

An aerial photograph of a wastewater treatment plant. The image shows several large, circular aeration tanks arranged in a circular pattern. Each tank has a central metal structure with a walkway. In the center of the plant is a large, multi-story circular building with a flat roof. The surrounding area includes parking lots with several vehicles and some industrial buildings. The sky is clear and blue.

# Handbook on Wastewater Management for Local Representatives

Developed by the New York State Department of Environmental Conservation, the US EPA Region 2,  
Environmental Finance Center at Syracuse University, and the New York Water Environment Association

February 2007



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*Produced under a cooperative agreement between –*



## **Introduction**

Local officials play an integral part in the administration of wastewater treatment plants within their communities. Wastewater treatment plants are a critical capital asset and as a local official it is your responsibility to understand the operations and management procedures associated with it. As public managers, local officials need the skills and tools to address problems that may arise at their community's plants. Because wastewater may impede public health or the environment within a community, it is important that elected officials familiarize themselves with basic terminology and responsibilities relating to wastewater treatment plants.

This handbook is designed to be a reference tool for local officials, public administrators, and managers. In addition to the basic treatment operations, this handbook will discuss the strategies to ensure compliance, funding, adequate training, and public education. This reference will also help public officials familiarize themselves with financial management tools, loan and grant assistance, as well as learn about capital improvement planning to enhance long term economic viability.

The handbook is broken into different sections. Each section discusses important topics and subject matters that will provide public officials with the basic information needed to understand how wastewater treatment plants operate. There are additional resources located at the end of each chapter for those who would like to learn more. In the appendices, topics such Advanced Evaluation Techniques, including the time value of money, are discussed in more detail, as well as sample forms for reporting and gathering information to properly manage their wastewater systems. In addition, this handbook has a comprehensive glossary of terms and glossary of financial terms.



### **Dedication**

**W**e dedicate this handbook to N.G. Kaul who passed away on February 25, 2004. He had 27 years of service with the NYSDEC and retired as the former Director of the Division of Water. Well known for his management and engineering skills, he is most fondly remembered for his people skills. He was a strong leader for environmental protection and the mission of protecting public health. Recognizing the critical role that wastewater treatment plays, N.G. was an avid supporter of operators and the need for ongoing training. He worked to assure that funding and support were available to maintain high standards in the wastewater profession.



## Acknowledgements

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The sections in each chapter were drafted by a number of authors from various public, private and non-profit agencies, and many chapters were adapted from the Maryland Center for Environmental Training publication, *Drinking Water and Wastewater Handbook for Local Officials*. We would like to extend our gratitude to the Maryland Center for Environmental Training (MCET) of the College of Southern Maryland as their manual was a major resource for the material produced in this handbook and we would like to recognize their commitment to environmental stewardship.

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## Table of Contents

<b>Ten Steps to Protect and Maintain Your Wastewater Utility</b> .....	8
<b>Chapter 1: Introduction to Wastewater Management</b> .....	10
Wastewater 101 .....	11
Personnel Management .....	19
Collection System and Plant Maintenance .....	25
Protecting and Maintaining Wastewater Infrastructure .....	30
<b>Chapter 2: Sustainable Financing</b> .....	40
Financial Management and Business Planning .....	41
Capital Improvement Planning .....	49
<b>Chapter 3: State and Federal Funding Options</b> .....	58
New York State Water and Sewer Co-funding Initiative .....	59
New York State Environmental Facilities Corporation .....	60
United States Department of Agriculture .....	62
Appalachian Regional Commission .....	65
New York State Energy Research and Development Authority .....	69
<b>Chapter 4: Regulatory Overview and Legal Responsibilities</b> .....	74
Addressing Regulations and Legal Considerations .....	75
State Pollutant Discharge Elimination System (SPDES) and Discharge Monitoring Report (DMR) .....	79
<b>Chapter 5: Public Relations</b> .....	84
Responding to Consumer and Operators Demands .....	85
Tools for Public Education .....	91
<b>Useful Contacts and Additional Resources</b> .....	95
<b>Financial Glossary</b> .....	100
<b>Glossary of Terms</b> .....	110
<b>Appendix A: Advanced Evaluation Techniques</b> .....	129
<b>Appendix B: SPDES Permit</b> .....	132
<b>Appendix C: DMR</b> .....	139

## Ten Steps to Protect and Maintain Your Wastewater Utility

- 1 Compliance, compliance, compliance!**

Make sure you are in compliance with the State Pollution Discharge Elimination System (SPDES) Permit requirements. Get a copy of 6 NYCRR Part 750 to the Sewer Board Chair and Chief Operator!  
*See Chapter 4 for more information on regulatory compliance issues.*
- 2 Re-visit your sewer rates.**

On a regular basis, at least annually, review your usage fees and determine if you are implementing full cost pricing. Forecast realistic operational and maintenance expenses and include funds for a sewer department capital reserve and debt service. Financial sustainability is the key!  
*See Chapter 2 for more information about Sustainable Financing.*
- 3 Build a strong case for rate increases!**

Do your homework and communicate with your operator to determine necessary wastewater infrastructure improvements. Educate the public about the critical service a wastewater treatment plant provides by protecting public health and preserving the environment for future generations.  
*See Chapter 5 for more information about Public Relations.*
- 4 Establish an equipment replacement schedule.**

Clearly identify what equipment will need to be replaced and when, and be sure to include major repairs and improvements – like a new roof!  
*See Chapter 1 for more information about maintenance and Chapter 2 for more information about Capital Improvement Planning.*
- 5 Establish a reserve fund – and don't rob the cookie jar!**

Federal funding is shrinking, undercapitalization is a reality, and yet, many wastewater treatment systems and equipment are beyond their useful lives. You can adopt an “ostrich mentality” or be a visionary and avoid the pitfall of satisfying short-term priorities by dipping into the reserve fund to cover routine operational expenses.  
*See Chapter 2 for more information about Sustainable Financing and Chapter 3 for more information about state and federal funding options.*
- 6 Address maintenance backlogs.**

Find out if your plant is suffering from a maintenance backlog and work with your operator to determine a course of corrective action. What will it take to get to the point we can start thinking “preventive”?  
*See Chapter 1 for more information on operations and maintenance.*

**7 Operators need ongoing training.**  
Don't "nickel and dime" the staff that are your frontline defenders of public health and protectors of a huge capital investment. NYSDEC regulations mandate continuous training.

*See Chapter 1 for more information on personnel management and training needs.*

**8 Stop robbing Peter to pay Paul!**  
Is a politically correct sewer budget and stagnant rates causing you to subsidize the plant from the General Fund?

*See Chapter 2 for more information about Sustainable Financing.*

**9 Avoid the NIMT (Not In My Term) syndrome or mentality.**  
Your constituents are looking to you to make things happen, demonstrate leadership, and get results. Public health and environmental quality are important issues to everybody! A well operated, properly maintained and fiscally sound wastewater system provides the foundation for sustainable development and community growth.

*See Chapter 5 for more information about Public Relations.*

**10 Visit the wastewater plant!**  
Know your operators, and familiarize yourself with the basic operations of the plant.

*See Chapter 1 for more information about plant operations.*

*Communication, commitment, involvement  
and support are the key factors  
to successful wastewater management.  
Get started today!*

Learn more about the  
"Ten Steps" at the next  
Panel on Wastewater for  
Local Representatives.

Contact the NYWEA at  
315-422-7811.

