

Environmental Finance Center Network EPA Region 3 - University of Maryland Annual Reports

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U.S. EPA REGION 3 - ENVIRONMENTAL FINANCE CENTER

AT

THE UNIVERSITY OF MARYLAND

1997 ANNUAL REPORT

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[Executive Overview:](#)

Established in 1993, the Region 3 Environmental Finance Center at the University of Maryland has pioneered innovative finance training techniques and alternative financing mechanisms. The EFC began operation by organizing and hosting a series of charrettes for local officials on environmental finance issues limiting compliance with environmental standards. Each charrette with a community involves a panel of public finance experts that provides authoritative advice and recommendations to local officials. The charrettes also serve as a valuable reservoir of information on the nature of finance problems affecting the regulated community to better develop and deliver training courses. Case studies developed from the charrettes are being shared with the other EFCs to augment their training activities. The EFC, in cooperation with the Office of the Governor, developed "Financing Alternatives for Maryland's Tributary Strategies" a pathbreaking assembly of innovative ways of financing clean up of the Chesapeake Bay. Recently, the EFC hosted a conference on a wide range of environmental finance and economic issues using long distance learning techniques that made possible the participation of attendees at two other sites.

Additionally, the Region 3 EFC has become a region-wide resource for executive solutions to environmental finance challenges. For example, the EFC tackled the tough issues of nonpoint source pollution for the State of Maryland, is currently working with EPA's Air Office on developing guidance for states in collecting Title V fees, and has been requested to develop alternative financing techniques for beneficial uses of dredged material for an international organization. The EFC is using the World Wide Web to make information available through its home page at <http://www.mdsg.umd.edu/EFC/index.html>

Facilities and Expertise:

The problem of environmental finance and management requires an integrated, interdisciplinary, and even transdisciplinary approach. The University of Maryland's Coastal and Environmental Policy Program provides a powerful network for mounting such an approach. The Coastal and Environmental Policy Program (CEPP) is comprised of five units of the University of Maryland: the School of Public Affairs, the School of Law, the Center for Environmental and Estuarine Studies, the College of Agriculture and the Maryland Sea Grant College.

CEPP's investigation into environmental finance began three years ago with the support of the U.S. EPA and has developed to the point where the University of Maryland is now one of only six Environmental Finance Centers in the country. The EFC's efforts to date have focused on both point-source pollution issues, such as alternative methods for financing waste treatment facilities and solid waste management facilities, as well as nonpoint-source pollution issues, such as storm water management. Many of the EFC's recommendations for alternative financing are fee-based--as federal resources become scarce, it is apparent that without fee-based environmental control programs in place, the clean up of our environment will fall short.

Charrettes

Part of the EFC's goal is to provide assistance and to act in an advisory capacity to state and local governments

on issues related to environmental finance. One way to achieve that goal is to advise local officials in a "charrette" format. The charrette process, pioneered by the University of Maryland EFC, employs an advisory panel of federal and state officials and financial experts who provide local officials with solutions to their problems with financing environmental services and facilities. The charrettes provide a forum for frank discussions between local officials and financial experts about financing difficulties experienced by communities in meeting the demands of environmental mandates. The charrette process is a cost-effective way to address unfunded mandates and further the Agency's strategic initiative on Partnerships. In addition, it was one of EPA's key proposals for the National Program Review.

Since its establishment in 1993, the EFC has arranged charrettes that have expanded its understanding of financing issues related to nonpoint-source pollution, such as urban storm water runoff and agricultural nutrient runoff. Many charrette participants have been faced with the challenge of identifying cost-effective and equitable financing solutions to environmental concerns that will not impede economic development in their community. One of the key challenges found during the charrettes is convincing businesses and homeowners to "pay now" rather than to "pay later," recognizing that paying later will certainly mean higher costs.

An important result of the charrettes is the renewed commitment by communities to dedicate additional time to their environmental finance problems. The EFC has found that frequently a charrette's highest and best purpose is to facilitate a meeting of the stakeholders of an environmental finance issue that might not otherwise take place. The EFC receives many compliments about its ability to convene a meeting of disparate stakeholders, and we expect to continue to provide this vital service to local governments.

Charrette Examples

Capital Access Charrette

The Maryland EFC was asked to host a charrette for the *Access to Capital Project* of the U.S. EPA Office of Policy, Planning and Evaluation's Common Sense Initiative. The *Access to Capital Project* aims to characterize and identify methods of overcoming barriers faced by metal platers and others in obtaining the necessary capital for investments in pollution prevention equipment and/or site remediation. By increasing access to funds needed for pollution prevention equipment or remediation, U.S. EPA hopes to reduce emissions from platers and reduce the risk to human health and the environment posed by contaminated plating operations, printed circuit board manufacturers and others.

The charrette, conducted in January 1997, gathered finance experts and others interested in identifying ways in which to help these industries access funds for improvements to help abate pollution. After a presentation by industry representatives on the nature and unique characteristics of the industries in question, the panel of finance experts engaged industry representatives in a dialogue on problems they have encountered in securing funding. After a thorough analysis of the situation, panelists made recommendations on how to help metal finishers and others better secure funding. A follow-up plan will be developed to help the *Access to Capital Project* realize its goals of helping these industries implement pollution prevention processes and remediation of their property. The summary of the Capital Access Charrette can be found on the Environmental Finance Program Web site at <http://www.epa.gov/efinpage/accs2cap.htm>.

In addition to the participants listed below, the report generated by the charrette introduced a wide audience to the challenges of inadequate access to capital for environmental practices.

- Diane Cameron, Natural Resources Defense Council - Common Sense Initiative Metal Finishing Subcommittee
- Stu McMichael, Custom Print - Common Sense Initiative Council - Common Sense Initiative Printing
- Bob McBride, A.C. Plating, Vice President, National Association of Metal Finishers

- Michael Kerr, The Institute for Interconnecting and Packaging Electronic Circuits
- Sloan Coleman, U.S. Small Business Administration
- Michael Curley, Finex Inc., Environmental Financial Advisory Board
- Scott Dosick, USEPA, Office of Policy, Planning and Evaluation, Common Sense Initiative Metal Finishing
- Robert Hallenbeck, Environmental Compliance Services
- Bill McElroy, Zurich American
- Bruce McKenney, Industrial Economics, Inc.
- Randy Muller, Bank of America, Chicago, Ill
- Richard Plewa, Comerica Bank, Detroit, MI

York, Pennsylvania charrette

A significant part of the EFC's work during the summer was devoted to planning a charrette with the City of York, Pennsylvania, in close coordination with U.S. EPA's Region III "Green Communities" program. The charrette, held on October 14 and 15 in York, addressed the needs of a small city confronted with the challenges of a deteriorating urban core and a continued loss of employment opportunities for its citizens.

The charrette brought together a group of experts in the areas of "green" development and design, landscape architecture and general planning. "Green" development refers to the use of recycled materials in construction as well as environmentally sensitive and landscaped site plans. It also pertains to the renovation or construction of buildings which achieve high energy efficiencies as well as enhance or establish a sense of place for those living or working nearby.

Over 75 local government, business and finance representatives attended the charrette, including those interested in learning about how to develop or renovate urban areas in a sustainable manner, one which recognizes cultural as well as economic factors and is supported by the community.

Listed below are some of the charrette participants who attended the two-day charrette:

- R. Eric Menzer, Director, City of York Office of Economic Development
- Charles Robertson, Mayor, City of York
- Don Iannone, Great Lakes Environmental Finance Center, Cleveland State University, Levine College of Urban Affairs, Cleveland, OH 44115
- Kate Genshlea, Urban and Economic Development Division, USEPA, ML 2127, 401 M St., SW, Washington, DC 20460
- Susan McDowell, USEPA Region III, Green Communities Program, 841 Chestnut Building, Philadelphia, PA 19107
- Dominique Lueckenhoff, Branch Chief, Ecological Assessment & Planning Branch, USEPA Region III, Green Communities Program, 841 Chestnut Building, Philadelphia, PA 19107
- Mindy Lemoine, USEPA Region III, Green Communities Program, 841 Chestnut Building Philadelphia, PA 19107

- Nancy Grundahl, USEPA Region III, Green Communities Program
- Joan Goodis, USEPA Region III, Green Communities Program
- Stevie Wilding, USEPA Region III, Green Communities Program,
- Stan Laskowski, Deputy Regional Administrator and Director, Division of Environmental Services, USEPA Region III

Other Charrette Initiatives

In addition, during the year, the EFC continued to solicit interest in conducting charrettes with other local governments in the Bay watershed. As always, it is important to work closely with communities to ensure that a charrette is the right tool for a community during its policy-making and implementation process. Below is a summary of the local governments and officials with which we are currently working.

Location: Port Towns within Prince George's County, Maryland

Issue: Urban revitalization and environmental protection

The Port Towns of Anacostia, Bladensburg, Colmar and Cottage City, have a rich history which has been overshadowed by decades of urban decay and neglect. In an effort to revitalize, the towns have completed a vision and action plan which includes a section on environmental and recreational opportunities which could be pursued. How to finance some of these activities is a pressing question which the county would like to address in a charrette. After several meetings with the director of capital projects for the county, it was decided that the Port Towns issues were similar to those of York, PA. The director attended the York charrette and is deciding whether he would like to develop a similar charrette for his project. In the meantime, the EFC is gathering examples of innovative public/private partnerships nationwide which could be incorporated into the Port Towns project.

- S. Ali Abbasi, Section Head, Capital Projects Section, Prince George's County, Department of Environmental Resources, Programs and Planning Division
- Kent Aist, Project Manager, Prince Georges County Department of Environmental Resources, Programs and Planning Division

Location: North Hampton and Accomack Counties, Virginia

Issue: Water source contamination

The Route 13 corridor, which runs down the eastern shore of Virginia and is the major thoroughfare in the region, has been experiencing development pressures in recent years. The North Hampton/Accomack Regional Planning District is concerned about agricultural and suburban contamination to ground water sources. They would like to consider planning and finance options available to help address this imminent situation and have expressed an interest in a charrette. One topic of great concern is sustainable development, including social equity issues. North Hampton County, in particular, continues to discuss this opportunity and has indicated an interest in conducting a charrette later in the winter.

- Thomas E. Harris, County Administrator, County of Northampton, 1
- Timothy E. Hayes, Executive Director, Joint Industrial Authority of Northampton County and Its Incorporated Towns
- James McGowan, Director of Planning, Accomac-Northampton Planning District, Commission
- Andrea Bennett, USEPA Region III, Water Protection Division, 841 Chestnut Building, Philadelphia, PA

19107

- Megan Gallagher, Program Manager, Center for Compatible Economic Development

Location: Fairfax County, Northern Virginia

Issue: Failing storm water pond

A private community in Fairfax County, Virginia, has a pond which formerly functioned as a storm water management pond, but is now filled with weeds and mosquitoes. The County will not assume management of the pond unless it is drained and reverts to a dry retention pond, which is against the wishes of the community. The community has indicated an interest in a charrette, so the Center is coordinating with the homeowners association, the county, the state and others. Discussions are proceeding and the EFC anticipates conducting a charrette this winter.

List of Charrettes

In addition to the 1997 Capital Access and York, Pennsylvania charrettes, the Maryland EFC held a series of 14 charrettes in 1995-96 covering such issues as building, expanding and/or upgrading Wastewater Treatment Plants (WWTP), providing drinking water for new developments, determining site locations for new landfills, and stormwater management projects. The charrettes and their topics are listed below. The full text of the case studies drawn from these charrettes can be found in the 1995 and 1996 EFC Annual Reports as well as on the Environmental Finance website at <http://www.epa.gov/efinpage>

<u>Locality Name</u>	<u>Jurisdiction</u>	<u>Population</u>	<u>Project</u>
Berlin, MD	Town	2,616	WWTP
Deer Park, MD	Town	419	WWTP
Denton, MD	Town	2,997	WWTP
Ellendale, DE	Unincorp.	1,050	WWTP
Fauquier Co, VA	County	48,471	WWTP
Federalsburg, MD	Town	2,365	Sewage Lines
Indian Head, MD	Town	4,000	Stormwater
King William Co. VA	County	10,913	WWTP
Loudoun Co., VA	County	102,100	Solid Waste
Manchester, MD	Town	2,810	WWTP
Port Deposit, MD	Town	685	WWTP
Taneytown, MD	Town	3,695	WWTP
South Bethany, DE	Town	600	Stormwater
Snow Hill, MD	Town	2,217	WWTP

(WWTP= waste water treatment plant expansion and/or upgrade)

-Total Cost of Projects Considered: \$60 million

-Total Residents Affected: 184,000 directly, plus non-residents

[Produce and Disseminate Outreach Materials on How Local Governments Can Protect Streams, Improve Infrastructure and Better Manage Lands](#)

During the year, the Maryland Environmental Finance Center collaborated with the Local Government Advisory Committee of the Chesapeake Bay Program to write and produce a chapter for the local government

handbook titled "Beyond Sprawl: Land Management Techniques to Protect the Chesapeake Bay." This handbook will be distributed to the over 1,600 local governments in the Chesapeake Bay watershed, as well as to those interested in smart growth, such as community watershed organizations.

The handbook, developed by the Local Government Advisory Committee of the Chesapeake Bay Program, is designed to promote more effective measures to balance growth objectives and resource conservation goals of local governments. It identifies many useful techniques for managing land use to protect local streams and the Chesapeake Bay. Financing is an integral part in managing land use, since financing not only provides the means for implementing plans and ideas, but also offers a powerful tool for directing land use practices. Financing techniques, such as those for storm water management, help protect natural resources in addition to encouraging managed, well-planned growth.

The chapter begins by acquainting the reader with challenges facing local governments as they strive to accommodate an increasing list of demands on their community. It discusses the benefits of effective planning and the need for innovative thinking in order to pay for all that is needed to achieve the goals of cleaner rivers and the Bay.

The chapter concludes that all those who live, work or visit the Chesapeake region should be involved in its restoration. Financing sources depend on a dedicated, reliable source of repayment, sometimes in the form of special rates, fees, or taxes. These dedicated revenues represent a "buy-in" on the part of those who live, work or visit the area, acknowledging that their livelihood, and quality of life, is intertwined with the health of the bay. This "buy-in" is an acknowledgment that all stakeholders have a vested interest in maintaining this beautiful and bounteous region.

At the end of the chapter there is a selection of financing options available to local governments for such activities as maintaining drinking water or waste treatment systems, providing stream corridor protection, and managing growth. Each financing option is clearly described, with details about how to implement the option and whether it is a source of revenue or capital.

Watershed-based Forums

Pennsylvania State Association of Township Supervisors

The EFC participated in the Pennsylvania State Association of Township Supervisors (PSATS) Annual Conference on April 28. The Center was part of a session entitled "Chesapeake Bay Restoration and Protection: Townships in the Lead," which presented the recently adopted Chesapeake Bay Program Local Government Participation Action Plan and discussed ways in which local governments could implement this plan, including innovative financing techniques. The Center's presentation focused on the many ways in which a community could define the environmental finance challenge and the many sources of financing available. Questions from the audience included ways in which several communities could collaborate on stream corridor and water quality protection in a cost-effective manner.

The Annual Conference drew over 1,000 local government representatives to the four-day event. Over 50 participants attended the session entitled "Chesapeake Bay Restoration and Protection: Townships in the Lead." Panelists included:

- Davis O'Neill, Assistant Director, Chesapeake Bay Local Government Advisory Committee, Chesapeake Bay Program
- James Wheeler, Pennsylvania State Association of Township Supervisors
- Ken Johnson, Pennsylvania Department of Economic and Community Development, Center for Local

Government Services

- Dr. Bernard W. Sweeney, Director, Stroud Water Research Center

Making the Connection: Land Use and the Chesapeake Bay

The Center conducted a session at the Maryland conference, "Making the Connection: Land Use and the Chesapeake Bay," on June 19. The session discussed environmental financing alternatives useful in supporting land use decisions which help direct growth and protect water quality. The Center organized a panel of local government representatives who made presentations on innovative financing techniques developed in their communities. A panelist from Calvert County (MD) made a presentation on an innovative recreation fee charged per new housing unit for the purchase and development of open space and park land. A panelist from Harford County (MD) made a presentation about that county's highly successful agricultural preservation program, which has won national acclaim. The coordinator of the Center moderated the session and also made a presentation on alternative financing techniques, such as expansion of the State Revolving Loan program (SRF) for nonpoint-source pollution projects.

The participants in the session were very engaged in the topic and were particularly interested in recent developments in the area of land trusts. From this discussion, the EFC developed information on land trusts, methods for establishing them, and benefits to land owners and the public. This information has been useful in assisting other communities and individuals interested in this alternative, and has allowed the Center to broaden its repertoire of recommended financing techniques.

The conference was attended by over 300 local government, business, nonprofit and citizen representatives. Over 40 participants attended the two sessions organized by the Environmental Finance Center entitled "Environmental Financing Alternatives." Panelists included:

- Sherrod Sturrock, Calvert County (MD) Department of Administration and Finance
- William A. Moss, Harford County (MD) Department of Planning and Zoning
- Virginia Kearney, Maryland Department of the Environment

Pennsylvania Association of County Commissioners

On August 4, the EFC participated in the Pennsylvania Association of County Commissioners Annual Conference in Philadelphia. The EFC was part of a session which presented the Chesapeake Bay Program Local Government Participation Action Plan and in particular, stream corridor protection. During the session, panelists discussed ways in which local governments could implement this plan, focusing on stream corridor protection techniques, including innovative financing methods.

The Center's presentation focused on the many ways in which a community could define stream corridor protection, including wetlands preservation, railway bed conversion and other recreational activities, habitat restoration and historical protection. Depending on the definition, there are many sources of financing available. The challenge for local governments is to maintain restoration and preservation efforts, which require dedicated sources of ongoing revenues, a challenge for today's fiscally strapped local budgets. A primary focus of the EFC's presentation dealt with ways in which to identify and dedicate revenues for stream corridor restoration maintenance, such as establishing special districts which could assess fees based upon how much a landowner contributed to a stream corridor's health or sickness.

The Annual Conference drew over 500 local government representatives to the four-day event. Over 50 participants attended the session entitled "Chesapeake Bay Restoration and Protection: Local Governments in the Lead." Panelists included:

- Ken Johnson, Pennsylvania Department of Economic and Community Development, Center for Local Government Services
- Rick Cooksey, U.S. Forest Service, Chesapeake Bay Program Office
- R. Eric Jarrell, Environmental Planner, Montgomery County (PA)
- David O'Neill, Assistant Director, Chesapeake Bay Local Government Advisory Committee, Chesapeake Bay Program

Investigate and Lay the Groundwork for Creating a Regional Nonprofit

During the year, the EFC participated in planning sessions with the Vice Chair of Local Government Advisory Committee of the Chesapeake Bay Program (LGAC), plus a workgroup composed of directors or representatives from the Alliance for the Chesapeake Bay, the Metropolitan Council of Governments, the Chesapeake Bay Commission, and various state agencies. The planning sessions were convened to develop ideas and a mission statement, bylaws and other documents necessary to establish a Chesapeake Bay regional nonprofit organization dedicated to local governments. This nonprofit (tentatively called the "Center for Chesapeake Communities") would provide a number of services to local governments, including proactively disseminating materials such as model ordinances, checklists for homeowners and other materials designed to protect and improve the waters that lead to the Chesapeake Bay.

It is anticipated that the nonprofit would provide assistance in the form of "catalyst" grants and loans for locally initiated environmental projects. This financial assistance could be provided through a regionally based revolving fund, which could be made available for a wide range of innovative watershed projects. The EFC is developing a recommendation paper outlining the benefits of such a fund, and ways in which to establish it. The paper will be delivered to the Chesapeake Bay Program during the winter.

The EFC is also engaged in the development of a round table discussion with foundations potentially interested in providing support to the new nonprofit. The round table will explore needs and gaps in assistance to local governments in their efforts to manage economic vitality along with environmental sustainability. The round table is scheduled for this winter.

The following participated in the Advisory Board with the Maryland Environmental Finance Center:

- Fran Flanigan, Alliance for the Chesapeake Bay
- Lee Epstein, Chesapeake Bay Foundation
- Karl Berger, Metropolitan Washington Council of Governments
- Ann Swanson, Chesapeake Bay Commission
- Scott Kudlas, State of Virginia, Chesapeake Bay Local Government Assistance Department
- Kathleen Lawrence, Virginia Department of Conservation and Recreation
- Theresa Pierno, Maryland Department of Natural Resources
- Mark Bundy, Maryland Department of Natural Resources
- Ken Johnson, Pennsylvania Center for Local Government Services
- Pat Buckley, Pennsylvania Department of Environmental Protection

- Jon Capacasa, USEPA, Chesapeake Bay Program
- Gary Allen, Mayor, Bowie, Maryland

Maryland Tributary Strategies: Watershed Management

The State of Maryland has created a new kind of institution, multi county, watershed specific "Tributary Teams", and charged the teams with implementing the state's commitment to reduce controllable nutrients that damage the Chesapeake Bay by 40% by the year 2000.

Funding for nutrient reduction has been identified as a primary concern of the Teams. Working with the Office of the Governor, the Maryland EFC advised the Blue Ribbon Panel for Funding the Chesapeake Bay Tributary Strategies in 1994. In this capacity, the Maryland EFC was able to bring to the table insights and ideas it had gleaned from its work in environmental finance and helped the panel produce its useful final study Financing Alternatives for Maryland's Tributary Strategies.

During 1997, the Center was asked by the University of Maryland Institute for Governmental Service to help design and produce an education program for the 350 members of the Tributary Teams. The program, entitled "Funding for Nutrient Reduction," aims to teach Team members about the political economy of financing nutrient reduction efforts in the individual watersheds. Increased knowledge among Tributary Team members will enable them to become more effectively involved in shaping fiscal policies for nutrient reduction. Team members will become more knowledgeable about:

- fiscal problems related to nutrient reduction, particularly issues at the county and municipal government level in their own watershed;
- policy making processes, that is, how public funding decisions for nutrient reduction are made, who makes them, when they are made, and why they are made;
- major fiscal policy options, both public funding alternatives and public-private partnerships, and their likely consequences.

As part of this effort, the EFC, in association with support from the Institute for Governmental Services and USDA, helped organize, conduct and speak at a workshop on storm water management for the Patapsco/Back Bay Tributary Team and the Baltimore Metropolitan Council on May 20. During the workshop, the Center's coordinator participated in a panel on financing nonpoint-source pollution control, and the Center's director facilitated a session on innovations in environmental finance. This regional council is exploring ways in which to address nonpoint-source pollution runoff from developed as well as agricultural lands. A key part of that effort is how to pay and who will pay for storm water management.

The proceedings from the workshop were distributed to all local governments in the region, including the counties of Anne Arundel, Baltimore, Carroll, Harford, Howard and the City of Baltimore.

[Extending the State Revolving Loan Program \(SRF\) to the Agricultural Community](#)

Maryland

In an effort to implement one of the ideas advanced in Financing Alternatives for Maryland's Tributary Strategies, the EFC has coordinated with the Future Harvest Project to develop a stand-alone revolving fund available to Maryland farmers for sustainable agricultural practices. By demonstrating through a small pilot project that a revolving loan program based on public/private partnership can achieve the goals of low-cost financing for best management practices, the Project hoped the pilot would lead to extension of the SRF to farmers for the purchase of equipment and the building of structures to help manage nutrient flows from the

farm.

The pilot project has accomplished the following:

- Made two low-interest loans to two farmers to fund Best Management Practices (BMPs) and the purchase of conservation equipment
- Reduced administrative costs by depositing pilot project funds in two approved local banks where the pilot project has agreed to accept lower earnings on the deposit, the savings to the bank have been passed on to the farmer in the form of a low-interest loan.
- The local banks reviewed the applications based on their own credit criteria and have assumed all credit risk.
- Involvement of the Soil Conservation Districts in setting up qualification criteria (management of BMPs, types of equipment and structures needed) has encouraged by-in from a diverse group of stakeholders

Following the success of the pilot project, legislation was passed in the Maryland General Assembly to expand its State Revolving Loan program (SRF) to the private sector for nonpoint-source pollution control activities. It is anticipated that such activities as septic system replacement or repair and individual storm water management efforts could be funded with SRF loans.

In addition, the EFC is currently working with Maryland's Departments of Agriculture, Environment and Natural Resources to further modify the state's SRF program to allow for an innovative "linked deposit" program. A linked deposit program would encourage participation by private lending institutions to assume the lion's share of administering the SRF's loans to private individuals, such as farmers interested in funding agricultural best management practices. These practices have demonstrated a marked reduction in nutrients running off farmland, and hold great promise in improving water quality and stream corridor restoration.

Pennsylvania

As a result of efforts in Maryland, the EFC was asked by the Pennsylvania Joint Legislative Air and Water Pollution Control and Conservation Committee to consult on its efforts to expand the state's SRF to the farming community for funding agricultural best management practices. An expanded SRF would increase the availability of low-interest loans to farmers, which should encourage wider implementation of BMPs and other sustainable agricultural practices. In addition, increased purchases of conservation tillage equipment and building of structures for management of nutrient flows may improve rural economies by enhancing job opportunities as well as protect the environment.

Key contacts for the Maryland/Pennsylvania project:

- Richard Pritzlaff, Development Director, Chesapeake Wildlife Heritage
- Tom Simpson, Chesapeake Bay Programs Coordinator, Maryland Department of Agriculture
- Tom Grasso, Maryland Director, Chesapeake Bay Foundation
- Tony Guerrieri, Pennsylvania Joint Legislative Conservation Committee

[Training Materials on Expansion of the State Revolving Fund \(SRF\) for Watershed Use](#)

The Maryland EFC, in cooperation with USEPA, has developed and produced a resource booklet and training curriculum designed to highlight the benefits of using the SRF for such nontraditional activities as septic system repair or replacement, storm water management and certain agricultural best management practices.

Since Congress established the State Revolving Fund (SRF) program in 1987, over \$17 billion have become available for water pollution control loans. Most of these loans have been for the building, expansion or upgrade of waste treatment facilities, historically a point-source pollution problem.

SRF programs are also making progress in providing loans for nonpoint-source and other pollution control projects, though strides in this area are coming as the result of only an innovative few SRF programs that have made less traditional loans a priority in their states.

The Nonpoint Problem: Nonpoint-source pollution (NPS)--pollution that does not originate from a single source, but from a variety of points--is the largest source of water pollution today. NPS pollution can be generated in many ways: from urban and suburban runoff, leaking abandoned mines and from certain agricultural practices. NPS pollution not only affects the quality of water, but it also influences how water is used. For example, NPS pollution can prevent the recreational use of lakes, contaminate groundwater used for drinking, and reduce valuable fish populations in streams, rivers, lakes and bays.

Because of the potential damaging effects of NPS pollution on public health, the environment and local economies, both the Federal government and some states have implemented programs to address these concerns. Nonpoint-source pollution control funding through the SRF program has increased primarily because of continued emphasis on EPA's watershed policy, developed in response to the challenges confronting local government from nonpoint sources of pollution. The watershed approach allows for a comprehensive review of problems as they affect specific watersheds.

As state innovation in providing SRF loans for nonpoint-source control projects has developed, the EPA has, at times, found it difficult to balance the need to encourage innovation with the need to ensure that projects funded by the SRF comply with the goals of the Clean Water Act. For example, should the EPA allow construction of new landfills to be funded with SRF loans, recognizing that the project would not address an existing water pollution control problem, but would perhaps prevent one from occurring?

To address this and other issues, the Agency invited states to participate in a mediated approach to devising a national nonpoint-source eligibility framework for the SRF program. This SRF funding framework encourages states to modify the traditional priority setting process to give nonpoint-source projects equal consideration during the planning process.

As a first step to encouraging state SRF programs to move to an integrated watershed planning and priority setting process, the EPA has asked the EFC to develop and produce a resource booklet and training curriculum designed to highlight the benefits of using the SRF for such nontraditional activities as septic system repair or replacement, storm water management and certain agricultural best management practices. The resource booklet and training curriculum will provide the basis for discussion and training on areas including the environmental needs of the multi-state region, existing activity in the nonpoint-source and estuary programs, the watershed approach, and the SRF integrated priority-setting process.

The training curriculum has been developed in modules which can be mixed and matched to accurately address the needs of different audiences, such as state SRF program representatives, state nonpoint source control and other water quality program representatives, and local officials and citizens. In addition, there is a module dedicated to the integrated priority-setting process, one designed to highlight successes from 6 pilot projects and other cases from around the country, and a marketing module.

Presentations on the training materials and certain stand-alone modules have been presented to local and Federal representatives at conferences throughout the nation. A planning meeting was conducted to develop ideas on ways to reach the various potential users of educational and training materials developed to encourage expanded use of the SRF program. A cross-section of USEPA programs met to identify their respective audiences and the best ways to reach them. Participants in this meeting included:

- Amy Gambrill, Nonpoint Source Program (OWOW)
- Ruth Chemerys, National Estuary Program (OWOW)
- Edna Villanueva, National Estuary Program (OWOW)
- Cleora Scott, SRF Branch
- Anne Weinberg, Watershed Academy (OWOW)
- Joan Warren, OWOW
- Brian Ng, SRF Branch
- Sheila Hoover, SRF Branch
- Kevin Rosseel, SRF Branch
- Mike Caron, SRF Branch
- Kon Chiu, SRF Branch
- John Meagher, Wetlands Branch (OWOW)
- Nikos Singelis, SRF Branch
- Ralph Caruso, USEPA Region I
- Yolanda Guess, USEPA Region II
- Walter Andrews, USEPA Region II
- Don Neihus, USEPA Region III
- Hank Zygmunt, USEPA Region III
- Gene Wojick, USEPA Region V
- Paul Thomas, USEPA Region V
- Tom Davenport, USEPA Region V
- Walter Biggins, USEPA Region VI
- Arlene Gaines, USEPA Region VI
- Kelly Beard-Tittone, USEPA Region VII
- Brian Friel, USEPA Region VIII
- Juanita Licata, USEPA Region IX

[NOAA/Gulf of Mexico](#)

The Maryland EFC was invited to act in an advisory capacity to the Gulf of Mexico Program, created in 1988 in response to increasing signs of environmental degradation in the region. The Program is comprised of 18 Federal agencies and five Gulf of Mexico states. Recognizing the importance of shellfish area closures as an indicator of coastal water quality, the Program initiated the Shellfish Challenge Project.

The Shellfish Challenge seeks to increase Gulf shellfish beds available for safe harvesting by 10 per cent. To achieve this ambitious goal, the Gulf of Mexico Program developed strategies for addressing the problem.

The Maryland EFC was contacted after strategies were developed to address the shellfish bed closure problem, including:

- connect poorly operating septic systems to wastewater treatment plants.
- reduce inputs of fecal coliform bacteria in runoff from densely populated areas.
- reduce inputs of fecal coliform bacteria from agricultural areas.
- replace or repair poorly operating wastewater treatment plants.

The Barataria-Terrebonne watershed in Louisiana was selected by the Gulf of Mexico Program as the site for the first pilot implementation of the strategies. The results of the Barataria-Terrebonne pilot will serve to guide subsequent shellfish restoration efforts in the Gulf of Mexico region.

The EFC's role in this pilot is to share our experience and insights on watershed financing mechanisms developed from our work with the Governor's Blue Ribbon Panel, which produced Financing Alternatives for Maryland's Tributary Strategies. In addition, our watershed management experience in developing an

agricultural revolving loan program, our promotion of storm water management through conferences and forums, and our community charrette experience were all instrumental in our Center's being invited to participate.

The EFC was invited to speak at a workshop in the Barataria-Terrebonne watershed about barriers to implementation and innovative financing techniques to overcome these barriers. As a result of the Barataria-Terrebonne Watershed Oyster Restoration Project Targeting Workshop at Nicholls State University in Thibodaux, Louisiana on February 24-25, 1997, stakeholders of the watershed were able to identify a priority list of activities to restore degraded shellfish beds and possible ways in which to fund these activities.

In addition to speaking and providing guidance on finance issues at the workshop, the EFC developed a list of financing mechanisms that could be employed to help pay for implementation of the eight priority candidate oyster restoration projects. These financing techniques include:

1. Special Assessment District (e.g. a septic maintenance district, a stream or small river watershed district or a natural resource management or beach district).
2. Storm water management utility or a septic maintenance utility.
3. Establish or make use of an existing wetland, forest or beach mitigation banking system at the parish, state, or watershed level.
4. Revise the State Revolving Fund (SRF) to allow for the financing of private sector projects that enhance or protect water quality (such as septic system repair or replacement, erosion control and bank stabilization, landfill capping, and construction of animal waste storage facilities)
5. Tax Increment Financing (similar to a Special Assessment District).
6. Pooling of communities' debt for credit enhancement/small community bond bank.
7. Issue credit cards benefiting an environmental fund dedicated to such water quality projects as septic system repair or replacement, habitat or parks development, or beach or wetland nourishment.
8. Create/expand a commemorative license plate program targeted at projects that improve water quality.
9. Adopt-an-Animal program (a wetlands, forest, marine or riverine animal).
10. Create endowment fund for water quality projects (e.g. wetlands and habitat creation/restoration, tree planting, stream bank stabilization, and other water quality projects).
11. Public-private partnership for financing the construction or upgrade of a waste water treatment plant, the construction of aquaculture containment areas, parks or other capital assets.
12. Annual user fee for the degradation of an aquifer.
13. One-time septic system installation impact fee.
14. Purchase of environmental easements by individuals, businesses, and other organizations.

[New Initiatives](#)

[Environmental Finance Center Public Outreach Brochure](#)

To ensure that communities in the Chesapeake Bay Region understand how the EFC can assist them in finding

ways to fund their environmental projects, the Center is developing an EFC marketing packet to be sent to local governments in the Chesapeake Bay Region. This brochure will highlight the ways the Center, in partnership with the Local Government Partnership Initiative, can assist local governments and others. For example there will be a section describing how an EFC charrette gives small communities access to technical and financial experts from the public, private, and academic sectors to discuss their issue.

Development of a Web Page for the Environmental Finance Center

The EFC is developing a web page which will improve environmental finance information delivery and exchange via the world wide web. Some of the information to be included on the web page includes:

- An interactive sign-up page for communities interested in participating in a charrette.
- Feedback from communities on environmental finance areas of concern.
- Riparian forest buffer financing alternatives.
- Financing issues fact sheets.
- Results of the Charrette Update Survey.
- Financing Alternatives for Maryland's Tributary Strategies (Blue Ribbon Panel report).
- Periodic updates of current projects.

Fact Sheets

The EFC is developing a series of short (one-page), targeted fact sheets that will address the three major themes of the local government participation plan; maintaining drinking water or waste treatment systems, providing stream corridor protection, and managing growth. One possibility is to select activities outlined in the Chesapeake Bay Program Bay Partners Benchmarks, which lists over 40 activities local governments can undertake to help protect the Chesapeake Bay. Several fact sheets are already in draft form.

Stream Corridor Protection Funding Matrix

Each year the erosion and destabilization of stream banks and coastal shoreline causes homeowners and others thousands of dollars in damages. The impact from these events also disturbs fish and wildlife habitat by flushing pollutants, including sediments, into streams and the Chesapeake Bay.

Realizing that much of this damage is avoidable, states and the Federal government have established programs which offer funds and technical assistance to property owners and public agencies to better protect property while improving fish and wildlife habitat.

The Environmental Finance Center designed and developed a matrix of Federal, state and local funding sources which, separately or combined, could be used to help pay for stream corridor protection and restoration. The Center currently has developed this Matrix for the State of Maryland, and expects to finalize a matrix for the states of Pennsylvania and Virginia during 1998.

In the Funding Matrix, four funding focus areas for stream corridor restoration have been identified:

- Planning- assessing the erosion or stabilization problem, using maps and other information, including Geographic Imaging Systems (GIS), is a very important first step.
- Capital- structural best management practices (BMPs), such as stream rip rap, retention ponds, or animal

fencing, need capital funds to build. Certain nonstructural BMPs, including riparian forest buffers, marsh plantings and stream bank restoration, can also avail themselves of capital funds.

- Maintenance- many times, maintenance of storm water and erosion control projects is the most important part in retaining the project's effectiveness.
- Education/Outreach- clear public education can serve to keep future costs down by encouraging prevention which, in the long run, is cheaper than corrective efforts.

The Funding Matrix can be used by private landscaping companies, coastal restoration firms and private landowners, as well as public agencies, to quickly identify funding sources for stream corridor activities. So far, the Funding Matrix has been used by private landscape firms in their marketing packages to private landowners who have deteriorating or un-buffered stream banks.

[EFC Network Collaborations](#)

The Maryland EFC has cooperated with and benefited from the other EFCs in the national network. The following lists several highlights from those collaborations:

- The Associate Director of the Great Lakes EFC in Cleveland, Ohio served as an expert panelist for our Capital Access Charrette, held in Washington, D.C. This was extremely beneficial, since this individual had recent and direct experience in the area of pollution prevention, and special public funds created for that purpose.
- The Director of the EFC at Boise State has been extremely helpful in advising us in drinking water issues, especially in the critical area of rate-setting. He has already helped establish contacts between our EFC and other clients in our region (Region III), and he will visit shortly to serve as instructor and advisor on rate setting.
- The Director of the EFC at Cleveland State served as an expert panelist for our charrette in York, Pennsylvania, bringing a wealth of expertise in the area of brown fields revitalization and urban renewal. His presentation has influenced the direction of our work in York, Pennsylvania and elsewhere as well.

In addition to specific collaborations, the Region III EFC is in constant contact with the other EFCs in the network on special projects as well as monthly conference calls and numerous information-sharing activities.

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**U.S. EPA REGION 3 - ENVIRONMENTAL FINANCE CENTER
AT
THE UNIVERSITY OF MARYLAND
1996 ANNUAL REPORT**

[Executive Overview:](#)

Established in 1993, the Region 3 Environmental Finance Center at the University of Maryland has pioneered innovative finance training techniques and alternative financing mechanisms. The EFC began operation by organizing and hosting a series of charrettes for local officials on environmental finance issues limiting compliance with environmental standards. Each charrette with a community involves a panel of public finance experts that provides authoritative advice and recommendations to local officials. The charrettes also serve as a valuable reservoir of information on the nature of finance problems affecting the regulated community to better develop and deliver training courses. Case studies developed from the charrettes are being shared with the other EFCs to augment their training activities. The EFC, in cooperation with the Office of the Governor, developed "Financing Alternatives for Maryland's Tributary Strategies" a pathbreaking assembly of innovative ways of financing clean up of the Chesapeake Bay. Recently, the EFC hosted a conference on a wide range of environmental finance and economic issues using long distance learning techniques that made possible the participation of attendees at two other sites.

Additionally, the Region 3 EFC has become a region-wide resource for executive solutions to environmental finance challenges. For example, the EFC tackled the tough issues of nonpoint source pollution for the State of Maryland, is currently working with EPA's Air Office on developing guidance for states in collecting Title V fees, and has been requested to develop alternative financing techniques for beneficial uses of dredged material for an international organization. The EFC is using the World Wide Web to make information available through its homepage at: <http://www.mdsg.umd.edu/EFC/index.html>

[Facilities and Expertise](#)

The problem of environmental finance and management requires an integrated, interdisciplinary, and even transdisciplinary approach. The University of Maryland's Coastal and Environmental Policy Program provides a powerful network for mounting such an approach. The Coastal and Environmental Policy Program (CEPP) is

comprised of five units of the University of Maryland: the School of Public Affairs, the School of Law, the Center for Environmental and Estuarine Studies, the College of Agriculture and the Maryland Sea Grant College.

CEPP's investigation into environmental finance began three years ago with the support of the U.S. EPA and has developed to the point where the University of Maryland is now one of only six Environmental Finance Centers in the country. The EFC's efforts to date have focused on both point-source pollution issues, such as alternative methods for financing waste treatment facilities and solid waste management facilities, as well as nonpoint-source pollution issues, such as stormwater management. Many of the EFC's recommendations for alternative financing are fee-based--as federal resources become scarce, it is apparent that without fee-based environmental control programs in place, the clean up of our environment will fall short.

Charrettes

Part of the EFC's goal is to provide assistance and to act in an advisory capacity to state and local governments on issues related to environmental finance. One way to achieve that goal is to advise local officials in a "charrette" format. The charrette process, pioneered by the University of Maryland EFC, employs an advisory panel of federal and state officials and financial experts who provide local officials with solutions to their problems with financing environmental services and facilities. The charrettes provides a forum for frank discussions between local officials and financial experts about financing difficulties experienced by communities in meeting the demands of environmental mandates. The charrette process is a cost-effective way to address unfunded mandates and further the Agency's strategic initiative on Partnerships. In addition, it was one of EPA's key proposals for the National Program Review.

Since its establishment in 1993, the EFC has arranged charrettes that has expanded its understanding of financing issues related to nonpoint-source pollution, such as urban stormwater runoff and agricultural nutrient runoff. Many charrette participants have been faced with the challenge of identifying cost-effective and equitable financing solutions to environmental concerns that will not impede economic development in their community. One of the key challenges found during the charrettes is convincing businesses and homeowners to "pay now" rather than to "pay later," even though paying later will certainly mean higher costs.

An important result of the charrettes is the renewed commitment by communities to dedicate additional time to their environmental finance problems. The EFC has found that frequently a charrette's highest and best purpose is to facilitate a meeting of the stakeholders of an environmental finance issue that might not otherwise take place. The EFC receives many compliments about its ability to convene a meeting of disparate stakeholders, and we expect to continue to provide this vital service to local governments.

Charrette Example

Background:

On January 29, the EFC arranged and conducted a charrette for the town of Indian Head, Maryland (see list of attendees at the back of this report). Located in Charles County, this 4,000-resident town lies on a small peninsula surrounded by the Potomac River and Mattawoman Creek. Most of the town's topography is flat, low lying and marshy with many springs that often flood, creating a drainage problem. In fact, the town green and many neighborhoods are repeatedly under water.

The town attracts considerable tourism since it is located on Mattawoman Creek, site of the best fishing in the county. Smallwood State Park, across the creek from Indian Head as well as a pier for public recreation provides a popular destination for tourists and residents.

The problem is that pollutants and excess nutrients from stormwater runoff from parking lots, roofs, roads and

lawns could potentially degrade the water quality and damage the ecosystem of Mattawoman Creek, surrounding wetlands and adjacent waters. This, along with standing water on the village green and in several neighborhoods, has had an adverse impact on the overall quality of life for people living in the area, as well as for other life dependent on the marine environment, from microorganisms to fish populations.

Because Indian Head is growing the town forms the terminus of Indian Head Highway (Maryland 210), a major link with Washington, DC, located 22 miles to the north town officials and some of its citizens have identified stormwater management as a top priority. The town also borders the Naval Surface Warfare Center (NSWC), a 2,000-building facility founded in 1890. The NSWC recognizes its stormwater management problem but has, to date, approached stormwater in a piecemeal fashion rather than develop a plan to address the problem comprehensively.

Indian Head's largest stormwater management pond is currently maintained per agreement by a townhouse association. It is the town's opinion that more could be done to maintain and take advantage of the pond's stormwater management functions. Along the way to the pond, a series of feeder ditches, swales and concrete culvert pipes under MD Route 210 collects water from the streets and low lying areas. There are also several sediment ponds on commercial private property required by the town's stormwater management ordinances.

It was clear to the charrette participants that a study or plan was needed that would detail where the peninsula's feeder flows came from and where they all emptied into the system. The study would also enable the town to determine what else they could do to help alleviate their stormwater problems and how they might be able to coordinate with the NSWC.

Project Financing:

Indian Head is seeking funding sources for a comprehensive stormwater management plan. Charrette panelists developed a list of recommendations to help identify funds for such an effort.

Recommendations and Observations:

- In order to address inadequate maintenance at the largest stormwater retention pond in town, it was suggested that a cost-share program be developed. The program would coordinate the townhouses located around the pond, the town, NSWC, Maryland Department of Transportation (MDOT), the County, the Army Corps of Engineers, and any relevant industry in the area. In addition, it was suggested that all parties that are potentially contributing to and affected by the stormwater management problem participate in a comprehensive planning effort.
- Understanding the relative sources of stormwater pollution is critical to determining a strategy for treating those sources. It was suggested that a Citizen Monitoring Group be formed that would consist of town volunteers working with the town council. This group could develop reports to help characterize the sources and composition of stormwater inputs. Once the sources are identified, partnerships between various organizations (i.e., NSWC, MDOT, etc.) could be formed to address the town's stormwater runoff problem. One panelist suggested making a video tape of a stormwater event to introduce the public to the problem.
- It was noted that different areas of town could benefit from different programs, i.e.: low-income areas could take advantage of a Community Development Block Grant; areas of standing water could avail themselves of the National Flood Insurance Program, which may offer up to \$50,000 for 5 years; stormwater containing excess nutrients, heavy metals and contaminants could use stormwater funds such as Section 319 funds and Coastal Zone Management grants. Also, agencies such as the Army Corps of Engineers are an excellent source for funds and can provide assistance for initial studies.
- The Intermodal Surface Transportation Efficiency Act (ISTEA) encourages diverse modes of travel,

increases the community benefits of transportation investment, strengthens partnerships between State and local governments, and promotes citizen involvement in transportation decisions that directly affect their daily lives. It was suggested that ISTEA synergies be considered between relevant capital projects and the stormwater management project.

- The panel suggested establishing a fund dedicated to stormwater management costs only. For example, parking meter money could be diverted to a start-up fund, or the town could charge a flat fee of \$25 per registered vehicle for 1 year.
- The town could create a special taxing district where costs are allocated according to the "polluter pays" principle.
- Impact fees for stormwater management could also be established, where a developer pays development-related costs up front, then passes those costs on to the buyer.

List of Charrettes

The Maryland EFC held a series of 14 charrettes covering such issues as building, expanding and/or upgrading Wastewater Treatment Plants (WWTP), providing drinking water for new developments, determining site locations for new landfills, and stormwater management projects. The charrettes and their topics are listed below. The full text of the case studies drawn from these charrettes are attached as an Appendix.

Locality Name	Jurisdiction	Population	Project
Berlin, MD	Town	2,616	WWTP
Deer Park, MD	Town	419	WWTP
Denton, MD	Town	2,997	WWTP
Ellendale, DE	Unincorp.	1,050	WWTP
Fauquier Co., VA	County	48,741	WWTP
Federsburg, MD	Town	2,365	Sewage Lines
Indian Head, MD	Town	4,000	Stormwater
King William Co. VA	County	10,913	WWTP
Loudoun Co., VA	County	102,100	Solid Waste
Manchester, MD	Town	2,810	WWTP
Port Deposit, MD	Town	685	WWTP
Taneytown, MD	Town	3,695	WWTP
South Bethany, DE	Town	600	Stormwater
Snow Hill, MD	Town	2,217	WWTP

(WWTP= waste water treatment plant expansion and/or upgrade)

-Total Cost of Projects Considered: \$60 million

-Total Residents Affected: 184,000 directly, plus non-residents

Charrette Summaries

In an effort to understand the most important concerns and issues of local governments as they address their environmental problems, the Center has designed an update survey for each of the charrettes conducted over the past four years. The results of that survey highlight continuing problems local officials have with financing and political issues that can affect successful implementation of charrette recommendations. Below is a summary of that survey.

Examples of implemented charrette recommendations:

CHARRETTES	
Participant	Actions
Denton, MD	a) Full water metering: residential, commercial, industrial units. b) Federal and state grants/loans: Working with MDE on nutrient removal program, and applied to FmHA for waste water treatment expansion.
Federalsburg, MD	a) revitalization study. b) water rate study and new fee to reflect greater use by business. c) started "self-help" programs for summer 1996.
King William County, VA	a) identified industry to attract to region and obtained grant to service industry with excess capacity available for city. b) applied for 3% DOEd loan for school sewer line.
Port Deposit, MD	a) have developer pay hook up fees. b) implement new rate structure based on demand. c) FmHA loan.
South Bethany, DE	a) citizens monitoring group for stormwater pollution. b) partnership w/ Delaware Sea Grant College to research water pollution. c) educating community about environmental issues (boating).
Snow Hill, MD	a) public support from property owners to commit up-front to construction and cost of new sewer system- held referendum. b) applied to FmHA for sewer line expansion funds.

Examples of continuing complexities:

Participant	Reason
Berlin, MD	Developed new rate structure, but computer problems have postponed implementation.
Fauquier County, VA	Project pending: in negotiation phase with engineering firm to study alternative technologies for waste treatment.
Manchester, MD	Waste water treatment upgrade project on hold because of changed county political climate. Also, capacity disputes centered on different growth plans.
Taneytown, MD	Plans to complete capital budget plan and implement new rate structure for water and sewer services by next fiscal year. Then will consider the rest of the recommendations.

Changes due to other factors:

Participant	Factor
Deer Park, MD	Transferred authority to secure funding for sewer lines to Garrett County Sanitation District who then received FmHA grants and loans.
Loudoun County, VA	New County officials have suspended the project.

The State of Maryland has created a new kind of institution multicounty, watershed specific "Tributary Teams" and charged the teams with implementing the state's commitment to reduce controllable nutrients that damage the Chesapeake Bay by 40% by the year 2000.

Funding for nutrient reduction has been identified as a primary concern of the Teams. In recognition of this concern, the Maryland EFC advised the Blue Ribbon Panel for Funding the Chesapeake Bay Tributary Strategies in 1994. In this capacity, the Maryland EFC was able to bring to the table insights and ideas it had gleaned from its work in environmental finance and helped the panel produce its highly useful final study *Financing Alternatives for Maryland's Tributary Strategies*.

During 1996, the Center was asked by the Maryland Cooperative Extension Service's Institute for Governmental Service to help design and produce an education program for the 350 members of the Tributary Teams. The program, entitled "Funding for Nutrient Reduction," aims to teach Team members about the political economy of financing nutrient reduction efforts in the individual watersheds. Increased knowledge among Tributary Team members will enable them to become more effectively involved in shaping fiscal policies for nutrient reduction. Team members will become more knowledgeable about:

- fiscal problems related to nutrient reduction, particularly issues at the county and municipal government level in their own watershed;
- policy making processes, that is, how public funding decisions for nutrient reduction are made, who makes them, when they are made, and why they are made;
- major fiscal policy options, both public funding alternatives and public-private partnerships, and their likely consequences.

The Maryland EFC is currently designing and developing a series of workshops which will achieve these objectives while involving as broad an audience as possible, including local government officials, farmers, business and industry, and academia.

In an effort to acquaint Team members with a primary source of information on alternative finance options, the Center has developed a presentation on Financing Alternatives for Maryland's Tributary Strategies which it offers to each Tributary Team.

[Extending the Maryland State Revolving Loan Program \(SRF\) to the Agricultural Community](#)

In an effort to implement one of the ideas advanced in *Financing Alternatives for Maryland's Tributary Strategies*, the Maryland EFC has coordinated with the Future Harvest Project to develop a stand-alone revolving fund available to farmers for sustainable agricultural practices. By demonstrating, through a small pilot project, that a revolving loan program based on public/private partnership can achieve the goals of low-cost financing for best management practices, the Project suggests that an extension of the SRF to farmers would enable the purchase of equipment and the building of structures to help manage nutrient flows from the farm.

One of the conclusions of *Financing Alternatives for Maryland's Tributary Strategies* was that "[n]ew and aggressive funding efforts need to be undertaken for agricultural nutrient reduction activities." Most farmers recognize the need for good stewardship and have implemented many practices to reduce erosion and more effectively manage nutrients. But without the availability of low-cost financing to purchase needed conservation equipment and to build physical structures to aide in nutrient management, many farms, which operate on narrow margins, might fail. These failures accelerate farmland conversion, often resulting in suburban sprawl development with related infrastructure demands. Not only will our waterways suffer from increased impervious surfaces, which channel urban nutrients and heavy metals to our streams and the Chesapeake Bay,

but our landscape and all that we treasure about our farms will be lost.

The Maryland EFC pilot project has accomplished the following:

- Resulted in two low-interest loans to two farmers to fund Best Management Practices (BMPs) and the purchase of conservation equipment
- Reduced administrative costs by depositing pilot project funds in two approved local banks where the pilot project has agreed to accept lower earnings on the deposit the savings to the bank have been passed on to the farmer in the form of a low-interest loan.
- Designed a program where local banks reviewed the applications based on their own credit criteria and assumed all credit risk.
- Involved the Soil Conservation Districts in setting up qualification criteria (management of BMPs, types of equipment and structures needed) which has encouraged buy-in from a diverse group of stakeholders
- Determine interest in an expanded SRF without risk to SRF principal funds.

Implications for an expanded SRF based on the pilot project might include:

- Increased availability of low-interest loans to farmers should encourage wider implementation of BMPs and generate interest among the farming and banking community for an expanded SRF program.
- Using local banks to administer the pilot project would reduce project credit exposure and administrative costs and stimulate business for local banks. In addition, if the pilot project was rolled into an extended SRF, increased purchases of conservation tillage equipment and building of structures for management of nutrient flows may improve rural economies by enhancing job opportunities as well as protect the environment.

Title V (Clean Air Act) Fee Guidance Report

In an effort to move toward a more efficient and effective approach to managing the environment, the U.S. EPA has begun to develop programs that do not rely solely on federal grants but are self-supporting. One solution is a fee-based program which achieves environmental protection while placing the responsibility of program cost maintenance on the regulated community. Such programs include the amended Clean Air Act, specifically Title V.

Because of a lack of clarity in the manner in which a state should collect, segregate and account for Title V (Clean Air Act) fees so that they are not commingled with other state efforts, the Maryland EFC developed a document that helps states, air quality management districts and others interested in how best to manage revenues generated by the Title V (Clean Air Act) program.

From insights and experiences shared by states, air quality management districts and others during an interview process, the Maryland EFC developed and conducted a focus group meeting on May 29 in College Park, Maryland (see list of attendees at the back of this report). The focus group examined some of the more innovative ways in which to facilitate the collection, segregation and accounting of Title V revenues, based on examples collected from the interview process.

Results of the interviews and the focus group indicate that states are clearly meeting the significant challenges associated with implementation of the Title V program. The final report, which is completed and in production now, will be useful as a reference source for state and regional air quality program managers and staff. Since many states are in the process of implementing or fine-tuning their programs, the document that the Maryland

EFC developed will provide assistance and introduce program managers and others to the innovative and most effective approaches to accounting for Title V revenues.

The final report, entitled *Overview of Clean Air: Title V Financial Management and Reporting*, includes an overview of the Title V guidance document project, findings from our interviews with states and district managers, ideas on cost allocation, time keeping, accounting fund structures and controls, and internal/external reporting techniques. Also included in the final document are examples from New York State and the Government Finance Officers Association.

The final document has also been reviewed by the Environmental Financial Advisory Board (EFAB) of the U.S. Environmental Protection Agency.

[Anne Arundel County, Maryland, Planning Guidance](#)

The Center was asked to act in an advisory capacity for Anne Arundel County, Maryland's Office of Planning to develop language on economic incentives for growth management for the County's revised Comprehensive Plan.

One of the most significant factors affecting the quality of life in Anne Arundel County is the productivity and health of the county's rivers, streams and shoreline. An overabundance of nutrients and other pollutants flowing from the county's land can severely degrade it's waterways, affecting not only housing values, jobs and recreation dependent upon clean water, but also stress the county's budget. Drinking water filtration systems, effective waste water and solid waste treatment facilities, the upkeep and accessibility of rivers, streams and the county shoreline all require substantial investment by the county as it struggles to provide additional infrastructure and services to a growing population.

One of the most effective ways in which to manage the costs of providing additional infrastructure and services to a growing population is to locate new growth adjacent to already-existing infrastructure. Not only does this allow new growth to take advantage of existing excess capacity at various facilities, this grouping of development reduces the consumption of open space and greenfields which help filter nutrients and other pollutants from the waterways that Anne Arundel County is famous for and dependent upon. Taking advantage of already-existing capacity at various facilities decreases the county's need to build new infrastructure and, in some cases, entirely new systems.

Based on this assessment, the County wanted to know how to convince citizens and property owners that higher density development and infill projects could be both attractive and of high value. The Maryland EFC arranged for a professor from the University's School of Architecture to make a series of presentations to the county planning department, citizen advisory committees and various council members on how a county can achieve better design elements through a vehicle such as a comprehensive plan. A primary focus of the presentations was the effectiveness and desirability of traditional community layouts that promote public open spaces and mixed types of residential and commercial development.

The result of the EFC's efforts was inclusion of policy statements in the Revised County Comprehensive Plan which would promote higher density development without sacrificing neighborhood continuity and a sense of place by incorporating design requirements into any future development. Some of these policy statements include:

"Primary Growth Areas: The Primary Growth Area is the area defined by the existing and planned sewer area. It is the policy of the General Development Plan to direct at least 90% of the planned growth in this area. The Primary Growth Area is an approach to growth management that allows the County to focus growth in and around existing and proposed public facilities where new growth will have the least impact on the environment and the surrounding community. The land use pattern proposed for the Primary Growth Area seeks to maximize

existing public facilities while conserving valuable environmental, cultural and economic resources. Protecting these resources and integrating them into the design of urban communities is an important goal. The Plan also seeks to strengthen and enhance existing communities and Town Centers by utilizing infill and redevelopment opportunities that support the existing mix of land uses and strengthen the vitality of the community.

Community Design - The Plan recommends that we establish and adopt standards and guidelines for the design of residential, commercial, mixed use and industrial projects, addressing site layout, preservation of natural features, use of open space, construction materials, landscaping, lighting, signage and other design elements. It would also incorporate design review early in the development review process.

Traditional Neighborhood Design - The Plan recommends the adoption of a Traditional Neighborhood Design ordinance as an alternative method for new residential development. Traditional Neighborhood Design means using design methods that were used successfully in the past, such as parallel and perpendicular streets that don't dead end, sidewalks and alleys for safe pedestrian movement, community open space that is used by residents as a gathering place and placement of neighborhood commercial and community services near or adjacent to residential areas."

Throughout the document, the Plan recommends various financing mechanisms suggested by the Maryland EFC to help realize goals stated in the Plan, such as transferable development rights (TDRs), conservation easements and various tax incentives.

[Riparian Forest Buffer Committee](#)

The Center was asked by the Riparian Forest Buffer Committee of the Chesapeake Bay Program to develop and report on financing alternatives to support the establishment of riparian forest buffers along streams, rivers and the Bay.

The presentation included a range of financing options, from the "least binding, least cost" methods to the outright purchase of land for riparian buffer establishment.

Recommendations included:

Least Binding, Least Cost

- Notification Program

Owners who are made aware of important resources on their properties are often willing to protect them once they learn of their existence or significance. In this program, the organization might notify the property owner with a brief letter describing why the forest buffer and stream bank deserves protection with a follow-up visit to answer questions. Notification can be an important first step in establishing good will with a property owner and may eventually result in a permanent commitment to protecting a significant resource.

- Recognition Program

A recognition program takes notification one step further by announcing publicly that a property or portion of a property is significant. Similar to the National Natural Landmarks Program, the idea is to play on the pride of the owner, who wants to maintain a respectable standing within the community and may have an inclination for stewardship. By presenting plaques or certificates to owners of significant property, the community as well as the owner gain from the publicity.

- Nonbinding Agreement Programs

A variation on a recognition program might require the property owner to agree, in writing, to protect certain

specified features of their property. The owner's obligation to comply is strictly voluntary. The agreements are based on mutual trust, pride of ownership, recognition and appreciation of the resource.

Management Agreements

- Management Agreements

Under a management agreement, a property owner agrees to care for a significant resource on their property in a specified manner for a set period of time, or the owner lets an organization carry out the management. Sometimes an owner receives compensation for expenses.

- Leases

Leases entitle the lessee to control the use of a property in return for rent, which may be nominal. An organization may lease the property from a property owner for a nominal fee or at market prices. On the other hand, an owner may agree in the lease simply to forgo destructive forestry or other practices that threaten the resource. In a lease-purchase agreement, the rents are applied toward an agreed-upon purchase price.

Financing Arrangements

- Agreements tied to Loans

Home buyers and owners have access, through their banks, to low-interest loans for homes that are built in desired areas and have environmentally sensitive features, such as a smaller footprint, more open space/undisturbed land, retention of forest buffers, etc. An agreement would be developed whereby a State and/or county government would place funds, in the form of the purchase of certificates of deposit, in local banks in exchange for certain criteria in loan agreements. Governments would accept a lower yield (interest rate) on the certificate with the understanding that the bank would pass the rate savings on to the home buyer/owner.

This program could also be designed for the development community as well. Developers would have access, through their banks, to low-interest loans for homes that are built in desired areas and have environmentally sensitive features

- State Revolving Loan Program

An idea is to extend the SRF program to the private sector so that private and public/private partnerships can use and leverage program funds to engage in environmental activities. Projects such as stormwater management, erosion and sediment control, stream restoration, structural shore erosion controls and agricultural runoff control would be considered for loans. SRF loans can be provided for up to 100% of the project costs, including planning, design and construction, to finance private sector capital projects. The criteria of water quality benefits and the capacity to repay are the most important factors in project qualification.

- Environmental Mini-bonds

Mini-bonds are bonds issued in small denominations (e.g.\$500) available for purchase by the general public. Proceeds of mini-bonds could be designated for specific programs or activities, such as stream restoration and forest buffers.

Maryland has issued mini-bonds twice, raising \$24.2 million in 1990 and \$11.8 million in 1991. Unfortunately, the cost of issuing mini- bonds can be a significant barrier to their use. Typically, the cost of issuance per \$1,000 of bond is \$6-8. In 1990, the state-issued mini-bonds cost \$11.80 per \$1,000, and in 1991, the cost was \$17.10. These costs include the cost of bond council, charges by rating agencies, and the administrative costs of printing and distributing official statements. Administrative costs are the largest component due to the large

number of bond holders. These costs could be potentially reduced by soliciting donations of time and services from bond service departments of banks and bond counsels.

- Stormwater Utilities

A stormwater management utility is a form of a special assessment district. A special assessment district is an independent government entity formed to finance governmental services for a specific geographic area. They can range in size from a city block to a multi-jurisdictional arrangement. Special districts focus the costs of enhanced services on the beneficiaries of those services by separating benefited taxpayers from general taxpayers. Residents of special districts pay taxes (usually in the form of increased tax rates) to finance improvements from which they will benefit.

Special districts have the power to levy taxes, fees and special assessments in order to pay for the debt incurred in developing the service as well as to pay for the ongoing upkeep of the project. Special districts can issue debt independent of state or county government, reducing the burden on general debt capacity.

Easements

- Conservation Easements

- Donation
- Purchase Purchase of Easements or Development Rights--the purchase of development rights by a local or state government. This necessitates the community assigning "development rights" to all parcels of land, and then purchasing those rights, to be used in designated "receiving" areas, usually in urban or already developed areas. Rights can also be extinguished or held in perpetuity.
- Transfer Transfer of development rights--permits property owners in development-restricted areas to sell their development rights to property owners in designated receiving areas. This requires a community to have designated "sending" and "receiving" areas (resource or rural areas and developed or urban areas, respectively). It allows landowners in sending areas to realize the market value of their land without developing it. Developers who purchase these rights can increase their marginal profits by increasing the density of their development.

Acquisition of Land

- Acquisition of Undivided Interests in Land

Purchase of a percentage ownership in a property, which allows for a legal interest in its management.

- Outright Acquisition of Property

- Land Banks (Program Open Space and transfer taxes)
- Rights of First Refusal guarantees the organization the opportunity to purchase important properties, but does not obligate it. By granting a right of first refusal, a property owner agrees to notify an organization that the property has been offered for sale and invites the organization to match the offer. This allows the organization to identify prospective buyers and negotiate with the potential new owner protection an agreement to protect the property (using one of the methods discussed here). This right may be donated to an organization of sold for a nominal fee.
- Option to purchase involves paying the landowner for the guarantee that the landowner will reserve a property at an agreed-upon price for a set period of time (typically ninety days to one year).

Local Government Conference with the Chesapeake Bay Program

The Maryland EFC was invited to assist the Chesapeake Bay Program's Local Government Advisory Committee (LGAC) in designing and conducting LGAC's 1996 conference *Making the Connection: Locals helping locals to protect and restore streams, rivers, and the Chesapeake Bay*, October 10-11 (see list of attendees at the back of this report). In serving on the Local Government Conference Workgroup, the Maryland EFC was able to incorporate the elements of finance into every session offered during the conference. Acknowledging that finance is truly one of the most challenging issues for local governments, the Workgroup not only included a finance component in each session, but also developed several sessions devoted primarily to alternative and creative financing solutions.

The EFC was instrumental in designing sessions and tracks which focused on real-world solutions. In fact, at the EFC's suggestion, it was decided that each session highlight a local or regional case study, complete with contact and financing information. The five tracks offered at the conference included:

- Development that works
- Conserving forests, streams and open spaces
- Preventing pollution
- Land stewardship and community involvement
- Technology and local government

In addition to helping design the sessions, the Maryland EFC was instrumental in identifying key speakers and case studies. Some of the sessions offered included:

- **Designing Livable Communities** During this session, livability was described in terms of Chesapeake Bay objectives, specifically how to reduce resource consumptive sprawl development. Efforts to discourage sprawl through higher-density development were discussed in light of architectural design principles which often enhance the higher-density living experience.
- **Financing Stormwater Management** The presentation focused on financing mechanisms available to local governments to implement a stormwater management program.
- **Tools to Preserve Farmland** This session involved a discussion on why it is important and how we can protect farms from development. Techniques discussed included urban growth boundaries, rural clustering, transfer of development rights, purchase of conservation easements and tax reforms.

On the second day of the conference, the Maryland EFC moderated a forum on innovative solutions to various environmental finance challenges. The EFC's director entertained questions from the audience, comprised of local government officials and state agency representatives, on specific financing issues currently faced by officials. These questions were then discussed by a panel of finance and planning experts, and recommendations offered on ways to address each particular finance situation. Not only did the inquiring jurisdiction benefit from the recommendations, but the audience, and the panelists, were also treated to a lively discussion about possible solutions to their own challenges.

The Maryland EFC has worked with, and will continue to work closely with the Local Government Advisory Committee of the Chesapeake Bay Program (CBP). The CBP is a unique partnership between the states of Maryland, Pennsylvania and Virginia, the District of Columbia, the Chesapeake Bay Commission (a tri-state legislative body) and the USEPA. The CBP is directing and conducting the restoration and protection of the Chesapeake Bay.

This past year, the CBP has made a concerted effort to increase partnerships with local governments in order to realize the CBP's mission. During 1995, the CBP partners signed a new initiative - the *Local Government Partnership Initiative* - which specifically engaged the 1,650 local governments within the region in the Bay

restoration effort. An integral part of that mission is how local governments can help to pay for the restoration and protection of the Bay. The Maryland EFC is in close contact with the CBP and in a unique position to help the CBP and local governments in their quest.

New Initiatives

Workshops on Expansion of the State Revolving Fund (SRF) for Watershed Use

The Maryland EFC, in cooperation with USEPA, will conduct a series of workshops in 1997 to encourage state SRF programs to move to an integrated watershed planning and priority setting process when considering loan applications to their program.

Since Congress established the State Revolving Fund (SRF) program in 1987, over \$17 billion have become available for water pollution control loans. Most of these loans have been for the building, expansion or upgrade of waste treatment facilities, historically a point-source pollution problem.

SRF programs are also making progress in providing loans for nonpoint-source and other pollution control projects, though strides in this area are coming as the result of only an innovative few SRF programs that have made less traditional loans a priority in their states.

Nonpoint-source pollution (NPS)--pollution that does not originate from a single source, but from a variety of points--is the largest source of water pollution today. NPS pollution can be generated in many ways: from urban and suburban runoff, leaking abandoned mines and from certain agricultural practices. NPS pollution not only affects the quality of water, but it also influences how water is used. For example, NPS pollution can prevent the recreational use of lakes, contaminate groundwater used for drinking, and reduce valuable fish populations in streams, rivers, lakes and bays.

Because of the potential damaging effects of NPS pollution on public health, the environment and local economies, both the Federal government and some states have implemented programs to address these concerns. Nonpoint-source pollution control funding through the SRF program has increased primarily because of continued emphasis on EPA's watershed policy, developed in response to the challenges confronting local government from nonpoint sources of pollution. The watershed approach allows for a comprehensive review of problems as they affect specific watersheds.

As state innovation in providing SRF loans for nonpoint-source control projects has developed, the EPA has, at times, found it difficult to balance the need to encourage innovation with the need to ensure that projects funded by the SRF comply with the goals of the Clean Water Act. For example, should the EPA allow construction of new landfills to be funded with SRF loans, recognizing that the project would not address an existing water pollution control problem, but would perhaps prevent one from occurring?

To address this and other issues, the Agency invited states to participate in a mediated approach to devising a national nonpoint-source eligibility framework for the SRF program. This SRF funding framework encourages states to modify the traditional priority setting process to give nonpoint-source projects equal consideration during the planning process.

As a first step to encouraging state SRF programs to move to an integrated watershed planning and priority setting process, the Maryland EFC, with support from USEPA, is designing and will conduct a national series of workshops. Five geographically dispersed workshops will be conducted to bring SRF managers together with state nonpoint-source control and estuary management professionals to explore the benefits of considering less traditional water pollution control projects and to address the challenges of providing assistance to these projects through the SRF program. The workshops will provide a forum for discussion and training on areas including the environmental needs of the multi-state region, existing activity in the nonpoint-source and estuary

programs, the watershed approach, and the SRF funding framework policy and options.

NOAA/Gulf of Mexico

The Maryland EFC has been invited to act in an advisory capacity to the Gulf of Mexico Program, created in 1988 in response to increasing signs of environmental degradation in the region. The Program is comprised of 18 Federal agencies and five Gulf of Mexico states. Recognizing the importance of shellfish area closures as an indicator of coastal water quality, the Program initiated the Shellfish Challenge Project.

The Shellfish Challenge seeks to "increase Gulf shellfish beds available for safe harvesting by 10 per cent." To achieve this ambitious goal, the Gulf of Mexico Program needed a way to determine where and how to most effectively direct its efforts to have the greatest impact on the shellfish closure problem. In February 1994, members of the Program formed a team with the Strategic Environmental Assessments (SEA) Division of NOAA's Office of Ocean Resources Conservation and Assessment (ORCA) to undertake a "strategic assessment" of the issues impacting shellfish bed closures in the Gulf region. The assessment set out to identify, on a Gulfwide basis, the highest-priority strategies for addressing the problem, the watersheds where these strategies could be applied, the actions needed to implement them, and the information required for them to be effective.

The Maryland EFC was contacted after strategies were developed to address the shellfish bed closure problem, including

- connect poorly operating septic systems to waste water treatment plants
- reduce inputs of fecal coliform bacteria in runoff from densely populated areas
- reduce inputs of fecal coliform bacteria from agricultural areas
- replace or repair poorly operating waste water treatment plants

The Barataria-Terrebonne watershed in Louisiana was selected by the Gulf of Mexico Program as the site for the first implementation assessment. The results of the Barataria-Terrebonne implementation assessment will serve not only to guide subsequent shellfish restoration efforts in the system, but will also be used as a template for additional assessments conducted by the project team and other interested groups in the region.

Maryland's role in this project is to share its experience and insights on watershed financing mechanisms developed from our work with the Governor's Blue Ribbon Panel, which produced *Financing Alternatives for Maryland's Tributary Strategies*. In addition, the Maryland EFC's watershed management experience in developing an agricultural revolving loan program, its promotion of stormwater management through conferences and forums, and its community charrette experience were all instrumental in the Center's being invited to participate. The first series of workshops is tentatively scheduled for late February 1997, with a follow-up workshop scheduled for May.

Capital Access Charrette

The Maryland EFC has been asked to host a charrette for the Access to Capital Project of the USEPA Office of Policy, Planning and Evaluation. The Access to Capital Project aims to characterize and identify methods of overcoming the barriers faced by metal platers in obtaining the necessary capital for investments in pollution prevention equipment and/or site remediation. By increasing access to funds needed for pollution prevention equipment or remediation, USEPA hopes to reduce emissions from platers and reduce the risk to human health and the environment posed by contaminated plating sites.

The charrette, scheduled for January 1997, will gather finance experts and others interested in identifying ways in which to help metal platers access funds for improvements to help abate pollution. After a presentation by industry executives on the nature and unique characteristics of the metal plating industry, the panel of finance experts will engage industry representatives in a dialogue on problems they have encountered in securing

funding. After a thorough analysis of the situation, panelists will be asked to give their recommendations on how to help metal platers better secure funding. A follow-up plan will be developed to help the Access to Capital Project realize its goals of assisting the metal plating industry implement pollution prevention processes and remediation of their property.

1995 Annual Report

Established in 1993, the Region 3 Environmental Finance Center at the University of Maryland has pioneered innovative finance training techniques and alternative financing mechanisms. The EFC began operation by organizing and hosting a series of charrettes for local officials on environmental finance issues limiting compliance with environmental standards. Each charrette with a community involves a panel of public finance experts that provides authoritative advice and recommendations to local officials. The charrettes also serve as a valuable reservoir of information on the nature of finance problems affecting the regulated community to better develop and deliver training courses. Case studies developed from the charrettes are being shared with the other EFCs to augment their training activities. The EFC, in cooperation with the Office of the Governor, developed "Financing Alternatives for Maryland's Tributary Strategies" a pathbreaking assembly of innovative ways of financing clean up of the Chesapeake Bay. Recently, the EFC hosted a conference on a wide range of environmental finance and economic issues using long distance learning techniques that made possible the participation of attendees at two other sites.

Additionally, the Region 3 EFC has become a region-wide resource for executive solutions to environmental finance challenges. For example, the EFC tackled the tough issues of nonpoint source pollution for the State of Maryland, is currently working with EPA's Air Office on developing guidance for states in collecting Title V fees, and has been requested to develop alternative financing techniques for beneficial uses of dredged material for an international organization. The EFC is using the World Wide Web to make information available through its home page at <http://www.mdsg.umd.edu/EFC/index.html>

With the support of the U.S. Environmental Protection Agency (EPA), the Environmental Finance Center at the University of Maryland was created to assist local communities in realizing the goal of full compliance with environmental and health regulations. The Maryland EFC promotes alternative and innovative ways to manage the cost of environmental activities through technical assistance and support, provides training and curriculum development opportunities in environmental leadership and management, and works to increase the public and private sector's awareness of the benefits associated with sound environmental management policies.

Facilities and Expertise

The problem of environmental finance and management requires an integrated, interdisciplinary, and even transdisciplinary approach. The University of Maryland's Coastal and Environmental Policy Program provides a powerful network for mounting such an approach. The Coastal and Environmental Policy Program (CEPP) is comprised of five units of the University of Maryland: the School of Public Affairs, the School of Law, the Center for Environmental and Estuarine Studies, the College of Agriculture and the Maryland Sea Grant College.

CEPP's investigation into environmental finance began three years ago with the support of the U.S. EPA and has developed to the point where the University of Maryland is now one of only six Environmental Finance Centers in the country. The EFC's efforts to date have focused on both point-source pollution issues, such as alternative methods for financing waste treatment facilities and solid waste management facilities, as well as nonpoint-source pollution issues, such as stormwater management. Many of the EFC's recommendations for alternative financing are fee-based--as federal resources become scarce, it is apparent that without fee-based environmental control programs in place, the clean up of our environment will fall short.

Charrettes

Part of the EFC's goal is to provide assistance and to act in an advisory capacity to state and local governments on issues related to environmental finance. One way to achieve that goal is to advise local officials in a "charrette" format. The charrette process, pioneered by the University of Maryland EFC, employs an advisory panel of federal and state officials and financial experts who provide local officials with solutions to their problems with financing environmental services and facilities. The charrettes provides a forum for frank discussions between local officials and financial experts about financing difficulties experienced by communities in meeting the demands of environmental mandates. The charrette process is a cost-effective way to address unfunded mandates and further the Agency's strategic initiative on Partnerships. In addition, it was one of EPA's key proposals for the National Program Review.

Since its establishment in 1993, the EFC has arranged charrettes that has expanded its understanding of financing issues related to nonpoint-source pollution, such as urban stormwater runoff and agricultural nutrient runoff. Many charrette participants have been faced with the challenge of identifying cost-effective and equitable financing solutions to environmental concerns that will not impede economic development in their community. One of the key challenges found during the charrettes is convincing businesses and homeowners to "pay now" rather than to "pay later," even though paying later will certainly mean higher costs.

An important result of the charrettes is the renewed commitment by communities to dedicate additional time to their environmental finance problems. The EFC has found that frequently a charrette's highest and best purpose is to facilitate a meeting of the stakeholders of an environmental finance issue that might not otherwise take place. The EFC receives many compliments about its ability to convene a meeting of disparate stakeholders, and we expect to continue to provide this vital service to local governments.

Charrette Process

One of the most effective tools for the exchange of ideas and discussion of issues is the process known as the "charrette." Currently, the term is gaining popularity for describing a gathering of various groups of people in a community to resolve common problems with the assistance of outside experts. The charrette, as a public policy tool, can be organized to achieve different desired results: the discovery of problems and issues of concern that need to be addressed; public feedback on a current or proposed regulation; expert advice; and "brainstorming," or creative thinking on the part of interested individuals in an attempt to solve problems.

The structuring of a charrette is similar to any other negotiated process. First, the interested parties are identified and apprised of the issues. Typically, whoever is most affected by the issue at hand is given a period of time to express their concerns and observations to a panel of experts who represent a wide range of disciplines. The broader the range of disciplines represented on the panel of experts, the more integrated are the discussions, advice and recommended solutions.

Secondly, a clear agenda must be outlined at the beginning of the charrette in order to establish the topics that must be covered in the allotted time. However, the nature of the charrette is such that flexibility and informality must be encouraged. The ability of panelists and participants to question each other in an informal manner usually results in a clearer understanding of the real issues. A moderator helps to draw out those who may be reluctant to participate: the comprehensive nature of the charrette requires that all views be expressed.

Thirdly, there must be periodic summarization in order to assure that what was said was also what was heard by all participants. It is at this point that vague concerns and viewpoints are clarified, consensus and disagreement points are identified, and the discussion is advanced towards the solution phase. If the charrette is designed only to identify problems, then periodic summarization serves to refocus the group towards new areas for discussion rather than rehashing the same points. The informal, yet intense format of a charrette demands accountability and responsibility on the part of all who participate. It is an effective forum for frank discussions--it forces each

stakeholder to recognize and perhaps appreciate other related viewpoints on a particular issue.

The Maryland EFC has helped pioneer the use of the charrette process for local governments. The charrettes have proven to be an effective form of discovery about the financing difficulties experienced by municipalities in meeting environmental needs. These charrettes, which are adaptable for smaller communities, provided a platform for a candid dialogue between local government administrators, federal and state officials and financial experts. Local government participants received direction, recommendations, and solutions to specific local environmental problems while at the same time providing case studies so that other communities can benefit from these experiences.

These case studies are available on the [Environmental Finance Program's Home Page](http://www.epa.gov/efinpage/index.html), which is now available on the World Wide Web (<http://www.epa.gov/efinpage/index.html>) as well as on the Environmental Financing Information Network (EFIN), EPA's electronic multi-media environmental finance database that provides state and local officials with information on funding methods.

Charrette Example

On July 20, the EFC arranged and conducted a charrette in the town of Snow Hill, Maryland. The town is located on the Eastern Shore of Maryland along the banks of the Pocomoke River, which drains to the Chesapeake Bay. The town, designated the county seat of Worcester County, is thirty minutes from Ocean City, a major summer ocean resort. Emphasis is being placed on developing Snow Hill's full recreational potential, and on maintaining its quiet, brick-sidewalked, tree-lined streets, enriched by lovely old houses.

The charrette explored ways in which to help twelve small businesses share the costs of connecting to the town's waste treatment facilities while continuing to provide much-needed services to the town. The recent decline in the area is due in part to the fact that no central utility system exists there. Without the extension of sewer, properties along the corridor will be hampered in their attempts at further development, and a number of the properties could be destined for closure by the Health Department due to the failure of on-site septic systems.

An engineer's report recommended the installation of a conventional sanitary sewer system which would cost \$750,000. On behalf of the businesses, Snow Hill received approval for a \$750,000 loan from the Farmers' Home Administration (FmHA). The loan would be amortized over forty years, at a rate of 4.5%, creating a debt service of \$40,000 per year. Using the present tax rate and assessed values of the properties, the yearly debt service per owner would be \$13,111.

Since the design and long-term financing of the utility system have been secured, the key issues in this case were how to fund initial construction and how the businesses could pay the annual debt service. Each property owner must be willing to commit to the construction and cost of the new sewer system, even if their septic system is not currently failing. One of the key difficulties is convincing the businesses to "pay now" rather than to "pay later," even though paying later will certainly mean higher costs to the businesses.

An important result of the charrette was the renewed commitment by the town to dedicate additional time to the problem. Without this charrette, the town might have continued to treat the situation as solely the concern of the businesses. As mentioned earlier, frequently a charrette's highest and best purpose is to facilitate a meeting of the stakeholders of an environmental finance issue that might not otherwise take place.

Although many of the EFC's charrettes have focused on such local government issues as wastewater treatment facility upgrades, there are still many opportunities to conduct charrettes on other environmental finance subjects, such as regional and watershed management of environmental issues. In a follow-up to a charrette investigating a regional revolving loan fund conducted in June, the Center has been invited to continue investigating this area by the Chesapeake Bay Commission, an organization of state legislatures in the Bay watershed. The Maryland Director of the Commission, in concert with appropriate Maryland State agencies, would like to explore the possibility of revising Maryland's existing state revolving fund program to allow for

broader applicability for a range of environmental finance issues. The EFC is proceeding with this project.

The EFC continues to work with many of Pennsylvania's state and local environmental and community agencies to identify the type of small, economically disadvantaged communities that the Center has targeted for environmental finance charrettes. These agencies include PennVest, the Pennsylvania Department of Community Affairs, the Mifflin County Planning Office and the Susquehanna Economic Development Association/Council of Governments (SEDA/COG).

Many of the towns are waiting to hear from traditional sources of financing, such as Farmers Home and the Community Development Block Grant program, before seeking the EFC's assistance. Others are waiting for engineering reports to ascertain the nature of their problems.

List of Charrettes

From 1992 through 1995, the Maryland EFC held a series of 14 charrettes covering such issues as building, expanding and/or upgrading Wastewater Treatment Plants (WWTP), providing drinking water for new developments, determining site locations for new landfills, and stormwater management projects. The charrettes and their topics are listed below. The full text of the case studies drawn from these charrettes are attached as an Appendix in the print version and there are links to the case studies in [Appendix 1](#) of the web version. The [Series of Charrettes](#) are available on the Environmental Finance Program's web site.

Locality Name	Jurisdiction	Population	Project
Berlin, MD	Town	2,616	WWTP
Deer Park, MD	Town	419	WWTP
Denton, MD	Town	2,997	WWTP
Ellendale, DE	Unincorp.	1,050	WWTP
Fauquier Co., VA	County	48,741	WWTP
Federalburg, MD	Town	2,365	Sewage Line
Indian Head, MD	Town	4,000	Stormwater
King William Co. VA	County	10,913	WWTP
Loudoun Co., VA	County	102,100	Solid Waste
Manchester, MD	Town	2,810	WWTP
Port Deposit, MD	Town	685	WWTP
Taneytown, MD	Town	3,695	WWTP
South Bethany, DE	Town	600	Stormwater
Snow Hill, MD	Town	2,217	WWTP

(WWTP= waste water treatment plant expansion and/or upgrade)

-Total Cost of Projects Considered: \$60 million

-Total Residents Affected: 184,000 directly, plus non-residents

Maryland Tributary Study - Blue Ribbon Panel

Background

The Maryland EFC was chosen in 1994 by the Governor of Maryland to staff the Blue Ribbon Panel for Funding the Chesapeake Bay Tributary Strategies. In this capacity, the Maryland EFC was able to bring to the table insights and ideas it had gleaned from its work in environmental finance ideas that had a major impact on the Blue Ribbon Panel's final study entitled *Financing Alternatives for Maryland's Tributary Strategies*.

Blue Ribbon Panel Advisory Work

- Total Cost of Projects Considered: \$356 million (1995-2000)

- Total Residents Affected: 4.8 million (State of Maryland) plus non-resident workers, tourists, and residents of adjacent states.

While the above may be considered a baseline of dollars considered by the EFC, there is much that cannot be quantified because of the effects of leveraging and other factors. Although the EFC advises state and local officials on cutting edge environmental finance techniques, all decisions are ultimately made at the local level. Therefore, cost savings will entirely depend on choices made by individual jurisdictions.

Introduction: Bay Tributary Strategy

For years the Chesapeake Bay and its tributaries have been recognized as Maryland's most important natural resource. But this vast watershed is a resource in trouble. Pollution, in the form of too many nutrients, is slowly killing it. The Chesapeake's problems are not without solutions, however. In 1983, and again in 1987, Maryland, together with the Bay states and the federal government, signed formal agreements to reduce the flow of damaging nutrients to the Bay by 40% by the year 2000. Nutrients pose the greatest threat to the Bay, and their reduction is the single most important act to help protect and restore the estuary's enormous ecological, recreational and economic value.

In 1992 ambitious and far-reaching amendments to the Agreements focused restoration efforts on the Chesapeake's tributaries and extended the 40% nutrient reduction goal to these tributaries. The 1992 amendments triggered the development of Maryland's Tributary Strategies. In 1995, these detailed plans, jointly written with input from the state's counties, municipalities, businesses, farmers, and citizens, laid out, tributary by tributary, what Maryland must do to reduce nutrient flows into the Bay and its rivers. A key issue, one vital to the success of Maryland's Bay restoration effort, is how to pay for these nutrient reduction activities.

Establishment of Blue Ribbon Panel

In Maryland, about \$200 million is spent each year from federal, state, local and private sources to protect and restore water quality in the Chesapeake Bay. Estimates from the Tributary Strategies effort indicate that we will need an additional \$60 million, on an annualized basis, to put in place all of the nutrient reduction activities needed to meet the 40% reduction goal. How to equitably bridge this \$60 million gap was the reason, in June of 1994, that then Governor William Donald Schaefer appointed a Blue Ribbon Panel on Financing Alternatives for Maryland's Tributary Strategies. The Panel was asked to identify a menu of innovative and equitable financing ideas that would help fill the gap between current spending on Bay restoration activities and full realization of the 40% goal. Basic to the Panel's considerations was the issue of fairness and the need to assure that the burden of costs is distributed appropriately among those who pollute as well as those who enjoy and benefit from the Bay and its tributaries.

Basic Principles

The Panel began its deliberations with the understanding that:

- Significant progress has already been made in reducing nutrient inputs to the Bay--phosphorus by 38% and nitrogen by 23%--demonstrating that the practices and technology called for in the Tributary Strategies are sound.
- The Tributary strategies can achieve the stated objectives of a cleaner, healthier Bay.
- While the cost of implementing the Tributary Strategies seems high, the cost of not supporting the cleanup is higher. Without action, the Bay's health will decline, which will mean it will be harder and more expensive to restore in the future.

Panel Findings

After several months of discussion and review, the Panel concluded that:

- In order to reach the goal of a 40% reduction in nutrients by the year 2000, existing programs must continue to be vigorously funded.
- New and aggressive funding efforts must be undertaken for agricultural nutrient reduction activities.
- Because everyone benefits from cleaner water, all should share in the costs of undertaking activities that bring about cleaner water.
- State and local governments may need to reconsider their capital and operating budget priorities in light of the renewed commitment to restore and protect the Chesapeake Bay.

A Menu of Ideas:

The Panel's charge was to produce a menu of funding ideas for each broad category of activity under the Tributary Strategies. As well as focusing on developing new ideas to finance Tributary Strategy activities, the Panel identified changes to make better use of financing vehicles already in place. The report presents a funding menu first by nutrient source (categories of point source, developed land, agricultural land and resource protection), and then by financing type (bond, fee, loan, private initiative/incentive, public/ private partnership, redirection of existing programs and surcharge). This cross-referencing allows the same ideas to be retrieved in either an issue- specific or financing-specific manner.

Among the menu of more than thirty-five funding ideas are the following highlights. In the Point Source and Developed Land categories, the report contains ideas such as the formation of stormwater utilities, the sale of municipal utility assets to private investors as tax shelters, and full-cost pricing of service fees.

In Agricultural Lands, ideas include the formation of local agricultural cooperatives to assist farmers in accessing more funding at lower costs. Another idea suggests expanding the tax deduction for certain environmental farm equipment.

For Resource Protection, the Panel listed options such as forest mitigation banking, the sale of mini-bonds to finance tree planting and stream restoration, a state-wide environmental trust fund and expanding the Bay license plate program.

One particularly noteworthy idea that makes use of existing funds is to expand the State Revolving Loan Program (SRF) to allow for loans to those in the private sector involved in Bay restoration activities.

Finally, the Panel strongly recommends that funding and implementation of nutrient reduction efforts should take place on a watershed basis through the establishment of "watershed districts." Watershed districts would formalize the relationship among local jurisdictions that reside in the same watershed, help them address common objectives of the Tributary Strategies and encourage the development of common solutions, especially financing solutions.

Conclusion:

The Panel concluded that business as usual will not get us a cleaner Bay, and that contrary to past experience, in the future, financing ideas must be developed along with environmental policy.

The Panel's goal was to produce a menu of financing ideas that would be both innovative and equitable. Therefore, the financing ideas developed in this menu are meant to be used creatively, mixed and matched and applied selectively by those who benefit from their use. No one idea alone can guaranty the success of the 40% reduction goal.

The Panel urges that the report be used as the beginning of an inquiry into a range of potential funding sources to help finance the Tributary Strategies. Such discussion is essential to ensure the participation of all stakeholders of the Bay watershed and to attain the goals embraced in the Chesapeake Bay Agreements. The newly created Tributary Teams will be leaders in using and developing the ideas identified in the report. Only a partnership between all levels of government and the private sector will bring a restored Chesapeake Bay.

Continuing Technical Assistance

In an effort to continue the work with the Blue Ribbon Panel, the EFC has been placed on the agenda of each of the ten tributary strategy management teams' planning meetings. The EFC will make the services of the Center available to each of the ten tributary management teams, especially its charrette support. The EFC hopes to emphasize that without good environmental finance practices, environmental management can prove to be severely challenging and even divisive to the community and its goals. The EFC believes that the charrette process can be a most useful instrument during this important time in Maryland's efforts to clean up the Chesapeake Bay.

Extending the Maryland State Revolving Loan program (SRF) to the agricultural community

The EFC is in the process of negotiating the terms under which a consortium of programs (headed by the Chesapeake Bay Foundation and including the Chesapeake Wildlife Heritage, the American Farmland Trust and the University of Maryland Cooperative Extension Service) will retain the services of the Maryland EFC to design and recommend a "pilot program" SRF which would be the basis of a proposal to the state.

In an effort to continue the work initiated by the Governor's Blue Ribbon Panel on Financing Alternatives for Maryland's Tributary Strategies, an opportunity exists to consider extending Maryland's State Revolving Loan Program to new customers--farmers.

One of the conclusions of the Blue Ribbon Panel was that "[n]ew and aggressive funding efforts need to be undertaken for agricultural nutrient reduction activities." Most farmers recognize the need for good stewardship and have implemented many practices to reduce erosion and more effectively manage nutrients. But without the availability of low-cost financing to purchase needed conservation equipment and to build physical structures to aid in nutrient management, many farms, which operate on narrow margins, might fail. These failures accelerate farmland conversion, often resulting in suburban sprawl development with related infrastructure demands. Not only will our waterways suffer from increased impervious surfaces, which channel urban nutrients and heavy metals to our streams, but our landscape and all that we treasure about our farms will be lost.

One idea advanced by the Panel is to "expand the State Revolving Loan Program (SRF) to allow for loans to those in the private sector involved in Bay restoration activities." Combining the need for low-cost financing for farmers with the idea of extending the SRF to the private sector has resulted in a proposal to develop a pilot program to extend the SRF to individual farmers for the purchase of equipment and the building of structures to help manage nutrient flows from the farm.

Modeled after SRF programs in Delaware and Ohio, the Maryland Pilot Program might have the following features:

- Provides farmers with low-interest loans to fund Best Management Practices (BMPs) and conservation equipment
- Makes loans eligible as the farmer match portion of the practices under the MACS program as well as other conservation related equipment
- Reduces administrative costs-- SRF funds would be deposited in local approved banks where the SRF

agrees to accept lower earnings on the deposit; the savings to the bank would then be passed on to the farmer.

- Allows local banks to review applications based on their own credit criteria and makes loans to the farmer at a reduced rate.
- Allows farmer to repay loan to bank; bank repays funds to SRF. Credit risk and administrative costs borne by the bank.

Benefits of the Maryland Pilot Program include:

- Increased availability of low-interest loans to farmers should encourage wider participation in cost-share programs and increase implementation of BMPs.
- Increased purchases of conservation tillage equipment and building of structures for management of nutrient flows will improve rural economies by enhancing job opportunities.
- Using local banks to administer the Pilot Program would reduce SRF credit exposure and administrative costs and stimulate business for local banks.

Continuing Technical Assistance

The EFC is continuing its efforts to explore the benefits of a flexible environmental revolving fund at the invitation of the Chesapeake Bay Commission.

Title V (Clean Air Act) Fee Guidance Grant Proposal from the U.S. EPA Office of Air Quality Planning and Standards

In addition to charrettes, the EFC has increasingly been invited to provide technical expertise to projects that have a wide impact on how we manage our environment. In September, the Center was awarded a \$144,939 grant from the Office of Air and Radiation of the U.S. EPA and U.S. EPA Region III to develop guidance on how best to manage revenues generated by the Title V (Clean Air Act) program, which is moving from a grant basis to a fee basis. Such a change requires improved management and better accounting of the costs and expenses associated with the fee-based program. Many program officials around the country are unfamiliar with such practices, so the Center will develop a document that will clearly and concisely define appropriate fee management practices.

Background

In an effort to move toward a more efficient and effective approach to managing the environment, the U.S. EPA has begun to develop programs that do not rely solely on federal grants but are self-supporting. Such programs include the amended Clean Air Act. The Clean Air Act joins the Clean Water Act (CWA) and the Resource Conservation and Recovery Act (RCRA) in instituting permit programs that aim to capture the costs of administering the program with fees collected from operating permits.

One of the most important benefits of the new Title V operating permits program of the Clean Air Act is that the program itself will ensure that adequate resources are available for its administration. By collecting fees from stationary air pollution sources in exchange for permits which regulate levels of emissions, states can achieve a number of desired goals:

- use revenues generated by those being regulated to monitor, enforce and report on stationary air emissions;

- create incentives for those sources to reduce emissions by forcing permit holders to internalize the costs of emitting air pollutants;
- begin to track air pollution control requirements and performance so it becomes easier to manage programs across media, such as air, water and land.

The U.S. EPA has published guidance that lists in great detail the activities whose costs must be covered by Title V fees. These activities include expenses incurred in developing a Title V program, the renewal and issuance of Title V permits, compliance and enforcement activities, and the administration of the program.

What is not clearly spelled out is the manner in which a state should collect, segregate and account for Title V fees so that they are not commingled with other state efforts or end up in the state's general fund.

Project Rationale

In order to realize the intent of fee-based regulation, fees generated from a specific program must be dedicated to the administration of that program. If revenues generated from a program go to support other state efforts, then not only will the program suffer from lack of resources, but those paying the permit fees will not receive the level of service for which they are paying.

Furthermore, fee-based programs are often managed by governmental operations more accustomed to handling grant and loan programs. In such cases there may exist the need for special management guidance.

It is for these reasons that the Environmental Finance Center at the University of Maryland proposes to develop a guidance manual for states and others interested in better financial management of fee-based environmental programs.

Objectives

The primary objectives of the Environmental Finance Center Title V Fee Management Manual are as follows:

1. To assemble a clear, user-friendly guidance document to help reduce any ambiguity about the Title V process.
2. To further our understanding of the economic and policy dimensions of fee-based environmental control programs.
3. To investigate alternative methods of fee management in order to better implement air pollution control programs.
4. To publicize and make available information regarding alternative methods of fee management for future fee-based environmental programs.

Methodology

In order to address issues surrounding effective fee management, the University of Maryland's Environmental Finance Center (the Center) at the Coastal and Environmental Policy Program (CEPP) will oversee the organization of a series of focus groups. The focus groups will be comprised of those most affected by the Title V program, including state air program directors, industry representatives, public accounting professionals and inspectors general. They will be asked to examine ways in which to facilitate and expedite the collection, dedication and accounting of Title V revenues so the funds may be readily available for use in supporting the Title V program, and may also be easily tracked for auditing purposes.

The goal of the proposed Project is to develop guidance (in the form of a manual) for state and local

government officials and the private sector which will clearly outline acceptable and efficient methods for collecting, segregating and accounting for fees received from the Title V permitting program.

The combination of background research and information gathered from potential users of the manual on the one hand and comments received on the draft manual on the other will help advance our collective knowledge in the area of fee-based management and ensure that the manual will be relevant and useful. Further, the manual will serve as a guide for policymakers and practitioners interested in converting or instituting fee-based environmental programs.

Dredged Material Uses

Another example of the excellent technical assistance provided by the EFC is a recent contract with Battelle. The Maryland EFC has been retained as a subcontractor to write a chapter for a guidance document on the beneficial uses of dredged material entitled, Identifying, Planning and Financing Beneficial Use Projects Using Dredged Materials: Phase II Report. The subcontract was awarded to Battelle last year, and, as a result of their well-received Financing Alternatives for Maryland's Tributary Strategies document, the EFC was invited to design and write a chapter on alternative financing ideas to support beneficial use projects. Beneficial uses of clean dredged material include the creation or restoration of such habitat as wetlands, the development of parks and other recreational sites, beach nourishment and the building of dredged material containment areas for aquaculture. Traditionally, dredged material was disposed of in the ocean, in designated disposal sites. But with advancements in analyzing the composition of dredged material, coupled with increasing concerns over the environmental effects of ocean disposal, we now see that using dredged material in some of our local activities may, in fact, be a practical, and oftentimes economical alternative.

In the past, many of these public and private projects have been financed primarily with federal and state taxes, grants, low-interest loans and cost-share programs. But with increasing pressures on local government budgets and reduction or elimination of many funding sources, it is imperative that alternative sources of financing be developed if we are to continue these beneficial use projects. Sources of capital for a beneficial use project include the bond market or any capital market, banks and other financial institutions such as corporation, foundations and individuals. But capital will not be invested in a beneficial use project until a steady, reliable source of revenues can be identified and dedicated to the project. The EFC will focus on the issue of how to generate steady, reliable source of revenues and capital to support such beneficial use projects.

Brownfields Initiative

The EFC sits on the Financing Incentives subcommittee of the Brownfields Council, the Baltimore City Office of Planning, and the state Department of Business and Economic Development. Brownfields describe unused or abandoned urban properties that are either polluted or perceived to be polluted. Because these properties are not attractive to the real estate redevelopment market, they tend to contribute to urban blight and often force new development outside the city, exacerbating problems with sprawl development. By identifying innovative ways to attract redevelopment of these otherwise well-located properties, cities may again regain their stature as convenient places to live. The EFC's ideas on ways to provide financing for redevelopment may lead to breakthroughs in Brownfields redevelopment.

The EFC has been successful in getting language into a recommendation to the Empower Baltimore Corporation on ways to provide flexible and ready financing for redevelopment which suggests an innovative structure for coordinating public and private financing for Brownfields redevelopment. Empower Baltimore has received a large grant from U.S. HUD to redevelop Brownfields in the empowerment zones of Baltimore--the EFC is hopeful that it will be awarded part of the proceeds of this grant to develop its innovative financing idea. The EFC is excited that the Brownfields initiative will allow them an opportunity to develop innovative financing ideas for Brownfields redevelopment that may have national applicability.

Training and Curriculum Development

Case Studies and Training

As an educational and training facility, the EFC continues to avail itself of the wealth of expertise in the region which must be brought to bear upon the integrated, holistic issues particular to environmental finance. Towards this end, the EFC worked closely with Professor Suzanne Slater, Director of the Public Sector Financial Management concentration of the School of Public Affairs and also Director of Executive Training Programs at the University of Maryland. Working with Professor Slater, the EFC has developed a series of case studies on seven charrette participants, identifying the problems, recommendations, and solutions that were utilized to achieve success.

These case studies are the basis for classes offered to government officials at the federal, state, and local level, as well as to graduate students in public policy programs. The case studies were also used as a teaching guide in a summer class entitled *Environmental Finance* that was offered as part of the School's Mid-Career program during the summer of 1994. The EFC has also used some of the cases in a School of Public Affairs graduate public finance course offered to allow others not familiar with environmental finance to become familiar with the issues.

Curriculum Development and Training

As part of the Center's collaborative efforts, a partnership has been formed with the University of Maryland's School of Public Affairs. With the help of the Environmental Finance Center, a joint concentration in Public Sector Financial Management and Environmental Policy has been established to prepare future professionals for emerging environmental finance issues.

This innovative concentration was first offered in the 1994 school year, and features courses in public policy and the environment, environmental finance (using our seven case studies), and public sector budgeting and accounting practices. In addition, the Environmental Finance Center offers summer internships at the Center to graduate students, and is available to sponsor the required Project Course for Environmental Finance Candidates (similar to a Master's Thesis).

The EFC helped in structuring a comprehensive Honors Course on Chesapeake Bay Watershed issues, including economics and finance, which was offered during the Fall 1994 semester to undergraduates. This opportunity affords the EFC the chance to 1) highlight the interrelatedness of issues surrounding proper environmental management, especially environmental finance's prominent and crucial role, and 2) increase the visibility of the EFC and its work throughout the University System and the region.

Innovative Finance Course for Local Officials

The Center, in collaboration with the School of Public Affairs, has developed a course on innovative financing techniques for environmental projects. The Office of Executive Programs of the School of Public Affairs, in coordination with the EFC, developed a course designed to highlight some of the latest techniques in environmental finance. The course includes case studies and exercises that can be completed by a student on his/her own time, although classroom lectures, field trips and group discussions would enhance the learning experience and are strongly recommended. The course is intended for local government officials, utility administrators, and those interested in innovative ways in which to finance environmental projects.

In addition, a version of the innovative financing course is currently being taught at U.S. EPA headquarters by the School of Public Affairs as part of its Masters Degree program in Public Policy. Part of assigned reading includes the seven case studies developed by the Center in 1994. These case studies will allow federal-level officials a glimpse at the demands and concerns of local officials with costs associated with environmental

mandates and point to ways in which to alleviate some of their burdens. In this way, more effective partnerships can be achieved between federal, state and local government representatives.

Finally, a version of the innovative finance course will be included as part of the requirements of the masters degree in Environmental Policy at the School of Public Affairs. Many current and future local and federal officials pursue this degree, and only through the EFC's perseverance has environmental finance become a key part of the curriculum.

Information and Outreach

EFC's 2nd Annual Mid-Atlantic Teleconference on Environmental Finance -Sept. 13-14, 1995.

The EFC organized and conducted an interactive teleconference, which served as a platform for environmental professionals from around the country to discuss financing options for environmental mandates and other environmental initiatives. The EFC collaborated with the Office of Executive Programs at the School of Public Affairs, which assisted in the administration of the conference, including advertising, mailing and registration efforts. The EFC coordinated the content of the conference, including speakers and conference sessions and other areas of substance, and also spearheaded marketing and advertising efforts.

Using satellite downlinks to other sites in Tennessee and New Mexico, the Environmental Finance Teleconference served as an interactive platform for environmental professionals from around the country to discuss financing options for environmental mandates and other environmental initiatives. The conference was designed to strengthen the capacity of all levels of government and the private sector to analyze environmental problems and to explore new, cost-effective financing strategies. The event featured leaders in environmental finance, including distinguished faculty from the University of Maryland and the University of Tennessee, senior level Federal Administration and state officials, and prominent private sector executives. Through the use of multi-point videoconferencing technology, the conference was held simultaneously at the University of Maryland, the University of Tennessee in Nashville, and the University of New Mexico in Albuquerque.

One of the most exciting aspects of the conference this year was the use of multi-point videoconferencing technology. This technology allowed live, interactive participation across long distances, which enabled our conference to reach a wider audience, such as rural area officials and officials that do not have the time nor money to travel to such a conference. Plans are being developed to use the technology to broadcast future environmental finance courses, workshops and charrettes across the nation to enhance partnerships between levels of government and the private sector.

EFC's 1st annual Mid-Atlantic Conference on Environmental Finance - September 8-9, 1994

The first annual Mid-Atlantic Conference was held on the campus of the University of Maryland. The conference provided educational presentations, programs and exhibits on local government finance and environmental regulations implementation. This first conference provided an opportunity for representatives from Federal, state and local government, as well as the private sector, to meet in an annual forum to discuss common issues and concerns related to environmental finance.

The conference panel and workshop discussions focused on encouraging new and innovative thinking regarding alternative methods for financing environmental projects, both mandated and desired. Helping participants to establish an ongoing network for the sharing of environmental information and ideas was an important outcome of the conference.

Outreach and Networking

The EFC has shown great expertise in outreach and networking. By actively seeking out opportunities to serve local communities, the EFC has improved the capability of officials in this area and has allowed the EFC to

develop an expertise in the area of innovative financing techniques for local governments, with an emphasis on watershed and nonpoint-source pollution management. In addition, the EFC has seeks communities that have successfully met environmental mandates and provides forums where they can present their experiences as models for local governments facing similar challenges.

An example is Prince William County, Virginia, which has presented its stormwater project as a case study at several EFC local government forums. Prince William County faced increases in severity and frequency of floods, increases in erosion, sediments and bank undercutting that are in large part due to urbanization. Prince William County's goal in considering stormwater management is to develop an innovative stormwater management plan that takes a watershed approach to environmentally sensitive decision making. This effective partnership between federal, state, local and private sector players is now a model for the region.

New Initiatives

Riparian Forest Buffer Committee

The EFC has been retained by the Riparian Forest Buffer Committee to develop financing alternatives to support the establishment of riparian forest buffers in the Chesapeake Bay watershed. This non-point source effort is another follow-up to the EFC's work with the Blue Ribbon Panel on Financing Alternatives for Maryland's Tributary Strategies.

Anne Arundel County, Maryland, Planning Guidance

The EFC is working in an advisory capacity with the Anne Arundel County, Maryland, Office of Planning to develop language for the County as they begin the process of revising the five-year general development plan. The County is requesting help on how best to introduce financial incentives and disincentives in relation to growth management and other land use issues as they affect environmental management. The EFC's proposal is contained in the following draft "white paper", which is aimed toward a growth management project funded jointly by Coastal Zone Management and the State of Maryland.

A Menu of Growth Management Techniques
(Draft white paper)

I. Introduction

It has become apparent that present approaches to managing the environmental impacts of population growth have not been fully successful. Past and current development often occurs in places and in ways that have had a cumulative adverse impact on local economies, resource habitat and ecology. Mechanisms that promote growth in areas which would result in less harm to the environment exist, but unfortunately are not being used. If the commitments agreed to in the Chesapeake Bay Program are to be achieved, alternative methods for controlling the impacts of a growing population must be employed.

The best approach to correcting this situation is to educate the public. As consumers become more educated about costs and risks associated with uncontrolled development, they will demand alternative choices which will lead to greater environmental protection. Thus, the long term strategy is one of changing consumer preferences through education. While this transformation is taking place, it would be useful to develop a short-term strategy that begins to employ techniques that help to make these alternatives possible.

One of the most pressing growth management issues is the rampant conversion of farmland to developed land. Resource lands (farmland, forests, open space) are often made more valuable for urban (developed) uses through subsidies such as:

- tax concessions and subsidized utility extension to commercial and industrial developers,
 - tax concessions given to home owners through the Federal income tax system,
- oversupply of land for low density development and undersupply of land for high density development,
- average public facility pricing which results in higher density urban areas (where per-unit facility costs are low) subsidizing suburban low density development (where per-unit facility costs are high).

The urban land market internalizes these economic subsidies into higher land values at the urban-rural fringe. These effects are further exacerbated by policies that encourage speculation over future conversion of the urban-rural fringe, such as nuisance laws placed on farmers by nonfarm residents regarding manure disposal, slow-moving farm vehicles, and hours of operation. In order to control these conversions, thought should be given to ways in which to relieve or remove some or all of the above-mentioned subsidies.

Below is a list of several different kinds of techniques that can be incorporated into the revision of the General Development Plan for Anne Arundel County. The objective of these techniques is to provide an incentive or encourage growth in desired areas, and to provide disincentives or discourage growth in areas less suitable for development. No one technique will guarantee success--only through coordinated efforts between regional, county and local partnerships will growth be managed to the benefit of our local economies and environment.

II. Outline of Techniques

- Financial Incentives/Loan Programs for Home Buyers and Developers.
- Land Use Policies.
- Land Acquisition.
- Tax and Fee Policies.

III. Techniques

Financial Incentives/Loan Programs for Home Buyers and Developers

Loan Programs--Home buyers have access, through their banks, to low-interest loans for homes that are built in desired areas and have environmentally sensitive features, such as a smaller footprint, more open space/undisturbed land, etc. State and/or county governments would place funds, in the form of the purchase of certificates of deposit, in local banks. Governments would accept a lower yield (interest rate) on the certificate in exchange for an agreement that would pass the rate savings on to the home buyer.

Loan Programs--Developers have access, through their banks, to low-interest loans for homes that are built in desired areas and have environmentally sensitive features, such as a smaller footprint, more open space/undisturbed land, etc. State and/or county governments would place funds, in the form of the purchase of certificates of deposit, in local banks. Governments would accept a lower yield (interest rate) on the certificate in exchange for an agreement that would pass the rate savings on to the developer.

Performance Bonds--Developers are held directly responsible for all environmental damages by levying an assurance or a performance bond equal to the current best estimate of potential future damages. Bonds would be held in an interest bearing escrow account for a predetermined period. Portions of the bond (plus interest) would be returned as the developer could demonstrate that the environment has been protected. If damages did occur, portions of the bond would be used for restoration and compensation.

Land Use Policies

Zoning:

- Conventional Zoning--includes setbacks, densities etc.
- Conditional Zoning--creates flexibility and allows communities an opportunity to exact concessions from developers.
- Planned Unit Development--used to achieve a development plan which satisfies zoning requirements but allows density transfers and other variations.
- Bonus or Incentive Zoning--allows a developer to apply for higher density or other variances in exchange for providing open space or other amenities.
- Cluster Zoning--provides developer the option of grouping units close together and leaving more land in open space.
- Exclusive Agricultural Zoning--prohibits nonfarm activities in the zone.
- Performance Zoning--uses permitted on a parcel of land are based on the amount of sewage capacity available, acceptable volume of surface water runoff or other factors.
- Building Permit Limitations--quotas on the number of building permits which may be issued in a specified time period or within a specified area.
- Special Agriculture Districts--agriculture districts can be protected from nuisance claims, special assessments for water and sewer, use of eminent domain to acquire farmland for public use, and others.
- Urban Service Limits--gradually install urban service limits in a ring around cities, through the purchase or transfer of development rights and conservation easements. Place all farmland outside this ring in exclusive farm use districts. Combine exclusive farm districts with right-to-farm provisions.
- Land Evaluation and Site Assessment (LESA)--developed by the Soil Conservation Service, sites are initially evaluated for their soil quality in terms of suitability for cropland and forest. Land is also evaluated for its compatibility with relevant plans and zoning, access to public infrastructure, etc. This method is also called Performance Evaluation.

Land Acquisition

Fee Simple--outright purchase of land.

Conservation Easements--the transfer of development rights from a property owner to a third party, such as the Conservation Foundation. This often is a tax- deductible gift if made to a charitable organization. The organization usually holds the development rights in perpetuity.

Purchase of Easements or Development Rights--the purchase of development rights by a community rather than received as a donation. This necessitates the community assigning "development rights" to all parcels of land, and then allowing those rights to be used in designated "high density" areas, usually in urban or already developed areas. Rights can also be extinguished or held in perpetuity.

Transfer of development rights--similar to purchase of development rights, this requires a community to have designated "sending" and "receiving" areas (resource or rural areas and developed or urban areas, respectively). It allows landowners in sending areas to realize the market value of their land without developing it. Developers who purchase these rights can increase their marginal profits by increasing the density of their development.

Restrictive Agreements--resource landowners enter into long-term contracts with counties in exchange for receiving preferential assessment. If land under this agreement is developed, property tax penalties are assessed.

Land Banking--similar to the purchase of development rights, except that a community acquires the entire fee simple interest in the land. While it gives more control to a community in the timing of development, it also removes the land from the tax rolls and has a hefty up-front investment requirement.

Tax and Fee Policies

Property Tax Reform (Split-rate tax)--a property tax is in reality two different taxes--a tax on the value of buildings, and a tax on the value of the land. By making land ownership more costly by increasing the tax on land values, land owners are motivated to develop their land, rather than hold onto it as vacant or underutilized lots. Since land adjacent to already existing infrastructure (metro, water and sewer) has higher land value than land farther away from infrastructure, with limited development demand, land in already developed areas will be developed first (a higher tax on land values results in lower land prices). This results in higher density development within the urban core and reduces development pressures on land in rural areas.

Regional Tax-base Sharing--a portion of the growth in property tax base is pooled and redistributed back to the taxing districts via a formula that favors those districts with below average per-capita-assessed property values. Tax base sharing reduces competition between jurisdictions for commercial and industrial development.

Urban and Rural Service Area Assessments--a county classifies all land according to whether it is slated to receive public water and sewer. The areas that will eventually receive the services are taxed at a higher rate. This system may provide an incentive for "urban" assessed landowners to convert their land because of the economic burden of high taxes (see Property Tax Reforms).

Income Tax Rebate-- when local property taxes assessed on a farmer exceed some threshold (i.e. 7%) of his/her net farm income, the state refunds income taxes equal to the property taxes paid in excess of that threshold.

Tax Penalty--impose a tax penalty equal to the present value of all property taxes not assessed between initial enrollment as farmland (taxed at a lower rate) and development.

Lump-sum Tax--access a lump-sum tax equal to the difference between the market value of land at the time of development and the value of that land for resource uses.

Land Gain Taxation--a community levies a tax on the gain realized from the sale of land which has been held for a short period of time. It is a penalty for speculators who buy land for the sole purpose of converting it to a more intensive use and then selling it.

Development Fees--a payment made by the developer to the community to cover the public costs of new infrastructure.

There are a variety of other techniques, such as transportation policies, which can also be effectively used in growth management which have not been addressed here but hold much promise.

[APPENDIX 1](#)

[Charrette Case Studies](#)

Region 3
University of Maryland EFC
14 Charrette Case Studies

DELAWARE (2)

[Ellendale, DE](#)..... failing septic systems

[South Bethany, DE](#) stormwater runoff into canal system

VIRGINIA (3)

[Fauquier County, VA](#) failing septic systems

[King William County, VA](#) ww treatment for land use planning

[Loudoun County, VA](#) site location for new landfill

MARYLAND (9)

[Berlin, MD](#) expand WW treatment capacity to serve new devpmnt

[Deer Park, MD](#) no WW treatment facility, dumping raw sewage

[Denton, MD](#) expand WW treatment system to avoid bldg moratorium

[Federalsburg, MD](#) separate storm water from WW

[Indian Head, MD](#) stormwater management

[Manchester, MD](#) manage sewer and DW contruction & \$200 pd fine

[Port Deposit, MD](#) need expanded WW treatment for new dvpment

[Snow Hill, MD](#) need central ww trtmnt systm to encourage business dvpmnt

[Taneytown, MD](#) upgrade aging WW trtmnt systm for new housing

SUMMARY OF PROJECTS AND ACTIVITIES RELATED TO CAPACITY DEVELOPEMENT FOR DRINKING WATER SYSTEMS

Established in 1993, the Region 3 Environmental Finance Center at the University of Maryland has pioneered innovative finance training techniques and alternative financing mechanisms. The EFC began operation by organizing and hosting a series of advisory panels (charrettes) for local officials on environmental standards. Each charrette with a community involves a panel of public finance experts that provides authoritative advice and recommendations to local officials. The charrettes also serve as a valuable reservoir of information on the natures of finance problems affecting the regulated community to better develop and deliver training courses. Case studies developed from the charrettes are being shared with the other EFCs to augment their training activities. To provide an outreach opportunity for representatives from federal, state and local government, as well as the private sector, to meet in an annual forum to discuss common issues and concerns related to environmental finance, the EFC has hosted annual conferences on a wide range of environmental finance and economic issues.

Advisory Panels (Charrettes)

To investigate and address pressing problems in the areas of environmental finance and capital budgeting and planning, the University of Maryland EFC initiated a series of advisory panels or "charrettes." These panels have proven an effective form of discovery about the financing difficulties experienced by municipalities in meeting environmental needs by providing a forum for frank discussions between local government administrators, federal and state officials, and financial experts. The charrettes provide municipal officials with

direction, recommendations, and solutions to specific local environmental problems, while at the same time supplying information for the development of case studies so that other communities can benefit from these experiences.

To date the Maryland EFC has held fourteen charrettes. Several examples involving drinking water systems are outlined below. The charrettes, as focus groups, have proven to be an excellent means to provide expert advisory assistance to smaller communities concerning a wide range of environmental financial issues, in particular, many dealing with capacity development.

One overwhelming conclusion from the charrettes was that water and sewer rates were insufficient in many instances to insure adequate system financial capacity. This finding and other experiences of the EFCs led to the decision to do the water and wastewater rate model.

Manchester, Maryland

Manchester, a community of 2,800, is in the midst a major environmental infrastructure financing problem with many aspects to it. Among them is the need to upgrade wastewater and drinking water facilities to accommodate strong growth pressures brought on by its proximity to major employment areas. The candid discussions provided during the charrette produced useful and achievable recommendations for Manchester's local officials.

King William County, Virginia

King William County, with a total population of less than 12,000, is facing the need to pay for major upgrades to its water and wastewater system. These upgrades are critical in order to provide adequate service for commercial and industrial development and to service the high school, which had reached maximum capacity for its well and drainfields. The charrette provided several valuable recommendations for King William County officials.

Ellendale, Delaware

Both the Town of Ellendale, with a population of about 350, and 700 in the surrounding community are located in Sussex County, Delaware. This area is situated on land with generally poor soils and high seasonal groundwater levels leading to increasing concern about such health issues as standing septic effluent and drinking water contamination. Proposed solutions had high project costs which were unaffordable for the residents. The charrette offered achievable and affordable recommendations as solutions to these critical environmental problems.

Rate Model Software for Full-Cost Pricing

In addition to the above course, the EFC expects to provide for local officials training sessions produced jointly by the EFCs at the Syracuse University in Region 2 and the University of New Mexico in Region 6 for our recently developed water and wastewater rate model.

Environmental Finance Conferences

The EFC has hosted two annual mid-atlantic conferences on environmental finance to provide educational presentations and programs. These conferences encourage new and innovative thinking regarding alternative methods for financing environmental projects, both mandated and desired. Recently, the EFC hosted a conference using satellite telecast long-distance learning techniques, a cutting-edge technology that made possible the interactive participation of attendees at two other EFCs. The EFC intends to increase the use of this technology, which has great potential in delivering training on capacity development to large geographical audiences.

Innovative Financing Training Course

The EFC has developed a course on innovative financing techniques for environmental projects. The course is self-contained and specifically aimed at public officials who find it difficult to be away for several days from their localities, thus allowing them to complete the course on their own, although classroom lectures, field trips and group discussion that will enhance the learning experience are strongly recommended. The content of the course includes a binder containing case studies and exercises designed to highlight some of the latest techniques in environmental finance.

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Last modified: 22-January-2008**Last modified: 16-August-2000**

URL: <http://www.epa.gov/efinpage/umdann.htm>