Final Report of the Interagency Technical Assistance Committee on Wastewater Treatment Systems

prepared for the

Water Security and Sewerage Systems Advisory Council

January 2006

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Interagency Technical Assistance Committee

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Advisory Council

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Acknowledgements

Almost three years ago, a broadly representative group of federal, State and local government officials and nonprofit agency representatives was convened as the Interagency Technical Assistance Committee on Wastewater Treatment Systems (or "ITAC" for short). The members of this Committee devoted a considerable amount of both professional and personal time to the issues discussed in this Report. The primary goal of the Committee was to ensure that local government officials have the knowledge, skills, and financial and technical tools available to properly manage their wastewater systems.

The findings and recommendations in this Report are geared toward improving the quality and availability of information about the proper management of wastewater systems. The focus is on local decision-makers, especially those from smaller jurisdictions who often wear many hats and have many responsibilities. The recommendations are made with the knowledge that local elected officials may change every two or four years, and that training and other assistance must be readily available when needed. The Committee also recognizes that there are a variety of high quality training courses and materials available from a number of sources. In this regard, we have resisted the temptation to "reinvent the wheel" whenever possible.

This Report builds upon the previous recommendations of the 2001 Report entitled ***Task Force on Upgrading Sewerage Systems*** and the 2004 Report entitled ***Final Report of the Water Security and Sewerage Systems Advisory Council and Preliminary Report of the Interagency Technical Assistance Committee***. Both Reports were submitted to the Governor, the Maryland General Assembly, and other stakeholders.

I would like to personally thank all the members of the Committee, each of whom brought special knowledge or insight that contributed significantly to our work, as well as the agencies that employ them, for generously lending us their time and expertise. I would also especially like to recognize the Committee's two subcommittee chairs, Jean Holloway and Victoria Woodward, for their outstanding leadership and tireless dedication to our effort. And finally, I must express my appreciation to the very skilled staff of the Maryland Department of the Environment, who were essential for keeping the Committee on task and helping to produce this Report.

Stephen R. McHenry

Chair, Interagency Technical Assistance Committee on Wastewater Treatment Systems

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This Report and the Preliminary Report of the ITAC are available at MDE's web page under the heading of "More Publications": www.mde.state.md.us

MEMBERSHIP COMPOSITION

INTERAGENCY TECHNICAL ASSISTANCE COMMITTEE ON WASTEWATER TREATMENT SYSTEMS

In March of 2003, pursuant to HB 659 (2002), Governor Robert L. Ehrlich, Jr. established the Interagency Technical Assistance Committee on Wastewater Treatment Systems and the Water Security and Sewerage Systems Advisory Council. The members selected by the Governor represent a variety of statewide and local interests.

Twelve (12) members, one from each of the following entities, comprise the Interagency Technical Assistance Committee:

- Maryland Department of Housing and Community Development;
- Maryland Department of Planning;
- Maryland Environmental Services;
- FORVM for Rural Maryland (now Rural Maryland Council);
- Maryland Center for Environmental Training;
- Environmental Finance Center;
- U.S. Department of Agriculture Rural Development;
- Maryland Municipal League;
- Maryland Association of Counties;
- Maryland Rural Water Association;
- Chesapeake Bay Foundation; and
- Safe Waterways in Maryland (SWIM).

MEMBERS

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ACRONYMS AND ABBREVIATIONS

Advisory Council	-	Water Security and Sewerage Systems Advisory Council
APFO	-	Adequate Public Facilities Ordinance
AWWA	-	American Water Works Association
BRF	-	Bay Restoration Fund
BNR	-	Biological Nutrient Removal
CDBG	-	Community Development Block Grant
CIP	-	Capital Improvement Program
CMOM	-	Capacity, Management, Operation, and Maintenance Program
COMAR	-	Code of Maryland Regulations
CWSRF	-	Clean Water State Revolving Fund (a.k.a. Water Quality SRF)
Council	-	Water Security and Sewerage Systems Advisory Council
DBED	-	Maryland Department of Budget and Economic Development
DHCD	-	Maryland Department of Housing and Community Development
EFC	-	Environmental Finance Center, University of Maryland
ENR	-	Enhanced Nutrient Removal
EPA	-	U.S. Environmental Protection Agency
EPCRA	-	Emergency Planning and Community Right-to-Know Act
FY	-	Fiscal Year
GIS	-	Geographic Information System
I/I	-	Infiltration and Inflow
ITAC	-	Interagency Technical Assistance Committee
MACO	-	Maryland Association of Counties
MCET	-	Maryland Center for Environmental Training
MDE	-	Maryland Department of the Environment
MDP	-	Maryland Department of Planning
MG	-	million gallons
mgd or MGD	-	million gallons per day
MML	-	Maryland Municipal League
MOU	-	Memorandum of Understanding
MRWA	-	Maryland Rural Water Association
NESC	-	National Environmental Services Center
NETCSC	-	National Environmental Training Center for Small Communities
NPDES	-	National Pollutant Discharge Elimination System (Permit)
NPS	-	Non-point Source
O&M	-	Operation and Maintenance
POTW	-	Publicly Owned Treatment Works
RCRA	-	Resource Conservation and Recovery Act
RMC	-	Rural Maryland Council
SCADA	-	Supervisory Control and Data Acquisition
SRF	-	State Revolving Fund
STAG	-	U.S. EPA State and Tribal Assistance Grant Program
2001 Task Force	-	Task Force on Upgrading Sewerage Systems (December 2001 Report)
TMDL	-	Total Maximum Daily Load
USDA	-	U.S. Department of Agriculture – Rural Development
WMA	-	MDE, Water Management Administration
WQSRF	-	Water Quality State Revolving Fund
WWOA	-	Water and Waste Operators Assoc. of MD, DE, & Dist. of Columbia
WWTP	-	Wastewater Treatment Plant

Executive Summary

INTRODUCTION

Elected officials, planners, scientists, environmentalists, developers, community activists and just about anyone else who lives in Maryland has an opinion about growth and development as well as its effects on the environment and the quality of life in this beautiful State. One effect is clear: enormous development pressures test the ability of Maryland's State and local agencies to provide the public facilities needed to serve the growing population. Over one million new residents are expected to live in Maryland by the year 2020. To protect the public health, it is necessary to provide safe and adequate wastewater treatment facilities. In addition, to restore the Chesapeake Bay and its tributaries, it is necessary to improve the quality of the effluent from these wastewater facilities.

Local governments must meet these population growth and water quality pressures in several ways. The managers of wastewater systems must have strong financial policies and procedures in place in order to have self-supporting systems and to ensure the long-term operational and environmental performance of these systems. Local governments must also have County Water and Sewerage Plans in place that describe where, when and how wastewater systems will be developed to meet the demands of the growing population. Such plans must include demographic information, inventories of existing infrastructure, financing mechanisms, and plans for capital improvements. Unfortunately, many local governments are not able to keep pace with growth. Many smaller jurisdictions have difficulty maintaining existing wastewater facilities due to limited population, revenues, and funding options. In addition, local governments face new federal and State environmental laws and regulations that are expensive and difficult to implement.

In response to these needs, the Maryland General Assembly enacted House Bill 659 in 2002. This bill was a combination of three bills pending in the General Assembly during the 2002 session that called for the study of a wide variety of water security and wastewater systems topics. House Bill 659 created the Advisory Council on Water Security and Sewerage Systems and the Interagency Technical Advisory Committee on Wastewater Treatment Systems (ITAC). The Advisory Council was tasked to study multiple issues including water and wastewater security; funding for water and wastewater plant upgrades; water and sewer plans; and the safety of using chlorine as a disinfectant. The Advisory Council reported its findings and recommendations to the General Assembly on December 1, 2004. The Interagency Technical Assistance Committee on Wastewater Treatment Systems was charged with implementing a recommendation of the Governor's 2001 Task Force on Upgrading Sewerage Systems to advise local jurisdictions on the efficient operation and financial management of wastewater treatment systems.

The Interagency Technical Advisory Committee formed two subcommittees: the Financial Management Subcommittee and the Water and Sewerage Subcommittee. The two Subcommittees prepared the findings and recommendations that are presented in this Report. This Report addresses some of the obstacles to good financial management and wastewater planning by identifying training opportunities, suggesting better coordination among funding agencies, and proposing ways to improve the water and sewerage planning process.

FINANCIAL MANAGEMENT OF WASTEWATER SYSTEMS

The Financial Management Subcommittee of the Interagency Technical Assistance Committee (ITAC) prepared the Financial Management Section of this Report in response to recommendations in the ***Task Force Report on Upgrading Sewerage Systems*** (2001) and the ***Final Report of the Water Security and Wastewater Systems Advisory Council*** (2004). The Subcommittee identified its current tasks pursuant to the 2001 and 2004 Reports as the identification and recommendation of additional enhancements to local wastewater treatment system efficiencies as follows:

- Examine the potential for mandatory minimum training requirements for local, non-technical system personnel;

- Determine the feasibility of a statewide review committee to improve and expedite the application and selection processes for financial assistance; and

- Examine the potential for establishing a statewide database of wastewater system rates.

Local governments, especially small and medium-sized ones, face technical, managerial, training, and financial challenges in operating and maintaining water and wastewater systems. In particular, the Subcommittee recognized that training of local elected officials in the technical, financial, and managerial aspects of water and wastewater systems is critical.

The Subcommittee also recognized that it would be desirable to improve coordination of the various State and federal agencies providing financial assistance to local governments for water and wastewater capital improvements in regard to funding priorities, joint funding decisions, and the provision of information to prospective financial applicants.

The Subcommittee recommends that current levels of State capital grant funding for wastewater treatment systems, of approximately $10 to $20 million per year, be maintained in the future. Even as Biological Nutrient Removal projects are completed, there will be an ongoing need for financial assistance to some local governments to keep needed upgrades affordable to all citizens of Maryland. Without grant assistance, these systems may fall out of compliance, thereby reversing the environmental benefits of wastewater system improvements.

Finally, the Subcommittee evaluated the creation and maintenance of a database for wastewater user rates. While the Subcommittee acknowledged that rates should not be compared without detailed knowledge of the particular systems, such a database would be helpful to address affordability issues.

RECOMMENDATIONS: FINANCIAL MANAGEMENT OF WASTEWATER SYSTEMS

Provide a Consolidated List of Training Opportunities

The Maryland Department of the Environment (MDE) should work with training providers to develop a list of training opportunities on technical wastewater topics to assist local wastewater system staff.

Provide Training for Local Officials

a) MDE and other stakeholders should prepare and widely circulate a short presentation to introduce local officials to their responsibilities for managing their wastewater systems and to inform them of relevant training opportunities. (The 20-minute CD on Wastewater Utility Management included in the Appendix of this Report provides an introduction to the type of training needed.)

b) MDE and other stakeholders should identify appropriate training sessions on management and finance topics relevant to local responsibilities for wastewater systems and encourage local officials to attend these training sessions.

c) MDE, the Department of Housing and Community Development (DHCD), and the U.S. Department of Agriculture - Rural Development (USDA) should require local officials and local system personnel to attend a minimum four-hour training course on their wastewater system responsibilities as a condition of receiving grant or loan assistance.

Coordinate Funding Agencies

a) A statewide committee of wastewater funding program representatives should be established to serve as an information sharing and funding coordination body.

b) MDE, DHCD, USDA and the Maryland Department of Planning should execute a Memorandum of Understanding that specifies funding goals, establishes a process to coordinate funding priorities, and streamlines procedures for the review of projects.

c) State capital grant funds for wastewater treatment systems of approximately $10 to $20 million per year should continue to be available even after completion of current Biological Nutrient Removal improvements.

Create a Database of Wastewater System User Rates

MDE should create a database of wastewater system user rate structures to help funding agencies and managers of wastewater systems.

WATER AND SEWERAGE PLANS

House Bill 659 (2002) directed a review of the effectiveness of Water and Sewerage Plans. The Water and Sewerage Subcommittee of the Interagency Technical Assistance Committee (ITAC) evaluated this issue and prepared eight categories of findings and recommendations to improve the effectiveness of Water and Sewerage Plans.

Many communities in Maryland are undergoing growth, and some are experiencing unprecedented rapid growth. The water and sewerage planning process is a critical early step in the development process. Each community must provide adequate water and sewer systems to serve current needs, new development, and redevelopment in a manner consistent with the local comprehensive plan. Adequate water and sewer systems are necessary in order to support economic development and Smart Growth, and to protect public health and water quality. The Water and Sewerage Plan is the plan for water and wastewater infrastructure in a local jurisdiction.

At the State level, the work force dedicated to managing the Water and Sewerage Planning Program has been reduced over the years as other pressing issues have been given higher priority. Local jurisdictions now face a myriad of environmental priorities that also compete for funding with infrastructure planning. Adequate funds are needed to properly manage the County Water and Sewerage Plan process to ensure that safe and adequate facilities will be available to support local Comprehensive Plans and economic development in ways that support Smart Growth.

The members of the Subcommittee used their expertise and the results of a recent MDE survey on the tracking and allocation of water and wastewater capacity to develop a series of findings and recommendations for this Report. Several other work groups in addition to the ITAC were also examining issues that were relevant to this Subcommittee. These groups evaluated issues such as Total Maximum Daily Load (TMDL) implementation, Tributary Strategy implementation, annexation policy and procedures, and system capacity management. All of these issues factor into water and sewerage planning. The Subcommittee considered relevant water and wastewater planning issues in a systematic manner and prepared comprehensive recommendations, which are as follow:

RECOMMENDATIONS: WATER AND SEWERAGE PLANS

Ensure Adequate Water and Wastewater System Capacity

Local jurisdictions should enact ordinances (such as Adequate Public Facilities Ordinances) and implement management procedures to ensure that adequate water supply and sewerage facilities are available to meet projected needs, consistent with County and Municipal Comprehensive Plans.

Fund Water and Sewerage Planning

a) MDE and the Maryland Department of Planning (MDP), in cooperation with the Maryland Association of Counties (MACO), the Maryland Municipal League (MML), and other stakeholders, should identify ways to fund State and local water and sewerage planning programs.

b) MDE and MDP, in cooperation with MACO, MML, regional planning councils, and other stakeholders, should identify ways to develop information technology capabilities to improve the effectiveness and efficiency of the water and sewerage planning programs.

c) When appropriate, the State Revolving Fund should be used to provide funding for the preparation and review of local Water and Sewerage Plans and amendments.

Provide Guidance, Technical Assistance, and Training

a) MDE, MDP, and other agencies as appropriate, should provide necessary State data, technology, and technical assistance to local governments for preparing Water and Sewerage Plans.

b) MDE should provide training for local elected officials and staff for preparing Water and Sewerage Plans.

Improve Inter-jurisdictional Cooperation

a) MDE, DBED and MDP, in cooperation with MACO, MML, regional planning councils, and other relevant State and interstate agencies, should encourage inter-jurisdictional and regional cooperation for water supply and wastewater facilities.

b) MDE, DBED and MDP, in cooperation with MACO, MML, and regional planning councils, should develop mechanisms to resolve county/municipal disagreements concerning water supply and wastewater systems.

c) The Annotated Code of Maryland should be revised to establish a process and a time period for a county to act on proposed Water and Sewerage Plans and amendments submitted by municipal governing bodies. After the period expires, the municipality should be able to follow the new process and submit its Plan or amendment to MDE.

Integrate Water Resource Objectives into Water and Sewerage Planning

MDE and MDP, in cooperation with MACO and MML, should hold technical and policy meetings with stakeholders to integrate multiple water resource management objectives into the comprehensive planning process and the water and sewerage planning process.

Strengthen MDE's Oversight Role in Water and Sewerage Planning

a) MDE should continue to provide oversight and guidance to those water and wastewater systems at critical capacity levels to ensure that necessary capital improvements are planned and constructed.

b) All local jurisdictions should prepare Water Supply Capacity Management Plans and Wastewater Capacity Management Plans to ensure that there is adequate capacity in their water supply and wastewater systems. Each local jurisdiction must use and present consistent data in its Capacity Management Plans and its Water and Sewerage Plan.

Revise the Regulations for Water and Sewerage Plans

a) MDE and MDP, with input from all stakeholders, should review and update the regulations pertaining to Water and Sewerage Plans.

b) In order to receive State guidance and assistance in a timely manner, the counties should submit draft Water and Sewerage Plan updates and amendments to MDE and receive State comments before initiating formal plan-adoption procedures.

Establish Procedures to Govern Minor Water and Sewerage Plan Amendments

MDE should establish procedures to govern minor amendments to Water and Sewerage Plans to ensure consistency with the State law.

Final Report of the
Interagency Technical Assistance Committee on
Wastewater Treatment Systems

Introduction

INTRODUCTION TO THE FINAL REPORT

House Bill 659, History of Legislation, and Rationale for Organization of the Advisory Council and Interagency Committee

In December of 2000, the leadership of the Maryland House and Senate, the Chairs of the Economic and Environmental Affairs and the Environmental Matters Committees, and the Chair of the Maryland Delegation to the Chesapeake Bay Commission wrote to Governor Parris N. Glendening about the wastewater needs of the State. In March 2001, the Governor's Executive Order 01.01.2001.03 created the Task Force on Upgrading Sewerage Systems to assess the wastewater infrastructure needs of the State and to identify other challenges to the successful planning, design, and construction of wastewater facilities to accommodate the State's existing and projected population. This Task Force produced a Report in December 2001 identifying the need for $4.3 billion in capital funds to address wastewater treatment plants and collection systems. The Report made several other recommendations, including evaluating and improving the water and sewerage planning process.

In a follow-up to this effort, House Bill 659 was enacted in the 2002 session of the Maryland General Assembly. This bill was a combination of three bills pending in the General Assembly that called for the study of a wide variety of water security and wastewater systems topics. HB 659 created the Advisory Council on Water Security and Sewerage Systems and the Interagency Technical Advisory Committee on Wastewater Treatment Systems (ITAC). The Advisory Council was tasked to study multiple issues ranging from water and wastewater security; funding water and wastewater plant upgrades; reviewing water and sewer plans; and studying the safety of the use of chlorine as a disinfectant.

The Interagency Technical Assistance Committee on Wastewater Treatment Systems (ITAC) was charged with implementing a recommendation of the Governor's 2001 Task Force on Upgrading Sewerage Systems to advise local jurisdictions on the efficient operation and financial management of wastewater treatment systems. In the course of initial joint meetings of the ITAC and the Advisory Council on Water Security and Sewerage Systems (Advisory Council), it was determined that the ITAC would be responsible for updating the 2001 Task Force Report, as well as HB 659 tasks numbered (f) 4, 5, 6 and 7, originally assigned to the Advisory Council (see Appendix A: HB 659). The Advisory Council was required to report its findings and recommendations to the General Assembly on December 1, 2004 and then sunset. The ITAC was required to report its findings to the Advisory Council on or before November 1 of each year until 2005. Since the Advisory Council completed its assignment and is now defunct, the ITAC is submitting its Final Report to the General Assembly.

To accomplish the tasks outlined above, the ITAC formed two Subcommittees: the Financial Management Subcommittee and the Water and Sewerage Subcommittee. The two Subcommittees prepared the findings and recommendations that are presented in this Report. This Report addresses some of the obstacles to good financial management and wastewater planning by identifying training opportunities, suggesting better coordination among funding agencies, and proposing ways to improve the water and sewerage planning process.

Financial Management of Wastewater Treatment Systems

FINANCIAL MANAGEMENT OF WASTEWATER TREATMENT SYSTEMS

INTRODUCTION

The Financial Management Subcommittee of the Interagency Technical Assistance Committee (ITAC) prepared the Financial Management Section of this Report in response to recommendations in the ***Task Force Report on Upgrading Sewerage Systems*** (2001) and the ***Final Report of the Water Security and Wastewater Systems Advisory Council*** (2004). The 2004 Advisory Council Report, which also contained a preliminary report from the ITAC, identified areas needing further evaluation in wastewater systems management, technical assistance, training, and financing, including an evaluation of how funding is targeted.

The Financial Management Subcommittee identified its current tasks as follows:

1) Evaluate the need for mandatory minimum training for local, non-technical system personnel;
2) Determine the feasibility of a statewide review committee to improve and expedite the application and selection processes for financial assistance; and
3) Examine the potential for establishing a statewide database of wastewater system rates.

After the Financial Management Subcommittee reviewed previous reports, it determined that small and medium-sized local governments require assistance in several areas that, when provided, should lead to the creation and long-term sustainability of financially sound wastewater systems. Without assistance to enhance these areas of financial, managerial, and technical capabilities, local governments as well as local elected officials and managers may overlook critical factors that could lead to:

- Damage to the environment and risk to public health;
- Reduced ability to plan for future economic and development needs in the face of increasing development pressure;
- Exposure to legal liabilities from federal and State regulatory agencies as well as third-party lawsuits;
- Damage or destruction of expensive wastewater systems; and
- Financial mismanagement, audit problems, and loss of citizen confidence.

BACKGROUND

Mandates for Management of Wastewater Systems

Wastewater treatment systems are subject to federal and State laws and regulations to ensure public health, water quality, and the safety of citizens and workers. Such laws include the Clean Water Act, the Occupational Safety and Health Act, the Resource Conservation and Recovery Act (sludge management and disposal), the Emergency Planning and Community Right-to Know Act, the Internal Revenue Service Tax Code, the Maryland Environment Article (water pollution control, county water and sewerage planning, financial assistance, etc.), and the Code of Maryland Regulations (COMAR).

The proper operation and maintenance of wastewater systems is critical to the protection of public health and water quality. Many wastewater outfalls are upstream of surface water intakes, both of which must be carefully monitored to prevent contamination of water supplies. Wastewater treatment plants that have outfalls in the vicinity of shellfish waters must be meticulous in plant operation, monitoring, and maintenance. Maryland's citizens engage in water contact recreation from the State's mountains to the ocean beaches, and contamination of waters with bacteria or other organisms may directly affect the public health.

Failure to comply with applicable laws and regulations may subject the local government to fines, penalties, or other enforcement actions such as moratoria on new connections. Failure to operate a system in a financially responsible manner may preclude the local government from eligibility for grants and low-interest loans. Under certain circumstances, local elected officials and managers also may be personally liable for violations of federal and State regulations, and could be subject to fines, penalties, and criminal prosecution.

The recent announcement of newly proposed water quality standards, the implementation of Total Maximum Daily Loads (TMDLs), and the development of more stringent Chesapeake Bay Tributary Strategy goals all mean tighter parameters for the design, construction, and operation of wastewater treatment plants.

Needs of Small and Medium-Sized Communities

Small and medium-sized communities have challenges and needs that are often different from those of local governments with large water and wastewater systems. Smaller systems have fewer customers to pay for needed capital improvements as well as operation and maintenance costs. This usually means a higher user rate per home in areas served by smaller systems. The smaller systems may lack the financial management skills and staff needed to anticipate and plan for major repairs or upgrades.

Local elected officials and town managers are expected to manage all aspects of local government, including wastewater systems, despite the increasing complexity of these systems. Public works employees in smaller towns may not have the full array of skills needed to achieve and maintain technical and managerial capacity. Providing adequate wastewater conveyance, treatment, and disposal has become more technically and financially

challenging. In addition, the officials of small communities may not be able to spare the time for operators to attend training or pay the costs of needed training. In larger systems, these areas of expertise are typically divided among several staff members.

Technical Challenges

Technical challenges result in part from increasingly more stringent laws and regulations enacted to protect public health and water quality. As more has been learned about the potential exposure to disease from inadequately treated sewage effluent, the level and methods of treatment and disinfection have become more sophisticated and expensive, and regulations have become more stringent accordingly. The tank size, equipment, and automated chemical dosing must be designed to provide adequate time for biological breakdown, and dechlorination must occur before discharge to waters of the State to protect aquatic life. Ultraviolet or ozone disinfection, substituted for chlorine to protect aquatic life, must be evaluated during higher than average flows to ensure adequate treatment.

Maryland has been a leader in efforts to reduce the amount of nitrogen and phosphorus discharged from point sources and non-point sources such as farms and urban areas. Under Maryland's current Chesapeake Bay Tributary Strategies and the Enhanced Nutrient Removal (ENR) Strategy for wastewater treatment plants, all wastewater treatment plants (WWTPs) with an average daily flow of at least 0.5 million gallons per day (mgd) must implement capital and/or operating improvements to achieve a nutrient loading limit based on 4.0 mg/l total nitrogen and 0.3 mg/l total phosphorus. Smaller WWTPs also must achieve nutrient reductions, but the reductions are less stringent and the systems have more time to comply.

The Maryland General Assembly passed the Chesapeake Bay Restoration Fund (BRF) during the 2004 session. This law establishes fees to be collected from all homes and businesses in Maryland. Homes on public wastewater systems must pay $2.50 per month. Businesses on public wastewater systems pay the equivalent of $2.50 per month per equivalent dwelling unit (EDU) of wastewater flow. Each EDU is equivalent to 250 gallons of wastewater per day. Homes with on-site septic systems must pay $30.00 per year into the Fund.

The proceeds of the Bay Restoration Fund will be used to provide grants to local governments to upgrade their WWTPs to achieve Enhanced Nutrient Removal goals. All WWTPs of at least 0.5 mgd have priority for the BRF funds, because the largest reductions will be achieved from the largest plants. If a minor WWTP (less than 0.5 mgd) is planning an upgrade that will increase it to greater than 0.5 mgd, it will have to begin planning for ENR technology. Therefore, any WWTP that will be greater than 0.5 mgd with their next upgrade must plan for the capital costs, operation and maintenance costs, greater operational complexity, and the other managerial and financial requirements that accompany a larger, higher volume system.

Other technical aspects, such as provision of plant and operational security, implementation of a CMOM (Capacity, Management, Operation, and Maintenance) program to manage the collection system, detection and elimination of Inflow and Infiltration (I/I), utilization of sophisticated operating software and other automated systems such as Supervisory Control

and Data Acquisition (SCADA) to remotely monitor pumping stations and treatment plants, require a high level of sophistication, training, budgeting, and accounting. Clearly, many small and medium-sized WWTPs will need help reaching this new level of technical competence.

Managerial / Training Challenges

In addition to the technical issues facing small and medium-sized wastewater systems, there are managerial concerns that must be addressed. In smaller communities, the town manager or administrator typically performs several job functions. Supervising wastewater operations is often one of these functions. The manager may or may not have any direct knowledge of operations and must rely on the certified operator to keep the system functioning properly.

Governments today are held to high standards by the citizens and other government agencies that have oversight responsibilities. The pressures to effectively and efficiently manage human, financial, and natural resources are considerable, and many town managers lack the time and knowledge to fulfill all of their responsibilities. Training is critical to helping town managers understand these responsibilities.

The local elected officials in a small or medium-sized community must have a sufficient technical and legal foundation to keep the basic infrastructure in a town functional. To accomplish this, local elected officials should have a minimum level of training in the basic operation of wastewater systems in general and in the operation of their system in particular. The elected officials should have an understanding of the various laws and regulations under which they operate, including the legal requirements and potential liabilities pertaining to environmental protection, health and safety requirements, employment responsibilities, and capital and operational budgeting. In addition, local officials must plan for future wastewater system requirements in concert with the local Comprehensive Plan to assure the success and sustainability of the system.

Financial Challenges

Despite training and good management, local communities may still find themselves in financial difficulty when managing their wastewater systems. While many environmental requirements tend to be uniform regardless of system size, the financial impact of these requirements can stretch or exceed the resources of a smaller town. In some instances, local elected officials and managers find they have "inherited" a poorly maintained system that requires basic upgrades. In other cases, new federal or State programs may force local governments to plan, design, and construct more advanced and expensive systems and to rehabilitate older sewer lines, pumping stations, and other capital infrastructure. New interest in development in an older area may present an opportunity for economic development and community improvements but may require some level of investment in the infrastructure by the community.

State and federal agencies that can offer financial assistance have been identified in previous reports on wastewater infrastructure needs. All of the funding agencies have literature and websites to make information easier to find. However, finding financial assistance that will

meet the needs of smaller communities may be difficult in some instances. Likewise, funding projects in economically depressed areas can present many challenges. It usually requires coordination among several funding agencies and the involvement of economic development experts. Cooperation and compromise among all involved parties, including the development community, citizens, elected officials at all levels of government, and regulatory and planning agencies, usually is required.

Many aspects of funding a project must be coordinated to ensure a successful project. Accurate information is critical to project success. Plans and designs must be completed in a timely manner, in compliance with regulatory and funding agency requirements. Public participation must be conducted. Environmental reviews are required to determine project impacts, benefits, and mitigation opportunities.

Each funding agency has a slightly different mission and goals that drive its processes. While each entity must work within its own legal bounds of eligibility and priority-setting, better coordination of the commitment and expenditure of these public funds is possible. Through outreach, education, and strengthened coordination among the funding agencies, it should be possible to ensure that every local government can find assistance.

Below is a brief description of the mission of each of these funding agencies:

- The mission of the U.S. Department of Agriculture (USDA) Rural Development Program is to provide loans and grants to communities with a population of 10,000 or fewer residents for water and wastewater projects. The USDA grant/loan determination is based on a review of existing and proposed user rates, median household income, and whether other fund sources are provided.

- The U.S. Environmental Protection Agency's (EPA) State and Tribal Assistance Grant Program (STAG) targets grant funds approved by Congress to specific geographic areas for projects to improve the environment and quality of life in those areas. Examples of past grants include funds for specific water supply projects as well as wastewater collection system and treatment plant upgrades.

- The mission of the grants and loan programs in MDE is to finance needed improvements to water and wastewater systems to protect the public health and water quality. Growth is eligible for loan funds in some cases. The Department also finances capital projects to reduce pollution from non-point sources, such as storm drain systems and solid waste landfills, and to restore streams and wetlands.

- The Maryland Department of Housing and Community Development (DHCD) Community Development Block Grant Program awards federal grants for neighborhood revitalization, housing opportunities, economic development, and improved public facilities and services. These grant-funded activities must benefit primarily low and moderate-income people.

- The DHCD Local Government Infrastructure Finance Program offers participants an efficient and economical means of access to capital markets in order to finance public

purpose infrastructure projects. The Maryland Department of Housing and Community Development issues bonds on behalf of local governments across the State. This Program is particularly suitable for smaller communities who do not issue bonds routinely, for those with limited access to the capital markets, or for those jurisdictions for which administering a financing on their own is either inconvenient and/or expensive. The program generates savings in the costs of borrowing by pooling statewide demand. Participants enjoy low, fixed, tax-exempt interest rates. The actual interest rates depend on market conditions at the time of sale.

The Financial Management Subcommittee realizes the importance of effective coordination among agencies that administer capital financing programs, including programs that fund economic development, community development, and transportation projects. This Subcommittee recommends that similar interagency meetings for other types of infrastructure projects be established to ensure an appropriate match between the requests of local governments and available sources of State and federal funding. Agencies that regularly work together can develop strategies to stretch increasingly limited public resources in order to increase the access of local governments to the available funds. Several states including Colorado, California, Indiana, and West Virginia currently have systems in place to coordinate infrastructure funding. The Rural Maryland Council and the Department of Housing and Community Development should jointly review these models, and explore the feasibility of establishing a well-integrated small community capital financing program in Maryland.

The Subcommittee also discussed the need for ongoing State capital grant funding for wastewater treatment systems, of approximately $10 to $20 million per year, in the future. Even as Biological Nutrient removal projects are completed, there will be an ongoing need for financial assistance to some local governments to keep needed upgrades affordable to all the citizens of Maryland. Without grant assistance, these systems may fall out of compliance, thereby reversing the environmental benefits of wastewater system improvements.

FINDINGS AND RECOMMENDATIONS

- **Finding 1: Provide a Consolidated List of Training Opportunities for Local Wastewater System Personnel**

The Financial Management Subcommittee finds that there are numerous training programs presently available for technical and operational topics and issues, in a wide variety of formats and venues. The Maryland Rural Water Association, Maryland Center for Environmental Training, Water and Waste Operators Association Short Courses, and a number of community colleges throughout the State are the most common sources of such training. Other opportunities arise from time to time, through a variety of both local and national organizations.

Whether novice or veteran, WWTP operators and superintendents have ample access to training and continuing education opportunities throughout the State. At present, however, the individual providers keep their own lists of training courses and there is no consolidated catalogue of courses. The Subcommittee has determined that a consolidated listing of courses or internet links among all of the different course providers would make it easier for those seeking training to find the sessions that are most convenient and appropriate. In addition, it may be appropriate for MDE, which regulates the operators and superintendents as well as the facilities they operate and manage, to maintain this consolidated list of training and technical assistance providers along with hyperlinks to their websites.

Recommendation for Consolidated List of Training Opportunities

The Maryland Department of the Environment (MDE) should work with training providers to develop a list of training opportunities on technical wastewater topics to assist local wastewater system personnel.

- **Finding 2: Provide Training for Local Officials**

Although training for operators and superintendents is readily available, the Subcommittee finds that more training for non-technical personnel such as mayors, town managers or administrators, and elected officials must be made available. Providing training for these individuals would go a long way toward improving system management, capacity, and long-term sustainability. Training for local elected officials is critical for the legal and well-managed operation of wastewater systems. The elected officials are legally responsible for the decisions and actions of the local government.

Governing bodies, whether elected or appointed, have legal, administrative, and financial responsibilities for their community's wastewater system, as follow:

- Legal responsibilities include compliance with federal and State laws and regulations. Local officials face potential legal liabilities both as owners/operators of wastewater systems and as employers of system personnel.

- Administrative responsibilities include everything from personnel issues to user-fee collection policies.

- Financial responsibilities include ensuring that revenues are sufficient to recover the costs of operation and planning for the future needs of the system consistent with the local Comprehensive Plan. Rate setting, billing, accounting procedures, audit requirements, and other issues related to the financial management of the system are included here.

Elected officials often rely heavily on professional, full-time staff to execute many of their responsibilities. These officials are likely to take direct action based on a staff recommendation, rather than on personal knowledge and understanding of the issue or its effects. Elected officials may ratify an action suggested or already taken by the staff. However, delegating these responsibilities does not relieve the elected body of the ultimate burden of responsibility for the operation of the system.

Many elected officials are surprised to learn that they are responsible for permit compliance and other issues related to running a local government utility. Training could ensure that local elected officials are aware of the responsibilities and liabilities associated with their wastewater operations. In addition, a well educated elected body and administrative staff will help to enhance system operation, maintenance, and sustainability. When local officials are knowledgeable about their responsibilities, they are more effective at communicating to their local users the need for proper management and funding of their wastewater systems.

The Subcommittee believes that training elected officials and non-technical personnel on basic management and finance topics can also benefit the technical aspect of system operations. The goal of this training is to identify and explain the role of these decision-makers in system operations. The Subcommittee has identified a number of topics where it believes training is needed. At a minimum, training should cover:

1) Rate-setting basics and full cost recovery rates
2) Financial record-keeping requirements
3) Operational record-keeping requirements
4) Operator certification and continuing education requirements
5) Legal and compliance issues
6) Liability issues
7) Planning and capital improvement planning
8) Emergency response requirements
9) Asset management basics
10) Public education and awareness techniques

The Subcommittee believes that a basic understanding of these topics can be presented in a half-day session. To be accessible to local officials who may have full-time jobs in addition to their governmental duties, courses should be offered throughout the State in as many locations and times as possible to offer ample opportunity for training. The training should be offered in two ways - voluntary and compulsory. Compulsory training will be required if a local government seeks State and federal funding assistance.

Introductory Presentation

As a first step, the Subcommittee recommends compiling a standardized, 20-minute presentation to be given at regional and statewide gatherings of local officials such as MML and MACO conventions; mayors' association meetings; regional council meetings; and similar meetings. This short presentation would be designed to introduce local officials to their legal responsibilities, specific training opportunities in their area, and to encourage them to attend these courses. MDE and the training providers should promote voluntary training at every opportunity. Updates on the specific scheduled training courses should be provided as needed by all means practical. Such avenues for advertisement may include:

- Listing on the MDE website;
- Announcements and mailings to applicable membership organizations such as Maryland Municipal League (MML), Maryland Association of Counties (MACO), and the Maryland Rural Water Association (MRWA);
- Announcements and mailings sent out by these membership organizations;
- Announcements and mailings sent out by training providers such as Maryland Center for Environmental Training (MCET), the Environmental Finance Center (EFC), the Water and Waste Operators Association (WWOA), the American Water Works Association (AWWA), and the National Environmental Training Center for Small Communities (NETCSC); and
- Direct mailings from funding agencies to local system representatives to announce upcoming training.

Compulsory Training

A minimum four-hour training course on these local responsibilities should be required of the manager of any wastewater system applying for MDE, Department of Housing and Community Development (DHCD), USDA Rural Development or other State or federal

grant or loan assistance. The training course should consist of elements jointly determined by the funding agencies. The requirement should include a specified number of system personnel who must attend as a condition of the application review and a time limit for compliance. The requirement should be in addition to any past training the system personnel may have received, to ensure that required instruction is reasonably uniform and up-to-date in content.

Training Presentations and Materials

The short training presentation for elected officials that could be presented in a variety of venues (MACO, MML, MRWA, etc.) across the State should be prepared by an appropriate non-profit entity with expertise in wastewater system management training. A sample of the type of training intended is included on the CD-ROM enclosed with this Report. This "introductory" presentation should highlight major management issues and point the targeted audience to more extensive and detailed training on the topics highlighted.

The more extensive, four-hour training should be modular in format so that various issues and topics could be presented as individual sessions. The funding agencies should require mandatory training of at least one member of a local elected body and at least one additional staff member. Training materials developed as part of this set of recommendations should draw to the greatest extent possible from existing training materials from other sources such as MCET, EFC, NETCSC, etc.

Recommendations to Provide Training for Local Officials

a) MDE and other stakeholders should prepare and widely circulate a short presentation to introduce local officials to their responsibilities for managing their wastewater systems and to inform them of relevant training opportunities. (The 20-minute CD on Wastewater Utility Management included in the Appendix of this Report provides an introduction to the type of training needed.)

b) MDE and other stakeholders should identify appropriate training sessions on management and finance topics relevant to local responsibilities for wastewater systems and encourage local officials to attend these training sessions.

c) MDE, the Department of Housing and Community Development (DHCD), and the U.S. Department of Agriculture – Rural Development (USDA) should require local officials and local system personnel to attend a minimum four-hour training course on their wastewater system responsibilities as a condition of receiving grant or loan assistance.

- **Finding 3: Coordinate Funding Agencies**

It would be very useful for funding agencies to better coordinate their funding priorities. To focus their efforts, funding agencies should meet on a regular basis to discuss potential projects in economically distressed areas, or other projects for which funding is a challenge. The meetings would ensure that the funds most suited to a particular project would be targeted appropriately. Initial commitments of funding (subject to the appropriate formal approvals) would be made at these meetings to allow a specified project to proceed in the review process. Each agency has its own application procedures and timelines. Improving coordination among the agencies will allow the communities to know if and when, and from whom, financing will be available.

The funding agencies and the Maryland Department of Planning (MDP) should execute a Memorandum of Understanding (MOU) to establish a process to coordinate their funding priorities and processes. Although MDP is not a funding agency, it manages the State Clearinghouse review process, which requires an interagency review of State and federal applications for financial assistance. Implementation of the MOU will result in expediting the State Clearinghouse review by eliminating duplicate reviews of projects with multiple funding sources. The proposed MOU is included in Appendix B.

In order to ensure ongoing State capital grants for future wastewater system upgrades, the Subcommittee also discussed the need to continue wastewater funding at the current level of the BNR Program after all current BNR upgrades are completed.

Recommendations for Coordination of Funding Agencies

a) **A Statewide committee of wastewater funding program representatives should be established to serve as an information sharing and funding coordination body.**

b) **MDE, DHCD, USDA and the Maryland Department of Planning should execute a Memorandum of Understanding that specifies funding goals, establishes a process to coordinate funding priorities, and streamlines procedures for the review of projects.**

c) **State capital grant funding for wastewater treatment systems of approximately $10 to $20 million per year should continue to be available even after completion of Biological Nutrient Removal improvements.**

- **Finding 4: Create a Database of Wastewater System User Rates**

Based on the data derived from a current study on wastewater user rates in Maryland by MCET for MDE, a database on user rates should be developed and maintained by MDE. This should be updated with information from other funding agencies and local governments and/or the Maryland Uniform Financial Report submitted annually by all local governments whenever practical. The Subcommittee recognizes the fallacies inherent in setting rates based on the rates of other systems and has determined that the User Rate Database should be specifically intended for informational purposes and as a means to help systems identify revenue deficiencies. The database should not be used as a sole basis for setting rates without a thorough analysis of the total costs of a specific system.

Recommendation to Create a Database of Wastewater System User Rates

MDE should create a database of wastewater system user rate structures to help funding agencies and managers of wastewater systems.

Water and Sewerage Plans

WATER AND SEWERAGE PLANS

INTRODUCTION

House Bill 659 of the 2002 Maryland General Assembly session directed a review the effectiveness of Water and Sewerage Plans. The Water and Sewerage Subcommittee of the Interagency Technical Assistance Committee evaluated this issue and developed six preliminary recommendations in 2004. These six preliminary recommendations were included in the ***Final Report of the Water Security and Wastewater Systems Advisory Council and Preliminary Report of the Interagency Technical Assistance Committee,*** which was published in December 2004. The Subcommittee continued working in 2005 to finalize these six preliminary recommendations and to develop two additional recommendations. The final eight recommendations of the Water and Sewerage Subcommittee to improve the effectiveness of Water and Sewerage Plans are presented in this Report.

BACKGROUND

Relationship between Local Comprehensive Plans and Water and Sewerage Plans

County and Municipal Comprehensive Plans are the guiding documents that describe how jurisdictions envision their future land use, development, and redevelopment. A key element of a local Comprehensive Plan is its land use plan. Local land use regulatory tools such as zoning, site plan, and subdivision regulations must be consistent with Comprehensive Plans. Depending on the jurisdiction, Comprehensive Plans are required under Article 25, Article 66B, or Article 28 of the Annotated Code of Maryland. Local governments develop and formally adopt Comprehensive Plans. The Comprehensive Plans are locally adopted and reviewed by MDP. There is no State approval of the Comprehensive Plans.

State law requires the County Water and Sewerage Plan to be consistent with the County and Municipal Comprehensive Plans. The Water and Sewerage Plan is the infrastructure plan for water and wastewater facilities in a local jurisdiction. As stated in §9-505 (a) (1) of the Environment Article, Annotated Code of Maryland, Water and Sewerage Plans shall:

> "Provide for the orderly expansion and extension of safe and adequate water and sewer systems in a manner consistent with all county and local comprehensive plans."

The Water and Sewerage Plan regulations (COMAR 26.01.03) implement this mandate by specifying Plan requirements for the timing of capital improvements; and plan requirements for the location, capacities, and service areas of all existing and planned water and sewer facilities. The Plan must be reviewed every 3 years and updated if necessary. The Plan may be amended at the discretion of the county governments, subject to MDE approval. Amendments may be necessary to add annexed land into service areas, to reflect changes

in local comprehensive plans or other development plans, to reflect new information about system needs and capacities, and to revise the capital program.

Legal Mandates for Water and Sewerage Planning

The Maryland General Assembly enacted the County Water and Sewerage Plan law in 1965 in reaction to the rapid growth that occurred during that time without the provision of adequate water and wastewater facilities to serve the new growth. Environment Article Title 9, Subtitle 5, Annotated Code of Maryland (County Water and Sewerage Plans), establishes the process for the local preparation, review, adoption, and State approval of County Water and Sewerage Plans. The purpose of these Plans is to provide safe and adequate water and sewerage facilities within every county, including municipal and private systems, for at least a ten-year period in the future.

The law requires that Water and Sewerage Plans include existing and projected water and wastewater treatment needs. In projecting water and wastewater needs, Environment Article § 9-505(a) (7) requires the Plans to consider "all relevant planning, zoning, population, engineering, and economic information and all State, regional, municipal, and local plans". The Plans must also be consistent with all County and Municipal Comprehensive Plans. In addition, each Water and Sewerage Plan must contain a Capital Improvement Program for all water and wastewater facilities in that county that identifies projects necessary to serve existing and planned future service areas. The Environment Article § 9-503(b) states that "Each county governing body shall review its county plan at least once every 3 years in accordance with a schedule set by the Department." The Environment Article § 9-503(c) further requires that "each county governing body shall adopt and submit to the Department [MDE] a revision or amendment to its county plan if: (1) the governing body considers a revision or amendment necessary; or (2) the Department [MDE] requires a revision or amendment."

The State law is implemented through COMAR 26.03.01, Planning Water Supply and Sewerage Systems. The COMAR regulations specify the contents of the County Water and Sewerage Plans. These regulations require that information be organized in chapter order. The regulations also require designated tables and maps illustrating existing and future facilities, planned expansions, information on comprehensive plans and demographics to support the planned expansions, and descriptions of problem areas.

After a Water and Sewerage Plan is adopted, any amendments to the Plan must go through a local and State review, adoption, and approval process, which includes local public hearings. Counties are directed by State regulation to provide a draft of the local Plan or amendment to the State for review and comment before the local governing body formally adopts it. Locally adopted Plans and amendments to Plans are reviewed by the Maryland Department of the Environment and advisory comments are solicited by MDE from the Departments of Planning, Natural Resources, and Agriculture. MDE is the State approval agency for all Plans and amendments. MDE has 90 calendar days to act on the Plan or amendment. MDE may extend the State review period by an additional 90 days for good cause. MDE's failure to act within these time limits constitutes approval of the Plan.

State and local permit issuing authorities may only issue permits for water and wastewater projects that are consistent with the locally adopted, State approved Plan. Furthermore, building permits may not be issued for new development unless the water and wastewater facilities are adequate to support that development.

Intergovernmental Challenges

As development proceeds in Maryland's counties and within incorporated municipalities, there are many opportunities for both cooperation and competition. The provision of water and sewerage leads to issues related to: growth management; land use and the zoning process; annexation; public health and water quality; and the adequacy of other public infrastructure such as roads, schools, police and fire protection. When these issues occur at the boundaries between towns and counties, opportunities are presented to coordinate the provision of services in the most cost-effective manner possible, recognizing that the overall purpose is to create safe and attractive neighborhoods. Examples of cooperation include taking a regional approach to providing water and wastewater services. Inter-jurisdictional agreements can lay the groundwork for an efficient program to schedule capital improvements and to provide services with costs shared equitably among the users.

Competition for new development and the water and wastewater infrastructure to serve the new development may also occur. Competition may stem from unresolved conflicts with the respective Comprehensive Plans, competing economic development efforts, existing infrastructure with a large debt service in search of customers, or other, less tangible reasons. Whatever the cause, competition between governments may lead to unnecessary delays, lost economic opportunities, redundant systems, and a climate of uncertainty for the development community.

Subsidiary Plans / Facilitation of Local Planning Efforts

The county governing body is the coordinating agency required to develop County Water and Sewerage Plans. County Plans must also incorporate the subsidiary plans of the towns, municipal corporations, sanitary districts, privately-owned facilities, State agencies, and federal agencies located within the county to the extent such incorporation will promote the public health, safety and welfare. The county must give notice to the officials in the subsidiary areas and provide them with an opportunity to be heard regarding the county plan, revision, or amendment.

County and municipal governments should be encouraged to cooperate and collaborate on water and sewerage infrastructure issues. Given the complexity of managing these systems, the costs to construct and operate these systems, and the legal liabilities associated with owning and operating water and wastewater facilities, it makes sense to combine resources and capabilities in the ownership and management of such facilities. Coordination is especially needed for water and/or sewer service extensions beyond municipal boundaries to ensure conformity with the County Comprehensive Plan, the Priority Funding Areas Law, the Rural Legacy Program, and the Agricultural Land Preservation Program.

Needs of Small and Medium-Sized Communities

Small and medium-sized communities have challenges and needs that are often different from those of local governments with large water and wastewater systems. A small system typically has a Water and Sewerage Plan that is smaller in scope than the County Plan and has fewer amendments to the Plan. However, the technical challenges involved in preparing, updating and amending the Water and Sewerage Plan are especially daunting for small and medium-sized municipalities. The COMAR regulations are very detailed and require using and presenting environmental, engineering, demographic, and scientific data. When a development proposal requires an analysis of infrastructure capacity and revisions to the Water and Sewerage Plan, the local government staff may not have the expertise to do so. Many municipalities rely on county staff or consultants to make changes in the Water and Sewerage Plan on their behalf.

FINDINGS AND RECOMMENDATIONS

The members of the Water and Sewerage Subcommittee used their expertise and the results of a recent MDE survey on the tracking and allocation of water supply and wastewater capacity to develop a series of findings and recommendations for this Report. Several other work groups also focused on issues that were relevant to this Joint Subcommittee. These groups evaluated issues such as Total Maximum Daily Load (TMDL) implementation, Tributary Strategy implementation, system security, and system capacity management. All of these issues factor into water and sewerage planning. The Subcommittee evaluated these relevant water and wastewater issues in a systematic manner and incorporated the results of the other work groups into its comprehensive recommendations, which are set forth below:

➢ Finding 1: Track and Allocate Water and Wastewater System Capacity to Ensure Adequacy

Many communities in Maryland are undergoing growth, and some are experiencing unprecedented rapid growth. Each community must provide adequate water and sewerage system capacity to serve current needs, new development, and redevelopment. This is an urgent issue in many communities that commands immediate attention. Adequate water and sewerage systems are necessary to support local comprehensive plans, Smart Growth, economic development, and to protect public health and water quality. The Environment Article, Annotated Code of Maryland, §9-512 (b)(1) requires that water and sewer systems be adequate to serve a proposed new development prior to that development connecting to the water and sewer systems:

"The State or local authority may not issue a building permit unless:

(i) The water supply system, sewerage system, or solid waste acceptance facility is adequate to serve the proposed construction, taking into account all existing and approved developments in the service area; [and]

(ii) Any water supply system, sewerage system, or solid waste acceptance facility described in the application will not overload any present facility for conveying, pumping, storing, or treating water, sewage, or solid waste;…"

It is not practical for State government to monitor every building permit or water and sewer connection throughout Maryland to ensure compliance. It is therefore incumbent upon local governments to monitor building activity within their jurisdictions and to evaluate the impact of this building activity on their water and sewerage systems. Local governments must adopt and implement local ordinances and procedures to ensure that existing facilities do not become overloaded. The Water and Sewerage Plans should describe which local ordinances and procedures are used to:

1) Measure the capacity of the water and sewerage systems on a regular or ongoing basis;
2) Monitor existing demands and flows in the water supply and sewerage systems;
3) Track existing and proposed connections to the water supply and sewerage systems;
4) Regulate additional connections to the water supply and sewerage systems; and
5) Plan and fund needed rehabilitation, upgrades, and expansion to the systems.

In addition to enacting Adequate Public Facilities Ordinances (APFOs) or developing similar management controls, local governments should also prepare Water Supply and Wastewater Capacity Management Plans. The recommendation of the Joint Subcommittee concerning Capacity Management Plans is presented on page 25 of this Report.

Recommendation to Ensure Adequate Water and Wastewater System Capacity

Local jurisdictions should enact ordinances (such as Adequate Public Facilities Ordinances) and implement management procedures to ensure that adequate water supply and sewerage facilities are available to meet projected needs, consistent with County and Municipal Comprehensive Plans.

- **Finding 2: Provide Funds for Water and Sewerage Planning**

Adequate funds are needed to properly manage the County Water and Sewerage Plan process to ensure that safe and adequate facilities will be available to support local Comprehensive Plans and economic development in ways that support Smart Growth. There is a need to provide funding at the State and local level for the preparation and review of Water and Sewerage Plans.

At the State level, the work force dedicated to managing the Water and Sewerage Planning Program at MDE and at MDP has been reduced over the years as other pressing issues have been given higher priority. Local jurisdictions now face a myriad of environmental priorities that also compete for funding with infrastructure planning. Many larger jurisdictions, with a

relatively large number of water and sewer users, may be able to dedicate adequate resources to this effort. Many large jurisdictions are using Geographic Information Systems (GIS) for mapping and other automated tools to prepare Plans and amendments more efficiently. Small and medium-sized municipalities and rural counties struggle to provide the resources needed to keep the Plans current, to prepare the required projections of population, to anticipate needed capital improvements, and to update the text and maps of their Water and Sewerage Plans. Both the Maryland Association of Counties (MACO) and the Maryland Municipal League (MML) have raised these issues as matters of concern to local communities. Each of these organizations has demonstrated a willingness to work with the State and their local stakeholders to find ways to resolve this funding shortfall. Potential funding sources to support Water and Sewerage Planning include local dedicated funds, State dedicated funds, State Revolving Funds, development impact fees, benefit assessment charges, and utility user fees.

Recommendations for Funding Water and Sewerage Planning

a) MDE and the Maryland Department of Planning (MDP), in cooperation with the Maryland Association of Counties (MACO), the Maryland Municipal League (MML), and other stakeholders, should identify ways to fund State and local water and sewerage planning programs.

b) MDE and MDP, in cooperation with MACO, MML, regional planning councils, and other stakeholders, should identify ways to develop information technology capabilities to improve the effectiveness and efficiency of the water and sewerage planning programs.

- **Finding 3: Provide Guidance, Technical Assistance, and Training**

There is a need to improve the quality, consistency, and timeliness of Water and Sewerage Plans and amendments. There are wide variations in the quality and content of Water and Sewerage Plans across the State. In addition, many jurisdictions have altered the service area categories in a variety of ways. Other jurisdictions need to update the tables on population projections and service demands more frequently. Plans with technical data that is not current can lead to uncertainty with regard to the future availability of adequate infrastructure. Also, it is important to update the Water and Sewerage Plans through the required public processes in order to give citizens and developers equal voice in how growth and development should occur.

Water and Sewerage Plans must be kept current and complete to schedule needed replacements to aging infrastructure and to support planned development. In some cases, jurisdictions propose changes to their Plans in response to requests or pressure from developers. A site-by-site approach is shortsighted and inefficient, and hampers

implementation of sound State and local Smart Growth policies. Many local jurisdictions need technical assistance to prepare their Water and Sewerage Plans. In order to prepare the County Water and Sewerage Plan, the County must assemble many types of technical, policy, and procedural information for its own facilities and for those owned or operated by municipalities and other entities. This information includes population projections; mapped data showing water resource availability; the assimilative capacity of receiving waters; facility, permit, and problem area inventories; local Comprehensive Plans; and the procedural practices, fiscal practices and policies of each operating entity. All of this information must be integrated into a coherent countywide Plan that meets both local needs and State regulatory requirements. This is not an easy or inexpensive task to perform. However, investing the time and effort to do it accurately and in a timely manner is far less expensive than the costs due to project delays created by a deficient Water and Sewerage Plan.

State agencies are in better positions to conduct the necessary technical studies and share this information with local jurisdictions. For instance, MDP provides county population and household projections for the next 20 to 25 years. MDE is able to provide studies of the water supply and demand in the Potomac River Basin to assess this resource for future needs. Due to economies of scale, it is often more cost-effective for the State to conduct a technical study for several jurisdictions than for each jurisdiction to conduct its own study. Conversely, there may be instances where local governments must conduct more site-specific and localized studies.

There is a need for local elected officials to fully use the water and sewerage planning process for growth management. The Subcommittee found that local elected officials and staff would benefit from more training in water and sewerage planning activities. These officials must approve capital and operating budgets, explain system deficiencies to the citizens and developers, and respond to the State or federal government if compliance issues occur. Often, the water and wastewater systems are "out of sight and out of mind" until a lack of capacity or a compliance issue is discovered. At other times, a needed change to the Water and Sewerage Plan may be overlooked only to emerge as an issue at the end of the development approval process.

The water and sewerage planning process is a critical early step in the development process. Early attention to water supply and wastewater issues can help avoid confrontational meetings and provide necessary information to stakeholders. In addition, planning for future improvements while maintaining the existing infrastructure in good operational order is a cost-effective and prudent way to minimize compliance actions.

Recommendations to Provide Guidance, Technical Assistance, and Training

a) MDE, MDP, and other agencies as appropriate, should provide necessary State data, technology, and technical assistance to local governments for preparing Water and Sewerage Plans.

b) MDE should provide training for local elected officials and staff for preparing Water and Sewerage Plans.

➢ Finding 4: Improve Inter-jurisdictional Cooperation

There is an increasing need to develop better methods to resolve inter-jurisdictional conflict over competing water supply and wastewater. Development issues frequently arise between county and municipal governments related to conflicts between County and Municipal Comprehensive Plans. There may also be conflicts in proposed growth areas and the water availability, discharge permits, water quality standards, nutrient loadings, and other barriers to Plan implementation.

MDE is responsible to the citizens of Maryland to try to seek the most cost-effective solution to a water quality problem and to reduce the number of sources of pollution to the State's waters. In order to resolve inter-jurisdictional conflict, it is essential that there is ongoing, open dialogue between municipal and county government staff and officials to reconcile the apparent differences on annexation, provision of vital public services, tax benefits, allocation of available capacity in shared water and wastewater facilities, and other issues. MACO and MML may offer the best opportunities for setting the venue and tone for the discussions, with State agencies available as informational resources. The goal of such a dialogue is to help the local governments recognize the benefits of working together on issues such as regional water and wastewater facilities, inter-jurisdictional service agreements, and other water supply and wastewater issues.

In a situation where inter-jurisdictional conflict remains unresolved, the jurisdictions may seek resolution through the use of independent mediation. As a last resort, disputing parties may use the judicial system to resolve the differences. In addition, involvement of interstate agencies may also be necessary due to the location of water supply and wastewater facilities in the Potomac and Susquehanna Basins.

At the present time, State law does not prescribe a clear process to address the situation when a County refuses to incorporate a subsidiary Water and Sewerage Plan. The Subcommittee finds that it would be helpful to establish a time period for County action on subsidiary plans.

Recommendations for Improving Inter-jurisdictional Cooperation

a) MDE, DBED and MDP, in cooperation with MACO, MML, regional planning councils, and other relevant State and interstate agencies, should encourage inter-jurisdictional and regional cooperation for water supply and wastewater facilities.

b) MDE, DBED and MDP, in cooperation with MACO, MML, and regional planning councils, should develop mechanisms to resolve county/municipal disagreements concerning water supply and wastewater systems.

c) The Annotated Code of Maryland should be revised to establish a process and a time period for a county to act on proposed Water and Sewerage Plans and amendments submitted by municipal governing bodies. After the period expires, the municipality should be able to follow the new process and submit its Plan or amendment to MDE.

- **Finding 5: Integrate Water Resource Objectives into Water and Sewerage Planning**

There is a need to integrate multiple water resource management objectives into the Water and Sewerage Planning process in Maryland. These objectives include source water protection plans, Chesapeake Bay nutrient caps and Tributary Strategies, Total Maximum Daily Loads (TMDLs), and new water quality standards. Since the Water and Sewerage Planning law was passed in 1965, many additional federal and State environmental laws have been enacted. These include amendments to the federal Water Pollution Control Act Amendments of 1972 (now known as the Clean Water Act) and the federal Safe Drinking Water Act. The Clean Water Act limits the amount of pollutants that can be discharged to the nation's waterways, and provides grant and low-interest loan programs to help make improvements to wastewater facilities. The Safe Drinking Water Act sets standards for the quality of drinking water. At the State level, laws have been enacted to mirror the federal laws to provide better protection to wetlands and waterways, to restrict development in the Critical Areas around the Chesapeake and Coastal Bays, and to protect public health and the environment.

Local planners must be well versed in current and emerging water supply and wastewater issues that affect their local governments, including water supply limitations, wastewater innovations, and regulatory programs that affect the local government's ability to use water and discharge wastewater. For example, the discovery of contaminants in a municipal well field may adversely affect the construction of new homes or businesses and may require unique solutions for the provision of water and wastewater. Regulatory constraints on the discharge of wastewater to surface waters due to TMDLs or other water quality standards may similarly limit growth until and unless alternatives are found.

Recommendation to Integrate Water Resource Objectives into Water and Sewerage Planning

MDE and MDP, in cooperation with MACO and MML, should hold technical and policy meetings with stakeholders to integrate multiple water resource management objectives into the comprehensive planning process and the water and sewerage planning process.

➢ Finding 6: Strengthen MDE's Oversight Role in Water and Sewerage Planning

MDE has an oversight and regulatory role in the water and sewerage planning process. In situations where local governments have failed to keep their Water and Sewerage Plans up-to-date, there are mechanisms to ensure that public health and water quality threats are avoided. Many approaches may be used, including either providing or withholding State funds. Water and Sewerage Plan amendments may be denied if the Plan itself is significantly out-of-date. As a last resort, the State may impose moratoria when water or sewerage facilities are not adequate to serve existing or proposed development.

To ensure that local governments begin water and wastewater expansions in a timely manner, MDE should require a water supply or wastewater system to take certain planning and design actions when it reaches a critical level such as 75% or 80% of design capacity. These actions include submitting a request for National Pollutant Discharge Elimination System (NPDES) planning limits, applying for discharge permit modifications, submitting plans and specifications, or applying for State funding. If the local government fails to initiate action to expand the system and continues to approve connections with the potential to overload the treatment capacity of the system, MDE may be required to initiate an enforcement action or impose a moratorium.

To assist local jurisdictions in tracking and allocating system capacity, MDE has developed draft guidance documents for preparing Water Supply Capacity Management Plans and Wastewater Capacity Management Plans. A Capacity Management Plan is a useful planning and engineering tool to address imminent water supply or wastewater capacity issues. A Capacity Management Plan requires a more detailed analysis of infrastructure capacity as well as management mechanisms to control allocations than is required for a Water and Sewerage Plan. The detailed infrastructure analysis required to prepare Capacity Management Plans could serve to bridge the gap between Water and Sewerage Plans and Capital Improvement Programs. The draft guidance documents, which are expected to be made final in the near future, are available at MDE's web site: www.mde.state.md.us.

Recommendations to Strengthen MDE's Oversight Role in Water and Sewerage Planning

a) MDE should continue to provide oversight and guidance to those water and wastewater systems at critical capacity levels to ensure that necessary capital improvements are planned and constructed.

b) All local jurisdictions should prepare Water Supply Capacity Management Plans and Wastewater Capacity Management Plans to ensure that there is adequate capacity in their water supply and wastewater systems. Each local jurisdiction must use and present consistent data in its Capacity Management Plans and its Water and Sewerage Plan.

- **Finding 7: Update the Submittal Process for and Contents of Water and Sewerage Plans**

Each county is required to "review" its Water and Sewerage Plan and to submit a "report of review" to the State every three years. Some counties often conduct only a cursory review and may re-adopt the Plan with little substantive change. For jurisdictions undergoing rapid growth, this procedure may be inadequate. On the other hand, some counties have developed planning programs that effectively revise the entire Plan on cycles that are less than three years. In such cases, the need for a triennial update may not be necessary because the Plan is part of a fully integrated management system that keeps the Plan current.

Local Comprehensive Plans must be reviewed and updated every six years. Since the County Water and Sewerage Plans must be consistent with local Comprehensive Plans, it is logical for the County to review and update its Water and Sewerage Plan following each Comprehensive Plan update. In general, every other Water and Sewerage Plan update should follow the required six-year local comprehensive plan update by one year. In addition, in order for the Water and Sewerage Plans to serve as meaningful capital programming and facility planning tools, it is necessary for the Comprehensive Plans to consider both the resource opportunities and constraints for developing water supply and wastewater infrastructure.

Often, Water and Sewerage Plan updates and amendments are submitted to MDE for review after the county governing body has already adopted the updates and amendments. In these situations, there is no opportunity to receive State guidance and assistance on prospective Plans and amendments. As required by regulation and in order to prevent conflict, Counties should submit the draft Plans and amendments to MDE for review prior to initiating plan-adoption procedures.

The Water and Sewerage Regulations are out-of-date with regard to modern reporting, GIS and tracking processes. The Subcommittee found that the regulations should be revised and amended as appropriate. To assist local jurisdictions in complying with the current regulations, the Subcommittee developed a comprehensive Checklist of the requirements for preparing a complete Water and Sewerage Plan. This Checklist may be found as Appendix C of this Report. The Checklist is intended to be used by local staff or by consultants to ensure that all of the COMAR requirements have been met.

Recommendations to Revise the Regulations for Water and Sewerage Plans

a) **MDE and MDP, with input from all stakeholders, should review and update the regulations pertaining to Water and Sewerage Plans.**

b) **In order to receive State guidance and assistance in a timely manner, the counties should submit draft Water and Sewerage Plan updates and amendments to MDE and receive State comments before initiating formal plan-adoption procedures.**

➢ Finding 8: Establish Rules to Govern the Plan Amendment Process

Many counties have adopted Water and Sewerage Plans that incorporate amendment procedures that vary from the procedures specified in the Water and Sewerage Plan statute. These practices fall into three categories:

- Delegated or administrative amendments;
- Automatic amendments; and
- Linked amendments.

Delegated or Administrative Amendments

At least seven counties delegate the authority to amend the Plan to certain local non-elected officials. The definitions of what actions are delegated, to whom they are delegated, and what oversight is exercised related to the amendments vary in each case. Delegated actions range from authorizing relatively minor editorial and data corrections to authorizing significant changes in categories and facilities. Since the delegated administrative amendments are often based on the local development process, these procedures vary from county to county. When a development proposal reaches a certain pre-defined benchmark in the local zoning, subdivision, and/or building permit process, the delegated official may be permitted to prepare and submit a Plan amendment. Notification of the public and elected officials concerning these actions varies. These amendments are usually, but not always, submitted to MDE for approval.

Automatic Amendments

Automatic amendments are based on achievement of certain development process benchmarks embedded in the definitions of service area categories. Advancement in service area categories is automatic based on meeting certain prerequisites related to the local development process including capacity analysis. This means that the changes to the service area categories are a matter of right if the conditions are met. There is also little public notice or governing body consideration related to this type of Plan amendment. It is not clear whether these amendments are always submitted to MDE for approval.

Linked Amendments

Linked Amendments are those that are tied to another related action. For example, amendment of a Comprehensive Plan or enactment of the Capital Budget may also constitute an amendment of the Water and Sewerage Plan. These related types of actions may be subject to public notice and full local adoption, but under provisions different from those required for Water and Sewerage Plan amendments. The public may not know that the proposed actions also constitute Water and Sewerage Plan changes. These actions are unlikely to be clearly advertised as Water and Sewer Plan amendments, and the county may not submit these amendments to MDE for approval.

Some amendment practices may be reasonable from an administrative streamlining perspective if the practices are clearly and strictly defined, do not constitute actions that affect the provision of safe and adequate facilities, and allow for public notice and comment as well as oversight by the governing body. However, these practices currently vary widely with respect to procedure, importance, content, and specificity. These amendment practices have been instituted without clear State guidance as to which practices meet the requirements of the Water and Sewerage Plan statute.

Recommendation to Establish Rules to Govern Minor Water and Sewerage Plan Amendments

MDE should establish procedures to govern minor amendments to Water and Sewerage Plans to ensure consistency with the State law.

Appendices

APPENDIX A:	**House Bill 659**
APPENDIX B:	**MOU - Water and Wastewater Infrastructure Funding Agencies**
APPENDIX C:	**Checklist for Water and Sewerage Plans**
APPENDIX D:	**Presentation Slides - Wastewater Utility Management**
APPENDIX E:	**CD - Presentation on Wastewater Utility Management**

HOUSE BILL 659

Unofficial Copy 2002 Regular Session
M3 (2lr2078)

ENROLLED BILL

-- Environmental Matters/Education, Health, and Environmental Affairs --

Introduced by **Delegates Morhaim, Redmer, Zirkin, Carlson, Boutin, and Stern**

Read and Examined by Proofreaders:

_____
Proofreader.

_____
Proofreader.

Sealed with the Great Seal and presented to the Governor, for his approval this _____ day of _____ at _____ o'clock, _____M.

_____
Speaker.

CHAPTER_____

AN ACT concerning

Environment - Water Security and Sewerage Systems Advisory Council - Committee on Wastewater Treatment Systems

FOR the purpose of establishing an Advisory Council on Water Security and Sewerage Systems and an Interagency Technical Assistance Committee on Wastewater Treatment Systems in the State; specifying the membership and duties of the Advisory Council and of the Committee; providing for the appointment of the chairman of the Advisory Council and of the Committee; providing for Advisory Council and Committee staff; prohibiting a member of the Advisory Council or the Committee from receiving compensation for serving on the Advisory Council or the Committee; authorizing a member of the Advisory Council and of the Committee to receive reimbursement for specified expenses; providing for the termination of certain provisions of this Act; requiring a certain report; and generally relating to the Advisory Council on Water Security and Sewerage Systems and the Interagency Technical Assistance Committee on Wastewater Treatment Systems in the State.

Preamble

WHEREAS, The Governor's Task Force on Upgrading Sewerage Systems delivered its report in December 2001; and

WHEREAS, That report clearly indicates that the water and sewer pollution will last for decades and will cost millions of dollars to solve; and

WHEREAS, The redesign, modification, repair, and improvement of sewerage systems will challenge architects and engineers; and

WHEREAS, The State, counties, and municipalities will need to address this issue continually; and

WHEREAS, Clean water is essential for all life and human activity; now, therefore,

SECTION 1. BE IT ENACTED BY THE GENERAL ASSEMBLY OF MARYLAND, That the Laws of Maryland read as follows:

(a) There is a State Advisory Council on Water Security and Sewerage Systems.

(b) The Advisory Council shall consist of the following members:

(1) two members of the House of Delegates, appointed by the Speaker of the House;

(2) two members of the Senate of Maryland, appointed by the President of the Senate;

(3) the Secretary of the Environment, or the Secretary's designee;

(4) The Secretary of Planning, or the Secretary's designee;

(5) The Secretary of Health and Mental Hygiene, or the Secretary's designee;

(6) one representative from the Chesapeake Bay Commission, designated by the Chesapeake Bay Commission;

(7) one representative from the Chesapeake Bay Foundation, designated by the Chesapeake Bay Foundation;

(8) two representatives from the environmental community, appointed by the Governor, one of which shall represent Safe Waterways in Maryland (SWIM);

(9) two representatives designated by the Maryland Association of Counties, of which one shall represent a county with a combined sewerage system;

(10) two representatives designated by the Maryland Municipal League, of which one shall represent a municipal corporation with a combined sewerage system;

(11) one representative of the Chesapeake Bay Program Office of the United States Environmental Protection Agency;

(12) one representative of the Johns Hopkins School of Public Health, designated by the Dean;

(13) one engineer with expertise in water and sewage issues;

(14) one representative of the Washington Suburban Sanitary Commission;

(15) one person from a law enforcement or security agency with specific experience in antiterrorism, appointed by the Governor; and

(16) one person from a Maryland educational research institution with specific expertise in water disinfection technologies, appointed by the Governor.

(c) The Governor shall appoint the chairman of the Advisory Council.

(d) The Department of the Environment shall provide staff for the Advisory Council.

(e) A member may not receive compensation for serving on the Advisory Council, but is entitled to reimbursement for expenses under the Standard State Travel Regulations, as provided in the State budget.

(f) The Advisory Council shall:

(1) study new and innovative technologies relating to water security and sewerage systems and compare the costs of new technologies with current practices;

(2) develop a priority funding system for implementing new technology;

(3) develop a plan for regular evaluations at timed intervals;

(4) develop methods for public education;

(5) develop plans to provide technical assistance to small and medium communities;

(6) study user rates;

(7) reevaluate and refine local needs data;

(8) evaluate and review certain water quality regulations and criteria to improve the waters and prevent interim degradation;

(9) review the effectiveness of water and sewer plans;

(10) study and assess the levels, potential health effects, and persistence of chlorination by-products in the water supply as they may affect individuals living and working in Maryland;

(11) assess alternative methods of disinfection of the water supply, and the potential health effects, both risks and benefits, that may accrue from using these alternative methods;

(12) study the environmental and public health issues surrounding the use of chlorine and alternative methods of disinfection in drinking water and wastewater treatment;

(13) perform a risk assessment and cost analysis relating to the use of chlorine and alternative methods of disinfection in drinking water and wastewater treatment; and

(14) examine the security issues surrounding the use and storage of chlorine and alternative methods of disinfection in drinking water and wastewater treatment.

(g) The Advisory Council shall report its findings and recommendations to the General Assembly on or before December 1, 2004, in accordance with § 2-1246 of the State Government Article.

SECTION 2. AND BE IT FURTHER ENACTED, That:

(a) There is an Interagency Technical Assistance Committee on Wastewater Treatment Systems.

(b) The Committee shall consist of at least 12 members, including representatives appointed by each of the following agencies and organizations:

(1) the Department of Housing and Community Development;

(2) the Department of Planning;

(3) the Maryland Environmental Service;

(4) the FORVM for Rural Maryland;

(5) the Maryland Center for Environmental Training;

(6) the Environmental Finance Center;

(7) the U.S. Department of Agriculture Rural Development;

(8) the Maryland Municipal League;

(9) the Maryland Association of Counties;

(10) the Maryland Rural Water Association;

(11) the Chesapeake Bay Foundation; and

(12) Safe Waterways in Maryland (SWIM).

(c) The members shall elect a chairman from among the members of the Committee.

(d) The Department of the Environment shall provide staff for the Committee.

(e) A member may not receive compensation for serving on the Committee, but is entitled to reimbursement for expenses under the Standard State Travel Regulations, as provided in the State budget.

(f) The Committee shall implement a recommendation of the Governor's Task Force on Upgrading Sewerage Systems by advising local jurisdictions on the efficient operation and financial management of wastewater treatment systems.

(g) The Committee shall report to the State Advisory Council on Water Security and Sewerage Systems on or before November 1 of each year.

SECTION 3. AND BE IT FURTHER ENACTED, That this Act shall take effect October 1, 2002. Section 1 of this Act shall remain effective for a period of 3 years and, at the end of September 30, 2005, with no further action required by the General Assembly, Section 1 of this Act shall be abrogated and of no further force and effect.

WATER AND WASTEWATER
INFRASTRUCTURE FUNDING AGENCIES

11/22/05 DRAFT

MEMORANDUM OF UNDERSTANDING

WHEREAS, the total drinking water and water quality capital project needs in the State of Maryland total over $9.4 billion; and

WHEREAS, many of these project needs are within the rural Maryland counties and municipalities; and

WHEREAS, these drinking water and water quality projects are required to protect the public health, protect water resources and foster economic growth in a manner that is consistent with local comprehensive plans, Smart Growth and other desirable land use policies; and

WHEREAS, there are several funding agencies that may provide financial assistance in the form of grants and loans for drinking water and water quality projects in these rural counties and municipalities; and

WHEREAS, these agencies operate under distinct federal and/or State laws and regulations which govern how the funds may be used and when they may become available; and

WHEREAS, projects proposing to use federal or State funds must be reviewed through the State Clearinghouse process; and

WHEREAS, these agencies desire to strive for a coordinated approach in funding decisions to ensure that the neediest projects in Maryland receive consideration for funding; and

WHEREAS, a coordinated approach will reduce duplication of technical and administrative effort and simplify the application process for potential grant and/or loan recipients; and

WHEREAS, local elected officials must be provided with a basic understanding of their legal, financial and managerial responsibilities for their municipality's water and sewer infrastructure;

NOW, THEREFORE, in consideration of the above, the following federal and State funding agencies do agree and covenant to:

MEMORANDUM OF UNDERSTANDING
PAGE 2

1. Share lists of project applications and proposed project justifications, costs and schedules, to allow each funding agency to consider the projects for fund eligibility;

2. Meet at a minimum of once each year to consider applications for funding from the rural Maryland counties and municipalities;

3. Commit grant and/or loan funding for needed projects to these jurisdictions in a time frame that will meet the needs of the applicants and the timing constraints of the various fund sources;

4. Coordinate the State Clearinghouse process to consolidate the application and review of a particular project;

5. Earmark, to the extent allowable, future funding as needed to applicants and projects that will require more than one year of funding from one or more of the funding agencies;

6. Require a minimum of four hours of training for at least one local elected official and one additional staff person as a condition of grant or loan award, with the specific topics for training to be determined by the funding agencies; and

7. Develop and maintain a listing of approved, mandatory training courses and locations on the website of the Maryland Department of the Environment.

It is hereby affirmed that the following agencies agree to the above goals and actions in order to further the public health, and environmental and economic well being in the rural Maryland counties and municipalities.

Signed this day, the _____of _____, 2005, by:

Regional Director, U.S. Department of Agriculture, Rural Development, Rural Utilities Service

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Secretary, Maryland Department of the Environment

Secretary, Maryland Department of Housing and Community Development

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Secretary, Maryland Department of Planning

CHECKLIST

FOR THE PREPARATION AND SUBMITTAL OF

WATER AND SEWERAGE PLANS

COMAR 26.03.01 REQUIREMENTS

The purpose of this Checklist is to assist local governments in the preparation and submittal of Water and Sewerage Plans. However, this Checklist does <u>not</u> supercede the requirements of COMAR 26.03.01 or the Annotated Code of Maryland, Environment Article, Subtitle 5.

The information submitted in County Water and Sewerage Plans must be consistent with the information submitted in Water Supply and Wastewater Capacity Management Plans.

26.03.01.01 Definitions: See COMAR attachment.

26.03.01.02 General Provisions

_____ 1. Is the plan consistent with county comprehensive planning?
_____ 2. Does the plan incorporate subsidiary plans?
_____ 3. Did the governing body review the plan at least annually?
_____ 4. Was the report of the annual review (with amendments to or revisions of the plan) submitted to MDE?
_____ 5. Is a statement attached indicating that comprehensive planning agencies were consulted?
_____ 6. Were public hearings held on all amendments and revisions to the plan?

26.03.01.03 Sequence of Steps for the Submission of County Plans

_____ 1. Submit the preliminary plan to the comprehensive planning agency, MDP, DNR and the Department.
_____ 2. Receive all agency comments from MDE, which will act as coordinator.
_____ 3. Hold a public hearing.
_____ 4. Formally adopt the plan.
_____ 5. Prepare the plan in final format.
_____ 6. Submit 4 copies of the final plan to the Department, 1 copy to DNR, and 1 copy to MDP.
_____ 7. Within 6 months after submission, the Department will approve, approve in part, or disapprove the final plan.
_____ 8. After approval, print and distribute at least 50 copies of the plan.
_____ 9. After approval, distribute 4 copies of the approved plan to MDE and 4 copies to DNR.

If applicable, please provide the chapter and page references from the County Plan for each item listed below. For example, include "Intro-2", "II-4", or "IV: 6-10" in the left-hand column.

26.03.01.04 Minimum Contents of Plans

_____ Each adopted plan shall be arranged with an introduction and a minimum of 4 chapters.

Introduction

_____ 1. Statement certifying that the county governing board has officially adopted the plan.

_____ 2. Statement certifying that the plan incorporates subsidiary plans; and that the governing body gave notice to subsidiary entities and provided an opportunity to be heard.

_____ 3. Statement certifying that the sections covering engineering aspects of water and sewerage projects have been prepared and reviewed for adequacy by a registered engineer licensed in the State.

_____ 4. The letter of approval from the Department.

Chapter I

_____ 1. A statement of the goals of the county consistent with county comprehensive planning.

_____ 2. A brief discussion, with charts, of the organization of the county government as it relates to the management of water supply and sewerage facilities.

Chapter II Background Information

1. Physical -

_____ a. Maps showing aquifers, soil drainage characteristics, topography, ground water and surface water patterns.

_____ b. A map or table showing water quality criteria in the county.

2. Population -

_____ a. General maps showing present and projected population distribution and density.

_____ b. **Table No. 1: County Population Projections**

Including county projections, State projections, and other projections for a period of three decades.

3. Land Use -

_____ a. Maps showing existing land use, zoning, and the adopted comprehensive development plan for the county.

_____ b. **Table No. 2: Land in County**
Acres and % Total Acreage for several Land Use, Zoned Land, and Comp. Plan categories.

_____ c. Institutions and Facilities -

Map showing existing and proposed major public institutions, such as schools, hospitals, correction facilities, government complexes.

Table showing the approximate populations of the facilities.

Chapter III Water Supply Systems

_____ 1. Tables, maps, charts, graphs, descriptive information, and other matter regarding these systems.

_____ 2. Discuss ground and surface water resources including the quality and potential quantity of these sources.

_____ 3. Summaries of existing and projected water demands.

_____ 4. Summaries of existing sources of pollution or contamination related to water supplies.

_____ 5. A discussion of alternatives and rationale used in determining the means of providing future water supplies.

_____ 6. For every water service area, the following should be discussed or shown:

Operating agency

Rated and actual production

Type of treatment

Location

Operation and maintenance cost

Proposed means of financing improvements

For any proposed new water source: A summary of the environmental impact of its development

For any proposed new water supply source: Outline efforts to reduce demands

_____ **7. Table No. 3: Projected Water Supply Demands and Planned Capacity**

(The table provided for intervals of ten years over a three-decade period.)

For each service area:
Total Population

Served Population

GPCD (gallons per capita day)

_____ **8. Table No. 4: Inventory of Existing Community System Wells**

Well Name or Number

Aquifer

Coordinate Location

Depth of Well

Diameter of Well

Pumping capacity

Water Quality

_____ **9. Table 5: Inventory of Existing Impounded Supplies**

List of Owners, grouped in Municipal, Industrial, and Private Community Categories

Crest Elevation (above sea level)

Total Length of Dam

Flooded Area of Crest Elevation

Length of Shore Line at Crest Elevation

Area of Land Owned

Water Overflowed Crest for First Time

Capacity of Reservoir

Safe Yield (MGD)

Average Daily Withdrawal (MGD)

_____ **10. Inventory of other surface water supplies showing initial and planned withdrawals (MGD).**

_____ **11. Table 6: Inventory of Existing Water Treatment Facilities**

List of Owners, grouped by Municipal (public), Industrial, and Private Community / Industrial categories

Water Source

Type Treatment

Plant Coordinate Location

Rated Plant Capacity (MGD)

Average Production (MGD)

Max. Peak Flow (MGD).

Storage Capacity (MGD)

Planned Expansion MDG/Dates

Method of Sludge Disposal

Operating Agency

_____ 12. Table 7: Inventory of Water Problem Areas Service area

Location

Population – Served, Unserved, Total

Nature of Problem

_____ 13. Table 8: Immediate, 5 and 10-year Priorities for Water Development

Fiscal Year and Project Number

County Priority Assigned

Coordinate Location

Description

Estimated Costs (Total, Federal and/or State, Local)

Local Costs

Project Status - Construction Start

Immediate Priority Projects

5 and 10-Year Period Projects

Chapter IV Sewerage Systems

_____ **1.** Indicate locations of proposed points of waste discharge.

_____ **2.** Show how conformance of existing and programmed sewerage facilities meet or will meet the effluent limitations specified in COMAR 26.08.03.01.

_____ **3.** Contain a summary of each available point of discharge evaluation, specifically those parts pertaining to protected water uses.

_____ **4.** Discuss the rationale of selecting a planned alternative for any proposed treatment facility, pumping station, or interceptor.

_____ **5.** For every service area and community system, the following should be discussed:

Operating agency

Design average and peak flows

Whether combined or separate collection systems

Level and type of treatment given

Sludge disposal plans

Condition of treatment and transmission facilities

Operation and maintenance costs

Proposed means of financing improvements

_____ **6. Table No. 9: Projected Sewerage Demands and Planned Capacity**

Provide the following columns of information by service area for the next three decades:

Population: Total, Served, Unserved

GPCD (gallons)

Capacity: Demand, Planned

_____ **7. Table No. 10: Inventory of Existing Sewage Treatment Plants**

Owner

Treatment Type

Coordinates

Occupied Acres

Vacant Acres

Point of Discharge

Max. Capacity Secondary

Max. Capacity Advanced

Existing Capacity

Average Flow

Peak Flow

Abandonment Date

Operating Agency

_____ **8. Table No. 11: Inventory of Problem Areas**

Service Area

Problem Description

Location

Population

Acres

Treatment Capacity

Treatment Demand

Planned Correction

_____ **9. Table 12: Water Quality Problems due to Storm Drainage Outfalls and to Non-point Sources**

Service Area

Problem Description

Location

Reach Affected

_____ **10. Table 13: Immediate 5 and 10-year Priorities for Sewerage Development**

Fiscal Year and Project Number
County Priority Assigned
Coordinate Location
Description
Costs: Total
PL 660 Eligibility
Other Federal
Local

Project Schedule: Preliminary Plans
Start Construction
Construction

_____ **11. Marinas:** The plan shall include an inventory of problem marinas and include basic planning concepts for sanitary facilities at marinas.

Technical Requirements of the Plan

_____ 1. Textual materials, tables, charts, graphs, and other illustrations shall be prepared on 8 ½ X 11 inch stock or any other size that can be folded for inclusion in the binder.

_____ 2. The Maryland Coordinated Grid System shall be used to determine place locations.

_____ 3. All projections shall be made by the decade year.

_____ 4. Two maps of the entire county to a scale of approximately 1 inch equal to 1 mile showing, in general, areas served or to be served with community facilities. One map should be for sewerage facilities and the other water supply facilities.

_____ 5. Two sets of detailed maps (one for water facilities and the other for sewerage facilities) of each portion of the county shall be prepared on a minimum scale of 1 inch equals 2,000 feet and in sufficient number to show actual areas served or to be served.

_____ 6. Amendments or revisions shall be prepared so that the new or additional material may be inserted in the binder in the appropriate places to provide a continuously updated and current comprehensive water and sewerage. Each sheet of the amendment or revision should be dated to show when the change became effective.

_____ 7. Measurements can be converted to their metric equivalence when applicable.

_____ 8. Delineate on the maps existing or proposed and planned community and multi-use water and sewerage facilities, including wells; reservoirs; intakes; transmissions and feeder mains; storage facilities; interceptor and trunk sewers; pumping stations; force mains; treatment works; outfall sewers; and service areas. Show sizes, or capacities, or both, where appropriate.

_____ 9. Delineate on the maps area served by community and multi-use water and sewerage systems which are either existing or under construction. The actual bounds of areas served by these systems should be clearly indicated. The areas so shown in this category shall be shown in Table 14 and shall be referred to as W-1 for water systems and S-1 for sewerage systems.

_____ **10. Table 14: Water and Sewerage Map Symbols**, includes (1) symbols for existing and planned water or sewerage treatment plants; water or sewerage pumping stations; water storage tanks; wells; springs; reservoirs; interceptors, outfalls, raw and treated water transmission mains; force mains; and laterals and feeder mains; and (2) identifiers for existing and planned service areas.

_____ 11. Delineate on the maps, areas to be served by extensions of existing community and multi-use water and sewerage systems, which are in the final planning stages. The areas so shown in this category shall be shown in Table 14 and shall be referred to as W-2 for water systems and S-2 for sewerage systems.

_____ 12. Delineate on the maps where improvements to construction of, new community and multi-use water supply and sewerage systems will be given immediate priority. The areas so shown in this category shall be shown in Table 14 and shall be referred to as W-3 for water systems and S-3 for sewerage systems.

_____ 13. Delineate on the maps areas where improvements to or construction of, new community and multi use water supply and sewer systems will be programmed for the 3 to 5/6 year period. The areas shown in this category shall be shown in Table 14 and shall be referred to as W-4 for water systems and S-4 for sewerage systems.

_____ 14. Delineate on the maps those areas where improvements or construction of, new community and multi-use water supply and sewerage systems are programmed for inclusion within the 6/7 through 10-year period. The areas so shown in this category shall be as shown in Table 14 and shall be referred to as W-5 for water systems and for sewerage systems.

_____ 15. Other maps symbols shall be as shown in Table 14.

26.03.01.05 Individual Water Supply and Sewerage Systems

_____ 1. Individual systems not permitted where community facilities are available.

_____ 2. Interim individual systems are allowed.

_____ 3. Individual systems are allowed where community systems are not planned.

26.03.01.06.1 Flow Data

_____ **1. Table 15: Flow Data - Wastewater Treatment Plants**

Name or service area

Design - Hydraulic (mgd)

Design - Organic (ppm)

Flow - Avg. Day (mgd)

Flow - Max. Day and Date

Development Occupancy Units - Existing

Development Occupancy Units - Anticipated - Under Const.

Development Occupancy Units - Anticipated - Not Under Const.

Building Permits for Unexpired PWAs

_____ **2. Table 15 A: Flow Data - Collector Sewers, Interceptors, Pumping Stations and Force Mains Sewer**

Name or type

Diameter

Flow - Avg. Day

Flow - Design

Number of Pumps

Pumping Station

Capacity of Each Pump

Normal Pumping Capacity

Avg. Day Pumpage

Force Main

Max. Day Pumpage and Date

Diameter

Design Flow

26.03.01.07 Compliance with Maryland Water Conservation Plumbing Fixtures Act Documentation shall include:

_____ 1. County agency responsible for enforcement.

_____ 2. Summary of county programs:

a. Procedures concerning certificate of occupancy;

b. Actions concerning sale of fixtures; and

c. Procedures for record plats and permits.

_____ 3. Description of changes to achieve compliance with MWCPFA.

26.03.01.08 Financial Management of Public Sewerage Systems

_____ 1. Contents of financial management plan:

Description of financial roles and relationships.

Completed Schedule FS.

_____ 2. Before issuance of a State permit for a new public sewerage system:

Financial management plan must be adopted as part of the county plan and approved by the Department.

_____ 3. The proposed system has been described in a plan amendment adopted by the governing body and approved by the Department.

_____ 4. Each plan is required to treat each public sewerage system as a separate entity.

_____ 5. Timing of financial management plan submittals.

_____ 6. Requirement to send instructions for Schedule FS to county contacts.

_____ 7. Additional information, if required:

Inventory of plant and equipment

Documentation that rates are sufficient to meet O&M costs

Billing procedures

Bad debt

Planned projects and anticipated financing

Plant replacement and anticipated financing

Escrow accounts

Balance sheet

Wastewater Utility Management
Guidance Briefing
for Elected Officials

Prepared by the Inter-Agency Technical Assistance Committee on Wastewater Systems in Maryland

Agencies

- Maryland Department of the Environment
- Maryland Department of Housing and Community Development
- Maryland Department of Planning
- United States Department of Agriculture, Rural Development

Introduction

- Local officials are responsible for the success or failure of their community's wastewater system.
- Their responsibilities include management, financial and legal obligations.

Introduction

- This presentation is an outline of these responsibilities.

- The agencies involved strongly encourage all local officials to seek detailed training on these and related topics.

Contents

Legal and Compliance Issues

Be familiar with all applicable laws and regulations:

- Clean Water Act
  - NPDES permit requirements
- Emergency Planning and Community Right to Know Act (EPCRA)
  - Emergency Response Planning
  - Releases of hazardous substances

Legal and Compliance Issues

- Employment Laws
  - OSHA / MOSH regulations
  - Family Leave
  - Equal Opportunity, etc.
  - Americans with Disabilities Act
- County Water and Sewerage regulations
- Comprehensive Plan requirements

Liability Issues

- An official who fails to take steps to have a basic understanding of the activities ***MIGHT BE LIABLE*** for damages resulting from ignorance or passive negligence.
- Anyone with authority over the utility system ***MIGHT BE SUBJECT*** to liability claims even if he is not the “owner”.

Liability Issues

- Liability issues may relate to:
  - Failure to comply with federal, State, and local laws that address workplace issues
  - Risk Management
  - Disasters and emergency preparedness
  - Negligence
- Liability claims can result in the assessment of fines and/or punitive damages

Know what is happening; consult the plant operators.

Operations

- Basic knowledge of the operations:
  - Wastewater collection and treatment procedures
  - Discharge requirements and limitations

Operations

- Record keeping requirements:
  - NPDES permit
  - Wastewater treatment volume reports
  - Discharge monitoring reports
  - Laboratory data
  - Maintenance records

Operations

Certification and Training

- Operator Certification
  - Only certified staff may be employed
    - To comply with regulations;
    - To operate the facility safely and efficiently; and
    - For liability issues.

Operations

Certification and Training

- Officials must support continuing education
  - Provides significant benefits
    - Efficient O&M
    - Higher productivity
- Continuing Education Requirements
  - Minimum CE hours required for license renewal

Financial Management and Planning

- Business planning
- Capital and financial planning
- Financing capital improvements
- Record keeping requirements
- Rate setting

Financial Management and Planning

Business Plan

- Facilities plan
- Management and administration
- Operations and maintenance
- Financial

Financial Management and Planning

Capital and Financial Planning

- Short and long-term Capital Improvement Program (CIP) plans

Financial Management and Planning

Capital and Financial Planning

- Identify types of Improvements needed:
  - **Major facilities**
  - **Extensions**
  - **Service installations**
  - **Capital equipment**
  - **Capitalized services**

Financial Management and Planning

Financing Capital Improvements

- Capital recovery charges
  - System development charges
  - Impact fees
  - Capacity charges
- State revolving loan funds
- Federal and State grants
- Operating revenues
- Investment income
- Bond issuance

Financial Management and Planning

Record Keeping and Source Documents

Maintain the “paper trail”

- Canceled checks
- Invoices
- Billing statements
- Receipts
- Meter readings
- Credit receipts
- Purchase orders

Regulation-required records must be retained for system operational data *in addition to* financial record keeping.

Financial Management and Planning

Budgeting

- Formulate Policy
- Plan Operations
- Track Financial Performance
- Report Financial Results
- Maintain/Sustain Services

Revenue Requirements

- Projected Costs **–** Non-Rate Revenue **=** *Rate Revenue Requirement*

Financial Management and Planning

Setting Rates

Goals and objectives:

- Financial adequacy
- Cost recovery
- System sustainability
- Legality
- Fairness and equity
- Impact on customers
- Simplicity and ease of implementation
- Water conservation philosophy and goals
- Revenue and rate stability over time

Long-range Planning

- Analyze 10- to 20-year requirements
- Identify any service area expansions
- Identify major facilities required to serve both existing and new service areas
- Prepare and adopt a capital improvement and/or replacement program
- Adopt and provide a long-term plan to the county for inclusion in the County Water and Sewerage Plan

Asset Management

"A combination of management, financial, economic, engineering, and other practices applied to physical assets with the objective of providing the required level of service in the most cost-effective manner."

Asset Management

Core Asset Management Issues:

- Asset Inventory and condition evaluation
- Setting goals for required level of service
- Identification of assets critical to sustained performance

Asset Management

Core Asset Management Issues:

- Strategies to minimize life cycle cost and plan for capital replacement, operation and maintenance
- Long-term financing strategy replacement and sustainability

Asset Management Benefits

- **Improved financial management and use of resources**
  - Better long range planning reduces overall annual costs
- **More efficient and focused O & M**
  - Predictive and preventive rather than reactive
  - Extends asset life cycle
- **Utility managed like a business making risk-based decisions**

Asset Management Benefits

- Utility moves from crisis management to informed decision-making through data analyses
- Reduces risk of system failure and service downtime
- Provides more consistent service levels over time

Emergency Response

- Emergency Planning and Community Right to Know Act (EPCRA)
- Bio-Terrorism Bill 0f 2002

Emergency Response

- New Safe Drinking Water Act Section 1433
  - Vulnerability Assessments
  - Emergency Response Plans (ERP)
- Applicable State and Local Laws

Public Relations

- *Effective public education campaigns improve conservation and appreciation for wastewater staff and local officials.*

- *Heighten awareness of the system's role in the community and what it takes to sustain that system.*

Public Relations

- Are an opportunity to keep customers informed about services, environmental protection, public health benefits and citizen responsibilities
- Highlight sound management and service practices
- Encourage public participation at meetings
- Could include open houses to show the public what occurs at the WWTP

SUMMARY

- Local officials have a number of responsibilities for the operation of their wastewater system:
  - Legal
  - Financial
  - Managerial
- The best defense against liability is knowledge of these responsibilities and the system's requirements.

Contacts

- **Maryland Department of the Environment**
  www.mde.state.md.us **410-537-3567**

- **Maryland Dept. of Housing and Community Development**
  www.mdhousing.org **800-756-0119 ext. 7236**

- **Maryland Department of Planning**
  www.mdp.state.md.us **410-767-4500**

- **United States Dept. of Agriculture, Rural Development**
  www.usda.gov/rus/water/index.htm **302-857-3625**