component of the annual and long-range budget process.
- **Secure sustainable and equitable financing:** Begin identifying sources funding and reserves and/or generating revenue to finance the program and ensure that the distribution of costs is equitable.
- **Track and train:** Continue the process for regularly tracking and assessing the stormwater system and program implementation. This should include training for Federalsburg staff in the necessary skills and technology to ensure ongoing improvement and efficiencies.
- **Engage and educate:** Develop and deliver relevant stormwater management information to home owners, property owners, citizens and businesses through staff, volunteers, and community partners.
- **Share engineering information and data with public:** Federalsburg has a strength and history of engineering and innovation through demonstration sites. To enhance the opportunity to gain community support moving forward, this information should be shared with the community to engage

them in the process of what changes will be occurring within their town.

- **Invest in order to gain multiple priority benefits:** Use stormwater investments as a catalyst for redevelopment, or in conjunction with flood mitigation, for synergy with other public works projects.
- **Incentivize stormwater Best Management Practices (BMPs):** By using stormwater BMPs such as trees, green space, and rain gardens that help manage stormwater, Federalsburg will also contribute to promoting other community priorities such as health, property value, and revitalization of local economies. Small details such as the choice of trees or the location of green space can go a long way to contributing to the overall revitalization movement.
- **Incentivize property owners:** Taking steps above and beyond requirements to manage stormwater through rebates, grant programs and education will leverage property owners and reduce the municipality’s burden.
- **Leverage data for economic development:** Utilize the vast amount of engineering information as an asset in economic development. There is a significant amount of engineering work that has been undertaken by the Town of Federalsburg. For a town of this size, it can consider itself advanced in the amount of engineering data that has been collected and organized. To a prospective business considering locating in the area, this type of data could save thousands of dollars in investigative engineering costs or investigative labor time for a prospective project.
- **Reserve for the future:** Analyze, create, and annually review a stormwater capital projects reserve so that a set number of projects that are identified can be implemented annually
- **Plan for the future:** Consider developing a green infrastructure plan. As the Town of Federalsburg seeks to revitalize and reinvest in the community, particularly the downtown area, there may be interest in continuing to implement green infrastructure projects. Many communities looking to address stormwater and water quality priorities, while also pursuing the revitalization of the local economy, have found that installing green infrastructure demonstration projects can help preserve resources and set an example for what can be duplicated by private property owners.
- **Fund operations and maintenance activities:** Developing and budgeting a dedicated program to clean BaySavers, inlets, ditches, and drains on a regularly scheduled basis will create an asset management plan that should reduce crisis-based investment needs, as well as extend the life of the installations.
- **Inform:** Data on impervious area and drainage areas can be used to quantify Federalsburg’s contribution to urban loads in Caroline’s County’s WIP. This in turn can be used to inform and clarify loading estimates in the adjustments to the State’s TMDL model in 2015.



*BaySavers in Federalsburg*

*For more information, please visit the [MOST Knowledge Center](#).*

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