

Improving Local Government Capacity for Watershed Planning and Implementation Efforts

Sassafras Watershed Action Plan (SWAP) Financing Recommendations

Prepared for the Sassafras River Association

Prepared by the **Environmental Finance Center
(EFC)** through the *Maryland Department of Natural
Resources Watershed Assistance Collaborative*



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Table of Contents

Table of Contents.....	2
Executive Summary	3
Introduction	4
Project Background.....	4
The role of the Watershed Assistance Collaborative.....	4
The role of the Environmental Finance Center (EFC).....	5
The Sassafras Watershed Action Plan (SWAP).....	6
Financing Strategies and Options.....	7
Upgrading Waste Water Treatment Plants (WWTP) in the Sassafras River Watershed	7
The Challenge.....	7
Potential Financing Mechanisms	9
Cost Saving Tools and Strategies.....	9
Grant and Loan Funding.....	14
Case Studies.....	21
Berlin, Maryland.....	21
Chestertown, Maryland.....	22
Specific Recommendations.....	22
Rate Check-Up.....	22
Pursue Funding/Financing Partnerships.....	22
Consider Sponsorship Loan	22
Addressing the Community Septics Issue in the Sassafras Watershed.....	23
The Challenge.....	23
Potential Financing Mechanisms	26
Cost Saving Tools and Strategies.....	26
Grant and Loan Funding.....	30
Specific Recommendations.....	31
Conduct a sanitary survey	31
Consider forming a Septic Utility District	32
Pursue Funding/Financing Partnerships.....	32
Route 301 Stormwater Management Projects in the Sassafras River Watershed.....	32
The Challenge.....	32
Potential Funding Mechanisms.....	33
State Programs	33
Federal Programs	36
Private Funding	37
Specific Recommendations.....	38
Conclusion.....	39
The Project Team.....	39
Appendices	41
Appendix A: Resource List.....	42
Appendix B: Route 301 Projects Locations.....	43
Appendix C: Phone Correspondence and Meeting Log (2009).....	44

Executive Summary

The Environmental Finance Center (EFC) at the University of Maryland has, to date, provided assistance to two organizations through the newly formed Watershed Assistance Collaborative (The Collaborative) – the Chester River Association and the Sassafras River Association (SRA). The Chester River project began in July 2008 and concluded in July 2009 with the finalization of a Sustainable Implementation Strategy for the Chester River watershed. The Sassafras River project, the focus of this report, was initiated in the spring of 2009 and involved drafting a set of financing recommendations for a few specific components of the Sassafras Watershed Action Plan (SWAP). The SWAP is, essentially, a strategic plan for restoring and protecting the watershed, and SRA provided the momentum, along with a core team of stakeholders, for the drafting of the plan. This report is intended to serve as a companion document to the SWAP which will be finalized by the core team of stakeholders in January 2010.

In this report, the EFC proposes a set of financing recommendations for three different priority areas identified by the SRA: wastewater treatment plant (WWTP) upgrades for the towns of Galena and Betterton, the repair or replacement of community septic systems in the Sassafras watershed, and stormwater management for severely degraded runoff sites along Route 301.

For the WWTP upgrades in Galena and Betterton, the EFC recommends a combination of rate check-up, funding/financing partnerships, and sponsorship loans. The EFC found that current sewer and water rates, in some cases, are below the recommended levels required to pay for maintenance and future costs of updating the WWTP. Second, funding partnerships can be developed with state and federal agencies to help close the funding gap for WWTP upgrades. Finally, sponsorship loans should be investigated as one way to couple large infrastructure investments with restoration projects.

To address failing community septic systems in the Sassafras watershed, the EFC recommends conducting a sanitary survey, considering the formation of a utility district, and exploring funding/financing partnerships. A sanitary survey is needed to thoroughly assess the situation in the watershed so that wide-ranging issues from water quality to zoning regulation can be appropriately handled. Next, forming a utility district could be important for the Sassafras watershed because it would develop a mechanism for procuring the necessary funds to upgrade and maintain the community septic systems now and in the future. Such a district would ensure that the cost and benefit of good septic system maintenance (and water quality protection) is a burden shared by the entire community. The EFC also recommends pursuing partnerships that can provide information, technical assistance, and educational support.

To reduce excess stormwater runoff along Route 301, the EFC recommends pursuing funding through the Maryland State Highways Administration (MSHA) Green Highways Partnership (GHP). Smaller funding gaps may be filled by MDE's WQSRF Non-Point Source Pollution Program or CBT's Restoration Grants Program. MSHA has expressed interest in taking on the Route 301 stormwater management projects as stewardship opportunities. The GHP promotes green highways that yield a net increase in environmental functions and values of the watershed, the use of innovative, natural methods to reduce imperviousness and cleanse all runoff within the project area, and protects the hydrology of wetlands and streams channels through restoration of natural drainage paths. On December 10, 2009 the SRA, CWP, and EFC will meet with representatives from MSHA to do a site tour of the proposed stormwater management projects along Route 301.

Again, these recommendations are intended to be used as a companion document to the SWAP. The EFC anticipates that, with the finalization of the SWAP in January 2010, the core team will be ready to move the projects proposed in the SWAP from the planning stage to the implementation stage. Thus, the recommendations included in this report are a tailored assessment of the funding and financing possibilities that should be considered as the three projects – WWTP upgrades, community septic system repair, and stormwater management – move forward.

Introduction

In August 2009, the Environmental Finance Center at the University of Maryland (EFC) was invited by the Department of Natural Resources (MD-DNR) to assist the Sassafras River Association (SRA) in their efforts to complete the Sassafras Watershed Action Plan (SWAP). Specifically, the EFC was charged with drafting a set of financing recommendations to use as a companion document to the SWAP. The financing recommendations were not intended to encompass the entire SWAP but, instead, to focus on three areas that are typically the most difficult types of projects to finance – wastewater, septics, and stormwater.

This report begins by providing a context for the Sassafras River project within the auspices of the Watershed Assistance Collaborative and within the framework of the SWAP. The body of the report considers financing strategies for each of the three types of projects – wastewater treatment plant upgrades in the towns of Galena and Betterton, failing community septic systems (particularly within Cecil County), and stormwater runoff associated with Route 301. Each of the three sections presents the challenge specific to the Sassafras watershed based upon conversations and email exchanges with SRA and others. Each section then presents a list of potential financing mechanisms and, where appropriate, case studies from around the region (and, in some cases, around the country). Finally, specific financing recommendations are made for each of the three sections. The appendices include a list of important dates in relation to the Sassafras River project as well as a list of practitioners, with contact information, who may be able to assist in the next phases of implementing the SWAP.

Project Background

The role of the Watershed Assistance Collaborative

State agencies including Maryland Department of the Environment (MDE), Maryland Department of Agriculture (MDA), and Maryland Department of Planning (MDP), have allocated resources and funding to assist communities and organizations in meeting their goals of planning and undertaking comprehensive watershed restoration and protection efforts. One such effort, led by the MD-DNR is a newly formed group of technical assistance providers called the Watershed Assistance Collaborative (the Collaborative). The Collaborative, composed of the EFC, Chesapeake Bay Trust (CBT), and University of Maryland Extension, was created to offer technical assistance to watershed groups and local governments toward the goal of improving local capacity for watershed protection and restoration. The overall goal of the Collaborative is to provide funding, resources and support toward watershed action plan development and implementation, to augment local capacity, and to develop innovative and sustainable financing strategies for doing so.¹

¹ The Watershed Assistance Collaborative was formally introduced to the watershed protection and restoration community on September 2, 2009 at the Watershed Assistance Collaborative Partners workshop held at Patuxent Wildlife Refuge in Laurel, MD. Prior to this event, The Collaborative was presented to a smaller audience through the Chesapeake Network Forum at what has come to be called the “Rockfish Meeting” on June 5, 2009.

The EFC recently finalized a project with the Chester River Association and the current effort with the Sassafras River Association is the second project completed within the auspices of the Collaborative. The EFC's work with the Watershed Assistance Collaborative began with a project in the Chester River Watershed. In July of 2008, the EFC assembled approximately a dozen stakeholders for state and local government, educational institutions, and nongovernmental organizations associated with the protection and restoration of the watershed. The EFC facilitated a discussion among these stakeholders that prioritized potential locations for their efforts, developed consensus on the on-the-ground projects to take place, secured the engagement of the partner organizations, and established a partnership that would serve as the basis for a proposal to the state for 2010 Trust funds.

Land use in the selected watershed is diverse, and the Middle Chester Partners were interested in developing a proposal that incorporated projects that would address a variety of community priorities. A collection of nutrient reducing agricultural, septic, and restoration projects were agreed upon and included in the proposal submitted to DNR in August 2008.

An initial assessment of the proposal indicated a level of engagement among partners that could be anticipated to have real and measurable impact on nutrient levels in the watershed if the included projects could be carried out effectively. To better capitalize on the strength of this partnership and further improve the likelihood of successful implementation, a more thoroughly defined work plan was needed.

Because the EFC is a non-advocacy organization promoting efficiency and sustainability, it seemed the most appropriate partner to facilitate the type of short- and long-term planning necessary to enable the Middle Chester Partners to maintain the successful launch of the majority of their proposed projects despite the funding limitations. The EFC worked closely with the Partners and project area subcommittees over the course of several months in 2009 to clearly identify the programmatic details, partner roles, and expected expenses for each of the proposed activities. The resulting work plan will serve as a road map for year one efforts in the Middle Chester and can be viewed at http://www.efc.umd.edu/pdf/MidChesPart_FinalReport.pdf.

The role of the Environmental Finance Center (EFC)

As indicated above, the EFC's second project through the Collaborative was to assist the Sassafras River Association as they guide the creation of the Sassafras Watershed Action Plan. The EFC role, therefore, was to help craft financing recommendations, based upon restoration strategies and stakeholder goals identified in the SWAP.

The EFC was also involved in the SWAP process, in the role of facilitator, for stakeholder meetings that took place in February and April. This role gave the EFC a holistic view of the players and issues in the watershed as well as allowed the EFC to establish an identity with the stakeholders as a non-biased entity that is not a player within the watershed.

With guidance from the SRA, the EFC selected three top priority projects. Each of these projects – upgrades to the Galena and Betterton wastewater treatment plants, identification and testing of major combined community septics within the watershed, and major stormwater retrofits at two sites along Route 301 – was proving to be more complicated than SRA had originally expected and less straightforward in terms of securing funding. Thus, the financing recommendations included in this document are designed to be used alongside the SWAP to help stakeholders within the watershed assess the funding options, match appropriate funding mechanisms to the top priority projects, build cost-saving collaborations, and maximize return on investments. However, there is an important

distinction to be made as to where exactly the EFC recommendations will be used. The section below is designed to clarify this distinction.

The Sassafras Watershed Action Plan (SWAP)

This section is intended to provide some background for the Sassafras River Association's (SRA's) role and the Environmental Finance Center's (EFC's) role in the development of the Sassafras Watershed Action Plan (SWAP).

In February 2009, the Sassafras River Association (SRA) launched the development of the Sassafras Watershed Action Plan (SWAP). In the past eight months, SRA has worked tirelessly to engage with stakeholders in order to create a plan that is scientifically robust, comprehensive, and embraced by stakeholders in multiple sectors throughout the watershed. SRA activities have included the creation of a core team (and monthly meetings to monitor the status of the SWAP), the formation of a large stakeholder group (with quarterly meetings), a stream corridor assessment, training for stream waders and other volunteers, a characterization and synoptic survey, meetings with public officials on the local and state levels, and a great deal of research into the problems inherent in the watershed and the solutions necessary to fulfill the SWAP goal of creating a "scientifically robust action plan for the watershed which will include a prioritized list of restoration projects, cost estimates and funding opportunities that will have a clear and demonstrable effect on water quality in the Sassafras River". The goal is for the SWAP to be approved and signed by the core team at a January 2010 meeting.

There is an important distinction here between the SWAP and a forthcoming SRA Strategic Plan, however, and it must be made in order to establish how the EFC recommendations may be used. The SWAP is already in progress, as detailed above, and is being drafted with the leadership of the SRA but is not under the purview of the SRA. The intention is that the SWAP is approved by the core team (who will literally include their signatures on the cover at the January 2010 meeting) and is used by the watershed as a whole. This means it becomes the guiding watershed restoration and protection document for the towns, the counties, watershed groups, citizens groups, etc. However, the SWAP is NOT the strategic plan of the SRA. Importantly, the SWAP, for instance, will not include plans to lobby for certain zoning laws, because the core team may in fact have differing views on such issues. Instead, it is a set of uniting principles and actions within which the entire watershed can work.

A strategic plan for the SRA does not yet exist. According to the SRA, they will likely use components of the SWAP and, at some point, draft a strategic plan for the organization. Such a plan *could* include things like lobbying for a zoning regulation because advocacy is a part of the SRA mission.

Thus, the financing recommendations that have been created by the EFC and discussed in this document are in a netherworld – connected both to the SWAP and a future SRA strategic plan but not necessarily a part of either. Some of the language written in these recommendations may be included in the SWAP but, according to the SRA, the SWAP will not include a specific section on financing the projects. Some of the language written in these recommendations may also be included in the SRA strategic plan if SRA decides to make one or more of the SWAP projects highlighted in these financing recommendations part of their "caseload." But the purpose of the recommendations in this document is, from EFC's perspective, to educate SRA (and, through SRA, folks in the watershed) about options for paying for three categories of large capital projects highlighted in the SWAP: WWTP upgrades, community septics, and complex (unusually expensive) stormwater projects.

Financing Strategies and Options

The body of this report is divided into the three sections referenced above - WWTP upgrades, community septic upgrades, and complex (unusually expensive) stormwater projects. One financing/funding mechanism that is mentioned in all three sections is the Maryland Water Quality State Revolving Loan Fund (WQSRF or WQRLF) through the Maryland Department of the Environment (MDE). General information is provided about this program in the text box below to avoid repetition. More specific information on the appropriateness of this funding/financing tool for each of the three projects covered in this document is provided within each of the three sections.

Maryland Water Quality State Revolving Loan Fund (WQSRF or WQRLF)

Federal money is allocated through the EPA Office of Wastewater Management to Clean Water State Revolving Fund (CWSRF) programs in each of the 50 states and Puerto Rico. In Maryland, this money funds the Water Quality State Revolving Loan Fund (WQSRF or WQRLF), Bay Restoration Fund – Septic System Grant Program, and others.*

Through the WQSRF, low-interest loan funding is available for various kinds of water quality projects throughout the state. The program is divided into Point Source Pollution Prevention and Nonpoint Source Pollution Prevention. Loans for point source projects include WWTP improvement and expansions. Loans for nonpoint source projects include stream corridor restoration/protection.#

Selection for financing through the WQSRF program (in both the Point Source and Nonpoint Source programs) is made based upon MDE's Integrated Project Priority System. Points are assigned based upon general eligibility, existing conditions criteria, proposed project benefits criteria, water quality improvement criteria, and state priority watershed criteria. Projects that score the same amount of points and need a "tie breaker" are prioritized in order of population served, drainage area treated, and linear feet restored. (See MDE Integrated Project Priority System March 2009 revision.)

*<http://www.epa.gov/owm/cwfinance/cwsrf/index.htm>

#http://www.mde.state.md.us/Programs/WaterPrograms/Water_Quality_Finance/Water_Quality_Fund/index.asp

Upgrading Waste Water Treatment Plants (WWTP) in the Sassafras River Watershed

The Challenge

Galena has a population of 425 and Betterton has a population of 387. Neither is considered a disadvantaged community due to a relatively high median income. The publicly-owned Galena Wastewater Treatment Plant (WWTP) processes approximately 55,000 gallons per day but is permitted to receive and treat roughly 60,000 gallons of sewage a day. Galena has petitioned MDE to increase the permit to 80,000-100,000 gallons per day but MDE has, so far, denied the increase due to violations for

ammonia and nutrients.² The Galena system serves 248 homes and 46 businesses. Although it is permitted to discharge 200,000 gallons of treated wastewater a day, the publicly-owned Betterton WWTP receives and treats approximately 20,000 gallons of sewage a day.

Raw wastewater received by the Galena plant is treated in a sewage lagoon that was designed and built in 1962.³ Although sewage lagoons have been used to treat wastewater for many years, particularly in small communities, like Galena, they are not capable of matching the pollutant removal efficiencies provided by newer wastewater treatment technologies. Raw wastewater received by the Betterton plant is mechanically screened and treated in an aeration tank and clarifier-digester housed in a single tank that was designed and built in 1969. The plant also has biosolids handling facilities, consisting of two covered sludge drying beds. Although the current operator has been doing a good job keeping the plant operational, it is a dated facility and is not capable of matching the pollutant removal efficiencies provided by newer wastewater treatment technologies. The single aeration tank cannot be configured to provide the environment needed to remove significant amounts of nutrients (nitrogen and phosphorus) from the wastewater stream.

The Sassafras River Association (SRA) has worked tirelessly to involve Galena town officials in the watershed planning process. Building a relationship with the town, for the purpose of getting the WWTP upgraded, has been slow; however, SRA has had contact with Mayor Harry Pisapia, and Town Manager Tom Bass. SRA has also attended town council meetings and was received amenably by the council.

The SRA has also been in contact with Betterton to offer support for the town's efforts to upgrade the WWTP. Mayor Candy (Carolyn) Sorge has a record of being supportive of environmental initiatives. Betterton also has a pipe outfall that goes directly into the river at a large public beach (300 ft of waterfront), giving SRA a powerful public outreach strategy (because there have been swim advisories at this beach). SRA has considered doing bacterial source tracking (using DNA) to link the bacteria coming out of this pipe back to the WWTP in order to make a stronger case that the WWTP needs to be immediately upgraded. Neither SRA, the town of Betterton, nor Kent County has the funds to do this type of data analysis.

The Towns of Galena and Betterton have submitted proposals to MDE for facility upgrades. The proposed upgrades in Galena are for secondary treatment only, at a cost of \$1,428,000. The proposal did not score high enough on the project priority list for funding but was offered a \$1,428,000 20-year Stimulus Loan at 1% interest. The Betterton WWTP submitted a proposal for \$4,050,000 to upgrade to Enhanced Nutrient Removal (ENR). This project also did not score high enough on the project priority list. The Betterton project was not offered stimulus funds because the start-of-construction date was not soon enough to take advantage of ARRA money.

While there is no tax base in either Galena or Betterton to support a 20 year loan, SRA believes that a 40 year loan is a possibility. A meeting between the Environmental Finance Center and MDE on September 11, 2009 indicated that 40-year loans are not offered by MDE. 30-year loans are possible but only for disadvantaged communities.

² In November 2009, the Kent County News reported that Galena faced a penalty of \$50,000 from MDE for discharge violations. The newspaper also reported that the Town Council voted to accept a consent order on November 9 to "move forward on its plans for a new sewage treatment plant." (Kent County News, Nov 12, 2009)

³ The Galena WWTP and lagoon was, in fact, designed and built by the grandfather of the present town engineer.

Because of the Galena sewage lagoon's and Betterton treatment plant's inability to significantly reduce nutrient loads, the Galena and Betterton WWTPs deliver a disproportionately large amount of both nitrogen and phosphorus to the Sassafras River. The Sassafras River is on Maryland's list of impaired waters and a total maximum daily load (TMDL) has been written for the watershed for phosphorus due to the increased number of algal blooms that have been occurring within the river in recent years. Unfortunately, the TMDL has been written to allow two point sources (i.e., the Betterton WWTP and the Galena WWTP, which is the watershed's single largest source of phosphorus) to contribute roughly half of the phosphorus load that is delivered to the river, despite the fact that **the two WWTPs treat wastewater from approximately 800 homes and businesses** and that the urban areas served by these municipal treatment plants make up less than 5% of the total watershed area.

In order to better protect the Sassafras River from nutrient enrichment, both the Galena and the Betterton WWTPs should be upgraded or replaced to remove a great portion of nitrogen and phosphorus from the discharge. Based on SRA water quality monitoring data, SRA knows when the WWTP is in violation. Ideally, the Galena WWTP should be updated to ENR status. Currently, the average TP concentration in the effluent discharged from the Galena plant is between 5 and 6 mg/L, while the reported average TP concentration in the effluent discharged from the Betterton plant is exactly 3 mg/L every month. BNR plants typically reduce TP concentrations to 3 mg/L or less, while ENR plants typically reduce TP concentrations to 0.3 mg/L or less. It is hard to believe that the plant consistently produces such a high quality effluent and it is very likely that there is at least some minor variation in TP concentration from one month to the next. An upgraded plant would produce a higher quality effluent on a more consistent basis. (Portions of this section are excerpted from an SRA document entitled Wastewater Treatment 062909 and drafted by Mike Novotney formerly of CWP.) (Also, for more information on pollution in the Sassafras watershed, please reference the Upper Eastern Shore portion of the Maryland Trib Strategy.⁴)

Potential Financing Mechanisms

Given the limited tax base and the current financial circumstances of both Galena and Betterton, neither community is able to access current revenues or reserve funds (a.k.a. pay-as-you-go financing) to finance the large capital expenditure needed for WWTP upgrades. Thus, this section highlights cost-saving efficiency measures as well as potential sources of grant and loan funding. Importantly, this section also includes programs that Galena and/or Betterton are NOT eligible for. It seemed relevant to include these sources so that they can be ruled out and resources are not wasted pursuing them.

Cost Saving Tools and Strategies

Financial Management Planning

For WWTPs that are the same age as the Betterton and Galena plants, some of the financial stress of upgrades could be alleviated by having sound financial management plans in place. As part of these plans, the plants should be continually checking on the financial health of their systems and continuously striving to improve and build towards strong financial health in the future. To do this effectively they must plan and be proactive about the necessary repairs and replacements that are required. In a worst case scenario, small plants can suddenly find themselves in violation of the Clean Water Act and in need of millions in funding for urgent upgrades.

⁴ MD DNR, Maryland's Chesapeake Bay Tributary Strategy Statewide Implementation Plan, http://www.dnr.state.md.us/BAY/tribstrat/TribDocumentFinal_012308.pdf

The use of capital improvement planning (CIP) is one method that would help WWTPs in the Sassafras watershed. CIP could be used to address short and mid-term capital improvement needs; however, it must be combined with a strategy for long term repair and replacement of their major capital assets. This can be achieved through the principles of Asset Management. Together, CIP and Asset Management are processes that help to take inventory of existing conditions, enable a system to evaluate current conditions of the plant, and prioritize improvements based on the level of needs. In this way, the WWTPs can get a better sense of best management practices that are typically recommended for a WWTP to run most efficiently but are often not used by small systems.

Capital Improvement Planning - The US EPA has developed an eight step approach that can guide this effort, particularly for small publicly-owned WWTPs⁵:

1. **Assemble a Team:** The most important step to be taken initially is to assemble a strong project team devoted entirely to achieving a successful financial asset inventory of all equipment needs, conducting a cost analysis, developing a financial plan, and gaining community support and education about capital asset improvements.
2. **Conduct a Needs Analysis:** Once a team is established, an inventory of all system costs, of both current and future needs, should be conducted. This cost estimate will determine exactly what will be needed for a system to be upgraded in order to meet all state and federal regulations.
3. **Define Project Goals:** Project goals and objectives should be clearly identified in order to communicate to others the exact needs for WWTP upgrades.
4. **Define a Technical Solution:** Having clearly defined project goals will enable the team to work towards understanding the technical problem and developing some long-term solutions which include examining all technical information and drafting solutions that will include construction timelines and costs.
5. **Conduct a Rate Analysis:** On any WWTP system, both large and small, a rate analysis should be conducted in order to cover the full cost incurred for providing the service to a community. This analysis can be done through web based tools such as those developed by the Environmental Finance Center at Boise State University through their free rate-setting software (Rate Checkup), by using a rate setting guide, or by hiring a consultant to conduct the rate analysis.
6. **Complete a Community-wide Financial Analysis:** After all costs and benefits for the entire project have been calculated and properly reviewed, an assessment of the community's commitment to play a financial role should be evaluated. Their contribution to funding any portion of the project improvements will help the team proceed in securing the remaining funding needed to complete the project goals.
7. **Select Financial Options:** Upon reaching this point, small systems such as Galena and Betterton should look at the various financing options that can be considered for completing the funding of capital improvements. These will include municipal revenue-generating authority such as taxes, fees, or fines; grants; loans; and bonds.
8. **Create and Communicate a Financing Plan:** When all of the information has been collected and evaluated by following the previous steps, a WWTP will have all of the necessary pieces of data to create a strong financial plan that will lead to improved environmental compliance.

Additionally, the University of Southern Maine Environmental Finance Center

⁵ USEPA, Financing for Environmental Compliance, Step Eight: Create and Communicate the Financing Plan: <http://www.epa.gov/compliance/assistance/financing/steps/index.html>

has created a tool called “25 Questions to Assess the Financial Health of a System.” It is geared specifically for small systems like those found in the Sassafras watershed. It is intended to be used as a training tool that will indicate possible warning signs regarding the financial health of a system and help towards enhancing fiscal vitality. The tool is a self-guided and easy to use questionnaire that generates an evaluation and recommends appropriate resources. The scoring mechanism is based on 100 points with a rating of excellent, good, fair, marginal and poor rating.⁶

Asset Management - It is very difficult for small systems like Galena and Betterton to properly manage the costs of repair and replacement of their equipment, pipes, machinery and supplies (known as assets) without first understanding the general principles behind asset management. It is imperative to have a ready process that plans, budgets, and commits to capital improvements as well as considers the system’s long-term viability. Asset management helps to address short and mid-term capital improvement needs which include a strategy for longer term repair and replacement that will ensure sustainability of the WWTP.

Typically, towns such as Betterton and Galena have a very limited tax base to draw from for infrastructure improvements. Therefore, it is important for small systems in rural communities to know what equipment they have and its current condition in order to prioritize the most critical needs for repair and service to invest limited funds based on priority needs of this equipment. For Betterton and Galena, with slowly increasing populations, taking steps to maximize all existing assets and planning for future investment and anticipated needs makes economic sense.

Using an asset management approach, a WWTP such as Galena’s would be able to evaluate the life expectancy of an asset and determine whether it should be rehabilitated or replaced. This promotes information-sharing and coordinated planning. Asset management is a process that helps to build sustainable infrastructure by combining good business principles with information management. Grants alone will not cover the costs of improvements to the facilities in Betterton and Galena. Thus, adopting an asset management approach will ensure the most efficient use of funds and move the systems towards sustainability throughout the next few decades.

There are five steps in an asset management process, and they are similar to the steps typically taken to ensure environmental compliance. Asset management begins with a complete inventory of a system’s components including age, expected life, projected replacement date, replacement costs, importance to a system, and maintenance history. This is followed by prioritizing those assets; developing an asset management plan and replacement budget; implementing the asset management plan; and reviewing plan so it can be revised as priorities shift.

Using an asset management approach in Betterton and Galena would reduce operation and maintenance costs, more efficiently allocate resources, reduce the risk of system failure and service down time, and provide more accurate financial planning and a more efficient data management system. Asset management is also critical, in conjunction with full cost pricing, for ensuring that funds are available to address necessary component repairs and replacement. Lack of revenue often prohibits sound management activities such as planned equipment maintenance or replacement, system improvements to increase efficiency or treatment quality, and pay raises

⁶ University of Southern Maine EFC, 25 Questions for Assessing Your Water System’s Financial Health, <http://efc.muskie.usm.maine.edu/Water%20Survey/25questions.htm>

to stay competitive in the hiring market, to name a few. Lack of ability to perform those activities can lead to equipment failure, process failure, treatment standards violation and lack of continuity of operations due to staff turnover.

Check Up Program for Small Systems (CUPSS) is user-friendly software tool available to communities interested in implementing asset management. This tool is available for download for free from the US EPA website and includes a workbook, user guide, and training materials. The program is designed to guide small systems like Betterton and Galena towards collecting the right financial information about upgrading their WWTPs to achieve a more sustainable infrastructure.

CUPSS helps to collect information about current assets, operation and maintenance costs, and other activities, while prioritizing maintenance that is required for all existing assets. Betterton and Galena would perhaps benefit most from the program's ability to calculate the full cost of all repairs, replacements, and upgrades in the context of the revenue stream coming from the community.⁷

Full Cost Pricing

When looking at the capital expenses associated with water system repair and upgrade, consideration must be given to the system's financial health and the capacity of incoming revenue streams to cover the full cost of the service(s) provided. For Galena and Betterton, assessing the ability of the existing revenue stream to adequately support an efficiently run system should be considered. While increasing rates is not politically popular, rate setting that covers the cost of service, and regular review and periodic rate increases aligned with inflation ensure that users are paying the full and actual cost of providing wastewater processing services.

Rates should always be set to recover the full cost of running the WWTP while also being fair, equitable, and defensible. They should not be set based on what other communities are charging or what might be the most politically expedient avenue. Rate-payers should also be made aware that the revenue paid by businesses and homeowners in the Sassafras watershed is dedicated to the wastewater program and not used for other purposes. Rates should be based on well planned budgets and customers in Galena and Betterton should have a good understanding of how their rates were calculated. This type of outreach and community rapport building will be critical for garnering support during times when rate increases are unavoidable.⁸

As discussed below, Rural Utilities Service (RUS) through USDA requires that applicants' user rates are aligned with similar systems on the Eastern Shore (i.e., same demographic makeup of equivalent dwelling units (EDUs)). RUS does not provide grants to ensure that towns or counties can keep rates lower than similar systems. In short, RUS provides funding only after a community adjusts their rates so that they are as close to full-cost pricing as possible.

Garnering Public Support for Rate Increases

Outreach - Promoting low or no P detergents through an outreach campaign is a strategy recommended by EPA as a way to engage the public on the importance of effective wastewater treatment in their community. This approach also meets a community need as it specifically addresses the TMDL for phosphorous. Such a campaign could be paired with outreach on the

⁷ US EPA, Check Up Program for Small Systems (CUPSS): <http://www.epa.gov/cupss/frequentquestions.html#q4>

⁸ US EPA, Full-cost Pricing: <http://www.epa.gov/waterinfrastructure/fullcostpricing.html>. UNC EFC, Results of the Appalachian Region Drinking Water and Wastewater Infrastructure Survey: http://www.efc.unc.edu/publications/pdfs/ARC%20Final%20Report_Chap%206.pdf (See pg. 116)

need for upgrading the WWTPs in Betterton and Galena and that, once upgraded, such low or no P products will help it last longer.

Public Education on Full Cost Pricing - Multiple resources are available from the EPA's Office of Wastewater Management, Sustainable Infrastructure for Water & Wastewater division on full cost pricing, or pricing that recovers the costs of building, operating, and maintaining a system into perpetuity. To garner public support, work will need to be done to re-educate WWTP users on the actual capital and operating costs of a sewage system. Resources are also available from West Virginia University's National Environmental Services Center oriented toward small communities⁹

Rate Check-Up

In an attempt to secure the needed funding for an upgrade for Sassafraz, existing gaps between the needs of the plant and the revenues used to support the plant should be identified. Consideration should also be made for a yearly review of current rate structure using detailed information available and modifying the rate currently charged to match the full cost of operating and maintaining a WWTP.

Town	Sewer (per month)*	Water (per month)*	BRF (per month)*	Total (per month)*	Total (per quarter)*	Total (annual)*
Galena	\$16.94	\$24.74	\$2.50	\$44.18	\$132.53	\$530.12
Betterton (within town limits)	\$38.33	\$16.50	\$2.50	\$57.33	\$172	\$688
Betterton (outside of town limits)	\$57.50	\$24.75	\$2.50	\$84.83	\$254.50	\$1018

*slight discrepancies due to rounding

These rates were derived via personal communication with the Clerk/Treasurer of the Town of Betterton in October 2009 and by referencing the Galena Sewerage Facility Analysis and Report (July 2009). Betterton's rate was effective June 23, 2009.¹⁰ Galena's rate was effective July 1, 2006.

In the Galena Sewerage Facility Analysis and Report, it is estimated that for a \$1.5 million dollar project (assuming a 30% grant and a 70% loan), rates would increase by 32%. Thus, the rate would increase to approximately \$58.17 monthly (\$174.50 quarterly or \$698.00 yearly).¹¹

In comparison, USDA Rural Utilities Service recommends the following rates in order to cover annual costs of water and sewer systems as well as the costs of maintenance and upgrades:

⁹ National Environmental Service Center (NESC), West Virginia University, Septic Systems education resources: <http://www.nesc.wvu.edu/subpages/septic.cfm>

¹⁰ Personal communication: Annette M. Green, Clerk/Treasurer, Town of Betterton

¹¹ Galena Sewerage Facility Analysis and Report, July 2009

	Monthly	Quarterly	Annually
Sewer	\$41.67-54.17	\$125.00-\$162.50	\$500-650
Water	\$33.33-37.50	\$100.00-\$112.50	\$400-450
Total	\$75.00-\$91.67	\$225.00-\$275.00	\$900-\$1100

Finally, one possibility for assessing rates that will cover the true costs of wastewater treatment is that used by the Loxahatchee River District in Jupiter, FL. The district assesses quarterly service charges (one quarter in advance) based upon the number of toilets in the home or business. For example, a home with one toilet is assessed \$40.75/quarter, two toilets are assessed \$50.94/quarter, three toilets are assessed \$61.12/quarter, and four toilets are assessed \$71.31/quarter. Businesses are assessed at slightly higher rates. While these rates are lower than the USDA recommendations in the table above, the River District is well-known for providing exemplary service while maintaining some of the lowest wastewater service rates in the state. Thus, the idea of assessing rates based on the number of toilets on a property could be a way for the towns of Galena and Betterton to directly connect rates with usage.¹²

Grant and Loan Funding

If either community were willing to consider (or reconsider, in the case of Galena) a loan, the following state and federal programs may be options. As loans are paid back with user fees, please refer to the discussion above on garnering public support for fees and rate increases. A summary of federal funding opportunities can be found on the US EPA Small Communities website¹³.

MDE Water Quality State Revolving Loan Fund (WQSRF) – Point Source Program

One way that WQSRF financial assistance can be used is to fund the construction of publicly owned wastewater treatment works. Loans via WQSRF are taken directly with MDE and are targeted toward public entities. Projects involving the construction of such facilities toward the reduction and prevention of water pollution problems are eligible. This includes financing for expanded or rehabilitated wastewater treatment plants as is needed in both Galena and Betterton.

Selection for financing through the WQSRF program is made based upon MDE’s Integrated Project Priority System. Points are assigned based upon general eligibility, existing conditions criteria, proposed project benefits criteria, water quality improvement criteria, and state priority watershed criteria. Projects that score the same amount of points and need a “tie breaker” are prioritized in order of population served, drainage area treated, and linear feet restored. (See MDE Integrated Project Priority System March 2009 revision.)

The Galena project received a total of 26 points out of a possible 30 when scored (and ranked 69). The maximum 10 points were given in the existing condition criteria for being a wastewater treatment facility and the maximum 10 points were given in the proposed project benefits criteria for enforcement action in attempting to address enforcement. Six points out of

¹² Loxahatchee River District, Residential Service: <http://www.loxahatcheeriver.org/residential.php>

¹³ US EPA, Office of Wastewater Management, Municipal Support Division, Federal Funding Sources for Small Community Wastewater Systems: <http://www.epa.gov/OW-OWM.html/mab/smcomm/eparev.htm#4>

10 were given in the water quality improvement criteria for being located in the Sassafras River watershed, which has been classified as a medium (?) priority watershed. The total score of 26 put the project below the fundable line of 27 points. However, the project was offered a 20-year loan (from ARRA stimulus funds) of \$1,428,000 at 1-2%. The town rejected the offer.

The Betterton project received a total of 22 points out of a possible 30 when scored (and ranked 183). The maximum 10 points were given in the existing condition criteria for being a wastewater treatment plant. Six points out of 10 were given in the proposed project benefit criteria as they did not indicate they were trying to address regional consolidation and non-expansion. Six points out of 10 were given in the water quality improvement criteria for being located in the Sassafras River Watershed. The total score of 22 put the project below the fundable line of 27 points. This project was not eligible for stimulus funding because the construction date was listed as September 2010.¹⁴

As part of their score, both Galena and Betterton earned 3 points for non-attainment of dissolved oxygen (based on water quality standards that are considered “attainable” by the Bay’s scientific community) and 3 points for the approved phosphorus TMDL (based on the 2008 303(d)/305(b) List). More impairment listings could have earned the projects more points in the water quality improvement criteria category.

In short, neither Galena nor Betterton ranked high enough to warrant WQSRF funding. MDE set the fundable line at 27 points for this round of funding. Thirty to forty projects scored above this line and approximately 200 projects fell below it.

Additional funds available on a “one time only” basis through ARRA stimulus funding were made available to some applicants. As indicated above, Galena was offered a \$1.4 million loan but turned it down. Betterton was not eligible for stimulus funding because the construction date was listed as September 2010.¹⁵

Based on this information, it is fair to conclude that neither Galena nor Betterton will be able to secure State Revolving Fund loan at this time. However, on October 29, 2009, a major spending bill, with substantial monies allocated for environmental protection and restoration, passed Congress and was referred to President Obama for final authorization. According to a Reuters article published that same day, the bill “includes \$2.1 billion to help local governments upgrade sewer systems...and \$641 million to protect [large bodies of water including] the Chesapeake Bay.”¹⁶ While it will take time for this money to trickle into state budgets, it is very possible that programs like WQSRF or additional stimulus funding for WWTP upgrades may be available in the near future. In the meantime, we recommend that some of the other financing mechanisms below be explored more thoroughly.

¹⁴ MDE, Maryland FINAL Project Priority List for Federal FY2009 & State FY2011 Clean Water Funds (State Revolving Loan/State Grant):

http://www.mde.state.md.us/assets/document/FINAL_FFY_2009_CLEAN_WATER_IUP.pdf

MDE, Maryland AMENDED Project Priority List for Federal FY 2008 & State FY 2010 Clean Water Funds (State Revolving Loan/State Grant) (Stimulus Funds):

http://www.mde.state.md.us/assets/document/Amended_FFY08_Water_Quality_PPL.pdf

¹⁵ Personal communication: Elaine K. Dietz and Andrew Sawyers, MDE, MD Water Quality Financing Administration

¹⁶ FACTBOX: Congress boosts spending on environmental programs, 10/29/09, <http://www.reuters.com/article/GCA-GreenBusiness/idUSTRE59S5B520091029>

Bay Restoration Fund (BRF)/Flush Tax (Senate Bill 320)

Bay Restoration Funds are comprised of money paid by sewer users (all funds go to WWTP upgrades) and money paid by septic users (60% of funds go to septic upgrades, 40% of funds go to cover crop programs). For the WWTP Fund, \$2.50/month is collected from each home/business served by a WWTP. This fund is currently giving priority to the 66 major WWTPs in the state according to Maryland’s Chesapeake Bay Tributary Strategy Statewide Implementation Plan. These plants process 500,000 gallons/day or greater. Thus, neither of the WWTPs in Galena and Betterton would be eligible to receive this funding.

Sponsorship Loans (a.k.a. Conduit Lending)

One strategy recommended by EPA’s Office of Wastewater Management is the Sponsorship Loan. While MDE does not have a sponsorship loan program (see Ohio case study below), it would be worth pursuing a similar model with a relevant state or federal agency who might be open to innovation.

Sponsorship Loans are made when a publicly owned treatment works (POTW) sponsors a non-point source (NPS) pollution project in their community in exchange for a reduced interest rate on their CWSRF loan. The interest rate on the loan is adjusted down so that the repayments remain the same. (See table below¹⁷.) These loans are typically paid back with user fees. (See more below on rate check-ups and utility district formation to increase user fees.)

Project	POTW Project Only	POTW Project + NPS Project (Sponsorship)
Project Size	\$1,000,000	\$1,200,000
Interest Rate	2.98%	1.06%
Repayment Amount	\$33,366 (2x/year)	\$33,366 (2x/year)

In some states, this type of loan application actually raises the rank of the project for consideration on the CWSRF list. One reason that the Maryland CWSRF may be hesitant to implement sponsorship loans is that they impact the buying power of the funds (i.e., the loan has expanded liability without expanding the capacity to pay back because the wildlife served by the NPS projects are not rate payers). However, Sponsorship Loans also make a more concentrated improvement in a community, are more aligned with watershed-level thinking (joining a point source project with a non-point source project), etc.), and provide a funding venue for difficult-to-fund non-point source projects.¹⁸

In short, a Sponsorship Loan could meet multiple goals laid out in the SWAP. For example, a Sponsorship Loan could both provide funds for WWTP upgrade while also meeting the goal of funding the creation of stream buffers or restoring eroding stream and wooded ravines (projects also listed as priorities in the SWAP). Unfortunately, MDE has not yet developed such a

¹⁷ Table courtesy of <http://www.epa.gov/owm/cwfinance/index.htm>.

¹⁸ Personal communication: Katie Hess, EPA Office of Wastewater Management, (Clean Water SRF),

program but the right partners could make this type of loan attractive to another funding agency.

A brilliant example of the success of sponsorship loans can be found in Ohio's Water Resource Restoration Sponsor Program.¹⁹ In this program, Water Pollution Control Loan Fund (WPCLF) recipients (publicly owned WWTPs seeking funding for upgrades) apply for a loan *and* to sponsor a restoration project through the Water Resource Restoration Sponsor Program (WRRSP). Funds for WRRSP projects are made available by advancing a portion of the estimated amount of interest to be repaid by the sponsor over the life of the loan. The WRRSP sponsor receives a 0.1% interest rate discount on its financing, which reduces its total loan repayments below that which would be required without sponsorship. The sponsor uses the refunded interest to implement the restoration project or to fund another entity who implements the project (land trust, park district, etc). Typical projects include:

- riparian buffer acquisition, enhancement, expansion or restoration
- conservation easements
- Category 3 wetland purchases
- Riparian zone or wetland buffer extension/restoration
- wetland restoration in conjunction with an adjoining high quality water resource
- streambank stabilization/natural channel design techniques
- in-stream habitat enhancements/dam removals

Between March 2001 and 2003, communities in Ohio used \$24 million of CWSRF loan funds to protect and restore 1850 acres of riparian lands and wetlands and 38 miles of Ohio's stream corridors.

Linked Deposit Loan

The linked deposit mechanism, as described by MDE, was designed to provide a source of low interest financing to encourage owners of water systems (as well as private landowners) to implement capital improvements that will reduce the flow of nutrients into the Chesapeake Bay. This program is one way that the state can provide local governments with access to private capital. MDE linked deposit loans may not exceed 20 years. The linked deposit structure exists largely for private entities and loans are made with an approved lending institution, not MDE.

Under a linked deposit approach, the state agrees to accept a reduced rate of return on an investment (e.g., a certificate of deposit) and the lender agrees to provide a loan to a borrower at a similarly reduced interest rate. For example, "if the typical earnings rate for a certificate of deposit (CD) is five percent, a state might agree to purchase a CD that earns two percent interest, and in exchange, the lending institution agrees to provide a loan to a borrower at an interest rate that is three percentage points lower than the market rate for the borrower."

As described by the EPA Office of Water, "Linked deposit loan programs provide benefits for CWSRF programs, local financial institutions, and borrowers. The linked-deposit approach benefits CWSRF programs because they support high priority nonpoint source projects and because they place risk and management responsibilities with local financial institutions. Financial institutions earn profits from the linked deposit agreements and add an additional service for their customers. Borrowers find linked deposit programs to be economical and comfortable;

¹⁹ Ohio EPA, Water Resources Restoration Sponsorship Program: http://www.epa.state.oh.us/defa/wrrsp_fa.aspx

they save money with low interest loans, and they are comfortable working with local financial institutions.”²⁰

For example, in Ohio's linked deposit program, the state makes arrangements with local banks to provide loans for agricultural BMPs and on-site wastewater treatment projects. Under a linked deposit arrangement the state agrees to buy a bank's investment (CD) and receive a lower than market rate of return on the investment. The bank agrees to provide reduced interest rate loans for eligible projects. The linked deposit loan interest rate reflects the difference between the state's reduced rate of return on the investment and the market rate of return.

In the case of Galena or Betterton, the advantage would be securing a low rate of interest (4%) and selecting and working with a local bank. However, even this reduced rate of interest does not match the low rate offered to and rejected by Galena through the WQSRF program. Thus, based on Galena's past behavior in accepting a loan, much work would need to be done at the local level to secure public support and proceed with a linked deposit loan.

Rural Development Grants/Loans (U.S. Department of Agriculture)

Grants and loans through USDA Rural Utilities Service (RUS) are specifically for cities and towns with populations of 10,000 or less who meet a set of demographic criteria. RUS's Water Programs Division has four programs which provide financial and technical assistance for development and operation of safe and affordable water supply systems and sewage and other forms of waste disposal facilities: Water and Waste Disposal Loans and Grants, Emergency Community Water Assistance Grants, Technical Assistance and Training Grants, and Solid Waste Management Grants. RUS frequently offers assistance that combines both a grant and a loan. Loan rates are typically between 2.5 and 4% (rates change on a quarterly basis) and there are no application deadlines.

Specific options available to address WWTP upgrades at the \$1.4 million and \$4 million level are the Technical Assistance and Training Program and the Water and Waste Disposal Loan/Grant Program. More information on these programs is available at <http://www.usda.gov/rus/water/>.

Water and Waste Disposal Loans and Grants can be made to public entities including municipalities, counties, special purpose districts, Indian tribes, and corporations not operated for profit, including cooperatives. A new entity may be formed to provide the needed service if an appropriate one does not already exist. Funds may be used to construct, repair, modify, expand, or otherwise improve water supply and distribution systems and waste collection and treatment systems, including storm drainage and solid waste disposal facilities as well as pay costs such as legal and engineering fees. Grants may cover a maximum of 75% of eligible facility development costs. For non-profits, loan guarantees may be available for up to 90 percent of any eligible loss incurred by the lender. Lenders pay a 1 percent guarantee fee, which may be passed on to the loan recipient. Interest rates for these loans are derived from a combination of poverty rate and market rate, depending on the circumstances of the borrower. Maximum repayment period (and the period that is almost always offered) for these loans is 40 years.

Technical Assistance and Training Grants are available to private non-profit organizations and are designed to pay the expenses associated with providing technical assistance and/or

²⁰ US EPA, Office of Wastewater Management, Innovative use of clean water state revolving funds for nonpoint source pollution, <http://www.epa.gov/owm/cwfinance/cwsrf/linkeddeposit.pdf>, July 2002.

training to personnel that will improve the management, operation, and maintenance of water and waste disposal facilities. Funds may also be used to assist organizations that have filed a pre-application with the Agency in the preparation of water and/or waste loan and/or grant applications.

Hardship Grants are also available through both programs described above. A Hardship Grant would provide a larger percentage of grant funding in the grant/loan mix and the lowest interest rate possible on the loan. However, communities must meet median household income requirements to be eligible. Specifically, a community needs to have per capita income that is not greater than 80% of national per capita income, as defined in the 2000 census. Betterton's median household income is listed at \$36,477 by the 2000 census. At 65% of national per capita income, Betterton qualifies for a Hardship Grant. Galena's median household income is listed at \$47,813 by the 2000 census. This makes Galena's population at 85% the national per capita income and thus they do not qualify for a Hardship Grant. Alternatively, if the problem is localized, they could use the median household income of a specific census tract area and become eligible.

Pre-development planning grants (PPG) are also available to communities to pay the costs of a preliminary engineering report and an environmental report (PRER). The grant covers up to 75%, to a maximum of \$15,000, for preparation of this report. (The cost of creating the reports is usually about \$20,000.) An engineer is typically contracted to conduct the reports and the process generally takes less than a month. Once submitted to RUS, the PRER goes to MDE, MDP, and DNR for signatures. In January 2009, the Town of Betterton applied for a PPG grant for \$15,000 to complete a PRER. As of October 2009, the grant had been awarded and the project was underway. Once this process is completed, they will be invited to submit a formal application for funding through the Water and Waste Disposal program.²¹

The Town of Galena is also in the process of applying for a RUS grant. Sassafras River Association provided the town with a white paper in support of the proposal with justification as to why the WWTP should be upgraded to ENR.

In order to qualify for these programs, RUS requires that applicants' user rates are aligned with similar systems on the Eastern Shore (i.e., same demographic makeup of equivalent dwelling units (EDUs)). RUS does not provide grants to ensure that towns or counties can keep rates lower than similar systems. In short, RUS provides funding only after a community adjusts their rates so that they are as close to full-cost pricing as possible.

Community Development Block Grant (CDBG) (U.S. Department of Housing and Urban Development)

The federally-funded Community Development Block Grant program enables local governments to undertake a wide range of activities to create suitable living environments, provide decent affordable housing, and create economic opportunities for persons of low and moderate income.

In Maryland, these funds flow through the Maryland Department of Housing and Community Development in cooperation with the Maryland Department of Business and Economic Development (DBED). Galena and Betterton are both considered eligible, non-entitlement

²¹ Personal communication: Brandi Burwell, Business and Community Programs Specialist, USDA Rural Development

towns which means that they qualify for funding through the CDBG program as opposed to getting money directly from HUD (as is the case for the more urbanized communities in the state).²²

Due to the restrictions of the CDBG program, Galena and Betterton are not eligible to receive funds for WWTP upgrades. Both are considered eligible to receive funds, for instance, for jobs activities and limited clientele activities (activities designed for specific populations – seniors, children, etc.) but they are not eligible for funding for so-called area benefit activities (including town wide water and sewer systems). For area benefit activities, 51% of the population or greater must be low or moderate income (LMI). Neither Galena nor Betterton is considered LMI. However, non-incorporated areas in Kent and Cecil County, assuming they meet priority funding area and planning requirements, and qualify below the LMI threshold, would be eligible.

CDBG funded projects must meet one of three national objectives: (1) principally benefit persons of low and moderate income (LMI), (2) eliminates slum and blight, or (3) meets an urgent need of recent origin that threatens public health and safety. Eligible projects include housing, public facilities (including water/sewer), and economic development projects.²³

In determining which projects to fund, the CDBG program awards points for public purpose, project impact, project management, and local commitment/leveraging. The maximum amount of points is 150. Up to 15 points can be awarded for the project's impact on local to moderate income (LMI) households. Maximum points may be awarded to projects where there is a direct benefit to LMI households. Moderate points will be awarded to projects where there is an area wide benefit to LMI households.²⁴

For the 2011 cycle, applications should be due in May 2010. Applications must be submitted by the local town or county government body. Workshops are available approximately 1 month prior to application being due.

During FY 2009, the CDBG program granted \$100,000 to Friendsville to assist with the rehabilitation and replacement of sewage collection lines to eliminate serious infiltration and inflow issues. The CDBG program also funded \$350,000 in Easton to support the replacement of storm drains, curbs, gutters and to resurface the road to solve chronic stormwater problems on a local road.

There is some evidence that a polluted river could be considered a threat to public health and safety under this program. Under the public purpose/local need section (up to 45 points), examples of distress may earn points. Failing septic systems are listed as imminent health and safety threats. Therefore, it is possible that pollution from a wastewater treatment plant that is not attaining nutrient goals could be considered a threat to the public and would warrant significant points in this category.

Based on the information gathered about the CDBG program, the program may be better suited to the community septic issue in the Sassafras watershed as opposed to the WWTP issue. Areas of Kent County, and Cecil County would be eligible. Kent County Public Works

²² Please see <http://www.neighborhoodrevitalization.org/Programs/CDBG/CDBG.aspx> for more information.

²³ The table at

http://www.neighborhoodrevitalization.org/Programs/CDBG/Documents/2009_HUD_INCOME_LIMITS_04_01_09.pdf lists the 2009 HUD Income Limits for the State of MD CDBG Program by household size.

²⁴ Personal communication: Cindy Stone, Maryland Department of Housing and Community Development

Board was awarded a CDBG for SFY2010 for \$150,000 to, “provide funding to continue the County’s housing rehabilitation program with grants and loans for LMI homeowners.”

The CDBG program bills itself as the source of gap financing after communities have collaborated with USDA and MDE programs.

Economic Development Grants for Public Works and Development Facilities (U.S. Department of Commerce)

The Economic Development Administration (EDA) provides grants to economically distressed areas for public works projects, including water and wastewater facilities. Projects must promote economic development, create long-term jobs, and/or benefit low-income persons or the long-term unemployed. Cities and counties are among the entities eligible to apply. According to program literature, the program will pay anywhere from 50% to 80% of program costs depending on unemployment rate and per capita income indicators.

“Economically distressed” is defined as an unemployment rate at least 1% above the national average or a per capita income that is 80% or less than the national average. More investigation, beyond the scope of this report, would be needed to determine whether Betterton or Galena would qualify based on each town’s respective unemployment rate. Regardless, this program does not seem like it will be an effective venue for funding WWTP upgrades. While the investments are intended to go towards infrastructure, the program is designed to open doors for new industry, encourage business expansion, diversify the economy, or generate/retain jobs. The EFC believes that such goals are not well-aligned with the needs of small Eastern Shore communities.

Case Studies

The Eastern Shore of Maryland has a unique set of characteristics – an agriculture-based economy, a reliance on septic systems for wastewater management, small communities – that are fairly universal throughout the counties. Thus, the question “How are other Eastern Shore Communities handling WWTP upgrade?” was considered as one way of orienting the potential solutions in Betterton and Galena.

Berlin, Maryland

The Town of Berlin also applied for stimulus funding through MDE. Berlin cited the need for upgrades similar to Galena, i.e., “existing WWTP cannot meet NPDES ammonia limit; expansion of plant for growth.” The project was described as “upgrade WWTP with sequencing batch reactor to meet ammonia limit and expand.” Berlin, population 4,365, applied for almost \$20 million in funding. Berlin scored 19 points (322 rank) and was not offered WQSRF assistance.

In October 2009, however, Berlin was awarded \$20.6 million in ARRA (American Recovery and Reinvestment Act) funding. The award included a USDA Rural Development low-interest loan of approximately \$6 million and a USDA grant of approximately \$6 million. The Maryland Department of the Environment will provide a \$1.5 million grant, and the Department of Housing and Community Development is providing \$700,000 through the Community Development Block Grant program. \$2 million towards the project is provided by the Town of Berlin.²⁵

²⁵ USDA, Recovery Blog: http://www.usda.gov/blog/usda/entry/recovery_act_funds_upgrade_berlin

Chestertown, Maryland

In 2008, Chestertown's WWTP was upgraded to ENR status. The plant reportedly reduces the Town's impact on the Chester River by removing 99% of the BOD, 99% of the Suspended solids, and over 90% of the nutrients (2008 Report of Municipal Affairs).

Current rates in Chestertown area as follow: residential users pay \$56.50/quarter (up to 10,000 gallons) and this includes water, sewer, and BRF (\$7.50/household). Commercial users pay \$49/quarter for water, \$49/quarter sewer, and the BRF (according to usage). Current rates represent gradual increase over a 1-year time period in order to support the WWTP upgrade.

In February 2006, Chestertown passed a resolution of intent to improve their wastewater treatment plant. The city got a 20-year loan through the MD Water Quality Financing Administration for the \$9 million project at .4% financing. The city also reportedly considered 40-year financing through a USDA program but determined that it would cost \$3 million more

MWQFA recommended that the water and sewer rates be increased by 40%, phased in over the next (2) fiscal years beginning FY2006-2007. He said if this was done the Town would be eligible for a lower interest rate of 1%, including the administrative fee as a disadvantaged community. He said this would result in an additional savings of \$15,000.00 per year.

USDA explained that the Town individual user fees would have to exceed \$500.00 per year, per residence, before Chestertown would be eligible for grants. Mr. Ingersoll stated the presently the Town user fees were at approximately \$34.00 per quarter (not including before the flush tax fees) but the 40% increase was unavoidable.

Specific Recommendations

Rate Check-Up

In order to secure financing for upgrading the WWTPs to ENR, the EFC recommends that both Galena and Betterton re-examine the rate structure for all Galena users and for Betterton users within town limits. USDA Rural Utilities Service (RUS) advocates for monthly sewer rates of \$41.67-54.17 to cover operating costs as well as maintenance and upgrades. Galena's rate of \$16.94/month for sewer is significantly lower than the recommended rate. Betterton's in-town rate is slightly below the margin recommended by RUS. Galena's rate was set in July 2006 and Betterton's rate was just re-set in July 2009. Regardless, officials need to consider the looming upgrades and move as close as possible to full cost pricing.

Pursue Funding/Financing Partnerships

Once user rates have been adjusted to increase the revenue stream, particularly in Galena, the remaining funding gap can be filled by a partnership of federal and state resources. The EFC is willing to facilitate meetings with each of the towns (Betterton and Galena) and representatives from Community Development Block Grant Program, USDA Rural Utilities Service, MDE, and MD Rural Water Association to solidify such a partnership. Based on the conversations that the EFC held with each of these agencies, these programs are willing to work together to come up with a financing strategy that best meets the needs of each community.

Consider Sponsorship Loan

Sponsorship loans are an important tool for financing infrastructure upgrades while also meeting the financing needs of difficult-to-fund restoration projects. The EFC strongly recommends that, as part of the partnership discussed in the previous recommendation, one or more SWAP Core

Team members pursue a sponsorship loan with a willing agency that would provide financing for WWTP upgrades while also funding another SWAP objective like woodland restoration.

Addressing the Community Septics Issue in the Sassafras Watershed

The Challenge

What are combined community septic systems?

In the most basic sense, combined community septic systems (also called shared septic systems, shared facilities, clustered septic systems, community sewerage systems, and onsite sewage disposal systems) operate mechanically in the same way typical private, single dwelling septic systems work, the major difference being that multiple septic tanks share a common drain field. In other words, in a shared system, multiple sources of wastewater are consolidated before discharging to a shared drainage area.

Shared septic systems are utilized in areas where hooking up to a public sewer is not an option. Shared septic systems are ideal for sites that cannot support an individual septic system due to factors related to soil type, environmental sensitivity, and/or lot size/shape. This way, the drainage field can be located away from the property in an area that is more appropriately suited.

When compared to individual systems, shared septic systems offer benefits including typically lower per-property costs and the opportunity for the central drainage field to serve as community open space. Furthermore, this approach encourages clustered development which can help to protect natural resources. Alternatively, shared septic systems also come with a growing concern that their installation allows development where development would otherwise be prohibited, thereby increasing sprawl and other undesirable development.

When operated and maintained properly, shared septic systems are a safe means of treating wastewater. However, this is precisely the biggest challenge with shared systems in particular, and onsite sewage disposal systems in general (including individual). Based on a review of available publications and research, it appears that there is a major lack of oversight and enforcement after a permit is issued. It is often unclear as to who is responsible/liable for community septic failure.

Also without comprehensive tracking of onsite sewage disposal systems within Maryland, it is difficult to begin a process of accountability (i.e. determining who must pay to fix the failures). Instituting a management infrastructure (management districts with a management entity and management agreements) appears to be the most recommended way to address the problems of individual, but in particular shared, septic systems. Unfortunately this requires both money and manpower which is not always available, particularly to smaller rural communities.

In the Maryland Code, it is stated that a “Controlling Authority” must operate and maintain a shared septic system even if owners refuse to pay the costs. This provision, unfortunately, allows owners to neglect their septic system without penalty and places a huge liability on the Controlling Authority. Liens, fines, and taxes are all options to attempt to enforce property owner maintenance of the system, but do not necessarily solve the health and environmental implications of system failure. Terminating service, of course, is not an option.

Community Septics within the Sassafras Watershed

MDE estimates that there are 51,000 septic systems in the Chesapeake Bay Critical Area, each discharging 27lbs of N per year (for functioning systems and more for non-functioning systems). Sassafras River Association (SRA) reports that there are 1,718 septic systems in the entire Sassafras watershed and almost half, 824, of those are located in the Critical Area. These numbers represent systems that have been documented by a permit. However, in addition to these documented systems, SRA believes that there are ten undocumented or loosely documented community systems in Cecil County – nine at the Indian Acres campground and one at Grove Neck Girl Scout Camp. SRA has been unable to determine the number of community systems within Kent County.²⁶

It is important to acknowledge in this report that the community septic situation in the Sassafras watershed is a “moving target”. For instance, several key meetings have been arranged between SRA and various regulatory agencies in the time since EFC’s role in this project began on August 1.

- On September 3, Kascie Herron met with MDE (Craig Williams) and Cecil County Health Department (a.k.a. Department of Health and Mental Hygiene (DHMH)) to discuss SRA’s water quality concerns regarding the community systems at the Indian Acres campground. (A follow-up meeting with Chuck Smyser from DHMH also occurred on October 9.)
- On September 30, SRA met with the Cecil County Administrator (Alfred Wein) and Cecil County Director of Planning (Eric Sennstrom) to discuss Indian Acres.
- On October 6, a public hearing on the Indian Acres issue took place.
- On October 9, a letter from SRA, including a list of concerns, was hand delivered to the Cecil County Environmental Health Director.
- In addition, the zoning issue has been brought to the attention of the county by a citizens group called the Chesapeake Bay Association. Cecil County discussed the Indian Acres issue at the Nov 3 Board of Commissioners Meeting.²⁷

Indian Acres²⁸

It is not yet known if the Indian Acres situation, mired in zoning issues, public health violations, environmental justice implications, and permitting loopholes, is the worst community septic case or if the other community systems in the watershed have similar issues. Indian Acres of Chesapeake Bay (IA), developed in the 1970s as a “funstead,” is a campsite resort in which specific parcels are purchased and owned by individuals. It is located within the Critical Area of the Chesapeake Bay in Cecil County. The campsite is divided into 1,500 parcels with 900 privately owned; the rest are owned by the developer. The parcels are grouped into nine “glens” which are also the basis for the organization of the community septic system.

Each glen has a dumping station which property owners are supposed to empty their septic containers into. Unlike typical shared septic systems, there is no underground conveyance system from individual septic tanks to the shared drainage field. There is evidence of improper usage of the shared septic system, with some property owners puncturing their septic tanks such that sewage leaches into the ground, thereby reducing the need to empty tanks at the dumping station. This appears to be the primary problem, though the capacity and performance of the system as a whole, even if used properly, is likely outdated. In addition, even if the

²⁶ Personal communication: Kascie Herron, SRA, October 30, 2009.

²⁷ Personal communication: Kascie Herron, SRA, October 30, 2009.

²⁸ See SRA Aug 2009 newsletter at for Indian Acres summary. Also see the Oct 2009 newsletter for an update: http://www.sassafrasriver.org/whatwedo/2009_10_sassafrasupdate.pdf

system was being used properly, and even if the system was not outdated, it was not designed to handle a year-round waste load as these properties were intended to be used as occasional or seasonal residences.

SRA has indicated that the biggest problem and challenge has to do with accountability since currently there are neither permits for holding tanks nor permits for the nine dumping stations. There is no oversight or monitoring of the septic systems' operation and therefore identifying a liable party is a significant issue. It is unclear whether or not the full time residents are primarily responsible, functionally and/or legally, for the community septic system failures.

Installing onsite sewage disposal systems is prohibited by the county and hooking up Indian Acres to public sewer is not a feasible or practical option. Options for upgrading the community septic system are further complicated by the fact that it is, in some cases, used seasonally (although not all cases – part of the problem is that people are living there year-round) and BNR (Biological Nutrient Removal) options require a steady source of bacteria. Feasible and practical options for addressing the problem at Indian Acres remain unclear.

The community septic issue is currently being overshadowed by a zoning issue dealing with the residency restrictions at Indian Acres. As zoned, permanent residence is prohibited with stays limited to 150 consecutive days. However, over the years a number of residents have made the campground their permanent residence. This issue is further complicated by the fact that many of these full time residents are elderly, disabled, or otherwise an “underrepresented” group. Fixing this situation will require sensitivity to these groups in an effort to ensure they do not feel as if they are being attacked by the authorities.

In this light, the primary focus at Indian Acres currently is to deal with the zoning and residency issue. The Chesapeake Bay Association is spearheading the effort to uphold the existing zoning to keep Indian Acres a seasonal-use campground. Therefore the community septic issue is temporarily “on hold.”

Kascie Herron, the Sassafra Riverkeeper, met with MDE and DHMH in September and October of 2009 to highlight two primary issues in the community septic saga that seem to have been thus far overlooked by the agencies. First, there are serious concerns regarding the onsite waste handling tanks. Second there are issues with the nine “comfort stations”. SRA sees their role as the needed catalyst to keep the county and state agencies working toward a solution and to keep the issue in the public eye with the goal of protecting water quality.

Onsite waste handling/septic holding tanks

- There are unpermitted tanks not adequately storing/handling waste onsite, even when used properly. The County does not proactively seek out violations/problems, but only responds to complaints by sending a letter to the “violator”—no charges are ever pressed. MDE maintains that they lack the resources to be proactive so their only option is to respond to reports of violations as they are called in.
- Building permits were issued to add-on to units at Indian Acres without checking to see if the septic tank was adequate to cover the addition. The County is responsible for conducting a sanitary review before issuing building permits but, in the case of Indian Acres, building permits were issued without requiring septic tank upgrades, when they would not have passed a sanitary review had one been conducted. DHMH maintains that this practice (reviewing the septic when a building permit is issued) stopped as of

2001. Now, building permits are only issued for building decks, sheds, and other structures that would not affect the septic system.

- SRA sees the leaky holding tanks issue as the more pressing concern.

Comfort Station Issues

- No groundwater discharge permit is issued or required for community systems at campgrounds. According to MDE and DHMH, until raw sewage seeps to the surface, nothing can be done.
- No one bears the responsibility for the septic fields at the comfort stations.
- Technical feasibility is in question because of the potentially seasonal flow of the waste. (BNR may not be possible without consistent flow.) MDE has suggested that, perhaps, the Indian Acres system should be allowed to fail and then a WWTP would be required to handle the waste.²⁹

On October 6, 2009, the SRA formally opposed the Cecil County proposed Letter of Intent (LOI) at the Cecil County Public Hearing. SRA's opposition was based upon the failure of the county to include water quality concerns in the LOI language.

It is beyond the scope of this report, which is intended to provide financing recommendations, to provide detailed technical or policy recommendations relating to the Sassafras watershed community septic issue. Regardless, any technical fix will require a funding or financing source. The section below is intended to provide a summary of the possible options.

Potential Financing Mechanisms

Cost Saving Tools and Strategies

Establishing a Septic Utility District/Responsible Management District

In situations where there appears to be lack of oversight and accountability for septic discharge of nutrients, such as the circumstances seen in various parts of Cecil County, establishing a Septic Utility District can provide a level of septic system management. If implemented, a monthly charge would be added to the water bill, for example, specifically dedicated to funding the Utility, which would assume responsibility for septic system maintenance, inspection, and other aspects of operation.

One example of a successful Utility District is the Albemarle Septic Management Entity in northeastern North Carolina. This region of North Carolina has large pockets of low-income residents and the utility has specific assistance available to low-income residents in need of septic repair or replacement. Another example is the Otter Tail Management District in Minnesota, notable because a significant portion of the population served are seasonal residents. Please see the textboxes below for more information.

²⁹ Personal communication: Kascie Herron, SRA, September 15, 2009.

Albemarle Septic Management Entity, Northeastern Region of North Carolina**Management Entity Formation**

The Albemarle region is located in the northeastern corner of North Carolina. The region has experienced explosive growth pressure from the Virginia Beach and Norfolk regions. Slow-permeability soil and shallow seasonal water tables have limited the effectiveness of conventional onsite septic drainfields. The establishment of the Albemarle Septic Management Entity (ASME) (based out of Albemarle Regional Health Services) to inspect enhanced systems and maintain systems by contract was the result of the coordinated effort of four health districts. The program operates as a joint management agency authorized under Section 153A-274 of the North Carolina general statutes. ASME has enforcement and compliance authority including the power to remediate systems and place property liens.

Services and fees

The ASME has a customer base of 3,500 and oversees individual onsite and cluster systems in an eleven county area. All innovative and alternative systems are required to enter into inspection and maintenance agreement with the ASME. In addition, all repaired or replaced systems receiving grants or low-interest loans are required to join the management area.

New system owners are informed of the inspection and maintenance agreement and owner requirements prior to system construction. As part of the inspection and maintenance agreement, ASME conducts inspections at least annually. All repairs and any maintenance activities must be completed by the septic system owner. If owners fail to make repairs, the ASME can make the needed repairs and bill the owner, and if needed place a lien on the property for failure to reimburse ASME.

Costs are generally \$50 per inspection. ASME issues permits on newly constructed facilities at a cost of \$150. Fees are collected through billing notices. The overall annual budget of \$290,000 is sustained through annual fees and county funds.

Special services for low income septic system owners

ASME works with low-income septic system owners to identify grant and low-interest loan funding to address repairs and replacements of failing systems within the management area. A combination of Community Development Block Grants (CDBG), the state Clean Water Trust Fund, and other funding sources are applied. As noted, all repaired or replaced systems receiving grant or low-interest loans are required to join the management area. ASME handles grant and loan administration and factors the cost of inspection into grant and loan products for a period of ten years.

Community Financing for Septic Management in the Inland Bays Watershed, EFC, January 2008.

Otter Tail Management District, Minnesota

Formed in 1984 to assure proper onsite treatment of wastewater in a 55 square-mile area experiencing decreasing lake water quality and population growth, the District, created under Minnesota statute allowing the formation of sanitary districts (M.S. 116A, 1971), covers an area with six lakes, four townships and portions of the City of Otter Tail and has the authority to levy taxes and write and enforce ordinances. It provides inspection, maintenance and monitoring services for both individual and cluster systems. The District also plans for the entire area and has installed cluster systems where necessary. To date, the District has installed sixteen cluster systems in areas with small lake lots or poor soil conditions which cannot support individual onsite systems

Serving 1,200 homes, cabins and businesses at the time of its initial development, the District had expanded to 1,545 connections (as of January 2008) that include both individual septic systems and the sixteen cluster systems. There are three primary types of users within the District: 1,160 seasonal residents (75%), 390 permanent residents (25%), and 48 resorts or businesses (3% of total, 75% of seasonal)

Regardless of system type, those in the District receive minimum services including: regular system inspection (interval based on system type and use), maintenance of system records, and information/education on user “best management practices.”

System owners of individual systems also have the choice of being involved in an active or passive maintenance program. The District maintains the system for those on the active program and pays for all repairs. In the passive program, the owner pays for maintenance, repairs and replacement but is still under the jurisdiction of the District. Cluster systems are required to be on the active program. If selected, new systems are fully covered at the active program level. Existing systems may enroll in the active program on a sliding scale over a ten-year period where the district picks up 10% more of the repair costs each year. At the start of the program, the system is inspected and the tank cleaned. At the end of the ten-year period, the system is covered 100%, except in the case of owner abuses that cause degradation to the system.

The District operates solely on user fees and in 2004 had an annual operating budget of \$140,000. Although the district has several employees, many of the activities including tank pumping, planning, design, construction, and repair are contracted with individuals and businesses. User fees are based on the type of system and maintenance program. The table below (Table 1) indicates the general rate structure effective 2002 for facilities on the active plan. These rates include the administrative fee (\$36-\$38 for dwellings or \$36-\$261 for businesses) and fees for all repairs and replacement of systems. Facilities on the passive system pay only the administrative fee. User fees for resorts and businesses are calculated on an individual basis due to the difference in size and components of each system.

To assist with collections, the District has the ability to issue compliance orders and the capacity to assign costs (including penalties and interest) to property tax statements. Up to 10% of the owners default on making their payment and the property tax collection mechanism of the District is used and necessary for financial viability.

The program has been successful in protecting groundwater and surface water sources as indicated by groundwater monitoring efforts, as well as the monitoring of lake water quality over the past twenty years. System failure rates have been less than 2% over a twenty-year period. Through the course of the program, seventeen of the over 1,500 septic systems have been replaced. In addition, 120 older pre-project systems have been upgraded or replaced.

Community Financing for Septic Management in the Inland Bays Watershed, EFC, January 2008.

Otter Tail Management District, Minnesota (continued)**TABLE I: Annual user fees for facilities on the active plan, effective 2002**

Type of Active Facility	Annual Cost
Permanent residence with tank, pump and drainfield	\$168
Permanent residence with tank and drainfield	\$120
Seasonal residence (based on 3 months average)	30% of permanent residence rates
Permanent cluster system	\$196
Seasonal cluster system	\$152
Resorts and businesses	\$164-\$2,178

Sanitary Survey

One of the factors complicating the community septic issue in the Sassafras watershed is an unclear understanding of the size and scope of the problem. As illustrated in the Indian Acres example, tallying permits is not always an adequate way to count systems, particularly in areas that rely on older community systems.

Anne Arundel County completed an evaluation in March 2008 of options available to properties within the county that relied on onsite sewage disposal systems (OSDS, a.k.a. septic systems). According to the final report, the study was intended to determine the most cost-effective strategy for decreasing nitrogen pollution from OSDS systems. As part of this evaluation, a septic survey was conducted to gather data on over 40,000 systems at a cost of \$342,000 and was performed by a privately contracted consultant.³⁰ The cost did not include the establishment of a GIS database which was reportedly absorbed by the county administration.³¹

A survey of community septic systems in the watershed (ten in Cecil County and potentially more in other parts of the watershed) could cost considerably less if technology is applied effectively. According to MDE, if you have accurate GIS abilities and a good local tracking network (i.e. bacteria levels at beaches with septic in close proximity) costs can be reduced.³² A septic survey could more effectively identify where failing community systems are and would provide the data necessary to hone in on replacement costs.

Role of Education in Reducing Nutrient Discharges via Septic Systems

In areas where upgrades may be too costly or otherwise unfeasible, the role of educating property owners of the proper usage and maintenance of septic systems cannot be over stated. By understanding the health and environmental costs associated with misuse, property owners may be persuaded to maintain the systems. In many cases of septic failure, it is not necessarily the system itself but user error/neglect that causes problems. Even an upgraded septic system may prove to be inadequate if property owners do not maintain the system properly.

³⁰ UMD EFC, Community Financing for Septic Management in the Inland Bays Watershed, January 2008.

³¹ See Anne Arundel County Onsite Sewage Disposal System (OSDS) Evaluation Study and Strategic Final Report, March 2008, http://www.aacounty.org/DPW/Resources/OSDS_Content.pdf

³² Personal Communication: John Boris, MDE, October 30, 2009.

Resources are readily available online for homeowners who need tips and information on maintaining their septic system. One example from the EPA can be found at http://cfpub.epa.gov/owm/septic/septic.cfm?page_id=269 and includes a checklist for homeowners to track system maintenance. Another example is a course taught by the University of Minnesota Extension Service at <http://www.septicprotector.com/EDCOVERIA.pdf>. These resources can be made applicable to users of community systems. Non-profit watershed organizations, in partnership with relevant county agencies, could pool resources and develop an outreach campaign to better educate residents tied into community systems.

Grant and Loan Funding

MDE Water Quality State Revolving Loan Fund (WQSRF) – Non-Point Source Program

Through the Non-Point Source Pollution Program, Section 319(h) grants are available to local and State entities including county and municipal agencies, Soil Conservation Districts, State agencies and State institutions of higher learning³³. Most funds are used for project implementation, though funds are also available for planning, design, and monitoring. According to program literature, implementation projects should:

- Reduce or eliminate water quality impairments listed in the Maryland’s List of Impaired Water (303(d) List), particularly in watersheds where Total Maximum Daily Loads (TMDLs) have been approved; and
- Result in quantifiable or measurable improvements in water quality and habitat, including, pollutant load reductions for impairments addressed in TMDLs or identified in the 303(d) List.”

A prerequisite of this funding is that all projects must be part of a Watershed Plan accepted by the EPA. Once the SWAP is finalized, approved by the SWAP Core Team, and submitted to the EPA for certification, this program would be available for consideration as a source of community septic upgrade funding.

As indicated in the text box on p. xyz, selection for financing through the WQSRF program is made based upon MDE’s Integrated Project Priority System. Notably, a maximum of ten points can be awarded under Existing Conditions Criteria (Pollution Problem Description) if the following criteria are met:

“Onsite Septic System Failing to Surface Water - A single system or cluster of single systems made up of sewers and piping, treatment tanks or other facilities, and disposal of sewage or individual wastes of a liquid nature into receiving surface waters that experience treatment or hydraulic failure. Documented water quality degradation (e.g. sanitary survey, percent of system failure rate, study by local health department, problem areas identified in the water and sewer plans, impaired waters list, consent agreements) should be provided by an approving authority such as the local health department, department of public works, or identified in the local water and sewer plans.”

Thus, to access these funds, it is extremely important that water quality degradation is documented.

³³ MDE, 319(h) Grants in Maryland: <http://www.mde.maryland.gov/Programs/WaterPrograms/319NPS/factsheet.asp>

Bay Restoration Fund (BRF)/Flush Tax (Senate Bill 320)

MDE has Bay Restoration Fund (BRF) money (\$7.5 million annually) available to upgrade approximately 600 systems. Priority is given to failing septic systems in the critical area. Currently, there are about 4,000 applicants who have applied for this funding. Upgrades average about \$12,500 (some estimates are as high as \$18,000) per system. Each of the 4,000 applicants in the queue has to prove that they have a failing system (meaning that sewage is on the ground). It is also important to note that BRF does not fund the repair of existing conditions, a necessary first step for those who would like to upgrade a system that is currently failing.³⁴

BRF money is typically used to upgrade individual systems and not community systems. However, if there were individual tanks in a system with one central collection point, BRF monies could be used to pay up to the cost of doing an individual upgrade on each collection tank in the system. However, with the applications already in the system, it would likely take seven to ten years to access these funds.³⁵

Thus, relying on the BRF to pay for repair of the failing community septic systems in the watershed is not a timely strategy. The EFC recommends that other funding sources are pursued.

MDE Supplemental Assistance Program (Grant)

The Supplemental Assistance Program (SAP) provides grants to local governments for planning, design, and construction of needed wastewater facilities. In relation to septic systems, the SAP funds connection of failing septic systems in older established communities to public sewers.³⁶ This would not apply to areas where hooking up to public sewers is not a feasible option, but may be applicable to certain sites.

Project selection is based on the Integrated Project Priority System – the same system described above in the MDE Water Quality State Revolving Loan Fund (WQSRF) – Non-Point Source Program section. In short, all projects must conform to the following criteria: eligible under the CWA, located in a PFA, and in alignment with the County Water and Sewer Plan. Grants are usually combined with other State and federal funds, however the SAP funds up to 100% of the project cost.

The SAP does not appear to be a “good fit” for resolving the gap in funding for community septic repair. All of the community sites within the watershed are in rural segments of the county and, as stated above, it would be cost prohibitive to connect these users to existing public systems.

Specific Recommendations

Conduct a Sanitary Survey

The Sassafras River Association has done a great deal of investigation into the community septic problem at the ten Chester County sites. The scope of the issue, however, has

³⁴ The Middle Chester Partners proposed the establishment of a fund to assist homeowners in repairing failing systems in order to qualify for BRF funding for system upgrade. This is referenced in the July 2009 publication by the EFC entitled Improving Watershed Planning Capacity: Middle Chester Partnership and is available at <http://www.efc.umd.edu/publications.html>.

³⁵ Personal communication: John Boris, MDE, September 17, 2009.

³⁶ MDE, Supplemental Assistance Program, http://www.mde.maryland.gov/Programs/WaterPrograms/Water_Quality_Finance/wqfa_supplemental.asp

extended far beyond SRA's mission of protecting water quality into the arena of public health, environmental justice and equity, and zoning regulation and the need for a GIS-based sanitary survey, to assess the scope of the problem, is critical. Such a survey would ideally be conducted by consultants familiar with Cecil County (and possibly Kent County if community septic sites are identified) but not an agency operating within the county.

Consider Forming a Septic Utility District

While not a fix for failing community systems, the formation of a utility district could generate the funds necessary to maintain upgraded and repaired systems in the future. The Otter Tail Water Management District example discussed above highlights one community's approach to offering low-cost inspection services for septic owners, with maintenance service available on an opt-in basis for those desiring the benefits of this added service. Such a utility could be particularly useful in the Sassafras River Watershed and could serve community as well as individual systems. Community systems would be best served if maintenance services to ensure proper management of systems were included as part of a package (as opposed to an "opt-in" provision, which would be more appropriate for individual septic owners). Such a structure would avoid the "everybody uses it but nobody maintains it" situation seen at Indian Acres. The Otter Tail program also integrates inspections considering system type – seasonal versus permanent, residential versus business – which also may be worthy of consideration in the Sassafras River Watershed.

Pursue Funding/Financing Partnerships

This recommendation is similar to the WWTP recommendation discussed above. The EFC is willing to facilitate meetings with each of the towns (Berterton and Galena) and representatives from Community Development Block Grant Program, USDA Rural Utilities Service, MDE, and MD Rural Water Association to solidify such a partnership. In addition, the EFC recommends including the Cecil County Soil Conservation District in these discussions as they could be a source of information, technical assistance, and educational support. Based on the conversations that the EFC held with each of these agencies, these programs are willing to work together to come up with a financing strategy that best meets the needs of each community.

Route 301 Stormwater Management Projects in the Sassafras River Watershed

The Challenge

Along Route 301, in Kent and Cecil counties, there are several locations in need of fairly complex stormwater management. One of the sites is at the weigh station and another occurs just south of the bridge that crosses the Sassafras River.³⁷ SRA described the projects in the following way at a meeting with the Kent County Commissioners and Maryland Department of Transportation (M-DOT):

During the upland assessment, which looked at stormwater runoff in developed areas of the watershed, SRA and Center for Watershed Protection identified 3 potential projects near the town of Sassafras, where Rt. 301 crosses the Sassafras. At several locations stormwater runoff from Rt. 301 and adjacent land use is creating significant erosion in receiving streams and runoff is being conveyed untreated into surrounding creeks and streams. Opportunities exist to

³⁷ Please see Appendix B for a site map.

treat stormwater runoff within the conveyance system and perhaps to re-route stormwater conveyance to reduce erosive flows in receiving streams³⁸.

At the weigh station site, an M-DOT installed pipe directs water off the roadway. This pipe is not functioning as intended and, as a result, water is scouring a ravine and flowing directly from road to river. The bridge site is experiencing similar issues and would require channel stabilization to fix the problem.

The Center for Watershed Protection (CWP) has suggested each site be fixed through the installation of a series of stepped pools that re-route the water from the roadway, slow it down, and trap pollution and sediment. Other technologies are possible, depending upon rigorous site analysis that has not yet occurred, but any technological fix would follow environmental site design and stormwater BMP recommendations. CWP cost estimates total approximately \$1.2 per site. Taken together, CWP suggests that these repairs could result in a reduction of 300 tons of P and 140,000 tons of suspended sediment on an annual basis.³⁹

The nature of Route 301 as a major state thoroughfare and the involvement of the state-funded weigh station would suggest that both of these projects would be appropriate candidates for MSHA mitigation funds. Officials in the Office of Planning & Preliminary Engineering at MSHA have indicated an interest in meeting with the SRA and key partners to further discuss the possibilities.

Potential Funding Mechanisms

Sustainable revenue streams that result from user fee-based stormwater management programs at the municipal or county level should always be considered for projects like those proposed by the CWP and the SRA. However, given the fact that such a program does not exist in this area as well as the fact that these are finite projects, one-time-only funding is appropriate, as long as the long term care and maintenance of the facilities is taken into consideration.

Clearly, the most immediate opportunity for implementing and financing the Route 301 stormwater management projects lies with the MSHA. However, there are a number of additional opportunities, both within MSHA and with other agencies and organizations, to potentially be leveraged as well. This is by no means an exhaustive list, but rather a summary of programs that appear to offer the best potential fit for the proposed project.

State Programs

MSHA: Transportation Enhancement Program

The Transportation Enhancement Program (TEP), administered by MSHA, provides federal funding for nontraditional transportation projects. Because the SRA's proposed stormwater projects are related to the function, impact, and proximity of a Maryland surface transportation route, they are suitable projects for Qualifying TEP Category I I which includes "environmental mitigation to address water pollution due to highway runoff," and more specifically, projects that minimize, correct, or collect stormwater runoff from roadways.⁴⁰ Nonprofit organizations, such

³⁸ Personal Communication. Kim Kohl, Sassafra River Association. Nov 3, 2009.

³⁹ Personal Communication. Paul Sturm, Center for Watershed Protection. Sept 9, 2009.

⁴⁰ According to the *Maryland Transportation Enhancement Program Manual*, "eligible mitigation activities include wetland creation, stream channel improvements, erosion control measures, drainage facility restoration, and permanent filtering systems such as the addition of vegetated ditches or detention basins." Page II.

as SRA or CWP, are eligible to apply for this program, but would be required to include a state or local government agency as a co-sponsor.

Perhaps the greatest challenge associated with this opportunity is the fact that this is not a grant program, but rather a reimbursement funding program, so project costs must be paid by the applicant and then reimbursement through this program. In addition, the program will pay for up to 50% of the total project costs, or up to 80% of the project's reimbursable project costs. For example, on construction projects such as these, planning and design costs are ineligible for reimbursement. In other words, the TEP program could pay for up to 80% of the construction costs associated with these projects, but planning and design costs would have to be put towards the applicant's nonfederal match.⁴¹

The TEP program is a viable option if a government partner is identified; if the applicant is able to make upfront payments to be reimbursed by the program; and if matching funding for any planning and design work can be secured.

Chesapeake and Atlantic Coastal Bays 2010 Trust Fund

The Chesapeake and Atlantic Coastal Bays 2010 Trust Fund (2010 Trust Fund) was established during the 2008 Legislative Session to support implementation of innovative practices that demonstrate measurable and ecologically-sound approaches to reduce nonpoint source pollution at the local level. Administered by the BayStat Program, multiple state agencies receive funds from the 2010 Trust Fund, including DNR, MDA, and MDE.

For FY 09, \$6 million was allocated to MDE for stormwater, stream, and wetland restoration projects, with an emphasis on practices similar to what has been proposed for the 301 projects. Nonprofit organizations with established stormwater management expertise were eligible to apply.⁴² Eight counties and one city (Baltimore City) received funding.

MDE: Stormwater Grants

MDE has offered Stormwater Grants in the past but reports that the program is not being funded for FY11 - FY15.⁴³ Instead, the Stormwater Grant program will be rolled into a joint agency Trust Fund RFP. Funding is scheduled to be available starting in FY 2012.⁴⁴ While this program could be a nice fit for the proposed projects, the EFC does not recommend waiting until FY 2012 to address the Route 301 issues. This program should be reconsidered in three years if the recommended actions below are unsuccessful.

MDE: Water Quality State Revolving Loan Fund (WQSRF) – Nonpoint-Source Pollution Program

Assuming the proposed Route 301 stormwater projects are designed with green infrastructure principles, both would qualify for either traditional WQSRF loan funding or funding through the green project reserve.⁴⁵ MDE will open the annual solicitation process on December 1, 2009 with a deadline of January 29, 2010. During that two-month window, MDE will accept

⁴¹ TEP discussion is based on information contained in the *Maryland Transportation Enhancement Program Manual* as accessed on October 20, 2009 available at www.marylandroads.com/OPEN/tep_manual.pdf.

⁴² Contact Marya Levelev or Elaine Dietz at MDE for more info at mlevelev@mde.state.md.us or edietz@mde.state.md.us.

⁴³ Personal communication. Elaine Dietz, MDE, October 21, 2009.

⁴⁴ Personal communication. Carrie Decker, MDNR, November 17, 2009.

⁴⁵ As of October 2009, MDE was awaiting word as to whether or not they will be receiving additional Green Project Reserve funds.

applications from interested parties for projects they wish to have considered for grant/loan funding. Local governments are eligible to apply and there is no match requirement.⁴⁶

MDE will look for projects that are ready to proceed during the funding timeframe - in this case, Federal Fiscal Year 2010/State Fiscal Year 2012. Projects will be rated and ranked using a scoring system⁴⁷ and a project will be selected for funding based upon its ranked order.

EPA guidance dictates that standard stormwater ponds do not qualify. However, a stormwater management project that utilizes green infrastructure practices to “infiltrate, evapotranspire, and/or harvest and use all stormwater from small storms, and a notable portion of stormwater from larger storms as well” is eligible. MDE will consider projects that “help to restore and maintain predevelopment hydrology for not only discharge rates, but also discharge frequencies, durations, and temperatures.

Finally, it is important to note that MDE has not funded similar projects with WQSRF money in the past because the stormwater grant program (referenced above) was available for these kinds of projects and applicants tended to decline loan funds in the hope of getting grant funds.

MSHA: Green Highways Partnership

The Green Highways Partnership (GHP) is a voluntary public/private initiative that uses integrated planning, regulatory flexibility, and market-based rewards to incorporate sustainability into transportation infrastructure. GHP was started in 2002 when the Federal Highway Administration determined that environmental stewardship was a main goal. The agency began partnering with EPA and state entities and the result was the creation of the GHP. In Maryland, the Green Highways Partnership program is run through the State Highway Administration (SHA).

As defined by program literature, a green highway integrates transportation functionality and ecological sustainability. Some green highway technologies include:

- innovative stormwater BMPs
- low impact development
- environmentally friendly concrete
- bioretention
- porous pavements
- forest buffers
- restored and stormwater wetlands
- stream restoration
- soil amendments

Some characteristics that make a highway green include a net increase in environmental functions and values of the watershed, the use of innovative, natural methods to reduce imperviousness and cleanse all runoff within the project area, and protection of the natural hydrology of wetlands and streams channels through restoration of natural drainage paths.

⁴⁶ Program details, including the application, will be available at www.mde.state.md.us/Programs/WaterPrograms/Water_Quality_Finance/index.asp

⁴⁷ The scoring system to be used is described at www.mde.state.md.us/assets/document/water/Final_IPPS_Document_060906.pdf

The SHA has partnered with many different entities, including EPA Region 3, Prince George's County, MD, the Great Lakes Program, The Conservation Fund, the Pennsylvania Department of Transportation/Pennsylvania Department of Environmental Protection, and the Industrial Resource Council.

One objective of the GHP is to establish pilot or demonstration projects, which will inform and inspire the implementation of practices that are innovative from a policy and practice perspective, efficient and cost effective, and environmentally sound and protective. Theme Teams identify pilot and demonstration projects that correspond to their group's overall mission and funding is granted based on approval of these work plans. Funds from GHP are supplemented through cost sharing and leveraging of funds from other sources. The three Theme Teams are Watershed-Driven Stormwater Management, Recycling and Reuse, and Conservation and Ecosystem Protection.

Based on conversations initiated by the EFC, MSHA has expressed an interest in taking on the Route 301 stormwater management projects as stewardship opportunities. On December 10, the environmental design group and other representatives from MSHA have agreed to meet on the Eastern Shore for a site tour hosted by the Sassafras River Association. The Environmental Finance Center and Center for Watershed Protection will also be present at the meeting.⁴⁸

Federal Programs

EPA: Section 319 Funding

The 1987 amendment to the Clean Water Act (CWA) established section 319, the Nonpoint Source Management Program, in an effort to better focus state and local nonpoint source activities. Under section 319, federal grant monies are available through the states and tribal entities to support the implementation of a wide variety of nonpoint source management practices.

In Maryland these funds are managed by the Maryland Department of the Environment (MDE). Funds can be used for planning, design, construction, monitoring and research expenses. Traditionally, the majority of 319 funds have been used on projects that: reduce or eliminate water quality impairments listed in the Maryland's List of Impaired Waters, particularly in watersheds where TMDLs have been approved; and result in measurable improvements in water quality and habitat, including, pollutant load reductions for impairments addressed in TMDLs or identified in the 303(d) List.

A TMDL for phosphorus exists for the Sassafras. Because phosphorus tends to bind to sediments, the arguments can be made that addressing runoff through these stormwater management projects will also address phosphorus, which is further indicated by the CWP phosphorus reduction estimates discussed earlier.

Although nonprofit organization are not eligible to apply for these funds, a partnering government, soil conservation district, or state institute of higher learning would qualify, and subcontracts to nonprofit organizations for consulting, engineering, construction and other tasks is permitted. An important prerequisite of this program is an EPA-approved watershed plan.

⁴⁸ Personal Communication. Greg Slater, Maryland State Highways Administration, Oct 13, 2009

Historically, only a few multi-year projects come close to the scale of the investment required here.⁴⁹ However, because this opportunity can be used for planning and design work where other opportunities discussed here do not, these funds could be effectively leveraged against other opportunities which would provide a match that would likely strengthen a 319 Fund application.

A Request for Proposals is typically issued by MDE in the spring of each year. Applications are due and the selection process takes place over the summer. MDE then submits these potential finalists in a funding request to EPA in the fall. These funds are then released to MDE in the spring of the following year with projects starting on or about July 1, meaning the entire process takes approximately 14 months.⁵⁰

Private Funding

Chesapeake Bay Trust Restoration Grant Program

The Chesapeake Bay Trust (CBT) is one of Maryland's most well-established granting organizations. Of the nearly one dozen funding programs offered by CBT, the recently revised Restoration Grant Program may be a good fit for at least a portion of the expenses associated with the proposed 301 stormwater projects.

The Restoration Grant Program was designed to fund “demonstration-scale, community-based, on-the-ground restoration projects” that will improve watershed health, showcase a particular restoration technique, and engage citizens in restoration while promoting bay restoration awareness. Up to \$50,000 can be requested for projects identified within a watershed plan, and nonprofit organizations are eligible to apply.⁵¹

Design-build requests are permitted for low-impact development practices such as this, with design costs not to exceed \$3,000. This could be an appropriate source of funds for aspects of the project not allowable under other funding mechanisms. Although there is no required match, demonstrating how these funds might be leveraged is encouraged. Online applications are currently being accepted through December 4, 2009.⁵²

The National Fish and Wildlife Foundation's Chesapeake Bay Small Watershed's Grant Program

The National Fish and Wildlife Foundation (NFWF) offers two Bay-restoration focused grants through their Chesapeake Bay Stewardship Fund. The Innovative Nutrient and Sediment Reduction Grants Program allows for grants requests of up to \$1 million, an amount far closer to the cost estimates indicated by CWP. However, projects that receive funding through this program tend to operate at a scale far greater than the proposed Route 301 stormwater projects.

⁴⁹ Based on an informal review of 319 Fund Annual Reports which can be found at www.mde.state.md.us/Programs/WaterPrograms/319NPS/index.asp.

⁵⁰ Program specifics can be found at www.mde.state.md.us/Programs/WaterPrograms/319NPS/factsheet.asp. The program is managed by Ken Shanks, kshanks@mde.state.md.us.

⁵¹ Information collected from CBT's website at www.cbtrust.org/site/c.enjJKONoFiG/b.5130211/k.7B54/Restoration_Grant_Program.htm, or contact Kirk Mantay at kmantay@cbtrust.org.

⁵² The RFP for this program can be found at www.cbtrust.org/atf/cf/%7B25AEDA0B-6D83-496D-9697-8EE8B2529DCF%7D/09-17-09_FY10_RestorationProgram-RFP-FINAL.doc.

The Chesapeake Bay Small Watershed Grants Program offers smaller funding windows, but has proven to be an effective funding source for the development of the SWAP. This program could be useful in ensuring SWAP-identified activities reach the implementation stage.

As SRA is likely aware, planning and design grants are available for \$10,000 to \$30,000 and require no matching funds. Implementation grants can range from \$20,000 to \$200,000, but these require 25% in non federal matching funds. A request for proposals is typically issued in February with submissions due in May and award announcements made in August.⁵³

Sponsorship

Lastly, there could be private opportunities to raise funds as well. Perhaps a local business could increase business or goodwill from having their name, image, or logo displayed roadside or at the weigh station. Another option may be partnering with one of the trucking companies that frequents the weigh station, allowing the company to benefit from the community recognition of their sponsorship.

Sponsorship clearly will not provide a level of funding of the scale necessary to complete these projects, but it is still a concept worth exploring. A few key sponsorships could provide enough revenue to address specific aspects of the project not covered by other funding sources, as well as providing matching funds that strengthen applications to other opportunities.

Specific Recommendations

Consider Sponsorship through the MSHA Green Highways Partnership (GHP)

On December 10, 2009 the SRA, CWP, and EFC will meet with representatives from Maryland State Highways Administration to do a site tour of the proposed stormwater management projects along Route 301. As indicated above, one of the goals of the GHP is to improve water quality while implementing practices that are innovative from a policy and practice perspective and demonstrate efficiency and cost effectiveness.

Pursue Funding/Financing Partnerships

In the event that a funding partnership is formed (or at least initiated) with the GHP at the December 10 meeting, MDE's WQSRF Non-Point Source Pollution Program and CBT's Restoration Grant Program could fill in additional funding gaps. Applications submitted to each of these programs will certainly be strengthened by the finalization of the SWAP.

As stated above, MDE will open their annual solicitation process on December 1, 2009 with a deadline of January 29, 2010. Given that the SWAP makes a sound case for the readiness of the watershed to implement watershed restoration activities and given that the core team has already been established and partnerships are already in place, the proposed Route 301 stormwater projects could be very good candidates for this source of funding. are designed with green infrastructure principles, both would qualify for either traditional WQSRF loan funding, as well as funding through the green project reserve.⁵⁴

⁵³ For more information contact Amanda Bassow at Amanda.bassow@nfwf.org. A list of 2009 CBSWG recipients can be found at: www.nfwf.org/AM/Template.cfm?Section=Charter_Programs_List&CONTENTID=13832&TEMPLATE=/CM/ContentDisplay.cfm.

⁵⁴ As of October 2009, MDE was awaiting word as to whether or not they will be receiving additional Green Project Reserve funds.

CBT's Restoration Grant Program 2009 deadline (December 4) will have passed before the SWAP is finalized but the EFC encourages the submission of an application in the next grant cycle.

Conclusion

The EFC is very pleased to submit these recommendations which are intended to serve as a companion document to the Sassafas Watershed Action Plan (SWAP). While funding for wastewater, septics, and stormwater projects is not abundant in Maryland, the EFC believes that, with the imminent finalization of the SWAP, stakeholders within the Sassafas watershed are now extremely strong contenders for state and federal grants, loans, and partnerships.

The EFC also applauds the work of the Sassafas River Association (SRA) and their persistence in leading a core team of stakeholders throughout the creation of the SWAP. The thinking and visioning that has occurred under the leadership of the SRA over the past year is evidence that the watershed protection community is well on its way to protection and restoration of the river. Nonetheless, much work will need to be done to implement the initiatives outlined in the SWAP. The EFC believes that the funding and financing recommendations contained in this report will be effective guidance for moving forward on WWTP upgrades, community septics repair and replacement, and stormwater management projects.

The Project Team

Project Manager

Megan Hughes, Program Manager – mhughes3@umd.edu

Megan Hughes comes to the EFC most recently from Bowling Green State University in Bowling Green, OH, where she served for four years as an Instructor and Internship Coordinator for the Center for Environmental Programs. She also worked for two years with the Chapel Hill, NC, firm Environmental Consultants and Research (EC/R, Inc.) as a contractor to the Environmental Protection Agency Office of Air Quality Planning and Standards (OAQPS). Ms. Hughes received her Master of Environmental Management degree from Duke University's Nicholas School of the Environment and Earth Sciences and a Bachelor of Arts Degree in Environmental Studies from the University of North Carolina at Wilmington. Her Master's Project, entitled "Creating the Urban Toolshed: A case study of Durham children's perceptions of nature and neighborhood," was authored during her time as an environmental education consultant for Durham Parks and Recreation in Durham, NC. During graduate studies, she also held a series of positions in the Triangle region of NC with the North Carolina Solar Center, the Center for Environmental Education, and Triangle J Council of Governments.

EFC Project Team

Kristen Mui, Program Coordinator – kmui@umd.edu

Kristen Mui graduated in May 2009 with a Bachelor's degree in Urban Studies and Planning, IVSP. Her interest areas include growth management, sustainable development, and community development. Most recently she completed her undergraduate thesis on the role of community gardening on community development. Previously Ms. Mui interned with the Prince George's County Planning Department's Environmental Planning Section and also participated in a number of community development research initiatives in the D.C. Metropolitan area. Kristen recently accepted a position with the environmental consulting firm ICF International in Fairfax, VA.

Joanne Throwe, Director – jthrowe@umd.edu

Hired in 2005 as the EFC's Agricultural Program Leader, Joanne Throwe became Assistant Director in 2007, Associate Director in 2008, and Director in 2009. In addition, she completed an 18-month assignment working with USDA/CSREES as shared-faculty to assist in the coordination of special agriculture projects. Ms. Throwe works with communities in the Mid-Atlantic region implementing innovative financing solutions for environmental protection. Her work experience includes extensive knowledge about agriculture, green infrastructure, biofuels, ecosystem services and solid waste management. Prior to joining the EFC, Ms. Throwe spent several years as a Development Resource Specialist at USDA's Foreign Agriculture Service and two years as an Agriculture Extension Agent for Peace Corps in the South Pacific. She holds a M.A. in Public Policy and Private Enterprise from the University of Maryland.

Jennifer Cotting, Program Manager – jcotting@umd.edu

Jennifer Cotting joined the EFC in 2004 to manage an EPA funded program designed to help communities and organizations in Region 3 overcome barriers to implementing and financing their watershed protection efforts. Now she coordinates a number of the EFC's core programs, with a particular focus on urban greening, tree canopy, and green infrastructure issues. Prior to joining the EFC, Ms. Cotting worked as an independent consultant developing and implementing environmentally based education and outreach programs for nonprofit organizations and government agencies. She received her M.S. in Sustainable Development and Conservation Biology from the University of Maryland and her B.A. in Communications from Marymount University. Ms. Cotting is also co-editor of Urban Wildlife News, the biannual newsletter of the Urban Wildlife Working Group of The Wildlife Society.

Appendices

Appendix A: Resource List

Appendix B: Route 301 Projects Locations

Appendix C: Phone Correspondence and Meeting Log

Appendix A: Resource List

Contact	Expertise	Title	Employer	Phone	Email
John Boris	Community Septics	Bay Restoration Fund Project Manager	MDE, Wastewater Permits Program	410-537-3678	jboris@mde.state.md.us
Brandi Burwell	WWTP Community Septics	Business and Community Programs Specialist	USDA Rural Development (including Kent County and Cecil County)	410-479-1202 ext. 118	Brandi.burwell@md.usda.gov
Elaine K. Dietz	WWTP Community Septics Stormwater	Natural Resources Planner	MDE, MD Water Quality Financing Administration	410-537-3908	edietz@mde.state.md.us
Katie Hess	WWTP	Environmental Specialist	EPA OWM, Clean Water SRF	202-564-1029	Hess.Katherine@epamail.epa.gov
Brigid Kenney	WWTP	Planning Director	MDE, Office of the Secretary, Office of Planning	410-537-3083	bkenney@mde.state.md.us
Andrew Sawyers	WWTP	Community Planner and Environmental Justice Coordinator	MDE, MD Water Quality Financing Administration	410-537-3411	asawyers@mde.state.md.us
Greg Slater	Stormwater	Director	Maryland State Highways Administration, Office of Planning & Preliminary Engineering	410-545-0412	gslater@sha.state.md.us
Cindy Stone	WWTP Community Septics	Director	Maryland Department of Housing and Community Development, Division of Neighborhood Revitalization, Office of Community Programs, Community Development Block Grant	410-514-7256	stonec@mdhousing.org

Appendix B: Route 301 Projects Locations



Appendix C: Phone Correspondence and Meeting Log (2009)

- September 2 – Watershed Assistance Collaborative Workshop, Patuxent Wildlife Refuge, MD**
- September 9 – SWAP Core Team Meeting, Galena Town Hall, Galena, MD
SRA Meeting with SRA Staff and Paul Sturm**
- September 11 – MDE Meeting, Andrew Sawyers and Elaine Dietz, Baltimore, MD**
- September 17 – MDE Phone Meeting, John Boris**
- October 9 – SRA Phone Meeting, Kim Kohl**
- November 12 – SWAP Core Team Meeting, Washington College**
- December 3 – MDP Meeting, Brigid Kenney, SRA Office**
- December 10 – SWAP Core Team Meeting, Washington College and Green Highways Partnership Meeting**