

# WET WEATHER CONSENT DECREES

*Negotiation Strategies to Maximize  
Flexibility & Environmental Benefit*



*A Handbook for  
Clean Water Utilities*

**NACWA**  
A Clear Commitment to America's Waters

# WET WEATHER CONSENT DECREES

## Negotiation Strategies to Maximize Flexibility & Environmental Benefit

This work is protected by copyright owned by the [National Association of Clean Water Agencies](#) (NACWA) and may not be reproduced or transmitted in any form or by any means without the consent of NACWA. Founded in 1970, NACWA is the nation's recognized leader in regulatory, legislative and legal advocacy on the full spectrum of clean water issues. NACWA represents public clean water agencies of all sizes nationwide. Our vision is to represent every utility as a NACWA member, helping to build a strong and sustainable clean water future.

This resource is an example of the unparalleled tools, information, and analysis that NACWA provides to members. To learn more about NACWA's advocacy on behalf of the clean water community or join the Association and lend your support to our advocacy efforts, contact us at [info@nacwa.org](mailto:info@nacwa.org), or 202-833-2672 or visit us online at [www.nacwa.org](http://www.nacwa.org). Together, we will elevate water as a top national priority!

This work contains information on legal issues associated with negotiating and analyzing wet weather consent decrees, administrative orders, and other enforceable agreements entered by federal and/or state regulators with public clean water agencies (wastewater and stormwater). Lloyd Gosselink Rochelle & Townsend, P.C. assisted with development of this work under contract with NACWA. Squire Patton Boggs LLP assisted with previous editions of this work under contract with NACWA, and content from those editions remains in this version.

This work does not constitute legal advice from Lloyd Gosselink, Squire Patton Boggs, or NACWA to NACWA's members or any other readers. This work should not be construed as legal advice to NACWA members or others who might read it. NACWA's production of this work does not replace an independent legal evaluation of relevant issues.

This work is provided "as is" and any express or implied warranties, including, but not limited to, the implied warranty of fitness for a particular purpose are disclaimed. In no event shall NACWA, Lloyd Gosselink, Squire Patton Boggs, or any contributors be liable for any direct, indirect, incidental, special, or consequential damages as a result of use of this work. NACWA has no obligation to update this work or make notification of any changes to the information discussed in the work. Neither NACWA, Lloyd Gosselink, Squire Patton Boggs, nor any member of NACWA's volunteer review team assume any liability resulting from the use or reliance upon any information, guidance, suggestions, conclusions, or opinions in this work.

# Table of Contents

<b>INTRODUCTION</b>	8
<b>HOW TO USE THIS HANDBOOK</b>	10
<b>ACKNOWLEDGEMENTS</b>	12
<b>SECTION ONE</b>	13
<b>I. Legal and Regulatory Background</b>	13
A. The Federal Clean Water Act	13
B. Combined Sewer Systems	14
C. Sanitary Sewer Systems	17
1. Sanitary Sewer Overflows	17
2. Blending	19
a. Blending in the Context of SSSs	19
b. Blending in the Context of CSO Systems	22
D. Stormwater Management	22
E. Integrated Planning	25
<b>SECTION TWO</b>	28
<b>II. Policies and Guidance Relevant to CWA Negotiations</b>	28
A. Enforcement and Economic Burden	28
1. 1994 CSO Policy	28
2. 1995 Combined Sewer Overflows Guidance for Funding Options	29
3. 1995 Interim Economic Guidance for Water Quality Standards Workbook	30
4. 1997 Combined Sewer Overflows Guidance for Financial Capability Assessment and Schedule Development	31
5. 2000 Compliance and Enforcement Strategy for CSOs and SSOs	32
6. 2003 Memorandum on Negotiation of CSO Consent Decrees	33
7. 2005 Memorandum on Guidelines for Federal Enforcement in CSO/SSO Cases	33
8. 2013 Assessing Financial Capability for Municipal Clean Water Act Requirements	33
9. 2014 Financial Capability Framework for Municipal Clean Water Act Requirements	34
B. Wet Weather	35
1. 1995 Combined Sewer Overflows Guidance for Long-Term Control Plans	35
2. 1995 Combined Sewer Overflows Guidance for Nine Minimum Control Measures	35
3. 1999 Combined Sewer Overflows Guidance for Monitoring and Modeling	36
4. 2001 Guidance on Coordinating CSO Long-Term Planning with Water Quality Standards Review	36
5. 2005 Guide for Evaluating CMOM Programs	37
6. 2012 CSO Post-Construction Compliance Monitoring Guidance	37
C. Watershed Approach and Integrated Planning	37
1. 1996 Watershed Approach Framework	37
2. 2011 Achieving Water Quality Through Integrated Municipal Stormwater and Wastewater Plans	38
3. 2012 Integrated Municipal Stormwater and Wastewater Planning Approach Framework and 2013 FAQs	39
D. Green Infrastructure	40

# Table of Contents (continued)

1. 2007 Memorandum on the Use of Green Infrastructure in NPDES Permit and Enforcement .....	41
2. 2007 Memorandum on Using Green Infrastructure in Stormwater, CSO and Nonpoint Source Programs ....	41
3. EPA Green Infrastructure Strategic Agenda .....	41
4. 2014 EPA Greening CSO Plans: Planning and Modeling Green Infrastructure for Combined Sewer Overflow (CSO) Control.....	41
5. Recent Trends in Green Infrastructure Implementation in Consent Decrees and Other Planning Efforts.....	42
<b>E. Stormwater.....</b>	<b>42</b>
1. 1999 Report to Congress on Phase II Stormwater Regulations.....	43
2. 2000 Report to Congress on Phase I Stormwater Regulations .....	43
3. 2000 National Menu of Stormwater Best Management Practices .....	43
4. 2001 Measurable Goals Guidance for Phase II Small MS4s.....	44
5. 2005 Stormwater Phase II Final Rule Fact Sheet Series .....	44
6. 2007 MS4 Program Evaluation Guidance.....	44
7. 2008 Evaluating the Effectiveness of Municipal Stormwater Programs .....	44
8. 2008 National Research Council Report on Urban Stormwater Management in the United States .....	45
9. 2010 MS4 Permit Improvement Guide .....	46
10. 2011 Draft Summary of State Stormwater Standards .....	47
11. 2014 Compendium of Stormwater Permitting Approaches for MS4s.....	47
<b>F. General Consent Decree Terms and Penalty Policies .....</b>	<b>47</b>
1. 1983 Guidance for Drafting Judicial Consent Decrees .....	47
2. 1984 Policy on Civil Penalties and 1984 Framework for Statute-Specific Approaches to Penalty Assessments: Implementing EPA’s Policy on Civil Penalties.....	48
3. 1988 Guidance on Certification of Compliance with Enforcement Agreements.....	48
4. 1995 EPA Interim CWA Settlement Penalty Policy.....	49
5. 2015 Update to the 1998 U.S. Environmental Protection Agency Supplemental Environmental Projects Policy.....	49
6. 2005 Memorandum, Clean Water Act Municipal Settlements and Supplemental Environmental Projects .....	50
7. 2016 Amendments to the U.S. EPA’s Civil Penalty Policies to Account for Inflation.....	50

## SECTION THREE ..... 54

<b>I. CWA Enforcement Trends .....</b>	<b>54</b>
A. Next Generation Compliance .....	54
B. Enforcement Initiatives Based on Population.....	55
<b>II. The Mechanics of CWA enforcement .....</b>	<b>56</b>
A. Understanding the Regulator’s Perspective and Setting the Tone for Interaction .....	56
B. How to Avoid Enforcement.....	57
C. Pre-Enforcement: Information gathering/CWA §308 .....	60
1. Typical language in a §308 Letter .....	61
2. Response Time .....	61
3. Scope/Reasonableness of Request.....	62
4. Public Disclosure of Produced Information .....	62
5. Recommended Action in Response to a §308 Letter.....	63
6. What Happens after Responses Are Submitted? .....	64
7. State Regulator’s Authority to Gather Information.....	64
D. Enforcement Actions .....	64
1. Administrative Enforcement Actions .....	64

# Table of Contents (continued)

a. Administrative Compliance Orders .....	64
b. Administrative Consent Agreements.....	65
c. Administrative Enforcement Steps and Recommendations .....	65
a. Civil Enforcement Steps and Recommended Action .....	66
b. What is a Consent Decree? .....	67
c. Federal Judge's Role.....	67
d. Regulator Press Release.....	68
e. Third Party Litigation and Involvement .....	68
f. Role of State Regulators.....	70
E. Overfiling .....	70
1. EPA's Authority .....	70
2. EPA Overfiling Considerations .....	71
F. General Factors to Consider in Determining Response to Enforcement.....	72

## SECTION FOUR..... 75

### IV. Tailoring Standard CWA Decree Provisions to Best Suit Your Utility ..... 75

A. Compliance Programs .....	75
1. Typical Compliance Programs .....	75
a. CSOs .....	75
b. SSOs .....	77
c. Stormwater .....	79
d. Nutrients .....	81
2. Design Storms/Level of Service or Control .....	82
a. SSOs.....	83
b. CSOs and Developments in EPA's "Presumptive Approach" .....	85
3. Scope of "SSOs"/Unauthorized Discharges and Inclusion of Basement/Building Backups .....	88
a. SSOs.....	88
b. "Unauthorized Discharge" .....	90
c. Basement/Building Backups .....	91
4. Implementation Approaches and Compliance Standards .....	93
5. Interim Effluent Limitations .....	93
6. Water Quality Standards Reviews.....	94
7. "Watershed Approach" .....	95
8. Connection Bans and Moratoria on New Development .....	96
B. Definitions .....	97
1. Wet Weather/Dry Weather.....	97
2. POTW .....	98
3. "Excessive Inflow & Infiltration" .....	99
C. Schedules and Deadlines .....	99
1. Fixed End Date .....	100
2. Deadlines.....	100
3. Phased Implementation .....	100
4. Implementation Schedule Length .....	101



# Table of Contents (continued)

5. Deadline Relief .....	102
<b>D. Penalties</b> .....	103
1. Civil .....	103
2. Stipulated .....	104
a. Structure of Stipulated Penalty Provisions .....	104
b. Written Demand for Stipulated Penalties .....	107
c. Penalty Accrual and Payment During Dispute .....	108
d. Penalty Credit.....	109
3. Supplemental Environmental Projects (SEPs) .....	109
<b>E. Effect of Settlement/Reservation of Rights</b> .....	110
<b>F. Covenant Not to Sue</b> .....	111
<b>G. Force Majeure</b> .....	111
<b>H. Dispute Resolution</b> .....	113
<b>I. Right of Entry</b> .....	114
<b>J. Reports and Certifications</b> .....	114
<b>K. Green Infrastructure and Low Impact Development</b> .....	115
<b>L. Integrated Planning</b> .....	118
<b>M. Modification/ Reopener/Adaptive Management Clauses</b> .....	120
1. Modifications Based on Financial Capability & Adaptive Management .....	121
2. Reopener Provisions and Financial Caps .....	124
3. Specified Revisions Not Considered “Modifications” .....	125
4. Material Modification v. Non-Material Modification .....	126
5. Modification for Changes in the Governing Law .....	127
6. Compliance and Funding.....	127
<b>N. Termination</b> .....	128
<b>O. Review of Submittals</b> .....	130
<b>P. Public Notification/Participation</b> .....	131
<b>I. Strategies And Tools To Negotiate Or Renegotiate The Best Decree For Your Community</b> .....	133
A. Building the Negotiating Team .....	133
1. The Attorneys.....	133
<b>SECTION FIVE</b> .....	133
2. The Technical Experts .....	134
3. The Financial/Economic Experts.....	134
<b>B. Building Utility Case/ Developing a Strategic Plan</b> .....	134
1. Knowing Your Utility.....	134
2. Benchmarking and Branding your Utility .....	135
3. Developing a Strategic Plan .....	136
4. Meetings with Regulators.....	137
<b>C. Developing a Holistic Communication Plan and Managing Stakeholder Involvement</b> .....	137
<b>D. Economic Burden: Affordability/ Financial Capability</b> .....	139
<b>E. Funding</b> .....	142
<b>F. Negotiating the Best Schedule for Compliance</b> .....	143

# Table of Contents (continued)

1. Phased Implementation/Adaptive Management .....	144
2. Deadline Relief .....	144
G. Integrated Planning/Watershed Approach/Adaptive Management .....	145
1. Integrated Planning .....	145
2. Watershed Approach .....	146
3. Adaptive Management .....	147
H. Green Infrastructure .....	147
I. Asset Management/Effective Utility Management .....	148
J. Conducting Penalty Negotiations .....	149
K. Incorporating Supplemental Environmental Projects .....	150
L. Reducing Risk of Overfiling .....	150
M. Reopeners/Modification .....	151
N. Environmental Justice .....	152
<b>SECTION SIX</b> .....	<b>154</b>
I. Existing And Emerging Negotiation And Implementation Issues .....	154
A. Shifting Enforcement Focus to Smaller Communities .....	154
B. Third Party Litigant/Intervenor Considerations .....	155
1. Citizen Suits .....	155
2. Intervention .....	156
3. Risk and Strategy Considerations .....	157
C. Economic Burden .....	157
D. Climate/Resiliency .....	157
E. Nutrients .....	158
F. Contaminants of Emerging Concern .....	159
G. Stormwater .....	159
H. Regionalization/Consolidation .....	160
I. Inflow & Infiltration/Satellite Systems .....	161
1. Private Laterals .....	161
2. Satellite Systems .....	162
J. Utility of the Future .....	163
K. Local Employment Issues .....	163
<b>GLOSSARY</b> .....	<b>166</b>
<b>APPENDIX</b>	
A. Summaries of Major Orders and Decrees	
B. The Water Resources Utility of the Future: A Blueprint for Action	
C. The Evolving Landscape for Financial Capability Assessment	
D. Principles for Assessment and Negotiation of Financial Capability: Compilation of Resources	

# Introduction

For over two decades, publicly owned clean water agencies have faced negotiations and litigation with federal and state governments regarding wet weather and sewage overflow issues. These wet weather negotiations generally require utilities to plan for, fund, and make million – and even billion – dollar investments in their wastewater infrastructure. The resulting infrastructure programs from these enforcement actions will often be the most expensive single public infrastructure project investment a municipality ever makes.

Given the high stakes nature of such negotiations – and the significant economic and environmental impacts they will have on the community – it is in a utility’s best interest to enter them armed with as much knowledge as possible regarding the government’s past practices and agreements with other communities; extensive expertise and information on the utility’s specific system and structure; detailed knowledge about the community’s economic health; strategies and tools to leverage the best possible agreement; and plenty of stamina for the long haul.

Recognizing the significant effort that compilation and review of past decrees and orders entails, the [National Association of Clean Water Agencies](#) (NACWA) created this *Handbook* to perform some of this essential analysis for our member agencies— to compare and contrast the various decrees, to cross-reference provisions with those found in past [Clean Water Act](#) (CWA) decrees, to assess the various ways the government’s boilerplate consent decree language can be modified via negotiation to be more workable for a utility, and to suggest strategies based on this analysis that can best position utilities during negotiations.

The initial version of the *Handbook* was published by NACWA (then known as AMSA) in 2003, with supplements in 2006 and 2009. Since then, this *Handbook* has gone through multiple revisions as the landscape of wet weather enforcement has changed significantly, with the economic downturn and the support of the [U.S. Environmental Protection Agency](#) (EPA) for innovative concepts, such as integrated planning, green infrastructure and more flexible affordability considerations, all playing significant roles in the evolution. Additionally, as more and more utilities have been placed under consent decrees in recent years, many are now looking to reopen and modify those agreements to take advantage of new opportunities and flexibilities. Accordingly, this *Handbook* both updates and expands upon the prior versions of the publication to detail for utilities the significant policy shifts and corresponding opportunities that have occurred in the wet weather enforcement arena in recent years.

The *Handbook* addresses the apparent legal and regulatory cultural change that is slowly emerging in the enforcement arena, at least at the EPA Headquarters level. EPA is cooperating and communicating more effectively across program, regional and agency boundaries, is more willing to reevaluate entrenched and long-established practices, and seems less hesitant to acknowledge shortcomings in its traditional enforcement approaches. This *Handbook* adopts the philosophy that rather than viewing this perceived cultural change with a skeptical eye, utilities have much to gain and little to lose by attempting to seize these opportunities for greater flexibility and more sustainable approaches and to transform rhetoric into action and precedent.

An important caveat: The final decrees reviewed in this *Handbook* in most cases are the product of months, if not years, of negotiation between the municipality/utility and state and/or federal governments. *Handbook* users should recognize that it was not possible for NACWA to capture the quid pro quos that went into the crafting of various provisions, to identify the tradeoffs that resulted in changes in the decrees, or to explain all of the potential factors that led a community to agree to various conditions.

While NACWA offers the recommendations, strategies, examples and case studies in this *Handbook* to better prepare utilities for wet weather enforcement negotiation, ultimately each utility must determine based on its own unique



circumstances which course of action is likely to yield the best results at the lowest possible cost with the least burden to operation. There are many complex issues that a utility should evaluate when determining whether to fight/litigate an enforcement action or consider settling, whether to take an aggressive or more cooperative stance on matters subject to enforcement, and whether to employ delay tactics, dig in on issues resulting in protracted negotiations or attempt to fast-track the process. Utilities approaching litigation, negotiation, modification or interim plan negotiation, should carefully analyze such factors as available resources and staff, noncompliance issues and potential penalties, operation disruption and productivity loss, precedent and publicity, the working relationship between the regulator(s) and the utility, and the tone that the utility wishes to set for that relationship.

This *Handbook* was created with the commendable assistance of Lloyd Gosselink Rochelle & Townsend, P.C. (Lloyd Gosselink) and a volunteer review team, all of whom are listed in the [Acknowledgements](#). Prior versions of this *Handbook* were prepared by Squire Patton Boggs, LLP, and much of their work remains in this edition. The opinions, recommendations and strategies in this *Handbook* do not necessarily represent the views of the individuals and firms who contributed to this work's content.

NACWA hopes this *Handbook* continues to constitute a key tool and thought piece for the clean water community for many years to come. Moreover, we hope by working together we can help positively shape the future of these enforcement tools that have such a resounding effect on NACWA members and their communities and usher in a new era of more innovative, sustainable and cost-effective environmental and public health improvements.



# How to Use This Handbook

This *Wet Weather Consent Decree Handbook* provides information on legal, regulatory, and policy issues associated with negotiating and analyzing wet weather consent decrees, administrative orders, and other enforceable agreements between publicly owned treatment works (POTWs) and federal and/or state governments. The *Handbook* covers a broad spectrum of issues that municipal and utility attorneys, managers, and staff may wish to consider before, during, and after wet weather negotiations.

The content of this *Handbook* applies not only to negotiation of new consent decrees but also to renegotiation/modification of existing decrees. It can also be helpful in negotiating/exploring implementation flexibility that may already exist based on language in current enforcement orders. While certain sections of this *Handbook* may appear to be written from the perspective of a utility negotiating a new decree, utilities considering modifications to enforcement orders should understand that many – if not all – of the information and strategies relevant for new decree negotiations can also be equally applicable to modification negotiations. Additionally, while this *Handbook* focuses on wet weather decrees, we expect that the information covered will be of broad use to NACWA member agencies, as many of the topics addressed are common in other types of environmental decrees, orders, and agreements.

The *Handbook* is designed so that readers can read the entire document or quickly jump to relevant sections. In any given section, if information on the topic is addressed elsewhere, there will be a cross-reference with quick links to the other section(s). Text appearing in [blue](#) contains a hyperlink to a pdf and/or external website. Text appearing in [purple](#) contains a hyperlink to the Glossary. In addition, the user will have the option to return to the Table of Contents or jump to other sections or appendices via a thumbnail content navigation slider that appears on the left side of the screen (simply drag the thumbnail to the right). Users should feel free to read this *Handbook* in its entirety, or go straight to a particular section/discussion that may interest them.

The *Handbook* is organized into six major sections. [I. Legal and Regulatory Background](#) provides an overview of the legal and regulatory foundation for wet weather enforcement. [II. Policies and Guidance Relevant to CWA Negotiations](#) identifies the actual EPA policies and guidance relevant to wet weather, stormwater and general enforcement. [I. CWA Enforcement Trends](#) addresses recommendations to best position a utility to avoid enforcement or, in the alternative, deal with an enforcement action (or pre-enforcement information gathering) if it ensues. [IV. Tailoring Standard CWA Decree Provisions to Best Suit Your Utility](#) focuses on techniques to craft workable standard decree provisions, such as compliance with law, stipulated penalties, force majeure, dispute resolution, and termination clauses. It further details provisions that other utilities have successfully negotiated to incorporate flexibility in their decrees, including reopeners, integrated planning and adaptive management provisions, and modifications for financial capability reassessments. \_ covers evolving strategic issues, such as negotiation approaches for establishing compliance standards and implementation schedules, as well as, strategies to maintain municipal autonomy, leveraging expertise in negotiations, and pursuing new opportunities such as integrated planning or the use of green infrastructure to secure an optimal enforcement order. The objective of [SECTION SIX](#) is to preview trends and implementation issues that are emerging and highlight implications for utilities.

Note that the terms “city,” “community,” “municipality,” “utility,” “regulated entity,” “permittee” and “Publicly Owned Treatment Work (POTW)” are used interchangeably throughout the *Handbook* to refer to public clean water agencies.

Specific wet weather agreements are referenced throughout the publication and summaries of major wet weather orders and decrees are listed in Appendix A. Appendix A is provided for your convenience as a downloadable Microsoft Excel file, so that the decrees can be sorted based on various key terms. The agreements could not be reprinted in the *Handbook* due to their combined length, but Appendix A links directly to copies of the decrees in NACWA's online Consent Decree E-Library (member-only resource). The E-Library provides the most comprehensive online collection of municipal wet weather agreements, and can serve as an excellent resource for utilities seeking to review full length decrees in preparation for their own negotiations. The E Library also offers a variety of search features to facilitate finding the most relevant decree examples. For your convenience, there is a link available on the thumbnail navigation slider that appears on the left side of the screen, which can be accessed at any point while reviewing the *Handbook*.

NACWA strives to continuously improve member resources and tools and we encourage feedback on this *Handbook* and the [Consent Decree E-Library](#). NACWA developed the *Handbook* as an electronic publication in order to provide a searchable, revisable, accessible and interactive tool. If users identify any errors or inaccuracies or have recommendations on how to improve the *Handbook* by adding information or examples, please forward suggestions and corrections to [espitzig@nacwa.org](mailto:espitzig@nacwa.org) or [awaters@nacwa.org](mailto:awaters@nacwa.org). While you may wish to download and/or print a hard copy of this document, we encourage you to periodically check the NACWA website for the most up-to-date version of the *Handbook*.

Finally, NACWA offers the information in this *Handbook* to equip members with critical knowledge and tools, but the information in this publication should not be construed as legal advice to NACWA's member agencies or others who might refer to it. NACWA's publication of this work does not replace the need to conduct an independent legal evaluation of relevant issues.



# Acknowledgements

The *Wet Weather Consent Decree Handbook* was produced by the National Association of Clean Water Agencies (NACWA) under the direction of its Board of Directors, Chief Executive Officer Adam Krantz, General Counsel Amanda Waters and Deputy General Counsel Erica Spitzig.

This edition of the *Handbook* was developed in collaboration with NACWA Legal Affiliate Lloyd Gosselink under the direction of Nathan Vassar. NACWA wishes to express our sincere gratitude to Lloyd Gosselink for its tireless efforts and substantive knowledge which is embodied in and reflected throughout this work.

NACWA owes a continuing debt of gratitude to Legal Affiliate Squire Patton Boggs, which along with NACWA staff developed the original *Handbook* and completed many substantive updates and revisions throughout the history of the *Handbook*. Much of Squire Patton Boggs' work carries forward in this edition of the *Handbook*.

NACWA also extends heartfelt appreciation and special thanks to the leadership of the NACWA Legal Affairs Committee and the members of the volunteer *Handbook* review team for their expertise, invaluable feedback and dedication to this project:

Hilary Meltzer  
*Chair, NACWA Legal Affairs Committee*  
Deputy Chief, Environmental Law Division  
New York City Department of Law, NY

Susan Myers  
*Vice Chair, NACWA Legal Affairs Committee*  
General Counsel  
Metropolitan St. Louis Sewer District, MO

Fredric P. Andes  
Partner  
Barnes & Thornburg LLP, IL

Robert E. Ashton  
Regulatory Compliance Advisor  
City of Columbus Department of Public Utilities, OH

Dax J. Blake  
Deputy Executive Director of Operations  
Northern Kentucky Sanitation District No. 1, KY

Misty Brown  
Assistant Counsel  
Unified Government of Wyandotte County, KS

Justin Curtis  
Attorney  
AquaLaw PLC, VA

Andrew Etter  
Senior Associate  
Squire Patton Boggs LLP, OH

John Evans  
Senior Utility Management Consultant  
Blue Cypress Consulting, LLC, GA

Devon Goodrich  
Senior Counsel  
New York City Department of Law, NY

Joseph Ganzer  
Staff Attorney  
Milwaukee Metropolitan Sewerage District, WI

Ronald Hill  
General Counsel  
Metropolitan Water Reclamation District of  
Greater Chicago, IL

Bennett Horenstein  
Director of Wastewater  
East Bay Municipal Utility District, CA

Jamie Heisig-Mitchell  
Chief of Technical Services  
Hampton Roads Sanitation District, VA

Sarah Jarboe  
Associate  
English Lucase Priest & Owsley, LLP, OH

Michael Witt  
Special Counsel, Passaic Valley Sewerage  
Commissioners  
Chasan Leyner & Lamparello, PC, NJ

# Section One

## I. Legal and Regulatory Background

The goal of this Section is to briefly outline the underlying legal and regulatory framework that will shape your negotiations. A municipality entering Clean Water Act negotiations with the federal government or a state regulatory or enforcement agency should have a general understanding of the legal and regulatory landscapes that govern wet and dry weather discharges, including [combined sewer overflow](#) (CSO) policies, sanitary sewer overflow (SSO) issues, and related “bypasses” at the [publicly owned treatment works facility](#) (POTW). While the legal frameworks for CSO and SSO compliance are quite distinct, a fundamental concept underlies both — EPA and many states view each of these events as a type of unlawful discharge under the Clean Water Act (CWA), unless specifically authorized by and in compliance with a [National Pollutant Discharge Elimination System](#) (NPDES) permit. Stormwater management issues are also gaining prominence and are a factor that utilities should consider in EPA enforcement actions (either as part of SSO/CSO decrees, or in stand-alone MS4 settlements). Utilities should have a general understanding of the regulatory program governing stormwater as well as the use of EPA’s integrated planning tool as a mechanism for prioritizing, scheduling and complying with CWA obligations.

This *Handbook*, while focused on enforcement in the context of sewer overflows, can serve as a resource for municipal utilities in other CWA enforcement contexts, including requirements related to nutrients, stormwater and other emerging issues. Further, various NACWA members are actively pursuing frameworks to address a broader scope of compliance requirements and ratepayer burdens, including efforts to expand the Integrated Planning dialogue to encompass additional regulatory and financial realities.

### A. The Federal Clean Water Act

The [Clean Water Act](#) (CWA) codified at 33 U.S.C. § 1251 *et seq.*, establishes the basic structure for regulating discharges of pollutants into the [waters of the United States](#) and establishing quality standards for surface waters. Although federal law has regulated disposals/discharges into jurisdictional waters since the late nineteenth century,<sup>1</sup> the statutory basis for the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, and the Act was significantly reorganized and expanded in 1972. “Clean Water Act” became the Act’s common name with the amendments passed in 1972.

The CWA provides that it is unlawful to discharge pollutants from a point source into surface waters unless a NPDES permit is first obtained. In simple terms, point sources are discrete conveyances such as pipes or man-made ditches that convey and then discharge wastewater or effluent to surface waters. EPA’s NPDES permit program establishes effluent limitations and other standards that will apply to point source discharges. Industrial, municipal, and other facilities must obtain a NPDES permit if their discharges go directly to surface waters.

Municipal wastewater collections systems are designed to convey sanitary sewage and other wastewater to a POTW<sup>2</sup> for treatment prior to discharge into a water of the U.S. Such discharges are subject to NPDES permits that establish effluent or discharge limitations under the CWA. As discussed in more detail below, some municipal systems are combined systems, which convey both sanitary wastewater and stormwater, while others only convey sanitary sewage. In either type of system, permitted relief outlets may exist that allow wastewater to be released prior to treatment, typically during times of heavy wet weather. EPA’s CWA enforcement efforts focus, in general, on discharges from these relief outfalls

or other discharge points from which wastewater does not receive prior or full treatment. EPA's objective is to prevent, reduce, or control the number of discharges and/or the volume of wastewater released through such outlets.

It is important to note that there may be fundamental factual questions about which regulatory framework may govern any particular system asset. There is no bright-line rule or authority distinguishing a combined collection system from a sanitary one, especially in older systems built long before these categories were imposed. Regulators communicate various "rules of thumb" (e.g., last manhole determines; peaking factor) but typically no authority is referenced for making this determination. This lack of clarity has been a fundamental issue in many communities because the characterization of the system makes a substantial practical difference in terms of the nature and cost of remedial measures that may be appropriate. Under this framework, as of June 2016, EPA reported that 98 cities or utilities are implementing consent decrees for combined sewer overflows and separate sewer overflows.<sup>3</sup>

## B. Combined Sewer Systems

As previewed above, a [combined sewer system](#) (CSS) is a municipal wastewater collection system designed to convey both sanitary wastewater and stormwater through a single pipe system to a POTW. Considered state of the art in the early 20th Century, CSSs are most common in older cities on the East Coast, and in parts of the Midwest and Northwest states. CSOs<sup>4</sup> are essentially relief outlets in various parts of the CSS that allow wastewater to be discharged, generally without treatment, before reaching the POTW headworks. CSO points are included within the CSS specifically to prevent washout and hydraulic overload at the POTW in heavy wet weather. EPA and states consider CSOs point source discharges subject to NPDES permitting requirements and to [technology and water-quality based effluent limitations](#).

In *Montgomery Environmental Coalition v. Costle*,<sup>5</sup> the District of Columbia (D.C.) Circuit Court of Appeals held that as a discharge point in the collection system, a CSO is not part of the "treatment works" within the meaning of the statute, and thus the secondary treatment requirements of 33 U.S.C. § 1311(b)(1) (B) applicable to POTWs do not apply to CSO discharges. Instead, effluent limits for CSOs are to be set in accordance with "[best practicable technology](#)" standards applying to "point sources other than publicly-owned treatment works." 33 U.S.C. § 1311(b)(1)(A).

In an effort to establish "a comprehensive national strategy to ensure that utilities, permitting authorities, water quality standards authorities and the public engage in a comprehensive and coordinated effort to achieve cost-effective CSO controls that ultimately meet appropriate health and environmental objectives," EPA issued its Combined Sewer Overflow Policy (CSO *Policy*) in 1994.<sup>6</sup> The CSO *Policy* "recognizes the site-specific nature of CSOs and their impacts and provides the necessary flexibility to tailor controls to local situations."<sup>7</sup> The CSO *Policy* sets forth the following objectives:

- ✓ Ensure that if CSOs occur, they are only as a result of wet weather;
- ✓ Bring all wet weather CSO discharge points into compliance with the technology and water quality-based requirements of the CWA; and,
- ✓ Minimize water quality, aquatic biota, and human health impacts from CSOs.<sup>8</sup>

Congress codified the CSO *Policy* in late 2000 and incorporated it into the CWA, providing that "[e]ach permit, order or decree issued pursuant to this Act after [December 15, 2000] for a discharge from a municipal combined storm and sanitary sewer shall conform to the Combined Sewer Overflow Policy signed by the Administrator on April 11, 1994." CWA § 402(q)(1). As provided below, regulators'



interpretation of this language has resulted in far-reaching consequences for utilities facing enforcement in light of the *CSO Policy*'s provisions.

Pursuant to the *CSO Policy*, CSO permittees are to undertake a process to adequately characterize their sewer systems and to develop a [long-term CSO control plan](#) (LTCP). They are also to demonstrate implementation of [nine minimum controls](#) (NMC) for CSOs, which are:

1. Proper operation and regular maintenance programs for the sewer systems and the CSOs;
2. Maximize use of the collection system for storage;
3. Review and modification of pretreatment requirements to assure CSO impacts are minimized;
4. Maximization of flow to the POTW for treatment;
5. Prohibition of CSOs during dry weather;
6. Control of solid and floatable materials in CSOs;
7. Pollution prevention;
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and,
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.<sup>9</sup>

The *CSO Policy* indicates that the CWA requires immediate compliance with technology-based controls which, on a best professional judgment (BPJ) basis, should include the NMCs.

Additionally, LTCPs are to include the following minimum elements:

- ✓ Characterization, monitoring, and modeling of the combined sewer system;
- ✓ A public participation process that actively involves the affected public in the decision-making to select the long-term CSO controls;
- ✓ The highest priority to controlling overflows to sensitive areas, including outstanding national resource waters, national marine sanctuaries, waters with threatened or endangered species or their habitat, waters with primary contact recreation, public water intakes or their designated protection areas, and shellfish beds;
- ✓ An evaluation of alternatives that includes a reasonable range of alternatives;
- ✓ Development of appropriate cost/performance curves to demonstrate the relationships among a comprehensive set of reasonable control alternatives that correspond to the different ranges of alternatives previously identified;
- ✓ Revision of the operation and maintenance program developed as part of the NMCs to include the agreed-upon long-term CSO controls;
- ✓ Maximization of treatment at the existing POTW treatment plant through use of a CSO related bypass;
- ✓ A schedule for implementation of CSO controls; and,
- ✓ A post-construction water quality monitoring program to verify compliance with water quality standards.<sup>10</sup>

The *CSO Policy* envisions implementation of LTCPs through a phased NPDES permitting program. Phase I CSO permits were to incorporate the requirements for demonstration of the NMCs and development

of the LTCP. The CSO *Policy* advised that Phase I permits should include requirements to comply with the NMCs through use of an enforceable order. Phase II CSO permits were to incorporate the requirements for implementation of a LTCP, with the compliance schedule “generally” in a judicial order for major permittees.<sup>11</sup> However, LTCPs have also been implemented through permits, administrative orders on consent and State decrees or orders.

Importantly, since “codification” of the CSO *Policy* in 2000, some enforcement officials have taken the position that the “shall conform to” language converted specific text in the CSO *Policy* into statute and mandate strict interpretation of its provisions. In contrast, utilities have argued that “conformance” does not eliminate flexibility to consider important site-specific and economic factors. The tension between these approaches remains one of the most controversial implementation questions regarding the *Policy*.<sup>12</sup> Limited interpretive case law on this issue leads to further uncertainty, which regulators may seek to exploit in enforcement negotiations. Utilities should be aware of these conflicting positions, however and should push back on enforcement efforts that rely on such reasoning as justification.

Additionally, EPA has also issued a series of reports since 2000 documenting the progress it has made in regulating wet weather discharges. For example, EPA’s December 2001 CSO Report to Congress (2001 Report) estimated that at that time 86 percent of CSO permits required implementation of the NMC, while only 65 percent of CSO permits contain requirements to develop and implement a LTCP. The 2001 Report also indicated that only 32 percent of CSO communities had documented the implementation of all NMCs; 34 percent submitted LTCPs to their permitting authorities; 19 percent had those LTCPs approved; and 17 percent had begun LTCP implementation.

To update its 2001 findings, EPA released its second [Report to Congress on the Impacts and Control of Combined and Sanitary Sewer Overflow](#) in 2004 (2004 Report), which was the final report that EPA was required to develop in accordance with the Consolidated Appropriations Act for Fiscal Year 2001.<sup>14</sup> Although the 2004 Report makes no specific policy recommendations, it does provide one of the most comprehensive assessments of sewer overflows in the United States. For CSOs, the 2004 Report cites continued progress since the 2001 Report, noting the percentage of CSO LTCPs submitted to permitting authorities had increased from 34 to 59 percent and since issuance of the CSO *Policy* in 1994, CSO volume had dropped from over 1 trillion gallons per year to 850 billion gallons per year.<sup>15</sup> The 2004 Report concluded that although there is evidence that the occurrence of CSOs and SSOs is widespread, municipal utilities have made significant progress in reducing them. It further noted that while there is evidence that “CSOs and SSOs may cause or contribute to environmental and human health impacts,” it is “difficult to establish a cause-and-effect relationship between” human illnesses or water quality impacts/impairments and overflows.<sup>16</sup>

Since the 2004 Report, EPA has continued its progress at “addressing” CSOs—indeed making it an “enforcement priority.” Its 2015 statistics (which are more extensively detailed in [Section III, pages 55-56](#)) document that 201 of the 213 large CSO communities in the U.S. are presently either subject to an enforceable order or have an approved LTCP. Of the remaining 12 systems, enforcement actions have been initiated against 8. EPA recently renewed this enforcement priority initiative for 2017-19.<sup>17</sup> The CSO consent decrees that have been entered provide examples of the types of remedial measures and terms that utilities can expect to see in the CSO enforcement context. [Section IV, page 75](#) provides more extensive details on the terms of such orders; however, the following are several CSO decrees to consider:

- ✓ **Kansas City, Missouri**
- ✓ **Cincinnati Metropolitan Sewer District, Ohio**
- ✓ **Indianapolis, Indiana**

- ✓ District of Columbia Water and Sewer Authority
- ✓ Northeast Ohio Regional Sewer District
- ✓ City of Mishawaka, Indiana

## C. Sanitary Sewer Systems

### 1. Sanitary Sewer Overflows

A [sanitary sewer system](#) (SSS) is a wastewater collection system owned by a municipality designed to convey only sanitary wastewater to a POTW. SSSs are not built to accept stormwater, per se (although they are designed to withstand increased wet weather flows), and therefore do not generally include designed relief outlets (although a few SSS systems do have engineering-designed SSO points that have been NPDES permitted much like CSOs). An SSO is a discharge of untreated wastewater from a SSS that occurs before the wastewater can reach the POTW headworks. SSOs generally occur at unexpected locations within the collection system, such as manholes. There are many causes of SSOs, including [inflow and infiltration](#) (I/I) of groundwater or stormwater, root or grease blockages, and pipe structural failures, among others.

In line with the rationale applied to CSOs in *Montgomery Environmental Coalition v. Costle*<sup>18</sup>, SSOs arguably are not subject to effluent standards based on secondary treatment. EPA asserts, however, that because SSOs are not designed to occur in the wastewater collection system, they instead are the result of declining collection system conditions, inadequate collection system design or maintenance, or related system management problems. EPA believes that SSS flows are meant to reach the POTW for secondary treatment, and thus any SSO is a violation of the standard NPDES permit condition requiring proper operation and maintenance of the POTW's system. However, EPA's regulation and enforcement in this area continues to present uncertainties for utilities.<sup>19</sup> Not only is there no definitive direction from the courts on the basis for a blanket SSO prohibition, but there remains no final SSO regulation despite the fact that SSOs remain an EPA enforcement target.

In 1995, EPA convened an Urban Wet Weather Flows Advisory Committee pursuant to the Federal Advisory Committee Act (FACA), which was to assist EPA in the development of cost-effective solutions for controlling the environmental and human health impacts of urban wet weather flows with minimal regulatory burden.<sup>20</sup> By October 1999, the FACA recommended that EPA move forward with a proposed SSO rule.

A proposed SSO rule was signed by EPA Administrator Browner in January 2001 but was not released for public comment and was almost immediately withdrawn from the Office of the Federal Register by the incoming Bush Administration for further review. However, it was anticipated based upon public dialogue at the time that elements of the proposed SSO rule were to include:

- ✓ A prohibition on all SSOs;
- ✓ Expansion of NPDES permitting to thousands of sanitary sewer collection systems for the first time;
- ✓ A narrowing of the ability to argue for an affirmative defense for "unavoidable" overflows, which may be available under the existing NPDES permit regulations;
- ✓ Requirements that SSSs implement [capacity, management, operation, and maintenance requirements](#) (CMOM) ;
- ✓ A requirement that when peak flows are leading to repeated overflows, collection

system operators will develop [system evaluation and capacity assurance plans](#) (SECAPs) to demonstrate how they will address problem segments;

- ✓ New SSO reporting and recordkeeping requirements; and,
- ✓ Public notification of SSOs.

The anticipated federal CMOM program would have also likely required compliance with five performance standards:

1. Proper management, operation and maintenance, at all times, of the parts of the collection system that the permittee owns or over which it has operational control;
2. Adequate capacity to convey base and peak flows;
3. Stop, and mitigate the impact of SSOs;
4. Provide notification to parties with a reasonable potential for exposure to pollutants associated with the overflow event; and,
5. Develop a written summary of the utility's CMOM program and make it, and program audits, available to the public upon request.

Since then, EPA has not proposed another draft SSO rule. As such, the lack of clear direction on these issues led to varied treatment of SSOs across the country. For example, EPA Region VI's Water Management Division's *Strategy for Wet Weather Sanitary Sewer Overflows* (Aug. 29, 1994) tracks EPA's CSO Policy and would allow for discharges from SSOs at levels less stringent than effluent limitations based upon secondary treatment levels. Under this approach, permittees with SSOs must develop and implement a SSO program that ultimately will achieve compliance with its NPDES permit and the CWA. In the interim, permittees were to undertake a program to accurately characterize their sewer system, implement the minimum controls analogous to those in EPA's CSO Policy, and develop a control plan to eliminate SSOs. Region VI's approach would consider wet weather facilities under specified conditions. However, wet weather facilities must meet water quality standards and allow for future expansion if a higher level of treatment is necessary in the future. The permit for the new discharge point would also allow for modification or termination if there is an increase in the volume or a change in the character of discharged pollutants.

Region IV pioneered the CMOM approach that gives sewer operators and personnel a framework to ensure that SSOs are identified and eliminated in a systematic manner through implementation of CMOM components. CMOM establishes a basic duty of the sewer operator to "properly manage, operate, and maintain" the collection system.

As seen over time, Region IV's approach has been more widely accepted within EPA, as EPA now routinely incorporates CMOM requirements into consent decrees. This national effort has followed EPA guidance materials issued over a decade ago. In January 2005, EPA's national Office of Enforcement and Compliance Assurance issued a comprehensive "*Guide for Evaluating CMOM Programs at Sanitary Sewer Collection Systems*." Further, in April 2005, EPA informally circulated a "*Fact Sheet*" and "*Model Permit Language*" for SSOs to state permitting agencies. The goal of these documents is to explain that NPDES permit authorities should be improving implementation of NPDES permit requirements for SSOs and sanitary sewer collection systems by clarifying how conditions in NPDES permits for discharges from POTWs apply to the collection system serving the treatment works. The *Model Permit Language* suggests that POTW permits should include:

- (1) Reporting, Recordkeeping and Public Notification requirements;
- (2) CMOM programs; and
- (3) SECAP requirements similar to those described in the draft SSO rule.

EPA also recommends that states consider the issuance of [satellite system](#) permits to collection system operators that do not operate POTWs and are not covered by NPDES permits. The “*Fact Sheet*” and “*Model Permit Language*” were released by the Agency in final form on August 20, 2007. Some of the issues raised by the regulated community with respect to the *Fact Sheet* and *Model Permit Language* are:

- ✓ Whether “overflows” should include basement backups;
- ✓ Whether an absolute prohibition or “zero discharge” standard is appropriate for sanitary sewer collection systems;
- ✓ Whether satellite collection systems can be required to obtain a NPDES permit based on the mere “potential” to discharge; and
- ✓ Whether formal rulemaking is required to implement EPA’s recommendations.

In the years since the 2005 CMOM guidance documents, EPA has taken steps to explore how CMOM may be implemented in both enforcement and permitting regimes. In June 2010, EPA held a series of “listening sessions” directed at obtaining information from the public on whether EPA should modify the NPDES regulations to establish specific SSO permit conditions for POTWs and clarify the regulatory framework applicable to municipal satellite collection systems.<sup>21</sup> EPA’s position as to “operation and maintenance” obligations via permits has been made clear in its briefs on the language, as EPA has stated that “[e]ven if the failure to properly operate and maintain a facility does not result in a direct discharge to the waters of the United States, it may be *evidence of defects* in the operation and maintenance of the [system] that *may result* in a spill or *create a risk of spills* to such waters.”<sup>22</sup> As such, even in the absence of additional permit language, permittees may anticipate that system operation and control is a basis for EPA enforcement interest, even in the absence of a discharge to jurisdictional water.

EPA has continued its progress at addressing SSOs through enforcement efforts. EPA’s 2015 statistics (which are more extensively detailed in [Section III, pages 55-56](#)) document that EPA has addressed through an enforceable order or other mechanisms 914 of 1103 large SSO communities (defined as SSSs producing >10 MGD of wastewater effluent) in the U.S. Of the remaining 189 systems, enforcement action has been initiated against 83 communities. Like the CSO decrees, the SSO consent decrees that have been entered provide examples of the types of remedial measures and terms that utilities can expect to see in an SSO enforcement context. [Section IV, page 77](#), provides more extensive details on the terms of such decrees; however, the following are several SSO decrees to consider:

- ✓ **Hampton Roads Sanitation District**
- ✓ **Sewerage and Water Board of New Orleans**
- ✓ **Boston Water and Sewer District**
- ✓ **City of Baltimore, Maryland**
- ✓ **East Bay Municipal Utility District**
- ✓ **San Antonio Water System**

## 2. Blending

### a. Blending in the Context of SSSs

Blending, also referred to as slipstreaming or recombination, is a peak wet weather flow management practice used by POTWs at the treatment plant. During peak wet weather conditions, a POTW receives significantly greater flow volumes than in dry weather. Most treatment plants were not built to store this excess flow for later treatment, and processing the peak flow through the biological unit would result in “wash out” of the unit and loss of functionality for days and even weeks. Thus, in a peak flow situation, a POTW operator (following primary treatment) will divert the flow exceeding the biological unit’s capacity, and then blend the diverted flow with flow that has been through the biological unit. The POTW’s effluent limitations are met even when blending is utilized. Historically, blending designs have been funded by the federal government in construction grants to POTWs. Some POTWs may have their blending practice referenced in their NPDES permit, while others may not.

However, EPA’s position on “blending” in the SSS context has changed over time from one of allowance to outright prohibition, unless there is no feasible alternative. EPA’s initial position was set forth in a December 21, 2001 draft memorandum that laid out five criteria for approving blending in a POTW NPDES permit without the practice being subject to the stringent bypass regulation at 40 CFR § 122.41(m).<sup>23</sup> The 2001 draft memorandum recognized the reality that “blending” was widely utilized and permitted by NPDES permitting authorities.

EPA’s 2001 “blending” policy was formally proposed in 2003.<sup>24</sup> The 2003 *Blending Policy* confirmed that blending “would not be a prohibited bypass and could be authorized in an NPDES permit” so long as the discharge met all applicable effluent limitations and water quality standards, passed through a primary treatment unit prior to discharge and only be routed around a biological or advanced treatment unit when the capacity was being fully utilized.<sup>25</sup> Indeed, several wet weather decrees evidence this position on blending:

- ✓ The **Knoxville, Tennessee**, decree (2004), at ¶15, incorporates the definition of “Diversion” from the city’s existing NPDES permit as “the intentional rerouting of wastewater within a treatment facility away from a biological portion of the treatment facility,” and states that “a Diversion is permissible only when necessary to protect the active biomass from a Washout due to peak flow events and when this action does not cause effluent limitations to be exceeded.” The city is required to develop a “Process Controls Program” (PCP) for use during wet weather operating conditions at its Wastewater Treatment Plants (WWTPs), and stipulated penalties will apply to any Diversion that is in violation of the approved PCP.
- ✓ The decree (2006) for the **City of Chicopee, Massachusetts**, requires the city to develop a “High Flow Management Plan” to evaluate the maximum flow that can be provided full secondary treatment at the city’s WWTP, to operate its WWTP in accordance with that plan, and to install disinfection for wastewater bypassed around secondary treatment during wet-weather conditions. For the purpose of determining compliance with NPDES permit mass discharge limits, only the mass of pollutants discharged from the secondary treatment process are included; the mass discharge from the secondary bypass is not considered. The decree also contains, as Appendices, copies of historical correspondence documenting the review and approval of the secondary bypass scenario by the state’s Department of Environmental Protection.
- ✓ The state administrative order (2006) for the **City of Little Rock, Arkansas**, contains extensive “Findings of Fact” that incorporate the definition of “Bypass”



from the city's existing NPDES permit and note that the city currently routes wastewater flows around the biological processes only when necessary to prevent damage to the WWTP and mitigate service backups and SSOs, without causing any violations of permit limits or state water quality standards.

However, in the face of concerted opposition from various environmental interest groups, EPA abandoned the 2003 *Blending Policy*. EPA issued a new proposed policy for public comment in December 2005.<sup>26</sup> The 2005 proposed “*Peak Wet Weather Discharges*” policy took a modified position stating that blending “diversions” were considered “bypasses” and would only be allowed “if there were no feasible alternatives.”<sup>27</sup> The 2005 *Peak Wet Weather Discharges Policy* also prohibited the use of peak flow management techniques in systems where high peak flows are due to poor system maintenance or a lack of investment in upgrades to improve treatment capacity.

However, the 2005 *Peak Wet Weather Discharge Policy* was never finalized by the Agency. Indeed, in 2010, EPA sought additional comment on the policy as part of its listening sessions on a new SSO rule asking for information about the “limited number of cases where infrequent discharges ... have been authorized and approved by an NPDES authority” and also whether it should finalize the 2005 *Peak Wet Weather Discharge Policy*.<sup>28</sup>

Even though the 2005 *Peak Wet Weather Discharge Policy* was not formally finalized or adopted, EPA has subsequently taken the position that it intends to follow it and treat blending as an illegal “bypass” subject to the stringent bypass regulations at 40 CFR § 122.41(m). Recent decrees follow the prohibition of the 2005 *Policy* and it remains an issue in NPDES permits as well<sup>29</sup>:

- ✓ The decree for the **City of Cambridge, Ohio**, incorporates the definition of “bypass” from 40 CFR § 122.41(m)(1)(i), and states that it shall include “the discharge of any wastewater from the POTW Treatment Plant that has not received secondary treatment.” The city is subject to a stipulated penalty of \$3,500 for each calendar day on which a bypass occurs.

EPA's more explicit change in position was also the subject of litigation in the United States Court of Appeals for the Eighth Circuit in *Iowa League of Cities v. EPA*<sup>30</sup>. The Eighth Circuit vacated EPA's position prohibiting blending because it had not adopted the 2005 Peak Wet Weather Discharge Policy in accordance with the [Administrative Procedures Act](#) (APA), 5 U.S.C. 706(2)(D). The Court also held that EPA's position prohibiting blending exceeded its statutory authority because EPA was seeking to regulate an internal flow within a facility and not the flow at the point of discharge. EPA sought rehearing of this decision, which was denied, and EPA opted not to seek review by the United States Supreme Court. Accordingly, this ruling remains in place.

However, EPA indicated shortly after the decision in *Iowa League of Cities* that it considers this decision to be binding only in the Eighth Circuit. Outside the Eighth Circuit, EPA intends to make a case-by-case determination on blending. More recently, the Department of Justice has argued on the EPA's behalf that EPA has yet to make a decision on whether to following to Eighth Circuit decision nationwide. In response to these mixed assertions, the Center for Regulatory Reasonableness petitioned the D.C. Circuit in 2014 to review EPA's alleged modification of NPDES rules relating to blending without formal rulemaking.<sup>31</sup> Specifically, the Center challenged EPA's decision to “again impose the previously vacated re-interpretations of its ‘bypass’ regulation (40 C.F.R. § 122.41(m)), secondary treatment rule (40 C.F.R. Part 133).

. . . and providing more stringent implementation, imposition, and enforcement of nationally applicable permitting rules for facilities outside the Eighth Circuit and requiring approved states . . . to meet more stringent requirements.”<sup>32</sup> The case is still pending before the D.C. Circuit, with oral argument scheduled for late 2016. NACWA filed an *amicus brief* in October 2015 stating its view that the Eighth Circuit decision should be binding nationwide.

To date, no other court has addressed the scope of *Iowa League of Cities*. As a result, further litigation is possible in other circuits as EPA’s prohibition will continue to be in play. NACWA expects this area of law to continue to develop as such litigation makes its way through the courts or EPA decides to formalize its blending prohibition.

## b. Blending in the Context of CSO Systems

Blending for CSO systems continues to be governed by Section II.C.7 of the 1994 *CSO Policy*, which requires the permittee to submit a “no feasible alternatives” analysis demonstrating that the secondary treatment system is properly operated and maintained, that the system has been designed to meet secondary limits for flows greater than the peak dry weather flow, plus an appropriate quantity of wet weather flow, and that it is either technically or financially infeasible to provide secondary treatment at the existing facilities for greater amounts of wet weather flow. The feasible alternative analysis must include consideration of enhanced primary treatment (e.g., chemical addition) and non-biological secondary treatment. Furthermore, the permit must require that all wet weather flows passing the headworks of the POTW will receive at least primary clarification, solids and floatables removal and disposal, and disinfection where necessary, and any other treatment that can reasonably be provided.

Many utilities believe that EPA is taking too restrictive a position as to a NFA’s required content and which party has the burden. Recent negotiations over NFA analyses in some cities have become increasingly complex, as permittees and regulators struggle with the issue of what “other” forms of treatment can “reasonably be provided” for flows that exceed the secondary capacity of the treatment works. High Rate Treatment using proprietary systems for ballasted flocculation are gaining favor with some state permitting authorities and EPA regions.

- ✓ The 2007 consent decree for the **Allegheny County Sanitary Authority (ALCOSAN)** contains extensive requirements in Section VI.L and Appendix C for the preparation and submittal of a “Wet Weather Routing Plan,” as well as a detailed “Bypass Demonstration” in the event that ALCOSAN wishes to propose that it be allowed to bypass all or part of the primary or secondary treatment process at its POTW. In addition to incorporating the basic principles from the *CSO Policy* described above, Appendix C specifies that ALCOSAN shall consider additional treatment including chemically-assisted clarification, ballasted flocculation, lamella clarification, micro filtration, and dissolved air flotation. The peak flows generated by the sanitary sewer system, plus 125% of peak dry weather flow from the combined sewer system, must receive full secondary treatment.

## D. Stormwater Management

In 1987, Congress amended the CWA to require implementation of a comprehensive national program for addressing stormwater discharges.<sup>33</sup> Pursuant to this legislation, which is codified at 33 U.S.C. §

1342 (CWA §402), EPA developed a stormwater permitting program for [municipal separate storm sewer systems](#) (MS4s).<sup>34</sup> Municipal separate stormwater sewer systems are defined as:

A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) ... including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, ...or a designated and approved management agency under section 208 of the Clean Water Act that discharges into waters of the United States;
- (ii) Designed or used for collecting or conveying stormwater;
- (iii) Which is not a combined sewer; and
- (iv) Which is not part of a Publicly Owned Treatment Work (POTW) as defined at 40 CFR §122.2.<sup>27</sup>

In contrast to the water quality standards based mandates of other sections of the CWA, the MS4 permit program requires reduction of pollutants to the “maximum extent practicable” (MEP). Specifically, MS4 permits “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods,” meaning that MEP involves implementation of best management practices (BMPs) designed to reduce the discharge of pollutants through stormwater runoff, rather than numeric limits on specific pollutants. In interpreting this section, courts have concurred that MS4s are not required to strictly comply with water quality standards and that they are not subject to the same numeric limits that apply to other dischargers.<sup>37</sup>

EPA implemented its MS4 stormwater program in two phases. Final regulations governing Phase I were promulgated by EPA on November 16, 1990.<sup>38</sup> The Phase I regulations required large and medium MS4s (those serving populations >250,000 and >100,000, respectively) to apply for NPDES permit coverage between November 1991 and April 1994. EPA issued regulations for Phase II of the federal stormwater permit program on December 8, 1999.<sup>39</sup> The Phase II regulations require smaller communities (those <100,000 in population) in urbanized areas as delineated by the U.S. Census Bureau to obtain stormwater permit coverage as well as those smaller MS4s designated by a NPDES permitting authority as having an adverse impact on water quality.

Phase I MS4 permittees are typically subject to individual NPDES permits issued to either a single permittee or groups of co-permittees. The permit application requirements at 40 C.F.R. § 122.26(d) require information on the physical description of the MS4, the legal authority of the operator, a characterization of surrounding sources and pollutants found in the MS4s’s stormwater discharge and a description of fiscal resources. Phase I permittees must also identify industrial sources that discharge to the system, including municipal landfills, sources of hazardous materials, and “industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system.”<sup>40</sup> The MS4 must also develop a monitoring and control program to address these industrial sources.<sup>41</sup>

Most Phase II MS4s, on the other hand, are covered under general permits issued by their respective state agencies. *See* 40 C.F.R. § 122.30-37. NPDES permitting authorities were required to issue general permits for Phase II MS4s by December 9, 2002. “Automatically designated” small MS4s—those in urbanized areas—were to obtain coverage within 90 days. However, NPDES permitting authorities had the ability to phase in coverage for other small MS4s determined to have an adverse impact on water quality in

accordance with a schedule that is consistent with the State’s watershed permitting approach.

Both large and small MS4s are required to develop [stormwater management plans/programs](#) (SWMPs) that are designed to “reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods.”<sup>42</sup>

In addition to the requirements noted above, the SWMPs must also address six minimum control measures:

- ✓ Public education and outreach on stormwater impacts;
- ✓ Public involvement;
- ✓ Illicit discharge detection and elimination;
- ✓ Construction site runoff control;
- ✓ Post-construction storm water management in new development and re-development; and
- ✓ Good housekeeping/pollution prevention activities.

MS4s are required to implement the SWMP using appropriate [best management practices](#) (BMPs). The specific requirements in MS4 permits vary greatly around the country. Some MS4 permits contain broad requirements that outline the basic SWMP components the permittee is required to implement, giving the permittee the ability to develop a program to meet the broad requirements. Other MS4 permits are more prescriptive and detail the minimum activities and BMPs for each program element. However, 40 CFR 122.26(d)(2)(v) and 122.34(g) require all MS4s to assess the effectiveness of their stormwater programs. As described above, municipal stormwater programs are required to reduce the discharge of pollutants to meet the MEP standard and satisfy the water quality requirements of the CWA.

Based in part on the recommendations of the National Research Council report, *Urban Stormwater Management In the United States*, which was released in 2008 (and is discussed in [Section II, page 45](#) and [Section VI.G, page 159](#)), EPA announced its intent to initiate rulemaking, described as a plan to “reduce stormwater discharges from new development and redevelopment and make other regulatory improvements to strengthen its stormwater program.”<sup>43</sup> EPA stated that the scope of the rulemaking would likely include:

[R]egulatory options that would strengthen the stormwater program, including establishing specific post-construction requirements for stormwater discharges from, at a minimum, new development and redevelopment. EPA does not currently regulate stormwater discharges from [these sources] directly. However, both Phase I MS4s and Phase II MS4s are required through the MS4 permit to address stormwater discharges from new development and redevelopment in their SWMPs, but the regulations do not include specific management practices or standards to be implemented<sup>44</sup>.

While noticing its intent to develop a rule, EPA repeatedly delayed issuing a draft rule. Instead, EPA’s Office of Water announced on March 19, 2014 that it is deferring development of the stormwater rule in lieu of more targeted, less regulatory-driven efforts to help utilities better control stormwater runoff. In a statement to the press, EPA explained it is “updating [its] stormwater strategy to focus now on pursuing a suite of immediate actions to help support communities in addressing their stormwater challenges and deferring action on rulemaking to reduce stormwater discharges from newly developed and redeveloped sites or other regulatory changes to its stormwater program.”

0

EPA's alternative plans for regulatory/policy changes in this area (other than the draft rule) are not clear at present. However, EPA has renewed its national enforcement initiative for 2017-2019 that focuses on keeping contaminated stormwater out of waters of the U.S. Additionally, stormwater management remains an enforcement priority for EPA and as such, stormwater requirements are increasingly being included in CWA enforcement matters. Examples of CWA consent decrees that include stormwater components (or focus entirely upon the MS4 system) include the following:

- ✓ **Unified Government of Wyandotte County/Kansas City**
- ✓ **Boston Water and Sewer Commission**
- ✓ **City of Rockford, Illinois**
- ✓ **Salt Lake County, Utah**
- ✓ **City of Revere, Massachusetts**
- ✓ **City of Newport, Rhode Island**
- ✓ **Sewerage and Water Board of New Orleans**
- ✓ **Lexington Fayette, Kentucky**

## E. Integrated Planning

Over the last 40 years, communities have been responding to a growing list of CWA regulatory mandates to improve the nation's water quality. Public wastewater utilities across the country are required to spend substantial resources to comply with CWA mandates under EPA's NPDES, CSO, SSO and stormwater programs, in addition to Safe Drinking Water Act and other federal/state environmental obligations. Communities also expect to face significant future costs to control nutrients and other contaminants of emerging concern as well as to address sustainability and resiliency requirements in response to climate change-induced risks. The totality of these mandates, and their associated financial impact, is staggering for many utilities with compliance costs ranging in the billions of dollars (and come at a time when federal and state funding options have become more limited). These costs will ultimately be borne by the ratepayers - the residents and businesses of the utility's community. In light of the financial hardships that many communities regularly face, and in response to the advocacy efforts of NACWA, the U.S. Conference of Mayors, and member communities' feedback, EPA released the *Integrated Municipal Stormwater and Wastewater Planning Framework* in June 2012. The *Framework* affords communities an opportunity to organize and sequence compliance goals across regulatory platforms in a holistic and prioritized manner. EPA has often promoted the use of integrated planning as a practical tool for managing CWA obligations through both permits and enforcement orders, but because integrated planning is voluntary, the onus is often on the community to suggest and demonstrate that integrated planning is an appropriate solution in the enforcement context. Integrated planning can also be used to facilitate green infrastructure and other sustainable solutions to "manage stormwater as a resource, and support other economic benefits and quality of life attributes that enhance the vitality of communities." EPA has reported that 13 cities or utilities included integrated planning in their consent decrees, and that three of these communities have implementation schedules of at least 20 years.<sup>45</sup>

It is important to note that integrated planning approach does not alleviate CWA compliance obligations, but rather is a tool allowing flexibility through appropriate sequencing of work. The *Integrated Planning Framework* and subsequently released Frequently Asked Questions (FAQs) outline how an Integrated Plan may be incorporated into both NPDES permits and enforcement actions. Notably, given the importance of affordability, the *Framework* and *FAQs* clarify that costs associated with drinking water, air, and land issues can be considered when evaluating the overall financial health of a community and developing a plan schedule.

Utilities may employ the integrated planning process to sequence work in a way that is most cost-effective and efficient for its particular needs—essentially creating a customizable solution for its community, particularly if the utility can demonstrate early environmental benefits that coincide with the community’s priorities. EPA has stated that the CWA and its implementing regulations have flexibility to permit use of this tool and as such, it has encouraged its Regions and states with delegated CWA authority to work with utilities on developing Integrated Plans. It also does not restrict utilities from seeking other forms of relief (such as variances) and in fact, may actually be of assistance in those contexts.

Implementation of integrated planning is still in its early years, and as such, it is yet to be determined how extensively it will be used and how effective it will be in practice as a management tool for utilities. Also undetermined is how regulators will actually respond to its use in real-world applications as opposed to the hypothetical. In late Fall 2016, however, Congress was working different passed versions of the Water Resources Development Act (WRDA), which, among other provisions, would codify the 2012 integrated planning framework. A number of communities have developed such plans and EPA/state regulator responses will set the stage for the long-term effectiveness of integrated planning. Several communities, including **Lawrence, Kansas** and **Columbus, Ohio** have received formal agreement upon a specific Integrated Planning approach (from state regulators), whereas others, including Burlington, Vermont, have received EPA-sponsored technical assistance to assist in the development of integrated plan components. Further, an increasing number of Consent Decrees now include “integrated planning” provisions with various off-ramps that would provide a utility with some degree of flexibility to revisit decree requirements alongside other CWA obligations when a plan is developed. (see [Section IV.L, page 118](#)). The following decrees include integrated planning terms or options:

- ✓ **City of Seattle, Washington**
- ✓ **King County, Washington**
- ✓ **The Unified Government of Wyandotte County and Kansas City**
- ✓ **Bangor, Maine**
- ✓ **Lima, Ohio**

---

## Section One Endnotes

- <sup>1</sup> See Rivers and Harbors Act of Sept. 19, 1890, § 6 (1890) (prohibiting actions to “cast, throw, empty, or unlade, or cause, suffer, or procure to be cast . . . gravel, earth, rubbish, wreck, filth, . . . refuse, or any other waste of any kind” into navigable waters).
- <sup>2</sup> The term POTW is a well-established term of art in the context of municipal wastewater collection which refers to the actual treatment facility or plant; however, it can also be used to refer to the municipal operator as well. Because municipal wastewater operators are now encompassing more than just collection and treatment of sewage, there is a movement underway as detailed in [Section VI, page 98](#) to change the nomenclature from POTWs to a term that more adequately describes these broader operations, such as Water Resource Recovery Facility. However, given the pervasive usage of this term, we will continue to use it herein.
- <sup>3</sup> See United States Government Accountability Office, [Report to the Ranking Member, Subcommittee on Environment and the Economy, Committee on Energy and Commerce, House of Representatives: WATER INFRASTRUCTURE Information on Selected Midsized and Large Cities with Declining Populations](#), 51 n. 72 (September 2016) (“GAO Report”).
- <sup>4</sup> The term CSO in wet weather vernacular is frequently used to refer to the discharge outfall, the overflow, the substance of the overflow and the conveyance itself. The term [SSO](#) is used in a similar manner, although its use focuses primarily upon the overflow/overflow substance.
- <sup>5</sup> *Montgomery Environmental Coalition v. Costle*, 646 F.2d 568, 592 (D.C. Cir. 1980).
- <sup>6</sup> 59 Fed. Reg. 18,688 (April 19, 1994).
- <sup>7</sup> *Id.*
- <sup>8</sup> 59 Fed. Reg. at 18,689; see also 1989 National Combined Sewer Overflow Control Strategy, 54 Fed. Reg. 37,371 (Sept. 8, 1989).



- <sup>9</sup> 59 Fed. Reg. at 18,691.
- <sup>10</sup> 59 Fed. Reg. at 18,691-95.
- <sup>11</sup> “Major permittee” is an undefined term in the *CSO Polity*; however, in NPDES permit forms, EPA traditionally regards POTWs with a design flow greater than 1.0 million gallons per day (MGD) or a service population above 10,000 as “major.”
- <sup>12</sup> See NACWA [Legal Alert](#) (June 2004).
- <sup>13</sup> Report to Congress: Implementation and Enforcement of Combined Sewer Overflow Control Polity, EPA 833-R-01-003 (Dec. 2001).
- <sup>14</sup> Report to Congress on Impacts and Control of Combined Sewer Overflows and Sanitary Sewer Overflows, EPA B33-R-04-001 (Aug. 2004).
- <sup>15</sup> *Id.* at ES 5. The 2004 Report provided estimates of the annual volumes of CSOs and SSOs, a modeled estimate of the number of illnesses caused each year by overflows, and an estimate of the resources that would be needed to further control overflows.
- <sup>16</sup> *Id.* at 10-1, 6-1.
- <sup>17</sup> EPA Announces National Enforcement Initiatives for [2017-2019], February 18, 2016, available at <https://yosemite.epa.gov/opa/admpress.nsf/0/25662047ebab45a085257f5d0071b4a0> (last visited Aug. 27, 2016).
- <sup>18</sup> 646 F.2d.568 (D.C. Cir. 1980).
- <sup>19</sup> As detailed in [Section IV.A, page 88](#), municipalities disagree with EPA that basement backups or other releases that do not reach surface waters constitute SSOs because they are not discharges to waters of the U.S. (or State). However, EPA continues to seek their inclusion in the definition of SSOs in SSO consent decrees.
- <sup>20</sup> 60 Fed. Reg. 21,189 (May 1, 1995).
- <sup>21</sup> 75 Fed. Reg. 30,395 (June 1, 2010).
- <sup>22</sup> Amicus Curiae Brief of the United States of America in Opposition to the City and County of Honolulu’s Motion to Dismiss Plaintiffs’ Second Claim, filed July 7, 2008, at 18 (emphasis added).
- <sup>23</sup> Draft Memorandum from G. Tracy Mehan, III, Assistant Administrator, EPA, entitled “*NPDES Requirements for Municipal Treatment During Wet Weather Conditions*” (Dec. 2001).
- <sup>24</sup> 68 Fed. Reg. 63,042 (Nov. 7, 2003).
- <sup>25</sup> *Id.* at 63,049-50.
- <sup>26</sup> 70 Fed. Reg. 76,013 (Dec. 22, 2005).
- <sup>27</sup> *Id.* at 76,016.
- <sup>28</sup> 75 Fed. Reg. 30,395, 30,401 (June 1, 2010).
- <sup>29</sup> Some states have likewise taken the position that NFA requirements are necessary to justify blending.
- <sup>30</sup> 711 F.3d 844 (8th Cir. 2013).
- <sup>31</sup> Petition for Review, *Ctr. for Regulatory Reasonableness v. Env’tl. Prot. Agency*, No. 14-1150 (D.C. Cir. Aug. 12, 2014).
- <sup>32</sup> *Id.* at 2.
- <sup>33</sup> No. 11-3412 (86 Cir. 2013)
- <sup>34</sup> 40 CFR §122.26.
- <sup>35</sup> 40 CFR §122.26(b)(8).
- <sup>36</sup> 33 USC §1342(p)(3)(B).
- <sup>37</sup> See *Defenders of Wildlife v. Browner*, 191 F. 3d 1159 (9th Cir. 1999).
- <sup>38</sup> 55 Fed. Reg. 47,990.
- <sup>39</sup> 64 Fed. Reg. 68,722.
- <sup>40</sup> 40 C.F.R. § 122.26(d)(2)(iv)(C).
- <sup>41</sup> *Id.*
- <sup>42</sup> 40 C.F.R. § 122.26(d)(2)(iv).
- <sup>43</sup> 74 Fed. Reg. 68,617 (Dec. 28, 2009).
- <sup>44</sup> *Id.* at 68620.
- <sup>45</sup> GAO Report at n. 72.

# Section Two

## II. Policies and Guidance Relevant to CWA Negotiations

Section II identifies various EPA policies and guidance regarding wet weather, stormwater and general enforcement issues. Many of these will be helpful for utilities to consider when faced with CWA enforcement. Other sections provide context and background on the relevant programs or an overview of EPA’s cumulative policies on a particular issue. This section provides a comprehensive list of federal documents related to CWA enforcement issues with some being more relevant in recent negotiations and decrees. For easy reference, the headings of the most significant documents appear in **green text**.

### A. Enforcement and Economic Burden

#### 1. 1994 CSO Policy

The 1994 [CSO Policy](#), which is codified at CWA § 402(q), remains the basis for CSO consent decree negotiations despite the passage of over two decades. EPA (as well as state agencies) continue to rely on its framework on issues ranging from the necessary level of CSO control to implementation scheduling and financial capability. Thus, understanding the components of this policy remains a critical first step for those entering negotiations.

Indeed, CSO communities should be aware of two special requirements set forth in the 1994 CSO Policy. First, the CSO Policy requires the inclusion of an “appropriate enforceable mechanism,” such as permits or administrative or judicial enforcement orders, to ensure implementation of a LTCP.<sup>1</sup> The CSO Policy states:

Unless the permittee can comply with all of the requirements of the Phase II permit, the NPDES authority should include, in an enforceable mechanism, compliance dates on the fastest practicable schedule for those activities directly related to meeting the requirements of the CWA. For major permittees, *the compliance schedule should be placed in a judicial order*.<sup>2</sup>

The CSO Policy also notes that:

If compliance with the Phase II permit is not possible, an enforceable schedule, consistent with the Enforcement and Compliance Section of this Policy, should be issued in conjunction with the Phase II permit which specifies the schedule and milestones for implementation of the long-term CSO control plan.<sup>3</sup>

Accordingly, the CSO Policy’s enforcement section emphasizes that EPA’s main focus in enforcing compliance with Phase II permits will be to incorporate the LTCP “through a civil judicial action, and administrative order, or other enforceable mechanism requiring compliance with the CWA and imposing a compliance schedule with appropriate milestone dates necessary to implement the plan.”<sup>4</sup> Specifically:

*In general*, a judicial order is the appropriate mechanism for incorporating the above provisions for Phase II. Administrative orders, however, *may* be appropriate for permittees whose long-term control plans will take less than five years to complete, and for minors that have complied with the final date of the enforceable order for compliance with their Phase I permit. If necessary, any of the nine minimum controls that have not been implemented by this time should be included in the terms of the judicial order.<sup>5</sup>

This discussion leaves open the possibility that administrative orders, rather than judicial consent decrees, may be used if the compliance schedule is less than five years in length or if the permittee is a “minor facility”<sup>7</sup>—a trend that we are seeing as EPA shifts focus to smaller communities (see [Section III.B, page 58](#)). However, the requirement to use either type of enforcement order, rather than relying on the permit alone, is qualified by the phrase “in general.” Therefore, given the *CSO Policy* codification at CWA § 402(q), POTWs can expect EPA to continue to argue that an enforcement order of some sort will typically be required. In addition, utilities should be mindful of the “diligent prosecution” requirements of the citizen suit provision of the CWA in evaluating the appropriateness of a particular enforcement agreement. (see [Section III.D, pages 68, 70](#) and [Section VI.B, page 155](#)).

Second, with regard to penalties, the *CSO Policy* states that:

At the time of the judicial settlement imposing a compliance schedule implementing the Phase II permit requirements, EPA will not seek penalties for past CSO violations from permittees that fully comply with the enforceable order requiring compliance with the Phase I permit and if the terms of the judicial order are expeditiously agreed to on consent. However, stipulated penalties for violation of the judicial order *generally* should be included in the order, consistent with existing Agency policies. Additional guidance on stipulated penalties concerning long-term CSO controls and attainment of WQS will be issued.<sup>8</sup>

This language makes clear that EPA will seek a civil penalty if a consent decree is not agreed to “expeditiously” and that stipulated penalties “generally” are to be included.<sup>9</sup>

Finally, the *CSO Policy* also remains the genesis of EPA’s position on financial capability for communities. The *CSO Policy* states that when developing the construction and financing schedule for implementation of CSO controls under a LTCP, a suite of factors are to be considered in assessing a permittee’s financial capability, including the following two factors that receive the most focus:

- 1) Median household income;
- 2) Total annual wastewater and CSO control costs per household as a percent of median household income.<sup>7</sup>

These two factors continue to be central to EPA’s financial capability analysis, which is more extensively detailed in EPA’s 1997 [Combined Sewer Overflows Guidance for Financial Capability Assessment and Schedule Development](#), and 2014 [Financial Capability Assessment Framework for Municipal Clean Water Act Requirements](#), discussed below.

## 2. 1995 Combined Sewer Overflows Guidance for Funding Options

In August 1995, EPA published [Combined Sewer Overflows Guidance for Funding Options](#).<sup>11</sup> This document is one of several prepared to foster implementation of the *CSO Policy* and describes options that may be available to fund the capital, debt service, and operational costs of CSO controls. It explains that the *CSO Policy* “contains four key principles to ensure that CSO controls are cost effective and meet CWA objectives.”<sup>12</sup> These principles are as follows: ”

- 1) Providing clear levels of control that would be presumed to meet appropriate health and environmental objectives;
- 2) Providing sufficient flexibility to municipalities, especially financially disadvantaged communities, to consider the site-specific nature of CSOs and to determine the most cost-effective means of reducing pollutants and meeting CWA objectives and requirements;

- 3) Allowing a phased approach to implementation of CSO controls considering a community's financial capability; and
- 4) Reviewing and revising, as appropriate, water quality standards and their implementation procedures when developing CSO control plans to reflect site-specific wet weather impacts of CSOs.<sup>13</sup>

The guidance provides an overview of major capital funding options available to permittees, funding mechanisms to meet annual costs, and a discussion on designing a funding solution. The primary capital funding options are: bonds, loans, grants, privatization, and other capital funding options (e.g., special reserves and special assessments). Funding options for annual CSO costs include fees, taxes, and miscellaneous (e.g., proffers, capacity credits, and fines and penalties). EPA suggests that permittees take the following three basic steps in determining a funding solution:

- 1) Assess the availability of state or federal grants for the community;
- 2) Evaluate local debt options including low interest State Revolving Fund (SRF) loans, revenue bonds, and General Obligation bonds to determine what options are available that provide sufficient funding levels, lowest interest costs, and acceptable repayment terms; and
- 3) Determine the effect of using user fees to fund annual costs in terms of the cost per household as a percent of median household income.<sup>14</sup>

### 3. 1995 Interim Economic Guidance for Water Quality Standards Workbook

EPA's [Interim Economic Guidance for Water Quality Standards Workbook](#) is intended for use by the states and regions in considering economics during the process of setting or revising water quality standards.<sup>15</sup> This includes pursuit of a [Use Attainability Analysis](#) (UAA) to potentially change a designated use of a waterbody. EPA explains:

The economic impacts to be considered are those that result from treatment beyond that required by technology-based regulations. All economic analyses of water quality standards should address only the cost of improving the water to meet water quality standards or the cost of maintaining water quality in high-quality waters.”<sup>16</sup> “A financial analysis of the discharger should be conducted to determine if the capital and the operating and maintenance costs of pollution control will have a substantial impact.”<sup>17</sup> For publicly-owned dischargers, “the financial impact analysis must consider the community’s ability to obtain financing and the general economic health of the community.” However, substantial financial impact alone is not sufficient to modify a use or grant a variance from water quality standards. Instead, an applicant must also “demonstrate that compliance would create widespread socioeconomic impacts on the affected community.”<sup>18</sup>

Chapter 2 of the *Workbook* provides details for evaluating substantial impacts on public-sector entities. To determine whether a “substantial impact” will result from a proposed project, the *Workbook* sets forth a five-step analysis:

- 1) Verify project costs and calculate the annual cost of the pollution control project;
- 2) Calculate total annualized pollution control costs per household;
- 3) Calculate and evaluate the utility preliminary “screener” score that only identifies those communities that will not experience a substantial impact;
- 4) Apply a secondary test that evaluates the community’s current financial and socioeconomic well-being; and

- 5) Assess whether the community falls within the “substantial impacts matrix.”<sup>19</sup>

If this test shows a potential for a substantial impact, the publicly-owned entity must then undertake a second analysis pursuant to Chapter 4 in the *Workbook* to determine whether there will be widespread socioeconomic impacts.<sup>20</sup> This test includes:

- 1) Defining the geographic area where project costs pass through to the local economy;
- 2) Considering the baseline economic health of the community; and
- 3) Evaluating how the proposed project will affect the socioeconomic well-being of the community.<sup>21</sup>

For public entities, a change in the following indicators may be considered: median household income, community unemployment rate, overall net debt as a percent of full market value of taxable property, percent of households below the poverty line, impact on community development potential, and impact on property values.<sup>22</sup>

#### 4. 1997 Combined Sewer Overflows Guidance for Financial Capability Assessment and Schedule Development

EPA’s [\*Combined Sewer Overflows-Guidance for Financial Capability Assessment and Schedule Development\*](#),<sup>23</sup> its 2014 [\*Financial Capability Framework for Municipal Clean Water Act Requirements\*](#) (see Sections II, pages 30 and 34), and the CSO Policy remain the most important documents for CSO communities to consider when facing EPA enforcement. The 1997 *Financial Capability Assessment Guidance* has two goals:

- 1) To provide a planning tool for evaluating the financial resources a permittee has available to implement CSO controls; and
- 2) To assist the permittee, EPA, and the NPDES authorities in developing CSO control implementation schedules.<sup>24</sup>

The guidance notes that “[a]ccording to the CSO Policy, an implementation schedule ‘may be phased based on the relative importance of adverse impacts upon WQS and designated uses, priority projects identified in the long-term plan, and on a permittee’s financial capability.’”<sup>25</sup> In evaluating the financial resources that a permittee has available to implement CSO controls, an assessment of “financial capability indicators” must be undertaken, which include: total annual wastewater and CSO control cost per household as a percent of median household income; bond ratings; overall net debt as percent of full market property value; unemployment; median household income; property tax revenue collection rate; and property tax revenues as a percent of full market property value. Notably, “[s]ince flexibility is an important aspect of the CSO Policy, permittees are encouraged to submit any additional documentation that would create a more accurate and complete picture of their financial capability.”<sup>26</sup>

The guidance outlines a two-tiered approach to determine a permittee’s capability to implement CSO controls. The first phase determines a “Residential Indicator” which is the permittee’s average cost per household for wastewater treatment and CSO controls as a percentage of the permittee service area median household income.<sup>27</sup> In order to be considered a “high” financial impact, under the guidance, this must be greater than 2 percent.<sup>28</sup> The second phase develops the aforementioned Financial Capability Indicators that serve to characterize a permittee’s financial capability as “weak,” “mid-range,” or “strong.”<sup>29</sup> The document’s Financial Capability Matrix combines the Residential Indicator and Financial Capability Indicators to give an overall assessment of financial capability.

The permittee’s financial capability (Low, Medium, or High), as well as other factors, may affect the CSO implementation schedule: “the schedules may be phased or extended to reflect the significance of various financial considerations, particularly financial capability.”<sup>30</sup>

Per the 1997 *Financial Capability Guidance*, where there is a Low Burden, implementation should be done on a normal engineering and construction schedule. Under a Medium Burden, the permittee may have up to 10 years to implement. Where CSO controls will cause a High Burden, the permittee may have up to 15 years to implement. EPA makes clear, however, that “[t]he time boundaries are not intended to replace the negotiations and deliberations necessary to balance all of the environmental and financial considerations that influence the site specific nature of the controls and implementation schedules.”<sup>31</sup> Indeed, while EPA initially took the position in many negotiations that a schedule longer than 20 years would not be permissible even for “high” burden communities, recent decrees evidence longer schedules have been negotiated (see [Sections IV.C.4, page 101](#); V.D., [page 139](#); and V.F., [page 143](#)).

EPA provided updates to the 1997 *Financial Capability Guidance* with its 2014 [Financial Capability Framework for Municipal Clean Water Act Requirements](#). Those updates maintain the median household income structure from the 1997 *Financial Capability Guidance*, while providing other clarifications, including clarifying the financial burdens associated with certain asset management costs, stormwater compliance impacts, and Safe Drinking Water Act compliance costs. (see [Sections II.A.9, page 34](#); V.D., [page 139](#); and V.F., [page 143](#))

## 5. 2000 Compliance and Enforcement Strategy for CSOs and SSOs

EPA’s [Compliance and Enforcement Strategy Addressing Combined Sewer Overflows and Sanitary Sewer Overflows](#)<sup>32</sup> provides background and context with respect to EPA’s CSO and SSO enforcement strategy, but will not likely be instrumental in actual enforcement discussions. The document gave EPA regional offices 60 days to develop a Compliance and Enforcement Response Plan to ensure that “CSO and SSO violations are properly addressed.”<sup>33</sup> For CSOs, each region was to establish a timetable for ensuring that all CSO communities are under an enforceable permit or administrative order requiring compliance with the NMCs and completion of a LTCP. Enforcement actions were to be taken according to pre-set priorities, including:

- ✓ Eliminating dry weather overflows;
- ✓ Implementation of the NMCs and development of LTCPs; and
- ✓ Correcting noncompliance with permits or past enforcement actions.

Further emphasis was placed on the impact of CSO discharges on receiving waters, including prioritizing areas with beach and shellfish bed closures, source water protection areas, impaired watersheds, and other sensitive areas.

For SSOs, the regions were to inventory all SSO violations and target 20 percent of priority systems on a yearly basis.<sup>35</sup> Initial inventories, compiled using any available tools, were to be completed by July 28, 2000. EPA recommended that the regions use the full range of enforcement options to “ensure that the appropriate remedy is undertaken by the permittee or municipality to correct all SSO problems.” Priorities were to be placed on SSOs in “priority watersheds,” where the receiving waters are “impaired,” in “environmental justice areas,” and in other sensitive areas. The strategy recommended using an inspection guidance document developed jointly by EPA’s [Office of Enforcement and Compliance Assurance](#) (OECA) and Region IV as an inventory and enforcement tool.<sup>36</sup> EPA suggests that the regions revise their SSO Response Plans when the SSO federal regulations



become available.

## 6. 2003 Memorandum on Negotiation of CSO Consent Decrees

On September 16, 2003, the Director of the Office of Regulatory Enforcement, in OECA, and the Chief of the Environmental Enforcement Section of the Department of Justice's (DOJ) Environment and Natural Resources Division, sent a [memorandum](#) to various offices throughout EPA headquarters and regions to address a number of important aspects of consent decrees for long-term remedial measures to address CSOs. The memorandum specified that the principal objective of all CSO negotiations between the enforcement authority and a municipality, or other defendant, is to reach agreement on a federal consent decree, which requires: (1) the development and implementation of a LTCP necessary to achieve compliance with the CWA, consistent with the *CSO Policy*; and (2) the implementation of the NMCs set forth in the *CSO Policy*. Again, this document is referenced primarily for background and context, but may not be instrumental in actual enforcement negotiations.

## 7. 2005 Memorandum on Guidelines for Federal Enforcement in CSO/SSO Cases

On April 10, 2005, the Acting Assistant Administrator of OECA and the Secretary Treasurer, Environmental Council of the States (ECOS), in their roles as Co-Chairs of the EPA-State CSO/SSO Workgroup, sent all ten EPA regions and the ECOS Compliance Committee a [memorandum](#) that included new guidelines for federal enforcement in CSO/SSO cases. The memorandum acknowledged that enforcement actions involving CSO and SSO violations are often highly complex and resource-intensive for EPA and authorized states. Stressing the need for EPA and the states to work together, the guidelines reflected the findings of a workgroup of state and EPA stakeholders that met to address these issues and provide greater clarity on when the federal government would pursue enforcement actions in CSO/SSO cases. The memorandum indicated that EPA was not introducing any new standards for federal CSO/SSO enforcement, but instead was reinforcing EPA's existing policies. This memorandum provides background and context, but will not be significant in actual enforcement negotiations.

## 8. 2013 Assessing Financial Capability for Municipal Clean Water Act Requirements

EPA's 2013 internal memorandum, [Assessing Financial Capability for Municipal Clean Water Act Requirements](#),<sup>37</sup> recognizes that the Agency is working with local governments on how to clarify the financial capability of a community when developing implementation schedules for CWA obligations. The memorandum was released in tandem with the [Integrated Planning Framework](#) discussed below.

The memorandum acknowledges the financial challenges being faced by local governments and agrees that it is "essential that long-term approaches to meeting CWA objectives are sustainable and within a community's financial capability."<sup>38</sup> It further suggests that its 1997 [Combined Sewer Overflows-Guidance for Financial Capability Assessment and Schedule](#) (discussed above) does in fact provide a flexible framework for considering site-specific factors in a financial capability assessment and, as such, "encourages communities to consider and present any other documentation of their unique financial circumstances, so that it may be considered as part of the analysis."<sup>39</sup> This information may include factors such as poverty rates, income distribution, late payments, terminations and average wastewater bill as a percentage of the median household income.

EPA also acknowledges that the "percentage of median household income" as discussed in the 1997 [Combined Sewer Overflows-Guidance for Financial Capability Assessment and Schedule](#), is "only one of many considerations that should be evaluated in determining the most appropriate schedule" and expects instead indicate that "the full range of financial indicators as well as municipal-specific information

will be considered when developing schedules.”<sup>40</sup> EPA previews that it is developing an “approach” for inclusion of such “additional community-specific information within a financial capability analysis.”<sup>41</sup> This approach will consider several elements, including:

- ✓ How to expand the use of benchmark indicators of household, community and utility affordability;
- ✓ How to meet the obligations of the CWA by utilizing existing flexibilities in the statute and implementing regulations to prioritize necessary investments;
- ✓ How rate structures present both limitations and opportunities;<sup>42</sup>
- ✓ How innovative financing tools, including public private partnerships, may be utilized;
- ✓ How to facilitate consistent policy implementation at EPA regional offices; and
- ✓ How other community factors (such as [Safe Drinking Water Act](#) (SDWA) requirements) should be considered in developing schedules.

## 9. 2014 Financial Capability Framework for Municipal Clean Water Act Requirements

In response to an ongoing dialogue between EPA, NACWA, the U.S. Conference of Mayors, and others, EPA distributed its final [Financial Capability Framework for Municipal Clean Water Act Requirements](#)<sup>43</sup> on November 24, 2014 to the ten EPA regional offices after more than a year of drafting and revising based on comments from stakeholders. The 1997 guidance on financial capability remains the starting point for all negotiations, but the new Framework stresses the important role that supplemental information may play in determining the final outcome. Most notably, EPA has indicated that clean water utilities, when evaluating financial capability using the 1997 Guidance, can include all wastewater and stormwater costs (including asset management costs) when considering the demands placed on median household income.<sup>44</sup> In addition, the Framework states that drinking water obligations may be submitted for consideration in analyzing financial capability.<sup>45</sup>

It is unclear exactly how or if the Framework was modified to reflect the recommendations made in a September 2014 [report](#) by the Environmental Financial Advisory Board. That report recommended a number of significant changes to EPA’s current approach to evaluating financial capability, but many of the Board’s more substantial comments were not reflected in the final Framework. Nevertheless, the Framework should prove very useful for NACWA members dealing with these issues.

Although the 2014 guidance afforded clarity as to the full suite of costs communities can include in their financial capability analysis, EPA has asked many communities to incorporate those costs and obligations into decrees. In many cases, EPA has interpreted language in the 2014 guidance that requires Communities to “demonstrate how the CWA work . . . will be implemented, including *appropriate assurances* that those expenditures will be made,” to mean that the work must be required under the decree to give such “assurances.”<sup>46</sup> From EPA’s perspective, this approach ensures that a financial capability analysis includes actual costs the community will incur, rather than an inflated estimate with wish list projects that may not come to fruition. This interpretation continues to develop, although utilities that present a financial capability analysis should anticipate that the projects presented (even if unrelated to SSO/CSO/effluent compliance) may become subject to remedial requirement negotiations. As such, communities should be prepared to articulate why certain costs will be incurred and the associated obligation “assurance” (to comply with permitting requirements, for example). In addition, utilities should attempt to keep decree obligations tied to a CWA violation nexus, rather than broadening a decree’s scope to incorporate programs and projects

that are best situated outside the framework of a court ordered settlement agreement.

## B. Wet Weather

Unlike some of the documents discussed in [Section II.A \(page 28\)](#), which were included to provide context and background, each document in this Section II.B remains vital in developing a wet weather response strategy. Between 1995 and 2012, EPA issued this series of documents to explain its approach on various aspects of wet weather management. Accordingly, each document remains EPA's fundamental guidance on that topic and should be afforded considerable attention.

### 1. 1995 Combined Sewer Overflows Guidance for Long-Term Control Plans

EPA's [Combined Sewer Overflows Guidance for Long-Term Control Plans](#)<sup>47</sup> is one of several guidance documents intended to support implementation of the *CSO Policy*. It provides guidance to utilities for the development of a comprehensive LTCP "that recognizes the site specific nature of CSOs and their impacts on receiving water bodies."<sup>48</sup> The LTCP "should include water quality based control measures that are technically feasible, affordable, and consistent with the CSO Control Policy."<sup>49</sup>

The document sets forth three steps in drafting a LTCP. First, the permittee must characterize the current conditions of the CSS and receiving waters. This involves analysis of existing data and monitoring and modeling of the CSS and receiving waters in order to establish the existing baseline of the system. Second, a permittee must develop and evaluate potential alternatives for CSO control. In evaluating these options, the LTCP "should provide flexibility to municipalities in recognition of the variable impacts of CSOs on water quality and the ability of different municipalities to afford varying levels of CSO controls."<sup>50</sup> This analysis will include cost/performance evaluations. In addition to financial considerations, evaluation of alternatives entails review of potential environmental issues, technical issues, and implementation issues. Nonetheless, "[a]s part of LTCP development, the ability of the municipality to finance the final recommendations should be considered."<sup>51</sup>

Finally, the permittee must select and implement the LTCP. This may entail engineering design and construction and will require development of a cost estimate and funding options. In developing an implementation schedule, the guidance recommends phased implementation with initial concern for sensitive areas and taking into consideration financial capability.

### 2. 1995 Combined Sewer Overflows Guidance for Nine Minimum Control Measures

In May 1995, EPA published its [Combined Sewer Overflows Guidance for Nine Minimum Controls](#)<sup>52</sup> in order to assist municipalities with implementation of the NMCs identified in the *CSO Policy* as minimum technology-based controls to address CSO problems that would not require extensive engineering studies or construction costs. Documentation of the implementation of these NMCs was required as soon as practicable, but no later than January 1, 1997.

As previously outlined, the NMCs set forth in the *CSO Policy* are:

- 1) Proper operation and regular maintenance programs for the sewer system and CSO outfalls;
- 2) Maximum use of the collection system for storage;
- 3) Review and modification of pretreatment requirements to ensure minimization of CSO impacts;
- 4) Maximization of flow to the POTW for treatment;

- 5) Elimination of CSOs during dry weather;
- 6) Control of solid and floatable materials;
- 7) Pollution prevention programs;
- 8) Public notification to ensure adequate notification of CSO occurrences and impacts; and
- 9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.<sup>53</sup>

This guidance provides descriptions of each of the NMCs as well as examples of control measures, considerations for implementation, and suggested documentation. This document remains the most relevant guidance on EPA’s approach to these measures.

### 3. 1999 Combined Sewer Overflows Guidance for Monitoring and Modeling

EPA’s [Combined Sewer Overflows Guidance for Monitoring and Modeling](#)<sup>54</sup> is another in a series of guidance documents to facilitate implementation of the *CSO Policy*. This document in particular provides for the role of monitoring and modeling in the development and implementation of a CSO control program and provides examples of data collection and CSS simulation. While the guidance is not a “how to,” “it is a set of guidelines that provides flexibility for a municipality to develop a site-specific strategy for characterizing its CSS operation and impacts and for developing and implementing a comprehensive CSO control plan.”<sup>55</sup> It emphasizes tailoring control plans, noting that large cities will have different needs than smaller CSSs and that communities will have varying degrees of knowledge regarding their CSS during wet weather events. Modeling and monitoring performed in accordance with this document assists in characterizing the CSS and, ultimately, assists a municipality in developing a CSO LTCP.

### 4. 2001 Guidance on Coordinating CSO Long-Term Planning with Water Quality Standards Review

In order to further implementation of the *CSO Policy*, EPA published its [Guidance on Coordinating CSO Long-Term Planning with Water Quality Standards Reviews](#).<sup>56</sup> Specifically, EPA recognized that implementation of the *CSO Policy*’s principle of developing the long-term plan in coordination with the review and appropriate revision of [WQSs](#) was not progressing as quickly as hoped.<sup>57</sup> It explained that “[g]iven local resource constraints,” CSO communities needed guidance as to how to implement CSO control programs to attain water quality standards.<sup>58</sup> The purpose of the guidance is to lay “a strong foundation for integrating water quality standards reviews, implementation of high-priority CSO controls, and development of well-designed and operated LTCPs that support attainment of water quality standards without causing substantial and widespread economic and social impacts.”<sup>59</sup>

In order to facilitate compliance with the *CSO Policy*’s goal, the guidance provides an outline of ways to improve coordination among CSO communities, state water directors, the community, environmental organizations, and EPA; integrate development of the LTCP and high-priority controls with the review and revision, as necessary, of state water quality standards; and reconcile water quality standards with well-designed and operated CSO LTCPs. This coordination would require a great deal of discussion with states and EPA regarding existing data, the need for additional data, monitoring programs, and the potential need for water quality standard revisions. The guidance suggests that “in practice, many CSO communities may face resource constraints that limit their ability to conduct comprehensive monitoring programs without collaboration from states and other stakeholders.”<sup>60</sup> Notably, the guidance also reiterates the “2 percent yardstick” that EPA discusses in its *1997 Combined Sewer Overflows Guidance for Financial Capability Assessment and Schedule Development*

(see [Section II.A, page 31](#)) to determine the financial capability of a community. It states that studies “found that the two cutoffs were appropriate for determining the difficulty the community would have in affording additional project costs.”<sup>61</sup> This guidance remains extremely important in discussions of UAAs as part of CSO LTCs (see [Section II.A.3, page 30](#)).

## 5. 2005 Guide for Evaluating CMOM Programs

In January 2005, EPA’s OECA published its [Guide for Evaluating Capacity, Management, Operation, and Maintenance \(CMOM\) Programs at Sanitary Sewer Collection Systems](#).<sup>62</sup> This guide identifies some of the criteria used by EPA to evaluate a collection system’s CMOM program activities. The guide is intended for use by EPA and state inspectors as well as the regulated community (owners or operators of sewer systems collecting domestic sewage as well as consultants or other third-party evaluators or compliance assistance providers). Collection system owners or operators can review their own systems by following the checklist in Chapter 3 of the guide to reduce the occurrence of sewer overflows and improve or maintain compliance. The guide is applicable to small, medium, and large systems; both publicly and privately owned systems; and both regional and satellite collection systems.

## 6. 2012 CSO Post-Construction Compliance Monitoring Guidance

In 2012, EPA published its [Combined Sewer Overflows: Post Construction Compliance Monitoring](#)<sup>63</sup> guidance to assist municipalities with developing post construction compliance monitoring programs required by the [CSO Policy](#). The guidance provides technical instruction so that permitting authorities and permittees collect sufficient data to evaluate the effectiveness of the CSO controls and to assess compliance with WQSs. EPA explains that “[p]ermit writers and permittees should remain mindful that phased implementation of control measures and design features suggests an iterative monitoring program that will continue to support the implementation schedule.”<sup>64</sup> While an effective post construction monitoring program will entail data collection, data validation, and monitoring, EPA clarifies that “these activities may be carried out by different entities within a state” and “the guidance does not transfer to the permittee functions that are state responsibilities.”<sup>65</sup>

Regarding financial capability, the guidance suggests that “[p]ermittees should consider the cost of developing and implementing a post construction compliance monitoring program as part of their long-term CSO control plan’s financial capability analysis.”<sup>66</sup> It also notes that if a permittee has “substantially developed” or is developing a CSO control program pursuant to an existing enforcement order but has not yet completed construction and the program is expected to provide for attainment of WQS and is consistent with the [CSO Policy](#), “the permit writer should modify the permit to require evaluation of sensitive areas and financial capabilities, as well as development of a post construction monitoring plan.”<sup>67</sup> Therefore, the guidance makes clear that those subject to existing consent decrees must also undertake post-construction monitoring.

# C. Watershed Approach and Integrated Planning

## 1. 1996 Watershed Approach Framework

EPA’s 1996 [Watershed Approach Framework](#)<sup>68</sup> was EPA’s first step in developing a strategy that would allow for the prioritization of improvements based upon a holistic analysis of CWA-related compliance requirements. This Framework serves as the precursor to the [Integrated Municipal Stormwater and Wastewater Planning Approach Framework](#), discussed below in [Section II.C.3 \(page 39\)](#). The [Watershed Approach Framework](#) emphasized “a coordinating framework for environmental management that focuses public and private sector efforts to address the highest priority problems

within hydrologically-defined geographic areas, taking into consideration both ground and surface water flow.”<sup>69</sup> The guiding principles for this approach include:

- 1) Partnership of key people most affected by management decisions to ensure that “environmental objectives are well integrated with those for economic stability and other social and cultural goals;”
- 2) Activities focused at specific geographical areas; and
- 3) Sound management techniques based on strong data.<sup>70</sup>

Because previous efforts to reduce pollution have focused on particular sources, pollutants, or water uses, gaps exist for overall protection of specific watersheds. According to the 1996 Framework, operating programs on a watershed basis:

[C]an result in cost savings by leveraging and building upon the financial resources and the willingness of the people with interests in the watershed to take action. Through improved communication and coordination the watershed approach can reduce costly duplication efforts and conflicting actions.<sup>71</sup>

While the 1996 Framework stated that implementation at the state level was most practical (a tenet expressed in the 2012 *Integrated Municipal Stormwater and Wastewater Planning Approach Framework*), the following operational changes were suggested at the national level: “reduced water quality reporting requirements, priority consideration for Clean Water Act grants for watershed activities, use of funds under the Safe Drinking Water Act for source water protection, simplified wetlands permitting, allowances for NPDES permitting backlogs, longer cycles for reviewing and, if appropriate, revising water quality standards, reduced monitoring under the Safe Drinking Water Act, TMDL assistance, and facilitated development of wetlands mitigation banks and effluent trading.”<sup>72</sup>

## 2. 2011 Achieving Water Quality Through Integrated Municipal Stormwater and Wastewater Plans

Acknowledging the financial hardships that many municipalities/utilities are facing, EPA issued its 2011 internal memorandum, [\*Achieving Water Quality Through Integrated Municipal Stormwater and Wastewater Plans\*](#),<sup>73</sup> to EPA regions. The *Integrated Municipal Stormwater and Wastewater Plan Memorandum* directs the regions to “be mindful that many of our state and local government partners find themselves facing difficult financial conditions. Their ability to finance improvements by raising revenues or issuing bonds has been significantly impacted during the ongoing economic recovery.”<sup>74</sup> Thus, the objective of the memorandum is to ensure that the EPA regions are working with communities to evaluate all CWA obligations and develop the most cost-effective approaches for meeting CWA goals through integrated stormwater and wastewater planning:

Today, the EPA, states and municipalities often focus on each CWA requirement individually for protecting water quality. As a result, we sometimes assess and implement the best alternative to resolve one problem at a time without full consideration of all CWA obligations. This approach may have the unintended consequence of constraining a municipality from implementing the most cost-effective solutions in a sequence that addresses the most serious water quality issues first. We encourage regions to work with the state to engage our local partners regarding all of their [NPDES] related obligations in an orderly manner. A comprehensive and integrated planning approach to a municipal government’s CWA waste- and storm-water obligations offers the greatest opportunity for identifying cost-effective and protective solutions and implementing the most important projects first. The CWA and its implementing regulations, policy and guidance provide us



with the necessary flexibility to work with communities to utilize comprehensive integrated planning to prioritize its waste- and storm-water investments.<sup>75</sup>

Indeed, this memorandum expressly recognizes and encourages EPA regions to allow the use of integrated planning as it will permit municipalities to identify efficiencies, prioritize capital improvements, meet operation and maintenance requirements and also lead to the identification of sustainable solutions, such as green infrastructure.

EPA does temper its embrace of integrated planning in the memorandum somewhat by stating that “we are not suggesting that existing regulatory or permitting standards ... be lowered.”<sup>35</sup> Instead, “we are simply suggesting that such an approach will help municipalities responsibly meet their CWA obligations by maximizing their infrastructure improvement dollars through the appropriate sequencing of work.”<sup>36</sup> However, importantly for municipalities, EPA also states in the memorandum that as part of the integrated planning process regions are to fully consider “all ... CWA obligations” when evaluating a municipality’s financial capability—an obvious benefit for municipalities in consent decree negotiations. Further, through the integrated approach, municipalities can sequence the “most pressing public health and welfare issues first.” The memorandum also “strongly encourages” the use of green infrastructure to manage stormwater, reduce overflows, enhance environmental quality and achieve other economic and community benefits.<sup>37</sup>

### 3. 2012 Integrated Municipal Stormwater and Wastewater Planning Approach Framework and 2013 FAQs

#### a) Integrated Planning Policy

EPA’s June 2012 [\*Integrated Municipal Stormwater and Wastewater Planning Approach Framework\*](#)<sup>80</sup> (*Integrated Planning Framework*) explains that EPA emphasizes the importance of allowing a municipality “to balance CWA requirements in a manner that addresses the most pressing public health and environmental protection issues first.”<sup>81</sup> Under this voluntary integrated planning principle, municipalities may choose to develop an integrated plan that allows a community to develop its own prioritization and schedule for investments to meet CWA obligations, subject to state and federal approval. “[E]lements of an integrated plan can be incorporated, where appropriate, into NPDES permits, enforcement actions, or both.”<sup>82</sup> With regard to enforcement actions, the guidance notes that “[s]ufficient flexibility should be provided in enforcement orders to allow for adaptive management principles,” and “[w]here an extended time frame is necessary to achieve compliance, enforcement orders should provide schedules for CWA requirements that prioritize the most significant human health and environmental needs first.”<sup>83</sup> EPA further encourages the use of green infrastructure to provide more sustainable management of stormwater as a resource.<sup>84</sup>

Some common trends of integrated plans include structures that identify regulatory/CWA-compliance issues to be targeted by the plan (including existing performance trends), a process to examine alternative strategies and schedules, metrics to evaluate progress, and an outline of the path forward that includes stakeholder input.

In a follow-up July 2013 document, [\*Integrated Municipal Stormwater and Wastewater Planning Frequently Asked Questions\*](#)<sup>85</sup> (FAQs), EPA provided responses to common questions regarding the use of integrated plans in NPDES permits and enforcement actions. Notably, in response to a question about whether a municipality with an existing consent decree may have its remedy and affordability analyses reexamined, EPA confirmed that it may, so long as the permittee can “provide EPA with sufficient information and analysis to determine whether an Integrated Planning Approach makes

sense based on sound science and appropriate technical and financial analyses.”<sup>86</sup> With regard to enforcement against communities that are experiencing financial or budgetary constraints, EPA explained that it “will continue to work with communities to address those threats within the constraints of the communities’ financial capability.”<sup>87</sup> While integrated planning compliance schedules are appropriate for both permits and enforcement, EPA noted that its enforcement “provides greater flexibility for establishing compliance schedules.”<sup>88</sup> In addition, EPA explained that the 2 percent median household income indicator discussed above in EPA’s 1997 *Financial Capability Assessment Guidance* is “one of many considerations . . . along with a suite of other financial indicators to assess the overall burden on a community.”<sup>89</sup> Thus, integrated planning “will take advantage of the flexibilities in existing EPA regulations, policies, and guidance to allow municipalities to sequence implementation of their CWA obligations . . .”<sup>90</sup> EPA also clarifies that it considers a variety of CWA requirements eligible for consideration in an integrated plan, including CSOs, SSOs, stormwater and WQS requirements.<sup>91</sup> However, EPA takes the position that drinking water programs are not eligible for inclusion, although they can be considered as part of the financial factors supporting an integrated plan.<sup>92</sup>

These documents signal EPA’s movement towards a more flexible interpretation of the *CSO Policy* that accounts for the financial capability of the community and recognizes the importance of integrated planning. They can be a critical tool and resource for utilities in enforcement discussions over new decrees or modification of existing decrees.

#### b) Developments in Integrated Planning Since 2012

Since EPA released the *Integrated Planning Framework* in 2012, EPA has indicated that, as a general matter, it would not formally approve individual plans, but its approvals will typically be found in permits and enforcement orders that reflect outcomes of the integrated approach.<sup>93</sup>

Several case studies underscore the ways in which integrated planning has developed in its early years. **Santa Maria, California’s** integrated plan addressed a variety of projects pursuant to its obligations, which included four TMDLs. **Seattle Public Utilities (SPU)** incorporated integrated planning into its Consent Decree and is developing a modified LTCP in light of data that demonstrates a need to prioritize certain stormwater remedial actions. Under the SPU structure, the utility may defer lower priority LTCP projects for certain CSO issues, so as to prioritize projects (including green infrastructure projects) that address stormwater quality.

Further, **Chicopee, Massachusetts** and **Richmond, Virginia** are incorporating integrated planning into their water management processes. Chicopee’s integrated planning process began as a way to measure the success of several CSO reduction projects and to find ways to decrease project costs and prioritize other reduction projects that will have the most “social, economic, and environmental benefit, on a schedule that is affordable to the city.”<sup>94</sup> Richmond began its integrated planning process in 2013 and has developed a project timeline with the goal of a plan developed by late 2016/early 2017 before their MS4 and NPDES permits are up for renewal in 2018.<sup>95</sup>

### D. Green Infrastructure

EPA’s approval of green infrastructure in wet weather and stormwater management is a relatively recent development, and as such, the guidance documents in this Section reflect EPA’s current position on this issue. They also provide guidance on use of green infrastructure in control and management strategies. Additional information on EPA’s position and resources related to green infrastructure is available on

the [Agency's website](#).

### 1. 2007 Memorandum on the Use of Green Infrastructure in NPDES Permit and Enforcement

On August 16, 2007, EPA's Water Permits and Water Enforcement divisions jointly issued a memorandum on [The Use of Green Infrastructure in NPDES Permits and Enforcement](#),<sup>96</sup> to clarify how green infrastructure can be incorporated into existing regulatory programs. The memorandum was circulated to regional EPA water division directors and enforcement coordinators, as well as to all state NPDES directors. The memorandum states that "[i]n developing permit requirements, permitting authorities may structure their permits, as well as guidance or criteria for stormwater plans and CSO long-term control plans, to encourage permittees to utilize green infrastructure approaches, where appropriate, in lieu of or in addition to more traditional controls."<sup>97</sup> For enforcement activities, the memorandum states that EPA will consider the feasibility of using green infrastructure as a pollution control option and encourages states to do likewise.

### 2. 2007 Memorandum on Using Green Infrastructure in Stormwater, CSO and Nonpoint Source Programs

On March 5, 2007, EPA's Assistant Administrator for Water issued a memorandum on [Using Green Infrastructure to Protect Water Quality in Stormwater, CSO, Nonpoint Source and Other Water Programs](#).<sup>98</sup> Common green infrastructure approaches cited in the memorandum include green roofs, trees and tree boxes, rain gardens, vegetated swales, pocket wetlands, infiltration planters, vegetated median strips, reforestation, and protection and enhancement of riparian buffers and floodplains. In addition, in April 2007, a [Statement of Intent](#) was signed by EPA, NACWA, Natural Resources Defense Council, the Low Impact Development Center, and the Association of State and Interstate Water Pollution Control Administrators (now the [Association of Clean Water Administrators](#) (ACWA)) "to formalize a collaborative effort among the signatory organizations in order to promote the benefits of using green infrastructure in protecting drinking water supplies and public health, mitigating overflows from combined and separate sewers and reducing stormwater pollution, and to encourage the use of green infrastructure by cities and wastewater treatment plants as a prominent component of their Combined and Separate Sewer Overflow (CSO & SSO) and municipal stormwater (MS4) programs."

### 3. EPA Green Infrastructure Strategic Agenda

As one of several objectives of EPA's [Green Infrastructure Strategic Agenda 2013](#),<sup>99</sup> the Agency seeks to bolster the use of green infrastructure in NPDES permits and enforcement actions. In this regard, EPA seeks to ensure that permitting and enforcement authorities "continue to consider green infrastructure approaches in the development of orders and settlements related to SSOs, CSOs and MS4s and incorporate green infrastructure as part of injunctive relief where appropriate."<sup>100</sup> In addition, EPA intends to "[c]ontinue outreach efforts to communities interested in developing integrated wet weather plans and discuss opportunities to utilize green infrastructure solutions."<sup>101</sup> Correspondingly, EPA intends to provide technical assistance to select communities.

### 4. 2014 EPA Greening CSO Plans: Planning and Modeling Green Infrastructure for Combined Sewer Overflow (CSO) Control

In March 2014, EPA published [Greening CSO Plans: Planning and Modeling Green Infrastructure for Combined Sewer Overflow \(CSO\) Control](#)<sup>102</sup> as a technical resource to assist communities in developing green infrastructure alternatives for CSO control. It includes an overview of the regulatory and policy

context for incorporation of green infrastructure, a description of how utilities may develop and assess these alternatives, and a modeling tool. The guidance notes that significant infrastructure is still needed in many areas to address CSOs, especially in light of potential climate change issues. However, use of green infrastructure may provide a cost-effective alternative to some types of gray infrastructure.

With regard to incorporation of green infrastructure into LTCPs, the guidance notes that implementation may utilize an adaptive management approach. “[Adaptive management](#) means monitoring and evaluating green infrastructure projects and practices as work proceeds, and adapting or revising plans and designs as appropriate based on lessons learned.”<sup>103</sup> It notes that this method “can often be a more effective approach than adopting a monitoring program confined to the post-construction phase.” EPA further emphasizes the increased use of green infrastructure in enforcement, noting that it “has incorporated green infrastructure as part of injunctive relief ... in a growing number of municipal CWA cases.”<sup>104</sup> Indeed, it notes that several recent settlements “include an option for communities to study the feasibility for green infrastructure approaches, and to propose the replacement of specific gray infrastructure projects with green infrastructure on a case by case basis ...”<sup>105</sup> Other settlements specifically require a commitment to green infrastructure. This guidance provides further illustration of EPA’s support for green infrastructure, including its use in the enforcement context.

## 5. Recent Trends in Green Infrastructure Implementation in Consent Decrees and Other Planning Efforts.

Since January 1, 2014, six new Consent Decrees and seven modified Consent Decrees have included green infrastructure planning, indicating a strong trend towards implementing green infrastructure projects into CSO storm water management. Moreover, several decrees include requirements to implement green infrastructure. Of the above-referenced decrees, half require the entities to implement or consider green infrastructure in LTCPs or Best Management Practices (BMP). The Consent Decrees for the **Delaware County Regional Water Quality Control Authority (DELCORA)** and **Harrisburg, Pennsylvania** require the entities to incorporate green infrastructure as alternative source control measures in the LTCPs. The Consent Decree for the city of **Lawrence, Massachusetts** also requires the city to implement green infrastructure, but specifically in the context of the BMPs for the city’s construction site and enforcement program. The Consent Decree for the **Metropolitan Water Reclamation District of Greater Chicago** requires, among other things, development of a rain barrel program and distribution of 15,000 rain barrels within 5 years; submittal of a green infrastructure plan within one year of Decree effective date that includes a comprehensive land use policy, as well as early monitoring, evaluation and knowledge building projects (\$325,000); and green infrastructure projects capturing at least 10 million gallons per storm event with 15 years. The remaining new Consent Decrees state that cities can use green infrastructure at their discretion. The **Lima, Ohio** Consent Decree gives the city the explicit ability to modify the Consent Decree at a later date in order to include green infrastructure. Similarly, the **Bangor, Maine** Consent Decree establishes some guidelines for the implementing green infrastructure in the LTCP, should they choose to do so.

## E. Stormwater

EPA has issued a significant number of fact sheets, guidance and policy documents related to its stormwater management program. We have identified some of the more significant documents and summarized them below in an effort to provide background on the program. There is a comprehensive list of materials on [EPA’s website](#), which provides a considerable resource for the regulated community.

These documents are provided primarily for program background purposes and will be of limited use in negotiating consent decree terms.

## 1. 1999 Report to Congress on Phase II Stormwater Regulations

In connection with EPA's adoption of the Phase II stormwater rules in October 1999, EPA issued a summary [Report to Congress on Phase II Stormwater Regulations](#) (*Phase II Report*) in October 1999. The report provides EPA's first statements on the program's overview and rationale and thus is a good document for introduction to the program. The *Phase II Report* contains:

- 1) An in-depth impact analysis on the effect the Phase II final regulations will have on urban, suburban, and rural local governments subject to the regulations;
- 2) An explanation of the rationale of the Administrator for lowering the construction site threshold from 5 acres to 1 acre;
- 3) Documentation demonstrating that stormwater runoff is generally a problem in communities with populations of 50,000 to 100,000; and
- 4) Information that supports the position of the Administrator that the Phase II stormwater program should be administered as part of the NDPS permitting program under the CWA.

## 2. 2000 Report to Congress on Phase I Stormwater Regulations

Similar to the [Phase II Report](#), referenced above, EPA prepared and issued a [Report to Congress on Phase I Stormwater Regulations](#) (*Phase I Report*) in February 2000. EPA's Phase I program for large and medium MS4s was adopted in 1990, and thus, the *Phase I Report* details the impact the program has had on improving water quality. The *Phase I Report* concludes that strides in water quality improvement and prevention of degradation have been seen and utilizes cases studies to make these demonstrations. EPA further states that site-specific [stormwater pollution prevention plans](#) (SWPPPs) and [BMPs](#) have been used to reduce pollution in a cost-effective manner. EPA does suggest that the program could be improved through revisions to the monitoring program. Namely, with respect to MS4s, EPA noted that some utilities could not monitor due to geographic or physical constraints at the end-of-pipe and thus had alternative monitoring programs. There was a concern expressed that these monitoring programs required the expenditure of substantial resources but did not take into account integrated impacts from other sources. EPA stated that it would continue to investigate and encourage innovative and integrated approaches. Overall, EPA's analysis of its Phase I program concluded that it was a flexible framework for controlling stormwater discharges and that the program was making strides in water quality improvement.

## 3. 2000 National Menu of Stormwater Best Management Practices

EPA first released the [National Menu of Stormwater Best Management Practices website](#) in 2000. The website is a compilation of fact sheets and guidance on implementing the BMPs for the six minimum control measures set forth in the Phase II rules. The website has been updated over time to include new and revised fact sheets and guidance as well as case studies. Each minimum control has its own link which provides detailed information on the control and its applicable BMPs. For example, the minimum control on public education sets forth guidance on developing a municipal outreach strategy and outreach materials, promoting the strategy in the public and providing outreach education to various categories of stakeholders. It also contains case studies on outreach programs implemented by MS4s. Similarly, the control for identifying and eliminating [illicit discharges](#) and spills to storm

drain systems includes guidance on developing an [illicit discharge detection and elimination](#) (IDDE) program and reducing SSOs, as well as guidance on illegal dumping and recycling programs.

#### 4. 2001 Measurable Goals Guidance for Phase II Small MS4s

As required by the Phase II rules, small MS4 owners must reduce pollutants in stormwater to the “[maximum extent practicable](#).” According to EPA, developing a [Stormwater Management Plan](#) (SWMP) that addresses the six minimum control measures can attain compliance with this requirement. One component of the SWMP requires the MS4 to select measurable goals to evaluate the effectiveness of the individual control measures being implemented. “Measurable goals” are BMP design objectives or goals that quantify the progress of program implementation and performance of BMPs. In 2001, EPA issued its [Measurable Goals Guidance for Phase II Small MS4s](#) to assist MS4s in complying with the “measurable goals” requirement. It recommends that MS4s establish a baseline reflecting current water quality conditions and against which future progress can be measured.<sup>106</sup> It further recommends that MS4s evaluate and understand their stormwater collection system, as well as their program authority or ordinances, as a precursor to identifying and implementing BMPs. Once an MS4 selects its BMPs, the MS4 can then identify concrete goals for implementing the BMPs as well as methods for measuring performance, such as in-stream monitoring. Goals may be as direct as performance of outreach or education programs a defined number of times per year, or completion of a survey of storm drain system outfall on a specified schedule per year of the permit term. The guidance sets forth concrete examples for MS4s to consider in each of the six control areas.

#### 5. 2005 Stormwater Phase II Final Rule Fact Sheet Series

EPA updated a series, originally issued in 2000, of [Stormwater Phase II Final Rule Fact Sheets](#) in 2005. The series covers topics related to the small MS4 program, including what entities are covered and the definitions of urbanized areas. It also provides detailed information on the six minimum controls identified by the Phase II rules—what they require and BMPs for consideration. It additionally contains fact sheets that relate to the construction program and the industrial program portions of the Phase II rules. This series provides a broad overview of EPA’s Phase II stormwater program and general information for the regulated community.

#### 6. 2007 MS4 Program Evaluation Guidance

EPA’s 2007 [MS4 Program Evaluation Guidance](#) is guidance designed to assist state and federal regulators with assessing the compliance and effectiveness of Phase I and Phase II MS4 programs. It provides a detailed step-by-step guide for conducting evaluations and inspections of MS4 programs as well as guidance on assessing whether enforcement is appropriate. For utilities, it is a helpful document to consider as SWMPs are updated or if facing a stormwater program inspection or enforcement measure.

#### 7. 2008 Evaluating the Effectiveness of Municipal Stormwater Programs

In 2008, EPA Region 3 released a series of guidance memoranda that addressed topics of relevance to municipal stormwater programs, including one entitled [Evaluating the Effectiveness of Municipal Stormwater Programs](#).<sup>107</sup> In the guidance, EPA Region 3 states that SWMPs “must be guided by specific measureable water quality-based goals” and “include, programmatic, BMP-implementation, and social goals.” Evaluation of the effectiveness then relates directly to such goals: “*Are we meeting the municipal SWMP goals?*” and “*Are we meeting NPDES stormwater regulatory requirements?*”<sup>108</sup> To demonstrate effectiveness, Region 3 recommends a series of steps, including, for example, that permittees track the type and number of structural BMPs installed as well as maintenance activities on the BMPs. It further recommends documenting management activities so that permittees can demonstrate reductions made (*i.e.*, the amount of material collected in street-sweeping, or the number of



illicit discharges identified and eliminated) or goals achieved (*i.e.*, increased awareness due to outreach measures). The memo also acknowledges that one of the key methods for demonstrating effectiveness will be through water quality monitoring, including both qualitative observations and quantitative measurements. The Region recognizes that to evaluate effectiveness, a baseline may be necessary, which can require the collection of further water quality data as a starting point. Additionally, any monitoring program should be focused on the pollutant sources at issue and the BMPs being implemented. Finally, it instructs MS4s that their program should be an iterative one with reevaluation and adjustment being significant components of the process. If upon evaluation, goals are not being achieved, the program should implement changes or additional measures or strategies.

## 8. 2008 National Research Council Report on Urban Stormwater Management in the United States

As discussed in [Section I.D \(page 22\)](#), EPA requested that the National Research Council review EPA's current stormwater permitting program and provide recommendations for improvement of the program. Rapid urbanization in the United States has resulted in increased construction of impervious surfaces, which in turn has affected how water moves both above and below ground during and following storm events as well as the quality of the stormwater itself. EPA's stormwater program – and in particular its Phase II permitting program, which is focused on small, urbanized MS4s – has likewise increased in magnitude, requiring stormwater permit coverage for communities with a residential population of at least 50,000 people and an overall population density of at least 500 people per square mile.<sup>109</sup> The objectives of the study were:

- 1) To better understand the links between stormwater pollutant discharges and ambient water quality;
- 2) To evaluate current stormwater management techniques being implemented by the regulated community; and
- 3) To make policy recommendations to improve the program to achieve improved water quality.

The NRC's final report, [Urban Stormwater Management in the United States](#) (*NRC Report*), was released in 2008. The *NRC Report* only addresses EPA's regulatory program and does not address nonpoint source pollution from agricultural runoff, septic systems, CSOs, SSOs and concentrated animal feeding operations.<sup>110</sup>

The *NRC Report* identifies several significant limitations of the current program, including that 1) there is limited information on the effectiveness of stormwater control measures over the long term; 2) monitoring requirements vary greatly among the permittees and thus available data may not provide a clear picture of water quality; and finally; and 3) state and local stormwater programs lack resources to review SWMP and conduct regular inspections, so the program suffers from "poor accountability and uncertain effectiveness."<sup>111</sup> It further found that the "regulation of stormwater is hampered by its association with a statute that focuses primarily on specific pollutants and ignores the volume of discharges," and "[m]ost stormwater discharges are regulated on an individualized basis without accounting for the cumulative contributions from multiple sources in the same watershed."<sup>112</sup> Given these limitations, NRC made the following programmatic observations:

- ✓ EPA's current approach is unlikely to produce an accurate or complete picture of the extent of the problem, nor is it likely to adequately control stormwater's contribution

to waterbody impairment due in part to lack of end-of-pipe monitoring or its failure to use flow or alternative measures for regulating stormwater. Changes to the regulatory program would be necessary to provide meaningful regulation of stormwater dischargers.

- ✓ Flow and related parameters, like impervious cover, should be considered for use as proxies for stormwater pollutant loading.
- ✓ EPA should engage in much more vigilant regulatory oversight in the national licensing of products that contribute significantly to stormwater pollution, such as de-icing chemicals, brake linings, motor fuels, asphalt sealants, and fertilizers.
- ✓ The federal government should provide more financial support to state and local efforts to regulate stormwater.<sup>113</sup>

Additionally, with respect to current stormwater management approaches, the *NRC Report* observed the following:

- ✓ Individual controls on stormwater discharges are inadequate as the sole solution to stormwater in urban watersheds. Instead, control measures need to be designed on a system or watershed basis integrating structural and nonstructural controls.
- ✓ Nonstructural control measures, such as a product substitution, better site design, downspout disconnection, conservation of natural areas and watershed and land-use planning can reduce the volume of runoff and pollutant load from new development.
- ✓ Control measures that harvest, infiltrate and facilitate evapotranspiration of stormwater are critical to reducing the volume and pollutant loading of small storms.
- ✓ Performance characteristics are necessary for structural and some nonstructural control measures, but additional research is necessary on relevant hydrologic and water quality processes to evaluate effectiveness.<sup>114</sup>

The *NRC Report* ultimately made the following recommendations for improving the effectiveness of EPA's stormwater program:

- ✓ Base all stormwater and other wastewater discharge permits on watershed boundaries instead of political boundaries. Responsibility and authority for implementation of a watershed-permit should be centralized with a municipal lead permittee in partnership with other utilities as co-permittees.
- ✓ Integrate all three permitting types such that construction and industrial sites fall under the jurisdiction of their associated utilities.
- ✓ EPA should also issue guidance on what constitutes a design storm and high-risk industrial facilities as well as provide support for the collection of quality industrial stormwater effluent data and stormwater control data on a national level.
- ✓ Finally, EPA should develop numeric limits to quantify the "maximum extent practicable" standard.<sup>115</sup>

## 9. 2010 MS4 Permit Improvement Guide

In April 2010, EPA issued its [MS4 Permit Improvement Guide](#), which is designed to "assist National Pollutant Discharge Elimination System (NPDES) permit writers in strengthening municipal separate storm sewer system (MS4) stormwater permits."<sup>116</sup> EPA's stated objective for the guidance is "facilitat[ing] the creation of MS4 permits which are clear, consistent with applicable regulations and

enforceable....Permit language should include controls that identify specific actions permittees must perform to comply with the Permit Requirements.”<sup>117</sup> The guidance is focused on general permits for small MS4s, however, it may also be utilized for development of Phase I individual permits for large and medium MS4s. The guidance contains examples of permit conditions and supporting rationale which should be considered by the permit writers. It also directs that permits should be drafted with “deadlines for compliance,...clear performance standards, and ... measurable goals or quantifiable targets for implementation” to allow the permitting authority to more easily assess compliance and/or the need for enforcement.<sup>118</sup>

EPA acknowledges in the *Permit Improvement Guide* that since the Phase II rules apply to small MS4s in urbanized areas, it is likely that multiple governments and agencies within the area will be subject to MS4 permitting requirements. Given the potential for overlapping activities in close proximity, EPA encourages permittees to establish cooperative agreements for implementing stormwater programs on a larger scale. It recognizes that partnership agreements can minimize unnecessarily repetitive activities and result in more efficient use of resources across a watershed.

## 10. 2011 Draft Summary of State Stormwater Standards

EPA’s [Draft Summary of State Stormwater Standards](#) is a compilation prepared by the Office of Wastewater Management, Water Permits Division of the stormwater standards for all 50 states. It is a helpful resource for MS4s as it compares application and control standards applicable in the various states. It further provides links to the state program, regulations and general permits.

## 11. 2014 Compendium of Stormwater Permitting Approaches for MS4s

EPA’s [Post-Construction Performance Standards & Water-Quality Based Requirements](#) is a compendium of permitting approaches for MS4s, prepared by the Water Permits Division, summarizing MS4 permitting approaches for all MS4s nationwide up to 2014. The compendium breaks down performance metrics into two categories: numeric post-construction standards, and water quality-based effluent limitations, and then provides examples for each EPA region, broken down by state.

## F. General Consent Decree Terms and Penalty Policies

The following documents provide a comprehensive overview of EPA’s general enforcement and consent decree guidance. While some of these documents may be outdated, documents such as the [Interim CWA Settlement Penalty Policy](#) and the [Supplemental Environmental Projects Policy: 2015 Update](#), discussed below, remain important to penalty and SEP discussions in CWA enforcement actions today.

### 1. 1983 Guidance for Drafting Judicial Consent Decrees

This 1983 [memorandum](#) contains an overview of EPA’s approach to drafting standard decree provisions. The document contains sample language and explanatory background for provisions, including jurisdiction, applicability, definitions, compliance, notification, penalties, dispute resolution, non-waiver, stipulated penalties, force majeure, modifications, and termination, among others.

The document states that “consent decrees must require compliance with applicable statutes or regulations and commit the defendant to a particular remedial course of action by a date certain.” Compliance provisions must not rely solely on requirements for construction of facilities or improvements, but must also contain requirements for compliance with applicable standards. The dispute resolution section dictates that the defendant shall bear the burden of proof if a dispute is

submitted to the court for resolution.

The guidance provides that “most decrees should contain provisions for stipulated penalties” because they “encourage compliance and simplify enforcement by providing a significant, clearly defined sanction in the event the defendant violates a provision of the decree.” The document discusses a variety of approaches to “escalating” penalty amounts, including number of days the violation continues, and percentage by which discharge exceeds applicable limitations. It also suggests the not widely enough recognized concept of placing stipulated penalties in escrow subject to refund if timely compliance is achieved.

Finally, the [force majeure](#) section explains that EPA will not accept economic hardship or increased costs as circumstances “beyond the Defendant’s control” to trigger relief from a decree. Termination clauses may be automatic upon completion of the terms of the decree, but the Agency prefers a motion for EPA termination. To ensure that the defendant remains in compliance, the minimum time between compliance and terminating the decree should be 180 days.

## 2. 1984 Policy on Civil Penalties and 1984 Framework for Statute-Specific Approaches to Penalty Assessments: Implementing EPA’s Policy on Civil Penalties

These policies apply broadly to EPA enforcement actions in general. However, both provide background on how EPA typically calculates its penalty demands.

EPA published its [Policy on Civil Penalties](#) in February 1984 in order to establish a uniform set of goals for penalty assessment in administrative and judicial enforcement matters.<sup>119</sup> The goals of the policy are “deterrence, fair and equitable treatment of the regulated community, and swift resolution of environmental problems.” In the *Policy*, EPA expressly states that “[m]uch of the rationale supporting this policy generally applies to non-profit institutions, including government entities.” The policy provides a general formula for assessing a civil penalty. Economic benefit for noncompliance and gravity of the violation are used to calculate the preliminary penalty. Adjustment factors include degree of cooperation, degree of willfulness and/or negligence, history of noncompliance, ability to pay, and other factors that may be unique to the circumstances.

On the same day that EPA published its *Policy on Civil Penalties*, it also published [A Framework for Statute-Specific Approaches to Penalty Assessments: Implementing EPA’s Policy on Civil Penalties](#). The purpose of this guidance was to develop a framework for each program that was “general enough to allow [the] program to tailor the policy to the relevant statutory provisions and the particular priorities of each program.” Further, with regard to the “ability to pay” factor, the guidance states that “[t]he Agency will generally not request penalties that are clearly beyond the means of the violator”; however, it is the defendant’s burden to provide sufficient financial information to show an inability to pay. Essentially, this guidance expands on the *Policy on Civil Penalties* to assist in its implementation with regard to various environmental programs.

## 3. 1988 Guidance on Certification of Compliance with Enforcement Agreements

This 1988 [Guidance on Certification of Compliance with Enforcement Agreements](#) sets forth standard requirements for consent decree provisions governing certification of compliance with the decree and its conditions. EPA desires that such certification provisions trigger the sanctions of 18 U.S.C. §1001, which states that anyone who “knowingly and willfully falsifies, conceals or covers up” a material fact, or makes “false, fictitious or fraudulent statements or representations” to the government shall be fined under this title or imprisoned not more than 5 years. The guidance requires that all reports be “certified” by a “responsible official” - for municipalities “a principal executive officer or ranking

elected official.”<sup>120</sup> The guidance also discusses the type of documentation that will best show that various actions have been performed, and contains a checklist of specific document types relating to each program area.

#### 4. 1995 EPA Interim CWA Settlement Penalty Policy

EPA’s [Interim CWA Settlement Penalty Policy](#) (*Penalty Policy*) allows the government to recapture the economic benefit that the defendant enjoyed as a result of delayed or avoided compliance costs. A preliminary penalty is calculated by determining the economic benefit,<sup>121</sup> adding an additional component based on the gravity of the violations (adjusting up or down based on various factors), and then subtracting for litigation considerations, ability to pay, and the value of any agreed upon offset projects or [Supplemental Environmental Projects](#) (SEPs). The *Penalty Policy*’s special section on municipal cases includes a detailed procedure for calculating the “national municipal litigation consideration.” This allows mitigation of a preliminary penalty by consulting two tables. The two tables contain (1) an economic benefit environmental impact factor amount, based on the actual or potential risk of harm posed by the violations, and (2) a service population months of violation factor amount. As an example of the first factor, if the potential harm was “moderate” (such as “raw sewage discharges”), and the economic benefit was from \$10-25 million, the amount for factor (1) would be only \$335,000-\$376,000. For the second factor, if the service population was between 250,000 and 500,000, and the violations extended for three years (36 months), the amount for factor (2) would be \$330,000-\$660,000. The sum of these two amounts is the penalty calculation. However, this amount can be reduced further for compelling ability to pay considerations and by up to 40 percent for appropriate SEPs.

Although the policy states that it is for settlements only and is not to be used in litigation, the courts often use a similar approach during trial. For an example of the judicial penalty calculation in a wet weather discharge case, see *Hawaii’s Thousand Friends v. City and County of Honolulu*.<sup>122</sup> This case contains a full discussion of the court’s penalty analysis reducing the statutory maximum penalty of \$246,750,000 to \$718,000 using CWA § 309(d), which provides that “[i]n determining the amount of a civil penalty the court shall consider the seriousness of the violation or violations, the economic benefit (if any) resulting from the violation, any history of such violations, any good-faith efforts to comply with the applicable requirements, the economic impact of the penalty on the violator, and such other matters as justice may require.”<sup>123</sup>

#### 5. 2015 Update to the 1998 U.S. Environmental Protection Agency Supplemental Environmental Projects Policy

In March 2015, EPA released the [Supplemental Environmental Projects Policy: 2015 Update](#) on incorporating supplemental environmental projects (SEPs) into civil judicial and administrative enforcement settlements, including municipal CWA consent decrees. This Policy applies to settlements filed after the effective date of the Policy and to all pending cases in which the government has not reached agreement in principle with the alleged violator on the specific terms of a SEP.

This Policy revises and supersedes the February 1991 *Policy on the Use of Supplemental Environmental Projects in EPA Settlements*, the May 1995 *Interim Revised Supplemental Environmental Projects Policy*, and the May 1998 [Supplemental Environmental Projects Policy](#). It also reflects and incorporates by reference a number of memoranda and guidance documents that have been issued by the EPA since 1998 (see Appendix B).

Consolidating the wealth of existing SEP guidance is intended to encourage use of the Policy by

helping facilitate and streamline the inclusion of SEPs in civil enforcement settlements whenever appropriate. The 2015 Update is also intended to underscore EPA’s continuing strong support for SEPs, which can be powerful tools to secure significant environmental and public health benefits beyond those achieved by compliance, and to help address the needs of communities impacted by violations of environmental laws. The updated SEP policy includes parameters on how supplemental projects may be used as part of EPA civil enforcement actions, and also includes examples of projects or actions that are not acceptable.

## 6. 2005 Memorandum, Clean Water Act Municipal Settlements and Supplemental Environmental Projects

On November 4, 2005, EPA issued a [memorandum](#) regarding CWA municipal settlements and SEPs. This is directly applicable to municipal CWA settlements and thus, is an important document to consider in CWA penalty and SEP negotiations. The document makes several important points. First, the memorandum clarifies that the statement in the 1998 *SEP Policy*, which provides: “[p]ursuant to the February 1995 Revised Interim CWA Settlement Policy, section V, a smaller minimum penalty amount may be allowed for a municipality,” was intended to explain that, “for purposes of settling CWA cases with municipalities ..., Regional and Headquarters enforcement staff should follow the CWA Penalty Policy when determining the appropriate balance between the penalty and any SEPs.” It further provides that while the *SEP Policy* and *CWA Penalty Policy* each provide for minimum penalty amounts, in enforcement cases where a municipality is making a “good faith effort to return to compliance,” EPA may utilize the *CWA Penalty Policy*’s National Municipal Litigation Consideration tables. These tables are “discretionary” but can “substantially reduce the required penalty in a municipal CWA case.” Secondly, the memorandum explains that in CWA settlements where a state is a co-plaintiff, the state may designate its share of the penalty to be used in any way permitted by state law. If the state penalty will be used for a particular project or fund, a description of the project or fund should be included in a federal consent decree.

## 7. 2016 Amendments to the U.S. EPA’s Civil Penalty Policies to Account for Inflation

In July 2016, EPA released its memorandum, [Amendments to the U.S. Environmental Protection Agency’s Civil Penalty Policies to Account for Inflation](#).<sup>124</sup> This memorandum supersedes prior civil penalty policies issued in 1997, 2004, 2008, as well as 2013 policy amendments issued by the Agency. Among other revisions, EPA is implementing a “catch-up” inflationary adjustment, with annual adjustments to follow, starting January 15, 2017. The memorandum provides that case teams currently negotiating settlements have discretion to adjust penalties upward to reflect the inflationary guidance, although EPA advised that such increases in penalties would “not be expected” when increases are unnecessary to deter violations, and would be “disruptive” to negotiations.<sup>125</sup>

### Section Two Endnotes

<sup>1</sup> 33 U.S.C. 1342(q).

<sup>2</sup> 59 Fed. Reg. at 18,688-18,696 (Apr. 19, 1994).

<sup>3</sup> *Id.* at 18,696 (emphasis added).

<sup>4</sup> *Id.*

<sup>5</sup> *Id.* at 18,697.



<sup>6</sup> *Id.* (emphasis added).

<sup>7</sup> “Minor facility” is an undefined term in the *CSO Policy*; however, NPDES permit forms typically consider POTWs with a design flow of less than 1.0 MGD or a service population under 10,000 as “minor.”

<sup>8</sup> 58 Fed. Reg. at 18,697 (emphasis added).

<sup>9</sup> See *Deadline for Nine Minimum Controls*, p. 3 (Nov. 18, 1996); *Implementation of CSO Policy*, p. 2 (May 19, 1998).

<sup>10</sup> *Id.* at 18,694. However, the *CSO Policy* also specifically embraces a cost/performance consideration “to determine where the increment of pollution reduction achieved in the receiving water diminishes compared to increased costs.” *Id.* at 18693. Also known as the “knee of the curve” analysis, this cost/performance consideration can be helpful for utilities in determining the most appropriate CSO controls from a cost and environmental benefit standpoint.

<sup>11</sup> OFFICE OF WASTEWATER MANAGEMENT, U.S. ENVTL PROT. AGENCY, GUIDANCE FOR FUNDING OPTIONS (1995)

<sup>12</sup> *Id.* at 3.

<sup>13</sup> *Id.*

<sup>14</sup> *Id.* at 47.

<sup>15</sup> OFFICE OF SCIENCE AND TECHNOLOGY, U.S. ENVTL PROT. AGENCY, ECONOMIC GUIDANCE FOR WATER QUALITY STANDARDS-WORKBOOK (1995) at 2.

<sup>16</sup> *Id.* at 3.

<sup>17</sup> *Id.* at 1-5.

<sup>18</sup> *Id.*

<sup>19</sup> *Id.* at 2-2, 2-3.

<sup>20</sup> *Id.* at 4-1.

<sup>21</sup> *Id.* at 4-1, 4-2, 4-3.

<sup>22</sup> *Id.* at 4-2.

<sup>23</sup> OFFICE OF WATER AND OFFICE OF WASTEWATER MANAGEMENT, U.S. ENVTL PROT. AGENCY, COMBINED SEWER OVERFLOWS-GUIDANCE FOR FINANCIAL CAPABILITY ASSESSMENT AND SCHEDULE (1997).

<sup>24</sup> *Id.* at 6-7.

<sup>25</sup> *Id.* at 6.

<sup>26</sup> *Id.* at 7. See also discussions in [Sections V.D., page 139](#); [V.F., page 143](#); [VI.C., page 157](#).

<sup>27</sup> *Id.* at 10.

<sup>28</sup> *Id.* at 19.

<sup>29</sup> *Id.* at 10.

<sup>30</sup> *Id.* at 43.

<sup>31</sup> *Id.* at 46.

<sup>32</sup> OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE, U.S. ENVTL PROT. AGENCY, COMPLIANCE AND ENFORCEMENT STRATEGY ADDRESSING COMBINED SEWER OVERFLOWS AND SANITARY SEWER OVERFLOWS (2000).

<sup>33</sup> *Id.* at 1.

<sup>34</sup> *Id.* at 6.

<sup>35</sup> *Id.* at 9.

<sup>36</sup> This Region IV/OECA inspection document evolved into OECA’s *Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems* which was published in 2005.

<sup>37</sup> OFFICE OF WATER AND OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE, U.S. ENVTL PROT. AGENCY, ASSESSING FINANCIAL CAPABILITY FOR MUNICIPAL CLEAN WATER ACT REQUIREMENTS (2013).

<sup>38</sup> *Id.* at 1.

<sup>39</sup> *Id.* at 3.

<sup>40</sup> The memorandum also seeks to clarify a “misconception” that the guidance “requires communities to spend to a level of 2% of MHI to meet CWA obligations.” Instead, EPA states that “the percent of MHI is guidance” and considered with other factors in determining burden.

<sup>41</sup> *Id.*

<sup>42</sup> As the approach is being developed, EPA “strongly encourages” municipalities to consider lower or variable rates and/ or subsidies for lower income customers. However, many communities face constitutional or statutory constraints in implementing such rate structures; thus, these types of structures may not be a realistic option in many cases.

<sup>43</sup> OFFICE OF WATER AND OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE, U.S. ENVTL PROT. AGENCY, FINANCIAL CAPABILITY ASSESSMENT FRAMEWORK FOR MUNICIPAL CLEAN WATER ACT REQUIREMENTS (2014).

<sup>44</sup> *Id.* at 3.

<sup>45</sup> *Id.*

<sup>46</sup> *Id.*

<sup>47</sup> OFFICE OF WASTEWATER MANAGEMENT, U.S. ENVTL PROT. AGENCY, GUIDANCE FOR LONG TERM CONTROL PLAN (1995).

<sup>48</sup> *Id.* at 1.

<sup>49</sup> *Id.*

<sup>50</sup> *Id.* at 3-3.

<sup>51</sup> *Id.* at 3-66.

<sup>52</sup> OFFICE OF WATER, U.S. ENVTL PROT. AGENCY, COMBINED SEWER OVERFLOWS, GUIDANCE FOR NINE MINIMUM CONTROLS (1995).

<sup>53</sup> *Id.* at 1-7.

<sup>54</sup> OFFICE OF WATER, U.S. ENVTL PROT. AGENCY, COMBINED SEWER OVERFLOWS, GUIDANCE FOR MONITORING AND MODELING (1999).

<sup>55</sup> *Id.* at 1-7 (emphasis in original).

<sup>56</sup> OFFICE OF WATER, U.S. ENVTL PROT. AGENCY, GUIDANCE: COORDINATING CSO LONG-TERM PLANNING WITH WATER QUALITY STANDARDS REVIEWS (2001).

<sup>57</sup> *Id.* at Forward(i).

<sup>58</sup> *Id.*

<sup>59</sup> *Id.* at 1.

<sup>60</sup> *Id.* at 13

<sup>61</sup> *Id.* at 31.

<sup>62</sup> OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE, U.S. ENVTL PROT. AGENCY, GUIDE FOR EVALUATING CAPACITY, MANAGEMENT, OPERATION, AND MAINTENANCE (CMOM) PROGRAMS AT SANITARY SEWER COLLECTION SYSTEMS (2005).

<sup>63</sup> OFFICE OF WASTEWATER MANAGEMENT, U.S. ENVTL PROT. AGENCY, COMBINED SEWER OVERFLOWS: POST CONSTRUCTION COMPLIANCE MONITORING GUIDANCE (2012).

<sup>64</sup> *Id.* at 1.

<sup>65</sup> *Id.* at 2.

<sup>66</sup> *Id.* at 14.

<sup>67</sup> *Id.* at 48.

<sup>68</sup> OFFICE OF WATER, U.S. ENVTL PROT. AGENCY, WATERSHED APPROACH FRAMEWORK (1996).

<sup>69</sup> *Id.* at 1.

<sup>70</sup> *Id.* at 1-2.

<sup>71</sup> *Id.* at 2.

<sup>72</sup> *Id.* at 11.

<sup>73</sup> OFFICE OF WATER AND OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE, U.S. ENVTL PROT. AGENCY, ACHIEVING WATER QUALITY THROUGH INTEGRATED MUNICIPAL STORMWATER AND WASTEWATER PLANS (2011).

<sup>74</sup> *Id.* at 1.

<sup>75</sup> *Id.* at 1-2.

<sup>76</sup> *Id.*

<sup>77</sup> *Id.* at 2.

<sup>78</sup> *Id.*

<sup>79</sup> *Id.* at 2.

<sup>80</sup> OFFICE OF WATER AND OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE, U.S. ENVTL PROT. AGENCY, INTEGRATED MUNICIPAL STORMWATER AND WASTEWATER PLANNING APPROACH FRAMEWORK (2012).

<sup>81</sup> *Id.* at 2.

<sup>82</sup> *Id.* at 6.

<sup>83</sup> *Id.* at 7.

<sup>84</sup> *Id.* at 2-5.

<sup>85</sup> OFFICE OF WATER, U.S. ENVTL PROT. AGENCY, INTEGRATED MUNICIPAL STORMWATER AND WASTEWATER PLANNING FREQUENTLY ASKED QUESTIONS (2013).

<sup>86</sup> *Id.* at 1.

<sup>87</sup> *Id.* at 1.

<sup>88</sup> *Id.* at 3.

<sup>89</sup> *Id.* at 5.

<sup>90</sup> *Id.* at 6.

<sup>91</sup> *Id.* at 10.

<sup>92</sup> *Id.* at 4.

<sup>93</sup> EPA has indicated its willingness to review Integrated Plans, and in some circumstances, Plans may be submitted for formal approval, such as the structure from the Seattle Public Utility Consent Decree (¶ 20).

<sup>94</sup> See <http://www.chicopeema.gov/607/Integrated-Water-Resources>.

<sup>95</sup> See RVA H2O, *Planning for the Future*, available at <https://dpu-rvah2o.squarespace.com/planning-for-the-future/> (last visited Sept. 28, 2016).

<sup>96</sup> OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE, U.S. ENVTL PROT. AGENCY, *USE OF GREEN INFRASTRUCTURE IN NPDES PERMITS AND ENFORCEMENT* (2007).

<sup>97</sup> *Id.* at 2.

<sup>98</sup> OFFICE OF WATER, U.S. ENVTL PROT. AGENCY, *USING GREEN INFRASTRUCTURE TO PROTECT WATER QUALITY IN STORMWATER, CSO, NONPOINT SOURCE, AND OTHER WATER PROGRAMS* (2007).

<sup>99</sup> U.S. ENVTL PROT. AGENCY, *GREEN INFRASTRUCTURE STRATEGIC AGENDA* (2013).

<sup>100</sup> *Id.* at 4.

<sup>101</sup> *Id.*

<sup>102</sup> U.S. ENVTL PROT. AGENCY, *GREENING CSO PLANS: PLANNING AND MODELING GREEN INFRASTRUCTURE FOR COMBINED SEWER OVERFLOW (CSO) CONTROL* (2014).

<sup>103</sup> *Id.* at 11.

<sup>104</sup> *Id.* at 12.

<sup>105</sup> *Id.* at 13.

<sup>106</sup> *Id.* at 8.

<sup>107</sup> Others in the series include: *Funding Stormwater Programs*; *Understanding Impaired Waters and Total Maximum Daily Load (TMDL) Requirements for Municipal Stormwater Programs*; and *Incorporating Environmentally Sensitive Development Into Municipal Stormwater Programs*.

<sup>108</sup> *Id.* at 2.

<sup>109</sup> See *id.* at 1.

<sup>110</sup> See *id.* at viii.

<sup>111</sup> *Id.* at 3.

<sup>112</sup> *Id.*

<sup>113</sup> *Id.* at 3-4.

<sup>114</sup> *Id.* at 7-8.

<sup>115</sup> *Id.* at 9-10.

<sup>116</sup> *Id.* at 1.

<sup>117</sup> *Id.*

<sup>118</sup> *Id.* at 5-6.

<sup>119</sup> See Env'tl. Prot. Agency, [Policy on Civil Penalties: EPA General Enforcement Policy](#) GM #21 (Feb. 16, 1984).

<sup>120</sup> 40 C.F.R. §122.22(a)(3).

<sup>121</sup> EPA generally uses its BEN model to calculate the economic benefit from delayed and avoided pollution control expenditures. See Sept. 1999 [BEN User's Manual](#). There is no minimum dollar amount triggering the use of the BEN model. In estimating economic benefit using the BEN model, the benefit should be calculated from the first date of noncompliance. EPA generally does not look back more than five years prior to the date when the complaint should be filed.

<sup>122</sup> 821 F. Supp. 1368 (D. Haw. 1993).

<sup>123</sup> *Id.* at 1395.

<sup>124</sup> OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE, U.S. ENVTL PROT. AGENCY, *AMENDMENTS TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S CIVIL PENALTY POLICIES TO ACCOUNT FOR INFLATION* (2016).

<sup>125</sup> *Id.* at 5.

# Section Three

## I. CWA Enforcement Trends

Common enforcement structures and themes reflect broader compliance policies outlined in Section II, but they also follow more targeted enforcement priorities set by EPA Headquarters, and its Office of Enforcement & Compliance Assurance (OECA).

### A. Next Generation Compliance

EPA has recently renewed certain wastewater and stormwater enforcement initiatives, and has unveiled a formal memo for [“Next Generation Compliance,”](#) an effort to improve compliance records with amended reporting, transparency, and enforcement techniques. Communities familiar with EPA’s current initiatives can develop strategies that support long-term compliance, while acknowledging regulators’ current focus. Accordingly, detailed in this section are updates regarding EPA enforcement trends and policies, enforcement avoidance and response approaches, as well as a breakdown of the tools EPA and state regulators use in enforcement matters.

Wet weather issues have long been a focus of EPA’s enforcement efforts, and were renewed as a central focus of the Agency’s current 2017-2019 [National Enforcement Initiatives](#), (keeping raw sewage and contaminated stormwater out of our nation’s waters). Their inclusion in the updated priority list only reinforces the fact that municipal clean water utilities will continue to face an aggressive CWA enforcement agenda in the coming years, and into the next Administration (*see also* [Section I.B, page 16](#)). Further, OECA’s current *Enforcement Goals* continue to list municipal sewer and stormwater discharges at the top of its list of key enforcement priorities.

While the *National Enforcement Initiatives* and *Enforcement Goals* carry forward CWA enforcement trends seen in recent years, the January 7, 2015 OECA Memorandum, *Use of Next Generation Compliance Tools in Civil Enforcement Settlements*, instructs EPA case teams to include “Next Generation” compliance tools in settlements, including requirements for more frequent/detailed noncompliance reporting, and the use of third party compliance verification to reduce EPA’s oversight requirements. To date, no community has agreed to such third-party verification in a CWA decree, as utilities have pushed back against funding a third party’s review of the utility’s decree performance, when that role has traditionally been covered by EPA. Even so, some utilities may find their state regulator seeking to incorporate third-party verification into administrative orders and permits. For example, **New York City** has agreed to third-party verification in various state administrative orders.

More broadly, “Next Generation Compliance” focuses on five components, including electronic reporting, increased transparency, innovative enforcement, advanced monitoring technology, and new approaches to restructure agency rules to promote compliance. By emphasizing broader monitoring/compliance verification (including by the public), “Next Generation Compliance” may result in citizen suits playing a larger role in enforcement than traditionally seen, particularly in light of limited federal resources. As one example, the more frequent use of drone technologies (already employed for compliance monitoring in some areas) may subject regulated entities to more novel investigation techniques, subject to developing law in this area. Further, aerial infrared imaging has been employed to detect illicit discharges in **Louisville, Kentucky**.

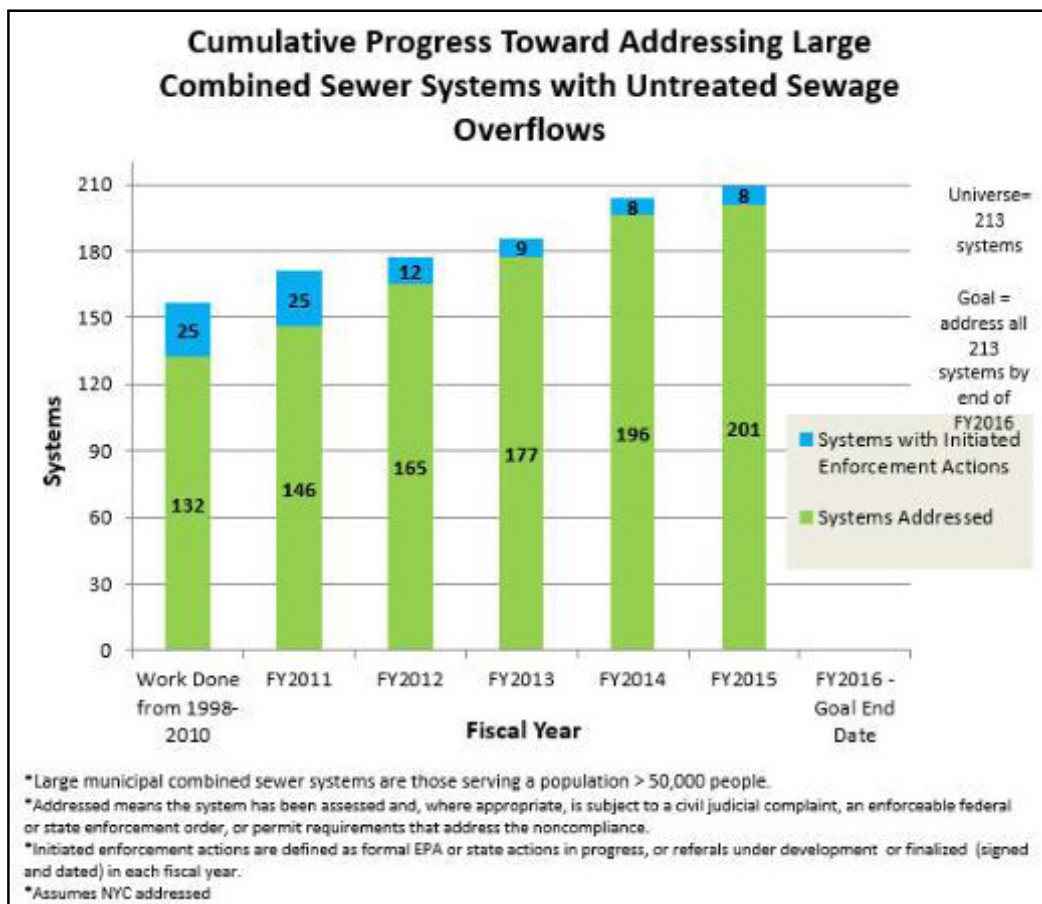
With respect to enforcement actions, OECA’s Next Generation recommendations have found their way into decree negotiations by efforts to incorporate third-party review requirements of decree-mandated deliverables, as well as stand-alone data collection requirements not tied to remedial requirements. The

impacts of *Next Generation Compliance* will continue to unfold as EPA case teams ask communities to agree to decree provisions that include *Next Generation* components, some of which may add additional costs and requirements to enforceable decrees.<sup>1</sup>

Several examples underscore the developments in *Next Generation Compliance*, as EPA has highlighted the focus' impact across permits and enforcement actions. Increasingly, permits are including new provisions regarding sampling and data collection. For example, NPDES and MS4 permits are including provisions requiring the publication of reporting and sampling information online, including those of the **Middle Rio Grande Watershed** MS4 permit and the **Metropolitan Water Reclamation District of Chicago's** NPDES permit. In the context of enforcement, EPA has required in recent Consent Decrees, significant data collection at CSO and MS4 outfalls, as seen in **Fort Smith, Arkansas** and the **San Antonio Water System**.

## B. Enforcement Initiatives Based on Population

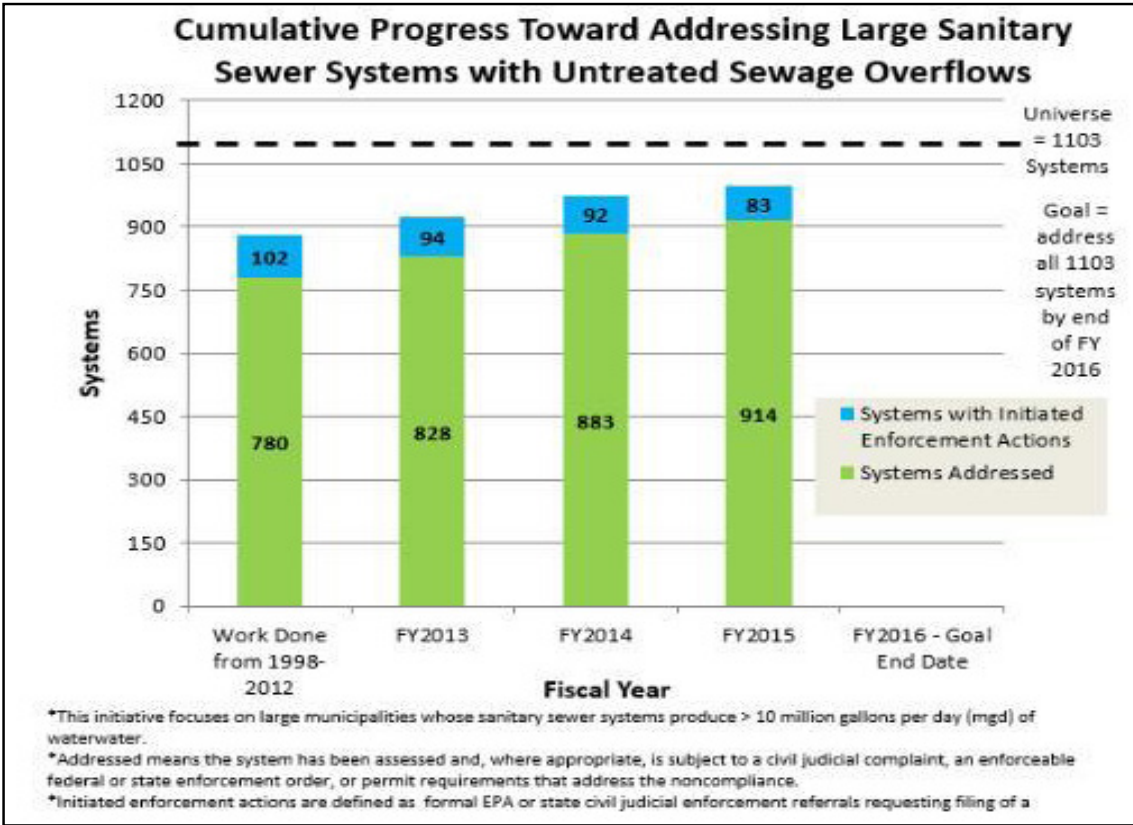
EPA's 2015 data shows that 201 out of a universe of 213 Combined Sewer Systems serving a population greater than 50,000 have been addressed. Of the remaining 12 systems, EPA and/or the state has initiated an enforcement action against 8. This leaves only four large systems that have not been subject to enforcement.



Source: EPA National Enforcement Initiative: Keeping Raw Sewage and Contaminated Stormwater Out of Our Nation's Waters

The percentage of systems that have been subject to enforcement is somewhat lower for separate sanitary sewer systems. Of an estimated total of [1103 large separate sanitary systems \[link?\]](#) (discharging more than 10 million gallons per day (MGD) of wastewater) that have SSOs, 914 systems have been addressed.

Of the remaining 189 systems, enforcement action has been initiated against 83. Thus, only 106 systems remain unaddressed from an enforcement standpoint.



Source: EPA National Enforcement Initiative: Keeping Raw Sewage and Contaminated Stormwater Out of Our Nation's Waters

EPA’s CWA enforcement activity in any given industry sector is initially prioritized based on the largest dischargers and/or the point sources with the highest potential to cause public health and environmental impacts. With so many of the larger systems addressed and with wet weather remaining a top EPA enforcement initiative, the shift to smaller systems has begun, as well as a shift toward regional providers and associated satellite systems. In light of the broader context and trends above, this section provides an overview of federal and state CWA pre-enforcement and enforcement actions, including CWA §308 requests (see [Section III, page 60](#)), and EPA and state enforcement response options (administrative and civil/judicial (see [Section III, page 64](#))). The objectives of this section are two-fold: (1) to offer recommendations on how to avoid an enforcement action from the outset; and (2) to describe the typical series of events and offer tips and strategies to better prepare should CWA pre-enforcement information gathering and/or enforcement ensue. By understanding the process, utilities can more effectively strategize, negotiate, and manage the risks and public relations impacts inherent in any enforcement action.

## II. The Mechanics of CWA enforcement

### A. Understanding the Regulator’s Perspective and Setting the Tone for Interaction

As a pervasively regulated sector, utilities must regularly interact with regulators even outside the enforcement context. As such, the relationship between a utility and its regulators is ongoing, and will



continue long after a settlement is completed and its obligations are performed. Thus, whether a utility is interacting with regulators in a permitting or enforcement context, it is important to understand the regulator's mission, responsibilities and processes. EPA's basic mission is to protect human health and the environment by implementing and enforcing the environmental laws passed by Congress. With regard to the CWA, EPA and states with delegated programs fundamentally exist to police CWA compliance. Regulators hear from a variety of significant and influential stakeholders including environmental [non-governmental organizations](#) (NGOs), whose views regarding the necessary extent of compliance and enforcement often differ from those of the regulated community. Engaging these organizations early can be key to a utility's credibility with EPA and states. To influence the process (and outcome) in regulator interactions, a utility should carefully evaluate actions that can be taken to define (or redefine, if necessary) the nature of the relationship and set a tone that will be most beneficial for the utility and the community it serves.

While significant challenges and criticisms of regulators are often well-founded, a utility is often best advised to assert its positions forcefully, but with a tone of collaboration and cooperation in enforcement discussions. Utilities should not simply expect the worst from EPA when it comes to negotiations; as with many other relationships, the interactions between regulators and utilities will be a two-way street influenced by the expectations and behavior of both parties. The best path forward in most cases is to attempt to forge a successful working relationship based on trust and credibility. Here are some basic tips that a utility should consider when interacting with its regulators:

- Know who is on the other side, each person's role in the respective enforcement agency, their background and experience;
- Know the regulators' drivers and metrics for success;
- Maintain a respectful and professional tone and know the right way to disagree;
- Listen to the other side;
- Be open, honest and forthright;
- Properly prepare before any meeting with regulators—know your system, the legal requirements, compliance history, noncompliance issues, and the utility's proposed solutions;
- If a utility wants the regulators to defer to its own plan for handling a particular situation, provide detailed information about that plan and any proactive efforts taken to resolve issues; and
- Know when and how to elevate issues/disputes and be transparent about it. There are times when personalities or circumstances cause a stalemate and prevent fruitful progress with negotiations. When that occurs, a utility should consider elevating the issue to a higher level. Utilities should make it clear that they have a duty on behalf of the ratepayers to seek a favorable resolution and be transparent about taking issues up to the next level if/when discussions have reached an impasse.

## B. How to Avoid Enforcement

Just because a formal enforcement action is an option for regulators does not mean that a decree will result, even after information requests and investigations commence. Utilities should consider approaches that position themselves to avoid or mitigate enforcement requirements early. In recent years, several utilities have successfully demonstrated compliance, precluding the need for an enforcement response entirely or resulting in a less onerous administrative order. Although such options may not be available

in all circumstances, avoiding a costly and protracted Consent Decree process is a preferred outcome for utilities.

Whether enforcement can be avoided is largely dependent upon the nature and extent of the noncompliance issues and the length of time needed to achieve compliance. Regulators will evaluate a number of factors when determining whether to enforce and, if so, what type of enforcement action to take (see, [Sections III, page 60](#) and [III, page 64](#)). These factors include whether compliance can be achieved in short order; whether compliance initiatives undertaken by the utility have already demonstrated success; whether a utility's administration or governing oversight bodies could change during the pendency of compliance obligations; whether judicial oversight would be advantageous; and whether resources and a revenue stream will be properly committed.

For communities with CSOs, the [CSO Policy](#) will govern, which addresses enforcement priority in the following manner:

NPDES authorities should set priorities for enforcement based on environmental impacts or sensitive areas affected by CSOs. Permittees that have voluntarily initiated monitoring and are progressing expeditiously toward appropriate CSO controls should be given due consideration for their efforts.

The *Policy* sets forth the appropriate manner of enforcement:

The main focus for enforcing compliance...will be to incorporate the long-term CSO control plan through a civil judicial action, an administrative order, or other enforceable mechanism requiring compliance with the CWA and imposing a compliance schedule with appropriate milestone dates necessary to implement the plan.

According to the *CSO Policy*, a judicial order is generally the appropriate mechanism for addressing CSOs but administrative orders "may be appropriate for permittees whose long-term control plans will take less than five years to complete." (see [Section II.A page 28](#))

Requirements may also be incorporated into NPDES permits or federal/state administrative orders rather than a Consent Decree. Administrative orders may represent a preferred approach for some communities facing a shorter-term compliance schedule, particularly if ongoing asset management and an effective CMOM program are already in place. Similarly, a permit-inclusion approach may suit some utilities, where certain repairs and upgrades are scheduled for implementation. While there is no single road map to avoid a Consent Decree once investigations have begun, those who have succeeded in this regard have had pre-existing awareness of compliance history, compelling compliance data, and tailored plans (often including elements of CMOM/asset management) to support long-term CWA compliance.

Avoiding enforcement will often include some of the strategies outlined above, but there is no substitute for a management approach that supports compliance. Effective utility management can help manage compliance and risks, improve operations and performance, increase understanding of a utility's system, ensure financial viability and respond to current and future challenges. As such, utilities should not wait for an enforcement action to begin before addressing CWA violations and recurring compliance challenges/operational issues.

In 2008, NACWA and five other major water and wastewater associations released [Effective Utility Management: A Primer for Water and Wastewater Utilities](#) (Primer), which is designed to advance effective utility management practices. The collaborating organizations also created an online repository of resources—[WaterEUM](#)—for utilities interested in using the attributes and keys to management success identified in the Primer to assess and enhance utility management efforts.

The Primer identifies “Ten Attributes of Effectively Managed Water Sector Utilities” (Attributes) that provide a succinct benchmarking tool and indication of improvement opportunities. The Attributes, all of which are defined with examples on the [website](#), are:

1. Product Quality
2. Customer Satisfaction
3. Employee and Leadership Development
4. Operational Optimization
5. Financial Viability
6. Infrastructure Stability
7. Operational Resiliency
8. Community Sustainability
9. Water Resource Adequacy
10. Stakeholder Understanding and Support

Human capital is the foundation for effective utility management. It is incredibly important to attract, hire, motivate, and retain a highly qualified, competent, and trained team of employees and engage the right outsourced professional services firms. In addition, a utility should strive to position employees and contractors in an optimal manner and make adjustments as needed. As a pervasively regulated entity, lack of regulatory knowledge can be very detrimental. A utility should have compliance expertise—knowledge of applicable legal requirements and permit obligations. The utility should be dedicated to ongoing learning and improvement as well as professional and leadership development.

Effective utility management also entails ongoing stakeholder engagement and public outreach, education, and communication (*see* Section [V.C, page 137-138](#)). A utility should develop and implement a holistic communication plan that strives to raise the visibility of the utility and keeps the community – including both ratepayers and environmental NGOs – abreast of the key role that the utility plays in protecting human health and the environment, job creation, and economic vitality. Messaging should focus on the inextricable link between the services provided by the utility and the climate/quality of life that residents and businesses enjoy. In addition, utilities should brand themselves as resource managers and innovation drivers rather than just sanitation or wastewater handlers (*see* Section [VI.J, page 163](#)). Identification of key stakeholders will vary in each community and will be largely dependent on how a utility is organized (operate within the city or county government structure and governed by city council/county commissioners; governed jointly by the city council and an appointed board of directors; special districts/quasi-municipal corporations governed by an elected board of directors, etc.). Once a utility identifies key stakeholders and decision-makers, including the media, the business community and elected officials, ongoing communication is key. In CWA delegated states, utilities should also communicate with the state regulator frequently and maintain a positive and trustful working relationship, which can be beneficial should federal enforcement arise (*see* [Sections III, page 56](#); [III, page 70](#)). Because of proximity and more frequent interaction with utilities, state regulators are more familiar with a utility’s community, compliance issues, and operations. When a state (as a co-regulator of utilities and typical co-plaintiff in decree cases) can attest to a utility’s improvements and compliance efforts, utilities may benefit from the state’s perspective in negotiations.

In EPA’s [draft 2014-2018 Strategic Plan](#), the Agency advances a philosophy of science-driven partnership and compliance assistance:



EPA will make a visible difference in communities across the country by advancing sustainability, innovation and providing sound scientific advice, technical and compliance assistance and other tools that support states, tribes, cities, towns, rural communities, and the private sector. Under this Plan, EPA will continue to improve the way we do business, engaging closely with our public sector partners at all levels and the regulated community to achieve environmental benefits in the most pragmatic, collaborative, and flexible way possible—for our children and future generations.

Should a utility be targeted for enforcement action, EPA’s strategic direction may offer benefits by advancing the concept of a partnership-like tone in negotiations. Many communities have seen the benefits of an approach that emphasizes mutual trust and common goals in negotiations

## C. Pre-Enforcement: Information gathering/CWA §308

EPA usually begins the enforcement process by gathering information pursuant to [CWA §308](#). If a utility receives a §308 information request letter, it should serve as notice that an enforcement action could follow.

Pursuant to §308(a)(A), EPA has the authority to require an entity to establish and maintain records, make reports, install, use, and maintain monitoring equipment or methods, sample effluents and provide such other information as EPA may *reasonably* require.<sup>2</sup> EPA also has right-of-entry authority:

(B) the Administrator or his authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of his credentials -

- i. shall have a right of entry to, upon, or through any premises in which an effluent source is located or in which any records required to be maintained under clause (A) of this subsection are located, and
- ii. may at reasonable times have access to and copy any records, inspect any monitoring equipment or method required under clause (A), and sample any effluents which the owner or operator of such source is required to sample under such clause.

Courts have broadly interpreted EPA’s §308 authority: “[t]he breadth of this statutory grant of authority is obvious. In our view, the statute’s sweep is sufficient to justify broad information disclosure requirements relating to the Administrator’s duties, as long as the disclosure demands which he imposes are ‘reasonable.’”<sup>3</sup>

A §308 letter should be taken seriously, and the utility should consider consulting legal counsel from the outset. The utility’s compliance with the §308 letter is an important first step in setting the tone for negotiations. While CWA §308 is not self-enforcing (i.e., EPA must seek enforcement in federal district court pursuant to §309), counsel should be involved in determining what information is responsive to the request, negotiating a timeframe for compliance, and evaluating whether any portion of a request may be unreasonable, taking into consideration the potential ramifications of any failure to respond. Similarly, if EPA seeks to enter the utility’s property, right of entry should not be refused. EPA will gain entry - it has authority under §308 to seek and act upon an ex-parte administrative search warrant if necessary - and refusal may unnecessarily hinder the ability to build a working relationship that can later benefit the utility. Nonetheless, because § 308 requests represent EPA’s first steps toward a litigation/enforcement posture—and are not merely bureaucratic fact-finding missions—the presence of counsel is recommended during any requested interviews or discussions pursuant to a § 308 investigation.

Upon receipt of any indication of potential enforcement, a utility should immediately, if it has not already done so, evaluate noncompliance issues and begin to take remedial action. EPA may prove more flexible with resulting requirements (e.g., grant extensions, defer to the utility plan to address noncompliance) if the utility is forthcoming about its noncompliance and proactive in addressing CWA violations.

## 1. Typical language in a §308 Letter

A typical §308 letter will set forth EPA's authority, indicate what information is requested, provide a deadline for response and detail the consequences of failure to respond. The following is an example of boilerplate language typically found in §308 letters:

This letter and the enclosure are a request for information issued pursuant to §308 (a) of the Clean Water Act, 33 U.S.C. § 1318(a). Section 308 of the Act authorizes the EPA Regional Administrator to require those subject to the Act to furnish information, conduct monitoring, provide entry to the Administrator or authorized representatives and make reports as may be necessary to carry out the objectives of the Act.

Failure either to properly respond to this §308 information request or to otherwise comply with the requirements of the Clean Water Act could subject [entity] to a civil action for appropriate relief pursuant to § 309(b) of the Act [33 U.S.C. § 1319(b)] and/or civil penalties not to exceed \$37,500 per day for each violation. Under §309(g) of the Act [33 U.S.C. § 1319(g)], any violation of the Act could subject [entity] to an administrative penalty action of up to \$16,000 per day of violation not to exceed \$187,500.

Requests also usually require that responses include a certification signed by a duly authorized representative:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

## 2. Response Time

The letter will set forth a deadline for response. While CWA §308 does not prescribe the amount of time for a response to a §308 letter, there is case law on point that gives EPA discretion to set a deadline as long as the period is reasonable: "The court does not believe that the EPA is precluded from setting a reasonable deadline for responses merely because the statute itself does not provide for such a deadline. Obviously, the factual circumstances will dictate what is a reasonable time period in which a response can be expected in a given case."<sup>4</sup> The utility can and should request more time, if needed. This request should be made as early as possible - do not wait until the deadline to request more time. In many cases, retrieving and organizing the requested material can take considerable effort and time for the utility. Therefore, detailing these factors as part of an extension request can be helpful in justifying additional time with EPA. In addition, in the event the matter is brought before a judge, the utility should best position itself to demonstrate that it has diligently and in good faith worked to respond to the §308 request as expeditiously as possible. Utilities should therefore estimate and then document such factors as available staff, available reproduction equipment, pages of documents in response to each request, cost of outsourcing and time for production.

As utilities are organizing an initial response (including identifying the universe of materials and appropriate response time), they should consider consultant analysis of such information (so as to provide a broader compliance context), engaged through legal counsel, so as to protect communications and work product concerning the utility's potential CWA liabilities.

How EPA deals with requests for extension varies by region. Some regions more liberally grant extensions while others rarely immediately grant extensions. Rather, regions often may wait to gauge the utility's level of cooperation and responsiveness before agreeing to an extension.

In practice, utilities usually reach agreement with EPA to produce records on a rolling basis to help manage the production burden.

### 3. Scope/Reasonableness of Request

The language of CWA §308 establishes a threshold test of reasonableness for requests. The burden of demonstrating that the request is unreasonable is very high. However, if a utility believes a request to be unreasonable, it can object to the request. Typically, an objection to a request will open a dialogue with EPA over the scope of the request. If a utility objects to or refuses a request on the basis that it is unreasonable or unduly burdensome, the utility should attempt to quantify the burden and communicate this information to EPA. The utility can make a case for additional time to complete the analysis or ask that EPA limit the request for data analysis or omit it altogether.

In responding to §308 requests, there should be no obligation to create new documents or information that is not already maintained by the utility. If a utility does not have responsive information, it should respond accordingly. In many cases, a utility will have raw data that may be responsive. In many circumstances, utilities have found value in providing EPA with responsive raw data along with a broader context/analysis of the utility's performance. Such context can often give a more representative depiction of the community's compliance history, while also including the information responsive to the EPA's request. One question that utilities often ask is whether it is reasonable for EPA to request that the utility analyze, summarize and synthesize data for EPA rather than simply submitting the data. This particular question has not been litigated or addressed by courts. However, there is case law supporting EPA's broad authority to request information not kept in the ordinary course of business. For example, in the 1977 case *U.S. Steel Corp. v. Train*,<sup>5</sup> the Seventh Circuit found that it was within EPA's §308 authority to require a company applying for a NPDES permit to conduct a study of the impact of cooling-water intake structures on aquatic life as a condition of obtaining the permit because the information requested was intended to assist EPA in developing effluent limitations in accordance with CWA §316.

### 4. Public Disclosure of Produced Information

For public utilities, whether information must be disclosed to the public is often a consideration at the forefront of much decision-making. Section 308, however, expressly provides that any of the information obtained through §308 "shall be available to the public" unless the utility can demonstrate that the information – or any part thereof – would "divulge methods or processes entitled to protection as trade secrets."<sup>6</sup> If the utility meets that burden of proof to demonstrate that a trade secret would be disclosed, EPA must treat that information as confidential except when disclosing such information to other authorized representatives of United States tasked with carrying out §308 (*i.e.*, the Department of Justice).

Recent litigation has tested the scope of EPA's ability to withhold information produced in the §308 context. In *Environmental Integrity Project v. EPA*,<sup>7</sup> the Environmental Integrity Project, Earthjustice,



and Sierra Club brought suit against EPA to compel disclosure under FOIA and CWA §308 of information that EPA had partially withheld which it had obtained via questionnaires and from vendors to develop new effluent guidelines, some of which was acquired using EPA's §308 authority. Specifically, the plaintiffs filed a FOIA request, but EPA withheld the information as confidential business information and trade secrets thereunder. The plaintiffs, on the other hand, argued that the public disclosure requirement in CWA §308(b) trumped the FOIA exemption from disclosure. The issue before the court was: "should a court compel disclosure of documents exempt under FOIA where a separate statute [§308], passed several years after FOIA was enacted, suggests that the agency must disclose them?" The court found §308 does not compel disclosure. Unlike other after-enacted statutes, CWA §308 does not expressly modify FOIA, as required by statute.<sup>8</sup> The plaintiffs have appealed the decision, so the scope of the exception to public disclosure of information produced pursuant to §308 may develop further in the coming years, including as to other statutory regimes and as to requests to public utilities.

## 5. Recommended Action in Response to a §308 Letter

Upon receipt of a §308 letter, a utility should evaluate and communicate with EPA early and often. It may consider taking the following steps to develop its response:

- Consult counsel;
- Issue a Legal Hold - A legal hold should be issued in response to current or anticipated litigation, audit, or government investigation. This is a process used to avoid evidence spoliation by preserving all forms of relevant information. While it can be argued that a §308 letter does not qualify as "anticipated litigation" and, therefore, there is no legal obligation to initiate a legal hold, issuance of such hold is the most conservative and protective approach. The legal hold is initiated by a notice, preferably from legal counsel, communicated to employees that may be custodians of relevant records and to IT personnel responsible for retention of electronic information. The notice sets forth the nature of the anticipated litigation or investigation and instructs employees to suspend routine disposition of records and to preserve any and all records that could be relevant. Legal hold steps include the following:
  - ♦ Email or otherwise communicate a legal hold to employees; it is best to send an email to all staff to ensure that everyone who could possibly be a custodian of relevant records is on notice;
  - ♦ Meet with the IT department to suspend automatic document disposition of emails, backup tape recycling, etc.;
  - ♦ Send periodic reminders to employees;
  - ♦ Keep documentation of all legal holds communicated;
- Assemble response team consisting of key staff who will be tasked with gathering and preparing the responses;
- Determine how much time is needed to respond (utility is not expected to cease necessary and normal business operations; the amount of time needed for response should factor in resources and staff time that can be devoted to the request) and determine if a rolling production would help alleviate the burden;
- Evaluate the request based on reasonableness;
- Determine if any requests require clarification; draft a list of questions; communicate questions and clarification requests to EPA;

- Work with EPA on the appropriate schedule for production/rolling production, request a meeting/call; and
- Compile and submit the necessary information as instructed and agreed.

## 6. What Happens after Responses Are Submitted?

While EPA imposes a deadline for responding to a §308 request, there is no deadline for its own review of information received, and it is not required to respond to a utility in any way - and in many cases, the time for EPA's review can be very lengthy. Utilities, thus, often feel as if they are in a legal state of limbo during this waiting period. A utility may receive more §308 requests after the first round, may receive requests for clarification on previous responses, or may hear nothing from EPA for months or even years after submitting information. If the utility does not hear from EPA for an extended period of time, it is possible that EPA is satisfied with the utility's CWA compliance and will not be pursuing an enforcement action against the utility. Alternatively, it is not unusual for EPA to shift focus to a higher priority but return to the previous case even after significant time has passed. The utility should feel free to request status updates from EPA. EPA will likely respond that they are continuing to review the information and the issue is still pending. The utility should continue its business but should keep the Legal Hold in place until certain that an enforcement action will not be initiated.

## 7. State Regulator's Authority to Gather Information

States with delegated CWA programs possess similar authority to gather information. Pursuant to CWA §308(c), each state can develop and submit to EPA procedures under state law for inspection, monitoring, and entry with respect to point sources and certain nonpoint sources within the control of a regulated entity located in such state.<sup>9</sup> If the procedures are consistent with EPA's authority, EPA will authorize such state to apply and enforce its procedures for inspection, monitoring, and entry.

## D. Enforcement Actions

An enforcement action may be initiated by EPA, by a state regulator or jointly by both. EPA has numerous [guidance documents](#) addressing enforcement, which influence the options selected. While enforcement action typically commences after a §308 inspection/request or similar information request, it can also be initiated without any previous notice. The names of state enforcement responses vary, but they generally mirror the federal structure. EPA has two main enforcement options available to it: (1) administrative and (2) judicial. As discussed below, the process varies depending on the option chosen. In selecting an option, "EPA will evaluate the severity and duration of the violation, risk to human health and environment, and the past compliance history of the violator."<sup>10</sup>

### 1. Administrative Enforcement Actions

#### a. Administrative Compliance Orders

EPA may handle enforcement internally using vehicles that range from a simple notice of violation up to a formal pleading similar to a lawsuit in federal judicial court. The formal process is governed by EPA's [Consolidated Rules of Practice](#) and involves the service of a Complaint by EPA, which initiates the administrative action. Unless a request for a stay is granted, a utility is required to file a formal Answer. Once an Answer is filed, an [Administrative Law Judge](#) (ALJ) is appointed. The parties usually reach a settlement before the ALJ hears the case and issues a decision. If a decision is rendered by the ALJ, parties can appeal the decision to the [Environmental Appeals Board](#) (EAB).

Pursuant to CWA §309(a), EPA also has the authority to issue an [administrative compliance order](#) (ACO) for violations of the CWA.<sup>11</sup> ACOs are non-judicial declarations that a CWA violation has occurred. These administrative enforcement tools are also used to demand corrective measures and impose other obligations to achieve compliance with the CWA. For instance, an ACO may be issued with or without penalty. Failure to comply with the [order](#) can lead to a maximum penalty of \$37,500 for each day the entity fails to comply. However, before assessing any such penalty, EPA must consult with the appropriate state, must issue written notice to the alleged violator of the proposal to assess penalties and provide an opportunity to request (within 30 days of receipt of the notice) a hearing on the order.<sup>12</sup>

EPA can and often does issue orders unilaterally, without any opportunity for the utility to contest the facts or legal liability. ACOs are issued without judicial review and oversight on the extent of liability under the CWA. EPA has sole authority to determine the violations, assess the penalty and demand compliance and corrective measures. Upon receipt of an ACO, a utility should request a meeting and/or suggest modifications. Until 2012, it was EPA's position that such orders were not "final" agency action and, therefore, the recipient of such order had no right to seek judicial review pursuant to the [Administrative Procedures Act](#) (APA).

In March 2012, the U.S. Supreme Court unanimously ruled that an ACO issued by EPA is "final" for purposes of judicial review under the APA and the CWA does not bar a party from filing suit to challenge such an order before EPA initiates a judicial enforcement action.<sup>13</sup> However, most interpret the Supreme Court ruling as applying only when EPA's jurisdiction is being challenged, which typically arises in the context of dredging and filling of wetlands rather than discharges from POTWs.

## **b. Administrative Consent Agreements**

Alternatively, EPA may negotiate the terms of an administrative order with a utility, often with the EPA Region taking the lead role. This type of settlement is often in the form of a consent agreement/final order (CA/FO) or administrative order on consent (AOC). These agreements typically contain a declaration that the utility is now in compliance or will achieve compliance via agreed-upon corrective measures and an agreement to pay a fixed penalty in settlement for the violations alleged in the order. At times EPA will not agree to modify terms of this type of settlement, although utilities should seek revisions, as appropriate, particularly if certain time frames pose challenges.

## **c. Administrative Enforcement Steps and Recommendations**

Upon receipt of the order or notice from EPA that it intends to proceed with an administrative enforcement action, the utility should consider taking the following steps in response:

- Consult with legal counsel and form a team of key staff/consultants to carefully review the allegations, assess liability and develop a strategy;
- Issue a Legal Hold (*see* Section III, [page 63](#));
- Contact EPA to schedule a meeting/call to discuss the allegations and potential settlement opportunities;
- If EPA refuses to negotiate or if negotiation efforts fail to achieve reasonable and desired outcomes, consider filing APA action for judicial review; and
- If final order is deemed acceptable, timely comply with the obligations and pay penalty.

### a. Civil Enforcement Steps and Recommended Action

A civil enforcement action will follow a typical process starting with a notice letter from DOJ or a draft consent decree. The DOJ notice letter usually identifies the alleged violations and the maximum civil penalty per day of violation that the government could seek if forced to litigate the case. The notice will open the door for negotiation of a settlement. In response to such letter, a utility should consider the following steps to develop its enforcement strategy:

- **Build Consent Decree Team/Develop Strategy.** Utility should consult and/or engage counsel, form a team of key staff and consultants to carefully review the allegations, assess liability and develop a strategy (*see* [Section V.A, page 133](#)).
- **Legal Hold.** If it has not already done so, utility should issue a Legal Hold (*see* [Section III, page 63](#)).
- **Settlement Negotiations.** Utility should begin settlement negotiations with DOJ and EPA as soon as possible. Depending on the complexity and willingness (or lack thereof) of the parties to compromise, the negotiations most often take years to complete. EPA will likely seek:
  - ♦ a commitment to a program or plan to ensure future compliance with the CWA (*see* [Section IV.A, page 75](#))
  - ♦ a fixed deadline for compliance and completion of consent decree programs (*see* [Section IV.C, page 100](#))
  - ♦ stipulated penalties for future violations (*see* [Section IV.D, page 104](#));
  - ♦ a civil penalty for past violations (*see* [Section IV.D, page 103](#))
- **Settlement.** If a settlement is reached and a consent decree negotiated, DOJ will simultaneously file a complaint and the proposed consent decree in a U.S. district court. Upon filing, the complaint and decree are deemed public documents and will be posted on [DOJ's website](#).
- **Federal Register Notice.** DOJ will then publish the proposed settlement in the Federal Register. The notice will officially open the public comment period, which will last at least 30 days. DOJ will request that the court take no action on the complaint until after the public comment period ends. After the comment period has expired, EPA and DOJ will consider comments submitted.
- **Response to Public Comments.** EPA and DOJ could engage in further negotiations with the utility based on comments received. If the decree is revised, it would potentially need to be noticed in the Federal Register again with another 30-day public comment period on the revised decree. However, in most cases, no revisions are made to the decree based on comments received. DOJ will then provide a summary of comments to the court and move for entry of the consent decree as an order of the court.
- **Entry of the Consent Decree.** If the judge finds the decree fair, reasonable and adequate, the decree is entered as a binding court order and becomes effective.

If negotiations fail or if the utility wishes to litigate the case rather than settle, DOJ will file a complaint in the same federal court and litigation will proceed.

## b. What is a Consent Decree?

In a judicial context, CWA settlements are most often in the form of a consent decree, which is a settlement contained in a court order. The decree is signed by all parties to the action and filed in the appropriate federal district court based on the location of the alleged CWA violations. A decree only becomes effective upon acceptance and entry by the court. The decree will order injunctive relief—a court-imposed remedy instructing a party to do or not do something—and the court will maintain jurisdiction over the case until compliance is achieved in accordance with the consent decree terms and the decree terminates.

## c. Federal Judge's Role

Consent decrees have characteristics of both contracts and judicial decrees, as they resolve issues through the consent of the parties, but they also contain judicial acts that must be rendered by the judge. For example, initial acceptance of the decree and subsequent significant modifications require court approval. This raises the question of the oversight and approval role of the federal judge.

Prior to entry of the decree, the judge must find that the decree is fair, reasonable and adequate. Several federal circuit courts have addressed and elaborated on the appropriate balance. The Second Circuit held: “The court must eschew any rubber stamp approval in favor of an independent evaluation, yet, at the same time, it must stop short of the detailed and thorough investigation that it would undertake if it were actually trying the case.”<sup>15</sup>

The Sixth Circuit explained that there exists a “presumption in favor of voluntary settlement” and that the “presumption is particularly strong where a consent decree has been negotiated by the Department of Justice on behalf of a federal administrative agency like EPA, which enjoys substantial expertise in the environmental field.”<sup>16</sup> The appropriate balance was clearly articulated in a 2014 order issued by a federal judge in Illinois:<sup>17</sup>

A consent decree is the product of parties’ agreement to settle, but the Court’s right to approve or reject that settlement “does not authorize the court to require the parties to accept a settlement to which they have not agreed.” *See Evans v. Jeff D.*, 475 U.S. 717, 726 (1985). The Court will either approve the consent decree as reasonable or reject the consent decree as unreasonable. It will not revise the consent decree that the parties have negotiated.

In considering whether the proposed consent decree was in the public’s best interest, the court noted the public’s interest in environmental improvement must be balanced with reasonable and affordable ratepayer investment: “The public ... includes more than just the people who sail on Lake Michigan or kayak in the Chicago River. . . . The public also includes the taxpayers who pay for the sewer system . . . and, therefore, have an interest in this project’s being completed at a reasonable cost.”<sup>18</sup>

In the order entering the **Miami-Dade County, Florida**, decree, the federal district court judge reiterated the above factors and principles for approving a consent decree and elaborated on the standard for reviewing fairness<sup>19</sup>:

Mindful of these principles, the Court finds the proposed Consent Decree is fair, reasonable, and consistent with the Clean Water Act. To determine the agreement’s fairness, the Court must weigh factors such as the good faith efforts of the negotiators, the opinions of counsel, and the possible risks involved in litigation if the settlement

is not approved. *United States v. Rohm & Haas Co.*, 721 F. Supp. 666, 680-81 (D.N.J. 1989). The Biscayne Bay Waterkeeper has not provided evidence of bad faith. Rather, experienced and well-intentioned environmental attorneys negotiated the Consent Decree, with the assistance of engineers and other professionals with expertise in wastewater collection, transmission, and treatment. Without doubt, litigation would consume considerable resources that could delay implementation of a compliant sewer system and would require the Court to craft a similar remedial plan to that which is already presented in the Consent Decree.

#### **d. Regulator Press Release**

EPA and states typically release a press statement when the consent decree is lodged to reinforce their enforcement priorities, identify the public health or environmental harm that will be remedied and highlight the civil penalty assessed. One reason for the press release is deterrence - punishment encourages other violators to cease violations or expedite efforts to achieve compliance. Utilities are often given an opportunity to comment on the regulator's draft press release and should make every effort to work with EPA and/or the state to craft the tone and content of the release in hopes of achieving a more positive portrayal of the utility. That tone may convey that utilities are clean water agencies whose mission is to protect the environment (see also [Section V.C, page 135](#)). Utilities can and should also do their own press release.

#### **e. Third Party Litigation and Involvement**

During the course of its effective term, a consent decree can act as a powerful shield for a utility by providing protection against third parties seeking to file CWA §505 citizen suits based on events or violations addressed or contemplated by the consent decree. Third parties may still attempt to sue based on the lack of diligent prosecution or for violations outside of the scope of the decree (see also [Section VI.B, page 156](#)).

Prior to initiation of enforcement, a third party must provide a 60-day notice of intent to file a citizen suit against an alleged violator. If this occurs, the utility should immediately assess its liability and exposure and consider its options including the option to contact the state regulator and/or EPA to discuss pursuing a consent decree to address the violations. Such an action would need to be filed by the state or EPA before the citizen plaintiff files a complaint - typically, before the running of the 60-day notice period, in order to bar the citizen suit under the CWA, so time is critical. Although, such enforcement actions filed by states after receipt of a 60-day notice have been challenged by third party citizen groups as "friendly" prosecutions and on other grounds, courts have affirmed that such actions are diligent prosecutions.<sup>20</sup>

A third party may also seek to intervene in the consent decree case. Courts have broad discretion to grant intervention. The Third Circuit, interpreting Federal Rule of Civil Procedure 24(a)(2), held that a potential intervenor must establish "1) a timely application for leave to intervene; 2) a sufficient interest in the underlying litigation; 3) a threat that the interest will be impaired or affected by the disposition of the underlying action; and 4) that the existing parties to the action do not adequately represent the prospective intervenor's interests."<sup>21</sup> Intervention by third parties can lead to delay and additional complications to reaching a consensus. It can also lead to additional consent decree obligations. In addition, third parties will often seek attorneys' fees for their involvement in and impact on the final decree. Consent decree negotiations can go on for months if not years; thus, the amount of attorneys' fees sought can be substantial.

If intervention is sought, the utility may wish to consider drafting a motion in opposition with



arguments based upon the factors listed above. On the other hand, there are circumstances where a third party intervenor's participation is beneficial from a strategic and public relations standpoint. The utility should carefully evaluate the pros and cons of intervention before deciding how to react.

Recent trends in third party involvement in consent decree negotiations suggest that intervenors seek involvement over a wide variety of issues, including climate change, the timelines for completing projects, and the continued acceptance of outfalls that discharge directly into receiving bodies of water without treatment. However, several recent cases indicate that while judges are open to intervention, they are less willing to actually incorporate intervenors' suggestions into the consent decrees.

In 2013, Biscayne Bay Waterkeeper intervened in consent decree negotiations with **Miami-Dade County, FL**. Although Miami-Dade did not entirely oppose the intervention, it attempted to limit Biscayne Bay's ability to participate in consent decree negotiations because the settlement was in its final stages by the time Biscayne Bay intervened. Miami-Dade argued that uninhibited intervention could cause costly delays in finalizing the consent decree.<sup>22</sup> The judge did not grant Miami-Dade's request to limit intervention, but assured Miami-Dade that if any unreasonable requests arose (such as unnecessary formal discovery requests) that the judge would address those issues individually. Upon successful intervention, Biscayne Bay argued that the settlement "failed to account for sea level rise and provide adequate funding for the Water and Sewer Departments maintenance."<sup>23</sup> However, Biscayne Bay's efforts were unsuccessful and the final consent decree did not contain requirements that Miami-Dade County account for sea-level rise in their design and construction. In overruling Biscayne Bay's objections to the consent decree, the court found that the consent decree was "fair, reasonable, and consistent with the Clean Water Act" and that Biscayne Bay did not provide any evidence of bad faith on the part of the parties involved in the negotiations.<sup>24</sup>

In 2014, EPA and the State of Illinois entered into a consent decree with **Metropolitan Water Reclamation District of Chicago, IL** ("MWRD") in order to address issues with MWRD's combined sewer system. Five intervenors opposed the proposed Consent Decree: Alliance for the Great Lakes, the Environmental Law and Policy Center, the Natural Resources Defense Council, Sierra Club, and the Prairie Rivers Network.<sup>25</sup> The intervenors objected to a variety of issues in the proposed consent decree, including the duration of the consent decree, the lack of planning activities, the performance evaluation and monitoring requirements, and that the consent decree did not require MWRD to build treatment plants at CSO outfalls.<sup>26</sup> The court stated that it must "either approve the consent decree as reasonable or reject the consent decree as unreasonable."<sup>27</sup>

The court rejected each of the intervenors' criticisms of the consent decree on the grounds that the intervenors failed to present any evidence that any of their concerns made the consent decree "unreasonable."<sup>28</sup> Among other reasons, the court found that many of the intervenors' objections to the consent decree required perfection of MWRD or because the alternative solutions provided by the intervenors were substantially more expensive than the terms in the consent decree, all of which were deemed unreasonable. In 2015, the Seventh Circuit affirmed the lower court, noting that the decree dealt with the "limitations imposed by the design of the sewer system . . . by using realistically available options," and as such, the settlement was not unreasonable.<sup>29</sup> Ultimately, the trial court and Seventh Circuit determined that the consent decree does not require perfection, but reasonableness, and these, as well as the other terms of the consent decree, were not unreasonable goals.<sup>30</sup>

## f. Role of State Regulators

A settlement agreement with state regulators may be preferable to a consent decree with EPA. Many state regulators have programs/initiatives in place that help a utility reduce CWA violations, with certain protections/assurances from state enforcement. Accordingly, a utility may be wise to consider engaging the state regulator about entering an agreement to address noncompliance. By doing so, the utility may be able to proactively address issues more on its own terms and schedule and perhaps with a lower penalty.

A settlement agreement with the state does not bar a federal action, but EPA often will defer to a delegated state if the matter is being handled appropriately. Pursuant to CWA §402(i), EPA retains authority to enforce permits in states that administer their own delegated or approved NPDES programs.<sup>31</sup> When negotiating a settlement with a state regulator, the state and the utility should analyze the scope of CWA violations with the penalty amount to ensure it is within the range of other settlements and is otherwise reasonable in order to deter overfiling (as discussed below). Utilities and regulators will also want to ensure that the agreed order is sufficient to satisfy the “diligent prosecution” requirements of the citizen suit provision of the CWA. (See [Sections I.A, page 29](#); [IV.B, pages 155-56](#)).

In some federal enforcement cases, the state is involved as either a plaintiff or as a defendant along with the utility. EPA may join the state as a defendant simply to satisfy CWA §309(e) State liability for judgments and expenses: “Whenever a utility is a party to a civil action brought by the United States under this section, the State in which such utility is located shall be joined as a party.” However, just because a state and EPA are aligned on the same side of the docket, this does not necessarily mean that the state and EPA will have aligned interests, goals, motivations, and application of relevant rules and policies.

## E. Overfiling

### 1. EPA’s Authority

The CWA’s enforcement provisions reflect the requirement for continued oversight and supervision of approved state programs by EPA. Although a state with an approved NPDES permit program has primary responsibility for enforcement of its program’s requirements, EPA may intercede and enforce the CWA, with or without prior notice to the state or the alleged violator. Within the CWA section that, in part, authorizes state delegation, it is specifically provided that “nothing in this Section shall be construed to limit the authority of the Administrator to take action pursuant to Section 1319 [CWA § 309] of this title.”<sup>32</sup>

A number of courts thus have held that a state consent order does not bar EPA from seeking federal relief for the same violations.<sup>33</sup> In *United States v. Cargill*,<sup>34</sup> the court explained that “if the state fails to bring an enforcement action altogether or if the enforcement action the state takes is inappropriate, the Administrator is required to act himself. These unambiguous words of the statute [in CWA §309(a)(1)] also indicate that the Administrator may bring a suit himself in federal court even though the state has already filed an enforcement action in state court if the Administrator believes the state is not prosecuting that action ‘expeditiously and vigorously.’”<sup>35</sup>

The regulations governing state NPDES programs also provide that “a civil penalty assessed, sought, or agreed upon by the State Director under paragraph (a)(3) of this section shall be appropriate to the violation.”<sup>36</sup> The note accompanying this subsection provides that “to the extent that State judgments or settlements provide penalties in amounts which EPA believes to be substantially

inadequate in comparison to the amounts which EPA would require under similar facts, EPA, when authorized by the applicable statute, may commence separate actions for penalties.”<sup>37</sup>

The only statutory limitation upon EPA’s right to “overfile,” that is, to commence enforcement where a state with an approved NPDES program has already commenced or is diligently prosecuting an enforcement action, is contained in CWA §309(g).<sup>38</sup> CWA §309(g) prohibits the Administrator from pursuing civil penalties where a state has commenced and is diligently prosecuting or has concluded an action under a state law comparable to the administrative penalty provisions of the CWA. However, EPA is quick to point out that the limitation on its ability to commence a judicial action for civil penalties where a state has commenced or concluded administrative penalty action is narrow, and does not preempt the federal agency’s authority to issue administrative orders for compliance, to seek judicial injunctive relief, or to administratively assess civil penalties. Moreover, many states do not have explicit statutory authority for the assessment of administrative penalties “comparable” to EPA’s administrative penalty authority under CWA §309(g).<sup>39</sup>

## 2. EPA Overfiling Considerations

While the CWA provides no legal bar to an EPA enforcement proceeding when a state with a delegated NPDES program has taken a judicial enforcement action for the same violations, EPA has in guidance suggested that it will take enforcement action in much more limited circumstances than the CWA’s broad grant of authority would allow. In EPA’s 1986 [Revised Policy Framework for State/EPA Enforcement Agreements](#), EPA states that there are four types of cases in which EPA may consider taking direct enforcement action: (1) state requests EPA action, (2) state enforcement response is not timely and appropriate, (3) national precedents, and (4) violation of EPA order or consent decree.<sup>40</sup>

The *Revised Policy* explains that because states have primary enforcement responsibility under the CWA and because EPA has limited resources with which it may directly enforce permits, EPA will circumscribe its actions to these areas.<sup>41</sup> In deciding whether to take direct enforcement in the above types of cases, EPA will consider the following factors: whether a case is nationally significant (*e.g.*, involving significant noncompliance or national or regional priorities); whether interstate issues (those involving multiple states or regions) are at stake; whether significant environmental damage or public health risk is involved; whether the violator has gained a significant economic benefit; and whether the case involves repeat violators or patterns of violations.<sup>42</sup>

While the *Revised Policy* describes a “timely” response by the state as little more than the state moving expeditiously to resolve the violation in an “appropriate” manner, it provides further insight as follows:<sup>43</sup>

- (i) *Inappropriate State action:*  
EPA may take direct action if the State enforcement action falls short of that agreed to in advance in the State/EPA Enforcement Agreements as meeting the requirements of a formal enforcement response . . . where a formal enforcement response is required. EPA may also take action if the content of the enforcement action is inappropriate, *i.e.*, if remedies are clearly inappropriate to correct the violation, if compliance schedules are unacceptably extended, or if there is no appropriate penalty or other sanction.
- (ii) *Inappropriate penalty or other sanction:*  
For types of violations identified in national program guidance as requiring a penalty or equivalent sanction, EPA will take action to recover a penalty if a State has not assessed a penalty or other appropriate sanction. EPA generally will not consider taking direct enforcement action solely for recovery of additional penalties unless a State

penalty is determined to be grossly deficient after considering all of the circumstances of the case and the national interest.

Additional EPA guidance also offers further details on what constitutes “timely and appropriate” enforcement responses and reiterates EPA’s position that it will only pursue direct federal enforcement in states with approved NPDES programs when the case is one of the four types outlined in the *Revised Policy*.

## F. General Factors to Consider in Determining Response to Enforcement

In response to an enforcement action, each utility must determine based on its own unique circumstances which course of action is likely to yield the best results at the lowest possible cost with the least burden to operation. A utility should evaluate many competing issues when determining how to respond - i.e., whether to fight/litigate an enforcement action or consider settling; whether to take an aggressive or more cooperative stance on matters subject to enforcement; whether to dig in on issues resulting in protracted negotiations or attempt to fast-track the process. Utilities facing litigation, negotiation, modification or interim plan negotiation, should carefully analyze such factors as available resources and staff, noncompliance issues and potential penalties, operation disruption and productivity loss, precedent and publicity, the technical/financial reasonableness of EPA’s proposal, the working relationship between the regulator(s) and the utility, and the tone that the utility wishes to set for that relationship. Specifically, a utility should consider:

- The government’s resources to litigate - In regards to federal enforcement, DOJ is the largest public law office in the world. While the workload of DOJ is ever increasing and resources are not limitless, chances are that the government’s litigation/negotiation resources exceed those of the utility. That being said, the government has an interest in reducing transaction costs, e.g., expense, time, effort of protracted litigation or negotiation. Thus, regulators have incentive to settle on terms that are less favorable than what could be achieved through litigation.
- The utility’s resources, management time, impact on productivity- A utility must consider the burden on staff resources and management to support various operations as well as the potential expense (internally and externally – consultant/attorney fees/court costs). For litigation, in addition to potential attorneys’ fees, a significant amount of work time must be devoted to discovery (locating, collecting, reviewing and producing requested records), preparation for trial, trial and potential appeal.
- Merits of the case/compliance issues - A utility should assess potential liability based on noncompliance issues; evaluate both the maximum and usual penalties assessed in both litigation and consent decrees. It should also consider that regulatory agencies are afforded deference on issues within their statutory expertise.
- Public Perception - The utility should consider how its course of action might be perceived publicly by decision-makers, stakeholders and ratepayers and should attempt to make the best of the situation no matter which course of action and posture is adopted. There are examples of enforcement actions and resulting settlements raising the visibility of the utility in a positive way and as many other examples of negative public perception arising from an enforcement action.
- Precedent - Utilities should analyze whether agreeing to requirements and terms would create negative precedent for future operation, compliance and interactions with the regulators. In addition, the utility may wish to avoid setting a negative example for the sector or for other

utilities in the state or region on any particular issue.

- Relationship and tone- There should be consideration of the ongoing working relationship of the parties and how the utility wishes to set the tone of that relationship.

---

## Section Three Endnotes

<sup>1</sup> For example, third party review/verification would relieve EPA of certain review efforts typically handled by Region staff, instead requiring communities to bear costs of a third-party consultant's review of City deliverables.

<sup>2</sup> 33 U.S.C. § 1318(a)(A).

<sup>3</sup> *Nat. Res. Def. Council v. Envtl. Prot. Agency et al.*, 822 F.2d 104, 119 (D.C. Cir. 1987).

<sup>4</sup> *U.S. v. Hartz Const. Co., Inc.*, No. 98 C 4785, 2000 WL 1220919, at \*5 (N.D. Ill. Aug. 18, 2000).

<sup>5</sup> *U.S. Steel Corp. v. Train*, 556 F.2d 822, 850 (7th Cir. 1977), *abandoned on other grounds by City of W. Chicago, Ill. v. U.S. Nuclear Regulatory Comm'n*, 701 F.2d 632 (7th Cir. 1983).

<sup>6</sup> 33 U.S.C. § 1318(b).

<sup>7</sup> No. 14-1282, 2016 WL 1254211, -- F.Supp.3d---- (D.D.C. 2016).

<sup>8</sup> Congress built into FOIA a statutory construction method for determining whether a later-enacted statute modifies FOIA. Specifically, a “[s]ubsequent statute may not be held to modify this subchapter . . . except to the extent that it does so express.” 5 U.S.C. § 559 (applying generally to the APA, which includes FOIA); *see also Maxwell v. Snow*, 409 F.3d 354, 357 (D.C. Cir. 2005) (“FOIA is intended as an ‘across-the-board’ statute covering all requests for information unless specifically exempted in a later statute.”).

<sup>9</sup> 33 U.S.C. § 1318(c).

<sup>10</sup> While the \$37,500 figure is current as of date of publication, EPA reviews the amount at least once every four years to [adjust for inflation](#). Pursuant to section 4 of the Federal Civil Penalties Inflation Adjustment Act of 1990, 29 U.S.C. § 2461 as amended by the Debt Collection Improvement Act of 1996 (DCIA), 31 U.S.C. § 3701, each federal agency is required to issue regulations adjusting for inflation the statutory civil monetary penalties that can be imposed under the laws administered by that agency. The most recent adjustment to civil penalties imposed pursuant to the CWA as of the publication of this *Handbook* was in [November 2013](#). It is anticipated that the next increased amount per violation per day will be \$42,500. \_

<sup>11</sup> 33 U.S.C. § 1319(a).

<sup>12</sup> 33 U.S.C. § 1319(g)(4) Rights of interested persons:

(A) Public notice. Before issuing an order assessing a civil penalty under this subsection the Administrator or Secretary, as the case may be, shall provide public notice of and reasonable opportunity to comment on the proposed issuance of such order.

(B) Presentation of evidence. Any person who comments on a proposed assessment of a penalty under this subsection shall be given notice of any hearing held under this subsection and of the order assessing such penalty. In any hearing held under this subsection, such person shall have a reasonable opportunity to be heard and to present evidence.

(C) Rights of interested persons to a hearing. If no hearing is held under paragraph (2) before issuance of an order assessing a penalty under this subsection, any person who commented on the proposed assessment may petition, within 30 days after the issuance of such order, the Administrator or Secretary, as the case may be, to set aside such order and to provide a hearing on the penalty. If the evidence presented by the petitioner in support of the petition is material and was not considered in the issuance of the order, the Administrator or Secretary shall immediately set aside such order and provide a hearing in accordance with paragraph (2)(A) in the case of a class I civil penalty and paragraph (2)(B) in the case of a class II civil penalty. If the Administrator or Secretary denies a hearing under this subparagraph, the Administrator or Secretary shall provide to the petitioner, and publish in the Federal Register, notice of and the reasons for such denial.

<sup>13</sup> *Sackett v. Envtl. Prot. Agency et al.*, -- U.S. --, 132 S.Ct. 1367, 1374 (2012).

<sup>14</sup> 33 U.S.C. § 1319(b).

<sup>15</sup> *City of Detroit v. Grinnell Corp.*, 495 F.2d 448, 462 (2d Cir. 1974), *abrogated on other grounds, Goldberger v. Integrated Res., Inc.*, 209 F.3d 43 (2d Cir. 2000). In *Donovan v. Robbins*, 752 F.2d 1170, 1176-77 (7th Cir. 1985), the court opined: “A federal judge ... has to consider whether the decree he is being asked to sign is lawful and reasonable, as every judicial act must be.... Although a judge thus must, before signing an equity decree that either affects third parties or imposes continuing duties on him, satisfy himself that the decree is reasonable (‘fair, reasonable and adequate,’ in the usual formulation ... but we think ‘reasonable’

sums it up fairly and adequately) how deeply the judge must inquire, what factors he must take into account, and what weight he should give the settling parties' desires will vary with the circumstances. The flexible character of the decision makes generalization difficult; but it is safe to suggest that the limitations of judicial competence and the desirability of encouraging out-of-court settlements in order to lighten the judicial caseload create a presumption in favor of approving the settlement.”

<sup>16</sup> *U.S. v. Akzo Coatings of Am., Inc.*, 949 F.2d 1409, 1436 (6th Cir. 1991) (citing *U.S. v. Cannons Eng'g Corp.*, 899 F.2d 79, 84 (1st Cir. 1990)).

<sup>17</sup> *U.S. v. Miami-Dade Cnty, Fla.*, No. 12-24400-CIV, 2014 WL 7534027, at \*3 (S.D. Fla. Apr. 10, 2014).

<sup>18</sup> *U.S. v. Metro. Water Reclamation Dist. Of Greater Chi.*, No. 11 C 8859, 2014 WL 64655, at \*6 (N.D. Ill. Jan. 6, 2014) (order approving and entering Consent Decree, reviewing fairness).

<sup>19</sup> *Id.*

<sup>20</sup> See, e.g., *Friends of Milwaukee's Rivers & All. for Great Lakes v. Milwaukee Metro. Sewerage Dist.*, 556 F.3d 603, 613-14 (7th Cir. 2009).

<sup>21</sup> *Liberty Mut. Ins. Co. v. Treesdale, Inc.*, 419 F.3d 216, 220 (3d Cir. 2005) (citing *Kleissler v. U.S. Forest Serv.*, 157 F.3d 964, 969 (3d Cir. 1998)).

<sup>22</sup> *U.S. v. Miami-Dade Cnty., Fla.*, No. 12-24400-CIV, 2014 WL 7534027, at \*2 (S.D. Fla. Apr. 10, 2014).

<sup>23</sup> *Id.* at \*3.

<sup>24</sup> *Id.*

<sup>25</sup> *U.S. v. Metro. Water Reclamation Dist. of Greater Chi.*, No. 11 C 8859, 2014 WL 64655, No. 11 C 8859, at \*1 (N.D. Ill. Jan. 6, 2014).

<sup>26</sup> *Id.* at \*8-\*14.

<sup>27</sup> *Id.* at \*6.

<sup>28</sup> *Id.* at \*14.

<sup>29</sup> *U.S. v. Metro. Water Reclamation Dist. of Greater Chicago*, 792 F.3d 821, 827 (7th Cir. 2015).

<sup>30</sup> *U.S. v. Metro. Water Reclamation Dist. of Greater Chicago*, 2014 WL 64655 at \*14; *U.S. v. Metro. Water Reclamation Dist. of Greater Chicago*, 792 F.3d at 825.

<sup>31</sup> 33 U.S.C. 1342(i).

<sup>32</sup> *Id.*

<sup>33</sup> See, e.g., *U.S. v. Town of Lowell, Ind.*, 637 F.Supp. 254, 257 (N.D. Ind. 1985); *U.S. v. Cargill, Inc.*, 508 F.Supp. 734, 740 (D. Del. 1981).

<sup>34</sup> *Cargill, Inc.*, 508 F.Supp. at 740.

<sup>35</sup> *Id.*

<sup>36</sup> 40 C.F.R. §123.27(c).

<sup>37</sup> See *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., Inc.*, 890 F. Supp. 470, 495 (D.S.C. 1995).

<sup>38</sup> 33 U.S.C. § 1319(g).

<sup>39</sup> EPA's position is that in order to be “comparable” to CWA §309(g), a state statute must provide: (1) the right of the person to be assessed an administrative penalty analogous to that provided in §309(g)(2); (2) public participation procedures which must be analogous to §309(g)(4); (3) penalty assessment factors analogous to those enumerated in §309(g)(3); and (4) standards of judicial review analogous to §309(g)(8).

<sup>40</sup> REVISED POLICY FRAMEWORK FOR STATE/EPA ENFORCEMENT AGREEMENTS, U.S. ENVIRONMENTAL PROTECTION AGENCY at 21, available at <https://www.epa.gov/sites/production/files/2013-11/documents/enforce-agree-mem.pdf> (last visited Sept. 28, 2016).

<sup>41</sup> *Id.*

<sup>42</sup> *Id.*

<sup>43</sup> *Id.* at 22-23.

<sup>20</sup> EPA's 1986 *Revised Policy Framework for State/EPA Enforcement Agreements*, at 21.

<sup>21</sup> EPA's 1986 *Revised Policy Framework for State/EPA Enforcement Agreements*, at 21.

<sup>22</sup> EPA's 1986 *Revised Policy Framework for State/EPA Enforcement Agreements*, at 21.

<sup>23</sup> EPA's 1986 *Revised Policy Framework for State/EPA Enforcement Agreements*, at 22.



# Section Four

## IV. Tailoring Standard CWA Decree Provisions to Best Suit Your Utility

Section IV is designed to highlight key issues and trends that utilities should consider in negotiating their own consent decrees. At the commencement of consent decree negotiations, state and federal authorities will typically present a utility with a draft decree that includes standard language with provisions that are typically favorable to the government. It will be up to the utility to carefully analyze the language and propose revisions to provisions (sometimes proposing entirely different structures) to make the approach most workable for the utility's specific situation and needs and to minimize liability exposure. Careful review and comparison of a wide range of final municipal CWA decrees can provide an idea of how the government's provisions have been modified to suit various situations. It can also inform utilities of the types of flexibilities that can be incorporated into a consent decree.

### A. Compliance Programs

The heart of any CSO or SSO decree under the CWA is the program for sewer overflow reductions (frequency and/or volume), achievement of [water quality standards](#) (WQS), and what it means to reach ultimate "compliance" with the terms of the decree.<sup>1</sup> A utility facing a CWA negotiation likely will spend considerable time negotiating these complex issues with the government. Section IV.A.1, below, provides a general overview of CSO and SSO compliance programs as well as stormwater and nutrient provisions seen in CWA decrees.<sup>2</sup> The remaining subparts of the Section detail key compliance issues on which utilities should focus when entering negotiations.

#### 1. Typical Compliance Programs

##### a. CSOs

There are several common elements of CSO reduction programs within municipal CWA decrees:

- ✓ Type of control improvements;
- ✓ Level of control required; and
- ✓ Implementation schedule for improvements.

Many utilities commit to implement significant control improvements such as tunnel/storage systems as a major feature of their CSO programs. Sewer separation is another option, usually best approached in predominantly residential areas. However, recent CSO reduction programs have also involved watershed management approaches that result in reduced runoff quantities, which can have long-term advantages for communities. Indeed, many decrees incorporate a combination of CSO and SSO controls (e.g., **City of Columbus, Ohio**, state consent order, **City of Indianapolis, Indiana**, a federal consent decree, **City of Lima, Ohio**, a federal consent decree, and **Capital Region Water and City of Harrisburg, Pennsylvania**, a federal consent decree) and programs to reduce pollution from municipal stormwater discharges (**Lexington, Kentucky**, and **Boston Water and Sewer Commission**).

The [level of control](#) required is also an issue of intense negotiation and is more fully discussed below in [Section IV.A.2 \(page 82\)](#). However, to preview, the *CSO Policy* sets forth a "presumed" standard of control of 85 percent capture/4 overflows per year. Some utilities have been successful in negotiating higher numbers of overflows (typically in state orders). Yet, a recent

trend in consent decrees is to require achievement of higher levels of control (less than four overflows per year) on certain CSO receiving waters that have a higher potential for public recreational use. See [Section IV, pages 85-87](#) regarding developments in EPA's movement away from the Presumptive Approach).

Consent decrees can approach the level of control and control improvements in two ways. Some utilities have negotiated specific solutions directly into the consent decree along with schedules for implementation. Other utilities have agreed to consent decrees without developing a control strategy. The consent decree in the latter case includes a provision that the utility will develop a plan and schedule pursuant to the decree. In any case, a utility should work to leave as much flexibility in the plan as possible. Committing to an implementation schedule for infrastructure that has not yet been designed is inherently risky. Moreover, many variables can change, including economic conditions, control technologies, and regulatory emphasis. These impacts are clearly demonstrated by the recent recession, increased emphasis from EPA on stormwater control, and Integrated Planning.

All CSO control approaches are associated with extensive costs, and coordination of CSO control efforts with other municipal initiatives can help to leverage and even reduce some expenditures. Consider the following examples:

- Under the consent decree for the **City of Indianapolis, Indiana**, the City will implement a Long-Term Control Plan (LTCP) designed to reduce overflows from its combined sewer system, implement another plan designed to address overflows from its sanitary sewer system, and perform various other remedial measures. Under the consent decree, the utility is expected to achieve 97 percent capture (2 events per year) on Fall Creek and 95 percent capture (4 overflows per year) on its other receiving waters.
- The consent decree for the **City of Fort Wayne, Indiana**, requires the City to make an estimated \$250 million in improvements to reduce the average 60 overflows annually from its sewer system. The improvements to the City's sewer system will reduce the number of overflows to approximately 1 per year on the St. Joseph River and 4 per year on the St. Mary's and Maumee Rivers. The injunctive relief provided under the settlement will reduce the volume of Fort Wayne's untreated combined sewer overflow discharges by 900 million gallons in an average year.
- The **City of Columbus, Ohio**, 2005 Wet Weather Management Plan (WWMP), which was prepared pursuant to its 2002 SSO and 2004 CSO consent decrees with the State of Ohio, included improvement projects totaling approximately \$2.45 billion (2005 dollars). The plan was expected to achieve an estimated 1.4 billion gallons of annual overflow reduction. The 2005 WWMP approval included approval of the level of control/level of service in terms of recurrence frequency and the technology used to achieve the level of control. It did not specifically include the size of the technology, thereby, allowing the utility to optimize the design of the solutions. In 2015, Columbus submitted and the state of Ohio approved an integrated plan – Blueprint Columbus – as an alternative to the WWMP to more effectively eliminate overflows will meeting applicable state and federal requirements under its consent decrees. The Blueprint approach prioritizes removing I/I from the system rather than allowing I/I into the system for the Columbus to then transport and treat as the WWMP would. Coupled with green infrastructure projects, I/I reduction tactics are the core of the Blueprint Integrated Plan. Blueprint Columbus

was approved on the condition that the Columbus implement programmatic reviews of all work completed as part of the integrated plan to evaluate whether the levels of control and performance standards are being met.

- The final consent decree for **Washington, D.C.**, incorporates the city's final LTCP, which provides for control of CSO discharges through a system of underground storage tunnels and pumping stations with stored flow being sent to one of its WWTPs for treatment. The plan also calls for [low impact development](#), sewer separation, outfall consolidation, CSO monitoring and public notification, interceptor sewers, regulator improvements and improvements to excess flow treatment facilities at the WWTPs. The decree contains a 20-year implementation schedule, but with an innovative, cost-based reopener provision discussed below.
- The decree for the **Northeast Ohio Regional Sewer District** (NEORS) incorporates a plan that will result in \$2.9 billion in CSO control measures and an additional \$2.2 billion in non-CSO capital improvements over 25 years. The plan includes projects for increased capacity through tunnel and pump station construction and disinfection through high rate treatment. However, the plan also includes a significant green infrastructure component—one of the first decrees to include such a component—as well as provisions that allows for NEORS to submit a proposal to replace additional gray infrastructure elements for green.
- The 2016 modification to the decree for the **City of Portsmouth New Hampshire**, requires the City to provide \$500,000 to support activities advancing the initiatives outlined in *Great Bay 2020: A Five-Year Vision for Collective Investment, Action, and a Healthy Watershed* (July 27, 2015). The initiative is managed by is Piscataqua Region Estuaries Partnership, Great Bay National Estuarine Research Reserve, New Hampshire Department of Environmental Services, the Nature Conservancy, but the activities to which the City's funds apply are determined with the input and concurrence of the City. Although the City is required to contribute to this project, the overall purpose is to improve ecosystem health and water quality, which ultimately addresses the City's CWA violations. Specifically, the decree requires the first installment of \$100,000 to be earmarked for the development and implementation of a water quality sampling plan for Sagamore Creek following appropriate quality assessment and quality control protocols and for a regional public education symposium relating to sustainable lawn care and landscaping practices that reduce water pollution.

## b. SSOs

EPA's position remains that SSOs are violations of the CWA (regardless of whether such overflows reach waters of the United States), and as such, EPA will seek to require complete elimination of SSOs as the end result of a CWA decree. Accordingly, communities may agree to pursue a "goal" of eliminating SSOs, but should not condition the decree's termination upon that result. Given this position, the scope of what constitutes a SSO or "Unauthorized Discharge" under a consent decree is a crucial negotiation point as is the level of service or type of storm for which a utility must design controls in order to achieve "elimination." Both of these critical issues are discussed in more detail in the following subparts.

Moreover, without a final federal SSO policy or regulation, the acceptable alternatives for SSO control programs are more uncertain than they are for CSOs. [Capacity Management Operations and Maintenance](#) (CMOM) program development and implementation continues to be the

central focus in recent SSO decrees, along with detailed requirements for spill response and cleanup plans and increasing attention to recordkeeping, reporting, and public notification provisions. A potential downside to incorporating the CMOM approach in an enforceable decree is that each program element – and its accompanying schedule – may become subject to government review, approval, enforcement and stipulated penalties. To avoid this, some cities may wish to negotiate as much flexibility into the schedule as possible, or expressly include language that states that certain CMOM components (such as performance indicator metrics) shall not trigger stipulated penalties. For example, some utilities use “interim” milestones that can either be adjusted by informal agreement of the parties (*i.e.* without modification of the decree) or excused if a more comprehensive “final” compliance deadline for program implementation is achieved. The following provide examples of possible programs:

- The **City of Atlanta, Georgia** SSO decree, includes a CMOM approach. Under the decree, the City is creating “a comprehensive program including the development and implementation of programs to ensure proper Management, Operation and Maintenance (‘MOM’) ... and a phased approach for the Evaluation and Rehabilitation of Defendant’s Collection and Transmission System... The remedial actions also address the Defendant’s Interjurisdictional Agreements with Satellite Systems ... and Reporting Requirements.” Rehabilitation and corrective actions may include, without limitation, sewer rehabilitation (*e.g.*, grouting, relining), sewer replacement, and construction of relief sewers. The I/I evaluations and sewer system evaluation surveys are to be consistent with EPA or industry guidance.<sup>3</sup>
- The **City of Mobile, Alabama** decree also builds on the CMOM approach. The City is to perform (1) a System Capacity Assurance Program (short- and long-term), (2) a SSO Reporting, Notification and Recordkeeping Program, (3) a Legal Support Program for SSOs (including ordinances and grease control provisions), (4) a Contingency Plan for Sewer Systems and WWTPs, (5) a Pump Station Operation Program, (6) a Corrosion Control Program, (7) a Grease Control Program, (8, 9 & 10) a Pump Station, Force Main, and a Gravity Line Preventative Maintenance Program, (11) a Maintenance of Rights-of-Way Program, and (12) an Unscheduled Maintenance Program.
- The **City of San Diego, California** consent decree – terminated in 2015 – required the City to continue its enhanced inspection and maintenance programs in the City’s wastewater collection system; system-wide cleaning, root control, sewer pipe inspection, repair or replacement; and grease control blockage programs.
- The **Metropolitan Government of Nashville and Davidson County (Metro), Tennessee** is investing approximately \$300 to \$400 million to control a combination of CSO, SSO and stormwater discharges under its consent decree. Metro must also make improvements to its CMOM programs to prevent future overflows and implement a plan to respond to overflows attentively when they occur.
- The **Lexington-Fayette Urban County Government (LFUCG), Kentucky** consent decree requires more than \$290 million in improvements to address SSOs and to reduce pollution levels in urban stormwater. The major features of the consent decree relating to SSOs require LFUCG to identify and quantify its SSOs; evaluate the capacity, design and condition of the components of its sanitary sewer system including pumping stations and treatment plants; develop and implement remedial measures to address recurring SSOs within 11 to 13 years; and improve its MOM

programs to prevent future overflows and respond to overflows when they occur.

- The **Hampton Roads Sanitation District, Virginia** consent decree is a SSO decree requiring investments of over \$140 million designed to address all SSOs, “Prohibited Bypasses” and “any other unpermitted or unauthorized discharges.” The major components of the SSO program include development of a MOM plan (consistent with EPA’s CMOM guidance), a preliminary capacity assessment report, a SSO emergency response plan, a short term wet weather operational plan and a regional wet weather management plan (RWWMP). However, in a Second Amended Consent Decree, which was approved in 2013, the District is permitted to defer development of the RWWMP so that it can consider the benefits of regionalization.
- The decree for the **Metropolitan District of Hartford, Connecticut** incorporates EPA’s “Guide for Evaluating CMOM Programs at Sanitary Sewer Collection Systems” as Appendix A to the decree and requires the District to submit for EPA approval and then implement a CMOM program “in accordance with the attached guidance document.”
- The **San Antonio, Texas, Water System (SAWS)** decree is a SSO decree that requires implementation of a CMOM and capacity assurance program but also includes a two-phase “Early Action Program” designed to identify and address certain projects that are to be completed within the first six years of the decree.
- The **City of Greenville, Mississippi** partial decree requires a series of CMOM Programs: Sewer Overflow Response Plan, Information Management System, Sewer Mapping Program, Gravity Sewer System Operations and Maintenance Program, Corrosion Control Program, Pump Station Operations and Preventative Maintenance Program, Fats, Oils, and Grease (“FOG”) Control Program, Financing and Cost Analysis Program, and Legal Support Program. The decree allows the CMOM Programs contained therein to be revised without constituting a modification of the partial decree so long as EPA has approved such revision.

Other decrees incorporating the CMOM approach include those for the **Louisville & Jefferson County Metropolitan Sewer District, Kentucky; Baltimore County, Maryland; City of Knoxville, Tennessee** (including a special provision giving EPA the “Right to Audit” the program in years 4 and 8 after entry of the decree); **Metropolitan Government of Nashville and Davidson County; City of Lebanon, Missouri; Sanitation District No. 1 (SD1) of Northern Kentucky; Boston Water and Sewer Commission; City of Oswego, New York; City of Great Falls, Montana; City of Lawrence, Massachusetts; City of Evansville, Indiana; City of Fort Smith, Arkansas; and City of Waterloo, Iowa.**

#### c. Stormwater

As noted in [Section I.D \(page 22\)](#), stormwater requirements are also increasingly included in many CWA decrees. Typical elements of stormwater compliance programs include the development and implementation of [Illicit Discharge Detection and Elimination \(IDDE\)](#) plans, development of [BMP Implementation Plans](#) and GIS mapping of the [MS4](#). Examples of decrees containing stormwater requirements include the following decrees:

- The Boston Water and Sewer Commission decree requires MS4 sampling, development of an MS4 map, development of a Revised IDDE plan, a requirement to remove illicit discharges, development of a stormwater model and a BMP

proposal (Phase I BMP Implementation Plan), stormwater model report and BMP Recommendation Report as well as GIS mapping of the MS4. It further requires the Commission to implement a Construction Site Inspection and Enforcement Program and an Industrial Facility Stormwater Pollution Prevention Program. The decree also requires the Commission to enter into various intergovernmental agreements with governments whose stormwater drainage systems connect to the Commission's MS4. The Commission is also required to develop and implement an extensive Public Education and Outreach program.

- **City of Revere, Massachusetts**, decree requires development and implementation of an IDDE plan and performance of GIS mapping of MS4 system.
- **City of Newport, Rhode Island**, requires installation of ultraviolet treatment system and implementation of a monitoring program.
- The consent decree for **Arecibo, Puerto Rico**, lodged in 2012 and pending court order, would require development of a stormwater management plan, a sampling and analysis plan, MS4 cleaning, construction of stormwater retention structures, a closed circuit TV study of the system, and upgrades to pump stations.
- The consent decree for the **City of Lawrence, Massachusetts**, requires the city to develop a comprehensive stormwater compliance program. The decree requires to the City to develop an IDDE Monitoring Plan for all twenty-two primary separate storm drain outfalls and all known MS4 outfalls. Upon approval, the City is then required to submit an IDDE Investigation Plan for screening and monitoring outfalls and interconnections, investigating sub-catchment areas, and identifying illicit discharges; the decree contains a schedule for the investigation of several sub-catchment areas. Additionally, the City must adopt an ordinance prohibiting non-stormwater discharges into the MS4, submit an Illicit Discharge Abatement Plan, and remove illicit discharges within sixty days. Moreover, the decree requires the city to develop and update every six months a GIS map of the collection system and the MS4 to "facilitate the City's operation and maintenance of its collection System and MS4." The decree also mandates stricter construction site stormwater management, including the development of construction site inspection procedures, requiring sediment and erosion control, and the creation of an active construction site database, and implementing post-construction stormwater controls.
- The **Salt Lake County, Utah**, MS4 consent decree lodged in 2016 requires the County to update and fully implement an EPA-approved Storm Water Management Plan, establish training for all MS4 program requirements, develop and implement its IDDE program and corresponding standard operating procedures and BMPs to prevent non-stormwater discharges, implement a Storm Water Pollution Prevention Plan and corresponding standard operating procedures, update and maintain its construction site database, develop an inventory of all post-construction stormwater control structures, develop a training program to reduce pollutant runoff from municipal operations, and develop and implement procedures to identify and inspect high-risk and industrial runoff.
- Along the same lines, the **Baltimore, Maryland**, 2016 modified decree continues the 2002 consent decree's sophisticated program for identifying and eliminating illegal stormwater or sewage connections to the collection system.



See also decrees for **Lexington-Fayette Urban County Government (LFUCG), Kentucky**; **Metropolitan Government of Nashville and Davidson County (Metro)**; **City of Swampscott, Massachusetts** (decree is structured similar to the **City of Lawrence, Massachusetts** decree); **Municipality of San Juan**; **City of Rockford, Illinois** (includes stipulated penalties for failure to comply with illicit discharge remedial measures); and **Capital Region Water and City of Harrisburg, Pennsylvania** (requiring the CRW to implement nine minimum control measures to manage stormwater discharges).<sup>4</sup>

#### d. Nutrients

Only a limited number of CWA enforcement actions expressly contain nutrient requirements. However, NACWA expects such terms to become more prevalent in the future. Below is a brief description of consent decrees addressing nutrient issues that have been identified to date:

- The CSO consent decree for the **City of Fitchburg, Massachusetts**, (¶ 48-49) requires the city to construct treatment plant upgrades to address phosphorus within approximately one year of the decree (by 2013). The decree further includes interim phosphorus limits that apply until the construction upgrades are completed. (¶ 58). Once completed, a second set of interim limits and monitoring limits applies. The decree further requires construction of additional facilities to meet the following permit limits: seasonal total phosphorus concentration-based limit of 0.2mg/l and a total phosphorus mass-based limit of 20.7 lb/day. The decree requires development of a Wastewater Management Plan that includes an itemized schedule for construction of the upgrades “as expeditiously as practicable within the City’s financial capacity and consistent with sound engineering practice and normal construction practices.” (¶ 55).
- The **Williamsport Sanitary Authority, Maryland**, decree provides in the Effect of Settlement/Reservation of Rights provision (¶ 73) that the decree does not constitute approval of the “Nutrient Removal Improvements” set forth in the Authority’s LTCPs.
- The **Scranton Sewer Authority, New Jersey**, consent decree (¶ 15) requires the City to be in compliance with final effluent limits of its NPDES permit, and if it is not in compliance with its annual limitation for 2014, the City shall purchase nutrient credits in a quantity costing up to the amount of \$100,000. Under the stipulated penalty provision, the unavailability of credits is not a defense to liability for penalties for failing to comply with this requirement. Further, if the authority only purchases a portion of the credits its needs, it will then be required to pay a stipulated penalty equivalent to the difference between \$100,000 and the amount paid for the credits. (¶ 40.d).
- The **District of Columbia Water and Sewer Authority** modified its LTCP under its consent decree in 2015 to voluntarily increase the size of one of its CSO tunnels to also comply with more stringent nutrient limits in its NPDES permit as a result of nutrient reductions mandated by the Chesapeake Bay TMDL.
- The impetus for the partial decree for **Capital Region Water and City of Harrisburg, Pennsylvania**, was, in part, CRW’s failure to implement the schedule for Biological Nutrient Removal as set forth in its NPDES permit. Consequently, the decree required CRW to comply with the annual nutrient effluent limitations set forth in the NPDES permit. If such limits could not be met by the end of the compliance period, CRW then had one month to purchase a minimum of 116,000 Total Nitrogen credits up to an amount of \$350,000.00.

- The **City of Portsmouth, New Hampshire**, decree requires the City, for the five-year period commencing June 1, 2020, to achieve a seasonal average total nitrogen effluent concentration level not greater than 8 mg/l from May 1 through October 31 annually and a monthly average total nitrogen effluent concentration level no greater than 8 mg/l from June 1 through October 31 of each year for a particular wastewater treatment facility.

## 2. Design Storms/Level of Service or Control

As previewed above, the level to which communities must design their controls will likely be one of the most significant issues in many CWA consent decree negotiations. At its core, it will impact the utility's control program, implementation costs (and schedule) and ultimate compliance with its decree. This subsection will look at how level of service/control/performance (collectively "LOS") has been addressed in both the SSO and CSO contexts in decrees.

In general, the goal of a control project is to reduce the risk of failure to an acceptable level. Risk is a function of both probability of occurrence and consequence of failure, but the LOS is often described in terms of the probability or return period. For example, a five-year return period storm is one that has a 20 percent probability of being exceeded in any given year, based on long-term rainfall statistics. As such, a five-year or larger storm would be expected to occur once every five years as a long-term average.

In negotiating a LOS standard (or, as appropriate, a range of standards), most communities will first start with identifying a detailed program of system improvements to address SSO and CSO issues and then developing corresponding cost estimates for such improvements. Negotiations over program scope and LOS can take considerable time—with some communities negotiating for years. However, in any LOS negotiation, knowing the program's costs of compliance will be absolutely crucial as increasing the LOS will inevitably result in higher program costs. Therefore, the LOS selection is usually negotiated in concert with an affordability analysis and schedule development.

Indeed, given the cost significance of an LOS standard, many communities perform at the onset a risk-based cost-benefit determination of which LOS is the most cost-effective to protect water quality and human health. This determination will analyze various alternative LOS or control—with higher LOS (for example, elimination of very infrequent SSOs, such as a once in 10-years frequency) typically being exponentially more expensive to implement. Utilities should be prepared to discuss this analysis in the context of the *CSO Policy's* "knee of the curve" context. The *CSO Policy* states that utilities should evaluate "where the increment of pollution reduction achieved in the receiving water diminishes compared to the increased costs," and refers to this analysis as "knee of the curve."<sup>5</sup> The *CSO Policy* explains that this analysis should "be among the considerations used to help guide selection of controls."<sup>6</sup> A modeling analysis can be used to assist in assessing the incremental benefit achieved by each increased level of control to determine the point at which expenditure of additional funds does not achieve proportionate improvements in water quality. It can also help support a response to demands from EPA for higher levels of control if a utility can demonstrate that the frequency of such storms is low relative to the costs. This analysis may also compare LOSs based on the incremental cost to the incremental volume reduced over a planning horizon (*i.e.*, \$25 per gallon).

An LOS standard can be articulated a number of different ways. Historically, the LOS has been based on design storms. Design storms (sometimes called design events) are rainfall events that are used as performance criteria for planning and designing facilities and/or wet weather flow control programs (*e.g.*, a 10-year design storm). Design storms were adopted decades ago where facilities and I/I reduction programs were implemented to accommodate a selected design storm in a manner

that prevents an adverse outcome such as flooding, CSOs, or SSOs.

The *CSO Policy*, on the other hand, uses a “typical year” standard. Typical year simulations are generally a step up in sophistication from the single design storm. A typical year is usually selected out of the historical record of rainfall. Rather than simulate a single event, the typical year simulates all the events from the historical record for the selected year. This approach then examines the collection system’s response. The typical year analysis also helps identify how consecutive storms impact overflows in the system and can simulate the full year’s rainfall pattern. The resultant LOS is then based on how many times the system overflowed, *i.e.*, two overflows in the typical year.

Design storms and typical year analyses are most applicable to CSS and may not be appropriate for SSS. Overflows from a CSS are primarily driven by runoff from impervious surfaces, whereas overflows from a SSS are driven by I/I. Moreover, a CSS may have a less stringent LOS than a SSS due to the current regulations.

Presently, some communities, rather than using a design storm or typical year approach, are shifting the LOS focus to the system’s response. The National Weather Service has developed depth-duration curves for storms of various recurrence intervals, which are helpful for quantifying the magnitude of a rainfall event, but do not reflect collection system response to such events. Instead, this approach recognizes that there are many variables that influence collection system response beyond rainfall, including other weather parameters such as temperature, wind speed, and the time of year or season, as well as soil conditions, slopes, ground saturation, *etc.* Modern computing technology allows for more detailed analysis of a collection system than was possible even ten years ago. Rather than define a LOS on rainfall occurrence, the LOS is based on the actual system response. For example, the return period for a SSO discharge may be once every ten years. A utility can also use long-term simulations of historical rainfall to evaluate system response, such as a 20-year simulation. Another approach that has been utilized involves designing the system for a particular flow frequency, rather than a rainfall frequency. Either approach requires an extensive data set for both rainfall and sewer flow. But, if a community has an extensive record of flow meter data, they may utilize a flow recurrence-type methodology.

Communities should consider retaining professional consultants experienced in modeling to assist with their negotiations of a LOS standard. CSO and SSO modeling is a very complex process and the analysis can require a considerable amount of time to collect the data, develop a calibrated model, and analyze alternatives.

#### **a. SSOs**

In the SSO context, EPA maintains the position that SSOs are illegal and must be eliminated, regardless of water quality impact. Thus, for compliance purposes, the scope of what constitutes an SSO is a critical issue (and is discussed in more detail below). However, also critical is the meaning of “SSO elimination.” Complete elimination may not be achievable or affordable since there may be some combinations of weather conditions that will result in an overflow regardless of control measures in place. Accordingly, some decrees have sought to accommodate such situations by specifying the type or level of storm to which controls must be designed – *i.e.* the design storm described above – such that SSOs no longer occur during that type or level of storm. In practice, many communities utilize a high LOS with a return period of five or more years, although some have been shorter (*e.g.*, 2 years). Use of a design storm, in this capacity, can provide clarity with respect to the design of a system for purposes of finalizing a decree and commencing construction. However, these short return interval events may not demonstrate

long-term performance of the system and thus may impact ultimate compliance with such a level of control in a consent decree (discussed above).<sup>7</sup>

Other decrees have left SSO elimination undefined or vague, which may give a utility flexibility in defining it in other contexts such as an integrated plan or on a site-specific basis. The downside to such open-endedness, however, is that compliance problems can occur when the regulatory expectation does not adequately account for prolonged storm periods that persist and result in worsening I/I conditions in each successive event. As discussed in [Section VI.D \(page 157-58\)](#), climate change impacts may have repercussions that make long-term compliance even more complicated for utilities. Although a short-term design storm standard might not be exceeded in this case, the cumulative effect of these events can cause very rare system flow conditions and overflows. In such a case, a utility may have difficulty pleading for leniency because the standard was written too narrowly around a single storm.

Ultimately, there is no one-size-fits-all approach to LOS analysis; thus, utilities should negotiate terms based upon their individual circumstances. However, it is important to understand that there are wide disparities across the United States on such terms in the SSO context, and as such, communities entering negotiations face inconsistent requirements. Accordingly, utilizing a cost-benefit/modeling analysis may help justify a utility's negotiating positions to avoid or mitigate requirements that increase costs without adding a corresponding environmental benefit. *Below are examples of design storms or LOS terms that have been agreed to in consent decrees in the SSO context:*

- The **City of Akron, Ohio** decree (p. 6) required the utility to “eliminate any discharges resulting from less than a 10-year intensity storm from the separate sanitary sewer system.”
- The **City of Little Rock, Arkansas** decree, requires the City to eliminate all “Capacity-Related” SSOs in its sanitary sewer collection and treatment system, except for Capacity-Related SSOs caused by a storm event greater than a specified “Design Storm Event.”
- The **Hampton Roads Sanitation District, Virginia** decree defines the term “Level of Service” to mean “the peak hourly sewer flow that the Specified Portions of the Regional Sanitary Sewer System can convey while maintaining Level of Service Adequate Capacity.” In this definition, “Level of Service Adequate Capacity” means the “capacity needed to collect and convey within Operation Pressures in the RWWMP [Regional Wet Weather Management Plan], peak hourly wet weather flows at a specific Level of Service, without capacity-related SSOs or Backups, and to treat such flows without capacity-related Bypasses, Prohibited Bypasses, unauthorized discharges and/or overloading at the STP.” The peak flow scenarios that the District is to consider as part of the RWWMP include the two-year peak flow recurrence and 2030 population, the 5-year peak flow recurrence and 2030 population and the 10-year peak flow recurrence and 2030 population.
- **SD1 of Northern Kentucky's** 2014 Integrated Plan calls for elimination of SSOs using a two-year storm level of service.
- Even when overall compliance is not measured by reference to specified wet weather conditions, penalty relief may be afforded under similar circumstances. For example, the **City of Cincinnati, Ohio**, decree (p. 49) contains a stipulated penalty provision, which states that the City is not liable for stipulated penalties for sanitary sewer discharges that are “caused by a ten-year or greater storm event.”

- The **City of Baltimore, Maryland** decree requires elimination of all SSOs without identifying an express design storm criterion.

## b. CSOs and Developments in EPA’s “Presumptive Approach”

Under the *CSO Policy*, compliance with WQSs may be “presumed” if a utility achieves 85 percent CSO flow capture, or reduces CSOs to 4 per year. Accordingly, this “[presumptive](#)” approach—as it is sometimes referred to—is a typical starting point for cities when evaluating CSO controls. Some utilities have been successful in negotiating higher numbers of overflows (typically in state orders).<sup>8</sup> Yet, an emerging trend in recent federal consent decrees is to require achievement of higher levels of control (fewer than 4 overflows per year) on certain CSO receiving waters with a higher potential for public recreational use. Other decrees have focused on a design storm matrix for determining the level of control instead of a defined number of overflows approach.

The Presumptive Approach has provided an important compliance metric for CSO communities for years. It has provided communities with a quantifiable target for control/violations, which has proved helpful in satisfying decree obligations and ultimately, terminating decrees after a utility has shown success. Perhaps influenced by the EPA approach in SSO contexts (where all SSOs are treated as *per se* CWA violations), EPA is increasingly expecting CSO communities to demonstrate improvement in water quality as a result of decree projects. As such, communities that previously had built compliance programs around a Presumptive Approach rubric may now experience EPA requiring more stringent evidence of compliance before agreeing to terminate a decree.

EPA’s 2015 Report by the Office of Inspector General, entitled *EPA Needs to Track Whether Its Major Municipal Settlements for Combined Sewer Overflows Benefit Water Quality*,<sup>9</sup> also signals an increased regulatory interest in the “demonstration” approach (*see infra*). In the report, the Inspector General states that while certain communities under enforcement have reduced CSOs and met project milestones, “EPA is not tracking and assessing results from consent decrees or determining whether the consent decrees are leading to desired water quality improvements.”<sup>10</sup> The report noted the significant public investment (estimated at \$32 billion, considering a total of 47 CSO decrees) that does not always correspond with intended results of such expenditures—a quantifiable improvement in water quality.<sup>11</sup> EPA noted the lack of a national tracking protocol for water quality, and urged a priority tracking for communities under consent decree enforcement.<sup>12</sup> Its recommendations include the annual reporting of data collected under CDs, the development of a national tracking system, and a public website to publish information gained and accountability results.

CSO utilities are seeing the results of EPA’s shift in their decree negotiations. Communities are seeing EPA case teams focus on increased data collection (note that this is consistent with EPA’s Next Generation Compliance (*see Section III, page 54*)), as well as a more demonstrative approach to achieving CWA compliance. EPA has begun to require a more robust post-construction monitoring program, such that communities demonstrate both: 1) compliance with model-based performance criteria (via implemented controls) as well as 2) in-stream water quality monitoring to assess results. In recent negotiations, EPA has pointed to the **Lima, Ohio** decree’s post-construction monitoring plan as an exemplar approach. Even in the context of SSO decree enforcement, EPA regions are asking utilities to agree to monitor stormwater outfalls to build databases and to identify sources of pollution that may point to illicit connections between MS4 and SSS. For utilities currently implementing decrees that reflect the Presumptive Approach, utility representatives should be prepared to point to compliance metrics outlined in their decrees, while also developing a compliance narrative that demonstrates water quality

improvements as a result of the utility’s actions (and in some cases, identifies non-utility variables that may contribute to water quality challenges).

While EPA has not announced an official policy or position on a shift away from the presumptive approach, recent statements by EPA staff suggest that the Agency indeed believes the approach will not provide sufficient water quality improvements. At a recent meeting of clean water utility professionals, a senior level Agency official opined that communities using the Presumptive Approach may find themselves needing to complete additional work at the conclusion of their decrees because they are not meeting water quality standards.

Similar to the SSO context, utilities evaluating a level of control or LOS provision in the CSO context should also consider developing an analysis that evaluates the most cost-effective level of control to protect water quality. Such an analysis can be used to assess the incremental benefit achieved by each increased level of control to determine the point at which expenditure of additional funds does not achieve proportionate improvements in water quality.

Additionally, CSO communities may decide to diverge from the Presumptive Approach model when their control plans will result in benefits beyond simply overflow reduction. This approach, sometimes called the “[demonstration approach](#),” involves the utility demonstrating via data and monitoring that the proposed controls are adequate to meet water quality standards and that any remaining CSOs will not prohibit attainment of WQSs. In such cases, utilities may want to detail the water quality benefits in a manner that holistically assesses the water quality benefits of a plan as opposed to solely CSOs reductions. These benefits might include a greater number of days of compliance with WQS, nutrient reductions, an increased number of stream miles improved and improved ecological and human health conditions. As provided above, such detail may be helpful even for communities using a Presumptive Approach, in light of EPA’s increased interest in using water quality data to show improvements as a result of enforcement successes. Such an analysis can be utilized to justify a city’s proposed control levels in consent decree negotiations. *Below are examples of level of service terms that have been agreed to in consent decrees in the CSO context:*

*Presumptive Approach:*

- The **City of Bangor, Maine** decree (§4) states that “with respect to CSOs, compliance shall be achieved in accordance with the National Combined Sewer Overflow Strategy ... and the Region I Policy Statement Concerning the Relationship Between Regulation of Discharges from CSOs and Water Quality Standards ....” This section also provides that nothing in the decree shall prevent Bangor from “seeking a modification of water quality standards” where appropriate.
- **City of Philadelphia, Pennsylvania** state consent decree (¶ 7) provides that the LTCP is “based upon the ‘Presumption’ approach, consistent with the National CSO Policy.” The order requires the City to eliminate or remove no less than the mass of pollutants that otherwise would be removed by the capture of 85 percent by volume of the combined sewage collected in the system during precipitation events on system-wide annual average basis.

*Design Storm or Typical Year Approach:*

- The state consent order for the **City of Portland, Oregon** includes a requirement to eliminate untreated CSO discharges to specific water bodies if they occur during



storm events over various periods of time (e.g., a five-year event in winter or a 10-year event in summer for one area, and a 4-in-1-year event in winter or a three-year event in summer for another area).

- The **City of Mishawaka, Indiana** decree provides that if the city implements the remedial measures set forth in its decree it will not have any CSO Discharges during a “Typical Year” of rainfall. The decree defines a “Typical Year” as “the amount, intensity, and frequency of rainfall or other precipitation, and the St. Joseph River flow rates, that occurred during 1992.”
- The **City of Lima, Ohio** decree provides that completed upgrades to the wastewater treatment plant and CSO storage tanks will result in the City achieving a Performance Criterion of no more than five CSOs during the Typical Year. The decree defines a “Typical Year” as the year 1949.
- The **District of Columbia Water and Sewer Authority’s** modified LTCP uses the design storm approach, and out of a variety of design storm thresholds considered, ultimately chose the 1-year 24-hour design storm. Furthermore, the documents describing the development of the final modified LTCP emphasize that this design storm well exceeds the levels of control in the Presumptive Approach suggested by the *CSO Policy*.
- **Capital Regional Water and the City of Harrisburg, Pennsylvania** consent decree required CRW to submit a technical memorandum of a statistical evaluation of long-term location rainfall patterns that support a Typical Year for LTCP development purposes.

*Alternative (and Demonstrative) Approaches:*

- Under the consent decree for the **City of Indianapolis, Indiana**, the City will implement a LTCP designed to achieve 97 percent capture (2 CSO events per year) on Fall Creek and 95 percent capture (4 CSOs per year) on its other receiving waters in a “typical” year. The typical year is defined using the average annual statistics for a representative five-year period from 1996 to 2000 (or other period subsequently agreed to by the parties). Further, this level of control was predicated upon a revision to water quality standards that would authorize overflows due to storms exceeding these levels of control. If such revisions are not approved within five years, the City can, under the terms of the decree, seek modification of the implementation schedule.
- **SD1 of Northern Kentucky’s** 2014 Integrated Watershed Plan developed under its decree compares both the Presumptive Approach (“Traditional” approach) of four overflows per year with an integrated watershed plan that includes CSOs, SSOs and stormwater reductions to justify an alternative level of control. The plan proposes to eliminate 20 CSOs, 1.2 million gallons of CSO volume from gray and green infrastructure improvements, treat 767 million gallons of CSO volume through high-rate treatment with a capture rate between 85 and 94 percent. The comprehensive watershed plan will result in water quality benefits that exceed the traditional approach including resulting in a reduction of bacterial levels, increased days of compliance with WQS, improved water quality in an increased number of stream miles and greater reductions in nutrient loading. Updated Watershed Plans will be submitted at five-year intervals. The deadline for full implementation of these plans is December 31, 2025.

### 3. Scope of “SSOs”/Unauthorized Discharges and Inclusion of Basement/Building Backups

Because EPA takes the position that all SSOs are illegal, how a SSO decree defines SSOs and/or unauthorized or unpermitted discharges is an important compliance issue. The scope of overflows that are subject to the standards of a decree will have repercussions on program costs and controls—typically the broader the term, the more expensive the program—as well as interim and final compliance with the decree. Therefore, it is an important negotiation point for communities. Also linked is the concept of Basement/Building Backups, which EPA regularly seeks to include under the definition of SSOs, notwithstanding that such discharges may not enter waters of the United States. This subpart will discuss how these interrelated terms have been addressed in various decrees as well language revisions that can assist in mitigating the scope.

#### a. SSOs

While the municipal community continues to assert that overflows to dry land or basement backups cannot constitute violations of the CWA or of the NPDES regulations since there is no discharge to waters of the United States and thus no federal jurisdiction under the CWA, EPA enforcement officials regularly insist that such discharges violate the requirement for proper operation and maintenance of a SSS. The scope of the SSO definition in a decree is, therefore, important given the ongoing debate in this area. *Consider the following example:*

- A clean definition of a “prohibited SSO” would not include collection system releases that occur on dry land, as the CWA only prohibits discharges to “waters of the United States.” The narrowest SSO definition in a consent decree is one that includes only those overflows that actually reach waters of the U.S., such as in the **City of Toledo, Ohio**, decree (¶ 4(o)).

*Compared with:*

- A broader SSO definition including overflows that do not reach waters of the U.S. can be found in the **City of Atlanta, Georgia**, SSO decree (pp. 13-14) (“Sewage Overflows include discharges to waters of the U.S. and the State as well as discharges to public or private property that do not reach waters of the U.S. or the State, such as to land surfaces or structures”).
- The **City of Baltimore, Maryland** decree also contains a broad definition of SSO as “any spill, release or discharge from any portion of the Collection System other than Baltimore’s Combined Sewer System.” (¶ 7.S.) The decree further provides that Baltimore shall eliminate all SSOs.
- The **Metropolitan Government of Nashville and Davidson County, Tennessee**, (¶ V.A.24) decree defines SSOs to include “unpermitted discharges,” “overflows, spills and releases of wastewater that may not have reached waters of the United States or the State” and “all Building Backups.”
- *See also* **City of Hammond, Indiana** decree (¶ 64); **Town of Greenwich, Connecticut** (¶ 6.q.); **City of Newport, Rhode Island** (¶ 6) (defining SSO to include “any release of wastewater from the Collection System to public or private property that does not reach waters of the United States, including Building/Private Property Backups”); **City of Perth Amboy, New Jersey**, decree (¶ 7); **Hampton Roads Sanitation District, Virginia**, decree (¶ 8); **City of Great Falls, Montana** (¶ 1); **Scranton Sewer**

**Authority, Pennsylvania (¶ 8).**

- The **San Antonio Water System (SAWS)** decree defines SSOs as “unpermitted discharges” and “any release of wastewater from SAWS WCTS to public or private property that does not reach State water or waters of the United States, including Building/ Private Property Backups.” But, it distinguishes for purposes of stipulated penalties those SSOs that reach waters of the United States and those that do not. For example, SSOs that reach waters of the United States are subject to stipulated penalties of \$500 per day if they occur within 4 years of the date of lodging. The penalty increases in subsequent years. For SSOs that do not reach waters of the United States, SAWS is only subject to a penalty of \$350 per day beginning 4 years after the date of lodging.
- ✓ The **City of Lima, Ohio**, decree likewise includes discharges to the waters of the State or United States from the City’s Sanitary Sewer System in its definition of “Sanitary Sewer Overflow” as well as any release of wastewater from the City’s Sanitary Sewer System to public or private property that does not reach waters of the State or United States, including Building/Property Backups.

*Compare further with:*

- A middle ground approach is reflected in the **City of Cincinnati, Ohio**, decree (¶ V.B.), which defines “SSO” to include discharges that do not reach waters of the State or waters of the U.S., but excludes basement backups, and separately defines “SSD” (or Sanitary Sewer Discharge) as a discharge to waters of the State or waters of the United States. The Capacity Assurance Program Plan in the decree is designed to eliminate SSOs, but only SSDs are subject to the stipulated penalty provisions of the decree.
- A similar approach is taken in the **Bristol Township, Pennsylvania**, decree (¶ 6), which defines SSOs as a “Discharge from the Collection System”, including any Sanitary Sewer Discharge or SSDs. However, SSDs are then defined as any “Discharge... through a point source not specified in any NPDES permit to ‘Waters of the United States’ or ‘Waters of the Commonwealth.’”
- Another middle ground approach is reflected in the **City of Mobile, Alabama**, decree (¶ 7), which includes discharges that do not reach waters of the U.S. within the definition of “SSO,” but excludes them from the definition of “Unpermitted Discharge.” Similarly, the **City of Waterloo, Iowa**, decree defines SSOs as including discharges from the SSS reaching waters of the United States as well as releases from the SSS to public and private properties that do not reach waters of the United States.
- The **City of Baton Rouge, Louisiana**, decree (¶ 13), contains a definition of SSOs that “does not include discharges that do not violate the CWA or regulations enacted pursuant to the CWA.” This leaves both parties on an equal footing if there is a future dispute over compliance, with EPA free to argue that SSOs violate the proper operation and maintenance regulations and the City free to argue that they do not.
- The **City of Revere, Massachusetts**, decree contains a definition of SSO that includes basement backups. However, under the Stipulated Penalty provisions (Section X), the City is liable for “unpermitted discharges” in the amount of \$6,500

for each day a SSO occurs, although such penalties are not required if the City stops the SSO “as soon as reasonably practicable” and is in compliance with the remedial schedules for its SSO program.

- The **Boston Water and Sewer Commission** decree (¶ 82.c.) contains a similar provision finding that the Commission will not be liable for an “unpermitted” SSO if it stops the SSO as soon as reasonably practicable and is in full compliance with the implementation schedules of the decree and complied with all SSO reporting requirements.
- ✓ The **Puerto Rico Aqueduct and Sewer Authority (PRASA)** decree defines SSOs as “any discharge, diversion, overflow, spill or release to waters of the United States from or caused by the Sanitary Sewer System through point sources not specified in any NPDES Permit, as well as any release of wastewater from or caused by the Sanitary Sewer System to public or private property that does not reach waters of the United States. However, if PRASA confirms SSOs are caused by laterals, other piping, or conveyance system not owned or controlled by PRASA, those are not SSOs for the purpose of this Consent Decree.” This approach captures even those releases that do not reach waters of the United States if it results from PRASA’s operation of the sewer system, but balances that inclusion with the explicit exclusion of those releases beyond PRASA’s control.
- ✓ The **City of Baltimore, Maryland**, 2016 modified decree, on the other hand, limits SSOs to “any spill, release, or discharge of wastewater from any portion of the Collection System, except from NPDES permitted outfalls in accordance with the applicable permit.”

#### b. “Unauthorized Discharge”

Closely related to the SSO definition is the definition of “unpermitted” or “unauthorized” discharges. This definition, or its equivalent, is often used to determine the applicability of the compliance and penalty sections of the decree. Much like the SSO definition, this term, in its narrowest sense, is restricted to discharges that reach waters of the state or the United States and does not include discharges to dry land or basement backups. *Consider the following examples:*

- The **City of New Orleans, Louisiana** decree (§VI.r) defines an “Unauthorized Discharge” as “a discharge of wastewater from any point in the Collection System, other than through the permitted outfall, to waters of the United States.” Stipulated penalties are assessed for such “Unauthorized Discharges.”
- The **Scranton Sewer Authority, Pennsylvania** decree (¶ 8) defines “Unpermitted Discharge” as any dry weather overflow or any discharge to water of the United States or Commonwealth from the Collection System at a location other than an Outfall designated in the NPDES permit. Importantly, this term is more narrowly crafted than the definition of SSO under the same decree, which is broader and includes basement backups. Only dry weather discharges are subject to graduated stipulated penalties based upon volume as are discharges “that reach waters of the United States.” (¶ 40.a.)
- The **City of Mishawaka, Indiana** decree (¶ 8.ss.) includes a definition of “Unlisted Discharge” that means “any discharge to waters of Indiana or waters of the United States from the Facility, from or through any point source that is not specifically

identified in Mishawaka's NPDES Permit as a Combined Sewer Overflow or CSO outfall." The terms of the order require Mishawaka to have "no Unlisted Discharges" (§ 11), but stipulated penalties do not begin to accrue with respect to Unlisted Discharges until after the City completes construction of the CSO Control Measures.

- The **City of Welsh, West Virginia** decree (§ 7) defines "unpermitted discharge" as any discharge at a location other than a CSO outfall identified in the utility's permits.
- The **Metropolitan Government of Nashville and Davidson County, Tennessee** decree (§ V.A.32) defines "unpermitted discharge" as a discharge that reaches waters of the United States or State from the i) sewer system, ii) point sources not specified in NPDES permits and iii) "WWTPs which constitute a prohibited Bypass." This definition of unpermitted discharge is narrower than the definition of SSO under the decree, which incorporates discharges that do not reach waters of the United States or state as well as Building Backups. Unpermitted discharges, on the other hand, must reach waters of the United States or state, but the definition is broader than some other decrees in that it also would also include bypasses. Stipulated penalties under the decree are limited to only Unpermitted Discharges and Dry Weather Overflows.

Compared with:

- The **City of Mobile, Alabama** decree (§ 7), includes an expanded definition of "Unpermitted Discharge" to capture "the discharge of pollutants from a point source into waters of the United States or the State which is not authorized by an NPDES permit, including but not limited to any SSO which reaches waters of the United States or the State indirectly."
- A similarly broad definition can be found in the **Harris County MUD 50 (Texas)**, settlement (§ 10.r), which defines "Unauthorized Discharge" as "any release of wastewater from any point in the Collection System, whether or not said release reaches Waters of the United States." The decree requires a remedial program that will "eliminate" all unauthorized discharges.
- Under the Stipulated Order for the **Government of the Virgin Islands** (§ 5.s.), "Unpermitted Discharge" is defined as "any discharge from the Collection System through point sources not specified in any TPDES permit as well as any spill or release of sewage to public or private property that does not reach the water of the United States."
- ✓ Under the consent decree for the **Puerto Rico Aqueduct and Sewer Authority** (PRASA), an "Unauthorized Release" is one that occurs "within the Sewer System at a location other than a CSO Outfall or that which is a confirmed SSO" and includes "any release of wastewater from the Sewer System to public or private property that does not reach waters of the United States."

### c. Basement/Building Backups

As discussed previously, utilities continue to take the position that basement backups cannot constitute violations of the CWA or of the NPDES regulations because backups are not "discharges" to jurisdictional waters. As such, utilities in many consent decrees seek to expressly carve out such backups from the definition of SSOs. However, EPA has not been receptive to such efforts in many cases. As a result, utilities have sought instead to 1) narrow the definition of SSO and unauthorized discharge for stipulated penalty provisions to exclude such backups and/or 2)

provide that no stipulated penalties will apply if they address the backup “as soon as reasonably practicable” and are in compliance with the remedial schedules for their SSO program. Further, utilities will seek to exclude from the definition of basement or building backup any backup caused by blockages in private laterals or lines or caused by surface flooding.

- In the SSO decree for **Hampton Roads Sanitation District, Virginia**, backups are “Sanitary System Overflows” caused by blockages, flow conditions and malfunctions in the Regional Sanitary Sewer System but excludes backups or releases caused by issues with Private Laterals. The decree for the **San Antonio Water System (SAWS)** contains a similar definition.
- The **City of Newport, Rhode Island**, decree (¶ 6), which defines Building/Private Property Backup as “a release of wastewater from the Collection System into buildings or onto private property, except a release that is (1) the result of blockages, flow conditions or malfunctions of a building lateral or other piping/conveyance system that is not owned or operationally controlled by the City, or (2) is a result of overland, surface flooding not emanating from the Collection System.” The definition of SSO under the decree expressly includes Building/Private Property Backups. Similar definitions are set forth in the **City of Fitchburg, Massachusetts** decree and the **Boston Water and Sewer Commission** decree.
- **The Jersey City Municipal Utilities Authority, New Jersey**, decree (¶¶ 7 and 15), includes a similar definition of Building/Private Property Backup and “Sewer Overflow” and further provides that “any unpermitted Sewer Overflow including a Building/Private Property Backup constitutes a violation of this Consent Decree.”
- The **Fort Gay, West Virginia**, decree (¶ 9) defines SSOs to include releases to public or private property that do not reach waters of the United States or the State, including Building/Private Property Backups, which are those releases to a building or onto private property that are caused by blockages, flow conditions, or other malfunctions. However, blockages or malfunctions of a Private Lateral are excluded from this definition.
- The **City of Lebanon, New Hampshire**, decree (¶ 6.A.) defines “Building/Private Property Backup” as “a Sanitary Sewer Overflow in the form of a wastewater release or backup into a building or onto private property.” Interestingly, however, the decree does not include a separate definition of SSO.
- The **City of Lima, Ohio**, decree defines “Building/Property Backup” as “a Sanitary Sewer Overflow or CSS Release in the form of wastewater release or backup into a building or onto private property that is caused by blockages, flow conditions, or other malfunctions in the Sewer System.” However, the definition specifically excludes a backup or release resulting from blockages, flow conditions, or other malfunctions of a Private Service Connection Lateral as that term is defined in the decree.
- The **City of Fort Smith, Arkansas**, decree includes in its definition of “Building/Private Property Backup” any wastewater “backup into a building and/or a wastewater overflow onto private property that is caused by blockages, flow conditions or other malfunctions into the [Wastewater Collection and Transmission System]” but similarly excludes backups resulting from a blockage or malfunction of a Private Service Lateral or other piping conveyance not owned or operated by the City.



## 4. Implementation Approaches and Compliance Standards

Related to the design storm/level of control discussion above, a utility will want to devote careful attention to negotiate an appropriate implementation approach for its decree as well as the compliance standards articulated in the decree.

Implementation approaches vary. For example, one approach is to enter a decree that orders a utility to conduct studies and planning to determine the elements of the compliance program, have the resulting program approved by the decree parties and the court, and then implement the program (known as a “develop and implement decree”). This approach may give a utility greater flexibility under the decree, but also leaves open issues that could impact overall project cost and timing.

*Examples of such decrees include:*

- The **City of Atlanta, Georgia’s** CSO decree (p. 25) required preparation of a *Remedial Measures Report* to evaluate alternatives to bring the City’s CSOs into compliance with applicable WQSs and permit requirements, including, chlorination/dechlorination, alternative disinfection methods, sewer separation, storage to reduce overflows to not more than 4 per year, relocation of the CSO, best management practices, and primary treatment of all flows. Atlanta indicated its preferred alternative, but then was to implement only the alternative approved by state and federal agencies. This type of open-ended compliance program could prove problematic as the utility’s choices are subject to override by the government, and the ultimate cost to the utility is difficult to estimate before a final alternative is selected.
- The **Anderson, Indiana,** decree required submittal of a LTCP under the initial decree and was later modified after the LTCP was developed to address implementation issues.

Another approach is to incorporate full details on each of the required improvements, programs, or construction projects in the decree itself (often known as an “implement only” decree). While this approach requires the system evaluations and feasibility studies to be completed up front, having precise project descriptions may assist the utility with obtaining funding for the projects and may provide a more developed understanding of – and the cap on – the cost of implementing the decree. An example of this approach:

- The consent decree for the **Northeast Ohio Regional Sewer District** includes an extensive appendix of projects that are identified up front and are to be completed under the decree.

Additionally, how ultimate “compliance” with the decree is expressed is essential to all parties and will avoid future disputes over a utility’s fulfillment of the terms and conditions of the decree. It likely will be in a utility’s best interest to make the compliance standards provision as specific and narrow as possible to minimize the likelihood of diverse interpretations about the goal. Many decrees contain broad blanket compliance standards, such as achievement of “all applicable water quality standards (WQS)” or “full compliance with the CWA,” which can be difficult to measure. However, more tailored compliance standards are advantageous to municipal utilities. *See* discussion above on Design Storm/ Level of Service for examples.

## 5. Interim Effluent Limitations

Often, CWA consent decrees entered in settlement of violations of a facility’s applicable effluent limitations contain a table of “interim” effluent limitations that must be met until certain improvements are completed. In the wet weather context, an analogous provision in municipal decrees will specify a performance standard something short of the 85 percent capture/4 overflows

per year standard for CSOs or the “total elimination” of SSOs. These types of provisions are often included in the stipulated penalties section of a CWA decree, and stipulated penalties may not apply, or may apply at lower levels, to discharges that occur prior to the implementation of the specified remedial measures. *See, e.g.,* the consent decree for **City of Portsmouth, New Hampshire**, which establishes interim limits and includes express stipulated penalties for violations of such limits. The **Puerto Rico Aqueduct and Sewer Authority (PRASA)** decree mandates interim effluent limits, but allows PRASA to request an extension of the interim limits if it cannot comply with the effluent limits yet has complied with all remedial measures, has implemented an Integrated Preventive Maintenance Program, and has submitted all required information to Puerto Rico’s Environmental Quality Board and applied to EPA for a NPDES permit or modification to its NPDES Permit. For additional examples, *see* [Section IV.D.2 \(page 104\)](#), on stipulated penalties.

## 6. Water Quality Standards Reviews

An important issue that may warrant attention in CSO decrees is the coordination of long-term control planning with WQS reviews. This concept was included in the *CSO Policy*, which recognized that CSO communities needed clear guidance on how they should implement control programs to attain WQSs. EPA released a guidance document on this topic, which provides that: “Water quality standards reviews are an important step in integrating the development and implementation of affordable, well-designed and operated CSO control programs with the requirements of the Clean Water Act . . . .”<sup>13</sup> In cases where the implementation of controls to meet existing designated uses would be infeasible, a utility can consider whether a formal [use attainability analysis](#) (UAA) could be performed to support a revision to the designated use(s) for the receiving stream.<sup>14</sup>

*Consider the following:*

- The **City of Indianapolis, Indiana** decree sets performance criteria of 95 percent capture and 4 CSOs events on certain watersheds and criteria of 97 percent capture and 2 CSOs on another. However, these levels of control are predicated upon a revision to WQS that would authorize overflows resulting from storms exceeding these levels of control. The utility requested a modification of the WQS through the UAA process. However, if a modification is not granted, the decree provides that the City may seek a modification of the implementation schedule.
- The **City of Fort Wayne, Indiana** consent decree contains extensive provisions for the submittal, review and potential approval by EPA of a “Work Plan for Revising CSO Control Measures” in the event that the state fails to adopt, or EPA fails to approve, certain new or revised water quality standards that were requested by the utility as part of its long term control plan.
- The **City of Bangor, Maine** decree (C 4) recognizes the possibility of WQS reviews, noting in the “Objectives and Effect” section of the decree that nothing in the decree shall prevent the City “from seeking a modification of water quality standards ... where appropriate.”
- The **City of Cincinnati, Ohio** consent decree (§ VII.B) states that if the “LTCP Update” to be prepared by the City is based upon the belief that certain water quality standards cannot be attained and will be changed by the state or regional authorities, but those changes are not implemented, then the City may submit a “Revised LTCP Update” that does not assume or rely on WQS changes that have not been approved. However, this provision does not provide for any extension of the ultimate compliance deadline in the decree.

- The decree for **SD1 of Northern Kentucky** (§ 41) states that the District may ask the State to consider a change in designated uses or WQSs, based on the cost analysis and alternatives considered in the District’s LTCP. The decree does not require the State to take any action upon such a request or provide for any particular relief if the request is either approved or denied.
- The New York State administrative order currently effective for the **City of New York**, recognizes that the CSO facility plans approved by the State “will not result in attainment of WQS under all circumstances.” Consequently, the order makes reference to a separate Memorandum of Understanding between the State and the City that is designed to establish a process by which WQS reviews will proceed concurrently with the construction of the CSO abatement projects listed under the order. Under the MOU, the City will produce a UAA for each of its water basins, and will pay \$1 million for the State to retain independent third party consultants to review those analyses. If appropriate, revision of water body classifications and/or site-specific standards will be sought to ensure that CSO abatement projects will result in WQS compliance. Submission of a final, utility-wide LTCP will follow the completion of this work.<sup>15</sup>

## 7. “Watershed Approach”

The “watershed” approach to water quality protection has been a priority with EPA for the last several years.<sup>16</sup> The first integrated municipal watershed-based NPDES permit was issued in 2004 to Clean Water Services, a wastewater and stormwater management utility in Washington County, Oregon. The permit covers four municipal WWTPs, emergency overflow structures, urban stormwater runoff, and allows for water quality credit trading.

Another example is the consent decree for SD1 of Northern Kentucky, which has incorporated this concept into the structuring of the decree’s overall program for CSO and SSO control. The major features of this decree will require SD1 to:

- (1) propose and implement specific corrective action plans to bring its CSOs into compliance with regulatory requirements;
- (2) propose and implement specific corrective action plans to eliminate SSOs (the worst of which must have been addressed no later than 2015);
- (3) improve its sewer system’s management, operation and maintenance (MOM) programs to prevent future overflows; and
- (4) respond to overflows when they occur.

SD1 will develop these plans through a “watershed approach” by which SD1 will identify remedial measures and establish priorities taking into account natural background conditions, other point source discharges and non-point source discharges. SD1 has four watersheds in its service area and will develop watershed plans for each area. The watershed plans will be updated at least every five years, the [first](#) of which was approved by the regulators in February 2014. Use of this watershed approach is expected to lead to improvements in water quality at a quicker pace in critical areas and to more efficient and cost-effective solutions.

The 2015 modified LTCP for the **District of Columbia Water and Sewer Authority** extensively detailed the need for the watershed approach, especially given the emphasis of such an approach in the *CSO Policy*. This approach focuses long-term control on three primary water bodies within the District – the Potomac River, Anacostia River, and Rock Creek – given the variety of pollutant sources that are discharged into these receiving waters. This approach was advocated with the ultimate goal

of achieving fishable and swimmable uses for these bodies, which can only effectively be done using a watershed approach.

## 8. Connection Bans and Moratoria on New Development

Although not always sought, the government may seek to include a ban on connections upstream from CSO or SSO portions of the collection system until the improvements required by the decree are fully implemented. An example of an absolute ban is found in the **City of New Albany, Indiana**, decree (¶ 58). This provision states that all new sewer connections associated with new development or commercial construction shall be prohibited until the utility has completed all I/I removal and capacity assurance projects and has demonstrated for one year that all capacity-related bypasses and overflows have been eliminated.

To avoid such categorical moratoria, some cities have negotiated detailed procedures by which some new connections can be authorized during the life of the decree. Consider the following examples:

- Under the **City of Winchester, Kentucky**, consent decree, “Capacity Certifications” are required before the utility can authorize any new sewer service connection or additional flow from an existing sewer service connection. Detailed standards for certification of “Adequate Treatment Capacity,” “Adequate Transmission Capacity,” and “Adequate Collection Capacity” are set forth in the decree.
- The Amended Consent Decree for the **Louisville and Jefferson County MSD, Kentucky**, has an extensive provision prohibiting new sewer service connections and/or any increases in flow from existing connections unless specific conditions are met, including the submission of a written demonstration that the new or increased flow was the direct result of a project in which an equal or greater amount of flow is eliminated, and an additional amount equal to three times the increase has been eliminated by I/I removal activities within the affected portion of the collection system.
- The **Puerto Rico Aqueduct and Sewer Authority** decree incorporates the Authority’s written “Sewer Connections Policy” as Appendix I to the decree, and further provides for an “Automatic Sewer Ban” if any of the 61 WWTPs covered by the decree exceeds (or is predicted to exceed) 105 percent of its monthly average permitted flow for three consecutive months (¶ 29). An exception is provided in the decree if an applicant provides an “offset” of 110 percent of the amount by which the new connection would increase the capacity demand (¶ 31).
- The **City of Mobile, Alabama**, decree (¶ 20), contains detailed procedures for both a “Short Term Capacity Assurance Program for New Connections” (¶ 21.a) and a “Long Term Capacity Assurance Program for New Connections” (¶ 21.b) that enable the City to authorize new connections if it can certify that adequate capacity exists within the relevant basin and that the new or increased flows will not result in any non-compliance under the decree. The stipulated penalty provision of the decree (¶ 56.c) allows the government to prohibit the City from authorizing any new connections if the System Capacity Assurance Program has not been implemented, and to assess a penalty of \$27,500 for each prohibited connection.
- The **City of Cincinnati, Ohio**, decree (§ VIII) states that the City shall authorize only those new sewers or sewer extensions or increased flows that are in compliance with a “Short-Term Adequate Capacity” (STAC) Plan set forth in Exhibit 10 to the decree. The objective of the plan is to prevent any flows from new development from aggravating or in any way adding to discharges from downstream SSOs. This is done by ensuring

that more flow is removed from the system than is added by the new connections, as determined by the criteria and formulae in the STAC plan. The plan uses a removal credit ratio of five gallons of flow removed from a downstream SSO for every gallon of new flow added.

## B. Definitions

Most consent decrees contain lengthy lists of defined terms. Many terms have standard definitions that are well established. The objective of this Section, however, is to identify those terms that are not fully or consistently defined and thus provide utilities opportunities for negotiation in their decree.

### 1. Wet Weather/Dry Weather

The term “wet weather” or its equivalent can be a defined term in a CWA consent decree. This term likely will determine the circumstances under which interim compliance will be measured, as well as stipulated penalties avoided for overflows that occur under conditions exceeding the capacity of the treatment plant and/or the collection system. While EPA has no regulatory definition of the term, it is used explicitly in the secondary treatment regulation to qualify the availability of a special exemption from the percent removal requirements for certain CSO systems.<sup>17</sup> Evaluating whether and how to define “wet weather” may therefore be important. In some decrees, the concept of “wet weather” is in part identified by defining its opposite condition such as “dry weather” discharges. Consider the following examples:

- The **City of Akron, Ohio** decree (p. 6) uses a simple “design storm” trigger to define “wet weather,” such as a 10-year storm event. In that case, the City was required to “eliminate any discharges resulting from less than a 10-year intensity storm from the separate sanitary sewer system.”
- The **City of Baltimore, Maryland** modified 2016 decree (¶ 7.H) includes a definition of “dry weather overflows,” which are discharges “unrelated to precipitation related flows” and any flows more than 72 hours after a rain event or snow melt event.
- The **City of Anderson, Ohio** decree (p. 4), defines a “Dry Weather CSO Discharge” as “a CSO discharge that occurs when the relevant portion of Anderson’s Sewer System is not receiving precipitation-related inflow.” Only dry weather CSOs, SSOs, and certain other “prohibited discharges” are categorically prohibited by the decree.
- See also **City of Elkins, West Virginia** decree (¶ 8.I.) defining a “Dry Weather Discharge” as a discharge that occurs during any period of time during which the collection system has not been influenced by rainfall or snowmelt. Dry weather discharges are prohibited under the decree.
- The **Scranton Sewer Authority, Pennsylvania** decree (¶ 8) defines “Dry Weather Overflow” as a discharge that “occurs at a permitted CSO Outfall that is not caused by precipitation-related Inflow or Infiltration.”
- The **City of Toledo, Ohio**, decree does not define “wet weather.” Instead, the decree’s compliance section (p. 7) reiterates the requirement from Toledo’s NPDES permit that “any discharges from Combined Sewer Overflows may occur only during wet weather periods when the flow in the sewer system exceeds the capacity of the sewer system.”
- The **Capital Region Water and City of Harrisburg, Pennsylvania** decree likewise does not define “wet weather”. Rather, the decree defines “dry weather overflow” broadly to capture all of those overflows that occur other than as a result of a rain or snowmelt

event: “‘Dry Weather Overflow’ shall mean a discharge that occurs at a permitted CSO Outfall during any period of time when the hydraulic capacity of the Combined Sewer System has not been exceeded due to a precipitation event. Overflows that are caused by any reason other than exceeded hydraulic capacity of the Combined Sewer System (e.g., debris in regulator) are Dry Weather Overflows.”

## 2. POTW

Another key issue for utilities to consider in the definition section of their decree is whether “[POTW](#)” includes the collection system. Under CWA § 301, POTW discharges must meet the [secondary treatment](#) standards established by EPA. If the POTW definition in a decree is over-broad, discharges that would not otherwise be subject to secondary treatment standards will be included. Current NPDES regulations at 40 C.F.R. § 122.2 define POTW by cross-reference to the definition contained in the pretreatment regulations at 40 C.F.R. § 403.3(o):

*The term Publicly Owned Treatment Works or POTW means a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant.*<sup>18</sup>

The D.C. Circuit Court of Appeals has determined, based upon this definition, that CSOs are not part of the “treatment works,” and consequently, they are not subject to the “secondary treatment” standards applicable to POTWs.<sup>19</sup> EPA has followed this ruling, stating that CSOs are not subject to secondary treatment and that the bypass regulation would not apply to CSOs. However, the Agency maintains that SSSs were designed to convey all sewage for treatment at the POTW, and therefore “discharges from separate sanitary sewer systems with less than secondary treatment are prohibited.”<sup>20</sup>

Consider the following:

- The **City of Atlanta, Georgia** CSO decree (§ VI.B.21), contains a broad definition of POTW that includes “the Collection System, the Combined Sewer System, the Wastewater Treatment Facilities, and the Combined Sewer Overflow Control Facilities.”
- Other decrees define the POTW as the utility’s treatment plants “as well as all appurtenances, additions, or improvements thereto, including the plant headworks and all facilities downstream of the headworks.” **City of Portsmouth, New Hampshire** decree (¶ 6).
- The **Metropolitan Government of Nashville and Davidson County, Tennessee** decree (¶ V.A. 33) defines the WWTP to include “devices or systems used in the storage, treatment, recycling and reclamation of municipal wastewater” including “all facilities owned, managed, operated, maintained by” the authority.
- The **Greenville, Mississippi** decree defines POTW by reference to 40 C.F.R. § 403.3 and specifically includes the Water Collection and Transmission System (WCTS) and the Wastewater Treatment Plant as defined in that decree. The WCTS means “the entire municipal wastewater collection, retention and transmission system, including all pipes, Force Mains, Gravity Sewer Lines, Pump Stations, pumps, manholes, and appurtenances thereto, which are owned or operated by the City.”



Compared with:

- The **City of Youngstown, Ohio** decree (¶ 3(h)), contains a more limited definition which simply states that the “Wastewater Treatment Plant” “shall refer to the wastewater treatment plant owned and operated by the city” under the applicable NPDES permit at the address specified therein. Similarly narrow language is used in the **Port Clinton, Ohio**, decree (¶ 7(o)), the **City of New Albany, Indiana**, decree (¶ 9.x); and the **City of Fitchburg, Massachusetts**, decree (¶ 6).

### 3. “Excessive Inflow & Infiltration”

Many decrees contain definitions for the terms “[infiltration](#)” and “[inflow](#).” Infiltration is generally defined as water that enters a system from the ground through defective/broken pipes, pipe joints, connections or manholes; and, inflow is defined as all water that enters a system from sources such as roofs, yard drains, foundation drains, manhole covers, cross connections, stormwater and surface waters. Combined “[inflow/infiltration](#)”, or I/I, is the total quantity of such waters.

- The SSO decree for the **Hartford Metropolitan District, Connecticut**, defines “Excessive Inflow/Infiltration” as I/I that can be “cost-effectively eliminated as determined by a cost-effectiveness analysis that compares the costs of eliminating the I/I with the total costs for transportation and treatment of the I/I (including capital costs of increasing sewage facilities capacity and treatment and its resulting operating costs).” A similar definition is set forth in the consent decrees for the **City of Revere, Massachusetts**; the **City of Newport, Rhode Island**; and the **City of Fitchburg, Massachusetts**.
- A similar approach is taken in the decree for **City of Great Falls, Montana**, which defines “Excessive I/I” to mean the “quantities of infiltration/inflow that the City demonstrates can be economically eliminated from its sewer system as determined by a cost-effectiveness analysis that compares the costs for correcting the infiltration/inflow conditions to the total costs for transportation and treatment of the infiltration/inflow.” However, Excessive I/I shall not include a “flow up to 120 gallons per capita in any Day” or the quantities that cannot be economically and effectively eliminated from the City’s sewer system.
- The decree for the **City of Greenville, Mississippi**, like the decree for the **City of Akron, Ohio**, gives “Excessive I/I” the same meaning as provided in 40 C.F.R. § 35.2005(b)(16), which is “[t]he quantities of infiltration/inflow which can be economically eliminated from a sewer system as determined in a cost-effectiveness analysis that compares the costs for correcting the infiltration/inflow conditions to the total costs for transportation and treatment of the infiltration/inflow.”

In a SSS, a utility should be mindful that such definitions favor gray infrastructure. With integrated planning (*see* Sections IV.L ([page ##](#)) and V.G ([page ##](#))), one must consider the cost of future stormwater rules and regulations along with transport and treatment. Conveyance and treatment of I/I is likely incompatible with the infiltration that is strongly encouraged by green infrastructure.

## C. Schedules and Deadlines

A utility negotiating a CWA decree will have to consider the timing of remedial programs agreed to in the decree, as well as the overall length and termination date of the decree (*see infra*). Some communities strive to maximize planning and engineering flexibility by agreeing to a single end date by which all improvements must be completed and by which compliance with the applicable standards must be

achieved. Other communities agree to more detailed milestone dates, which can help to keep projects moving forward and also may help a utility obtain financing by requiring governmental authorities to authorize certain immediate expenditures. On the down side, detailed project milestones can make reporting and recordkeeping under the decree more difficult and may be susceptible to unforeseen contingencies. Moreover, if penalties are associated with missed deadlines, detailed milestones can lead to financial liabilities for the utility. Furthermore, when the schedule includes many milestones for each project, the community will erode credibility if they miss some less important dates, such as starting design. The most important dates are generally the completion dates for individual projects if that level of detail is included in the schedule. For a discussion on the financial capability implications on negotiating an implementation schedule, see [Sections V.D \(page 139\)](#) and [V.F \(page 143\)](#). Examples of the various approaches are detailed below in the subsequent subparts.

### 1. Fixed End Date

Rather than include multiple deadlines, some decrees establish a fixed date for implementation of control improvements. In some decrees, such as the state decree for **Milwaukee, Wisconsin**, the majority of the projects do not have individual commencement of construction or completion of construction dates. Rather, all projects must collectively be completed by a fixed date. This gives a utility greater flexibility in shifting start dates and combining projects without having to seek an amendment to the decree. This flexibility can be useful if state revolving funds have been exhausted in a particular year or if additional rate adjustments are required.

### 2. Deadlines

Most decrees, however, set forth more detailed deadlines for various steps of the implementation. Others include both a series of construction deadlines and a final date by which all control improvements are to be completed. Under either of these approaches, however, there is opportunity for negotiation on the detail of the schedule, including the number of interim deadlines. Examples of these types of decrees include the following:

- The **Miami-Dade County, Florida**, decree includes timetables for upgrades to the system (including additional treatment and disposal capacity, transmission capacity, and local pump station upgrades), and reportedly enabled the County to obtain required funding on an expedited basis.
- The **New Orleans, Louisiana**, decree contains a 10-year compliance program with start, midterm, and termination dates for every project and stipulated penalties associated with every deadline.
- An innovative provision in Section V.E of the SSO Settlement Agreement for the **City of Los Angeles, California**, requires the utility to rehabilitate or replace the number of miles of sewer pipes required each year pursuant to a report and plan to be submitted and approved under the decree. If the utility rehabilitates or replaces more than the required number of miles in any year, the utility may “bank” the excess miles and apply them as a credit against the number of miles required in future years.

### 3. Phased Implementation

In order to address the continuing financial burden on utilities implementing CWA compliance requirements, a number of recent consent decrees have emphasized a phased implementation approach. However, the downside to this approach is that while some issues may be settled, others are still open for negotiation. Consider the following:

- The **City of Cincinnati, Ohio**, entered into an interim partial decree on SSOs in 2004 which was followed by a global decree later that year. Its consent decree (¶ 3) further notes that WWIP measures are to be completed “as expeditiously as practicable” but may be implemented in phases and additional phases can be added to avoid severe financial hardship.
- **City of Elkins, West Virginia**, consent decree requires implementation of the city’s LTCP in two phases, with the first phase to have been completed by 2015 and the second by 2021.
- **District of Columbia Water and Sewer Authority** entered into a partial decree in 2003, which was followed by a second decree in 2006.
- The **Unified Government of Wyandotte County/Kansas City, Kansas**, decree is considered a “partial” decree with subsequent phases to be negotiated upon further consideration.
- The **Hampton Roads Sanitation District** (HRSD) federal consent decree provides for a phased approach to pursue regionalized solutions through development of a Regional Wet Weather Management Plan (RWWMP). In 2013, HRSD coordinated with 13 localities to evaluate an alternative approach to the SSO reduction program through which the entire wastewater system would be regionalized under a single service provider that could implement the RWWMP at a significantly lower cost and thus reduce the average bill to ratepayers. A hybrid approach to regionalization evolved. This called for HRSD to plan, implement and fund the full RWWMP, thereby maintaining significant savings to the ratepayers. During 2014, HRSD worked with EPA and Virginia Department of Environmental Quality (DEQ) to amend their 2010 federal consent decree for the hybrid approach to regionalization. Since the amendment was completed in August 2014, HRSD has been conducting an updated round of flow monitoring, pipeline condition assessment and sewer system modeling activities in the locality systems, which was scheduled to be completed by the middle of 2015. This work supplements the data collected by the localities and gives HRSD a clearer picture of the condition of the system. After the new data is collected, the process to identify capacity limitations in the regional system will continue through the remainder of 2015, with capacity solutions developed in the first half of 2016. The 2010 Consent Decree contains the following clause regarding ultimate termination of the decree (Section xxx. TERMINATION):

171. After HRSD has (1) completed the requirements of Section V through XVI (Compliance Requirements), (2) completed the Performance Assessment, (3) fulfilled the requirements of Section XVI (Performance Assessment), (4) thereafter maintained continuous satisfactory compliance with this Consent Decree for a period of twelve months, (5) complied with all other requirements of this Consent Decree, and (6) paid the civil penalty and any accrued stipulated penalties as required by this Consent Decree, HRSD may serve upon the United States and the State a Request for Termination, stating that HRSD has satisfied those requirements, together with all necessary supporting documentation.

#### 4. Implementation Schedule Length

EPA and states have typically sought compliance, particularly in the CSO context, within 10-20 years. See discussions in [Sections I.E. \(page 25\)](#), [V.D \(page 139\)](#), and [V.F \(page 143\)](#) on financial capability assessment issues associated with implementation schedules. However, more recent consent decrees evidence extended dates of completion, recognizing the high burden that these CWA decrees place

on communities. See for example the following decrees:

- Kansas City, Missouri (25 years)
- Evansville, Indiana (21 years)
- Scranton, Pennsylvania (25 years)
- District of Columbia Water and Sewer Authority (20 years)
- SD1 of Northern Kentucky (20 years)
- Youngstown, Ohio (20 years)
- Northeast Ohio Regional Sewer District (25 years)
- Metropolitan St. Louis Sewer District, Missouri (22 years)
- Lima, Ohio (24 years)
- Honolulu, HI (25 years)

See also [Section IV.M \(page 120\)](#) below for a discussion of consent decrees that have included reopener or modification language to allow for reconsideration of a final compliance deadline.

## 5. Deadline Relief

A number of recent decrees have also included language providing relief from interim and final deadlines if EPA fails to timely respond to deliverables required to be submitted for agency review pursuant to the decree. See the examples discussed under the [Section IV.O \(page 130\)](#), below, in “Review of Submittals.”

The decree for the **County of Baltimore, Maryland**, also has a separate provision providing relief from delays in obtaining necessary permits, which is discussed under [Section IV.G \(page 111\)](#).

In addition, recent decrees continue to provide for informal extensions of the interim milestone dates in their compliance schedules without the need for formal modification of the decree. Consider the following examples:

- The decree for the **City of Knoxville, Tennessee** (p. 25) provides that the utility may request, and EPA may approve after consultation with the State, an extension to most of the specific project schedules listed in the decree. EPA “shall not unreasonably withhold” such approvals and shall respond “within a reasonable time period.” These approvals are not considered “Modifications” of the decree. Denials are subject to the decree’s provision on Dispute Resolution.
- The **Metropolitan Government of Nashville and Davidson County, Tennessee** decree (§ VI.C) may have deadlines modified if EPA or the Tennessee Department of Environmental Conservation delay in issuing written comments on deliverables or (§ VI.D) if deadlines are contained in deliverables under the Consent Decree, since revisions to deliverables shall not be considered modifications of the decree. (Deliverables under the decree include Metro’s Corrective Action Plan for addressing SSOs and its LTCP for CSOs, which require proposed implementation schedules.) See also **DeKalb County, Georgia**, consent decree (¶ 46); **City of Memphis, Tennessee** consent decree (¶ 14).

Adaptive management may also allow utilities to consider new technology, shift project schedules, and find flexibility within their compliance schedules without the need for a modification. See the discussion and examples in [Section IV.F \(page 144\)](#) and [Section IV.M \(page 120\)](#).

## D. Penalties

This Section addresses civil penalties assessed for past violations under the CWA, stipulated penalties for future violations of the decree terms and [supplemental environmental projects](#) (SEPs) that are utilized by some utilities to offset civil penalties.

### 1. Civil

Civil penalties will typically be sought by the government in connection with most CWA consent decrees. Public wastewater utilities have long argued that assessment of civil penalties is inappropriate against them as public bodies, which are providing a valuable public health service, particularly considering the tremendous economic burden that wet weather compliance programs will impose on their communities. These arguments appear to have resonated more since the economic downturn in 2008, and there are examples of decrees wherein civil penalties have not been assessed or penalties are relatively minor in nature, including:

- City of Lebanon, New Hampshire (None)
- City of Portsmouth, New Hampshire (None)
- Town of Fort Gay, West Virginia (None)
- Town of Timmonsville and City of Florence, SC (None)
- City of Lawrence, Massachusetts (None)
- The partial decree for the **Unified Government of Wyandotte County and Kansas City** also does not include any civil penalty assessment, although such assessment may occur under a subsequent order.
- City of Perth Amboy, New Jersey (\$17,000)
- City of Elkins, West Virginia (\$64,800)
- City of Welch, West Virginia (\$5,000)
- City of Swampscott, Massachusetts (\$65,000)
- City of Ironton, Ohio (\$98,000)
- City of Elkhart, Indiana (\$87,000)
- City of South Bend, Indiana (\$88,200)
- City of St. Martinsville, Virginia (\$49,926.28)
- City of Mishawka, Indiana (\$28,000)
- Lima, Ohio (\$49,000)

Penalty discussions by their nature will be very dependent on the individual circumstances of a utility. Accordingly, a utility facing a CWA decree should expect a penalty demand as part of negotiations, and there are several approaches that it can employ with respect to the payment of penalties. For example, the penalty may be split between the state and the federal plaintiffs. This portion of the decree also typically will contain details on the method of payment, including the person(s) to whom it must be submitted and any person(s) that must receive copies or notices of the payment. It also may specify that interest is due on any late payments. The government may insist that a certain statutory rate of interest be specified; however, more than one statutory rate can be used. Competent economic advice can help select the most favorable interest rate for the utility. Consider the following examples:

- Some cities may make installment payments, with the initial installment due 30 or 60 days after final entry of the decree by the court and subsequent installments due at appropriate later dates. *See* **City of Atlanta, Georgia** decree; **City of Jackson, Mississippi** decree; **City of Akron, Ohio** decree; **City of Elkhart, Indiana** decree; **City of Great Falls, Montana** decree (spreading penalty payments over 2 years); **Bristol Township, Pennsylvania** decree (spreading payments over 1 year).
- **The Scranton Sewer Authority, Pennsylvania** decree also permits phased installments over a six-month period. However, the second installment, which is due within six months, is to include “interest” from the date of lodging. (¶ 33)
- The **City of Atlanta, Georgia** CSO decree (§X.B), uses the coupon issue yield equivalent of the average accepted auction price for the last auction of 52-week U.S. Treasury bills settled prior to the date the decree was entered.
- The **City of Cincinnati, Ohio** decree (¶ 53), uses the statutory judgment rate set forth at 28 U.S.C. § 1961(a). The **City of Youngstown, Ohio** decree (¶ 131) also refers to the 28 U.S.C. § 1961 rate “in effect on the day this Decree is entered with the Court.”

Consent decrees entered into by EPA in combination with state agencies or state-based orders may include a suspended penalty provision—which is typically a state law concept. Suspended penalties are those civil penalties that are suspended and not due so long as certain projects or actions under the decree are completed.

- For example, the 2013 state-based consent decree for the **City of La Mesa, California**, includes a suspension of \$387,606 of the \$801,462 total civil penalty upon completion of a SEP. The SEP is an enhancement and restoration project of a 900 linear foot segment of Alvarado Channel.

## 2. Stipulated

Nearly all CWA decrees contain provisions for the payment of stipulated penalties for specified instances of non-compliance with the decree or the applicable NPDES permit. Various approaches to manage stipulated penalties include:

Keeping them defined as narrowly as possible;

Incorporating a gradually ascending scale depending on the number of days a violation continues (*e.g.*, for the first 30 days, for the 31st to 60th day, and more than 60 days) or number of gallons spilled;

Limiting them only to violations of a specific decree provision; and

Ensuring that the provisions are no more restrictive than the governing NPDES permit.

A utility should be wary of a “catchall” provision that contains stipulated penalties for violations of “all other” provisions in the decree (this type of provision is often contained in the government’s initial draft decree). The following subparts detail approaches for outlining the structure of stipulated penalties as well as building flexibility into such provisions.

### a. Structure of Stipulated Penalty Provisions

Many CWA consent decrees will require a utility to construct additional wet weather storage facilities. In these cases, the utility can assert that penalties are not appropriate for wet weather overflows that occur prior to the completion of those facilities, although some form of stipulated penalties will typically be required. Similarly, if the consent decree involves the implementation



of an LTCP for CSO improvements or improvements to address SSOs, a utility can argue that stipulated penalties are not appropriate for CSOs or SSOs that occur in the interim. This relief may be qualified by a requirement that the utility be in compliance with certain operation and maintenance provisions or their implementation schedules in the meantime. *See* discussion above under [Section IV.A \(page 75\)](#). Consider the following examples:

- The **District of Columbia** consent decree (C 59) contains a “rebid” provision, which provides that if the City elects to rebid a construction contract for a project required under the decree, it may either request a modification of the decree or elect to “defer” the payment of stipulated penalties for failure to meet the relevant “award of contract” deadline. If the City meets the deadline for “placing in operation” the specific project for which the penalties were deferred, the penalties for failure to meet the “award of contract” deadline will be excused.
- The **City of Bangor, Maine** decree (¶ 24.6) contains stipulated penalties for exceeding applicable effluent limitations by a “factor” of up to 20 percent, 20 to 40 percent, or more than 40 percent for monthly average limits, and a “factor” of up to 50 percent, 50 to 100 percent, or more than 100 percent for daily maximum limits.
- The **City of Baltimore, Maryland** decree (¶ 23.M), includes five penalty levels for overflows, beginning with \$100 for those less than 100 gallons, \$500 for those from 100 to 2,499 gallons, and on up to a maximum of \$15,000 for overflows of one million gallons or more.
- The **City of Mobile, Alabama** decree (¶ 56.a) provides a graduated scale of stipulated penalties for “Unpermitted Discharges,” beginning with \$250 per day prior to August 1, 2003, then \$500 per day in the following year, \$560 per day in the second year, and capped at \$750 three or more years out.
- The **City of New Orleans, Louisiana** decree (¶¶ 83-84), prior to the completion of remedial measures in a particular basin requires the payment of \$5000 per day for each day of unauthorized discharges only if the utility is not in compliance with its preventive maintenance program or employee training manual. After the completion of remedial measures for a particular basin, the utility may be assessed an additional \$1000 per day penalty even if it is in compliance with the preventive maintenance program and the training manual.
- The **City of Toledo, Ohio** decree (¶¶ 76-79) contains several provisions on stipulated penalties for overflows that occur before and after completion of the improvements required by the decree. Thus, penalties are imposed for SSOs prior to 2006 only if the utility is out of compliance with its Sewer System MOM Plan. The penalties imposed for SSOs after 2006 do not apply if the SSO was caused by a 10-year storm event. Stipulated penalties for CSO discharges are paid only if the utility violates a permit provision allowing such discharges to occur at a specified outfall during wet weather periods when the flow in the sewer system exceeds the capacity of the sewer system decree. Penalties are imposed for CSOs after implementation of the city’s LTCP or 2016 (whichever is earlier), but only if they violate the applicable water quality-based and technology-based limits for the treatment plant. Penalties are imposed for plant bypasses only if they occur at levels of flow that are less than specified plant capacity levels (170 MGD prior to completion of improvements; 195 MGD after completion of improvements).

- The **City of Baton Rouge, Louisiana** decree (¶ 71) provides that the utility shall not be liable for pre-remedial action stipulated penalties for unauthorized discharges of 1,000,000 gallons or less if it is in compliance with its “Preventive Maintenance and SSO Response Plan” and if the utility follows its “SSO Response Plan.”
- The **City of Cincinnati, Ohio** decree (¶¶ 48-49) contains separate stipulated penalty provisions for (1) “Pre-Remedial Measures” sanitary sewer discharges caused by the utility’s failure to comply with its O&M program or for which the utility fails to follow its SSO Response Plan, and (2) sanitary sewer discharges “Following Completion of Permanent Remedial Measures” for a specified SSO discharge point.
- The **City of Greenwich, Connecticut** decree contains separate stipulated penalty provisions that apply to SSOs occurring before implementation of controls (\$5,000 per day) and after the date upon which construction of controls is to be completed (\$25,000 per day). With respect to the former, the utility will not be liable for such penalties if it demonstrates that it stopped the SSO as “soon as reasonably practicable” and is in compliance with the schedules set forth in the Remedial Measures section of the decree.
- The **City of Oswego, New York** consent decree (¶ 42) imposes one level of stipulated penalties on SSOs and CSOs occurring before improvements and an increased level of penalties following those improvements. *See also City of Welch, West Virginia* (¶¶ 39-40).
- The **Hampton Roads Sanitation District, Virginia** decree imposes stipulated penalties for each SSD, prohibited bypass or unauthorized discharge based upon the volume of the release with penalties increasing as volume increases. (¶ 109). The decree further imposes stipulated penalties for a multitude of individual requirements under *Remedial Measures* as opposed to a more consolidated approach seen in some other decrees.
- A more stringent penalty provision is contained in the **Scranton Sewer Authority, Pennsylvania** decree and provides that for stipulated penalties incurred more than 1 year after the Effective Date, the amount for which Scranton will be liable will be multiplied by the quotient of (i) the maximum penalty under 33 U.S.C. 1319(d) (as adjusted for inflation) and (ii) \$37,500. (¶ 44). It further provides that stipulated penalties will be retroactive after entry to the date that the authority signed the decree (¶ 48).
- The **San Antonio Water System, Texas** decree includes phased stipulated penalties that for SSOs commence 4 years after the lodging of the decree. Other requirements are on a graduated scale with penalties increasing as days of violation increase for items such as failure to submit deliverable or failure to comply with a remedial requirement.
- For the **Miami-Dade County, Florida** stipulated penalties initially agreed upon by EPA, the state of Florida and the County were increased at the request of the court in order to secure approval of the decree (Section X ¶ 42(a)-(c)). Stipulated penalties associated with SSOs escalate based on volume and date of occurrence relative to the entry date of the decree.

## b. Written Demand for Stipulated Penalties

Ideally, stipulated penalties are due and payable only upon receipt of a written demand by EPA. A “payment without demand” provision is found in some decrees, and while often encountered in the government’s opening draft, it is a requirement that can be negotiated. Contrast the following examples:

- *Payment On Demand*: **City of Akron, Ohio**, decree (¶ 12); **City of Toledo, Ohio**, decree (¶ 82); **City of Baltimore, Maryland**, decree (¶ 25); **City of Youngstown, Ohio**, decree (¶ 39); 1995 **Miami-Dade County, Florida**, decree (¶ 28); **City of Hammond, Indiana**, decree (¶ 28); **City of Port Clinton, Ohio**, decree (¶ 72); **City of Baton Rouge, Louisiana**, decree (¶ 78); **Harris County, Texas** decree (¶ 43); **City of Revere, Massachusetts**, decree (¶ 32); **City of Portsmouth, New Hampshire**, decree (¶ 33); **City of Oswego, New York**, decree (¶ 47); **Hampton Roads Sanitation District, Virginia**, decree (¶ 123); **Metropolitan Government of Nashville and Davidson County, Tennessee**, decree (¶ X.C.).
- *Payment Without Demand*: **City of Bangor, Maine**, decree (¶ 24. D); **City of Anderson, Indiana**, decree (¶ 65) (payment due within 30 days); **City of Honolulu, Hawaii**, decree (§ X1.0) (due by 15th day of month following violation); **City of New Orleans, Louisiana**, decree (¶¶ 91-92) (penalties “shall be paid” no later than 30 days after they accrue, and interest is due on late payments); **Bristol Township, Pennsylvania**, decree (¶ 65); **City of Elkins, West Virginia**, decree (¶ 41); **Scranton Sewer Authority, Pennsylvania**, decree (C 43).
- **The City of Atlanta, Georgia**, CSO decree (§ X.A) contains a hybrid provision where certain categories of penalties must be paid within 30 days of receiving a written demand, but stipulated penalties for failure to maintain operational standards and for violations of metals limits must be paid without a written demand.
- In some recent decrees, although payments are due within 30 days of a written demand, the decrees provide that EPA or a state “may” (as opposed to will) provide a written demand. However, regardless of whether the agency provides such a written demand, penalties will still continue to accrue. *See City of Greenwich, Connecticut*, decree (¶ 29); **City of Newport, Rhode Island**, decree (¶ 88).

Although EPA has not typically demanded stipulated penalty payments for each and every violation or missed decree deadlines, within the last year, various EPA regions have demonstrated an inclination to seek regular payment of stipulated penalties for all qualifying events. EPA Region VI in particular has explicitly indicated its practice is to routinely seek all such payments. As such, communities should not rely on unwritten promises or suggestions made during negotiations that stipulated penalties will not be regularly assessed. This development also underscores the importance of negotiating an appropriate stipulated penalty structure with clear definitions for the types of overflows that will trigger penalties (such as those that are tiered for large-volume spills, or different penalties for spills reaching jurisdiction waters (versus dry land spills)). At the same time, however, EPA has also often indicated that it will refrain from collecting penalties for certain types of overflows while a utility is implementing injunctive relief.

The catalyst for increased penalty demands in Region VI is unknown, although in a 2011 citizen suit involving the City of Baton Rouge, Louisiana’s 2002 decree, an environmental group alleged that EPA had failed to diligently prosecute the 2002 decree, in part, because it did not seek stipulated penalty payments for certain violations.<sup>21</sup> The broader trend in demanding the regular payment of stipulated penalties may have been influenced by a 2010 Audit Report prepared by

EPA’s Inspector General’s Office (OIG).<sup>22</sup> Upon assessment of EPA’s billing, collection, and tracking practices, the OIG determined that although it generally took appropriate actions to collect fines and penalties, EPA inconsistently recorded fines and penalty billings, failed to monitor some of the collections, and did not completely and accurately disclose all collections. As such, the report recommended various remedial tactics, including developing a policy on fines and penalties to clarify when a stipulated penalty becomes an account receivable, performing an annual reconciliation of the penalty-assessed amounts and the penalty-billed amounts, and disclosing fines and penalties both collected and assessed when reporting the amount and nature of fines and penalties resulting from enforcement actions.

As a utility receiving demands such demands to make regular payments of stipulated penalties for every possible qualifying event, existing decree language may be useful in pushing back against such demands. Stipulated penalties are intended to change behavior. Where the utility is already implementing injunctive relief – a form of changing its behavior – imposing maximum stipulated penalties is not intuitive. As explained by the Seventh Circuit, stipulated “penalties are by no means a *requirement* for compliance to be assured. Repeated violations due to the same underlying systemic causes are likely to continue until a large-scale remedial project addressing those underlying causes is completed . . . .”<sup>23</sup> Such duplication of efforts to allegedly encourage compliance, in reality, impedes progress towards environmental remedies.<sup>24</sup> In short, demanding additional penalties on those who are already taking corrective measures “will not bring about compliance any faster or cause the result to be any more effective—it will just cause the result to be more expensively arrived at.”<sup>25</sup>

### c. Penalty Accrual and Payment During Dispute

If not otherwise covered in the “Dispute Resolution” section of the decree, stipulated penalty provisions can be tailored to state that the utility’s obligation to pay stipulated penalties is suspended pending the outcome of any dispute between the parties. If the government insists that penalties continue to accrue during the dispute resolution process, a utility may seek to assure that no actual payment is required during the dispute. Consider these examples:

- The **City of Toledo, Ohio** decree contains a hybrid provision (¶ 86), which states that stipulated penalties shall continue to accrue but need not be paid until (a) 30 days after a dispute is resolved by agreement, or (b) 60 days after a dispute is resolved by order of the court. If the court’s order is appealed, the City must begin paying the stipulated penalties into an escrow account within 60 days after the court’s order is issued, and the escrow agent will pay the balance to EPA or the City within 15 days after the final appellate court decision. A similar provision is contained in the consent decrees for the **City of Revere, Massachusetts** (¶ 33); **City of Lebanon, New Hampshire** (Section VIII.C); **City of Portsmouth, New Hampshire** (¶ 33); **City of Greenwich, Connecticut** ¶ **Boston Water and Sewer Commission, Massachusetts** (C86); and **City of Oswego, New York** (¶ 49).
- Another approach evidenced in the **Hampton Roads Sanitation District** decree is that stipulated penalties will continue to accrue during any Dispute Resolution, except that if it takes longer than 180 days to resolve a dispute at the District Court level, the District will only be liable for 180 days of stipulated penalties. The provision further caps days of accrual at 270 for an appeal to the Court of Appeals. (¶ 125).

EPA's *Guidance for Drafting Judicial Consent Decrees*, § 1.8.3, recognizes that stipulated penalties may be placed in escrow and subject to refund if timely compliance is achieved. Consider this example:

- The **City of Anderson, Ohio** decree (¶ 55) provides that stipulated penalties for noncompliance with numerical effluent limits in its NPDES permit shall accrue for three years, but the obligation to pay them shall cease if (1) at least three years have elapsed, (2) the Utility has maintained continuous compliance with its NPDES permit for the last 12 months, and (3) the City has made its civil penalty payments (including late fees) to the state and federal governments.

#### d. Penalty Credit

Another option for utilities to consider is obtaining a statement that, in the event the government seeks and collects additional civil penalties for any violation for which the utility has already paid stipulated penalties under the decree, a credit shall be applied in the amount already paid for the same violation. This provision will not be in the standard language draft presented by the government, but it has been agreed to when specifically requested by a utility. Consider the following:

- The **City of Akron, Ohio** decree (§ 18) provides that “[i]f the United States and/or the State of Ohio elects to seek civil penalties under statute, the amount of any stipulated penalties paid to the United States and the State of Ohio for such violation shall be deducted from the amount of the civil penalty for such violation.”
- The **City of Toledo, Ohio** decree (¶ 99.A) contains a compromise approach in which the parties stipulate that evidence the City has paid a stipulated penalty for the same violation shall be “admissible” and “can be considered as a factor in mitigation” of a civil penalty by the court.
- The **City of Youngstown, Ohio** decree (¶ 40) provides that “[i]n an action for civil penalties based upon a violation of the Act, the Parties stipulate that evidence Youngstown has paid a stipulated penalty... for the same violation for the same day in issue is admissible for the purpose of fact of payment but not as an admission of liability and can be considered as a factor in mitigation of a penalty.”

### 3. Supplemental Environmental Projects (SEPs)

EPA's [Supplemental Environmental Projects Policy: 2015 Update](#) allows for a consent decree to include a SEP in order to mitigate a civil penalty. In recent negotiations, however, EPA has also indicated an interest in mitigating certain stipulated penalties based on a community's SEP. As such, a community may avoid or limit stipulated penalties pursuant to a decree if the decree (or an amendment to a decree) is “crafted to stipulate that a defendant will perform a particular SEP in addition or as an alternative to paying specified penalties, in the event of noncompliance. . .”<sup>26</sup> A SEP cannot be a project that the utility is already required to undertake, but is something voluntary. Further, the utility will be required to quantify the benefits of the SEP and typically must prominently state that the SEP was undertaken as part of a settlement of an enforcement action whenever it publicizes its activities. While SEPs have historically been a popular tool for mitigating civil penalties, there has been less emphasis on SEPs in recent years, and there are instances of state/federal regulators pushing back against SEP proposals, favoring penalty payments instead. Utilities considering SEPs should determine the applicable civil penalty offset ratio - state policies on offset ratios vary but it is typically 2:1. For example, if a utility is faced with a \$100,000 gravity-

based civil penalty and the parties agree to \$60,000 in penalties and the remainder in SEPs, the SEP projects would need to total \$80,000 (\$100,000 - \$60,000 = \$40,000, x 2). A utility must balance the interest of being able to use funds locally that would otherwise go to the Federal Treasury with the increased overall cost due to a potentially unfavorable offset ratio and any additional burdens associated with implementing, administering and reporting on SEPs. A good resource to assist utilities in understanding the diversity of SEP practices in each state is the American Bar Association’s publication [Supplemental Environmental Projects: A Fifty State Survey with Model Practices](#). The following are examples of a few recently agreed upon SEPs:

- The **Boston Water and Sewer Commission, Massachusetts** consent decree requires a leaking sewer lateral lining program that addresses a minimum of 25 private sewer laterals that have been identified as sources of sanitary sewerage (a value of \$160,000).
- The **Jersey City Municipal Authorities, New Jersey** consent decree requires the removal of designated common sewers and construction of individual lateral sewers for connection to the combined sewer system (a value of \$550,000).
- The **Metropolitan Government of Nashville and Davidson County, Tennessee** consent decree requires installation of wastewater collection and transmission systems in particular neighborhoods (a value of \$2,800,000).
- The **DeKalb County, Georgia** consent decree includes a stream cleanup SEP (a value of \$600,000).
- The **City of Lima, Ohio** consent decree includes a SEP that involves tree planting along the Ottawa River.
- The **City of Fort Smith, Arkansas** consent decree includes a SEP to repair private laterals to reduce I&I, at a value of at least \$400,000.

Many recent SEPs also typically include a green infrastructure component. See [Section V.H \(page 147\)](#). Consider the following:

- The **Lexington-Fayette Urban County, Kentucky** consent decree includes two SEPs, with one for the implementation of green infrastructure (a value of \$230,000).
- In lieu of up to \$74,250 of the State penalty, the **City of Jeffersonville, Indiana**, may spend, at a ratio of 1.6:1, funds to install pervious pavers and a rain garden at Preservation Park (a value of \$118,050).
- The state consent decree for the **City of Milwaukee, Wisconsin**, includes a \$255,000 SEP to design and construct green parking lots within the Milwaukee River drainage basin.
- The **Fort Wayne, Indiana** consent decree includes a SEP provision allowing the City to offset its penalty to the State of Indiana by participation in a rain garden demonstration and incentive program. See also **City of Chattanooga, Tennessee**, consent decree (¶ 39) (the portion of the civil penalty that is paid to the State will go to the Highland Park Green Infrastructure Demonstration Project).

## E. Effect of Settlement/Reservation of Rights

Another key component of a municipal CWA decree is the “Effect of Settlement/Reservation of Rights” provision. This provision defines what the decree means in terms of other violations and what rights the parties have to make additional arguments in the future. Most utilities will strive for as broad a release as possible from the type of violations alleged in the decree, via a provision that states that “the decree is



entered in full and final settlement of all violations of the type alleged in the complaint, through the date of entry of the decree by the court.” In contrast, EPA or the state will prefer that the settlement cover only the specific violations identified by the agency, through the date of execution of the decree or its lodging (prior to entry) with the court. Sometimes, the government will attach an itemized list of violations as an appendix to the decree. Consider the following examples:

- A compromise approach is reflected in the **City of Toledo, Ohio** decree (¶ 31) stating that the settlement covers all violations identified in the City’s monthly operating reports or otherwise made known to the permitting authority before the decree is entered.
- Another comprehensive provision is contained in the **City of Little Rock, Arkansas** decree (¶ 27), which provides that the settlement agreement constitutes full and final settlement of any claims in the lawsuit through the termination date, providing a complete and full remedy for all SSOs that occur prior to the effective date *and* all SSOs that occur after the effective date but prior to the termination date of the settlement agreement. This type of provision would have logical support in a federal decree that provides stipulated penalties for SSOs that occur during its effective period.

## F. Covenant Not to Sue

To complement the Effect of Settlement provision, utilities negotiating a CWA decree sometimes obtain an explicit Covenant Not to Sue/Reservation of Rights under related statutory provisions for the violations alleged in the decree. The rationale behind such provisions is that the decree should be entered in settlement of all claims that were made or *could have been* made for the type of violations alleged in the decree. Without such a provision, the government theoretically could seek additional administrative or judicial penalties under laws not explicitly cited in the complaint. In extreme cases, some cities have sought and obtained waivers of potential claims under other statutes such as the Rivers and Harbors Act, or natural resource damage claims under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Consider the following examples:

- The **City of Baltimore, Maryland** decree (¶ 34) provides that “the United States covenants not to bring any administrative or civil judicial action for violations of Sections 301 and 402 of the Clean Water Act as alleged in the Complaint filed in this matter, and the State of Maryland covenants not to sue Baltimore for violations of Sections 301 and 402 of the Clean Water Act and Sections 9-322 and 9-323 of the Maryland Environment Article as alleged in the State of Maryland’s complaint in intervention.”
- The **City of Hammond, Indiana** decree (¶ 54) involved CERCLA claims, and as such, the EPA covenants not to sue or take administrative action against the utility for civil liability arising from wastewater discharges through the date of lodging of the decree for: (a) relief pursuant to Sections 309 or 311 of the CWA, (b) relief pursuant to the Rivers and Harbors Act, 33 U.S.C. § 401 et seq., or (c) reimbursement of response costs or other legal or equitable relief resulting from wastewater discharges pursuant to CERCLA Sections 106 or 107, or Section 7003 of Resource Conservation and Recovery Act, 42 U.S.C. § 6973. Similar covenants are provided by the State of Indiana under various state statutes and regulations. *Id.*

## G. Force Majeure

The [force majeure](#) clause outlines the conditions under which the utility must notify the government of any potential event beyond the utility’s control that will affect obligations under the consent decree. The notification usually must be made by the utility in writing within a specified number of days or the defense is deemed to be waived. In most force majeure clauses, the government will be in the position

of determining in the first instance whether or not the event was caused by circumstances beyond the control of the utility, its contractors, consultants, or anyone else under the utility's control. "Changes in financial circumstances," lack of funding or "unanticipated costs or expenses" are invariably carved out from the defense by the government. (Ironically, however, EPA has insisted on this type of defense for itself in cases in which it is the defendant.)<sup>27</sup> The utility usually can invoke formal dispute resolution if it disagrees with the government's decision, but will bear the burden of proof to show that the event (and the length of the delay) was beyond its control and could not have been prevented.

A utility negotiating a CWA decree can strive for a force majeure clause that gives it the broadest array of defenses to various events that could occur. Areas subject to negotiation include:

- ✓ The length of time for providing notice (*e.g.*, 10 days, 14 days, 30 days);
- ✓ The triggering event (the government prefers to measure the deadline from the time that the defendant knew "or in the exercise of reasonable diligence should have known" that the event would cause a delay); and
- ✓ Whether or not there is a deadline for the defendant to invoke formal dispute resolution after notification of the government's decision.

Consider the following examples:

- The force majeure provisions in the decrees for **Cincinnati, Ohio** (¶¶ 52-55), **Baton Rouge, Louisiana** (¶¶ 42-44), and **Baltimore, Maryland** (¶ 59-61), may be taken as typical examples of the government's standard position.
- Some decrees shorten the deadlines or tighten the standard requirements. For example, the **City of Mobile, Alabama**, decree (¶ 66), requires telephone notice within 24 hours and written notice within 5 days of knowledge of the delay.
- The **City of Ironton, Ohio's** decree (¶¶ 69, 74), contains two force majeure clauses. With regard to the United States, unanticipated or increased costs or expenses or changed financial circumstances and failure to apply for or submit complete applications for required permits or approvals are not force majeure conditions. However, for the State of Ohio, the Parties agreed that it was premature to raise and adjudicate the existence of a force majeure defense. In addition, the State of Ohio clause provides that, unless associated with a force majeure event, unanticipated or increased costs associated with implementation of any action required by the decree or change in financial circumstances shall not constitute circumstances entirely beyond the City's control or serve as a basis for an extension of time under the decree. *See also* **NEORS** consent decree (¶¶ 65, 70).

Force majeure clauses typically provide that failure to apply for a permit or other required approval (or to provide in a timely manner all information required to obtain the permit or approval) is not a force majeure event. However, consider the following alternative language:

- The **Baltimore County, Maryland**, consent decree (¶ 48) provides that the county may seek relief under the force majeure provision for any delay in the performance of an obligation resulting from a failure to obtain, or a delay in obtaining, any permit or approval required to fulfill such obligation, if the county has submitted timely and complete applications and has taken all other actions necessary to obtain such approvals.
- Under the **Puerto Rico** 2006 decree (¶ 68), the failure to obtain any necessary permit or approval shall not be deemed a force majeure event "unless" the Authority "demonstrates that it exercised due diligence in promptly pursuing such permit application or approval."

- The **City of Toledo, Ohio**, decree (¶ 89) provides that “if a permitting authority fails to issue, renew or modify—or delays in issuing, renewing or modifying—a lawful permit, order or other action required for any part of the work under this Consent Decree,” the ensuing delay shall justify a delay under the decree.
- Under **Northeast Ohio Regional Sewer District’s (NEORSD’s)** decree (¶ 24), if a compliance obligation depends on federal, state or local permit or approval, failure to obtain or delay in obtaining the permit or approval may be force majeure if NEORSD has submitted timely and complete applications and taken all other actions necessary to obtain all such permits or approvals. However, delay due to pending applications for constructive grants, State Revolving Loan Funds, or other grants or loans, or other delays caused by inadequate facility planning on the part of NEORSD is not a cause for an extension. *See also City of Elkhart, Indiana*, consent decree (¶ 20).

## H. Dispute Resolution

Another significant provision in a consent decree is the “dispute resolution” provision. The government may present the utility with draft language that attempts to control the procedures, timing, and effect of any dispute, as well as the utility’s ability to petition the court for resolution of the matter. The standard government requirements provide that the utility must notify the government in writing and engage in a period of informal or formal negotiation with the government. If the government disagrees with the utility, the government’s position controls unless the utility petitions the court within a finite period of time (such as 45 days). The utility then bears the burden of proof to demonstrate that its position is correct.

Normally, the government will agree to suspend payment of stipulated penalties pending a final decision by the court, but it will insist that the penalties continue to accrue in the interim. *See discussion of Stipulated Penalties* in [Section IV.D.2 \(page 104\)](#). More troublesome is a provision that the utility must *comply* with the government’s position pending an appeal to the court. If the dispute involves a significant construction or compliance outlay, the performance of the disputed activity logically could be stayed pending the outcome of the dispute. Consider the following compromise approach:

- The **City of Baltimore, Maryland**, decree (¶ 46) provides that submission of a dispute to the court shall not extend any of the deadlines in the decree unless the parties agree to the extension in writing or the court grants an order extending it.

Several CWA decrees incorporate an elaborate, quasi-administrative process as part of the prejudicial phase. Some decrees include both formal and informal procedures with certain aspects being reviewed under the informal process and if a dispute continues, going through the more formal procedure.

- The **Northeast Ohio Regional Sewer District** decree contains both an informal and formal dispute resolution process.
- Other decrees have eliminated the formal dispute resolution procedures (*e.g.*, **South Bend, Indiana**) in favor of the merely informal procedures; however, this has not been widely accepted.

Under a typical formal process, the utility must submit a formal “statement of position” to the agency, supported by all the data, documents and other materials that it intends to rely upon. These materials become part of an “administrative record” for the dispute, which is maintained by the agency. The agency files a responsive statement of position, and the utility has an opportunity to reply. Thereafter, an agency official (such as the Regional Administrator or the head of the Regional Water or Enforcement Division) will render a “final administrative decision” in the matter. The utility has an opportunity to

“appeal” this decision to the court, but has the burden to show that the decision was “arbitrary and capricious, or otherwise not in accordance with law.” Consider the following:

- The **City of Mobile, Alabama** decree (¶¶ 68-78); the **City of Baton Rouge, Louisiana** decree (¶ 90-96); the **City of Hammond, Indiana** decree (¶ 48).
- The **City of Toledo, Ohio**, decree (¶ 96) provides that the court will conduct a “de novo review” of any dispute, in which the City has the burden to show that its actions are in accordance with, and will assure compliance with, the decree.

This complex approach is based upon one commonly used in Superfund cases (where an administrative record is already created for entirely independent reasons), and a utility can argue that it is not appropriate in a CWA consent decree. Further, a utility should be wary of the “arbitrary and capricious” standard of review, in which great deference is given to the agency — and not to the utility. However, this standard has notably been incorporated in several decrees. See **City of Elkins, West Virginia** decree (¶ 60), which includes this express “arbitrary and capricious standard” as the standard of review; **Town of Fort Gay, West Virginia**, decree (¶ 83); **Scranton Sewer Authority, Pennsylvania**, decree (¶ 65).

Finally, a federal court always retains jurisdiction to enforce and adjudicate any disputes that arise under its decree, and the court will decide what standard of review to apply. Just as the parties cannot create a “right of appeal” that does not exist by virtue of any statute or regulation, the parties cannot fetter the discretion of the court in how to resolve a dispute that is already subject to its jurisdiction. For this reason, a great number of decrees will either remain silent on the standard of review, or will state that it shall be “that provided by applicable law.” Consider the **City of Cincinnati, Ohio** decree (¶ 61), the **City of Youngstown, Ohio**, decree (¶ 48); and the **City of Great Falls, Montana**, decree (¶ 108). The decree for the **Metropolitan Government of Nashville and Davidson County, Tennessee**, sets forth a standard of “a preponderance of the evidence.” (¶ XII.J).

## I. Right of Entry

The standard “right of entry” provision gives the government access to the utility’s property and facilities for the purpose of monitoring compliance with the decree. In negotiating this provision, a utility can seek to condition the government’s right of entry upon the presentation of proper credentials and compliance with any environmental health and safety requirements at the facility, and to exercise this right during reasonable or normal business hours. It also is important to seek to have the government provide the results of any samples collected and analyzed, and to provide splits of any samples it collects. Consider the following examples:

- The **City of Youngstown, Ohio**, decree (¶ 50) states that EPA, its representatives, contractors, and consultants shall have the right of entry “at all reasonable times, upon proper presentation of credentials.” Upon request, Youngstown “will be provided with splits of all samples” taken by the United States or the state.
- The **City of Cincinnati, Ohio**, decree (§ 15) requires the government to provide the opportunity to obtain split samples, to provide the laboratory QA/QC and analytical results, and any non-privileged reports concerning such results. The government also commits to using its “best efforts” to coordinate field inspections by providing advance notice to the city.

## J. Reports and Certifications

The “reports and certifications” provision sets forth the terms and requirements for utility documentation, status reports, or updates that must be provided under the agreement. EPA policy requires that

*certifications* submitted by the utility pursuant to a decree be signed by a responsible official, which can be defined by reference to 40 CFR § 122.22(a)(3) (signatories to permit applications and reports for utilities). However, § 122.22(a)(3)'s requirement to have a "principal executive officer or ranking elected official" certify compliance with the *decree* will not be appropriate for every routine, interim report that is submitted in the course of the work being performed and the monitoring being conducted under the decree. Cities may find that a more workable approach specifies the POTW manager or public utilities department official as the signatory for more regular reports. This request can be supported by reference to the NPDES regulations governing the signature of monthly operating reports under 40 CFR § 122.22(b). This regulatory provision states that for reports required under permits, the signature may be that of a "duly authorized representative," which includes "either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, . . . superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters .... (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)"

- A "reports and certifications" provision offering significant operational flexibility to a utility is one that provides that any report, plan, or other submission that the utility is required to submit under the decree shall be signed and certified by "an official *or* authorized agent" of the utility. See **City of Toledo, Ohio**, decree (¶ 127); **City of Youngstown, Ohio**, decree (¶ 54); **Town of Fort Gay, West Virginia** (¶ 54); **City of Welch, West Virginia**, (¶ 30); and **Scranton Sewer Authority, Pennsylvania** (¶ 30).

Utilities should also carefully review their certification statements to ensure that they match up with the requirements of 40 CFR § 122.22, and that it includes the qualifiers in favor of the submitter, as the signer of the certification can be subject to personal liability for any inaccurate information. In addition, the court in *United States v. City of Elkhart*, 2:11-cv-328 (N.D. Ind.), held that EPA must use the proper 40 CFR certification statement and not one lacking qualifiers in favor of the submitter. The City of Elkhart, Indiana entered into a consent decree in 2011 to address overflows from its combined sewer system. It later came to the city's attention that the certification statement it was required to make for all submissions under the consent decree materially differed from the certification statement required by EPA's NPDES regulations, 40 C.F.R. § 122.22(d). Elements of the § 122.22(d) certification statement that protect signers from being held liable for innocent mistakes were omitted from the consent decree certification statement, including as the important qualifier that the information in the submission is true, accurate, and complete "to the best of my knowledge and belief." The effect of the changes was to make the employee signing the certification statement potentially subject to personal enforcement action if the submission contained any inadvertent errors. Asserting that the incorrect consent decree certification must have been the result of an error, the city filed a motion in November 2015 asking the court to amend the certification statement to make it conform to § 122.22(d). EPA initially opposed the motion, arguing that the § 122.22(d) certification statement does not apply to consent decrees and that it was therefore within the Agency's discretion to draft a different statement. After further discussions, however, EPA agreed to a consent decree modification to correct the certification statement. A motion to that effect is expected to be filed shortly. This is an important result which will affect all EPA information requests, administrative orders, and consent decrees.

## K. Green Infrastructure and Low Impact Development

Green infrastructure opportunities are being incorporated into increasing numbers of CWA consent decrees, both as part of compliance programs and as supplemental environmental projects (SEPs). On April 19, 2007, EPA, NACWA, and a number of other groups signed a [Statement of Intent](#) to promote the use of green infrastructure to help solve stormwater runoff and sewer overflow problems. The

statement of intent recognizes the positive benefits green infrastructure can have for utilities in a wet weather context and pledges cooperation among these groups to promote the use of various green infrastructure techniques such as rain gardens, bio retention cells, infiltration swales, green parking lot design, rain barrels, and many others. The agreement supplements an early statement supporting green infrastructure that has been signed by over 60 national, regional, and local organizations. One of the objectives of the statement is to explore opportunities and incentives for the use of green infrastructure in CSO long term control plans. This strategy has been further underscored in the March 5, 2007 and August 16, 2007 EPA policy memos and 2013 [EPA Green Infrastructure Strategic Agenda](#) discussed in [Section II.D.3 \(page 41\)](#).

It is important to note that many communities/utilities have pursued and are pursuing green infrastructure/low impact development (LID) options within the consent decree context because these approaches can provide greater environmental benefits at less cost (*see* [Section V.G, page 147](#)). EPA and state regulators are also more accepting of green infrastructure as part of enforcement orders. However, there is nothing that mandates a utility or community must accept green infrastructure/low impact development in a consent decree or enforcement order.

Additionally, the amount of green infrastructure used in wet weather programs will vary from community to community and will depend on a number of factors including required overflow control level, geography, topography, water quality considerations, and community acceptance. There is no “right” or “wrong” approach to the use of green -- ultimately each community must make its own determination about whether and how much green infrastructure to incorporate as part of a CWA enforcement order.

A number of consent decrees incorporate green infrastructure opportunities as part of the utility’s compliance obligations. As some of these examples suggest, the ability to use green infrastructure in some decrees allows for a “hybrid” approach that combines green methods with more traditional gray infrastructure methods. Consider the following:

- The **City of Chattanooga, Tennessee** consent decree (¶ 26) requires a Green Infrastructure Plan for CSS that includes: (1) control measures that store, infiltrate or evapotranspire precipitation and reduce wet weather flows into the CSS; (2) a Comprehensive Land Use Policy; (3) Green Infrastructure Community Assistance Plan; and (4) an implementation schedule.
- The **Northeast Ohio Regional Sewer District (NEORS)** decree (¶ 19) requires it to submit a plan that identifies control measures that use Green Infrastructure. In addition, NEORS may propose revisions to CSO Control Measures to use Green Infrastructure control measures as a substitute fully or in part for Gray Infrastructure control measures. *See* ¶ 20.
- The **City of Cincinnati, Ohio** decree notes that the City may “identify proposed revisions to WWIP projects by adding or substituting ‘green infrastructure’ or ‘gray infrastructure’ where it is justified by business case evaluation in Defendants’ sole discretion.”
- The **City of South Bend, Indiana** consent decree permits that on a maximum of two occasions on or before December 31, 2020, the City may submit a request for consideration of a smaller tank, conduit, or interceptor size requirement for or all storage tanks, conduits, or parallel interceptors if (1) the City has implemented Green Infrastructure Measures or CSO Measures that reduce wet weather flow; (2) the City demonstrates it will continue to achieve flow reductions; and (3) the reductions will achieve the Performance Criteria of no more than four Overflow Events during a Typical Year with the smaller tank, conduit, or interceptor.
- The **City of Revere, Massachusetts** consent decree (¶ 69), requires the City to implement a program to purchase, promote and install rainwater harvesting systems designed to capture



runoff from rooftops. It is also required to purchase at least 500 rainwater harvesting systems.

- The **City of Newport, Rhode Island** decree (¶ 69) requires the utility to install a rainwater harvesting system for rooftop drainage.
- The **City of Fitchburg, Massachusetts** consent decree (¶ 55.e) encourages the City “to consider evaluating potential Best Management Practices, including the use of all appropriate ‘green infrastructure’ and ‘low impact development’ techniques currently available to reduce inflow.”
- The **Boston Water and Sewer Commission, Massachusetts** consent decree (¶ 25) requires the BMP proposal to “include and emphasize the use of all appropriate currently available Green-Infrastructure (‘GI’) and Low-Impact Development (‘UD’) techniques.”
- The **City of Philadelphia, Pennsylvania** state consent decree requires the City to submit a Green Infrastructure Maintenance Manual development process and Green Infrastructure Maintenance Plan.
- The **Scranton Sewer Authority, Pennsylvania** consent decree (¶¶ 13-14) requires it to evaluate the feasibility of implementing Green Infrastructure Measures as part of its long term controls.
- The **City of Kansas City, Missouri** consent decree notes that the City is identified as a leader in promoting public and private green solutions to sewer overflows and urban stormwater impacts. It includes provisions for the adaptive management approach in order to extensively utilize green infrastructure in lieu of and in addition to structural controls. It includes a green infrastructure pilot program and also allows the utility to propose revisions to utilize green infrastructure instead of gray control measures.
- The **Metropolitan St. Louis Sewer District, Missouri** consent decree (p. 3), includes a \$100 million commitment to implement green infrastructure that redirects stormwater.
- The **Unified Government of Wyandotte County and Kansas City, Kansas** consent decree (¶ 48) requires consideration of green infrastructure under SSS and CSS control alternative analyses. Potential locations for use of green infrastructure should prioritize effectiveness of the green infrastructure measures, availability of land, and benefits to minority and low income populations.
- The **City of Seattle, Washington** decree permits use of GI as part of LTCP control measures, but if GI does not meet Performance Criteria, the utility may petition for change in criteria or must implement additional CSO control measures if criteria change is not approved that are consistent with the final construction deadline (2025).
- The **King County, Washington** decree permits the county to propose revisions to approved CSO control measures to incorporate GI stormwater infrastructure provided that the GI provides “same or greater level of control in terms of gallons controlled and the number of CSO activations in a typical year.” EPA may approve or disapprove the substitution and its disapproval is final (no dispute resolution).
- The 2009 **Onondaga County, New York** Fourth Amended Consent Judgment (ACJ) (state order) (¶ 21) extended deadlines in the prior ACJ “in order to allow the parties to review these projects for the purpose, in part, of evaluating the feasibility and utility of using green infrastructure in lieu of or in combination with the gray infrastructure currently required by the ACJ.”

- The 2003 **Allegheny County Sanitary Authority (ALCOSAN)** et al. state consent order with the Pennsylvania Department of Environmental Protection (PADEP), which was set to expire on March 30, 2015, was extended 18 months so that a study could be conducted to examine the feasibility of green infrastructure source control options. The original order requires Pittsburgh and 79 nearby municipalities to upgrade their wastewater infrastructure to reduce overflows from sanitary sewer systems and combined stormwater/sewer system. As part of this extension, the parties will negotiate new orders that will meet the time line contained in the 2008 federal Amended Consent Decree that is currently being renegotiated between EPA, PADEP and ALCOSAN.

As indicated above, the use of green infrastructure has also been addressed in the context of SEPs. Consider the following:

- The consent decree for the **Lexington-Fayette Urban County Government, Kentucky** includes a \$230,000 SEP project requiring the county to manage stormwater runoff at one or more sites in the Lexington area using green infrastructure principles, such as rain gardens, porous pavements, green roofs, infiltration planters, trees and tree boxes and rainwater harvesting for non-potable uses such as toilet flushing and landscape irrigation.
- The 2008 state consent decree for the **City of Milwaukee, Wisconsin** includes a \$255,000 SEP to design and construct green parking lots within the Milwaukee River drainage basin.
- The **Fort Wayne, Indiana** consent decree includes a SEP provision allowing the utility to offset its penalty to the State of Indiana by participation in a rain garden demonstration and incentive program. See also **City of Chattanooga, Tennessee** Consent Decree at ¶ 39 (the portion of the civil penalty that is paid to the State will go to the Highland Park Green Infrastructure Demonstration Project).
- The **City of Jeffersonville, Indiana** decree (¶ 36) includes a SEP for construction of a wetland stormwater treatment system consisting of two constructed wetland areas and vegetative buffer strip at the River Ridge Commerce Center to reduce the velocity of and remove pollutants from stormwater flow at a value of \$130,000. A state SEP, in lieu of up to \$74,250 of the state penalty, involves installation of pervious pavers and a rain garden at Preservation Park with a value of \$118,050.
- Under the **Metropolitan Water Reclamation District of Greater Chicago, Illinois**, consent decree (¶ 19), delays in tunnel or reservoir construction constitute Contingency Events that can result in extension of Long Term Control Plan deadlines conditioned on implementation of supplemental green infrastructure projects. For each contingency event, additional green infrastructure must be installed to retain 250,000 gallons of water (per storm).

Additionally, some decrees are expressing preferences for use of LID control strategies, as the **City of Newport, Rhode Island**, consent decree (¶ 29-30) provides that the utility will encourage the use of LID strategies as a means of reducing I/I.

## L. Integrated Planning

In addition to green infrastructure terms, some federal consent decrees are also now incorporating integrated planning provisions, which will allow utilities to revisit compliance requirements and schedules. EPA's 2012 *Integrated Municipal Stormwater and Wastewater Planning Approach Framework* explains that the goal of integrated planning is to permit a utility "to balance CWA requirements in a manner that addresses the most pressing public health and environmental protection issues first."<sup>28</sup> Integrated planning is a voluntary planning principle that utilities may utilize to prioritize their CWA obligations. A

number of recent consent decrees specifically allow the utility to submit an integrated plan for approval, and upon approval, the plan is to be incorporated into the Consent Decree. *See* [Section V.G \(page 146\)](#), for additional information on leveraging integrated planning as a strategy in enforcement negotiations. Consider these examples:

- The **Lima, Ohio**, consent decree incorporates a full integrated plan consistent with EPA's 2012 Framework. The Integrated Plan includes the CSO/SSO Control Measures Plan, the LTCP, the Sanitary Sewer Overflow Abatement Plan, and all approved revisions to those plans. (¶ IV.8 (x), V.14).
- The **City of Seattle, Washington**, consent decree (¶ 20) permits the City to submit an Integrated Plan with proposed water quality improvement projects beyond those to be achieved by CSO Control Measures. The Integrated Plan must demonstrate compliance with the CWA, NPDES permit and MS4 stormwater permit, and *CSO Policy*. The schedule must be as "expeditious as possible", but may include extension of the final CSO construction milestone.
- The **King County, Washington**, consent decree (¶ 23), allows the County to request modification of critical milestones if the modification would reflect good engineering practice and is required to coordinate or align with the City of Seattle's stormwater or CSO infrastructure projects or is necessary to attain cost effective and technically sound CSO control measures. But, these modifications cannot change the final compliance date. The County may also develop an Integrated Plan to include an extension of the final construction completion milestone.

Other consent decrees simply emphasize the importance of prioritizing implementation projects, considering cost, effectiveness, and other similar factors:

- The partial consent decree for the **Unified Government of Wyandotte County and Kansas City, Kansas** (Section IX) requires the development of an Integrated Overflow Control Plan, which is to include the utility's LTCP for CSOs and its remedial plan for SSOs. The IOCP is to consider a range of alternatives for reducing CSOs, ensuring adequate capacity in the SSS, eliminating bypasses and implementing Green Infrastructure where feasible. The evaluation is to consider costs, effectiveness and water quality benefits of the selected alternatives. Then, in prioritizing alternatives, the Unified Government shall consider the alternative's impact on the reduction of CSOs, the percent wet weather capture, project costs, and water quality improvements.
- The **City of Evansville, Indiana and Evansville Water Sewer Utility Board** consent decree (C35), states that the Integrated Overflow Control Plan should prioritize improvements and other remedial measures necessary to prevent or minimize discharges and CSS Releases to identified sensitive areas, analyze the impact on environmental justice populations, and complete the design and construction of all improvements and other remedial measures by May 31, 2032 (unless a demonstration is made to reconsider the schedule based on financial circumstances).
- The **Jersey City Municipal Authorities, New Jersey** consent decree (¶ 13) states that the Capacity and Condition Assessment Study "should enable Defendant to prioritize improvements needed and to begin addressing those improvements in an orderly fashion as capital improvement funding becomes available." This Assessment is to be done in a "phased approach."

- The **City of Revere, Massachusetts** consent decree (¶ 14.e), requires that the CWMP/CSMP “identify and prioritize capital projects and all other remedial projects required to maintain and improve operation of the existing systems ...” The city “shall prioritize projects based upon factors, including, but not limited to: (1) relative likely impact on human health and the environment, (2) SSO frequencies, (3) total SSO volumes, (4) the cost-effectiveness of the remedial projects, and (5) demonstrated limitations in the downstream MWRA system.”
- The **City of Fitchburg, Massachusetts** consent decree (¶ 42.d) contains a number of provisions emphasizing prioritization of projects. An updated hydraulic model is to be provided in order to evaluate the impacts and prioritize proposed sewer separation projects, remedial measures, and planned removal of extraneous flows. Further, the WWMP must include an itemized schedule for construction of facilities necessary to meet seasonal total phosphorus concentration-based limit and total phosphorus mass-based limit “as expeditiously as practicable within the utility’s financial capacity and consistent with sound engineering practice and normal construction practice.” (¶ 55.a).
- The **Boston Water and Sewer Commission, Massachusetts** consent decree (¶ 16) contains provisions related to prioritization of performance. For example, the investigation of the sub-catchment area should be done in accordance with a “priority ranking schedule.” In addition, the Stormwater Model Report is to include ranked listings and evaluations for individual outfalls and sub-watersheds. (¶ 27). The stormwater BMP Report must “include a prioritized listing of subcatchments suitable for application of such BMPs.” (¶ 28).
- The **Hampton Roads Sanitation District, Virginia** consent decree (¶ 44) requires an alternatives analysis in its Regional Wastewater Management Plan, weighing “life cycle costs, feasibility of construction, operation and maintenance impacts, water quality benefits, and other relevant factors.” Ultimately, it must “weigh the protectiveness and cost of the alternatives.” (¶¶ 44-45, 50).
- The **City of Columbus, Ohio** 2015 integrated plan, referred to as Blueprint Columbus, prioritizes I/I reduction tactics and green infrastructure implementation. The Blueprint targets reductions by ranking areas within which to phase the City’s focus on I/I reductions. High priority areas were identified through investigation and field work conducted pursuant to the city’s 2005 WWMP, which the Blueprint is intended to replace for compliance achievement

## M. Modification/ Reopener/Adaptive Management Clauses

The closely related issues of schedule and cost have come to the forefront in recent consent decree negotiations, in part because the focus has begun to shift from LTCP development to the implementation phase. The *CSO Policy* states that the final LTCP must be implemented “as soon as practicable.” According to EPA’s 1997 *Guidance for Financial Capability Assessment and Schedule Development*, for cities in the High Burden category (generally those whose cost per household will exceed 2 percent of median household income) an implementation schedule up to 15 years might be appropriate, and in “unusually high burden situations” a schedule up to 20 years may be negotiated. Facing projected costs that exceed even 2.5 or 3.0 percent of MHI, many cities have proposed even longer schedules of 30 to 40 years. Cities with major CSO and SSO consent decrees, such as Atlanta, have begun to revisit their original cost analyses and to seek relief in terms of extended implementation schedules or revisions in the scope of their proposed control programs. Developments like EPA’s embrace of integrated planning principles (see [Section IV.G, page 145](#)) have provided even greater impetus and opportunity for communities already under a consent decree or enforcement order to seek modification based on changed economic circumstances and better/

smarter ways - such as incorporation of green infrastructure - to achieve environmental compliance (*see Section V.M (page 151)* for recent examples and discussion of emerging justifications for modification). Several traditional approaches for modifying and reopening a decree are discussed in more detail below:

## 1. Modifications Based on Financial Capability & Adaptive Management

In recognition of the significant financial burdens being placed on utilities implementing CSO and SSO consent decree compliance requirements, a number of recent consent decrees permit modification based upon financial capability. In some cases, this is expressed as an opportunity to seek modification if costs exceed a certain cost trigger, which is typically the estimated cost of program implementation. Other times the term is more generally phrased as an opportunity to seek modification based upon financial circumstances or constraints. Consider the following:

- The **City of Mishawaka, Indiana** consent decree (¶¶ 69-75) allows for reconsideration of the schedule based on financial capability. “No earlier than 5 years after the Effective Date, and on a maximum of one occasion every five years during the pendency of this Consent Decree, Mishawaka may submit to the United States and Indiana a request for approval of an extension of up to a maximum of five years, less the length of any prior extension request granted, of the deadlines for completing any of the remaining requirements of Appendix A.” (¶ 69). The total combined time of all extensions cannot exceed five years. Any request must show that the utility has actually spent at least \$19,482,500, a Residential Indicator exceeding 2.5 percent, an increase in Residential Indicator by at least 0.2 percent since the Consent Decree was entered or last extension request, a description of each requirement, and as short of an extension as reasonably possible. Any such agreement is a “minor modification” and does not require court approval.
- The **City of Chattanooga, Tennessee** consent decree (¶ 27) notes that the schedule of completion of any projects required by the Consent Decree may be extended if the utility is able to demonstrate a need for extension by submitting a written request, including a Financial Capability Analysis. The analysis must demonstrate that the expected household cost of the utility’s compliance will exceed 2.5 percent of the Median Household Income for the utility’s entire service area.
- The **Northeast Ohio Regional Sewer District (NEORS)** consent decree includes a number of modification and flexibility provisions. The Parties agreed that the CSO Control Measures, in combination with an additional \$2.251 billion non-CSO related capital costs contained in the Capital Improvement Plan constitute a “high burden” on ratepayers. (¶ 16.b.) If NEORS requires additional time to implement the necessary measures to achieve Performance Criteria following achievement of full operation of any specific CSO Control Measure, it may submit a request for extension as part of its Corrective Action Plan. (¶ 16.c.) Further, if EPA and Ohio fail to act on submittals within 90 days, any subsequent milestone dependent upon such action shall be extended upon written notice from NEORS. (¶ 23).
- The **City of Evansville, Indiana, and Evansville Water Sewer Utility Board** consent decree (¶ 42) schedule for completion and construction of all improvements and other remedial measures under the Integrated Overflow Control Plan may be modified if Defendants demonstrate in an updated financial Capability Analysis submitted by January 31, 2012 that the expected per household cost will cause Defendants’ cost per household to exceed 2.5 percent of the Median Household Income for the entire service area.

- The **City of Cincinnati, Ohio** consent decree notes that if necessary Permits to Install (PTIs) cannot be obtained, the utility may submit a Supplemental Remedial Measures Plan. (¶ B.6). Further, the utility may submit modifications as needed to avoid violation of bond covenants. (¶ C.1). The utility’s final WWIP provides for annual allowance budget to fund unplanned projects. Additionally, the City may propose “significant changes to one or more projects (including associated appropriate changes to Performance and Design Criteria) because of changes in watershed approaches, priorities, technologies, methods, and other information through concepts of ‘adaptive management.’” (¶ C.2).
- The **City of Euclid, Ohio** consent decree (¶ 32) requires that in evaluating the financial impact of any of the alternatives evaluated and the alternatives proposed for implementation in any plan submitted pursuant to the decree and NPDES permit, the utility shall evaluate not only residential and commercial water and sewer rates but also possible alternative funding mechanisms, including, but not limited to, commercial and industrial user fees and rate structures, bond revenues, and grant and loan availability. For EPA and Ohio EPA to consider the utility’s economic capabilities for the proposed alternatives, the utility must provide a certified statement regarding the then current sewer rates (exclusive of water), a certification of the average annual sewer bill for a household, and three previous years of Annual Financial Reports. The utility must also provide any other relevant information as to its economic capabilities if requested by the Agencies. (¶ 33).
- The **City of Elkhart, Indiana** consent decree (¶ 12) allows it to request an extension of any deadlines for completing any of the remaining LTCP projects between 9 and 13 years after the effective date of the Consent Decree based on financial circumstances by demonstrating that it will complete the required task as soon as reasonably possible but in no event later than July 1, 2033 and include a Financial Capability Assessment.
- The **City of South Bend, Indiana** consent decree contains a number of specific modification provisions. On a maximum of two occasions on or before December 31, 2020, South Bend may request reconfiguration of storage tanks required under the Consent Decree. (¶ 79). South Bend may submit a request to modify the Performance Criteria for E. Coli. (¶ 84). Further, the City, no earlier than 5 years after the effective date and on a maximum of one occasion every five years, may request an extension of up to five years, less the length of any prior extension, of deadlines for completing any remaining LTCP requirements provided: (1) it has spent at least \$98,915,750 (in 2007 dollars); (2) The Residential Indicator (calculated pursuant to terms of the Consent Decree) exceeds 2.5 percent; and (3) The Residential Indicator has increased by at least 0.2 percentage points from the date of the last extension request (or 2.41 percent for a first extension request). (¶ 89).
- Section 7 of the state order for the **City of Milwaukee, Wisconsin** provides that the subsequent enactment of state or federal legislation which significantly impairs the utility’s financial ability to meet its obligations in light of its other governmental responsibilities (defined a “Financial Impairment”) shall be sufficient basis for the court to entertain a motion to reopen the judgment.
- Several consent decrees include provisions that allow for a supplemental compliance plan to address schedule changes due to financial hardship. For example, the **City of Seattle, Washington** consent decree (¶ 18) permits the City to submit a Supplemental



Compliance Plan if Performance Criteria is not achieved, which should include a request for extension of the Construction Deadline (2025). Further, if the utility experiences “significant adverse changes to its financial circumstances,” the utility may request a modification of a CSO Control Measure or extension of a CSO Critical Milestone up to five years. (§ 23). An agreed upon modification will be incorporated into an amended consent decree. *See also* **King County, Washington** consent decree (§ 27).

- The **City of Atlanta’s** SSO consent decree was originally entered in 1999. In 2012, the City sought and obtained an amendment to the decree based upon the utility’s financial circumstances to extend the deadline for compliance by 13 years (for a total of 25 years). At the time of the 2012 amendment, the utility had completed the majority of requirements under the consent decree and had also raised water and sewer rates by 252 percent over ten years and adopted a 1 percent municipal option sales tax to fund the requirements of the decree. Even with such measures, the utility was facing significant financial hardships under the initial 15-year schedule. EPA agreed that modification of the schedule was reasonable based upon its evaluation of Atlanta’s financial analysis and because it would allow the utility to also address competing improvements with its drinking water system. EPA/DOJ did conclude that the extension constituted a “major modification” under DOJ’s policy (28 CFR § 50.7) and thus the proposed modification was lodged with the Court and public noticed for a 30-day comment period prior to entry.
- The 2011 consent decree for the **Lexington-Fayette Urban County Government (LFUCG), Kentucky**, was modified in April 2015 to extend the deadline for all remedial measures until December 31, 2026, due to the “unanticipated increased scope and cost of projects that will be implemented” pursuant to the remedial measures plan under the decree. The remedial measure plan originally developed pursuant to the decree contained various deadlines ranging from September 2023 to September 2026. Section 15.G(vii) of the original decree provides that deadlines “may only be extended with approval of EPA and EPPC, for good cause.” At the time the original consent decree was signed by the Parties, the costs were estimated to be \$250-\$300 million. Since entry of the decree, LFUCGP completed a comprehensive Sewer System Assessment, which estimates the costs at \$590 million. This increase in anticipated costs was deemed by the regulators to be “good cause” for the deadline extensions.
- In July 2010, the **City and County of Honolulu, Hawaii**, reached agreement with EPA and four environmental organizations on a new consent decree that incorporated the terms and requirements of Honolulu’s existing 1994 Consent Decree and 2007 Stipulated Order, and resolved pending litigation from 2004. Financial capability and cash-flow analyses were used extensively to support the terms of the new decree. Initial estimates of the capital requirements and cost of compliance was \$1.2 billion for treatment plant upgrades alone. The new decree provided for a longer timeline than originally proposed by EPA, and brought all regulatory requirements under one document and timeline. EPA’s initial timeline would have potentially diverted capital spending and staff resources away from the much-needed infrastructure investments. The new decree allows 10 years to complete ongoing work on the collection system, 14 years for the upgrade of the Honouliuli WWTP to secondary treatment, and up to 25 years for the upgrade of the Sand Island WWTP to secondary treatment.
- The **Lima, Ohio**, consent decree is structured to provide Lima with the ability, upon EPA’s approval, to modify certain control measures or extend a milestone by five years

if it experiences “significant adverse changes to its financial circumstances or other financial or budgetary issues.” There is also a reopener for “changed circumstances,” including financial and budgetary considerations, adaptive management, and green infrastructure projects.

## 2. Reopener Provisions and Financial Caps

As another means of providing increased flexibility to utilities implementing CSO and SSO consent decrees, utilities have sought to include reopener provisions that allow for modification of the consent decree when certain deadlines or capital expenditures are met, or particular events may trigger the need for adjusted schedules. *Consider the following:*

- The consent decree for the **City of Fort Wayne, Indiana**, contains an extensive series of reopener provisions in Part XXI of the decree (Modification). As mentioned above, the utility may submit a work plan for revision of its proposed CSO control measures in the event that certain water quality standard revisions are not implemented. It may seek extension of certain deadlines if periodically submitted revisions to the estimated capital cost of its program (estimated at \$239 million in 2005 dollars) exceed \$313 million. It may also seek modification of the decree if the utility experiences significant adverse changes to its financial circumstances, if future NPDES permit proceedings warrant, or if the state fails to submit or EPA fails to take action on its requested water quality standards revisions within three years after the decree is lodged with the court. The utility may seek extension of the deadlines for achieving certain performance criteria if it needs additional time to implement additional remedial measures to achieve those criteria. Finally, the utility may seek modification of the performance criteria if it cannot achieve those criteria without additional remedial measures that are cost-prohibitive, infeasible, or otherwise inappropriate.
- A similar series of reopener provisions is found in Part VI of the 2006 consent decree for the **City of Indianapolis, Indiana**, including the right to seek modification of the decree if the estimated \$1.865 billion cost of the utility’s control plan will *exceed* \$2.325 billion in light of the revised cost estimates that are to be submitted by the utility every 5 years under the decree. Indeed, Indianapolis’ decree has been modified twice (2009 and 2011) to incorporate modifications to the control plan based upon this provision. *See also* the **City of Anderson, Indiana** consent decree, which obtained a 20 year extension in a subsequent modification.
- The state consent order for the **City of Philadelphia, Pennsylvania**, includes the submission of an Evaluation and Adaptation Plan (EAP) every five years, which will assess the City’s progress in implementing its LTCP and detail its next steps. (¶ 3.e.). The EAP is to include metrics on the amount of CSO reduction, and if certain performance standards are not met, an “adaptive strategy” for how the City proposes to meet such standards. Any adaptive strategy proposed by the utility will only be considered final upon approval by the Commonwealth. The EAP is to also include metrics on the green infrastructure that the City employs under the LTCP.

Others, such as **Cincinnati** and the **District of Columbia**, have attempted to limit the financial burden on their communities by incorporating a cap on overall cost or a financial re-opener provision in the consent decree itself.

- Section IX.B of the 2004 **Cincinnati, Ohio**, decree provided that the schedule for completion of the remedial measures in the utility’s CSO and SSO control plans shall be

as expeditious as practicable, but in no event later than February 2022, unless the city demonstrates that the expected capital costs of the CSO and SSO control measures (in 2006 dollars) are expected to exceed \$1.5 billion. If costs are expected to exceed that amount, then the schedule for completion of all measures proposed in the city's updated CSO and SSO control plans must still be "as expeditious as practicable," but may be later than February 2022.

- In the **District of Columbia** decree (¶¶ 33-36), the defendant agrees that the 20-year implementation schedule and the work required by the decree "is feasible and equitable, based on current information, assumptions and financial and other projections." Those financial assumptions and projections are incorporated as an appendix to the decree. The parties recognize that those assumptions and projections may change, and the schedule and/or work may be modified based on a "significant change" in the information currently available. EPA accepts the scope of work and the 20-year schedule, but reserves the right to disagree or contest particular assumptions in the event that the sewer authority seeks to extend the schedule based on a significant increase in costs or other changes in financial condition. The failure of the defendants to enact timely rate changes or to obtain bond or other financing are excluded from the definition of "significant change," and shall not, by itself, justify a change in the interim milestones or the 20-year schedule.
- In a 2005 state administrative order for the **City of Richmond, Virginia**, the State Water Control Board accepts the utility's 2002 LTCP and approves its CSO Control "Plan E." The Implementation Schedule for the LTCP, in Appendix A to the order, requires the utility to raise revenue for implementation of the LTCP "to the limit of its financial capability," which is defined to include biannual adjustments to its sewer rates so that the annual sewer bill for typical residential customers is 1.25 percent of median income. Each fiscal year the utility is required to allocate and spend "available funds" in accordance with the schedule for the CSO projects set forth in the appendix. "Available funds" are defined as the annual sewer revenues remaining after deducting operating expenses, non-operating expenses, and any other expenditures required to comply with any federal, state or local water quality related requirements associated with the utility's combined sewer system and treatment works. The utility must document its program in an annual compliance and progress report that includes an "independent rate consultant report" that calculates the annual residential sewer bill and the corresponding percentage of median household income.
- See also discussion above in [Section IV.M.1 \(page 121\)](#), to the **City of Mishawaka, Indiana**.

### 3. Specified Revisions Not Considered "Modifications"

To further allow flexibility in implementation of CSO and SSO compliance requirements, a number of consent decrees delineate certain actions that are not considered "modifications" under the consent decree and, therefore, do not require judicial approval. *Consider the following:*

- The **City of Mishawaka, Indiana** consent decree states that on a maximum of 2 occasions before December 31, 2021, the City can request for consideration a smaller lift station, force main, parallel interceptor, river crossing, or sewer size for any or all CSO Control Measures" (¶ 64). If agreement is reached, it is a minor modification.
- The **City of Memphis, Tennessee** consent decree (¶ 10) states that revisions to the MOM Program are not considered modifications of the Consent Decree; however EPA's

prior written approval is required for revisions to the substance of any MOM Program required by the consent decree. *See also* the **City of Jackson, Mississippi** consent decree (modifications of the CMOM Program do not constitute modifications of the consent decree).

- The **City of Los Angeles, California**, Settlement Agreement (¶ 166) provides that modifications of certain construction deadlines and to the terms and schedules in the SEP work plans submitted under the decree which do not extend the duration of the Agreement beyond 10-years may be made by written agreement of the parties without court approval. Under Section V.H of the Agreement (“Modification of Construction Deadlines”), if the utility and the governmental plaintiffs agree, the deadlines applicable to specified sewer relief projects and sewer rehabilitation and replacement projects “may be adjusted to address unforeseen circumstances.”
- The **Hampton Roads Sanitation District** consent decree (¶ 30) requires the District to notify the Commonwealth of Virginia and the appropriate federal authority if it reduces a project’s scope by 20 percent or more. If the District wants to remove a project from the list or to substitute another project, it must submit a request with a justification for the change. (¶ 31).
- The **Unified Government of Wyandotte County and Kansas City, Kansas** consent decree (§ XI), states that approval of the Integrated Flow Plan constitutes incorporation into the Consent Decree without further modification. In addition, revisions to submittals may be necessary but are not considered “modifications” for purposes of Section CCII of the decree but EPA approval is still required.

#### 4. Material Modification v. Non-Material Modification

In addition to listing specific terms that may be modified without court approval, several consent decrees simply state that material modifications require court approval and written agreement whereas nonmaterial modifications do not require court approval. *Compare the following:*

- The **San Antonio Water System** includes a provision that allows the Parties to, by “mutual agreement”, determine whether a modification is non-material. (¶ 110). It further details non-material changes that can be effectuated by agreement of the Parties.
- The decree for the **City of Cambridge, Ohio** (¶ 92) provides that the decree may be modified only by a subsequent written agreement signed by the parties. Where the modification constitutes a “material change to any term” of the decree, it shall be effective only upon approval by the court.
- The **District of Columbia** decree provides (Section XXI) that “non-material terms” of the decree may be modified by a subsequent written agreement of the parties, but a “material modification” of the selected CSO controls or schedules in the decree requires public participation, consultation with and approval by EPA, and lodging with the court for a period of public comment prior to entry.
- The **East Bay Municipality Utility District** consent decree (§ XVI) states that modification may only be made by written agreement of the parties and must be approved by the Court if it is a “material change” to any term. *See also* **City of Alameda, California** consent decree (§ XXIV) (modifications that constitute a material change are only effect with court approval, but extensions of time and modifications of deliverables are not construed as material changes).

- The **Bristol Township, Pennsylvania** decree (¶ 98), on the other hand, provides that extensions of deadlines for not more than 90 days are considered nonmaterial modifications; however, even these nonmaterial modifications need to be in writing and must be filed with the Court before the modification will be considered effective.
- The **Scranton Sewer Authority, Pennsylvania** decree (¶ 24) provides that all plans and studies submitted pursuant to the decree are considered incorporated into the decree upon approval by EPA. However, a modification of the LTCP requires written agreement of the parties, and if “material”, requires court approval.
- The **Metropolitan Government of Nashville and Davidson County, Tennessee** decree (¶ VI.D) provides that revisions to deliverables under the Consent Decree shall not be considered modifications of the decree. Deliverables under the decree include Metro’s Corrective Action Plan (CAP) for addressing SSOs and its LTCP for CSOs. However, (XXI) provides that changes to deadlines in the CAP or LTCP shall be considered material modifications requiring agreement in writing and court approval.

## 5. Modification for Changes in the Governing Law

Several consent decrees also recognize that EPA’s regulations and policies governing SSOs, CSOs, and bypasses are often changing. Therefore, some consent decrees note that changes in relevant EPA laws and regulations, including revised water quality standards and permitting requirements, are grounds for a utility to seek modification of the consent decree. *Consider the following:*

- The **City of Cincinnati, Ohio**, consent decree contains an unusual provision in Section XXI that allows the utility to seek modification of the decree (including requests for extension of time) in order to conform compliance with the decree to (1) any change in EPA’s regulations or national policies governing SSOs, CSOs or bypassing; (2) any new or revised water quality standards (including federal, state, or interstate standards relating to the Ohio river); and (3) any new requirements included in future permits for the utility’s WWTPs or sewer system. The utility regards this provision as particularly important in light of the continuing uncertainties surrounding EPA’s unfinished SSO rule and blending policy, as well as potential changes in the use designations or water quality criteria applicable to its receiving waters.
- The **City of Independence, Missouri**, consent decree, includes a provision allowing for modification to “conform compliance ... to any modification in EPA’s regulations or national policies governing SSOs or bypassing” or any new or revised water quality standards. (§ XXVI.C). The utility may request modification and, if approved, the Parties will submit a joint motion. If not approved, the utility may file a motion seeking modification by the Court. *See also* **City of Kansas City, Missouri**, consent decree (§ XXV.B).
- The **City of Philadelphia, Pennsylvania**, state consent order provides that in the event of changes in the governing law or if EPA or the state regulatory agency (or a legislative body) passes any new policy that revises, changes or supersedes the National or Pennsylvania *CSO Policy*, either party may request a revision to the order which can be accomplished by written agreement of the parties.

## 6. Compliance and Funding

While many recent consent decrees exhibit greater flexibility with regard to implementation, a number of decrees explicitly state that compliance is expressly not conditioned on the receipt of

federal or state funding or on the utility’s financial capabilities. *See, e.g., City of Ironton, Ohio*, consent decree (¶ 28); *City of Euclid, Ohio*, consent decree (¶ 34). In addition, a number of consent decrees include provisions related to obtaining and/or maintaining the financial ability to pay for the required compliance projects. *Compare the following*:

- The **City of Ironton, Ohio**, consent decree (¶ 63) states that the State of Ohio will not have any liability under the consent decree except as required by CWA Section 309(e) if the laws of the State of Ohio prevent Ironton from raising revenues needed to comply with the consent decree.
- The **City of Oswego, New York**, consent decree (¶ 16) requires the utility to retain an expert in municipal finance to assist it in “identifying and securing sufficient funding for Compliance ...” It also requires the establishment of an “Enterprise Fund” for sewer use fees.
- The **City of St. Louis, Missouri**, consent decree (p. 3) allows the utility to seek alternative funding sources, including state, federal, bonding and other private or public financing to assist with improvements.
- The **City of Springfield, Missouri**, consent decree (§ IX.A.8) requires it to perform a Financial Capability Analysis as part of its Overflow Control Plan development. The Consent Decree further allows for modification due to an “unanticipated change in Financial Conditions.” The utility may request modification or additional time to perform under judgment if subject to financial or budgetary constraints.
- In a unique case, the County Commission of Wayne County was appointed as receiver for the **Town of Fort Gay, West Virginia**, WWTP. The Consent Decree states that “[i]f the Receiver is unable to comply with EPA’s instructions with the financial or other resources available, it shall apply to this Court for guidance.” The Receiver is also to establish a Utility Account for capital improvements and operation and maintenance (¶¶ 41-42). It must “avoid imposing unsustainable burdens on the customers of the Facilities.”

## N. Termination

One of the most important provisions of any CWA decree is the “termination” provision, which points to the completion of the decree. This provision generally will include an assurance that all requirements of the decree have been completed the government cannot engage in further review of the work done under the decree, nor may the government ask the utility to take additional steps. Termination provisions also provide that the utility will no longer be subject to stipulated penalties for noncompliance with the specified elements of the decree (which usually include compliance with the NPDES permit and the CWA), although a utility is not immune from further enforcement or penalties for CWA violations subsequent to the decree. For a utility, a favorable “termination” clause will state that the decree shall terminate, automatically, upon payment of the civil penalty and completion of the required injunctive measures.

In contrast, the government will ensure that the decree is not terminated until all of the required injunctive relief has been fully implemented and the utility has not only achieved compliance, but also demonstrated that it will continue to remain in compliance in the future. The continued existence of the decree greatly reduces the government’s enforcement burden, since the utility is already subject to the court’s jurisdiction and imposition of a penalty for non-compliance is automatic (subject only to the dispute resolution provisions of the decree). The government’s standard “termination” clause generally will specify that the decree may be terminated only upon application to the court, which will occur



only after the utility makes a request to the government, and the government agrees that termination is appropriate. Furthermore, the utility must demonstrate that it has paid all required penalties under the decree, completed all of the required injunctive relief, and both achieved and maintained continuous compliance with the decree, the applicable permit and the CWA for a specified period of time (usually no less than one year). If the utility's filing of petition to terminate is conditioned upon the government's agreement to do so, a utility still may strive to preserve its right to invoke the court's jurisdiction to review the government's decision. *Consider the following examples:*

- The **City of Mobile, Alabama** decree (§ 107) states that the decision to terminate the decree, or a portion thereof, “shall be in the sole, unreviewable discretion of the United States.” Some courts object to a provision like this, which could usurp the judge's authority.
- The **City of New Orleans, Louisiana** decree (§ 124-25) provides that the decree “shall automatically terminate” one year after the city has certified compliance with certain specified sections of the decree including the remedial measures and payment of penalties. The decree shall not terminate if the United States asserts in writing that full compliance has not been achieved, and shall remain in effect pending resolution of the dispute. *See also the City of Baltimore, Maryland* decree (§§ 71-72).
- The **City of Akron, Ohio** decree (§ 39) provides, that the decree “shall terminate one year after” the utility has completed (1) the compliance program, (2) the SEP, and (3) certain supplemental projects, provided the utility has supplied all the reports and data required under the decree and paid the civil penalty and any stipulated penalties and interest that are due and payable under the decree.
- The decree for the **City of Great Falls, Montana** provides that the City may request termination of the decree. In its request, the City must demonstrate that it has paid all civil and stipulated penalties due under the decree and that it is in “compliance” with the requirements in its remedial program. If EPA objects to the request, the matter proceeds under the Dispute Resolution provisions of the decree.

If the government insists upon a period of demonstrated compliance with the effluent limitations or discharge standards of the decree, the utility can negotiate to minimize the time period involved (*e.g.* one year) and to seek a standard of “substantial” rather than “continuous” compliance. **City of Atlanta, Georgia** CSO decree (§ XXIV) (“substantial compliance”). If the word “substantial” cannot be agreed to, then the term “compliance” without any qualifying adjective is preferable to “continuous compliance.” *See City of Toledo, Ohio* decree (§ 144); **City of Great Falls, Montana** (§ 81) (“City is in compliance, as of the time it submits its request for termination” with the injunctive relief of the decree).

A utility may wish to seek a compromise position incorporating phased or staggered termination of selected portions of the decree. This may be particularly appropriate for CWA decrees, which can have unusually long durations for compliance programs. *Consider the following:*

- In the **City of Hammond, Ohio** decree (§§ 62-32), termination is staggered with automatic termination after three years for the stipulated penalties on effluent limitation violations and the remainder of the decree terminating upon completion of the required projects.
- In the **City of Youngstown, Ohio** decree (§§ 68-71), termination is in several phases: (1) the stipulated penalty provisions regarding effluent limitation and monitoring violations are terminated, parameter by parameter, after the utility has complied with the limit for each parameter for one year, (2) other sections terminate upon successful completion of the requirements for specific projects, and (3) the remainder of the decree terminates after implementation of the utility's LTCP and submission of the Post-Construction Monitoring Plan.

## O. Review of Submittals

A number of decrees contain separate provisions governing the procedures for agency review and approval of the various deliverables that are due under the decree, such as plans, updates and reports relating to different portions of the compliance program. *Consider the following examples:*

- The **San Antonio Water System** decree contains a review provision in Section VII which identifies those submittals which are subject to review and approval by EPA from those that are merely subject to review and comment and/or simply review. Larger program submittals such as the Condition Remedial Measures Plan and the CMOM Plan are subject to approval; however, other significant reports like the Sewer Overflow Response Plan and the Capacity Assessment Report are only subject to comment (and thus may not be subject to stipulated penalties for deficiencies).
- Under Section VI.C of the **Metropolitan Government of Nashville and Davidson County, Tennessee** decree (which contains several pages of detailed requirements for the submission and review of deliverables under the decree), if EPA does not issue an action on a submittal within 120 days, any subsequent deadline will be extended based upon the number of days over the 120-day time frame. Metro is required to identify these deadlines and may seek dispute resolution if EPA does not agree that a delay in review and approval of any deliverable is grounds for automatic extension of an applicable deadline or milestone date under the decree.
- Sections 103-09 of the **City of Fort Wayne, Indiana** consent decree govern state and EPA review and approval of submissions by the utility. If the state or EPA fails to act on a submittal within 60 days, any subsequent milestone date dependent on that submittal shall be extended by the number of days beyond 60 that the state or EPA use to act on the submittal.
- The **Washington Suburban Sanitary Commission** decree (Section VI) (“Review and Approval Procedures”), and the **Puerto Rico Aqueduct and Sewer Authority** decree (§§ 33-38), provide that if EPA or the State respond to a written submission more than 60 days after the submittal, WSSC or PRASA is entitled to an extension of any interim or final deadlines if it is unable to meet the deadline as the result of the delay in the review process.
- The **Knoxville, Tennessee** decree contains a provision at Section VI for “Review, Approval and Implementation of Deliverables.” In addition to detailed procedures for submittal and revision of “Level 1” and “Level 2” deliverables, the section provides that if EPA issues certain comments or decisions more than 120 days after receipt of deliverables submitted by the utility, any subsequent deadlines or milestones dependent on those comments or decisions will be extended.
- The **Louisville & Jefferson County MSD** decree (§ 39) (“Review of Submittals”) and the **Lebanon, Missouri**, decree (Section VII) (“Submissions Requiring EPA/MDNR Approval”), provide for extension of deadlines if EPA or the state fails to act on a submittal for more than 60 days. The decree for **SD1 of Northern Kentucky** (Section VI) (“Review of Submittals”) provides for extensions if EPA or the State fails to act for more than 90 days.
- The **Scranton Sewer Authority, Pennsylvania** decree (VI) also contains extensive review and approval terms that require resubmittal within 60 days of any disapproval. Stipulated penalty provisions continue to accrue with respect to any disapproved portion even if the authority proceeds with implementation of the non-deficient portion. (§ 24). However, if EPA fails to review a submittal within 90 days, EPA shall extend any subsequent deadlines by the number

of days in excess of 90. However, such extension is only effective if granted in writing (as opposed to automatically). (¶ 27)

## P. Public Notification/Participation

Particular emphasis has been placed in recent decrees on provisions requiring utilities to implement extensive public notification programs for CSO and SSO discharges. These programs go beyond the typical public notification plans that have been submitted as one of the NMCs under the *CSO Policy*, and may reflect, in part, the additional details and procedures contemplated for the proposed public notification requirements in EPA's unfinished SSO rule.

- In the 2004 state consent decree for the **City of Columbus, Ohio**, (¶ 8), the utility is required to submit a public notification program that informs the public of the location of any CSO overflow or outfall, the possible health and environmental impacts associated with CSO overflows and outfalls, and advises the public against contact or recreation when elevated bacteria levels may endanger public health. The plan subsequently approved by the state requires the utility to (1) post signs at each CSO outfall; (2) provide general information in its utility bills at least once per year; (3) publish a notice in neighborhood newspapers every six weeks during the recreation season with a map of CSO outfalls and a phone number and website for more detailed information; (4) provide a link on its website to pages showing the location of each outfall, a database showing the date and volume of each CSO discharge, and a link to the utility's collection system characterization report with baseline information on the number, volume and duration of CSO discharges, and their impact on receiving waters. The database must be updated at least once a month and contain information for at least the previous year.
- The **District of Columbia** final consent decree (¶¶ 30-32), requires a "visual notification system" to be installed as part of the District's three tunnel storage projects. The system requires the installation of colored lights, flags, or pendants at a minimum of three locations on each receiving water at public access locations. One color is to be displayed as long as flow is detected from the outfall, and the others are to be displayed on the basis of overflow volume and probable duration. When operational, the system must also be described and explained on the sewer authority's website.

## Section Four Endnotes

<sup>1</sup> A comprehensive discussion of engineering alternatives for CSO and SSOs to meet WQS is beyond the scope of this *Handbook*. However, there are many resources available for municipalities to review to make these decisions.

<sup>2</sup> Note that CWA decrees are not limited to just CSO, SSO and stormwater issues, but can and do include other CWA issues as well, including requirements related to pretreatment programs and operational issues.

<sup>3</sup> See *Sewer System Infrastructure Analysis and Rehabilitation*, EPA/625/6-91/030 (Oct. 1991); Water Environment Federation, *Manual of Practice FD-6, Existing Sewer Evaluation & Rehabilitation* (1994).

<sup>4</sup> In addition to stormwater requirements in CWA decrees, MS4 permits are becoming increasingly stringent as well. Examples of such permits include the MS4 permit for Albuquerque, New Mexico and the District of Columbia.

<sup>5</sup> 59 Fed. Reg. at 18,693 (Apr. 19, 1994).

<sup>6</sup> *Id.*

<sup>7</sup> A utility must consider their degree of understanding as it relates to the collection system response before defining the wet weather event. For example, a wet weather event that does not include depth and duration will likely require a more complex

model with continuous simulations with varying antecedent moisture conditions. In fact, antecedent moisture, sewer shed basin size, and local soil conditions can all have significant impacts on design considerations. A more specific definition such as a 10-year, 6-hour storm is more focused and simpler to design. The tradeoff is likely cost to construct a control technology.

<sup>8</sup> See, for example, state orders for **Lafayette and Terre Haute, Indiana**.

<sup>9</sup> OFFICE OF INSPECTOR GENERAL, U.S. ENV'T'L PROT. AGENCY, EPA NEEDS TO TRACK WHETHER ITS MAJOR MUNICIPAL SETTLEMENTS FOR COMBINED SEWER OVERFLOWS BENEFIT WATER QUALITY (2015).

<sup>10</sup> *Id.* at Introduction (At a Glance).

<sup>11</sup> *Id.* at 4.

<sup>12</sup> *Id.* at 10-11.

<sup>13</sup> *Coordinating Combined Sewer Overflow Long-Term Planning with Water Quality Standards Reviews*, EPA-833-R-01-002 (July 31, 2001).

<sup>14</sup> There have been cases in which EPA has proposed UAA language in decree negotiations that would actually be less advantageous for cities. As a result, these types of terms are not seen very frequently in entered decrees.

<sup>15</sup> This order is currently being renegotiated. Since the order was signed, the state rejected the New York City's first attempt at a waterbody-specific LTCP, claiming that the LTCP did not achieve the highest attainable use of the waterbody. Additionally, the state promulgated new WQS requiring all waterbody classes must be of fishable and swimmable quality.

<sup>16</sup> See EPA's January 7, 2003 [Watershed-Based NPDES Permitting Policy](#).

<sup>17</sup> See 40 C.F.R. §133.103(a).

<sup>18</sup> 40 C.F.R. § 403.3(o) (emphasis added).

<sup>19</sup> See *Montgomery Environmental Coalition v. Costle*, 646 F.2d 568 (1980).

<sup>20</sup> See EPA's 1989 *National Combined Sewer Overflow Control Strategy*, 54 Fed. Reg. 37,371 (Sept. 18, 1989).

<sup>21</sup> See *La. Env't'l Action Network v. City of Baton Rouge*, 677 F.3d 737, 750 (5th Cir. 2012) (the Fifth Circuit did not take a position on the argument regarding penalty collection).

<sup>22</sup> ENVTL. PROT. AGENCY, *EPA Needs to Improve its Recording and Reporting of Fines and Penalties*, Audit Report No. 10-P-0077 (Mar. 9, 2010), available at <https://www.epa.gov/sites/production/files/2015-11/documents/20100309-10-p-0077.pdf>.

<sup>23</sup> *Friends of Milwaukee's Rivers v. Milwaukee Metro. Sewerage Dist.*, 382 F.3d 743, 762-63 (7th Cir. 2004).

<sup>24</sup> *Id.* at 763 (citing *N. & S. Rivers Watershed Ass'n, Inc. v. Town of Scituate*, 949 F.2d 552, 556 (1st Cir. 1991)).

<sup>25</sup> *Id.*

<sup>26</sup> U.S. ENVIRONMENTAL PROTECTION AGENCY, SUPPLEMENTAL ENVIRONMENTAL PROJECTS POLICY at 35-36 (2015).

<sup>27</sup> See, e.g., the consent decree in the Georgia total maximum daily load case, *Sierra Club v. EPA*, Civ. No. 1:94-CV-2501-MHS (N.D. Ga. 1997). In that case, the force majeure provisions, Sec. IX, state that the parties recognize that performance of the decree is subject to the fiscal and procurement laws and regulations of the U.S., and "the possibility exists that circumstances outside the reasonable control of EPA could delay compliance with the timetables" contained in the decree. Such situations include "sufficient funds not being appropriated as requested, appropriated funds not being available for expenditure, Congressional action affecting EPA's commitments under this Decree, or catastrophic environmental events requiring immediate and time-consuming response by EPA." If delay occurs due to such circumstances, any resulting failure to meet the timetables in the decree is not a failure to comply with the decree, and the deadlines occurring within 120 days of the end of the delay are extended as well.

<sup>28</sup> Env'tl. Prot. Agency, *Integrated Municipal Stormwater and Wastewater Planning Approach Framework* (May 2012), at 2.

# Section Five

## I. Strategies And Tools To Negotiate Or Renegotiate The Best Decree For Your Community

Negotiating a CWA decree - whether for the first time or as part of a modification - is a complex and usually lengthy process. With many variables and factors unique to the utility involved, the negotiating parties and the behind-the-scenes influences and decision-makers will shape the terms of the final document. The objective of [Section IV \(page 75\)](#) is to outline the types of terms that are typically incorporated in a decree. However, the goal of this Section is to provide examples of strategies, arguments, and techniques that can provide an advantage to utilities in enforcement negotiations. The strategies outlined in this Section are the result of multiple real-world experiences of other utilities and clean water professionals who have already gone down the enforcement path and can be equally useful for negotiation of new decrees, renegotiating existing ones, or negotiating flexibility into existing decrees during implementation. These strategies are all designed to help craft a decree that maximizes economic flexibility and implementation achievability with the achievement of environmental benefit for your community. While information in this Section is focused on federal judicial consent decrees, these strategies and tools are also applicable to state enforcement or EPA administrative enforcement.

### A. Building the Negotiating Team

#### 1. The Attorneys

A key part of negotiating or renegotiating a CWA consent decree is the assembly of an experienced legal team. Whether in-house and/or from an outside law firm, members of the team should have particular expertise in CWA enforcement and permitting. A combination of skills will be needed during the negotiations, including litigation, negotiation, and subject-matter expertise with public wastewater collection and treatment systems, and the agencies that regulate them.

It will be beneficial for the legal team to have direct knowledge of, and experience with, the various players on the enforcement side of the table, including personnel from various offices, such as EPA's [Office of Enforcement and Compliance Assurance](#) (OECA), the Environmental Enforcement Section of the DOJ, and regional EPA staff. Further, relationships with state agency representatives can be helpful, whether such contacts are in state attorney general offices or state environmental agencies. Legal counsel must be familiar with a broad context of enforcement backgrounds, and be capable of advocating unique decree provisions for a utility (based upon precedent as well as special circumstances). EPA typically responds to efforts to tailor pending consent decree provisions based on decrees entered with other utilities by claiming such provisions were responsive to a special situation and that such language cannot be used in the instant situation. Therefore, it becomes incumbent upon the negotiation team to establish why the prior decree provisions are appropriate and/or why your circumstances are similarly "special" and require similar accommodations. Conveying and gaining acceptance of these points is sometimes a difficult and time-consuming exercise, but successful efforts can avoid the need for later modifications or other challenges after a decree is entered.

As noted above, in addition to experience with the EPA's negotiation representatives, the utility's legal team is also enhanced by including people who have dealt on a regular basis with the relevant state permitting authorities and their enforcement counterparts. The state agency can sometimes be an ally in the negotiations, not only because it often has a more detailed knowledge of local

conditions, but also because it has dealt with the regulated entity for many years and has issued and fully understands the basis for that entity's NPDES permit. The state agency may also have an additional interest to ensure that the requirements of the decree do not place unreasonable economic burdens on its local governments and its citizens, or impose requirements inconsistent with state practices.

## 2. The Technical Experts

Another indispensable component of the negotiating team is competent technical expertise from in-house utility engineers and staff, and/or outside consultants who are knowledgeable in municipal wastewater collection and treatment systems and in the particular infrastructure at issue in the negotiation. Public agencies that have been through the consent decree process often report that the technical expertise on the federal agency side of the table is inadequate or outdated, and that it is therefore essential for the utility to fully explain the technical basis for its positions. Any request by EPA for unrealistic remedial program elements is best countered with thorough preparation, analysis, and articulate explanation from the utility's technical experts. The utility negotiating team should know its system, how it works, and its flaws and strengths better than anyone else at the negotiating table, and use this information to the utility's advantage.

## 3. The Financial/Economic Experts

Financial and/or economic experts are also becoming increasingly integral members of utility negotiating teams. They can play a key role in providing an essential financial analysis to EPA. Financial capability and affordability have become, in many cases, the cornerstone of consent decree negotiations (particularly as to schedules and overall term). Such experts can develop financial capability determinations that are essential in negotiations with respect to the cost and scope of the compliance program as well as the length of its implementation schedule. These consultants also play an important role in challenging the financial analysis prepared by the EPA.

Another role of the financial experts relates to determination of the cost-effectiveness of specific technologies and program schedules. For example, for the East Bay Municipal Utility District in California and its satellite communities, a case was made that more rapid public investment would not be cost effective given that program effectiveness was reliant on replacement of private service laterals that would occur with housing rollover.

# B. Building Utility Case/ Developing a Strategic Plan

## 1. Knowing Your Utility

Once the team has been formed, the utility needs to start building its case in response to the enforcement violation allegations through information gathering and analysis to ensure a clear understanding of the following:

- The system/facilities owned and operated by the utility;
- Noncompliance issues, overflow frequency, and volumes;
- History of addressing noncompliance, proactive programs and measures to protect public health and the environment (e.g., overflow volume reduction; asset management programs; CMOM-type programs; NMC compliance; modeling/monitoring; collection system assessment methodology and programs; public notification of overflows);
- Satellite systems and private sources that contribute to noncompliance;



- Available resources (staff and professional services);
- Finances (e.g., revenues, revenue sources, current rate structure, history of rate increases, rate projections, rate approval process and approval challenges, annual operations & maintenance costs/budget, annual capital costs/budget, debt service, 5-10-year projected capital expenditures, results of financial audits, bond rating, etc.);
- Governance and oversight of the utility;
- Public perception/level of understanding and support from all interested stakeholders, including environmental NGOs;
- Local/state politics and legal requirements influencing the utility's rates/decision making;
- Water quality data in receiving waterbodies, and, if available, benchmarking over time to show water quality response to initiatives undertaken; and
- If data is available, the utility should also attempt to characterize pollution sources for relevant pollutants (pathogens, BOD, nutrients, TSS, toxics, floatables) from sources outside the control of the utility that can impact water quality, such as polluted runoff from sources other than a related MS4, failing septic systems and industrial point sources. The requisite analysis should include a focus on ensuring consistency of data across potential sources, especially as to the incidence of CWA violations.

For utilities already under decree/enforcement order and considering modification, it is important to know how the utility is performing under the current decree, including status of specific projects, achievement of key deadlines/milestones to date, and resulting reduction in overflow events.

## 2. Benchmarking and Branding your Utility

In reviewing the alleged violations in preparation for the negotiations, the utility should research how it measures up nationally on noncompliance/overflow volume. Of equal importance is understanding the factors that influence gross metrics (overflow volume) such as service area topography and configuration to gauge variances from national benchmarks. In addition, it is essential for the team to become familiar with the terms and conditions that have been imposed in other decrees—and the evolution of key provisions over time. This *Handbook* provides a resource for beginning this process, as do the referenced CWA decrees in a sortable Excel spreadsheet found at Appendix A. However, while the Appendix attempts to identify the key substantive elements contained in each decree, it does not fully summarize these lengthy documents.

The team is likely to be served well by assembling copies of the actual decrees for more comprehensive analysis. Copies of municipal CWA decrees and enforcement orders are available online in NACWA's [Consent Decree E-Library](#). It is important that the team fully research the implementation of any given decree and any modifications to get a clear picture for benchmarking purposes. Another strategy that has been useful to some utilities is to contact, and arrange visits with, other utilities that have negotiated and are in the process of implementing their decrees.

Regulators often approach negotiations viewing utilities in the abstract with a laser-like focus on the letter of the law. A utility has an opportunity from the outset to shape the tone of the negotiations and its working relationship with its regulators by branding the utility in a way that highlights its unique qualities, challenges and proactive behavior in a way that replaces the regulator's theoretical perspective with a practical, real world understanding.

A utility should consider emphasizing the following if applicable:

- Any proactive, progressive and innovative initiatives - particularly those addressing the wet weather challenges confronted by the utility (e.g., CMOM, flow-monitoring, hydraulic modeling, asset condition assessments, etc.) (see [Section VI J, page 163](#));
- Examples/Overview of effective utility management using resources such as [Effective Utility Management \(EUM\): A Primer for Water and Wastewater Utilities](#) (EPA, AMWA, APWA, AWWA, NACWA, NAWC, WEF, 2008) and the companion online Resource Toolbox ([waterEUM](#));
- Track record of raising rates responsibly or basis for inability to raise rates to the degree deemed necessary;
- Positive bond rating; extent of utilization of [Clean Water State Revolving Fund](#) (CWSRF), grants and other innovative financing tools;
- Awards, recognitions, positive efficiency, “gap” assessments and organizational audits, certifications such as [Leadership in Energy and Environmental Design](#) (LEED) and [ISO 14001](#); and
- Partnerships and/or positive relationships with community groups/citizen activist groups in the local community on key environmental issues.

### 3. Developing a Strategic Plan

The team should next turn to developing a strategic plan for the negotiations, with clear goals, messaging, and possible paths outlined. This process should be taken as seriously as if the utility were litigating the matter. The objective of negotiation is to produce results that are better than the potential outcomes of litigation, which is the standard against which any proposed consent decree should be measured. This mindset throughout the negotiation can protect the utility from accepting terms that are too unfavorable and from rejecting terms it would be in the utility’s best interest to accept. Often, it is helpful to first identify the utility’s end-goals, both as to the negotiations at issue and, more broadly, as a successfully operating utility. Such goal posts may contain significant overlap, but identifying targets early can help to inform other details.

A utility must not only know its own strengths and weaknesses, but should attempt to step into the shoes of the regulators and seek to understand their position, agenda, drivers, must-haves, wants and potential trade-offs. For each component, the utility needs to know who is in the superior bargaining position (based upon compliance history, timing concerns, affordability, among others). If all the leverage lies with the regulators on a given issue, no method or negotiation strategy can guarantee success and it may be beneficial to give more on that issue in exchange for a win elsewhere. The utility needs to translate its positions into a compelling and credible case and decide which member or members of the negotiating team will be best to lead the discussions with EPA on relevant topics.

Given that the regulators (and their counsel, DOJ) have enforcement authority, in general it is best to cultivate a spirit of collaboration by fostering an atmosphere that encourages trade-offs to achieve win-win solutions rather than employing an adversarial “I win, you lose” style. At the same time, it is an axiom of the legal profession that you cannot settle a case favorably unless the parties you are negotiating with believe that you are willing to try the case. In the face of intransigent government demands, it is essential that the team be prepared to walk away from the negotiating table and litigate the case when necessary. As part of its negotiating strategy, the utility should carefully evaluate whether the regulator could obtain as much from the court as it is demanding in negotiations. That being said, where the line is drawn may be difficult to pinpoint.

#### 4. Meetings with Regulators

Allow enough time for proper preparation before face-to-face meetings with the regulators - good relationships flow from proper preparation. Travel to meet the regulators if so requested; the expense is well worth the advantage of meeting in person. In advance of the first face-to-face meeting, inform the regulators that the utility will provide a brief overview of the utility at the beginning of the meeting. It is also helpful to use the first face-to-face meeting to outline compliance trends, if positive, so as to frame the discussions as to appropriate remediation at the outset.

Though the regulator audience may be acutely concerned with the alleged CWA violations and potential enforcement actions, it is important for all parties to hear and understand the utility's position and circumstances before entering into discussion of violations and the potential amount of penalties that could be awarded in litigation. In this context, it is important to respectfully convey that the utility may want to state that it is voluntarily engaging in good faith negotiations and that it is the utility's goal to set a constructive and respectful tone from the outset. To facilitate a fruitful negotiation process, the utility should adopt a cooperative rather than adversarial stance and should expect the same posture from the regulators. A negotiation built on trust can lead to positive outcomes throughout the process. As negotiation meetings continue, the negotiation team may be able to build upon a rapport developed between certain members of the utility team and EPA's case team. As such, designating appropriate communicators throughout the process can build upon earlier communication.

Again, the utility needs to plan in advance which member(s) of the team will lead the discussion. Pick a good communicator who can best convey a concise, credible and compelling case. This initial presentation should get to the point and not be boastful, adversarial, overly legal or technical (the presentation should not be technically and scientifically vague, but this meeting is not the appropriate time to set forth a comprehensive technical assessment).

Begin by emphasizing that your objectives should align - you can be partners to achieve compliance in the most cost-effective, environmentally beneficial manner. However, make it clear that utility has a duty to keep rates affordable. The utility must also ensure that it has adequate resources to properly operate the utility; address aging infrastructure; plan for growth, climate change and resiliency; and address future regulatory priorities and mandates.

Composure is critical to the utility's success. Members of the negotiation team should be prepared to stay calm and non-defensive, even in the face of comments that may be untrue or unproductive. The utility can request breaks in order to strategize or assess discussions. While there is nothing wrong with standing your ground on an issue, do not let emotions or frustration potentially derail a positive outcome.

As negotiation meetings continue, utilities can benefit from an appropriate agenda order, by which momentum is built early, and negotiations can continue along with a positive tone. The negotiations are an iterative process, and utilities should be mindful that progress may be slow at times. Accordingly, when areas of disagreement inevitably emerge, it can be helpful to have reached agreement earlier on the less contentious issues to keep both sides engaged, recognizing that certain issues may require further discussions.

### C. Developing a Holistic Communication Plan and Managing Stakeholder Involvement

Utility leaders and boards, along with stakeholder groups and other members of the public can have significant involvement in the negotiation process. In some instances, there may be citizen groups that

seek to intervene in the litigation and have a seat at the negotiation table in determining the decree's substance. See [Section VI.B \(page 155\)](#), for more information on this scenario. But even without the presence of intervenors, the utility needs to have a public outreach strategy in place during negotiations, especially to key stakeholder groups.

Maintaining regular communication with the utility's governing body is also critical to avoid surprises after a decree has been negotiated and is preparing for lodging/entry. Regular briefings to a governing board and other political leaders (which can be held in executive/closed sessions, pursuant to applicable local/state law) can be useful in seeking direction from the utility's ultimate "client" and in preparing that client for an eventual decree that will have political implications for public officials.

Well in advance of the lodging of the decree, the utility should develop a public outreach and communication strategy and begin to implement that plan while negotiating the decree. Such a proactive approach will ideally outline certain messages that address issues of community concern, such as costs, implementation, and penalty amounts. The first time the community hears of the draft consent decree should not be the day the decree is lodged with the court and announced by EPA. It is helpful to provide context for stakeholders, as some will likely be less familiar with EPA enforcement than those who are in the trenches. Referencing other decrees (particularly within the same state or region) can help point out that EPA enforcement is not unique to the utility at issue. As for the specifics of the communication plan, while the utility should not share details about the negotiations or the terms of agreement, it is crucial that it educate the public about the enforcement action on its own terms.

During the pending negotiations, the utility should step up public outreach efforts. For example, the utility can demonstrate to the public how the utility is working on their behalf. Capital projects and programs should be communicated to the public using available and effective channels and media. The scope and method of communication may vary for each project (e.g., for a project in a single neighborhood, door hangers could be used; for larger projects, a map on the website showing completed, current, future projects and quantification of benefits). One effective method to foster a spirit of partnership and community with the public is a "we all live in a watershed" educational initiative. This can be accomplished in numerous ways including a "which watershed do you live/work in?" search engine on the website; by typing in an address or zip code, the watershed can be identified as well as work undertaken and planned by the utility affecting that particular watershed. If the utility is undertaking green infrastructure or other innovative projects, the utility should consider communicating the triple-bottom line concept in terms of the environmental, economic, and social values.

Key stakeholder groups should be identified in the communication plan and the utility should develop a strategy and schedule for additional outreach efforts focused on these groups. In fact, many consent decrees contain provisions requiring stakeholder education or participation in the development of plans pursuant to the decree.

Through NACWA's ability to poll and gather information from its extensive membership, NACWA can be a resource for examples of successful communication and outreach strategies and plans.

After the draft consent decree is filed in federal court, notice of the decree is issued in the Federal Register allowing not less than 30 days for public comment. During this period of time the decree is considered lodged with the court but is not entered and effective. The following is a typical decree provision on public notice and comment:

PUBLIC PARTICIPATION. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with 28 C.F.R. §

50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. The City and the State each consent to entry of this Consent Decree without further notice and agrees not to withdraw from or oppose entry of this Consent Decree by the Court or to challenge any provision of the Consent Decree, unless the United States has notified the Parties in writing that it no longer supports entry of the Consent Decree.

A utility should develop a strategy in advance of the public comment period to secure as many positive, supportive comments endorsing the proposed decree as possible. Outreach to various community and environmental activist groups that might potentially raise concerns with the decree is especially important. The utility should make sure that potential “supporters” of the decree are prepared to express that support in writing, and also should work to assure potential “opponents” of the decree that the agreement is actually in their (and the community’s) best interest, thereby encouraging them to write supportive comments as well. NACWA is also available upon request to submit comments in support of proposed decrees for Association members to provide a national clean water advocacy perspective during the comment process.

Public outreach/education and stakeholder involvement should continue throughout the life of the consent decree and beyond. Regardless of whether it is required, a robust outreach plan is in the utility’s best interest. Unfortunately, during difficult economic times, communication and government affairs programs often get cut or curtailed. The public can be an important ally if the utility has to go before the federal judge on any issues arising pursuant to the decree or any signification modifications to schedule or compliance obligations. Accordingly, utilities may be well served to adopt a perspective that public education and outreach is part and parcel of its consent decree compliance program and structure its budgeting to reflect this inter-relationship.

## D. Economic Burden: Affordability/ Financial Capability

Among the most common challenges in decree negotiations is negotiating a settlement that the community’s ratepayers can afford. Recent developments have provided some tools to help in this regard. As outlined above in Section II, on November 24, 2014, EPA released the final [Financial Capability Framework for Municipal Clean Water Act Requirements](#) (see [Section II.A.9, page 34](#)), which according to EPA “provides examples of additional information that may help some communities provide a ‘more accurate and complete picture’ of their financial capability as is envisioned in the 1997 [CSO Guidance for Financial Capability Assessments](#).” The ongoing financial challenges and effects of the economic recession faced by most U.S. communities have reminded regulators of the need for balance, and consideration of the cumulative claims imposed by environmental regulations impacting local governments. This new thinking has been in part driven by the economic realities of the last few years, but also from aggressive advocacy by NACWA and others. NACWA’s [Money Matters . . . Smarter Investment to Advance Clean Water™](#) campaign, which focuses on the need to optimize limited resources to help communities improve water quality and community vitality, played a critical role, as did efforts by the U.S. Conference of Mayors. The affordability / financial capability assessment arena is ripe with opportunities to negotiate additional flexibility. Given EPA’s embrace of integrated planning principles, utilities should seize this opportunity to negotiate application of a more holistic and flexible financial capability assessment methodology. At the time of publication of the *Handbook*, the U.S. Senate and House passed versions of the Water Resources Development Act (“WRDA”) (subject to conference to resolve differences in the two versions) that would direct EPA to focus its affordability considerations away from the Median Household Income target that has driven affordability determinations for nearly two decades.

The question of what is “affordable” has become the central issue in many consent decree negotiations (**SD1 of Northern Kentucky, Cincinnati, Atlanta** and the **District of Columbia** are notable examples).

In May 2013, NACWA released [\*The Evolving Landscape for Financial Capability Assessment — Clean Water Act Negotiations and the Opportunities of Integrated Planning\*](#). Aligning with the principles of Integrated Planning, NACWA recommends an enhanced framework for conducting Financial Capability Assessments and in particular for determining appropriate program scheduling provisions.

NACWA’s recommended approach seeks to move beyond EPA’s existing guidance as well as more recent “enhancements” to EPA’s methodology that call for examination of more financial performance indicators and of ratepayer impacts across the distribution of ratepayer incomes (as opposed to cost as a percentage of [\*Median Household Income\*](#) (MHI) alone). Such enhancements sharpen the resolution of EPA’s methodology, but do not provide a clear, long-term picture of a community’s financial capability. NACWA’s recommended methodology treats the EPA guidance methodology as largely a preliminary screening exercise that provides a snapshot of a community’s financial situation. Despite its limitations, the EPA’s methodology will be used as the starting point by the government in any negotiations, and permittees should have a solid understanding of how EPA’s calculations characterize their community’s financial picture.

NACWA’s methodology eschews the notion that a community’s financial capability may be adequately assessed through a simple workbook exercise referencing a collection of financial performance indicators and a static estimate of ratepayer impacts. Rather, NACWA’s methodology leverages analyses typically already required of permittees for developing and financing their capital programs - expanding them to assess requirements over extended periods and across the spectrum of potentially impacted ratepayers. In particular, NACWA’s recommended Financial Capability Assessments approach is comprised of three fundamental components:

1. **Water Quality-Based Project Prioritization.** This component addresses the CWA requirement for implementation of cost-effective improvements to address water quality requirements, and ensures that a community’s limited financial resources are applied to improvements yielding the highest returns in terms of community and environmental benefit. This component is entirely consistent with EPA’s Integrated Planning Framework.
2. **Cash-Flow Forecasting.** This component is the central departure from the formulaic workbook-based approach embedded in the EPA guidance and subsequent enhancements thereof. It contemplates program scheduling based on projections of permittee revenues and expenses under tenable rate increase programs that are within a community’s financial capabilities. This approach is similar to that used to demonstrate the feasibility of prospective debt issues and may be tailored to address the unique characteristics of individual communities.
3. **Analysis of Burden.** Using the cash-flow forecasts noted above (or the less robust EPA workbook), a key consideration in assessing community financial capabilities is the resulting impact on lower-income communities. This analysis involves examination of projected rate impacts in terms of claims on income across a community’s income profile as well as consideration of options to provide low-income ratepayer relief and assure the affordability of wastewater service to all populations.

EPA has indicated that it will continue to rely on the MHI-based workbook approach potentially including some recommended enhancements - as a primary mechanism (as opposed to a preliminary screening tool) to conduct its financial capability assessments. Accordingly, it is incumbent on the permittee to



place the workbook calculations into the appropriate, broader context, with consideration of community financial capabilities and the practicalities of capital program financing, when it presents its analysis to the government. As set forth in NACWA's white paper:

Enforcement agencies often assert that the calculations are required to initiate negotiations. In this context, permittees are faced with the option of performing the requisite calculations and attempting to use "additional documentation" to better characterize their circumstances or declining to participate in the exercise by offering cash flow forecast data in substitute. Though most permittees have performed the simplistic matrix calculations, both approaches have been employed with success. Importantly, the latter strategy of dispensing with Guidance calculations should be recognized as a legitimate, and in many cases, compelling option.

Traditionally, the revenue streams available to address utility obligations have been predominantly rate revenues and various miscellaneous revenues (e.g., system development and connection fees, interest earnings, charges for discrete services) collected by wastewater service providers. In some communities, various forms of taxes and special assessments have supplemented these service revenue streams, and increasingly communities are establishing charges for stormwater management/watershed protection services. On the expense side, while notable strides have been made in enhancing operating efficiencies through both technology and process improvements, wastewater utilities are among the most capital-intensive of all enterprises, even among relatively capital-intensive utilities such as gas and electric. The assessment of financial capability effectively boils down to whether a community can bear the impacts of the associated service rate, fee or tax levels and increases required to make and sustain necessary capital investments over time. In this context, there are both practical and policy limitations on the extent to which service rates and fees may be increased to support clean water investments, and similar limitations on the extent to which such investments may be cost effectively executed. Financial Capability Assessment negotiations largely involve defining the appropriate balance between placing additional burdens on ratepayer populations and effecting high priority water quality investments. The importance of cash-flow forecasts is most evident as negotiations work to strike this balance.

The following financial capability/economic burden resources may be useful for permittees:

- [Financial Capability Framework for Municipal Clean Water Act Requirements](#) (EPA, November 2014)
- The Evolving Landscape for Financial Capability Assessment - Clean Water Act Negotiations and the Opportunities of Integrated Planning (NACWA, May 2013) (*see* [Appendix C](#));
- Assessing the Affordability of Federal Water Mandates (USCM, WEF, AWWA 2013);
- Financial Capability and Affordability in Wet Weather Negotiations (NACWA, October 2005);
- Principles for Assessment and Negotiation of Financial Capability: A Compilation of Resources, (NACWA, November 2007) (*see* [Appendix D](#)).

Utilities should be aware of national advocacy and legislative initiatives that may help on the financial capability/affordability front. Federal WRDA legislation, as noted above, would codify EPA's integrated planning framework and extend permit terms for communities with integrated plans, and require EPA to broaden its financial capability determinations, among other important revisions. As noted, at the time of the *Handbook's* publication, versions of WRDA have passed both the U.S. Senate and House and conference committees are resolving differences in the drafts.

Utilities should determine if there are applicable state laws or guidance addressing affordability. For example, several states have enacted laws or resolutions requiring consideration of affordability when

implementing wet weather CWA measures, particularly CSO measures. For example, in 2010 Kentucky passed a law ([KRS 224.16-040](#)) requiring the state regulatory agency to consider a number of affordability factors when issuing permits for CSO discharges.<sup>1</sup> Similar legislation was enacted in Ohio in 2011.

## E. Funding

One of the principal reasons why NACWA's call for cash-flow forecasting in financial capability analyses is eminently reasonable is that it is the foundation for the type of strategic financial planning (SFP) required for effectively managing consent decree program implementation. Cash-flow analyses are used to develop capital financing strategies, demonstrate the feasibility of a utility's debt obligations, and project prospective system-wide rate increases and customer bill impacts. This analytical capability - irrespective of enforcement actions - is becoming ever more important as utilities face increasingly acute funding challenges. These challenges have been exacerbated by the pronounced withdrawal of federal support for wastewater infrastructure investments over the last generation, the need to reinvest in aging infrastructure, and the ongoing promulgation of new regulatory requirements (e.g., nutrient removal, contaminants of emerging concern: see [Sections VI.E, page 158](#) and [VI.F, Page 159](#)) in addition to those already in place related to wet weather issues:

- In 1987, Congress enacted the Water Quality Act of 1987, which phased out the CWA Title II Construction Grants Program (EPA 201 Construction Grants) and shifted funding support to a loan program with the creation of the State Revolving Fund (SRF).
- Specific grant funding available to support wastewater infrastructure investment, even for economically disadvantaged communities, continues to represent a relatively limited share of total investment requirements.<sup>2</sup>

As a consequence, the vast majority of funding to address wet weather issues as well as future regulatory requirements will likely be derived from local resources, primarily through utility service rates, fees and taxes. NACWA's [Financial Survey and Index](#) provides an unparalleled look at the clean water sector's revenues, expense capital need, sewer service charges, rates and more. NACWA works to ensure Congress and EPA have access to and understand this critical utility investment information.

Given that responsibility for meeting these funding challenges will fall most heavily on utilities subject to enforcement actions, it is exceptionally important to be in a position to evaluate long-term financial options and define utility system financing strategies that are tenable for their communities. Strategic Financial Planning (SFP) involves the development (and regular modification) of a strategy for financing capital improvements, ensuring sustainable funding of utility operations and maintenance expenses, and adequate renewal and rehabilitation of system assets. Specifically, SFP models are used to generate long-term cash-flow forecasts that identify system-wide rate increase requirements and project financial performance indicators (e.g., debt service coverage, fund balances, debt/equity ratios) given a variety of alternative assumptions related to economic conditions, the utility's financial position, and alternative consent decree/capital program configurations. Revenues may be projected under alternative assumptions related to customer accounts, billable flows and strength loadings, interest earning rates, and other factors. Operations and maintenance (O&M) expenses may be projected under alternative assumptions related to inflation of key expense items, treatment requirements, and other factors. Finally, modeling may define the utility's capital financing strategy by testing implications of the use of different forms of debt obligations (e.g., revenue bonds, SRF loans), use of equity financing, and application of dedicated funds (e.g., reserves). These implications may be documented in terms of projections of utility rate increases and bills across the spectrum of a utility's ratepayer population and community financial indicators (e.g., prospective levels of indebtedness).

Dialogue continues in Congress regarding reinvigorating the federal commitment to the nation's infrastructure, but any significant federal grant program for infrastructure or regulatory compliance is unlikely in the foreseeable future. Utilities should instead explore a wide variety of tools to finance consent decree obligations. There are many resources available that identify potential financing tools including:

- [EPA's Guidebook of Financial Tools: Paying for Sustainable Environmental Systems](#), 2008 Revision. This is a comprehensive source of information on federal and private financing tools and programs that have been used to fund "sustainable environmental systems," which is defined very broadly as "virtually any successful or potentially successful environmental protection initiative."
- Chapter 7 of EPA's [2012 Guidelines for Water Reuse](#). Even if a utility's operations do not meet the definition of "water reuse" as defined in Chapter 1 as "municipal wastewater that has been treated to meet specific water quality criteria with the intent of being used for a range of purposes," the funding sources identified may still be attainable.
- The Langdon Marsh for the Environmental Law Institute's 2007 [Report on Funding and Financing for Reclaimed Water Facilities](#).

## F. Negotiating the Best Schedule for Compliance

Compliance deadlines are arguably the most critical elements in every decree, as they often determine a utility's ability to address decree obligations in a feasible and cost-effective manner. Accordingly, the schedule component requires significant preparation. From EPA's perspective, front-loading decree requirements on a short schedule brings a utility into compliance as soon as possible. However, the utility is faced with financial and feasibility constraints, and must demonstrate why certain projects require certain time frames (which may include a need to coordinate certain elements of a decree, or demonstrate the relationship between various compliance activities). Of course, the length of the overall decree is influenced by the interim deadlines as well as financial impacts. The utility must balance consent decree expenditures with needed spending on the many other aspects of its operation, analyzing factors such as the need to address other regulatory and non-regulatory capital spending requirements (e.g., asset management), to manage its debt portfolio, to implement acceptable rate adjustments, and plan for the future.

While EPA has, in prior consent decree negotiations, articulated policies of only allotting a certain amount of time for the final deadline - in some cases referencing the 1997 *Financial Capability Guidance* prescribed schedule boundaries - there is nothing in the CWA that sets a time limit. A utility should review scheduling provisions in other consent decrees (see [Section IV.C, page 99](#)), but not feel bound by them as such provisions continue to evolve and be tailored to individual utility circumstances (particularly as more and more utilities challenge established EPA policies and prescriptions). As shown by the recent shift from decrees that allowed a maximum of 20 years as suggested by the 1997 Guidance to decrees that have enabled final compliance date of 25 years or more depending on the circumstances involved, this is an area of continuously expanding flexibility. SSO decrees tend to fall on the shorter end of this spectrum, typically between eight and ten years, although recent trends show longer SSO decrees.

Regardless of whether a utility is taking an integrated planning approach to negotiating a decree, EPA's *Integrated Planning Approach Framework* provides that integrated planning should be guided by the following principles, which may be used to negotiate favorable schedule provisions:

### **[Principles to Guide the Development of an Integrated Plan](#)**

- 1 Reflect state requirements and planning efforts and incorporate state input on priority setting and other key implementation issues.

- 2 Provide for meeting water quality standards and other CWA obligations by utilizing existing flexibilities in the CWA and its implementing regulations, policies and guidance.
- 3 Maximize the effectiveness of funds through analysis of alternatives and the selection and sequencing of actions needed to address human health and water quality related challenges and non-compliance.
- 4 Evaluate and incorporate, where appropriate, effective sustainable technologies, approaches and practices, particularly including green infrastructure measures, in integrated plans where they provide more sustainable solutions for municipal wet weather control.
- 5 Evaluate and address community impacts and consider disproportionate burdens resulting from current approaches as well as proposed options.
- 6 Ensure that existing requirements to comply with technology-based and core requirements are not delayed.
- 7 Ensure that a financial strategy is in place, including appropriate fee structures.
- 8 Provide appropriate opportunity for meaningful stakeholder input throughout the development of the plan.

## 1. Phased Implementation/Adaptive Management

As discussed in [Section IV.N \(page 128\)](#), several recent consent decrees have used a phased implementation approach. Phased implementation may enable both the regulator and the utility to tailor requirements based on lessons learned during implementation of initial phases, i.e., adaptive management. An advantage of this approach is that it may prevent utilities from having to make “improvements” that do not make as much sense as originally anticipated and tailor future work based on exhibited performance. This is particularly important for programs that might use green infrastructure or new technologies. However, phased implementation also imposes a degree of uncertainty for both the regulator and the utility. Regulators do not get a checklist of defined projects with prescribed milestone dates. Utilities face undefined prospective requirements that could be more onerous than anticipated in the event that early projects do not perform as anticipated. When analyzing decree schedule provisions and whether to negotiate a phased implementation approach, a utility should consider the potential for an increase in the project requirements associated with interim deadlines and the potential increase in administrative burden associated with multiple deadlines as opposed to a single deadline at the end of the decree. Detailed project milestones can make reporting and recordkeeping under the decree more difficult, and compliance may be susceptible to unforeseen circumstances. In addition, if stipulated penalties are triggered for missed interim deadlines, phased implementation may invite more potential financial liability for the utility.

## 2. Deadline Relief

While consent decrees usually contain fixed deadlines for utilities to submit plans/reports, the regulators’ time for review of such submittals is often not addressed or is prescribed in terms of reasonableness. In addition, when both the state and EPA are parties to the decree, review and approval timeframes are often extended significantly. There are many examples of regulators taking many months to years to complete reviews. During this time, if the utility proceeds with projects/programs that are pending approval, they do so at the risk that such activities will not be approved. On the other hand, if the utility waits for approval it risks missing other related deadlines in the decree. This is a particularly difficult quandary insofar as consent decree obligations are often used to justify needed rate increases to the public and interested stakeholders.

As a consequence, utilities should attempt to protect themselves through negotiation of provisions addressing the regulators' review time. As discussed in [Section IV.O \(page 130\)](#), several recent decrees have included language providing relief from interim and final deadlines if the regulator fails to respond in a timely fashion to deliverables that are required to be submitted for review pursuant to the decree. Connecting utilities' compliance schedules to the date of regulators' responses is a common approach to address delays in regulators' review processes. In addition, recent decrees continue to provide for informal extensions of interim milestone dates in their compliance schedules without the need for formal modification of the decree. An example provision:

- If the state or EPA fails to act on a submittal within 60 days, any subsequent milestone date dependent on that submittal shall be extended by the number of days beyond 60 days that the state or EPA use to act on the submittal.

## G. Integrated Planning/Watershed Approach/Adaptive Management

As detailed in [Section IV \(page 75\)](#), utilities routinely use mechanisms within consent decrees that permit flexibility for addressing multiple regulatory obligations in a comprehensive and coordinated manner. These mechanisms may be expressly incorporated into a decree, whether through integrated planning, a "watershed" management approach and/or adaptive management terms. Utilities are increasingly seeking to prioritize and phase their wet weather obligations on a system-wide basis or in coordination with other obligations they are facing to address stormwater, drinking water and other CWA requirements. This is being done both in new decree negotiations and in discussions over modification of existing decrees. Managing compliance in such a manner allows agencies to prioritize spending to yield the greatest returns in terms of environmental benefit for their water resource management investments. Accordingly, consent decrees are increasingly containing terms that allow utilities the opportunity to seek approval to manage obligations in a comprehensive fashion. With resources limited, these types of consent decree provisions generally give utilities the ability to prepare a plan that details its obligations holistically, and to delineate criteria to effect justifications for prioritizing or phasing prospective compliance projects. EPA (or a state) will then review the plan and provide approval. In preparing such plans, utilities have the opportunity to justify changes to compliance schedules or alternative compliance projects (for example, green instead of gray infrastructure) using the defined prioritization criteria - thereby enabling costs savings and/or other community benefits in addition to improved environmental conditions.

### 1. Integrated Planning

Over the last 40 years, communities have been responding to a growing list of CWA regulatory mandates to improve the nation's water quality. Wastewater utilities across the country are being required to spend substantial resources to comply with CWA mandates under EPA's NPDES, CSO, SSO and stormwater programs. They also expect to face significant future costs to control nutrients, stormwater and other contaminants of emerging concern as well as to address climate change requirements.<sup>3</sup> For many utilities, the cumulative costs of these mandates could be staggering with some larger systems facing potential costs ranging in the billions of dollars. These costs will ultimately be borne by ratepayers made up of the residents and businesses of the utility's community. Recognizing the financial burdens these obligations require as well as the financial hardships many communities are facing, EPA released the [Integrated Municipal Stormwater and Wastewater Planning Approach Framework](#) (Framework) in June 2012. EPA has embraced the use of integrated planning as a practical tool for managing CWA obligations, and since the Framework's release has been coordinating with communities interested in implementing Integrated Plans. Integrated planning can and should complement a utility's financial capability analysis and evaluation of economic burden.

The cover memo for the Framework states that integrated planning will offer relief to “municipalities on their critical paths to achieving the human health and water quality objectives of the Clean Water Act (CWA) by identifying efficiencies in implementing requirements that arise from distinct wastewater and stormwater programs, including how best to make capital investments.” Integrated planning can be used to facilitate green infrastructure and other sustainable solutions “to manage stormwater as a resource, and support other economic benefits and quality of life attributes that enhance the vitality of communities.” It is important to note that the integrated planning approach does not alleviate CWA compliance obligations, but rather is a tool allowing flexibility through appropriate sequencing of work. The Framework and subsequently released [FAQs](#) outline how an Integrated Plan may be incorporated into both NPDES permits and enforcement actions. Notably, given the importance of affordability of regulatory compliance, the documents clarify that costs associated with drinking water, air and land issues can be considered when evaluating the overall financial health of a community and developing an integrated plan schedule. EPA’s recent support of integrated planning as a tool for managing a public wastewater agency’s CWA obligations is a promising move in the right direction, although its effects on permits, enforcement decrees, and the resulting compliance schedules remain pending as communities seek EPA approval of appropriate flexibility.

Integrated planning can be utilized whether negotiating a new decree or seeking to renegotiate an existing decree. The principles of integrated planning should also be explored for incorporation into plans submitted pursuant to existing decrees. For example, integrated planning principles can be used to help demonstrate the effectiveness of completed projects, refine project prioritizations, and revise prospective program scheduling. As noted earlier, both **Columbus, Ohio** and **Lawrence, Kansas** have integrated plans and scheduling approaches that have been formally approved by state regulators. The impetus for development of the Framework was the outcry of affordability concerns expressed by the regulated community, including significant advocacy efforts by NACWA.<sup>4</sup>

NACWA has co-hosted workshops around the country that bring together regulators and the regulated community to engage in dialogue to facilitate widespread implementation of integrated planning. The reaction of EPA Regions and states with delegated program has varied. The Framework is still in its early years and as outlined above ([Section I.E, page 25](#)), communities are starting to see some examples of regulators’ (including state environmental agencies’) buy-in on integrated approaches. Before a community spends time and resources developing a plan it should communicate with regulators early and often to ensure the plan will be considered, and to identify particular requests to regulators (such as schedules and permit conditions). NACWA has extensive integrated planning information on its [website](#). Another good resource for those utilities new to integrated planning is Barnes &Thornburg’s list of tips for [Getting Started with Integrated Planning](#).

## 2. Watershed Approach

The “watershed” approach (*see also*, [Section IV.A.7, page 95](#)) to water quality protection has been a priority with EPA for the last several years. Attributes of watershed management include stakeholder input, holistic assessment of problems and solutions (e.g., examining all sources, loads and stressors to a given waterbody or watershed), focus on prioritization rather than programs, and integration with TMDLs when applicable. The first integrated municipal watershed-based NPDES permit was issued in 2004 to Clean Water Services, a wastewater and stormwater management utility in Washington County, Oregon. The permit covers four municipal WWTPs, emergency overflow structures, urban stormwater runoff, and allows for water quality credit trading.

At least one CWA consent decree, [SD1 of Northern Kentucky](#), has incorporated this concept into the structuring of the decree’s overall program for CSO and SSO control. The major features of this



decree require SD1 to (1) propose and implement specific corrective action plans to bring its CSOs into compliance with regulatory requirements; (2) propose and implement specific corrective action plans to eliminate SSOs (the worst of which must be addressed no later than 2015); (3) improve its sewer system's management, operation and maintenance (MOM) programs to prevent future overflows; and (4) respond to overflows when they occur. SD1 will develop these plans through a "watershed approach" by which SD1 will identify remedial measures and establish priorities taking into account natural background conditions, other point source discharges and non-point source discharges. SD1 has four watersheds in its service area and will develop watershed plans for each area. The watershed plans will be updated at least every five years. Use of this watershed approach is expected to lead to improvements in water quality at a quicker pace in critical areas and more efficient and cost-effective solutions.

### 3. Adaptive Management

Adaptive management incorporates and builds upon watershed management and the watershed approach. The overarching goal of adaptive management is to allow a utility to learn while implementing the decree and course-correct based on lessons learned, changed circumstances or priorities, and/or new regulatory mandates that have arisen.

The regulatory landscape continues to shift drastically and effective utility management requires the ability to adapt. Prioritization is not and should not be static. A rigid decree that sets an invariable course for an extended period of time is contrary to the objectives of the CWA and holds the prospect for imposing substantial undue costs. Adaptive management is critical to achieving the most beneficial water quality improvements at the lowest cost and is, therefore, in the best interest of the community being served and the environment.

One needs to look no further than the CWA for endorsement of adaptive management. The CWA embodies adaptive management concepts in several contexts including biennial state §305(b) water quality assessments, §303(d) impaired waters identification, triennial Water Quality Standards review, and the current five-year cycle for NPDES permit renewal.

Negotiation of adaptive management provisions should go hand-in-hand with schedule discussions. Communities have negotiated adaptive management approaches that include early-year assessment/remediation, with appropriate pivots to asset management/long-term sustainability approaches in later years of the decree. While there are several examples of reopener provisions allowing for modification of the consent decree when certain deadlines or capital expenditures are met ([see Section IV.M, page 120](#)), adaptive management concepts usually arise in the green infrastructure context. The [City of Philadelphia Partnership Agreement](#) with EPA provides a good example of adaptive management in progress. Adaptive management can also be used for finances. The **Metropolitan St. Louis Sewer District, Missouri**, consent decree LTCP advanced the concept of an "Open Book Portfolio Management" approach that is essentially an adaptive management approach to the financial circumstances - cast in financial terms with the portfolio management reference.

## H. Green Infrastructure

Green infrastructure requirements are being incorporated into increasing numbers of CWA consent decrees, both as part of the compliance program and as supplemental environmental projects (SEPs). Green infrastructure is extensively discussed in other parts of this *Handbook* including [Section II.D, \(page 40\)](#) and [Section IV.K \(page 115\)](#).

The use of green infrastructure in consent decrees and enforcement orders can give utilities and communities more flexibility in how they achieve wet weather flow reductions. It can also be used as

an effective way to engage environmental advocacy organizations. However, each utility must make its own determination about whether the use of green infrastructure is appropriate as part of its consent decree commitments, and to what extent. While green infrastructure may be an important new tool for utilities to consider, the very high overflow control requirements of many consent decrees will likely mean that gray infrastructure solutions will still need to play a prominent role. Many utilities are finding that a “hybrid” approach using a combination of both gray infrastructure and green infrastructure can provide optimum environmental results and the most reasonable cost. Each utility must make their own evaluation within the context of their unique enforcement situation to determine the appropriate role for green infrastructure.

For those utilities interested in pursuing green infrastructure within an enforcement order or consent decree, there is significant regulatory support for its use. On April 19, 2007, EPA, NACWA, and a number of other groups signed a [statement of intent](#) to promote the use of green infrastructure to help solve stormwater runoff and sewer overflow problems. The statement of intent pledges cooperation among these groups to promote the use of various green infrastructure techniques such as rain gardens, bio retention cells, infiltration swales, green parking lot design, rain barrels, and many others. The agreement supplements an earlier statement supporting green infrastructure that was signed by over 60 national, regional, and local organizations. One of the objectives of the statement is to explore opportunities and incentives for the use of green infrastructure in CSO LTCPs. This strategy has been further underscored in the March 5, 2007 and August 16, 2007 EPA policy memos discussed in [Section II.D \(page 41\)](#). In addition, *Managing Wet Weather with Green Infrastructure Action Strategy*,<sup>5</sup> a 2008 publication by NACWA, EPA and others, promotes the benefits of using green infrastructure in mitigating overflows from combined and separate sewers and reducing runoff and the EPA *Memorandum, Protecting Water Quality with Green Infrastructure in EPA Water Permitting and Enforcement Programs* (April, 2011) affirms EPA’s commitment to work with communities to incorporate green infrastructure. The Integrated Planning Framework (see [Section V.G.1, page 145](#)) encourages green infrastructure to achieve CWA goals. Examples of green infrastructure in the consent decree context are below - more examples can be found in [Section IV.K \(page 115\)](#):

- The consent decree for the **Lexington-Fayette Urban County Government** includes a \$230,000 SEP project requiring the county to manage stormwater runoff at one or more sites in the Lexington area using green infrastructure measures, such as rain gardens, porous pavements, green roofs, infiltration planters, trees and tree boxes and rainwater harvesting for non-potable uses such as toilet flushing and landscape irrigation.
- The **Fort Wayne, Indiana** consent decree includes a SEP provision allowing the utility to offset its penalty to the State of Indiana by participation in a rain garden demonstration and incentive program.
- The 2008 state consent decree for the **City of Milwaukee** includes a \$255,000 SEP to design and construct green parking lots within the Milwaukee River drainage basin.
- The **City of Philadelphia** has a state consent order that allows for a substantial portion of the utility’s sewer overflow reduction to be accomplished through the use of green infrastructure. Additionally, the utility signed a subsequent [Partnership Agreement](#) with EPA that provides federal recognition and blessing of the aggressive green infrastructure approach outlined in the state consent order.

## I. Asset Management/Effective Utility Management

An effective asset management program can advance a utility’s ability to negotiate/renege favorable terms in a consent decree. Asset management is an underlying obligation of any responsible utility, and utilities need to take their asset management plans into account when making commitments to new

programs and infrastructure. In addition, EPA is far more likely to defer to the judgment of a utility on projects and plans if the utility has a solid track record of strategic asset management with demonstrative compliance results.

Because water and wastewater utilities are among the most capital intensive industries, ongoing evaluation to effectively manage capital infrastructure assets is necessary. Asset management should, therefore, be used specifically in the affordability context. Utilities should include comprehensive costs associated with asset management during negotiation and implementation.

A strategic asset management program offers numerous benefits outside the enforcement context including rigorous and defensible decision making; improved risk management; lower costs; improved public confidence; improved bond ratings; possible higher priority ranking for SRF; effective information transfer and knowledge retention; improved coordination and communication; and improved regulatory compliance. There are a number of resources available to help utilities with asset management.<sup>6</sup>

## J. Conducting Penalty Negotiations

Penalty negotiations are a significant element of negotiations on a consent decree. The CSO *Policy* recognizes that EPA will not seek penalties for past CSO violations from permittees that have fully complied with their Phase I permits (those requiring implementation of the [NMCs](#) and development of [LTCPs](#)). EPA generally has been less forgiving of historical SSO discharges, which it regards as *per se* CWA violations. The government also may seek significant civil penalties from CSO communities that it views as recalcitrant or uncooperative in negotiations.

To arrive at a final penalty amount the parties will have to address all of the factors reflected in EPA's *Penalty Policy*, including any "economic benefit" the utility is alleged to have enjoyed from delayed compliance with the CWA. Penalty negotiations involving economic benefit calculations can be both contentious and protracted. A utility generally will need an economic adviser to assist in presenting and arguing its position with the agency. If the matter goes to trial, each side will likely present competing expert witnesses addressing the potential for economic benefits derived.

Proper application of EPA's BEN model (used to calculate a utility's economic benefit from avoided/delayed compliance), discussed in [Section II \(page 49\)](#), as well as conceptual flaws in the model itself, have been the subject of intense debate for many years. Penalty negotiations will involve many factors, such as identification of the facilities that the utility would have been required to construct in order to achieve compliance, estimating the costs of construction and operation of those facilities, establishing the time period during which the compliance costs were avoided or delayed, and calculating the time value of the money saved.

One issue frequently contested in calculating the economic benefit of non-compliance is the proper discount rate to be applied. In a Federal Register notice responding to public comments on proposed revisions to its BEN model, EPA stated that:<sup>7</sup>

[B]ecause the Agency is trying to calculate the economic benefit that the municipality and its residents or rate payers have actually gained, the Agency prefers to use an estimation of the municipal government's opportunity cost of financing projects, which is equal to the interest rate on the municipality's bonds.

Nevertheless, if another financing mechanism can be shown to apply to the infrastructure improvements whose delayed construction is at issue, such as low-interest financing through state revolving fund loans or the utility's actual interest earnings rate on reserve funds, the utility can argue for an appropriate adjustment in EPA's methodology.

As part of negotiations, utilities have regularly taken the position that penalties are inappropriate in the wet weather context particularly when communities are facing significant financial hardships to implement compliance programs. In the penalty negotiation, communities should point out that every dollar spent on civil penalty payment is another dollar that could be better spent on remediation projects in the community. Following the recent economic downturn and recovery, some believe that this argument has gained more traction with regulators. Discussions on the ability of the utility to finance the projected compliance program has become more prominent suggesting a tacit understanding that limited recourses should be allocated to producing actual environmental benefits. Thus, financial capability discussions influence (whether expressly acknowledged or not by EPA) penalty discussions and, therefore, utilities should be prepared to make the best financial case possible for a reduced civil penalty.

Examples of penalties negotiated in specific decrees are available in [Section IV.D \(page 103\)](#).

## K. Incorporating Supplemental Environmental Projects

As noted in [Section II.F \(page 47\)](#), the *Penalty Policy* allows utilities to offset up to 40 percent of the initial penalty calculation by committing to implement SEPs that benefit the environment. Utilities often are in a favorable position if they can identify available projects. To allow a SEP, EPA will need to be persuaded during the course of the negotiations that the projects proposed by the utility are acceptable under its SEP Policy:

- First, the utility must not otherwise be required by law to implement the activities contemplated by the SEP.
- Second, a relationship must exist between the violations alleged in the decree and the SEP proposed.
- Third, the SEP cannot have been committed to or started before EPA identifies the violations (i.e., before it issues a Notice of Violation or files a complaint), though not necessarily before the decree is signed.
- Fourth, the exact scope of the SEP project must be specified in the decree — a mere agreement to spend a fixed amount of money will not suffice. However, the decree may provide that, in the event the agreed upon SEP becomes infeasible, the parties may negotiate an alternate, acceptable SEP to replace it.

EPA has increasingly expressed an interest in SEPs that include Environmental Justice components. Thus, to the extent that a community can point to projects that benefit economically disadvantaged, those projects are likely to be met with favor by EPA. SEPs continue to be used by utilities to offset civil penalties. In most cases, the SEP's value exceeds that of the civil penalty assessment, illustrating the implicit objective discussed above that the parties want funds spent on projects that will produce actual environmental benefits (see [Section IV.D, page 103](#) for examples).

## L. Reducing Risk of Overfiling

The issue of “overfiling” is an important consideration for utilities negotiating a consent decree or administrative order with their state permitting agency and enforcement authorities. This issue is covered in more detail above in [Section III.E \(page 70\)](#). Under the CWA, EPA retains the discretion to sue a utility for additional penalties or injunctive relief if it determines that a settlement reached in an administrative order or a judicial consent decree with the state was inadequate. For this reason, it may be wise for utilities negotiating with their state agency to ensure that the state consults with and obtains concurrence from the applicable EPA regional office before finalizing a state-only settlement.

## M. Reopeners/Modification

If a utility's consent decree contains a reopener or modification provision, the utility should continuously and carefully evaluate if and when to use that provision. As discussed in [Section V.G.3 \(page 147\)](#), taking an adaptive management approach to implementation of the decree will help to achieve the goals of the decree in the most fiscally responsible and environmental beneficial manner. Thus, a utility should consider needed consent decree revisions based on changed financial circumstances (e.g., inability to raise rates at the level needed; reduced water usage and resulting impact on revenues, population changes that affect revenues, bond rating downgrade, etc.), affordability concerns (including revised affordability guidance issued by EPA)/increased economic burden, monitoring/modeling results that justify course correction, reprioritization, new regulatory mandates, climate change and resiliency factors, better or more innovative approaches including incorporating more green infrastructure, and Utility of the Future (UOTF) transition concepts. If a community can identify particular circumstances during negotiations that should be considered in a decree's timelines, special modification circumstances can be built into a decree that allow for time extensions based upon those circumstances. Further, in light of progress on federal WRDA legislation, communities may wish to seek specific reopener provisions that relate to new affordability guidance EPA may issue pursuant to such federal legislation. When such events are anticipated, it is better to include such acknowledgements in a decree rather than relying upon the boilerplate modification language.

All of the negotiation strategies discussed in this Section have applicability to utilities considering modification. In particular, the acceptance of integrated planning concepts and the use of green infrastructure, along with the emergence of new approaches to financial capability/affordability considerations, can provide an excellent opening for utilities under existing decrees/orders to pursue changes that allow for additional flexibility and innovation in meeting their enforcement obligations. This is especially true for communities with decrees dating from the 1990s or early 2000s, but which are now facing radically different financial realities as a result of the economic downturn. The economic predictions underpinning these decrees may no longer be valid, and communities now have an opportunity to seek decree modifications that provide more cost effective, prioritized investments to address wet weather concerns.

Even if the decree does not have an explicit reopener provision, the decree will most likely contain a general modification provision that allows modification via agreement of the parties (*see* [Section IV.M, page 120](#)). Major modifications may require court approval but this should not deter the utility if there is a justifiable basis for modification. Recent decrees also include distinctions between major modifications requiring court approval and non-material modifications, requiring a less formal process by which EPA is notified or gives written approval (but does not require court approval) (*See* **City of Greenville** Consent Decree. Modification examples in addition to those identified in [Section IV.M \(page 120\)](#) include:

- The **City of Atlanta, Georgia** negotiated a major schedule extension specifically on the basis of financial capability.
- The **City of Indianapolis, Indiana** negotiated a 2009 amendment to its original 2006 Decree related to a particular CSO control measure and a 2011 amendment that further modified the control measures and the schedule for implementation of those measures.
- The **City of New Orleans, Louisiana** has negotiated several modifications due to the continuing effects of Hurricane Katrina on timely compliance.
- The **City of Knoxville, Tennessee** modified its original consent decree to postpone the final compliance date for several projects.

- The **Hampton Roads Sanitation District, Virginia** negotiated a modification to evaluate potential regionalization and consolidation of sewage collection systems through transfer of control and assets to HRSD.
- The **Louisville and Jefferson County Metropolitan Sewer District, Kentucky** reached an amended agreement in 2009 for an Integrated Overflow Abatement Plan (IOAP) to address its obligations under the original 2005 decree. The IOAP has a mix of green infrastructure and gray solutions to prevent and control sewer overflows with front-end consideration of source control and green infrastructure. According to the utility's [website](#), "this means that more traditional "gray" infrastructure in the IOAP has been sized after considering both (1) the anticipated flow-reduction benefits of programmatic and site-specific green infrastructure solutions and (2) the anticipated effectiveness of other source control approaches, including reduction of private sources of I/I."
- The **City of Gloucester, Massachusetts** entered into a modified consent decree in 2012 allowing for the submittal of a supplemental CSO Long-Term Control Plan. The modified agreement acknowledged that the City "did not have the ability to pay the substantial penalty warranted by the facts of this case without jeopardizing the implementation of necessary improvements related to the City's wastewater treatment works." (p.3).
- The 2009 **Onondaga County, NY** Fourth Amended Consent Judgment (ACJ) (state order), (4:121) extended deadlines in the prior ACJ "in order to allow the parties to review these projects for the purpose, in part, of evaluating the feasibility and utility of using green infrastructure in lieu of or in combination with the gray infrastructure currently required by the ACJ."

## N. Environmental Justice

It is incumbent upon every utility to carefully evaluate and address environmental justice issues while planning and implementing projects and programs. A utility should implement community-based programs to engage overburdened communities. In addition, during negotiation of a consent decree, environmental justice issues should be raised when evaluating economic burden, planning time and implementation schedule at a minimum. The EPA focus on environmental justice can be traced to President Clinton's 1994 Executive Order 12898, in which federal agencies were directed to "identify[] and address[], as appropriate, disproportionately high and adverse human health or environmental impacts of its programs, policies, and activities on minority populations and low-income populations in the United States . . ."<sup>8</sup> In 2011, EPA entered into a Memorandum of Understanding on Environmental Justice with 16 other federal agencies to declare the "continued importance of identifying and addressing environmental justice considerations in agency programs, . . ." and to recommend information-sharing among agencies, and provide for greater public input on environmental justice progress.<sup>9</sup> EPA has developed [Plan EJ 2014](#), which is a roadmap that will help EPA integrate environmental justice into the Agency's programs, policies, and activities. Building on Plan EJ 2014, in May 2016, EPA unveiled its Environmental Justice Strategy for 2016-2020 (known as EJ 2020).<sup>10</sup> EJ 2020 includes three goals, focusing on a "deepen[ing]" of EPA's environmental justice practices, working with partners to expand environmental justice impacts, and showing progress on national challenges.<sup>11</sup> NACWA submitted comments on EJ 2020, supporting EPA's plan for greater collaboration between levels of government as co-regulators, but also noting that environmental justice should also provide a focus on financial impacts on the economically disadvantaged, in light of rate impacts driven by regulatory requirements. NACWA also commented that EPA should also emphasize proactive approaches for environmental justice so as to avoid enforcement, rather than remedying EJ concerns after the fact. NACWA has established an ongoing environmental justice task force to communicate these and other viewpoints as environmental justice approaches are implemented.



A utility will have an increased ability to reach agreement on favorable terms if it can demonstrate how a project, program, schedule or affordability factor can help EPA advance its environmental justice goals. Also, when negotiating civil penalties, utilities can make a stronger case for SEPs if tied to environmental justice issues in some way (*see also*, [Sections IV.D, page 103](#), and [V.J, page 149](#)) by arguing that money spent locally versus paid to the federal government will allow more funds to be spent on projects impacting the low-income sector of the community and will result in greater improvement to water quality.

## Section Five Endnotes

<sup>1</sup> [KRS 224.16-040](#) requires consideration of the following factors:

- Limitations on a community's financial capabilities and ability to raise or secure necessary funding;
- Affordability of control options;
- An evaluation of the effectiveness and affordability of control technologies;
- Promotion of green infrastructure;
- Reducing economic impacts on regulated entities, other state and local governmental entities, and residents of the Commonwealth;
- Allowing for reasonable accommodations for regulated entities and other state and local governmental entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained;
- Giving preference, where proposed by a permittee, to control options that meet presumption approach performance criteria and demonstrate significant pollution reduction rather than mandating specific designs;
- Allowing adequate time and flexibility for implementation schedules when justified by a clear environmental benefit, a community's ability to raise or secure adequate funds, an analysis concluding that the costs of a shorter implementation schedule outweigh the benefits of faster implementation, or other factors; and
- Factors set forth in the United States Environmental Protection Agency's "Combined Sewer Overflow Control Policy" that may ease the cost burdens of implementing long-term control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards.

<sup>2</sup> Nevertheless, some grant funds continue to be available and permittees are encouraged to explore a wide variety of tools to finance consent decree obligations as discussed in such varied documents as EPA's [Guidebook of Financial Tools: Paying for Sustainable Environmental Systems](#), 2008; Chapter 7 of EPA's 2012 [Guidelines for Water Reuse](#); and Langdon Marsh for the Environmental Law Institute's 2007 [Report on Funding and Financing for Reclaimed Water Facilities](#).

<sup>3</sup> See 2014 AWWA [State of the Water Industry Report](#); American Society of Civil Engineers 2013 [Infrastructure Report](#); 2012 [Strategic Directions in the U.S. Water Utility Industry Report](#), Black & Veatch.

<sup>4</sup> NACWA's [Money Matters . . . Smarter Investment to Advance Clean Water](#) campaign.

<sup>5</sup> [Managing Wet Weather with Green Infrastructure Action Strategy](#), (2008), American Rivers, Association of State and Interstate Water Pollution Control Administrators, NACWA, NRDC, LID Center, EPA.

<sup>6</sup> Over the last decade or more, the subject of Asset Management has been addressed extensively in dialogues on the state of infrastructure assets in the U.S. and internationally including by water resource utility professional societies. Accordingly, there is extensive literature on the subject offered by NACWA, WEF, IWA, ASCE, and AWWA among others including the American Water Works Association's online [Resource Community](#), which provides tools, issues and developments related to asset management; NACWA's 2007 [Implementing Asset Management: A Practical Guide; Effective Utility Management \(EUM\): A Primer for Water and Wastewater Utilities](#) (June 2008) (EPA, AMWA, APWA, AWWA, NACWA, NAWC, WEF, 2008) and the companion online Resource Toolbox ([waterEUM](#)).

<sup>7</sup> 64 Fed. Reg. 32,947, 32,960 (June 18, 1999).

<sup>8</sup> Exec. Order No. 12898, 59 Fed. Reg. 7629 (Feb. 11, 1994), at 1.

<sup>9</sup> Memorandum of Understanding on Environmental Justice and Executive Order 12898 (2011), available at [https://www.justice.gov/sites/default/files/crt/legacy/2011/08/10/080411\\_EJ\\_MOU\\_EO\\_12898.pdf](https://www.justice.gov/sites/default/files/crt/legacy/2011/08/10/080411_EJ_MOU_EO_12898.pdf) (last visited Sept. 22, 2016).

<sup>10</sup> EJ 2020 ACTION AGENDA, U.S. ENVIRONMENTAL PROTECTION AGENCY (AUG. 2016), available at : <https://www.epa.gov/environmentaljustice/ej-2020-action-agenda> (last visited Sept. 11, 2016).

<sup>11</sup> *Id.*

# Section Six

## SECTION SIX

### I. Existing And Emerging Negotiation And Implementation Issues

As municipal wastewater utilities continue to navigate and manage wet weather challenges, new issues develop on the horizon. The objective of Section VI is to preview certain emerging trends and highlight implications for utilities. For utilities entering new consent decrees, these developments are important to understand as they may influence your negotiations. For utilities implementing existing decrees, these trends could impact your planned wet weather program in positive or negative ways and lay the groundwork for modification to your decree. Some trends are shifts in regulatory focus or are matters that raise strategic considerations; others will bring new mandates and thus new costs and administrative requirements; and still others may present opportunities for innovation and technology advances. Utilities (and not just utilities facing CWA enforcement) should already be aware of many of these issues and should be engaged in addressing and planning for them in the future.

#### A. Shifting Enforcement Focus to Smaller Communities

In early 2016, EPA announced its [National Enforcement Initiatives for FYs 2017-2019](#). The priorities remain consistent with those for FYs 2011-2013 and FYs 2014-2016, as they continue to include an enforcement priority focused on “keeping raw sewage and contaminated stormwater out of the nation’s waters.”<sup>1</sup> Given the continued inclusion of the initiative among the FY 2017-2019 priorities, CWA enforcement will continue to be at the forefront. However, based on the existing coverage of major metropolitan areas to date, EPA’s focus is also shifting from larger communities to smaller ones.

As set forth in [Section III \(page 55\)](#), EPA’s statistics on its enforcement efforts through FY 2015 demonstrate that EPA has initiated and/or concluded enforcement with respect to the majority of large CSO and SSO communities. EPA has shifted to smaller communities but may use administrative options more often when dealing with small communities, as administrative enforcement is usually quicker and less costly. If investigations and negotiations commence, communities may wish to explore alternatives with EPA (although as discussed in [Section VI.B.1 \(page 155\)](#), administrative orders are not considered diligent prosecution and thus may provide less protection from citizen suits than a consent decree or state judicial order).

This shift in focus also dovetails with EPA’s decrease in overall enforcement efforts. In November 2013, EPA circulated its draft strategic plan for 2014-2018 that proposes a significant reduction in EPA’s enforcement efforts from the levels seen in the preceding period (2011-2015).<sup>2</sup> Indeed, EPA anticipates concluding about half as many enforcement cases (i.e., approximately 10,000) and conducting about 30% fewer inspections. However, it should be noted that EPA’s plans to reduce enforcement efforts apply to its overall enforcement initiatives for all environmental issues, not just enforcement against municipal utilities. Within the larger enforcement context, municipal CWA issues represent fairly “low hanging fruit” for EPA in terms of initiating enforcement actions and thus may not see the same corresponding reduction. Thus, communities should not assume that an overall reduction in EPA enforcement activities means that they no longer need to be concerned about potential EPA or state action.

## B. Third Party Litigant/Intervenor Considerations

As outlined above in [Section III\(D\)\(2\)\(e\) \(page 68\)](#), third party litigators/intervenor can impact the schedules and compliance obligations in a material way. As provided in this section, there are a number of strategic considerations that a community will need to weigh including the risks posed by the suit, the posture of existing governmental enforcement efforts (if any), the scope of demands being made and their potential costs (including attorneys' fees that may be available to the prevailing party in a citizen suit even if the matter is settled), the utility's liability exposure and whether settlement discussions would be productive. Many of these factors will depend upon the circumstances of the particular community and the third party litigants or interests involved. The objective of this subsection is to highlight some of the recent experiences that CSO/SSO and stormwater utilities have faced. However, any community confronted with a third party suit or intervention should thoroughly evaluate with their legal and technical team all potential defenses and practical considerations in developing a strategic response.

### 1. Citizen Suits

Third party litigants, who are concerned that enforcement is not being undertaken or advanced with respect to a CSO/SSO or stormwater community, may seek to initiate an enforcement action under the CWA's citizen suit provision, 33 U.S.C. § 1365(a). The citizen suit provision provides in relevant part:

..., any citizen may commence a civil action on his own behalf—

(1) against any person (including (i) the United States, and (ii) any other governmental instrumentality or agency to the extent permitted by the eleventh amendment to the Constitution) who is alleged to be in violation of (A) an effluent standard or limitation under this chapter or (B) an order issued by the Administrator or a State with respect to such a standard or limitation, ...

In order to commence such an action, a third party litigant is required to comply with several prerequisites, including notifying EPA, the state, and the permittee at least 60 days prior to filing suit in order to give the agencies the opportunity to proceed with enforcement themselves.<sup>3</sup> Thus, the objective of such suits is usually two-fold: either force EPA or a state to initiate enforcement (which they sometimes do) or if the agencies decline, permit the litigant the ability to prosecute such enforcement in its own right.<sup>4</sup> If no governmental action is initiated, the threshold for standing in such suits is typically very low.

A community faced with a 60-day notice letter of a CWA citizen suit will need to evaluate the notice and its compliance posture carefully. If the notice is deficient in terms of timing or content under 40 C.F.R. Part 135, it may present an opportunity to have the citizen suit dismissed.<sup>5</sup> Utilities should also evaluate whether the suit is for existing, ongoing violations, or whether the suit seeks relief for violations that occurred in the past. The U.S. Supreme Court has held that citizen suits for injunctive relief and civil penalties are limited to existing violations and may not be brought to address “wholly past violations.”<sup>6</sup> As the Court explained, this means that citizen-plaintiffs must “allege a state of either continuous or intermittent violation—that is, a reasonable likelihood that a past polluter will continue to pollute in the future.”<sup>7</sup>

Additionally, if a municipality is in negotiations with EPA or a State over alleged CWA issues or is subject to an existing consent decree or judicial order, a citizen suit for the same violations may be barred, particularly if an enforcement action has been commenced by the regulators. CWA citizen suits are prohibited where EPA or the state is “diligently prosecuting” an enforcement action covering such violations.<sup>8</sup> Without such a restriction, dissatisfied citizens could constantly second

guess governmental action which would “impinge on the authority and autonomy of federal and state agencies to regulate water pollution pursuant to the Clean Water Act.”<sup>9</sup> Consequently, some courts have held that a lack of diligent prosecution is “a necessary precondition for the court’s jurisdiction” and that third party litigants have the burden of demonstrating that the restriction does not apply,<sup>10</sup> although the Fifth Circuit has provided a different take on the issue, finding that the diligent prosecution provision is a non-jurisdictional limitation on citizen suits.<sup>11</sup>

Given this limitation, one strategy that utilities without an existing consent decree may consider is a request that EPA or a state file an enforcement suit prior to the expiration of the 60-day notice period. This strategy is not without risks (one of which is that the litigants may seek to intervene in the enforcement action, see discussion below) and will be dependent upon the tone of existing enforcement discussions (if any) and the utility’s relationships with its regulators. Nevertheless, the filing of such a suit may bar a citizen suit.

In general, diligent prosecution under the CWA requires a court action and thus administrative orders do not qualify. If a governmental enforcement action is filed in court or a judicially approved consent decree (federal or state) is already in existence, there will be a strong presumption of diligence on the government’s part. However, courts will consider a host of factors in determining diligence including:

- ✓ Whether the action afforded an opportunity for public participation;
- ✓ Whether the relief obtained has remedied or will remedy the violations alleged by the litigant or in some manner address the litigant’s concerns;
- ✓ Whether a penalty was assessed;
- ✓ The timeliness of the enforcement negotiations or process; and
- ✓ Whether the court or governmental entity retained jurisdiction to enforce compliance or remedy future violations.

There is a considerable amount of instructive case law in this area.<sup>12</sup>

There have also been instances in which a citizen suit is filed and EPA or a state will intervene in such an action to protect the uniform application of federal and state environmental laws.<sup>13</sup> Intervention in such cases may help ensure more consistent terms and/or requirements in a subsequently negotiated decree or settlement. Accordingly, another strategy if faced with a citizen suit is to request intervention by governmental agencies. However, such a strategy is not without risks similar to those discussed above.

## 2. Intervention

Third party intervenors may seek entry into an ongoing EPA or state enforcement action to have a say in the scope of the consent decree and planned controls as well as the implementation schedule—usually arguing that further controls are necessary, that the schedule is not sufficiently aggressive, or that additional penalties are warranted. Before entering a federal consent decree, the reviewing court is required to confirm that the decree is fair and “reasonable.”<sup>14</sup> When third parties interests are involved, this standard requires balancing such interests against other public policy interests.<sup>15</sup> Even without intervening parties, the judge may ultimately consider opposing views, because the decree will be open for public comment, and these comments will aid the judge in making a determination. Even so, in making a reasonableness determination, the court may only approve or disapprove entry—it cannot force a party to accept a settlement or revise the settlement without the parties’ consent. See Section III for several case studies of recent intervention examples.

### 3. Risk and Strategy Considerations

As demonstrated by the foregoing, the impact of a citizen suit or intervention will likely result in increased litigation costs for communities as they defend such actions or efforts. Program costs may also be increased if the litigants or intervenors are successful and additional controls are required or implementation schedules attenuated. Additionally, if a litigant is successful or even partially successful, utilities may also be required to pay for the citizen litigant's attorney fees, if the court finds an award of fees appropriate.<sup>16</sup> Ultimately, these types of suits or efforts have the potential to impose significant delays, costs and uncertainty on utilities in the CWA enforcement context. As such, when faced with a third party suit or intervention, utilities need to coordinate with their legal team to develop a comprehensive strategy for managing associated risks and impacts.

## C. Economic Burden

In response to the extreme financial hardships that communities are facing as a result of EPA CWA enforcement coupled with the recent economic downturn that has occurred in the U.S., communities across the country have banded together to advocate for new flexibility in enforcement actions that impose untenable economic burdens. NACWA and the [U.S. Conference of Mayors](#), among others, have been at the forefront of such efforts and have raised the profile of this vital issue through their advocacy, education and political initiatives. As referenced above in Sections II, III, and V, advocacy groups have continued to press for federal legislation to address EPA's continued focus upon MHI as its affordability rubric. Recently, the U.S. Senate and House each passed versions of WRDA that would require a shift from MHI as the focus of community affordability. At the time of the *Handbook's* publication, conference committees were working through differences in the Senate and House versions of WRDA, with a final bill expected in late 2016.

## D. Climate/Resiliency

Over the next several decades, the nation's wastewater utilities are expected to face many challenges related to climate change, which may both threaten water quality and have adverse impacts on public health and the economy. The effects of climate change will likely vary by region, but may include:

- ✓ Extreme storm events that will result in increased frequency of sewer overflows from treatment plants that were not designed with sufficient capacity for such events;
- ✓ Rising sea levels that may threaten the resiliency of coastal utilities' infrastructure; and
- ✓ Dangerous drought conditions that may threaten drinking water supplies and require expensive wastewater and water recycling.

Several of these impacts were detailed in EPA's 2008 [Screening Assessment of the Potential Impacts of Climate Change on Combined Sewer Overflow Mitigation in the Great Lakes and New England Regions](#). This report notes that CSO mitigation measures are usually designed to handle precipitation events of a given intensity, duration or frequency, and that climate change projections, if realized, may present a significant risk to future performance of CSO infrastructure. The goal of the report was to determine the extent to which CSO mitigation based on historical precipitation may be under-designed, by estimating changes in the frequency of the historical benchmark event under future climate conditions. In the Great Lakes region, projected long-term (2060-2099) changes in precipitation suggest that many systems could experience increases in the frequency of CSO events beyond their design capacity, resulting in increases in overflow volumes. In the New England region, projected near-term (2025-2050) changes are inconsistent and the results were found to be inconclusive. Long-term (2060-2099) projections of change in the New England region were not available for analysis. Overall, the report concludes that systems may be vulnerable to

future climate change and that there is a need for more detailed, site-specific analyses.

While site-specific conditions will dictate, it is anticipated that to improve the resiliency of wastewater treatment plants in response to climate change, many utilities will need to take actions such as raising pump stations, developing alternative treatment systems, ensuring backup power generation capacity, constructing additional storage capacity and, in some cases, relocating facilities to address flooding and rising sea level issues. Utilities in more drought prone areas may need to improve or expand wastewater and water reuse and recycling operations. Further, as major energy consumers, municipal wastewater utilities will be impacted by rising energy costs and, as such, will need to consider alternative energy sources including those produced by their own operations, such as biosolid and biogas reuse, and/or water reclamation technologies.

Miami-Dade County has already taken significant steps to plan for climate change impacts. In 2009, the county entered into the Southeast Florida Regional Climate Change Compact with a number of surrounding counties to partner in mitigating the causes and adapting to the consequences of climate change. The collaborative, comprehensive approach outlined in the Compact represents an effective and appropriate way for the county to address climate change, including potential sea level rise and the resulting impacts on water and wastewater facilities.

Resiliency actions will likely be very expensive for public water and wastewater utilities. Recent estimates suggest nationwide costs in the range of \$450 billion to \$950 billion. To confront challenges associated with funding such measures, federal legislation has previously been introduced, the *Water System Resiliency and Sustainability Act*, which would establish a program through which the Nation’s water supply, wastewater, stormwater and flood management agencies can compete for funding to undertake projects to adapt their operations and make their infrastructure more resilient to climate change. The legislation was originally introduced in 2011 and was reintroduced in subsequent years, including the current 114th Congress. At the time of publication, however, neither the Senate nor House has taken action on the legislation. Regardless of such legislation, which may or may not ultimately be enacted, municipal utilities should consider starting to plan for the future by incorporating climate change analysis into their ongoing infrastructure planning. EPA’s Office of Enforcement and Compliance Assurance (OECA) has noted its interest in developing a policy to address climate risks in the context of CWA enforcement cases. OECA has not adopted any such policy to date, although it has reached out to stakeholder groups, including NACWA, to gauge current practices.

E. Nutrients

EPA has deemed nutrient pollution “one of America’s most widespread, costly and challenging environmental problems.”<sup>17</sup> Nutrient pollution has impacted many streams, rivers, lakes, bays and coastal waters for decades, resulting in significant environmental and human health impacts. Excessive nitrogen and phosphorus in the water causes algae growth which can impact water quality, food resources and habitats, and decrease the oxygen that fish and other aquatic life need to survive. Some algal blooms are also harmful to humans because they produce elevated toxins and bacterial growth. Nutrients in groundwater can also impact drinking water sources requiring increased removal costs. Public awareness of these issues has been widespread due to the significant hypoxia (i.e., lack of oxygen) issues in the Gulf of Mexico and algal blooms in the Great Lakes.

Although there are numerous sources of nutrient pollution, including urban stormwater and municipal wastewater discharges, agricultural and other nonpoint sources are typically the most significant—accounting for more than 70% of the phosphorus and nitrogen causing the Gulf of Mexico’s dead zone, as an example.<sup>18</sup> Nevertheless, under the CWA, wastewater utilities are being required to remove nutrients



from their discharges. Though utilities are rightfully concerned with ongoing efforts by regulators to develop nutrient standards that will result in them shouldering a disproportionate share of the nutrient burden, increasing regulation of nutrient loading is clearly an emerging trend that will impact future costs.

While nutrients are a nationwide issue, local land use and water quality conditions are critical components to analyses of nutrient source loadings, appropriate water quality standards, and determinations of potential remedial measures. As such, EPA has been urging states since the 1990s to take the lead on the nutrient front (although some environmental organizations, dissatisfied with the pace of such efforts, have petitioned or taken initial steps to petition EPA to promulgate such criteria—something EPA has declined to do thus far).<sup>19</sup> Across the U.S., states are in various stages of this process and are employing a variety of different approaches to this complex task.<sup>20</sup>

Given the scope and complexity, as well as the politics and costs involved, nutrients represent a considerable challenge for POTWs. To this point, nutrient issues have not played a large role in CWA enforcement actions (see [Section IV\(A\)\(1\)\(D\), page 81](#)), nor is there yet a trend to address nutrient issues via CWA consent decrees. However, because growing importance of nutrients in the national water quality debates, utilities should understand and remain apprised of the status of criteria development in their state, remain informed on EPA's policies in this context, and be aware of increased environmental activist group focus on this issue.

## F. Contaminants of Emerging Concern

In addition to anticipated controls for nutrients, utilities may also be facing effluent limitations on other contaminants in the future which may also require installation of treatment technologies or require utilities to impose pre-treatment requirements on their industrial dischargers. Many of these “emerging” contaminants are generally being assessed and studied by EPA, other governmental agencies and the scientific community at this time, and may lead to mandates at some point. These contaminants are a focus because of increasingly sensitive (but often very expensive) testing capabilities.

Contaminants in this category include pharmaceuticals, which make their way into wastewater through human excretion or down-the-drain disposal. Others are substances utilized in industrial processes or consumer or personal care products that are then disposed of or leach into wastewater. This category includes substances such as triclosan, an environmental toxicant used in consumer products including textiles and housewares. NACWA and clean water utilities are advocating for measures to reduce or prevent the presence of these contaminants in wastewater before they reach the treatment plant. For example, NACWA supports drug-disposal or take-back programs to reduce the disposal of pharmaceuticals down toilets or drains. It has also advocated for federal controls of the uses of triclosan (as well as other emerging contaminants), which can harm micro-organisms in the treatment process, impact the potential reuse of a POTW's biosolids, and contribute to expensive failures of whole effluent toxicity (WET) tests at POTWs. As with nutrients, there is no general effort to address emerging contaminants via CWA consent decrees at this time. However, utilities should remain vigilant in monitoring the status of issues related to these emerging contaminants in order to evaluate their potential impacts on POTW operations.

## G. Stormwater

As discussed above, and also in [Section IV.A \(page 75\)](#), stormwater remains a significant enforcement priority for EPA. EPA has stated that urban stormwater “is a leading cause of water quality impairment and its impact is growing” as approximately 800,000 acres of land are developed in the U.S. every year.<sup>21</sup>

Given its significance, almost 50% of EPA’s CWA enforcement resources have been allocated in recent years to stormwater enforcement, starting first with developers and moving to MS4s. MS4s are being targeted for inspections, information requests and administrative orders related to their stormwater programs. This trend is also evidenced by the number of recent CWA decrees that have also covered stormwater requirements (*see also* [Sections I.D, page 22](#) and [IV.A, page 75](#)).

Despite the fact that stormwater will remain an enforcement priority, EPA announced in March 2014 (*see* [Section I.D, page 22](#)) that the Agency would defer development of a national stormwater rule in lieu of more targeted, less regulatory-driven efforts to help utilities better control stormwater runoff. EPA explained it is “...updating [their] stormwater strategy to focus now on pursuing a suite of immediate actions to help support communities in addressing their stormwater challenges and deferring action on rulemaking to reduce stormwater discharges from newly developed and redeveloped sites or other regulatory changes to its stormwater program.” EPA’s alternative plans for regulatory/policy changes in this area are not yet clear. Increased stormwater regulation may occur in the context of TMDLs, permits and enforcement actions.

## H. Regionalization/Consolidation

Given the significant challenges that wastewater utilities are facing both in terms of CWA enforcement, stormwater, and emerging issues, many utilities are looking for opportunities to reduce costs and provide services more efficiently. As such, many are considering a move toward regionalization or consolidations that go beyond political boundaries.<sup>22</sup> These considerations are in line with increased expectations from tax and/or ratepayers that public agencies dealing with similar matters work together regardless of jurisdictional boundaries.

The benefits of this approach may include economies of scale, management efficiencies, consistent/integrated services and systems, opportunities to implement regional solutions and reduced environmental footprints. Economies of scale make such a move attractive from a cost savings perspective: operations can be combined and managed as one (i.e., POTWs and sewer systems) which may reduce staffing and other duplications, administrative burdens, and enable departments to be consolidated (i.e., pretreatment programs and enforcement, laboratory services, IT), and assets and resources managed in a comprehensive manner (i.e., vehicle fleets, biosolids). It also allows for more holistic watershed planning by providing more complete modeling and mapping and increased opportunities for regional-based infrastructure solutions. As noted above, stormwater management is moving in a similar direction through the use of joint permits and cooperative management agreements.

However, challenges can be significant as well when dealing with multiple jurisdictions and related politics. Rate challenges and annexation issues can destabilize the process. Politics and media bias can present significant hurdles (i.e., losses of autonomy, jobs and revenue can present adverse perceptions of the process). Regulatory burdens may also hinder or delay the process (i.e., permit transfers, loans/grants transfers, existing enforcement initiatives, and pace of regulatory decision-making). Changing liability risks must also be carefully assessed. Increased sophistication of operators may also be needed to ensure environmental compliance.

Often CWA enforcement and consent decree implementation drive evaluation of regionalization or consolidation to reduce costs and increase efficiencies. For example, the Allegheny County Sanitary Authority (ALCOSAN) in Pittsburgh treats an average of 200 million gallons of wastewater daily from 83 municipalities including the City of Pittsburgh. ALCOSAN, a joint city-county authority that has been under a federal consent decree since 2008, is now in the process of negotiating a modification and has received initial confirmation of DOJ’s willingness to consider a new phased approach, which incorporates green

infrastructure and “contemplates a high level of regional cooperation and coordination in implementing flow reduction/management programs and furthering substantive regionalization efforts.”<sup>23</sup>

For those considering such an approach, the benefits and the challenges should be evaluated and strategies developed for addressing potential hurdles. NACWA can be a resource for those considering the process or some form of regionalization/consolidation. In addition, [AWWA](#) (through its Strategic Management Practices Committee) has recently conducted a survey focused on regional cooperation/coordination arrangements rather than formal consolidations, but this may serve as a useful reference for those interested in advantages/disadvantages and lessons learned.

## I. Inflow & Infiltration/Satellite Systems

Regardless of whether a decree contains explicit requirements related to I/I (*see* [Section IV.B.3, page 99](#)), reducing I/I from satellite systems and private sources, such as private sewer laterals, can be a significant issue for many municipal utilities as well as a highly political one. As explained in [Core Attributes of Effectively Managed Wastewater Collection Systems](#), flow monitoring and I/I assessment may be necessary for evaluation of the hydraulic performance of a system, and “quantifying the flow discharge from satellite system entering the system is essential to provide a holistic analysis of the system needs.”<sup>24</sup> I/I assessment is required by CMOM programs and, in general, is necessary for effective utility management.<sup>25</sup> Accordingly, communities are increasingly developing programs to effectively address I/I in their systems including incorporating incentives to encourage private and satellite system management and penalties when they fail to take such steps.

### 1. Private Laterals

The linear length of the private portion of the wastewater collection system is generally roughly proportional to the length of the publicly owned and operated portion of the wastewater collection system. As such, private sources can represent a considerable percentage of I/I in wastewater systems, including infiltration through old or neglected private sewer laterals as well as direct inflow from downspouts or basement sump pumps. At times, reduction goals or commitments cannot be achieved through reduction of public sources alone and these private sources must also be addressed. However, the costs to private entities (e.g., residents and small businesses) for such work can be considerable and represent potential affordability concerns as well as political hurdles.

To respond to such issues, utilities have undertaken a variety of approaches. These approaches often include modified ordinances to provide utilities increased authority to address connections/laterals. This can be accomplished by ordinances that require replacement during roadway projects, requirements to inspect/repair at time of property sales (point-of-sale programs) and/or during building remodels. Ordinances may also give more authority for inspection and approval of new construction to ensure appropriate use of materials and connections. Other programs require private sources to demonstrate that lines are in compliance through video or other inspections. Programs may include voluntary components such as incentives to disconnect downspouts. A number of utilities have found it useful to accept requirements dealing with private property in a consent decree in order to help manage the realtor stakeholders (who generally oppose point-of-sale requirements for private sewer laterals) and related political concerns. Given the considerable private costs involved, many private lateral programs also include a financial incentive program for owners (e.g., cost sharing, flat fees and/or payment plans). Utilities will also, in some instances, utilize their resources to perform repair/rehabilitation work on private laterals and bill private owners instead of requiring them to contract for such services on their own. Others (like New York City) employ a privately run insurance program for water and sewer laterals.<sup>26</sup> Private I/I programs also typically

include significant public outreach and education to inform the public on issues associated with deficient or illicit connections and methods for rehabilitation. These outreach programs can also emphasize the benefits of reduced I/I including decreased SSOs and basement backups.

Some utilities have raised the question of whether there are federal tax implications associated with these programs, with some utilities suggesting that the assistance may be treated as income for the private party and may create a corresponding obligation on the utility to issue Internal Revenue Service (“IRS”) Form 1099s to program participants. **Hampton Roads Sanitation District** requested an IRS determination on this issue for its lateral rehabilitation program. The IRS concluded that under the facts presented, and without establishing precedent outside of HRSD, the benefit to program recipients is not considered gross income under § 61 of the Internal Revenue Code. As such, in the letter ruling, no tax reporting obligations were triggered. However, because of the limited application of this letter ruling and the fact that tax consequences may differ based on other circumstances, utilities should consult tax professionals for questions unique to their circumstances.

## 2. Satellite Systems

An entity that owns a collection system may not provide treatment of wastewater. These satellite collection systems or satellite systems convey their wastewater/stormwater for treatment to a different entity. According to EPA, of the more than 19,000 collection systems, about 4,800 are public satellite collection systems. There are also private satellite collection systems associated with a wide range of entities such as trailer parks, residential subdivisions, apartment complexes, commercial complexes such as shopping centers, industrial parks, college campuses, and military facilities.

Satellite systems can be considerable sources of I/I and are often difficult to manage or control insofar as the sources of infiltration and inflow are outside the jurisdiction of the permitted utility. Getting satellite system cooperation and buy-in for I/I reduction programs can be a considerable hurdle given both the private party property issues, building political will across satellite communities, and the significant costs that may be involved. Thus, coordinating with satellites may also require incentive programs and cooperative agreements. In some cases, to fund private I/I work, communities have developed wet weather flow fees for satellites which are intended to motivate reductions within their service areas or pay for increased capacity improvements. Others rely on subsidies, including grants and loans to support such work and implementation. Examples:

- **East Bay Municipal Utility District** in Oakland, California, presents a helpful case study where asset management principals, including point-of-sale requirements for private service lateral replacements and inspections, and repair and replacement of sewer mains and manholes, are at the center of a regional consent decree framework; satellite systems have joined together with the utility to collectively negotiate the decree.
- **Renewable Water Resources (ReWa)**, a regional wastewater agency in Greenville, South Carolina, imposed peak flow limitations on their satellite agencies to encourage investment in work to reduce peak wet weather flows.
- The **Metropolitan Council**, in St Paul, Minnesota, has developed an I/I Surcharge Program to encourage the 15 satellite cities they serve to reduce peak wet weather flows.<sup>27</sup>
- **Orange County Sanitation District** has developed a program to provide targeted grants to their satellites for investment in the collection system to reduce peak flows.

## J. Utility of the Future

The term “sewage treatment” agency no longer adequately describes most municipal wastewater utilities. Utilities are increasingly expanding their operations beyond the traditional role of sewage collection and treatment to areas of resource recovery, energy production, stormwater management and community development. The movement in this direction is generally defined as becoming a “Utility of the Future” (UOTF), and NACWA, WEF and WERF recently published a document entitled [\*The Water Resources Utility of the Future: A Blueprint Action\*](#), which further describes the UOTF concept (see [Appendix C](#)). The UOTF approach may include a combination of the following processes:

- ✓ Reclaiming and reusing water;
- ✓ Extracting and finding commercial uses for nutrients and other constituents in their waste streams;
- ✓ Capturing waste heat and latent energy in biosolids and liquid streams;
- ✓ Generating renewable energy using their land assets; and
- ✓ Utilizing green infrastructure to manage stormwater and CSOs.

These programs allow utilities to capitalize on efficiencies and generate new revenue opportunities all while producing significant environmental and social benefits (including costs savings for ratepayers and community development and redevelopment options). Municipal wastewater utilities are increasingly moving toward the UOTF model through both large and small steps.<sup>28</sup>

Further opportunities for innovation in this area abound. However, to fully capitalize on these opportunities, a variety of legal and institutional changes are necessary. NACWA is leading such efforts at the national level, including recommending regulatory and legislative changes to achieve the following:<sup>29</sup>

- ✓ Refocusing existing federal grant programs to support UOTF initiatives;
- ✓ Creating a program for early state and innovation investment;
- ✓ Establishing a tax credit and incentive program that will encourage private/public partnerships;
- ✓ Enacting statutory changes to CWA and the Safe Drinking Water Act to bolster reuse of recycled water;
- ✓ Creating market-based approaches to efficiently and more equitably address watershed scale water quality challenges; and
- ✓ Ensuring that implementation of EPA’s Integrated Planning Framework accounts for UOTF activities.

The UOTF is a developing but expansive concept and one that provides significant growth opportunities for municipal wastewater utilities to consider. In particular, utilities should evaluate whether and how to incorporate UOTF considerations into future CWA consent decrees or decree modifications. EPA has expressed strong support for the UOTF concept, and utilities willing to include it as part of a consent decree may find it provides them with additional leverage during decree negotiations.

## K. Local Employment Issues

Given the substantial investment required to fund consent decree compliance, utilities are often a major local economic engine. For example, investment in water infrastructure, both green and gray, is one of the most efficient methods of job creation in the current economy.<sup>30</sup> Although estimates vary depending

on the source, the following statistics present a compelling case for investment in water infrastructure:

- An investment of \$188.4 billion spread equally over the next five years would generate \$265.6 billion in economic activity and create close to 1.9 million jobs.<sup>31</sup>
- Infrastructure investments create over 16 percent more jobs dollar-for-dollar than a payroll tax holiday, nearly 40 percent more jobs than an across-the-board tax cut, and more than five times as many jobs as temporary business tax cuts.<sup>32</sup>
- 90 percent of the jobs created by infrastructure investment are middle-class jobs.<sup>33</sup>

Expectations and pressure to hire locally often occur. For example, according to District of Columbia Water and Sewer Authority, it has “arguably the largest capital program in the District of Columbia with multiple large scale infrastructure projects currently underway” and more “major projects are planned over the next 10 years.” In recognition of the fact that these projects are largely funded by ratepayers, it launched the [DC Water Works!](#) Initiative, which is an “effort to boost local hiring on DC Water projects.” Depending upon geography and the size of remedial plans under decrees, some communities may face challenges to find workers available for projects, which can threaten decree compliance and impact schedules. Although this scenario is at the opposite end of the spectrum from some communities, it requires appropriate planning and communication well in advance of a decree’s entry date.

Many states have passed [resident bidder preference laws](#) that give an advantage to state resident bids on public projects. While some states apply the preference to bids on state contracts only, many state laws also apply to local government contracts.

Consent decree projects are often highly complex and specialized and may require skills that are not available or competitive at the local level. A utility must balance interests and make the best decision for the community to achieve compliance in the most cost-effective and environmental beneficial manner.

---

## Section Six Endnotes

(Endnotes)

<sup>1</sup> NATIONAL ENFORCEMENT INITIATIVES FOR FY 2017-2019, U.S. ENVIRONMENTAL PROTECTION AGENCY (June 2016), available at <https://www.epa.gov/enforcement/national-enforcement-initiatives> (last visited Sept. 11, 2016).

<sup>2</sup> See 78 Fed. Reg. 69412 (Nov. 19, 2013).

<sup>3</sup> See 33 U.S.C. §1365 (b).

<sup>4</sup> There are number of recent examples of such suits, including *Sierra Club Ohio Chapter v. City of Columbus*, 282 F.Supp.2d 756, (S.D. Ohio 2003); *Conservation Law Found., Inc. v. Boston Water and Sewer Comm’n*, No. 10-10250-RGS, 2010 WL 5349854 (D. Mass. Dec. 21, 2010).

<sup>5</sup> *Sierra Club Ohio Chapter v. City of Columbus*, 282 F.Supp.2d 756 (S.D. Ohio 2003).

<sup>6</sup> *Gwaltney of Smithfield v. Chesapeake Bay Foundation*, 484 U.S. 49 (1987).

<sup>7</sup> *Id.* at 56.

<sup>8</sup> See 33 U.S.C. § 1365(b).

<sup>9</sup> *Connecticut Coastal Fisherman’s Ass’n v. Remington Arms Co., Inc.*, 777 F. Supp. 173, 179 (D. Conn. 1991), *aff’d in part and rev’d in part*, 989 F. 2d 1305 (2nd Cir. 1993).

<sup>10</sup> *Id.*

<sup>11</sup> *Louisiana Env’t Action Network v. City of Baton Rouge*, 677 F.3d 737, 748 (5th Cir. 2012).

<sup>12</sup> See, e.g., *EPA v. City of Green Forest*, 921 F. 2d 1394 (8th Cir. 1990); *North & South Rivers Watershed Ass’n, Inc. v. Town of Scituate*, 949 F. 2d 552 (1st Cir. 1991); *Arkansas Wildlife Fed’n v. ICI Americas, Inc.*, 29 F. 3d 376 (8th Cir. 1994); *Connecticut Coastal Fisherman’s Ass’n v. Remington Arms Co.*, 777 F. Supp. 173 (D. Conn. 1991); *Sierra Club v. Colorado Refining Co.*, 852 F. Supp. 1476



(D. Colo. 1994); *Bishop v. Water Works and Sanitary Sewer Bd. of the City of Montgomery*, No. 00-A-527-N, 2001 WL 46973 (M.D. Ala. Jan. 16, 2001); *Lockett v. EPA*, 176 F. Supp. 2d 628 (E.D. La. 2001); *Atlantic States Legal Found. v. Hamelin*, 182 F. Supp. 2d 235 (N.D. N.Y. 2001).

<sup>13</sup> See *Conservation Law Found., Inc. v. Boston Water and Sewer Comm'n*, No. 10-10250-RGS, 2010 WL 5349854 (D. Mass. Dec. 21, 2010).

<sup>14</sup> *Donovan v. Robbins*, 752 F. 2d. 1170, 1177 (7th Cir. 1985).

<sup>15</sup> See *U.S. v. Metro. Water Reclamation Dist. of Greater Chicago*, No. 11 C 8859, 2014 WL 64655, at \*13-14 (N.D. Ill., Jan. 6, 2014), *aff'd* by *U.S. v. Metro. Water Reclamation Dist. of Greater Chicago*, 792 F.3d 821 (7th Cir. 2015).

<sup>16</sup> See 33 U.S.C. §1365(d).

<sup>17</sup> NUTRIENT POLLUTION: THE PROBLEM, U.S. ENVIRONMENTAL PROTECTION AGENCY (Mar. 1, 2016), available at <http://www2.epa.gov/nutrientpollution/problem>.

<sup>18</sup> Alexander, Richard et al., “Differences in Phosphorus and Nitrogen Delivery to the Gulf of Mexico from the Mississippi River Basin”, *Env't'l Sci. & Tech.* (2007).

<sup>19</sup> See, e.g., *Gulf Restoration Network v. Jackson*, No. 12-677, 2013 WL 5328547 (E.D. La. Sept. 20, 2013), *vacated and remanded*, 783 F.3d 227 (5th Cir. 2015).

<sup>20</sup> For a comprehensive listing of the efforts of the States, see EPA’s STATE PROGRESS TOWARD DEVELOPING NUMERIC NUTRIENT WATER QUALITY CRITERIA FOR NITROGEN AND PHOSPHORUS, available at <http://cfpub.epa.gov/wqsits/nnc-development>.

<sup>21</sup> See *Jeremy Bauer, Updates on EPA’s Stormwater Program*, U.S. ENVIRONMENTAL PROTECTION AGENCY (Aug. 2012), available at [http://www.stormcon.com/downloads/SC2012\\_EPA\\_SLIDES.pdf](http://www.stormcon.com/downloads/SC2012_EPA_SLIDES.pdf).

<sup>22</sup> As one example, the Hampton Roads Sanitation District Consent Decree was amended for a second time in 2013 to allow the District additional time to evaluate and implement Regionalization measures. Regionalization is defined by the Second Amended Consent Decree as “the consolidation of sanitary sewer collection systems owned and operated by most or all of the Localities through the transfer or operational control and assets to HRSD.”

<sup>23</sup> *ALCOSAN Releases Statement on Department of Justice Response to Wet Weather Plan*, (Feb. 20, 2014), available at <http://www.alcosan.org/Portals/0/PDFs/DOJ%20Decision%20on%20WWP.pdf>.

<sup>24</sup> See APWA, ASCE, NACWA, WEF’s *Core Attributes of Effectively Managed Wastewater Collection Systems at 23* (2010).

<sup>25</sup> The five classes of activities that EPA generally believes are necessary for implementing a CMOM program include:  
Control of infiltration and connections from inflow sources.

Requirement that sewers and connections be properly designed and constructed.

Ensure proper installation, testing, and inspection of new and rehabilitated sewers.

Address flows from municipal satellite collection systems (to the extent the permittee services such systems).

Implement the general and specific prohibitions of the national pretreatment program (see 40 CFR 403.5).

<sup>26</sup> See description of the [New York City insurance program](#).

<sup>27</sup> *Id.*

<sup>28</sup> There are many examples of utilities’ successes in implementing UOTF programs available through NACWA’s website and publications.

<sup>29</sup> See NACWA’s *Water Resources Utility of the Future: A Call for Federal Action* (2013) and NACWA, WERF and WEF’s *The Water Resources Utility of the Future: A Blueprint for Action* (2013).

<sup>30</sup> *See id.*

<sup>31</sup> *Water Works: Rebuilding Infrastructure Creating Jobs Greening the Environment*, GREEN FOR ALL. (2011).

<sup>32</sup> *Id.*

<sup>33</sup> *Economic Analysis of Infrastructure Investment*, U.S. DEPT. OF TREASURY (Oct. 11, 2010).

# Glossary

## A

### Adaptive Management

The process by which new information and priorities is incorporated into a remediation plan; involves a blend of scientific research, monitoring, and practical management that allows for experimentation and provides the opportunity to “learn by doing”

### Administrative Compliance Order

ACO

Pursuant to CWA §309(a), EPA can pursue formal administrative enforcement action by issuing an administrative compliance order to compel compliance, and in many cases can administratively impose a monetary penalty for past infractions.

### Administrative Law Judge

ALJ

The U.S. Environmental Protection Agency’s Office of Administrative Law Judges (OALJ) is an independent office in the [Office of Administration and Resources Management](#). The Administrative Law Judges conduct hearings and render [decisions](#) in proceedings between the EPA and persons, businesses, government entities, and other organizations which are or are alleged to be regulated under environmental laws. Administrative Law Judges preside in enforcement and permit proceedings in accordance with the Administrative Procedure Act. Most enforcement actions initiated by the EPA are for the assessment of civil penalties.

### Administrative Orders on Consent

AOC

In an EPA administrative enforcement action, settlements are often in the form of consent agreements/final orders (CA/FOs) or administrative orders on consent (AOCs).

### Administrative Procedure Act

APA

5 U.S.C. § 551 et seq.

### [American Water Works Association](#)

AWWA

A nonprofit, scientific and educational association dedicated to managing and treating water.

### [Association of Clean Water Administrators](#)

ACWA

A national, nonpartisan professional membership [organization](#) of the State, Interstate and Territorial officials who are responsible for the implementation of surface water protection programs throughout the nation.

### Association of Metropolitan Sewerage Agencies (now [NACWA](#))

AMSA

See NACWA

[↶ Back to Table of Contents](#)

## B

[Best Management Practices](#)

BMP

A permit condition used in place of or in conjunction with effluent limitations to prevent or control the discharge of pollutants. BMPs may include a schedule of activities, prohibition of practices, maintenance procedure, or other management practice.

**Biochemical Oxygen Demand**

BOD

A measure of the amount of oxygen consumed by microorganisms from the decomposition of organic material in water over a specified time period (usually 5 days, indicated as BOD5). The BOD5 value is used for many applications, most commonly to indicate the effects of sewage and other organic wastes on dissolved oxygen in water.

**Blending**

A peak wet weather flow management practice used by POTWs at the treatment plant.

**Bypass**

The “intentional diversion of waste streams from any portion of a treatment facility,” unless there are “no feasible alternatives.”

## C

**Capacity, Management, Operation and Maintenance**

CMOM

Framework for municipalities to identify and incorporate widely accepted wastewater industry practices to:

- » Better manage, operate, and maintain collection systems
- » Investigate capacity constrained areas of the collection system
- » Respond to sanitary sewer overflow (SSO) events

[Clean Water Act](#)

CWA

33 U.S.C. § 1251 *et seq.* See also FWPCA

[Clean Water State Revolving Fund](#)

CWSRF

A federal program created by the Clean Water Act Amendments in 1987 that offers low interest loans for wastewater treatment projects.

[Combined Sewer Overflow](#)

CSO

A discharge of untreated wastewater from a combined sewer system at a point prior to the headworks of a POTW.

**Combined Sewer System**

CSS

A wastewater collection system owned by a municipality (as defined by Section 502(4) of the Clean Water Act) that conveys domestic, commercial and industrial wastewater and stormwater runoff through a single pipe system to a POTW.

[↶ Back to Table of Contents](#)

[Comprehensive Environmental Response, Compensation, and Liability Act](#)

CERCLA

Commonly known as Superfund; creates a tax on the chemical and petroleum industries and provides broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

**Consent Agreements/Final Orders**

CA/FO

In an EPA administrative enforcement action, settlements are often in the form of consent agreements/final orders (CA/FOs) or administrative orders on consent (AOCs).

**Construction Grants Program**

Federal assistance program authorized under Section 201 of the Clean Water Act intended to assist with the development and implementation of waste treatment management plans and practices that will achieve the goals of the Act.

**Conventional Pollutants**

As defined by the Clean Water Act, conventional pollutants include: BOD, TSS, fecal coliform, pH, and oil and grease.

## D

**Demonstrative approach - CSOs**

Demonstrative approach must meet EPA's requirements by addressing the following:

- » the planned control program is adequate to meet water quality standards and protect designated uses, and
- » the CSO discharges remaining after implementation of planned control programs will not preclude the attainment of water quality standards or the receiving waters designated uses or contribute to impairment, and
- » the planned control program will provide the maximum pollution reduction benefits reasonably attainable, and
- » the planned control program is designed to allow cost effective expansion or retrofitting if additional controls are subsequently determined to be necessary to meet water quality standards or designated uses.

[Department of Justice](#)

DOJ

If EPA opts to pursue a civil enforcement action against a utility, it will refer the case to the U.S. Department of Justice (DOJ). The 1870 Act to Establish the Department of Justice gave the Department control over all criminal prosecutions and civil suits in which the United States had an interest. In other words, DOJ serves as outside legal counsel for EPA and other federal agencies.

**Design Storm**

Also called design events; a rainfall event that is used as performance criteria for planning and designing facilities and/or wet weather flow control programs.

**Dissolved Oxygen**

DO

The oxygen freely available in water, vital to fish and other aquatic life and for the prevention of odors. DO levels are considered a most important indicator of a water body's ability to support desirable aquatic life. Secondary and advanced waste treatment are generally designed to ensure adequate DO in waste-receiving waters.

[↶ Back to Table of Contents](#)

### [Drinking Water State Revolving Fund](#)

DWSRF

The Safe Drinking Water Act, as amended in 1996, established the Drinking Water State Revolving Fund (DWSRF) to make funds available to drinking water systems to finance infrastructure improvements.

### Dry Weather CSO

An unauthorized discharge from a combined sewer system that occurs during dry weather conditions.

### Dry Weather SSO

A sanitary sewer overflow that occurs during dry weather conditions, most often as a result of blockages, line breaks, or mechanical/power failures in the collection system.

## E

### Effluent Guidelines

Effluent guidelines are national standards that are developed by EPA on an industry-by-industry basis, and are intended to represent the greatest pollutant reductions that are economically achievable for an industry. To develop these technology-based regulations, EPA first gathers information on the industry's practices; characteristics of discharges (stormwater flows and pollutants); technologies or practices used to prevent or treat the discharge; and economic characteristics. EPA identifies the best available technology that is economically achievable for that industry and sets regulatory requirements based on the performance of that technology.

### Effluent Limits

Restrictions established by a state or EPA on quantities, rates, and concentrations in municipal or industrial wastewater discharges.

### [Environmental Appeals Board](#)

EAB

Decisions issued by the Administrative Law Judges are subject to review by the [Environmental Appeals Board](#) (EAB). The Appeals Board is the final EPA decision maker on administrative appeals under all major environmental statutes that the Agency administers. It is an impartial body independent of all EPA components outside the immediate Office of the Administrator. The Board typically sits in panels of three judges and makes decisions by majority vote. The EAB has issued [A Citizens' Guide to EPA's Environmental Appeals Board](#), a plain language guide for members of the public participating in matters before the Board.

### [Environmental Council of the States](#)

ECOS

A national non-profit, non-partisan association of state and territorial environmental agency leaders.

### [Environmental Protection Agency \(U.S.\)](#)

EPA

Federal agency authorized to implement and enforce the provisions of the Clean Water Act.

### EPA BEN Model

A model used by EPA which calculates the economic benefit a violator derives from delaying or avoiding compliance with environmental statutes.

## F

### **Federal Water Pollution Control Act of 1972**

FWPCA

Commonly known as the Clean Water Act, amended by Clean Water Act Amendments of 1977, Water Quality Amendments of 1986, the Wet Weather Water Quality Act of 2000, and the Beaches Environmental Assessment and Coastal Health Act of 2000.

### **Financial Capability Assessment**

FCA

FCAs are addressed in EPA's 1997 "Combined Sewer Overflows: Guidance for Financial Capability Assessment and Schedule Development," which addresses how financial capability and other factors may be used to negotiate reasonable compliance schedules for implementation of CSO controls. A two-phase approach is presented: the residential indicator and permittee financial indicators.

### **Force Majeure**

A common clause in consent decrees that may excuse obligations or delays in performance based on the occurrence of an extraordinary event or circumstance beyond the control of the utility.

## H

### **High Rate Treatment**

HRT

Uses proprietary systems for ballasted flocculation

## I

### **Illicit Discharge**

40 CFR 122.26(b)(2) defines an illicit discharge as any discharge to an MS4 that is not composed entirely of storm water, except allowable discharges pursuant to an NPDES permit, including those resulting from firefighting activities.

### **Illicit Discharge Detection and Elimination**

IDDE

Phase II MS4s are required to develop an IDDE program/plan to detect and eliminate these illicit discharges.

### **Infiltration**

Storm water and groundwater that enter a sewer system through such means as defective pipes, pipe joints, connections, or manholes. (Infiltration does not include inflow).

### **Inflow**

Water, other than wastewater, that enters a sewer system from sources such as roof leaders, cellar drains, yard drains, area drains, foundation drains, drains from springs and swampy areas, manhole covers, cross connections between storm drains and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters, or other drainage. (Inflow does not include infiltration).

[↶ Back to Table of Contents](#)



<b>Inflow &amp; Infiltration</b>	I/I	The total quantity of water from both infiltration and inflow.
----------------------------------	-----	--

## L

<b>Level of Service</b>	LOS	The level to which an entity will design its CSO and/or SSO controls.
<b>Long-Term Control Plan</b>	LTCP	Water quality-based CSO control plan that is ultimately intended to result in compliance with the Clean Water Act. Long-term control plans should consider the site-specific nature of CSOs and evaluate the cost effectiveness of a range of controls.
<b><u>Low-Impact Development</u></b>	LID	Approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible.

## M

<b>Major Facility</b>		Classification for wastewater treatment plants that are designed to discharge more than 1 million gallons per day. Some facilities with smaller design flows are classified as major facilities when the NPDES authority deems it necessary for a specific NPDES permit to have a stronger regulatory focus.
<b>Management, Operation and Maintenance</b>	MOM	See CMOM above.
<b>Maximum Extent Practicable</b>	MEP	Clean Water Act (CWA) section 402(p) requires MS4s “to reduce the discharge of pollutants to the maximum extent practicable,” but the law does not explicitly define the standard. EPA has broad discretion to determine how strict a discharge limit must be to be “practicable” given the effectiveness of available technology. EPA has long defined MEP limits to be less stringent than the generally-applicable WQS that other discharges must meet.
<b>Median Household Income</b>	MHI	EPA’s 1997 “Combined Sewer Overflows: Guidance for Financial Capability Assessment and Schedule Development,” calls for a calculation of the increased user rates as a percentage of MHI on a <i>system-wide</i> basis. Rates are deemed to be affordable if the rates are less than 2% of MHI.
<b>Million Gallons per Day</b>	MGD	A unit of flow commonly used for wastewater discharges. One MGD is equivalent to a flow rate of 1.547 cubic feet per second over a 24-hour period.
<b>Minor Facility</b>		A classification for wastewater treatment plants that are designed to discharge less than 1 MGD.

**Municipal Separate Storm Sewer System**

MS4

A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created to or pursuant to state law) including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act that discharges into waters of the United States. (ii) Designed or used for collecting or conveying stormwater; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2. 40 CFR 122.26(b)(8))

## N

**National Association of Clean Water Agencies**

NACWA

NACWA represents the interests of more than 300 public agencies and organizations that have made the pursuit of scientifically based, technically sound and cost effective laws and regulations their objective. NACWA members serve the majority of the sewered population in the United States.

**National Pollutant Discharge Elimination System**

NPDES

The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 318, 402, and 405 of the Clean Water Act.

**National Resource Council**

NRC

**Nine Minimum Controls**

NMC

Technology-based CSO controls that do not require significant engineering studies or major construction.

**Non-governmental Organization**

NGO

Any non-profit, voluntary citizens' group which is organized on a local, national or international level.

**Nutrient**

Any substance assimilated by living things that promotes growth. The term is generally applied to nitrogen and phosphorus in wastewater, but is also applied to other essential and trace elements.

## O

**Office of Enforcement and Compliance Assistance - EPA**

OECA

According to EPA's website, OECA "aggressively goes after pollution problems that make a difference in communities through vigorous civil and criminal enforcement that targets the most serious water, air and chemical hazards. OECA also advances environmental justice by protecting vulnerable communities. OECA is resetting our relationship with states to make sure we are delivering on our joint commitment to a clean and healthy environment."

[↶ Back to Table of Contents](#)

[Office of General Counsel](#) – EPA

OGC

The chief legal adviser to EPA, providing legal support for Agency rules and policies, case-by-case decisions (such as permits and response actions), and legislation.

**Operations & Maintenance**

O&M

Typically includes the day-to-day activities and expenses necessary for an entity and its systems and equipment to function and perform.

## P

**Peaking Factor**

Refers to the ratio of the maximum flow to the average daily flow in a wastewater system; i.e., the daily peak flow divided by the average daily flow.

**Point Source**

Any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fixture, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged.

**Presumptive approach – CSOs**

The presumptive approach must meet one of the EPA's criteria:

- » no more than 4-6 overflow events per year that do not receive minimum treatment; or
- » the elimination or capture for minimum treatment of no less than 85% by volume of the combined sewage collected during precipitation events on a system-wide annual average basis; or
- » the elimination or removal of no less than the mass of the pollutants, identified as causing water quality impairment during the characterization, monitoring, and modeling effort.

**Primary Treatment**

First steps in wastewater treatment wherein screens and sedimentation tanks are used to remove most materials that float or will settle.

**Publicly Owned Treatment Works**

POTW

A treatment works, as defined by Section 212 of the Clean Water Act that is owned by a state or municipality. This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW treatment plant [40 CFR §403.3].

## S

[Safe Drinking Water Act](#)

SDWA

The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards.

[↶ Back to Table of Contents](#)

<a href="#">Sanitary Sewer Overflow</a>	SSO	An untreated or partially treated sewage release from a sanitary sewer system.
Sanitary Sewer System	SSS	A municipal wastewater collection system that conveys domestic, commercial and industrial wastewater, and limited amounts of infiltrated ground water and stormwater, to a POTW. Areas served by sanitary sewer systems often have a municipal separate storm sewer system to collect and convey runoff from rainfall and snowmelt.
Satellite System		A sewer system that is owned or operated by one entity that discharges to a system that is owned or operated by a different entity. Satellite sewer systems depend on a separate entity for final wastewater treatment and discharge.
Secondary Treatment		Technology-based requirements for direct discharging municipal sewage treatment facilities. Standard is based on a combination of physical and biological processes for the treatment of pollutants in municipal sewage. Standards are expressed as a minimum level of effluent quality in terms of: BOD5, suspended solids, and pH (except as provided for special considerations and treatment equivalent to secondary treatment). Secondary treatment removes the dissolved organic matter that escapes primary treatment by using microbes that consume organic matter as food, and convert it to carbon dioxide, water, and energy for their own growth and reproduction. The biological process is then followed by additional settling tanks to remove more of the suspended solids. A properly functioning secondary treatment facility will remove approximately 85% of the suspended solids and BOD. Technologies include basic activated sludge process, the variants of pond and constructed wetland systems, trickling filters and other forms of treatment which use biological activity to break down organic matter.
State Revolving Fund Program	SRF	See Clean Water State Revolving Fund (CWSRF) above. There is a similar program under the Safe Drinking Water Act – the Drinking Water State Revolving Fund (DWSRF).
Stormwater Management Plan	SWMP	Designed to reduce the discharge of pollutants to the maximum extent practicable using management practices, control technologies and systems, design and engineering methods.
Stormwater Pollution Prevention Plan	SWPPP	A SWPPP may also be called a “ <i>construction best practices plan</i> ,” “ <i>sediment and stormwater plan</i> ,” “ <i>erosion, sedimentation, and pollution prevention plan</i> ,” or similar term. The SWPPP (or similarly named plan) is generally required to comply with EPA’s or the state’s stormwater construction general permit. A SWPPP will address the steps and techniques to reduce pollutants in stormwater runoff leaving a construction site.
Strategic Financial Planning	SFP	
Supplemental Environmental Project	SEP	A project that produces environmental or public health and safety benefits beyond those required by law, for which a credit may be granted by EPA to offset partially the penalty imposed in the settlement of an enforcement action.

[↶ Back to Table of Contents](#)

**System Evaluation and Capacity Assurance Plan**

SECAP

A plan to address repeated overflows caused by peak flows.

## T

**Technology Based Effluent Limits**

TBEL

Effluent limitations applicable to direct and indirect sources, which are developed on a category-by-category basis using statutory factors, not including water quality effects.

**Total Maximum Daily Load**

TMDL

A calculation of the maximum amount of a [pollutant](#) that a water body can receive and still safely meet water quality standards.

**Total Suspended Solids**

TSS

A measure of the filterable solids present in a sample of water or wastewater (as determined by the method specified in 40 CFR Part 136).

**Tripple Bottom Line**

A level of analysis that examines the economic, environmental and social impacts of a particular course of action. This approach has been used particularly in analysis of the potential role of green infrastructure in wet weather control.

## U

**U.S. Conference of Mayors**

USCM

The official non-partisan organization of cities with populations of 30,000 or more.

**Use Attainability Analysis**

UAA

A structured scientific assessment of the factors affecting the attainment of uses specified in Section 101(a)(2) of the Clean Water Act (the so called “fishable/swimmable” uses). The factors to be considered in such an analysis include the physical, chemical, biological, and economic use removal criteria described in EPA’s water quality standards regulation (40 CFR 131.10(g)(1)-(6)).

**Utility of the Future**

UOTF

The Water Resources Utility of the Future (UOTF) is defined by utility leaders pioneering innovative technologies and cutting-edge practices with a focus on resource recovery. NACWA is committed to making sure the array of UOTF issues – whether related to energy production, water reuse, green infrastructure or watershed-based approaches – are priorities with Congress, the Administration and other key stakeholders going forward.

## W

**Water Environment Federation**

WEF

Not-for-profit technical and educational organization of 36,000 individual members and 75 affiliated Member Associations representing water quality professionals

[↶ Back to Table of Contents](#)

## **Watershed Approach**

An initiative that promotes integrated solutions to address surface water, groundwater, and habitat concerns on a watershed basis. It is a decision-making process that reflects a common strategy for information collection and analysis and a common understanding of the roles, priorities and responsibilities of all stakeholders within a watershed.

## **Water Quality Based Effluent Limits**

WQBEL

Effluent limitations applied to dischargers when technology-based limitations insufficient to result in the attainment of water quality standards. Usually applied to discharges into small streams

## **Water Quality Standards**

WQS

A law or regulation that consists of the beneficial use or uses of a waterbody, the numeric and narrative water quality criteria that are necessary to protect the use or uses of that particular waterbody, and an antidegradation statement.

## **Whole Effluent Toxicity**

WET

Refers to the aggregate toxic effect to aquatic organisms from all pollutants contained in a facility's wastewater (effluent). It is one way EPA implements the CWA's prohibition of the discharge of toxic pollutants in toxic amounts. WET tests measure wastewater's effects on specific test organisms' ability to survive, grow and reproduce.



Click [here](#) to download Appendix A, a sortable Microsoft Excel Spreadsheet, from NACWA's website.

# The Water Resources Utility of the Future: A Blueprint for Action



## FOREWORD

The National Association of Clean Water Agencies (NACWA), the Water Environment Research Foundation (WERF) and the Water Environment Federation (WEF) are pleased to release the *Water Resources Utility of the Future . . . Blueprint for Action*. Work on this document began in earnest in September 2012 and has been shepherded along by the strong efforts of a joint Steering Committee made up of three representatives from each of the three organizations as well as by a diverse Task Force of 49 experts representing a broad cross-section from the three organizations' memberships. The Steering Committee ensured the *Blueprint* remained both targeted and comprehensive while the Task Force provided data, input, editing and insight throughout the drafting process.

This *Blueprint* was placed on a fast-track for finalization to ensure that Utility of the Future (UOTF) issues are front and center as the 113th Congress and incoming Administration develop their environmental priorities. The audience for this *Blueprint*, however, is broader than just federal policy-makers and includes local utility managers, private sector interests, state and local governments, and many others within the clean water, drinking water, energy and agricultural communities.

Our three organizations have different missions and strengths - these include advocacy, technical input, outreach/communications, scientific research, data collection and media relations. Each organization will cull from this document to determine which particular UOTF priorities to advance. Wherever possible, however, the three organizations will work together to advance shared objectives and will seek to encourage the array of organizations that make up the clean water sector to review this document closely and work to advance the UOTF objectives outlined in the *Blueprint* as well.

It is critical to understand that the *Blueprint* is a living document and that new ideas under the UOTF umbrella will continue to be added. This document represents an opening salvo in the effort to define and tie together a diverse realm of resource recovery activities and innovative approaches, many of which were never contemplated, and likely could never have been foreseen, 40 years ago when the Clean Water Act was enacted.

This project was advanced because a group of industry leaders arrived at a shared realization that the challenges (and opportunities) faced by wastewater agencies are unprecedented and that some of the paradigms

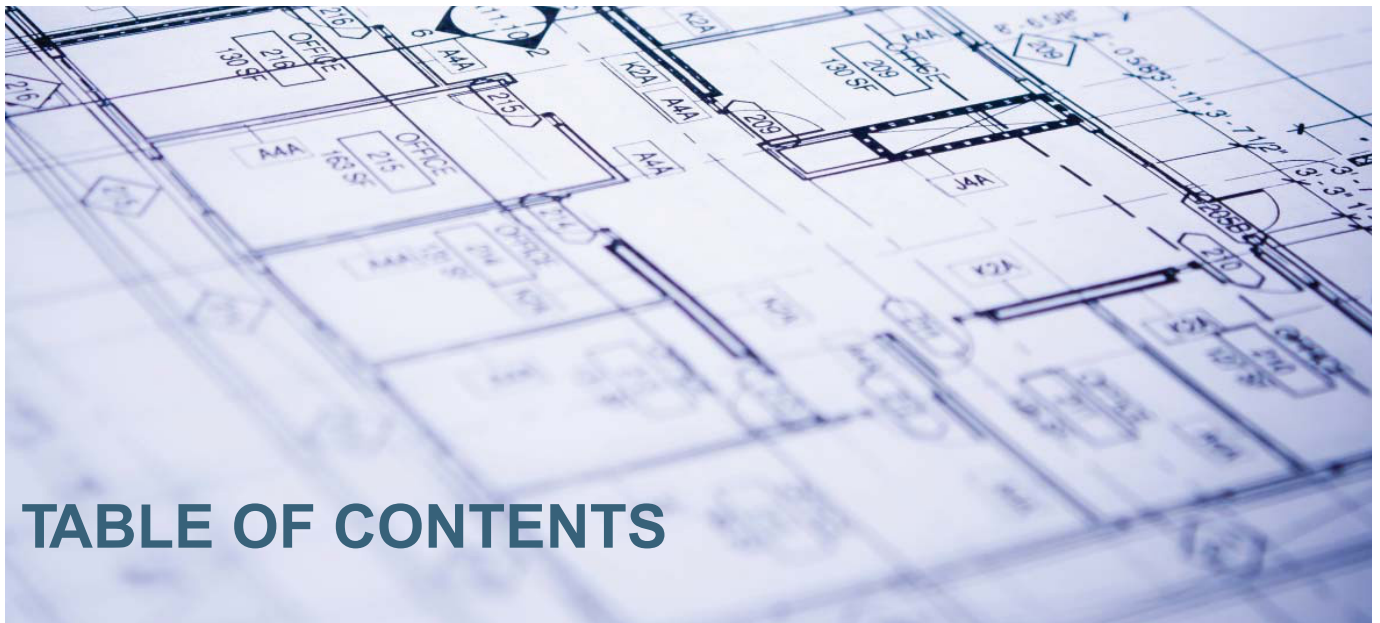
that have been in place for decades are changing to meet these challenges. This *Blueprint* underscores the need for the clean water sector to work together to shape the landscape of clean water going forward. It also highlights the type of collaboration that is needed to ensure a sustainable future that minimizes waste, maximizes resources, protects the ratepayer, improves the community, and embraces innovation in an unprecedented manner.

The joint Steering Committee and Task Force that did the hard work to make this *Blueprint* possible constitutes a model that is now in place not only for further joint efforts under the UOTF banner but potentially for other efforts that can advance the clean water sector's lofty objectives. We sincerely hope you find this document as fascinating and useful to read as our organizations did creating it!

Ken Kirk  
Executive Director  
NACWA

Glenn Reinhardt  
Executive Director  
WERF

Jeff Eger  
Executive Director  
WEF



# TABLE OF CONTENTS

<b>Executive Summary .....</b>	<b>1</b>
<b>Defining Utility of the Future .....</b>	<b>4</b>
Evolution of Today's Clean Water Utility .....	4
Defining the Utility of the Future: A New Model Is Emerging .....	5
The Business Case for Action: Why Utilities Are Transforming Themselves .....	6
A Vision for the Future .....	9
Enabling Innovation: What It Will Take to Realize the Vision .....	10
<b>Creating an Environment of Innovation .....</b>	<b>11</b>
Legislative and Regulatory Actions .....	11
Watershed-Based Water Quality Solutions .....	12
Total Maximum Daily Load Process .....	12
Pollutant Load Trading. ....	13
Adaptive Management. ....	13
Energy Extraction from Wastewater and Biosolids. ....	14
Expansion and Clarification of Current Energy Tax Credit and Incentive Programs .....	15
Use Multi-Media Benefit and Risk Frameworks to Resolve Regulatory Conflicts that Inhibit Energy Recovery at Clean Water Authorities. ....	15
Relief from Limits on Tax-Exempt Bonds Used to Finance Publicly Owned Renewable Energy Projects. ....	16
Including Combined Heat and Power (CHP) Projects at Clean Water Agencies in State Renewable Portfolio Standards (RPS). ....	16
Water Reuse.....	16

Water Rights.....	16
SRF Priorities to Include Water Reuse .....	17
Public Health Protection .....	17
Statutory Acknowledgement of Water Reuse .....	17
Executive Order on Water Reuse .....	18
Institutional and Programmatic Actions .....	18
Acknowledging and Paying for Stormwater as Part of Integrated Water Management. ....	19
Integrated Water Resources Decision Making and Management. ....	19
Financial and Risk Management Actions .....	20
Focus Federal Grant Programs on Implementation of UOTF Initiatives .....	21
Bureau of Reclamation. ....	21
Department of Energy .....	21
Environmental Protection Agency .....	22
Department of Agriculture. ....	22
ARPA-W: Early Stage Technology Innovation Grants .....	23
Pooled Risk Sharing Strategies .....	23
Risk Abatement Facility within ARPA-W .....	24
State Certification Reciprocity .....	24
Acknowledging Acceptable Performance Variability in New Permits. ....	25
Utility Leadership and Internal Management Actions .....	26
Lean Operations/Six Sigma for Continuous Improvement. ....	27
Nationally Consistent Operator Training and Certification .....	27
Environmental Education .....	27
Environmental Management Systems to Set Priorities .....	28
Smart Technology to Improve Service Delivery and Customer Care .....	28
<b>Extending the Vision with Bold Transformative Thinking .....</b>	<b>30</b>
Congressional Caucus to Advance UOTF Initiatives.....	30
Creating the Industry of the Future.....	31
An Intergovernmental Partnership to Address Adaptation to Extreme Weather Events .....	31
Creating Real Markets for Water .....	32
<b>Concluding Thoughts .....</b>	<b>34</b>
<b>Acknowledgements .....</b>	<b>36</b>
<b>Endnotes .....</b>	<b>39</b>





## EXECUTIVE SUMMARY

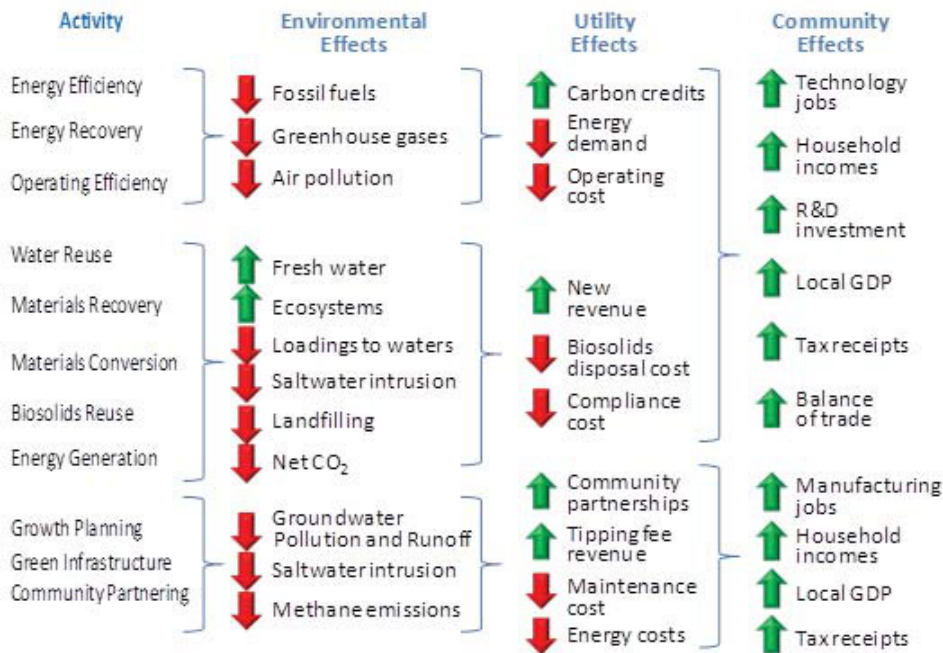
The clean water paradigm in the US is changing. The Water Resources Utility of the Future (UOTF) will transform the way traditional wastewater utilities view themselves and manage their operations. They also will transform their relationships with their communities and their contributions to local economies. This *Blueprint* presents the clean water industry's vision for the future as well as a series of actions that will help deliver our vision.

Today's utilities have evolved and matured over decades. Originally technical engineering entities, utility managers now embrace sophisticated management approaches and have developed innovative finance capabilities. These institutions have accomplished many of their goals — they are operationally efficient collectors and managers of household and industrial wastewaters and protectors of the quality of the nation's waterways. In recognition of these achievements, these utilities are increasingly renaming themselves "Water Resources Recovery Facilities" or "Clean Water Agencies."

The most progressive of today's clean water agencies are defining the UOTF. Instead of solely collecting and transporting wastewaters as far downstream as possible to central treatment plants where wastes are cleansed to meet permit limits prior to discharge to waterways, the UOTF transforms itself into a manager of valuable resources, a partner in local economic development, and a member of the watershed community seeking to deliver maximum environmental benefits at the least cost to society. It does this by reclaiming and reusing water, extracting and finding commercial uses for nutrients and other constituents, capturing waste heat and latent energy in biosolids and liquid streams, generating renewable energy using its land and other horizontal assets, and using green infrastructure to manage stormwater but also to improve urban quality of life more broadly.

These actions benefit the utility in the form of reduced costs and increased revenues. But they also deliver environmental, economic, and social benefits both locally and nationally:

Because we have examples of these sorts of innovations and outcomes, it is tempting to conclude that no further action is needed. Indeed, there are signs that the market for innovation in the clean water sector is beginning to bear fruit after many years of trial and error. But, resistance to change is strong, reinforced by



regulatory pressures, strained utility budgets, political reluctance to raise rates, customer confusion about the benefits of innovation, skyrocketing demands for capital competing for every dollar, risk and regret associated with technology failure, and venture capital looking elsewhere for faster and safer returns.

This *Blueprint for Action* examines these barriers, suggests incentives for innovation, and compiles a series of actions that could change the dynamics of this industry. It asks the US Congress to take a major role legislatively to assure that the Clean Water Act and other authorizing statutes fully support public and private enterprises across the clean water industry as they make the transition to the UOTF. Some actions call for legislative or regulatory changes to sanction watershed-based solutions to the nation's biggest water quality challenges. These would enable all sources of water quality contaminants to work together on socially cost-effective, market-based solutions while respecting the regulatory framework that has served us well for decades. Other actions call for modest changes to encourage water reuse and water conservation where it is feasible, needed, and cost-effective and for similarly incremental changes to enable clean water agencies to fully recover waste heat and energy and to produce clean, renewable energy at their facilities.

Other actions address financial and risk allocation conventions: focusing disparate federal financial support programs on UOTF objectives; maximizing efficient water use and reuse for new government buildings where it is environmentally and economically feasible to do so; stimulating the pace of technology innovation with a new advanced research and development program for clean water; and implementing pooled risk-sharing strategies and reciprocity for technology approval across the 50 states, both aimed at boosting adoption rates for new technologies.

Still others call for institutional or programmatic changes that for the most part, the clean water sector itself can implement working more closely with other municipal leadership and in some cases, state and/or federal regulators. Stronger support for Green Infrastructure from within the sector could help go beyond cost-effective stormwater control to frame a broader conversation about fundamental urban design. New models for integrated watershed planning would engage the public, civic leadership, drinking water utilities, and infrastructure

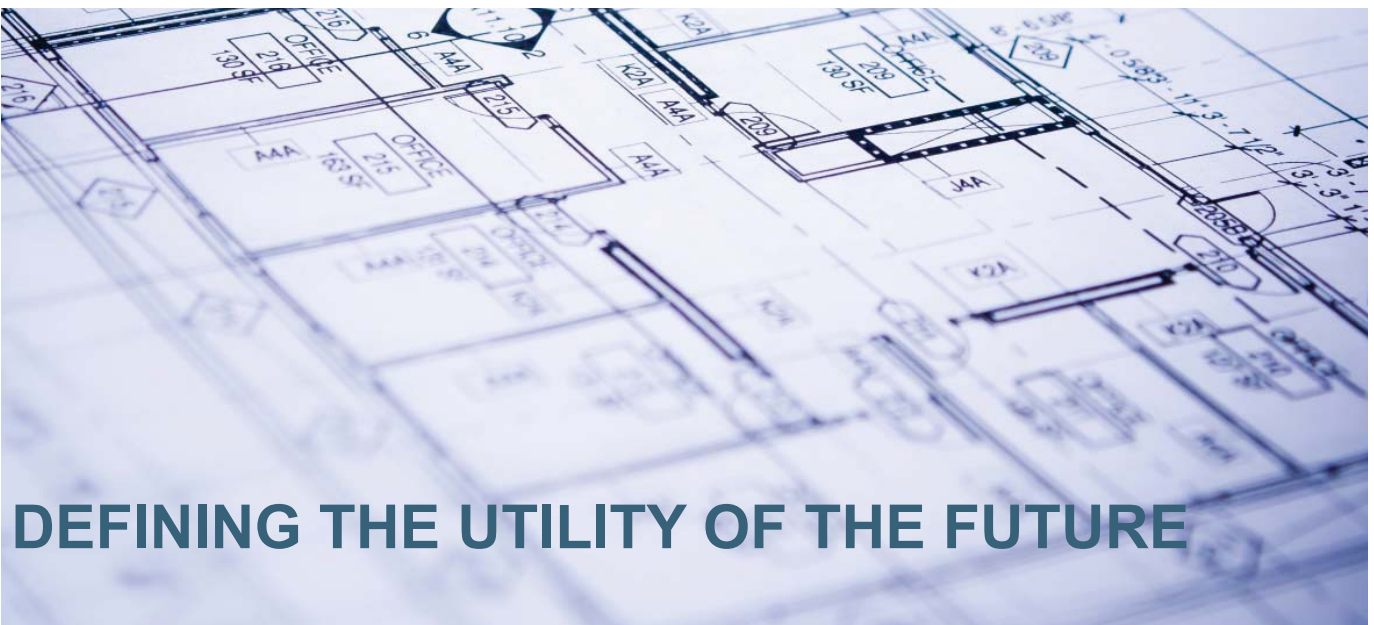
professionals to make better decisions.

Finally, the *Blueprint* makes a strong case that clean water agencies must continue to strengthen their institutions through productivity improvement processes/decision support tools such as Lean, Six Sigma, and sustainability-driven environmental management systems. The UOTF will increasingly use social media and smart technology to interact with customers and deliver services more efficiently. It will standardize operator certification to create a better trained and more mobile workforce. These approaches help ensure that the sector performs at peak levels so that external resources will have the greatest impact.

There should be little doubt that all of these changes to the status quo can have profound results. But the world around us will change even as we change our own sector. This *Blueprint*, therefore, also calls for bold, transformational thinking and cooperation in our advocacy, in research and development, and in education and outreach efforts. To shape the future, the *Blueprint* calls for creation of a Congressional caucus where water sector experts can collaborate with legislators to help drive UOTF initiatives and craft a 21st Century Watershed Act that builds on 40 years of Clean Water Act achievements but embraces UOTF initiatives more fully. As well, the *Blueprint* calls for an intergovernmental solution to improve the resilience of our infrastructure and our communities in response to extreme weather events like Hurricanes Sandy, Irene, or Katrina. It asks professional organizations that represent the clean water industry to work together to create the “Industry of the Future,” notably, by compiling a knowledge base of UOTF achievements and by working with the Environmental Protection Agency (EPA), other federal agencies, and the US Congress to implement key elements of this *Blueprint*. And, it calls on the states to develop or support water markets that address long- and short-term shortages in the face of drought.

At this early stage, we cannot fully envision the limits to this new paradigm. But, we do know that each clean water agency will take a somewhat different path from handlers of wastewater to managers of sustainable resources; from regulated entities seeking permit compliance to watershed-scale environmental leaders seeking least-cost/highest return environmental and social solutions; from engineers designing concrete and steel treatment works to regional planners designing and building weather-resilient, green communities; from isolated public service units to integrated members of economically thriving local economies.

This *Blueprint for Action* defines tangible steps — actions we can take as a nation to realize our vision.



# DEFINING THE UTILITY OF THE FUTURE

## Evolution of Today's Clean Water Utility

Urban sanitation in the US has evolved from the 18th century norm of dumping human waste in the streets, through the era of sewage collection but little treatment from the mid-1800s through the early-1900s, to early treatment efforts of the early to mid-1900s, to the Clean Water Act era of federal intervention requiring secondary or greater treatment following the Act's passage in 1972. According to a recent poll of 11,341 read-

ers conducted by the British Medical Journal, the advent of modern sanitation — collection and treatment of human wastewater prior to discharge — was the single most important public health advance of the last two centuries.<sup>1</sup>

The institutions that managed this transition have similarly evolved. In the very early years, sewer companies were nearly all owned and operated privately. As cities realized that modern sanitation held the key to a healthy population and economic growth, governments stepped in to expand collection networks. City public works departments that added rudimentary treatment to help clean up America's waterways from raw sewage discharge eventually became city sewer departments. Over the first couple of decades following Clean Water Act mandates for both greatly enhanced treatment and increasing financial sophistication, many city sewer agencies transitioned into public, but generally larger, regional and often independent authorities with broad technical, financial, legal, and management mandates. Not surprisingly, utility leadership diversified to include lawyers, economists, scientists, and management experts as well as engineers.

Today, America's urban clean water agencies are among the most sophisticated and effective utility organizations in the world. They deliver services to more than 90 percent of the US population; their operations affect nearly every river, stream, lake, estuary, and coastal waterway in the US; they manage more than \$500 billion in net depreciated assets; they finance about \$25 billion a year in capital investments; they manage a combined budget of more than \$55 billion a year.<sup>2</sup> They remove more than 90 percent of organic inputs, an estimated 55 percent of nutrients, and nearly all harmful bacteria.<sup>3</sup> Environmental outcomes are equally impressive — according to EPA and state analyses, municipal wastewater discharges account for less than 10% of remaining water quality impairment of the nation's rivers, streams, lakes, reservoirs, and coastal shoreline and only about 30% of impaired estuaries.<sup>4</sup>



The public health and environment-based model of the “traditional” wastewater treatment utility that evolved over the last 150 years has had as its principal objectives, to collect and transport human and industrial wastewater quickly and as far downstream as possible to central treatment works that could purify it sufficiently and cost-effectively so that when discharged, receiving waters would meet applicable environmental standards.

### Defining the Utility of the Future: A New Model Is Emerging

While traditional public health and environmental protection will always be central, the model for the utility of the future (UOTF) is evolving in new directions. It contemplates a new business approach where instead of simply collecting, treating, and disposing of municipal and industrial wastewater, the UOTF recognizes that its inputs are valuable resources. As such, its objectives are to separate, extract, reuse, or convert valuable water, energy and commodities from wastewater while using utility assets in innovative ways to reduce costs, increase revenues, and strengthen the local economy. The UOTF also seeks to engage more fully with others that share the water resource through watershed-based approaches, innovative partnerships and adaptive management techniques to ensure that actions maximize environmental benefits.

This is no longer an aspiration. With the help of technology developers, innovative US clean water agencies are beginning to take these steps today.

### A Model of the Wastewater Utility of the Future

Motivation	Activity	Innovation
Financial Strengthening (Increased Revenues, Reduced Costs)	Water Reuse	• Industrial Cooling, Recharge, Landscape, Golf Course Irrigation
	Materials Recovery	• NH <sub>4</sub> , P Compounds, N Compounds, Metals
	Materials Conversion	• Bioplastics, Pyrolysis Fuel Oil, Algal Biomass, Solid Fuels, Fertilizers
	Biosolids Reuse	• Liquid/Solid Fertilizer
	Energy Generation	• Photovoltaics, Wind Turbines
	Energy Recovery	• Methane, Hydrogen, Heat Recovery
	Operating Efficiency	• Automation and Smart Operations, Asset Management, Sourcing
Environmental Sustainability	Watershed Processes	• Alternatives to Point Source Controls
	Energy Efficiency	• Energy Efficiency Equipment & Networks
	Green Infrastructure	• Green Roofs, Urban Parks, Porous Pavement, Leak Detection & Repair
	Infiltration/Inflow Control	
Social and Community Well-Being	Growth Planning	• Sectoral Expansion, Targeted Upgrades, Managed Package Plants
	Green Infrastructure	• Urban Runoff Controls
	Infiltration/Inflow Control	• Biowaste Conversion To Methane
	Community Partnering	

The nation's clean water agencies are becoming more energy and operationally efficient, recovering energy from biosolids, reusing effluent and biosolids, recovering nutrient and other constituents, transforming waste streams into valuable new commodities, taking steps to support economic expansion by setting capital investment priorities to meet the needs of industry, and working collaboratively with other water quality interests within their watersheds.

## The Business Case for Action: Why Utilities Are Transforming Themselves

Part of the explanation for why clean water agencies are increasingly taking these actions lies in the natural evolution of the institutions as introduced earlier — after decades of experience, utilities simply have done a good job at meeting traditional objectives. Utilities also realize that for some constituents including nutrients, mercury, and emerging pollutants, the most effective environmental solutions and the most cost-effective solutions for the communities they serve increasingly involve others outside their direct control.

At the same time, we are reaching the limit of traditional sources of urban water in many areas, especially in the arid West; real costs of energy are rising steadily; and local budgets are stretched thin as utilities cope with political reluctance to raise rates even as costs of asset replacement and advanced treatment are escalating. In some cases, customers have limited ability to pay more for wastewater services. As a result, one of the key drivers is financial. Utilities that undertake transformative measures toward the UOTF, from treatment and disposal of wastewater to sustainable resource management, generate from their own perspective, net benefits in the form of reduced costs and increased revenues.

Importantly, these actions also result in benefits to the environment, the communities they serve, and both local and the national economies (see the exhibit below). Fewer residuals are released into the environment. Those that are released are generally in a more benign form. Many UOTF elements capture methane, a powerful greenhouse gas that would have been released to the atmosphere. Clean water agencies that substitute their own renewable forms of electricity for purchased electricity from carbon-based fuels reduce CO<sub>2</sub> emissions. Utility savings are passed back to the community in the form of mitigated rate increases and investments to strengthen service delivery and environmental quality.

### UOTF Leadership in the US

The Camden County Municipal Utility Authority (CCMUA), which serves 500,000 people across 37 communities in southwestern New Jersey, responded to economic pressures over the last five years with a series of UOTF initiatives including operating performance improvements, green infrastructure, solar energy, and currently underway, methane recovery from biosolids. Combined operating and capital costs are now lower than they were in 1996, effluent is cleaner as are the tributaries to the Delaware River into which CCMUA's effluent is discharged, odors from the plant have been significantly reduced, and vendor-financed solar photovoltaic arrays save about \$300,000 a year in energy costs.

The Milwaukee Metropolitan Sewerage District (MMSD), serving 1.1 million customers in 28 communities in the regional Lake Michigan watershed, has set stringent, 25-year sustainability, cost reduction and efficiency goals. MMSD's two guiding principles capture the essence of the UOTF: (1) Sustainable Bottom Line, balancing economic, environmental, operational, and social values; and (2) Water Quality Leadership and Collaboration, through strategic alliances and a watershed approach.

MMSD promotes future use of green infrastructure, cost-effective watershed-based permitting and effluent trading, renewable energy sources to meet 100% of its energy needs, reduction in its carbon footprint by 90% from a 2005 baseline through energy efficiency projects, and multiple steps to mitigate the effects of climate change.

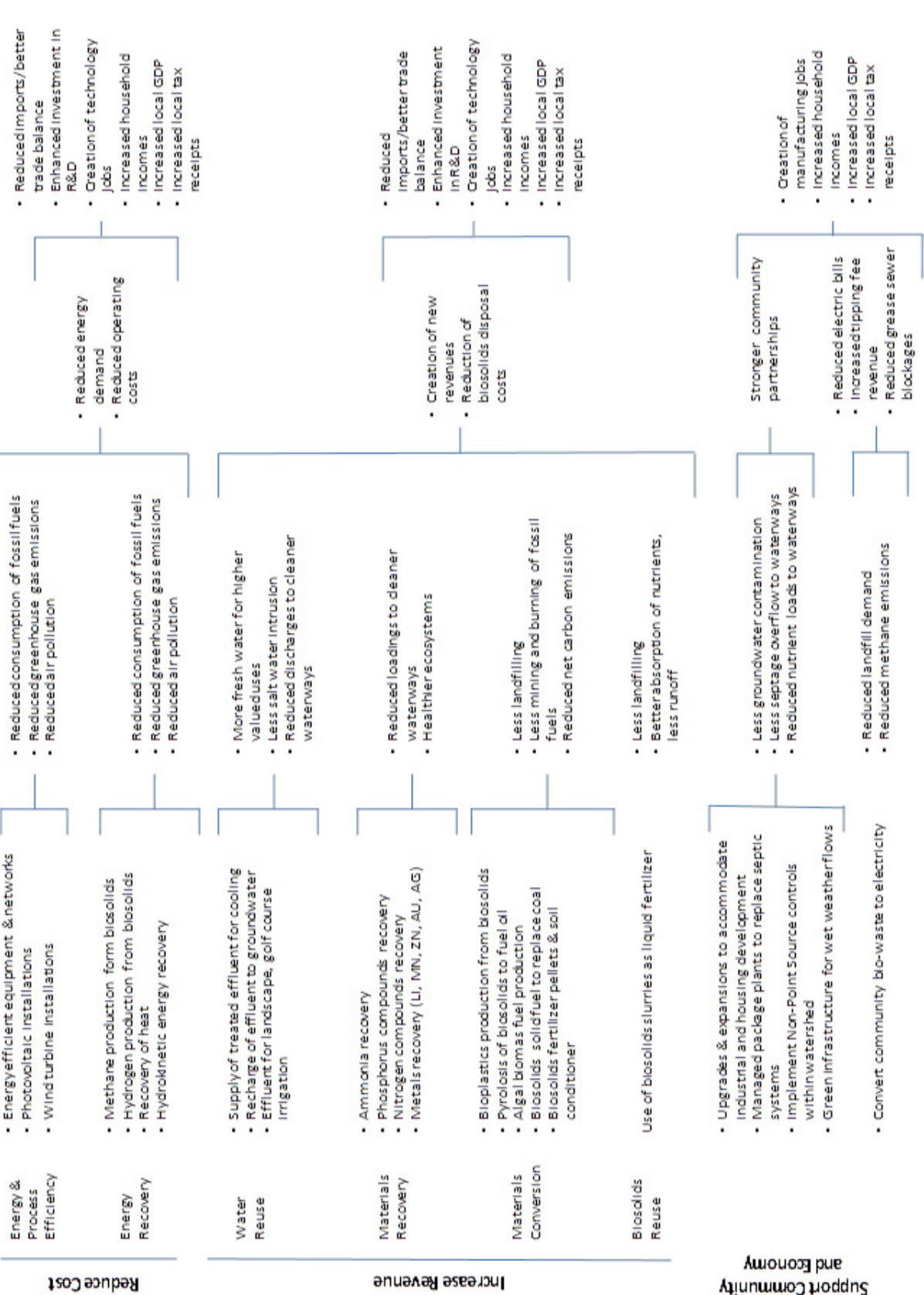


Regional Economic Effects

Utility Effects

Environmental Effects

Example Innovations



Local economies and in many cases, the national economy also benefit (these effects are illustrated in the graphic above). Reduced costs and increased revenues passed back to households and businesses create more disposable income, which can be reinvested in local goods and services. Business will have more capital to reinvest in plant and equipment as well as research and development. Part of this investment ends up creating new jobs in the technology and manufacturing sectors, which creates demand for new housing and other goods. As a result, governments enjoy growing tax receipts. Nationally, energy savings reduce imports and support a healthier balance of trade. Locally, utilities enjoy a dividend from these value dynamics as they come back to the utility in the form of increased demand and higher revenues.

Non-potable wastewater reuse (for industrial cooling, toilet flushing, landscape irrigation, fire fighting, and ecological enhancement), while still in its infancy, is increasing rapidly and offers cost-effective solutions to stressed regional water supplies in the West and in rapidly growing regions in the Southeast. Water reuse builds on the success of water conservation programs, which have allowed utilities to better manage infrastructure expansion needs. While non-potable wastewater reuse has doubled over the last decade to about 2 billion gallons a day, this represents only about 5 percent of total municipal wastewater discharged, according to the WaterReuse Association.<sup>5</sup> Where water scarcity threatens local economies or community stability, reuse offers “water independence” and greater local control of future economic growth. Locally generated electricity has similar benefits to communities that depend on fragile generation or transmission infrastructure for their supply.

US clean water agencies are increasingly engaging within their service areas as both public health and economic development leaders. Some activities are routine — coordinating with local and state highway agencies to replace sewer pipes when roads are being rebuilt or with telecommunications companies to lay fiber optic cable to under served areas when sewer lines are open for repair or replacement. Similarly, clean water agencies often work very closely with economic development agencies and real estate developers to furnish new or expanded services to potential entrants. Increasingly, public wastewater authorities are partnering with technology developers and solution providers to develop renewable energy, nutrient recovery, wastewater reuse, and operational efficiency projects. Similarly, clean water utility managers are increasingly taking the lead in watershed-scale management initiatives that address both water quality and water use.

## UOTF Leadership in the US

The East Bay Municipal Utility District (EBMUD) serving Oakland and surrounding areas east of San Francisco implemented an innovative program to blend community food waste (e.g. fats, oils, and grease from local restaurants and food waste from wineries and farms) with their own biosolids to produce enough methane-generated electricity to meet their own demand and send excess to the local grid. This 55,000 megawatt-hour/yr, \$31 million biogas project saves the utility \$3 million a year in energy and contributed to EBMUD's reduction of 13,300 metric tons of carbon from its 2010 baseline.

The Hampton Roads Sanitation District (HRSD), serving 1.6 million people in 17 cities in southeast Virginia, employs a unique nutrient recovery process in its Nansemond Treatment plant, one of nine large treatment facilities. In an innovative partnership with Ostara Nutrient Recovery Technologies, Inc., HRSD recovers and converts about 85 percent of phosphorus and 25 percent of ammonia from its dewatering process into a slow release fertilizer, Crystal Green™. Fertilizer revenues offset both capital and operating costs, effectively reducing discharge of nutrients at no cost to HRSD and compared to alternatives, saves ratepayers money. It also increases overall plant efficiency and replaces mined phosphorus fertilizer generating net economic and environmental gains. Dozens of clean water agencies have installed solar photovoltaic networks and/or erected wind turbines, converting their land and building assets into sources of renewable energy to power their facilities, reduce energy costs, and cut carbon emissions.

### **UOTF Transformations Worldwide**

Similar transformations are occurring around the world.

Singapore's Public Utility Board has been treating and reusing municipal wastewater to drinking water quality since 2003. With three "NEWater" plants in operation today, reused wastewater supplies 30 percent of Singapore's water needs, including supplies for industrial processing and blending with reservoir supplies for potable reuse. By 2060, Singapore estimates that NEWater will meet 50 percent of the nation's water needs.

Australia has embarked on a \$1.5 billion "Water Smart Australia" program to transform the way utilities and other institutions use and manage their water resources with broader and faster uptake of smart technologies. In one example, two private firms, Veolia Water and AquaNet Sydney acquired the license to supply Sydney Water, the public utility serving Australia's capital, with about 5 million gallons per day (mgd) of recycled water under a 20-year agreement. In this \$100 million project, treated secondary wastewater is diverted from discharge pipes and membrane filtered (ultra filtration and reverse osmosis) prior to storage and pumping to various sites for reuse as industrial cooling and process water, as well as irrigation and fighting fire.

### **A Vision for the Future**

While it is clear that America's clean water agencies are emerging in the direction of the UOTF, the pace, depth and breadth of this transformation remains unclear. As is the case at any fundamental turning point, many believe that we are unable to imagine today the extent to which utilities could eventually innovate if faced with the right supportive conditions.

Discussions of innovation often include elements like the amount and quality of research; adoption rates and risk sharing; cooperation between academic, public, and private institutions; institutional leadership; workforce education; R&D funding and access to venture capital; protection of intellectual property rights; and market forces and competition. Indeed, many of these are relevant to the US clean water sector. In terms of what may be needed to create optimal conditions for innovation, sector leaders can point to many incremental changes within the industry and across the legislative, administrative, financial, and institutional environments in which they operate. Some envision bold new directions for their organizations — new models for highly efficient, community-based delivery of public health, customer service, and technology development.

The UOTF will be more distributed, automated, and circular. Reuse facilities, for example, are likely to be distributed because it will make little economic sense to reuse wastewater after it is transported long distances downstream to centralized facilities and pumped back upstream to points of application. Significant savings in energy, infrastructure replacement, and maintenance are possible with distributed, local reuse for cool

ing or landscape irrigation. Automation and controls, web-enabled mobile devices, and cloud computing will help drive this transition and, more generally, enable unattended operations linked to central control rooms that monitor operations, adjust processes in real time, communicate with customers, and manage the entire commercial process. UOTF processes will be circular in the sense that water, nutrients, solids, heat, energy, and other constituents will be reused and not discarded.

The UOTF will be greener and more involved with others within its watershed. Greener as a result of energy efficiency and generation of renewable energy, but also greener in terms of the design of facilities and the choices of solutions, especially green infrastructure — natural land-based solutions in place of concrete and steel containment and treatment structures — to manage stormwater. Working with others at the watershed scale will enable clean water agencies to implement water quality solutions that save them and their communities' money while preserving valuable resources for their most productive uses, including for example, partnering with drinking water utilities on conservation to reduce sanitary wastewater and expansion of wastewater infrastructure.

## Enabling Innovation: What It Will Take to Realize the Vision

Fundamentally, innovation in the clean water sector is already taking place because it's good for the utility, the environment, the community, and the economy. The market is working, but at a slow and unpredictable pace. Left to evolve on its own, we might imagine a future where economic, environmental, and social forces drive a slow and bumpy transition to the UOTF. Relatively modest changes to current conditions would drive this transition more predictably to more locations, large and small, across the nation.

To effect the transition, utility leadership and management will have to continue, if not escalate their own programs that deliver continuous improvement in operational efficiency. External changes also are needed, however, to enhance incentives and reduce barriers that exist within legislation, regulations, administrative policies and priorities, finance and risk management conventions, and institutional partnerships.

In a 2012 survey of 62 medium and large clean water agencies, "project financing" and "regulatory concerns" were the two most frequently cited barriers to successful implementation of UOTF activities.<sup>6</sup> Technology risks were a close third. Among the least cited barriers were management reluctance, customer acceptance, and legal authority to take the sorts of UOTF actions described above. A few utilities said availability of land would prevent them from taking certain UOTF actions, such as installing solar photovoltaic farms or wind turbines. The following section explores the most prevalent of these barriers and proposes actions to mitigate them. It also examines ways to provide incentives for technology innovation and broader adoption across the sector.

### UOTF Opportunities Available to All Size Utilities

Simple process and equipment changes that cost about \$1 million generated about \$50,000/year in energy savings in Mukilteo Washington's 2.6 mgd facility.

Less than \$15,000 in advanced instrumentation and controls netted more than \$9,000 in annual energy savings at the Bartlett Tennessee wastewater plant.

The clean water utility serving Cascade Wisconsin (population: 706) is powered 100 percent with renewable energy from two 100 KW wind turbines, generating \$30,000/yr in energy savings (12.5 year payback) and reducing carbon emissions by 200 tons a year.

The 2 mgd clean water utility in Essex Junction Vermont recently installed two 30 kilowatt methane-fueled micro-turbines to generate its own electricity from biosolids. In this combined heat and power (CHP) project, waste heat offsets the cost of fuel needed to heat its anaerobic digesters. With total energy savings of \$33,000 a year, the project has a 7.84% IRR and reduces CO2 emissions by 30 tons a year.

The Gloversville-Johnstown NY wastewater facility serving 25,000 residents and 12 local industries generates 90% of its energy needs in its anaerobic digester processing biosolids from the plant plus local dairy wastes. It saves \$500,000 a year in energy costs and nets \$750,000 a year in additional revenue from dairy waste acceptance fees.





## CREATING AN ENVIRONMENT OF INNOVATION

Today's clean water agencies operate within a complex environment of legal, institutional, and financial forces that taken together, influence utility decisions. By using these forces to provide the right incentives and remove unnecessary barriers to innovation, the nation can help utilities be better stewards of the environment and suppliers of public health services. These actions can mitigate risk, strengthen project feasibility, and stimulate technology advancement with minimal resource commitments that generate high rates of economic, environmental, and social return. In short, by re-examining current policies from the perspective of the UOTF, we can further enhance environmental and public health outcomes while enabling emerging objectives like resource recovery, water reuse, energy efficiency, and sustainable communities.

This section suggests key changes to:

- Legislation and Regulations,
- Institutional and Programmatic Practices,
- Financial and Risk Management Conventions, and
- Utility Leadership and Internal Management Approaches.

Each of these areas will be explored subsequently in this section. Options and suggestions are drawn largely from the experiences of clean water agency practitioners, technology suppliers, academics, and industry analysts that have participated in this initiative. The intent is to be indicative, not categorical, so options should be taken as examples. This is a long-term transition and requires a long-term commitment at all levels.

### Legislative and Regulatory Actions

Among the many factors that will affect the types of UOTF activities that clean water agencies will pursue and why they will pursue them, none will be more important than the regulatory environment. In the same survey mentioned above, eight out of ten clean water agency managers said regulatory inflexibility is “very important” or “the most important” factor that needs to change to create more innovation in the sector.<sup>7</sup>

Key legal or regulatory actions include:

- Watershed-based processes and integrated approaches designed to deliver enhanced water quality outcomes at lower total social costs,
- Elimination of unintended barriers to widespread innovation on utility-scale energy recovery and generation, and
- Integration of water reuse into wider regional water supply solutions while managing public health risks and costs to all water users.

Given the key role that the US Congress will play in helping clean water agencies transition to the UOTF and today's fiscal realities, it seems logical that the industry advocate for a Congressional Caucus on the UOTF (*see page 30 for details*). Not only would it raise awareness among legislators, but it would elevate the importance of water to our society and ensure that the federal government is doing everything it can to support the industry. A Congressional UOTF Caucus also would enable the industry and regulators to interact regularly with federal legislators to sort through the issues and set priorities.

**Watershed-Based Water Quality Solutions.** After 40 years of ever-increasing regulatory pressures on US clean water agencies, most of the easy and cost-effective solutions are already in place. Achieving further reduc-

tions in pollutant loadings from wastewater treatment plants will be disproportionately expensive relative to potential gains in ambient water quality or relative to the cost of achieving the same or in many cases, far better ambient water quality, by addressing unregulated sources of pollutants or other forms of water quality impairment.<sup>8</sup> This suggests that from a community or broader social perspective, everyone would be better off if the Clean Water Act (CWA) and state equivalents formally encouraged processes that would enable local innovation around least-cost watershed scale water quality solutions rather than less effective, efficient, and equitable solutions because of their enforceability under current law and administrative practice. Following are examples of legislative and regulatory actions that would promote watershed solutions. Continued analysis of these and other watershed matters is needed, however, as more utilities participate in watershed-scale programs.

**Total Maximum Daily Load Process.** When effluent standards based on conventional wastewater treatment technology under the Clean Water Act are unable to produce ambient water quality that meets criteria for designated uses of the receiving water, the Act provides the states and EPA authority to establish a Total Maximum Daily Load (TMDL) for the pollutants of concern from all sources so that criteria will be met. States then allocate loadings of this pollutant to all point and nonpoint sources in the watershed. But since only point sources are regulated, the TMDL process must rely on voluntary actions to control non-point sources, which are some-

### **An Alternative to the Traditional TMDL**

The Dupage River Salt Creek Workgroup (DRSCW) offers a cost-effective alternative to the more formal TMDL process, which could serve as a model for other watersheds faced with similar challenges. This 360 square mile watershed in northeast Illinois lies in two counties and is home to 55 municipalities, 25 publicly owned treatment works (POTWs) that collectively discharge 15 mgd, 41 permitted MS4 stormwater discharges, and more than 21 dams that have significantly altered the hydrology of its natural waters.

Illinois EPA issued TMDLs for dissolved oxygen and chlorides in 2004, which if applied strictly to reduced effluent loadings at basin point sources, would have cost around \$50 million. Instead, municipalities, POTWs, and environmental organizations created DRSCW, a voluntary non-profit organization to decide how to meet ambient water quality goals. Through water quality monitoring, bio-assessment, modeling, and engineering analyses, DRSCW was able to meet dissolved oxygen goals through dam removal and habitat restoration at significant savings. DRSCW is addressing the chloride issue through education on alternative deicing and anti-icing methods.



## Examples of Successful Trading Programs

One recent program that enables trading of nutrient reductions from all sources across nine states in the Ohio River Basin could serve as a model for other watershed-based trading programs. Launched in 2009 with some states joining as recently as 2012, the project is a first-of-its-kind interstate multi-credit trading program. It represents a comprehensive approach to developing markets for nitrogen, phosphorus and potentially greenhouse gas reduction credits. At full scale, it would become the world's largest water quality trading program potentially creating credit markets for 46 power plants, thousands of wastewater facilities and other industries, and up to 230,000 farmers.

As part of its program to meet nitrogen load reductions to Long Island Sound, the State of Connecticut has established a successful nitrogen credit exchange/ trading program. During the period 2002-2009, some \$46 million in nitrogen credits were bought and sold, providing a cost-effective alternative for 79 clean water agencies to meet their nitrogen waste load allocations as part of the TMDL adopted for Long Island Sound. Compared to other alternatives, these facilities have saved between \$300 and \$400 million through trading.

In 2012, the US Department of Agriculture awarded \$2.35 million in grants to organizations in the Chesapeake Bay watershed to build the infrastructure needed to support a bay-wide water quality trading program. This program is expected to reduce loadings of nutrient and other pollutants to the Bay at significant savings to clean water agencies, farmers, and stormwater utilities.

times subsidized through various state and federal grants. Often, the result is load reductions disproportionately allocated to point sources, against which EPA and the states can take legal action, rather than nonpoint sources to which enforceable regulations do not apply.<sup>9</sup> Because of the uncertainties associated with results from nonpoint source programs, EPA suggests in its TMDL guidance that it may be necessary to reopen CWA permits and require more stringent limits on point sources in the event that nonpoint sources are unable to reduce their loadings.

***Action: With Congressional authorization as needed, EPA and the states should reform the TMDL process to achieve reliable, least-cost loadings reductions regardless of source and/or other in-stream actions to restore ambient water quality goals, with appropriate financial support where needed, monitoring, and enforcement.***

***Pollutant Load Trading.*** Currently, many states enable groups of wastewater treatment utilities within a watershed to work together — that is, trade pollutant loadings among themselves — to attain ambient water quality standards through any combination of loadings that minimizes aggregate costs. Until very recently, states did not allow such trading among point and non-point sources, even though in some watersheds, the cost of removing pollutants per unit removed from non-point sources is <sup>10</sup> to 100 times less than point sources.<sup>10</sup> One of the key features of a successful trading program is regulatory flexibility, which enables regulated sources adequate time to attain superior water quality outcomes across all dischargers rather than focus strictly on ways to meet their own ever-increasing permit restrictions.

***Action: Congress should support greater adoption of watershed-based solutions by explicitly encouraging trading in the Clean Water Act and extending permit***

***terms for facilities that are participating in these processes. Similarly, EPA should work with delegated states to promote viable and flexible trading programs.***

***Adaptive Management.*** The term “adaptive management” in the broadest sense refers to the philosophy of using new information to modify actions within a long term project strategy. The Wisconsin Department of Natural Resources has incorporated the term in a somewhat more narrowly defined man-

ner to describe a regulatory compliance strategy whereby a permitted point source (or group of point sources) will work towards water quality compliance with a state designated water quality standard by developing partnerships within the watershed to balance load reduction efforts by both point and non point sources. The intent is to reduce discharges of the parameter of concern to the water body by the most cost effective method rather than relying strictly on reductions by point sources through installing tertiary treatment. Point source dischargers are afforded flexibility and can defer or avoid costly infrastructure installation by facilitating load reductions within the agriculture or other non point sectors. Adaptive management differs from water quality trading in that it doesn't require trade ratios or margins of safety, but does require demonstration of eventual compliance with the ambient water quality criteria in the receiving water. Adaptive management activities often achieve complementary improvements in the watershed in addition to reduction of specific parameters of concern.

***Action: EPA should amend its TMDL regulations and guidance to formally incorporate adaptive management as part of the TMDL approach. Until it does, EPA should issue guidance to state regulators that encourages states to pursue these voluntary processes based on the Wisconsin model.***

### Energy Extraction from Wastewater and Biosolids.

According to recent industry analyses, heat and embedded energy in biosolids extracted by US clean water agencies contain enough energy to meet up to 12% of US electricity demand.<sup>11</sup> Aside from the savings in utility energy costs and potentially, revenues from the sale of surplus energy and carbon credits, energy extraction/conversion at wastewater facilities contributes to energy independence, reduces the community's carbon footprint, and saves ratepayers money. As documented above, some US clean water agencies are converting their wastewater solids to energy using anaerobic digesters to produce methane, which is converted to electricity. Others use dry biosolids as a fuel. A promising technology converts biosolids to a combustible gas via pyrolysis. Energy also is recoverable from wastewater itself. Treatment plants, especially in cold climates use heat exchangers to extract heat from effluent to pre-heat processes, offsetting energy demand. Promising technologies include solar conversion of nutrients in wastewater effluent to algae

### Extracting Energy from Wastewater and Biosolids

San Diego's Point Loma Wastewater Treatment Plant operates a 1,350 kilowatt hydroelectric plant that captures hydrokinetic energy sufficient to power 1,300 homes as its treated effluent drops 90 feet prior to discharge through a 4.5 mile ocean outfall.

Irvine Ranch California, serving roughly 500,000 people in Orange County, is now installing a biosolids to biogas plant, which will save its customers more than \$10 million a year for the next 20 years (about \$100/year per customer).

Massachusetts Water Resources Authority, serving 43 communities in greater Boston, generates about a quarter of its energy needs from its own power plant fueled by methane produced in its anaerobic digesters on Deer Island. This process, which also produces hot water used in treatment processes, saves \$15 million a year in fuel oil costs and another \$2.8 million a year in electricity.

Dried biosolids also can be used as a much cleaner fuel than coal. A cement kiln in Union Bridge Maryland uses about 40,000 tons/year of dried biosolids pellets in place of coal. Another kiln in Rialto California uses 1,640 wet tons/day of biosolids converted to 300 tons/day of dry biosolids fuel (95% solids) with 5,529 Btu/lb in energy value (slightly less than low grade coal).

Detroit's Water and Sewerage Department is planning to construct a biosolids drying facility by 2016 to produce up to 200 dry tons/day of dried pellets, which may be used as a fuel source in electric power plants in place of coal, helping meet the state's mandate of 10% of its power from renewable sources. Dried pellets also may be used as a fertilizer/soil amendment.

for use in biofuels production and use of wastewater fuel cells to capture electricity created when microbes convert compounds of carbon and nitrogen. Following are examples of energy-related legislative and regulatory actions that would provide incentives for clean water authorities to recover energy or eliminate barriers that inhibit some facilities from doing so. Continued analysis of these and other energy-related matters is needed, however, as more utilities take on energy projects.

*Expansion and Clarification of Current Energy Tax Credit and Incentive Programs.* Some of the existing federal tax credit and incentive programs designed to promote investment in renewable energy did not necessarily contemplate clean water agencies as developers or partners with private developers. Included here are such programs as the renewable fuel standard, renewable energy production tax credit, clean renewable energy bonds, and qualified energy conservation bonds. As the nation moves toward energy independence through for example, development of renewable energy standards, the wastewater community needs to be part of the conversation to ensure that the energy they generate is included.

***Action: The clean water sector should work with Congress to examine these programs to assure that they do not exclude or limit their participation and where it does or can, they should work with Congress to amend authorizing language to ensure that private investors have every incentive to partner with clean water authorities to extract energy from wastewater and biosolids, and to ensure that renewable energy from these facilities however generated is eligible to participate in markets for renewable energy.***

*Use Multi-Media Benefit and Risk Frameworks to Resolve Regulatory Conflicts that Inhibit Energy Recovery at Clean Water Authorities.* As America's clean water authorities innovate around energy recovery, conflicts will inevitably arise between energy recovery and other objectives. These can be resolved using multi-media risk and benefit analyses. In March 2011, for example, EPA finalized new source performance standards and emission guidelines for new and existing sewage sludge incinerators intended to reduce emissions of nine pollutants from these facilities.<sup>12</sup> This rule is currently the subject of litigation. According to the wastewater industry, these rules will make it prohibitively expensive for clean water agencies to invest in innovative biosolids incineration/energy production technologies. It is questionable whether the modest potential reduction in public health risk from this proposed rule exceeds the risks associated with the alternative of landfilling biosolids. Where these incinerators are used to recover energy, additional environmental and public health returns in the form of reduced fossil fuel use and reduced carbon and methane emissions should exceed any gains from the proposed rule.

***Action: EPA should revise the March 2011 sewage sludge incineration rule to exclude sewage sludge incinerators that use biosolids to generate energy. More broadly, EPA should work with clean water authorities to formulate procedures that account for multi-media assessment of energy and resource recovery alternatives at their facilities, so that future rules can take a broader, more holistic perspective of all environmental benefits and risks.***

*Relief from Limits on Tax-Exempt Bonds Used to Finance Publicly Owned Renewable Energy Projects.* Under section 141 of the Internal Revenue Code, public clean water agencies cannot issue tax-exempt bonds to finance energy recovery or energy production projects if more than 10% of the energy produced is sold to private users, including generally, feeding unused electricity back to the grid.<sup>13</sup> This rule can affect projects that recover methane from wastewater solids, create electricity by burning biosolids fuels, recover municipal landfill methane to produce electricity, or use utility land to generate electricity from photovoltaics or wind-powered generators. In place of low-cost tax-exempt bonds, utilities faced with this rule can reduce output of their project to just their own needs, use higher-cost private activity bonds or taxable bonds, or partner with an energy service company who finances the project. All of these alternatives either limit energy recovery potential and/or increase costs.

***Action: Congress should relax the private-use test for publicly owned and operated energy recovery or production projects as long as the issuer first satisfies 100% of its own energy needs before selling excess production.***

*Including Combined Heat and Power (CHP) Projects at Clean Water Agencies in State Renewable Portfolio Standards (RPS).* Many state RPSs require that a specified percentage (typically 10-30%) of energy produced within the state comes from renewable energy sources. As of October 2012, 37 states and the District of Columbia had established RPS requirements or goals. But only 28 of these states included biogas from the anaerobic digestion of wastewater solids or waste heat recovery as an eligible resource.<sup>14</sup> RPSs stimulate market and technology development for renewable energy. If states do not include biogas (methane), synthetic gas (other carbon-based combustible fuels) and heat recovery, which include nearly all of the methane recovery/electricity generation projects at wastewater treatment plants as an eligible resource, energy solution providers and energy users lose valuable incentives to invest in or buy power from these sources.

***Action: State legislatures should amend their RPS eligibilities to include energy recovery projects from biosolids. To help legislatures understand why such changes would generate triple bottom-line benefits, the wastewater industry should educate state legislatures on this matter.***

**Water Reuse.** Most federal and state water use and water quality legislation was written and first implemented decades ago, before water reuse was widely practiced. As a result, these statutes and the regulations pursuant to them could be easily clarified to encourage more reuse where it can be shown to be valuable, cost-effective, and safe. In its recent study of water reuse, the National Academy of Science noted several instances where legislative or regulatory initiatives would result in such outcomes.<sup>15</sup> Continued analysis of these and other reuse matters is needed, however, as more utilities take on reuse projects.

**Water Rights.** According to the National Academy report, state legislation that governs creation and allocation of water rights to users generally was not written contemplating reuse of wastewater.<sup>16</sup> Many states have not yet addressed this matter and conventions vary widely among the states that have amended their water laws to accommodate reclaimed water. Generally, it remains unclear whether reclaimed wastewater creates a new supply or a right to use it, and if it does, to whom this right belongs, especially where downstream uses including the environment could be disadvantaged. In



some states, utilities have explicit, but limited rights to reuse water, as is the case in Colorado where water reuse is limited to the amount imported from outside the basin or that originated as groundwater. In Utah and New Mexico, utilities essentially must have or buy water rights before they can reuse wastewater. Legislation in other states, like Florida and New Jersey explicitly encourages and promotes reuse of wastewater.

***Action: States should clarify use rights associated with, and rules governing groundwater storage of, reclaimed wastewater so that private developers and public agencies would have stronger incentives to engage in non-potable reuse of wastewater.***

***SRF Priorities to Include Water Reuse.*** Under the Clean Water Act, states have wide latitude to set priorities for funding projects using State Revolving Fund (SRF) monies. States facing strong demand and limited natural supplies for water could stimulate local consideration of reuse by driving more SRF funds to these projects through, for example, explicitly recognizing wastewater recycling and reuse as an eligible category for funding, working with SRF borrowers to structure SRF applications that meet other state requirements for funding, and generally taking other actions that promote needed and feasible wastewater reuse projects.

***Action: States in which additional water reuse would help meet future demand for water supplies safely and at least cost should amend SRF eligibilities to include wastewater reuse.***

***Public Health Protection.*** Recent risk assessments have shown that properly designed and operated indirect potable wastewater reuse presents public health risks that are orders of magnitude lower than so-called “de-facto” reuse, which already occurs in many places today where public water supplies are drawn from waterways into which treated municipal wastewater is discharged upstream.<sup>17</sup> These sorts of risk comparisons are part of the solution to public acceptance of water reuse, but water utility boards are still reluctant to propose, and the public is still reluctant to accept, direct potable reuse.<sup>18</sup> US experience with de-facto reuse across major river systems plus the experience of Singapore (see side bar on page 9) suggests that at least some forms of potable reuse can be designed to be safe.

***Action: Consistent with the findings of the National Academy in its recent study on water reuse, Congress should amend the Safe Drinking Water Act to make explicit certain safeguards (e.g. advanced treatment, increased monitoring) that are needed to assure that potable reuse can indeed be safe.***

***Statutory Acknowledgement of Water Reuse.*** Regulatory frameworks, most notably the Safe Drinking Water Act and Clean Water Act, fail to address adequately the important role that recycled water supplies can play in terms of public health and safety or sustainable water quality improvement.

***Action: Congress should consider three amendments to the Clean Water Act to acknowledge water recycling and reuse where it is feasible and desirable locally: 1) redefine POTW to identify its ability to be a resource provider, 2) extend permit terms for projects that employ resource recovery activities***

*such as water recycling, 3) name water reuse as eligible for federal financial assistance.*

*Executive Order on Water Reuse.* Currently, at least nine federal agencies play some role in water reuse.<sup>19</sup> By working more closely together, these federal agencies can improve results of their programs and perhaps eliminate duplication. Local clean water agencies and technology developers also would benefit. An Executive Order on water reuse could help coordinate federal reuse policies and programs and stimulate innovation.

***Action: The President of the United States should consider issuing an Executive Order that (a) creates a Federal Interagency Task Force on Water Reuse to coordinate all federal water reuse initiatives, and (b) sets a goal for minimum percentages of reclaimed water for all new federal installations (similar to the federal goal for recycled paper).***

## Institutional and Programmatic Actions

In many cases, simply changing program priorities or administrative processes can drive innovation and help clean water agencies implement effective and efficient UOTF activities.

### Leveraging Green Infrastructure to Transform Urban Spaces

Green infrastructure (and reduction of infiltration and inflow to collection systems) offers cities innovative ways to reduce stormwater flows to treatment facilities and polluted runoff to water bodies. Some cities are taking green infrastructure beyond water quality by embedding it within broader initiatives to restructure ways to use urban lands and the way people live, work, and play in urban environments. Significant opportunities exist in vacant lots, roofs, roads, bridges, corridors, medians, parking lots, and other paved spaces for green approaches to stormwater management.

Cities like Washington DC, Portland OR, Syracuse NY, New York City, and Philadelphia PA are taking such steps today. Under a \$2 billion agreement signed in 2012 between the two parties, for example, EPA will provide technical support and monitoring including school gardens and low-income neighborhood revitalization through green design in partnership with Philadelphia on the city's 25-year "Green City, Clean Waters" plan, which aims to protect and enhance urban watersheds by managing stormwater with green infrastructure techniques.

DC Water's new Clean Rivers, Green District partnership with Washington DC uses green infrastructure to prevent pollution from coming into contact with rainwater in the first place, while also providing public health, livability, and economic benefits for the District and its residents.

The New York City Green Infrastructure Plan predicts that, "every fully vegetated acre of green infrastructure would provide total annual benefits of \$8,522 in reduced energy demand, \$166 in reduced CO<sub>2</sub> emissions, \$1,044 in improved air quality, and \$4,725 in increased property value."

Next generation stormwater utilities can replicate and extend this concept more broadly by partnering with urban planning agencies, architecture and planning faculty at local universities, and experts from across the industry and related professions that have pioneered and demonstrated these concepts.

EPA supports these approaches with a variety of grants as do many other federal and state programs, including prominently, the federal and state Departments of Transportation.



Options include:

- Acknowledging and Paying for Stormwater as Part of a Broader Integrated Water Management Approach
- Leveraging Green Infrastructure to Transform Urban Environments
- Integrated Water Resources Decision Making and Management

**Acknowledging and Paying for Stormwater as Part of Integrated Water Management.** Municipal separate storm sewer systems (MS4s) are required to develop and implement stormwater management programs to reduce contamination of stormwater runoff within their jurisdictions. According to the most recent analysis, the US will have to spend some \$42 billion over the next <sup>20</sup> years to comply with requirements.<sup>20</sup> Many urban stormwater control authorities have designed equitable and efficient ways to finance their programs, including frequently, user fees based on land-owners' proportion of impervious surface within the watershed. A growing number of lawsuits by ratepayers, however, are challenging new stormwater fee programs, arguing that impervious-based charges for stormwater represent an illegal tax. Other complications include legal challenges to stormwater programs that require on-site retention of stormwater, a low-cost and green approach, arguing that they constitute illegal local land use controls. Utility leadership can help avoid costly legal challenges that can delay implementation by educating the public about the long-run benefits of effective, efficient, and equitable stormwater management programs such as least life-cycle costs to ratepayers, distribution of costs in proportion to source of runoff, preservation of open space, and creation of habitat.

***Action: Using materials that they have already developed, EPA should support local stormwater management entities in initiatives designed to educate the public about the value of, and equitable ways to pay for, stormwater management as one component of integrated management plans for all water resources within local watersheds.***

**Integrated Water Resources Decision Making and Management.** The transition to the UOTF will be much more effective and efficient to the extent that clean water agencies make joint decisions with other water management and regional planning interests within their service areas. The complication is that in nearly all watersheds, responsibility for these decisions is highly fragmented into multiple public and private entities. Even modest changes in the institutional structure of these entities could have profound results in terms of planning for and allocation of water from all sources to all uses according to availability, cost, and quality. One recent water industry examination of integrated wa-

ter management called for federal guidance on a “one water” policy from the President’s Council on Environmental Quality, better coordination or consolidation of the many federal water programs, and creation and funding of a national water census.<sup>21</sup>

There should be no doubt that these initiatives would have positive outcomes. But, as all analyses rightly point out, sustainable solutions are likely to come as much from the bottom up as from the top down — from those that allocate, regulate, use, price, and pay for water in all its forms (drinking, wastewater, stormwater, etc.). In the short run, clean water utility leadership can organize the many entities that use water or affect its quality within their watershed.

*Action: Regional governments should consider creating joint water/wastewater/stormwater utilities that can manage all water within their jurisdictional boundaries as a single resource. Further, these unified water management enterprises would be better equipped to coordinate more effectively with land-use, transport, housing, energy, and other local authorities that use or affect water.*

## Financial and Risk Management Actions

As regulations and their compliance costs increase and aging infrastructure needs to be replaced, competition for available funds will remain one of the top barriers to more widespread adoption of UOTF initiatives. Ultimately, most UOTF initiatives will reduce future costs or raise additional revenues, so part of the funding solution lies in utility leadership and communication to the public about their own transition and the future of the community under a traditional path versus the UOTF. But many of the benefits of the latter course accrue far beyond community boundaries, for example, to cities downstream that enjoy cleaner waterways and safer water supplies, indeed to the nation as a whole as UOTF initiatives move the nation toward energy independence, reduced greenhouse gas emissions, creation of green jobs, and a stronger economy.

The business case for the UOTF, therefore, argues strongly in favor of a blended approach to funding that draws on local as well as national sources, both public and private. Such an approach would rely on existing grant and loan programs as well as the public capital markets to provide project financing. It also would draw on more innovative partnerships with private solution providers like energy service companies and technol-

ogy developers that share risks and rewards with public waste-

water entities through, for example, performance contracting.

Most forms of long-term funding for infrastructure replacement do a good job of reducing risks associated with failure of assets that could wear out. They are generally less effective in reducing risks associated with performance of new and innovative technologies that promise to improve performance and/or reduce total life-cycle costs. Many suggest that adoption rates for new technology within the municipal clean water sector are too slow to compel serious investment in technology innovation, and in turn, this limit gains in productivity of invested capital in this sector.<sup>22</sup>

## Federal Grant Programs That Support UOTF Initiatives

**US Department of the Interior, Bureau of Reclamation.** Title XVI 25% matching grants up to \$20 million to design and construct demonstration and permanent water reclamation and reuse facilities in the 17 continental US states and to conduct research on reclamation and desalting of impaired surface and groundwater.

**US Department of Energy.** Energy Efficiency Block Grants to cities, counties, and states to implement energy efficiency projects and programs as well as State Energy Program grants that provide states willing to match at 20% grants to fund energy efficiency and renewable energy programs, including establishment of revolving loan funds to finance local projects.

**Environmental Protection Agency.** Clean Water and Drinking Water State Revolving Fund capitalization grants to states that fund capital investments to comply with the Clean Water Act and Safe Drinking Water Act, respectively, and separately, a Green Infrastructure Program that provides technical assistance to communities pursuing green infrastructure solutions to comply with stormwater requirements.

**US Department of Agriculture.** Rural Utility Service financial assistance to towns with populations less than 10,000 for wastewater and stormwater facilities. Rural Development loans and guarantees to build bio-refineries. Natural Resource Conservation Service and Farm Service Agency for conservation objectives, including nutrient controls.

Options include:

- Focusing Expanded Federal Grants Programs on UOTF Initiatives
- Early Stage Technology Innovation Grants: ARPA-W
- Strategies to Reduce Risk of Technology Adoption
- Financial Incentives to Reclaim and Reuse Wastewater

**Focus Federal Grant Programs on Implementation of UOTF Initiatives.** At least four federal agencies support grant programs that have helped or could help clean water agencies plan and implement UOTF actions: the US Environmental Protection Agency (EPA), the US Department of Energy (DOE), the US Department of Agriculture, and the Bureau of Reclamation (USBR) within the US Department of the Interior.<sup>23</sup> These programs could focus greater attention on implementation of UOTF activities (research and development will be discussed in a subsequent section) and as they do, clean water agencies contemplating UOTF actions should familiarize themselves with these programs and participate in them as appropriate.

**Bureau of Reclamation.** Launched in 1992 (Public Law 102-575), the USBR's Title XVI program authorized the Department of the Interior to design and construct demonstration and permanent facilities to reclaim and reuse wastewater in the 17 Western states. As of November 2010, approximately \$531 million has been appropriated for 42 of the 53 authorized Title XVI projects. The program has generally provided cost sharing for up to 25 percent of the total project costs, with a project maximum of \$20 million. As of the end of 2010, the program had a \$630 million backlog for projects awaiting appropriations, up from the \$354 million backlog in 2006.

***Action: The Bureau should focus federal grants on reuse projects, without which returns would be insufficient to attract private co-investment and where they deliver high net economic and social benefits.***

**Department of Energy.** Among the many renewable energy incentive programs that DOE administers, the Energy Efficiency and Conservation Block Grant (EECBG) and State Energy Program (SEP) grants are perhaps best suited to support UOTF projects at clean water agencies.<sup>24</sup> EECBG, passed in 2007 and was first funded in 2009, provided formula block and competitive grants to cities, counties, states, and Indian tribes to implement energy efficiency projects and programs. SEP provides grants to states that match them at 20% to implement a wide variety of energy efficiency and renewable energy programs and projects. About 95% of the \$6.3 billion funds appropriated to these two programs under the 2009 American Recovery and Reinvestment Act (ARRA) are obligated to existing activities, some of which benefitted clean water agencies directly, including EECBG funds that helped finance a new power plant in Miami-Dade County Florida that burns methane recovered from the local clean water agency and local landfill.

***Actions. (1) Clean water agencies should take advantage of any unobligated grant funds and to the extent they are eligible, loans from the 29 states that established revolving loan funds using SEP grants.<sup>25</sup> (2) On the basis of strong performance of the 2009 ARRA funding, the wastewater community***

***should advocate for continued funding under these programs, with explicit acknowledgement that clean water agencies should be priority recipients of funding assistance.***

*Environmental Protection Agency.* The largest sources of loans and limited grants available to utilities for UOTF initiatives are the 50 EPA grant-funded State Revolving Funds. Given their key role, there should be no doubt that continued funding of these institutions is critical.<sup>26</sup> In addition, EPA's Green Infrastructure Program is providing technical assistance to 27 community partnerships (10 in 2011 and 27 in 2012) to support their efforts to implement green infrastructure solutions to stormwater problems.<sup>27</sup> Assistance (e.g. public charrettes, tactical team assistance, and information sharing on financing) responds to needs, but does not include grants or loans. The value of this assistance is generally small (\$35,000-\$75,000) and focused on specific products like code reviews, conceptual designs and strategies for green infrastructure approaches, selection of green infrastructure elements, modeling the performance of green infrastructure, or evaluating costs and benefits of green infrastructure. While small, recipients often use this assistance strategically, to meet specific scientific or research needs, to motivate broad participation across their communities, and to engage regulators on matters of affordability and compliance scheduling. An October 2011 joint statement of EPA's Office of Water and Office of Enforcement not only endorsed green infrastructure as part of integrated watershed planning, but noted that EPA and the states have, "flexibility to evaluate a municipality's financial capability...and to set appropriate compliance schedules." Clean water agencies, especially those that have stormwater management responsibility are typically participants of these community partnerships.

***Action: The wastewater community should advocate for a continuation, if not an expansion of these EPA programs. Continued federal funding not only preserves the intergovernmental partnership embedded within the Clean Water Act, it creates jobs and accounts for the "public goods" benefits that all clean water utilities deliver when they ship cleaner water to downstream users; reduce greenhouse gas emissions through energy efficiency, methane reduction, and renewable energy production; and reduce runoff from green infrastructure.***

*Department of Agriculture.* USDA administers several grant programs that can help utilities achieve their UOTF goals. The Rural Utility Service provides loans, loan guarantees, and grants for wastewater and stormwater systems to towns with populations of up to 10,000. USDA Rural Development provides loan guarantees to rural communities to build or retrofit commercial scale "bio-refineries," which includes biosolids as an eligible feedstock. Its Repowering Assistance Program provides 50% grants to producers and sellers of advanced biofuels, including biogas (methane) derived from wastewater biosolids. A sister program provides annual production subsidies to bio-refineries that scale up production year-on-year. USDA administers multiple voluntary programs accompanied by some \$2-3 billion a year in federal subsidies largely through its Natural Resources Conservation Service and Farm Service Agency to achieve a wide variety of conservation objectives. Fundamentally, these programs are designed to reduce soil erosion and wetlands loss, protect habitat, and improve farm productivity. But about 10-15% is used to control nutrient runoff and these funds could be used more widely to meet watershed nutrient loadings limits at significantly less cost than removing the same

nutrient loadings at wastewater treatment facilities located within the same watershed.<sup>28</sup>

***Action: USDA should take steps to assure that a greater proportion of their conservation program assistance funds nutrient reduction programs.***

**ARPA-W: Early Stage Technology Innovation Grants.** Because clean water agencies are responsible for environmental and public health protection, they tend to be justifiably risk averse. One result of this conservative stance, however, is slow adoption of new technology. Despite the substantial size of municipal clean water equipment and services markets, slow adoption of new technology dampens enthusiasm on the part of technology developers and entrepreneurs, artificially reducing the pace of innovation.

To help remedy this, the clean water sector could draw on successful programs in other sectors like defense and energy that have created early stage research and development grants to stimulate creation of breakthrough technologies. In the defense sector the Defense Advanced Research Projects Agency (DARPA) manages numerous grant programs to stimulate innovative research and development initiatives for weapons, information/communications, electronics, and materials. Modeled after DARPA, the Department of Energy administers through its Advanced Research Projects Agency for Energy (ARPA-E), an R&D grants program to, “focus on creative, ‘out-of-the-box’ transformational energy research that industry by itself cannot or will not support due to its high risk but where success would provide dramatic benefits for the nation.”<sup>29</sup> These programs have generated significant technological advances for their intended industries, spin-off applications in many other industries, and created strong export markets for American technology.

***Action: Congress should establish and fund ARPA-W to work with industry to define high-risk, high-reward R&D needs, solicit proposals from public and private enterprises that had solutions at various stages of commercialization, and manage information flow about the research for the benefit of the industry and the nation.***

**Pooled Risk Sharing Strategies.** Clean water agencies are slow adopters of new technology in part because of environmental and public health risks if new technologies fail to perform and in part because of the economic, political, and regulatory consequences of failure. Two new initiatives are addressing part of the slow adoption problem. First, the Water Environment Federation and the Water Environment Research Foundation have joined together in a new Leaders Innovation Forum for Technology (LiFT) Technology Evaluation Program (TEP) to facilitate collaboration among facilities for the evaluation and testing of new technologies and disseminate peer reviewed information about emerging technologies.<sup>30</sup> Second, a consortium of US drinking water and clean water agencies are structuring an Innovation Technology Advancement Group (iTAG) with a UK technology innovation consultancy to share experiences on new technologies.<sup>31</sup> These could be powerful steps that enhance market pull for new technologies.

But three aspects of adoption risk will remain: (1) abating private development risk and long adoption cycles, (2) simplifying state regulatory approval processes for new technologies, and (3) acknowledging acceptable variability in performance of advanced technologies in new permits.



*Risk Abatement Facility within ARPA-W.* At least one part of any new program like the ARPA-W proposal above would have to address adoption risk.

**Action:** Congress should establish within ARPA-W, a special development facility for consortia of clean water agencies, universities/research centers, and technology developers, who together would jointly apply for federally subsidized private insurance that would offset utility costs in the event that piloting innovative technologies was unsuccessful. This facility also could provide tax credits to private corporations that partnered with a grant recipient to help offset risks associated with developing and commercializing its technology.

*State Certification Reciprocity.* State water quality regulators operate largely independently of each other when it comes to approval of new technology to meet permit conditions. The result is that design engineers are reluctant to include new technologies for a proposed project unless they have been demonstrated to work in that state and at scale, even though the exact same technology may have performed according to spec in an identical application in another state or perhaps another country. This is a strong disincentive for technology developers and investors in innovative technology. Yet, there are numerous situations wherein states reciprocate to avoid just this sort of problem: automo-

### Why are Clean Water Agencies Typically Slow to Adopt New Technology?

Not all clean water agencies behave this way, but broadly, they accept new technology very slowly, which dampens innovation. Here's why:

**Regulations** — clean water agencies have navigated the past 40 years of rules, permits, enforcement actions, and penalties by choosing technologies that are 100% proven. New technologies must have a large cost savings to offset risks of deviating from traditional choices.

**Management Capacity** — clean water agencies are highly capital- and asset-intensive enterprises that manage large workforces over broad geographies, with state, federal and local governing body oversight at the front and thousands of customers to satisfy at the end of their value chains. Many simply have little spare capacity to manage new technology.

**Reward Systems Favor the Status Quo** — few clean water agencies reward management for taking risks. Generally, just the opposite is true. Consequently, decisions tend to maintain the status quo.

**Asymmetry in Public Visibility** — when clean water agencies perform well, services are typically taken for granted and the public tends to forget that clean water agencies exist. Their failures, however, are generally highly covered by the media and in full public view. The upside of new technology must be substantial, therefore, to overcome the regret and real consequences of technology failure.

**The UOTF Paradigm is Still New** — clean water agencies are still used to cleaning waste and discharging residuals. The UOTF will change the paradigm to resource management. Until then, new technologies will have to be “pushed” into the sector. UOTFs will create new demand, “pulling” technology through the industry.

**Procurement Requirements for Competition** — because of their public heritage, many clean water agencies cannot negotiate with a single technology provider, even if the technology cannot be provided by anyone else.



bile and other vehicle licenses, concealed handgun permits, teacher certifications, on-line education certification, and pesticide licensing procedures (in the 11 Northeast states).

***Action: An appropriate organization of the fifty states such as the Council of State Governments should formulate a program of reciprocal technology certification, where once tested and permitted in one state, the burden of proof to deny a permit for that technology in any other state falls to the regulatory agency based on guidelines agreed by all 50 states.***

*Acknowledging Acceptable Performance Variability in New Permits.* Reliability of some advanced technologies like biological nutrient reduction (BNR) can vary widely from plant to plant, depending on design and actual flows, wet weather events, seasonality, and even diurnal changes in loadings. To reduce regulatory risks, design engineers have attempted to accommodate as many (or all) of these variables as possible. The results is overdesign (e.g. blowers that are too big, reactor basins that are too large, over-sized pumps) targeted to meeting excessively high performance reliability, high initial costs, and expensive and complex operations. To help fix this, engineers have developed sophisticated process models that more accurately predict plant performance, enabling more appropriately sized facilities that are less expensive and easier to operate. If permits reflected variable performance at levels that were still protective of the environment, engineers would design more appropriate facilities and costs of advanced processes would be reduced.

***Action: Working more closely with the design engineering community to understand new stochastic approaches to performance and design of advanced technologies including BNR, state and federal permit writers need to incorporate results into new permits to assure that they have more realistic parameter limits that are still protective of the environment, but achievable at more appropriate costs.***

Financial Incentives to Reclaim and Reuse Wastewater. In some parts of the country, wastewater recycling and reuse can be effective and efficient as a solution to water scarcity. According to the National Research Council of the National Academy of Science:

“Approximately 12 billion gallons of municipal wastewater effluent is discharged each day to an ocean or estuary out of the 32 billion gallons per day discharged nationwide. Reusing these coastal discharges would directly augment available water resources (equivalent to 6 percent of the estimated total U.S. water use or 27 percent of public supply).”<sup>32</sup>

In a recent survey of 1,000 US consumers, more than 80% said they favored the use of recycled water for non-potable uses such as irrigation, industrial cooling, and toilet flushing.<sup>33</sup> But the cost of recycling wastewater for these uses can be a significant barrier to more widespread adoption. Reuse production costs vary considerably depending on factors such as quality needed, technology, scale, pumping and energy costs, and financing costs. Recent estimates range from \$1.83/1,000 gallons for non-potable reuse, which is roughly comparable to costs of water produced from fresh water supply to \$19.44/1,000 gallons.<sup>34</sup> In the same survey mentioned above, nearly half the respondents said they were willing to pay on average, 12.4% more on their water bills

immediately to ensure that future generations would be less vulnerable to water shortages. So while higher water rates today will be part of the solution, other measures may be needed to fill the gap. Moreover, the gap between reuse costs and other alternatives as above addresses only financial costs. There are significant economic savings associated with wastewater reuse that are not accounted for in strict financial comparisons: reduction in seasonal peak demands on potable systems, which reduces overall capital and operating costs; improved reliability during drought and business investment based on that reliability; and environmental benefits such as preserved in-stream flows, reduced energy demands and lower carbon emissions.

***Action: To help fill the relative cost gap and generate other economic and environmental benefits of wastewater reuse, the wastewater industry should advocate for wastewater reuse investment tax credits to attract private investment, expanded grants to cover costs of facility feasibility studies, and/or loan guarantees for reuse projects that serve rural or low income communities that could not afford to repay market rates.***

## Utility Leadership and Internal Management Actions

As it matured over the last several decades, the clean water sector has embraced the concept of continuous quality improvement in many forms. But despite these improvements, the industry faces a fiscal crunch today unlike any in its history. Federal funding in absolute and real terms has declined by 90% from about \$15 billion a year in the 1980s to about \$1.5 billion a year in 2012 (all in 2009 dollars). Over this same period, real local investment in wastewater more than doubled from about \$27 billion a year to \$55 billion a year. Estimates of total sector capital investment needed to meet national clean water goals also has grown from \$155 billion in 1986 to \$298 billion in 2008, despite a combined federal/state/local investment in wastewater infrastructure of \$750 billion during this period. In many places, combined costs of infrastructure replacement and compliance with environmental regulations greatly exceeds both current investment levels and based on standard metrics, affordability for large portions of local populations. Fiscal pressures alone compel leadership and management in the clean water sector to make hard choices every day with limited resources.

While this *Blueprint* is not intended to provide detailed industry guidance, it is important to acknowledge that future successes depend to a great extent on utilities' initiatives to manage themselves and operate as efficiently as possible. Building on 2007 recommendations from leadership in the drinking water and clean water sec-

tor, EPA, NACWA, WEF, and other industry associations published a statement of support for an overall utility management framework based on a series of *Attributes of Effectively Managed Utilities and Keys to Management Success*.<sup>35</sup> This document acknowledged and to a degree codified that business in this sector needed to be done in a different way. In 2008, these organizations published the Effective Utility Management Primer for Water and Wastewater Utilities, which reaffirmed the industry's commitment to "Effective Utility Management" or EUM, as a way to assess utility strengths and weaknesses, set institutional priorities, and decide on outcomes they wished to achieve.<sup>36</sup> This collaboration between regulatory and clean water agencies is encouraging as a foundation for further progress.

Other tools and initiatives that are consistent with EUM can help utilities achieve continuous improvement in the productivity of their organizations and help set environmental and public health priorities in a resource constrained world:

### Six Sigma Results

Clean Water Services, a water resources management utility serving 536,000 customers in Washington County, Oregon escalated its productivity improvement program developed in the early 1990s to Lean/Six Sigma in 1996, with the following results:

- A 24% gain in productivity in three years,
- A Goal-Share Program to support collaborative improvement efforts,
- A pay-for-performance system within a collective bargaining agreement,
- The nation's first integrated, municipal watershed-based permit,
- A partnership with Ostara Nutrient Recovery Systems, to provide the nation's first full-scale commercial phosphorus recovery system,
- Formation of the Clean Water Institute to commercialize its intellectual property, and
- A Business Process Management Center of Excellence, with core staff trained on Lean and Six Sigma methods.

Over the last decade, Clean Water Services has saved nearly \$100 million in operating costs despite their advanced treatment levels. They saved an additional \$140 million by instituting the nation's first temperature water quality trading program. They increased labor productivity by more than 35 percent. The utility's fleet was reorganized enabling a 33% reduction in vehicle count. During this period, the utility made strong steps toward the UOTF by reorienting its vision and focus from engineering excellence to watershed and public health stewardship, attaining 100% compliance with all permit terms at all four wastewater treatment plants.

- Lean Operations/Six Sigma for Continuous Improvement,
- Environmental Management Systems to Set Priorities,
- Nationally Consistent Operator Training and Certification,
- Environmental Education,
- Smart Technology to Improve Service and Customer Care.

**Lean Operations/Six Sigma for Continuous Improvement.** Lean operations or simply, "Lean" is a business improvement approach designed to eliminate non-value adding activity or "waste" using methods developed for manufacturing industries including automotive. Practitioners often combine Lean methods with Six Sigma tools, developed by Motorola and embraced by GE, that use statistical analysis to eliminate defects and variation. Lean and Six Sigma are widely used across the industrial sectors to identify and drive productivity gains through organizational, business process, and technological change.<sup>37</sup> Clean water agencies that use Lean/Six Sigma save millions of dollars, improve service quality, build a confident and motivated workforce, and reduce environmental and safety risks.<sup>38</sup> Its culture of continuous improvement through employee engagement essentially retrain the workforce to think about productivity, take actions to improve productivity, and be rewarded for their successes.

**Nationally Consistent Operator Training and Certification.** Today's sophisticated resource recovery facilities require highly trained operators that are able to work anywhere in the nation without obstacles. Unfortunately, the Clean Water Act does not require training or certification of operators. Complicating matters further, most states have unique training requirements, so operators certified in one state will not necessarily be certified in others. The UOTF will require more consistency, with a national base-

line standard for operator training and certification, perhaps based on the toughest state standard, which would also allow for reciprocity.

**Environmental Education.** UOTFs will need to advocate for themselves through strong programs of environmental education. Today's students are tomorrow's legislators, ratepayers, and the children

of today's legislators and ratepayers. Thus, it is essential to acquaint children with the importance of water to public health and, ultimately, the welfare of our society. UOTFs also need to make the broader public benefits case regularly to legislators, governing boards, ratepayers, and the press, demonstrating delivery of value for money and reminding the public of the environmental and economic services they deliver every day.

**Environmental Management Systems to Set Priorities.** An Environmental Management System (EMS) is a framework that helps any organization achieve its environmental goals through consistent control of its operations. EMSs address regulatory demands and other objectives like energy conservation or reduction of infiltration and inflow to collection systems in a systematic and cost-effective manner, setting priorities to reduce risks of non-compliance and improve public health and safety outcomes for the public and employees, respectively.<sup>39</sup> In practice, clean water agencies have found that EMSs also enable the organization to capture institutional knowledge, making it available to future decision makers, in effect ensuring continuity over generations of leadership and management.

**Smart Technology to Improve Service Delivery and Customer Care.** Web-enabled tablets, smart phones, and cloud-based communications have transformed the way clean water agencies deliver services and interact with their customers. They enable customers to share information instantaneously about service disruptions, faulty infrastructure, and meter figures as backup to automated readings. Work orders can be routed efficiently to field crews according to their location, enabling very fast response times. They also enable work crews in the field to access and update vital information stored centrally about asset location, condition, and performance. Smart phones allow customers to track progress against work requests in real time. Credit card and check payments using mobile devices linked to central billing and collection databases avoid labor-intensive turn-off/turn-on trips. Social media allows dissemination of critical information to customers to support both routine and emergency activities. Smart meters enable automated, labor-free two-way monitoring, communication, and control (customer to utility and vice versa) of usage patterns for billing and for customer awareness. GPS

## EMSs & Other Management Tools

The Lawrence, Kansas water and clean water utility serving 90,000 customers implemented a utility-wide EMS in 2007. As a result, it reduced biosolids transportation and land application fuel use by 13.5%, eliminated drinking water taste and odor problems, sited a new 530 acre wastewater treatment plant, achieved 73% customer satisfaction, and reduced workers compensation liability by more than 20% in three years.

The Camden County NJ Municipal Utilities Authority (CCMUA) used an EMS process to address its discharge and biosolids issues with equally impressive results. Prior to its EMS, CCMUA was barely meeting its state discharge permit, being fined and sued for almost continuous odor problems and had recently raised its user rates by over 22%. Through the EMS, the CCMUA identified its core objectives to be (1) optimization of water quality, (2) minimization of odors and (3) cost efficiency. Within 5 years of implementing an EMS, the CCMUA improved solids capture by 40%, virtually eliminated its odor problems, completely overhauled its physical plant, and reduced suspended solids in its discharge from 26 to 7 parts per million (permit limit of 30 ppm). The utility accomplished all of this while reducing rates from \$337/household in 1996 to \$324/household in 2012.

Global Water Resources, which operates a portfolio of small and medium drinking water and clean water agencies in Arizona, is perhaps the most technologically sophisticated utility in the US. It has taken utility efficiency to a new level using evaluation and productivity improvement processes (Total Water Management) similar to Lean, advanced metering infrastructure, and cloud-based data analytics and presentation technology to reduce water losses and put real-time monitoring of water use in the hands of their clients.

devices on agency vehicles enable greatly improved accounting and accountability of rolling stock and field labor, saving thousands in fuel costs.





## EXTENDING THE VISION WITH BOLD TRANSFORMATIVE THINKING

The previous section examined incentives for, and barriers to, innovation. It proposed ways to change current regulations, financing conventions, risk allocation mechanisms, administrative procedures, and operating efficiencies to broaden incentives and overcome barriers. There is no doubt that these actions will help utilities transition from collectors and handlers of wastewater to resource managers and environmental leaders.

Many believe, however, that we must go beyond changes to current conditions to arrive at the UOTF, that bold and transformative thinking will be needed to effect quantum movement in operating performance, cost, environmental outcomes, and community involvement.

The sorts of initiatives described in this section are ambitious and complex. It will take time to fully define objectives, roles, scopes, milestones, and measures of success. Consequently, only the concepts are introduced in this *Blueprint*.

### Congressional Caucus to Advance UOTF Initiatives

We are perhaps only a few years into a multi-decade transition and at this early stage, it is difficult to foresee all the possibilities. Under these circumstances, while creating an environment of innovation, it seems prudent to also create forums that enable continuous exchange of ideas as they arise. The utility side of the industry has such forums as do technology developers, design engineers, and solution providers. But no such forum exists at the Congressional level to raise awareness among legislators. And clearly, nothing short of a national strategic initiative will result in the kinds of outcomes needed to meet the challenges of the 21st Century and beyond. A Congressional Caucus on the UOTF is one way to elevate the importance of water to our society and ensure that the federal government is doing everything it can to support the industry.

***Action: Congressional leaders from both House and Senate authorizing committees should create a Congressional Caucus to bring together legislators, sector leadership, and leadership from within the regulatory, finance, and related communities. The Caucus would enable systematic evaluation of some of the actions discussed in this Blueprint as well as new approaches to solve problems as they arise. Key federal water agencies would participate, perhaps***



## Replicating Successful Clean Water Agency Programs

The Narragansett Bay Commission (NBC), serving 360,00 residents and 7,700 businesses in Rhode Island's capital, Providence, and surrounding communities, is a leader in the field of energy efficiency and alternative energy for wastewater treatment facilities. The NBC built the first wind farm in the state of Rhode Island when it installed three 1.5MW wind turbines at its Field's Point facility in Providence. At its Bucklin Point facility in East Providence the NBC is completing design of a biogas Combined Heat & Power (CHP) project and a feasibility study to evaluate installing a 2.6 MW solar photovoltaic plant is ongoing. These alternative energy projects, in conjunction with continuous energy efficiency upgrades, have placed the NBC on a path toward meeting its net-zero energy goal.

With the support of an EPA grant, the NBC has established a partnership with Rhode Island's electric utility, National Grid, to conduct Energy Efficiency Technical Assessments (EETAs) of all Rhode Island wastewater treatment facility operations. All nineteen wastewater plants in Rhode Island were assessed, and at the completion of the EETA process in 2012, each facility received a technical report identifying Energy Efficiency Measures, including equipment and physical operating control systems which could produce economically feasible reductions in energy use if implemented. The technical reports also included cost effective co-generation and use of renewable energy resources that can be implemented by the clean water agencies.

Similar programs could be replicated across the nation, which would leverage the considerable technical expertise embedded within large clean water agencies to reach thousands of smaller clean water agencies and multiply benefits to the nation considerably.

*marking the beginning of better federal interagency coordination on water policy and program objectives. Over time, especially in light of inevitable moves to balance the federal budget, one could imagine this group formulating a sensible approach to consolidating the federal role into fewer, more targeted offices and programs.*

## Creating the Industry of the Future

The future of clean water agencies is emerging largely because of the efforts of dozens of forward thinking leaders in the sector. Regulators, technology developers, consulting engineers, and the industry's professional organizations are supporting this transition. But like any emerging trend, the sector is not yet organized optimally.

The major professional organizations representing clean water agencies can play a key role in organizing the industry to create and sustain the "Industry of the Future." The Task Force that came together under their auspices to create this *Blueprint* can become a powerful driver on their behalf. A concerted movement to organize the clean water sector behind the "Industry of the Future" would include such activities as focused, collaborative research; advocacy for legislative change; advisory services to regulators; public information; and a UOTF knowledge base platform that details and updates the latest UOTF technologies and processes, enabling the nation's 16,000 clean water agencies to replicate them.

*Action: The UOTF Task Force organized to support this Blueprint, working with the clean water industry associations, should be the driving force behind implementation of the actions noted herein, especially those that deal with internal activities and creation of an "Industry of the Future" knowledge base. For those that require regulatory action, the Task Force should work with EPA in the capacity of a UOTF Advisory Board. For those that require Congressional action, the Task Force would represent the industry in hearings.*

## An Intergovernmental Partnership to Address Adaptation to Extreme Weather Events

Recent events such as the broad drought in the summer of 2012 or Hurricane Sandy in the fall of 2012 serve

as constant reminders both of the critical services that clean water utilities provide and of the vulnerability of their physical structures to extreme weather events. Because centralized facilities are typically sited at the lowest elevation possible to facilitate gravity flow, clean water facilities are particularly susceptible to floods and sea level fluctuations. Complicating matters further, they cannot be moved easily since urban land is generally scarce having been developed over the years since these facilities were first built and because complex networks of sewers were built expecting large treatment facilities at their terminus.

Many argue that building in physical and operating resilience can be a viable and cost-effective solution. Elements of such a solution include physical barriers, redundant components, remote operations facilities, and other sorts of hardening approaches. But these may only buy time, especially if climate change results in more frequent and more severe flooding and/or continued sea level rise. Operational resiliency will help under these circumstances, including for example, broad and well exercised inter-local cooperation agreements, regional emergency equipment stores available to multiple facilities, city-wide command centers to manage through an emergency event, and advance warning systems that enable portions of networks to shut down and perhaps divert flow before systems are hydraulically overloaded. Green infrastructure is the third key element, where hard urban surfaces are replaced by vegetated or permeable surfaces to retain runoff and natural shoreline features such as wetlands and sand dunes are restored to mitigate the effects of storm surges.

**None of these options are inexpensive.** Beyond funding, all of these options involve extensive planning, public education and involvement, changes to individual and corporate behaviors, and potentially changes in land use.<sup>40</sup>

***Action: The nation's clean water professional associations should organize a coordinated program to synthesize on-going research and more fully define and recommend elements of a program of action on resilience in response to extreme weather events for the nation's clean water infrastructure. Based on these recommendations, the US Congress should support a concerted 10-year partnership with the states to formulate and help finance infrastructure and other measures to ensure implementation of resiliency plans at all susceptible facilities.***

## Creating Real Markets for Water

As more clean water agencies reclaim water to reuse in industrial cooling, landscape irrigation, groundwater recharge, and possibly potable water supplies, questions will arise as to the rights to these sources of supply, especially in the western states that operate under a prior appropriations water rights doctrine. A well-defined market for buying and selling water rights within targeted watersheds would support an orderly transition to such reuse and support clean water agencies that wish to create new revenues from the sale of reused water. Aside from the benefits to clean water agencies, well-defined and organized markets for water would help water-short urban centers sustain temporary supplies from less productive users like farmers irrigating marginal lands during droughts.

Water transfers are possible today and, in fact, there are more than two decades of experience in states like California with modest numbers and types of transfers, although they have declined in number in recent years.<sup>41</sup> The market could be significantly strengthened if either or both state agencies that administer water

rights systems within their states and/or the federal government in their capacity to create and define rules within federal interstate water management compacts better define and possibly manage a market for public and private buyers and sellers of water rights.

Facing severe drought for more than a decade, such interventions by the Australian government did exactly this.<sup>42</sup> The Australian water market is considered by many to be the most sophisticated in the world, with more than \$3 billion in trades a year. Water rights can be bought and sold separately from land rights and traded on an open market, generally within watershed boundaries. Investors can buy entitlements to water and rent them back to irrigators, or sell the rights into the temporary transfer market. The Australian Government is pursuing a number of initiatives to improve the functioning of water markets: working with Basin states to remove barriers to water trade, developing a National Water Market System that will assist in the efficient management of water registry, transaction and market information functions; and creating and updating market rules. Private water market intermediaries (e.g. water brokers and exchanges) play an important role in the market by bringing buyers and sellers together, reducing search costs, improving information flows and assisting in obtaining regulatory approvals

***Action: The professional organizations representing the clean water industry should initiate an examination, perhaps with such organizations as the Western Governors Association or the Council of State Governments, to examine in detail whether and the extent to which the states acting individually or with input from federal water agencies like the US Bureau of Reclamation could better support water markets to define rights for recycled water and achieve more efficient allocation of all source waters (including recycled water), especially during extreme weather events.***



## CONCLUDING THOUGHTS

Clean water agencies face unprecedented challenges in the coming decade. Fiscal pressures have never been greater. Infrastructure upgrades, expansions, and replacement have never been more critical. Regulatory demands to control nutrients, combined sewer overflows, and sanitary sewer overflows have never been stronger.<sup>43</sup> Future threats of system failure from extreme weather events have never seemed more real.

Yet there is cause for optimism. Sector leadership is stronger than ever. Technology innovation is emerging as a driving force offering design engineers options to make great strides in process efficiency while reducing costs. And most importantly, the sector as a whole is beginning to understand its central role in economic and social well-being. In short, the Utility of the Future is becoming real.

Just a few years into a generational paradigm shift, we cannot fully envision its limits. We do know that each clean water agency will take a somewhat different path from handlers of wastewater to managers of sustainable resources; from regulated entities seeking permit compliance to watershed-scale environmental leaders seeking least-cost environmental and social solutions; from engineers designing concrete and steel treatment works to regional planners designing and building weather-resilient, green communities; from isolated public service units to integrated members of economically thriving local economies.

The actions described in this *Blueprint* are important steps. But despite initial optimism, these steps alone may not be enough. We should build on our momentum to go beyond the Clean Water Act by engaging legislators, industry practitioners, and technology innovators in a conversation about a 21st Century Watershed Act. The Congressional Caucus introduced earlier would be an ideal forum for such a conversation.

A 21st Century Watershed Act would find its roots in the foundations of the 1972 Clean Water Act that called on regulators and the regulated community to find solutions to America's water quality challenges by working together at the area-wide or watershed scale. The 1972 Clean Water Act embodied several parallel approaches to meet clean water goals: watershed planning, financial incentives to help clean water agencies upgrade and expand treatment works, a system of legally enforceable water quality requirements and discharge permits with penalties for point sources that failed to meet them, and funding for science and technology to fill knowledge gaps needed to justify requirements and permit conditions.

We have accomplished a great deal with these programs and the nation benefits from significantly cleaner water bodies. Over time, however, Clean Water Act priorities have focused much more narrowly on enforcing tighter and tighter discharge limits to the point that future water quality returns to this 40-year old approach will be sharply lower than we have enjoyed in the past and whatever gains may be possible will come at greatly increased costs. Already reduced federal clean water funding is threatened further by budget concerns, tax-exempt public capital markets appear shaky in the current tax-reform debate, and increasingly communities are reaching their limits of affordability of clean water services. The emergence of UOTF initiatives is clear evidence that a new direction is emerging, that the paradigm has changed.

A new 21st Century Watershed Act would acknowledge this paradigm shift and help realign regulatory expectations, federal programs, and the emerging leadership role of America's clean water agencies as they explore and implement UOTF initiatives described herein. Such an Act would re-create the partnerships previously enjoyed between EPA, state regulators, and clean water agencies. It would embrace sound science based on ecosystem-wide management decisions and holistic evaluation of watersheds to determine sustainable solutions. It would encourage the examination of the historical record for the receiving water to ensure that all causes of impairment are understood and controlled. It would allow for the sorts of watershed processes like adaptive management discussed earlier and "smart engineering" methods to be incorporated as elements of the TMDL process. It would encourage green infrastructure and other solutions that go beyond chemistry in the water column to restore and create fisheries and wetlands or make our shoreline more resilient to extreme weather events while creating the jobs of the future.

The vision of fishable, swimmable waters is something we all share, but new directions are needed if we are to achieve our goals. The progress we are making today is strong evidence that new approaches to resources management are possible, that America's clean water agencies are prepared to lead, and that communities across the nation are motivated to work together to find least-cost water and resource management solutions that improve local economies and the quality of life. A 21st Century Watershed Act would set this new direction legislatively and launch the next increment of success in water resources management.





## ACKNOWLEDGEMENTS

This report was prepared by Kenneth Rubin, Managing Director of Rubin Mallows Worldwide Inc. and produced by the National Association of Clean Water Agencies (NACWA), the Water Environment Research Foundation (WERF) and the Water Environment Federation (WEF).

This publication benefited from generous contributions of time and expertise from many individuals. NACWA, WEF and WERF would like to thank the members of the Utility of the Future Steering Committee and Task Force for providing comments and guidance to develop and ensure the quality of this publication. Special thanks are due to Thomas Sigmund, Executive Director, NEW Water, who served as Chair of the Task Force in addition to participating on the Steering Committee.

### Steering Committee

The Steering Committee was made up of nine members – three from each of the partnering organizations – and was tasked with providing high-level oversight to ensure that the *Blueprint* achieved the goals set out in the proposal framing the project.

**Suzanne Goss**

JEA (Electric, Water & Sewer),  
Jacksonville, Florida

**Michael Sweeney**

Toho Water Authority

**David Jenkins**

University of California,  
Berkeley

**Thomas Sigmund**

NEW Water

**Jim McQuarrie**

Denver Metro Wastewater  
Reclamation District

**Cordell Samuels**

Regional Municipality of Durham  
Canada

**Lauren Fillmore**

WERF

**Adam Krantz**

NACWA

**Matthew Ries**

WEF



## Task Force

The Task Force provided technical input to the document and was made up of experts from public utilities, consulting/engineering firms, academia, and technology developers and manufacturers – nominated for participation by NACWA, WEF and WERF. *(listed in alphabetical order)*

**Greg Boettcher**

Little Blue Valley Sewer District

**Chris Kaakaty**

City of Dallas

**Sunil Mehta**

Infilco Degremont USA

**Charles Bott**

Hampton Roads Sanitation District

**Amit Kaldate**

Infilco Degremont USA

**Bradley Moore**

City of Bangor

**Tom Broderick**

Loudon Water

**Andrew Kricun**

Camden County Municipal  
Utilities Authority

**D. Michael Mucha**

Madison Metropolitan Sewerage  
District

**Jeanette Brown**

University of Connecticut

**Helen Littleton**

American Water

**Leland Myers**

Central Davis Sewer District

**Pete Cavagnaro**

Johnson Controls

**Mary Lynn Lodor**

Metropolitan Sewer District of  
Greater Cincinnati

**Howard Neukrug**

City of Philadelphia Water  
Department

**Kartik Chandran**

Columbia University

**Charles Logue**

Renewable Water Resources

**Charlie Nylander** Watermatters,  
LLC

**Patricia Cleveland**

Trinity River Authority of Texas

**Richard G. Luthy**

Stanford University

**Logan Olds**

Victor Valley Wastewater  
Reclamation Authority

**Glen T. Daigger**

CH2M HILL

**John Lyons**

Strand Associates, Inc.

**Douglas Owen**

Malcolm Pirnie

**Kathryn Garcia**

New York City Department of  
Environmental Protection

**Rick Manner**

Urbana & Champaign Sanitary  
District

**Tyler Richards**

Gwinnett County Department of  
Water Resources

**Cathy Gerali**

Denver Metro Wastewater Recla-  
mation District

**Dean Marriott**

City of Portland Bureau of  
Environmental Services

**Peter Ruffier**

Clean Water Services

**Kevin Hardy**

Encina Wastewater Authority

**Michael McEvoy**

Western Virginia Water  
Authority

**Kevin Shafer**

Milwaukee Metropolitan  
Sewerage District

**George Hawkins**

DC Water

**Thomas Sigmund, Chair**  
NEW Water

**David St. Pierre**  
Metropolitan Water Reclamation  
District of Greater Chicago

**David Stensel**  
University of Washington, Seattle

**Beverley M. Stinson**  
AECOM

**Carter Strickland**  
New York City Department of  
Environmental Protection

**George Tchobanoglous**  
Tchobanoglous Consulting

**Bill Toffee**  
Effluent Synergies

**Art Umble**  
MWH Americas Inc

**Thomas Uva**  
Narragansett Bay Commission

**Doug Walters**  
City of Los Angeles Bureau of  
Sanitation

**Tom Ward**  
Salt Lake City Department of  
Public Utilities

**Rick Warner**  
Washoe County Department of  
Water Resources

**John Willis**  
Brown & Caldwell

**Dave Williams**  
East Bay Municipal Utility  
District

**Joseph E. Zuback**  
Global Water Advisors, Inc

Finally, we would like to thank Jeff Eger, WEF Executive Director; Glenn Reinhardt, WERF Executive Director; and Ken Kirk, NACWA Executive Director, for their vision and support for making the *Water Resources Utility of the Future. . . Blueprint for Action* a reality.



## ENDNOTES

1 BMJ 2007; 334:111.2 <http://dx.doi.org/10.1136/bmj.39097.611806.DB> (18 January 2007)

2 U.S. Environmental Protection Agency, *Clean Watersheds Survey Report to Congress* (2008); U.S. Bureau of the Census, *State and Local Government Finances* (2010); U.S. Bureau of Labor Statistics, *State and Metro Area Employment* (2012).

3 National Association of Clean Water Agencies, *Two Sides of the Same Coin: Increased Investment & Regulatory Prioritization* (2011) and *Controlling Nutrient Loadings to U.S. Waterways: An Urban Perspective* (2012).

4 Agriculture is by far, the greatest source of pollutants that impair US waters. Other sources of impairment or rivers and lakes that exceed municipal sources include atmospheric deposition, hydro-modification, and runoff from urban and rural lands. For details, see: USEPA ATTAINS database and Section 305(b) reports to the US Congress, various years.

5 By comparison, Israel reuses 70 percent, Singapore reuses 30 percent and Australia reuses 8 percent, with a national goal of 30 percent reuse by 2015. For details, see: <http://www.nvwra.org/storage/2011/conference/presentations/presMillerWade.pdf>

6 Survey of members of the National Association of Clean Water Agencies, September 2012.

7 Ibid.

8 For details, see National Association of Clean Water Agencies, *Controlling Nutrients to US Waterways: An Urban Perspective*, October 2011.

9 Where there is “reasonable assurance” that nonpoint sources will reduce their nutrient pollutant loadings, a state may allocate more of the needed loadings reductions to nonpoint sources instead of more stringent point source reductions. In their recent review, however, the states and EPA concluded that allocation in the absence of enforcement is unreliable: “*States have undertaken and explored different limited approaches to control nonpoint sources. Authority at the federal level for state development of effective, enforceable and*

*transparent nonpoint source accountability is lacking.*” For details, see: State-EPA Nutrient Innovations Task Group, *An Urgent Call to Action*, a report to the Administrator of the US Environmental Protection Agency, August 27, 2009, page 19.

10 Op cit. National Association of Clean Water Agencies. Also, see: Ohio EPA Rules for Water Quality Trading, Ohio Administrative Code Ch. 3745-5.

11 See Water Environment Research Foundation, *Energy Opportunities in Wastewater and Biosolids*, unpublished White Paper, April 2009.

12 For details, see: <http://www.epa.gov/ttn/atw/129/ssi/ssipg.html>

13 For details, see: <http://www.law.cornell.edu/uscode/text/26/141>

14 For details, see: <http://www.c2es.org/us-states-regions/policy-maps/renewable-energy-standards>

15 National Research Council, Water Science and Technology Board, National Academy of Science, *Water Reuse: Potential for Expanding the Nation's Water Supply Through Reuse of Municipal Wastewater*, The National Academies Press, Washington D.C., 2012.

16 Though each state has its own set of rules and conventions, generally the Western states allocate water to users following a prior appropriations doctrine whereas the Eastern states follow the riparian use doctrine. There are many fine books that present the details of state water laws, including for example, A Dan Tarlock, *Law of Water Rights and Resources*, Clark Boardman Environmental law series, New York, 1988-2010.

17 Op. cit., National Research Council, pages 123-130.

18 The City of San Diego CA, which imports 90 percent of its water, has attempted and failed to implement potable wastewater reuse since 2004. See: <http://www.sandiego.gov/water/waterreuse/index.shtml>

19 These include: the Environmental Protection Agency, Department of the Interior (Bureau of Reclamation), Department of Commerce, Department of Agriculture, Department of Energy, General Services Administration, U.S. Geologic Survey, US Army Corps of Engineers, and Department of Defense.

20 See: US Environmental Protection Agency, *Clean Watersheds Needs Survey 2008 Report to Congress*, EPA-832-R-10-002, Office of Wastewater Management, Washington DC.

21 Integrated water resources planning and management has been the focus of literally thousands of journal articles and hundreds of professional and scientific conferences over the years. As water grows scarcer and costlier, incremental progress toward this goal is inevitable. For a contemporary look at integrated water management as it relates to the UOTF, see: US Water Alliance, *Managing One Water*, 2010.

22 See, for example: Joe Zuback, *Strategies for Accelerating Adoption of New Cost-Saving Water Technologies and Solutions in a Risk-Adverse Market*, presented at the 104th annual meeting of the Water and Wastewater Equipment Manufacturers Association, Las Vegas NV, November 2, 2012.

23 Although both the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency have limited authorities to provide assistance to local entities for recycling projects (e.g., specific provisions for the Corps in 1992 and 1999 Water Resources Development Acts; a pilot program by EPA under the Alternative Water Sources Act; and general Clean Water Act water treatment and wastewater authorities), neither has an established, regularly funded program dedicated to such activities. For details, see: Betsy A. Cody and Nicole T. Carter, *The Title XVI Water Reuse Program: Implementation and Legislative Issues*, US Congressional Research Service, October 27, 2006.

24 For complete guidance on these and other DOE programs, see: <http://www1.eere.energy.gov/wip/guidance.html>

25 Most state loan funds are targeted at specific borrowers in the private sector or low-income households, so loan availability may be limited. For details, see: [http://www1.eere.energy.gov/wip/pdfs/sep\\_rlf.pdf](http://www1.eere.energy.gov/wip/pdfs/sep_rlf.pdf)

26 The National Association of Clean Water Agencies has been on the forefront of advocating for SRF funding either in its current form or in the form of a Federal Clean Water Trust Fund. The Water Environment Federation also has been a strong supporter of SRF funding and more recently has called for a new Water Infrastructure Finance and Innovation Authority (WIFIA) to be created.

27 For details, see: [http://water.epa.gov/infrastructure/greeninfrastructure/gi\\_support.cfm](http://water.epa.gov/infrastructure/greeninfrastructure/gi_support.cfm)

28 Programs include the Conservation Reserve Program, Conservation Stewardship Program, Environmental Quality Incentives Program, and Wetlands Preserve Program. For details, see: National Association of Clean Water Agencies, *Controlling Nutrient Loadings to US Waterways: An Urban Perspective*, October 2011.

29 See: <http://arpa-e.energy.gov/About/About.aspx>

30 For details, see: <http://www.werf.org/lift/Home/lift/Home.aspx?hkey=2cd855fd-d6da-44b2-a6ae-92c66436a704>

31 This leader of this consortium is Southern Nevada Water Authority. Isle Utilities organizes the iTAG. See: <http://www.isleutilities.com/>

32 Op cit., National Research Council, p. 1.

33 General Electric Company, GE Water Reuse Survey, *Executive Summary of US Findings*, October 23, 2012.

34 Op Cit., National Research Council, p.155.

35 For details, see: <http://www.watereum.org/>

36 U.S. Environmental Protection Agency, Association of Metropolitan Water Agencies, American Public Works Association, American Water Works Association, National Association of Clean Water Agencies, National Association of Water Companies, and Water Environment Federation, *Effective Utility Management: A Primer for Water and Wastewater Utilities*. (June 2008). [www.watereum.org/resources/](http://www.watereum.org/resources/)

37 These methods are similar to the initiatives that NACWA pioneered in the 1990s in their guidance and sector workshops, *Thinking, Getting, and Staying Competitive: A Public Sector Handbook*, and *High-Performance Business Services*.

38 For a thorough examination of Lean and Six Sigma in the water and clean water sector, see: *Environmental Protection Agency, Resource Guide to Effective Utility Management and Lean: Improving Performance and Addressing Key Management Priorities at Water-Sector Utilities*, Environmental Protection Agency, November 2012 Review Draft.

39 For details, see: <http://www.wef.org/AWK/page.aspx?id=2477>

40 Many initiatives are already under way to address resiliency of US water and wastewater infrastructure, including for example, the Water Utility Climate Alliance (members include Central Arizona Project, Denver Water, the Metropolitan Water District of Southern California, New York City Department of Environmental Protection, Portland Water Bureau, San Diego County Water Authority, San Francisco Public Utilities Commission, Seattle Public Utilities, Southern Nevada Water Authority and Tampa Bay Water). EPA has several programs addressing resiliency of infrastructure such as their CREAT software that enables utilities to evaluate the vulnerability of their assets to extreme weather events and broadly, plan resilient activities to reduce risks or EPA's Community-Based Water Resiliency Initiative to assess resilience of infrastructure to service interruptions. See: <http://www.wucaonline.org/html/>, <http://water.epa.gov/infrastructure/watersecurity/climate/creat.cfm>, or <http://water.epa.gov/infrastructure/watersecurity/communities/>

41 According to one recent analysis, there have been a little less than 200 recorded water rights transfers (short- and long-term sales and leases) a year over the period 1987-2007. See *Zachary Donohew, Property Rights and Western United States Water Markets*, The Australian Journal of Agricultural and Resource Economics, 53, pp.85-103, 2009.

42 Water use laws and conventions in Australia originally very similar to ours in the US underwent broad reform largely in response to sustained drought, which suggest a strong potential for learning and transfer. Australia's federal Commonwealth government is responsible for policy leadership, planning, and funding while states are responsible for laws that govern water use and allocation of water rights within their states. Australia's Water Management Act of 2000 created separate rights for extraction/diversion of surface or groundwater and for the right to use water at a specific place for a specific purpose. Using an extensive public involvement process, the Act also prioritized water uses in times of shortage, from highest to lowest: Domestic, environmental, commercial and urban uses, and irrigation. The Water Act in 2007 implemented Australia's National Water Initiative, which among other things, created the Murray-Darling Basin Authority to coordinate basin planning and water management in this watershed serving about a quarter of the country's population and most of its agricultural production across three of Australia's five mainland states. For details, see the website of Australia's National Water Commission at: <http://nwc.gov.au/>

43 For details on these issues and a general presentation of financial changes and challenges in the clean water sector, see National Association of Clean Water Agencies, *Two Sides of the Same Coin...Money Matters – Increased Investment and Regulatory Prioritization* (2011) and *The Message is Clear...Money Matters – Smarter Investment to Advance Clean Water* (2011)





## The Water Resources Utility of the Future: A Blueprint for Action © 2013



National Association of Clean  
Water Agencies  
1816 Jefferson Pl., NW  
Washington, DC 20036  
[www.nacwa.org](http://www.nacwa.org)



Water Environment Research  
Foundation  
635 Slaters Lane, Suite G-110  
Alexandria, VA 22314  
[www.werf.org](http://www.werf.org)



Water Environment Federation  
601 Wythe Street  
Alexandria, VA 22314  
[www.wef.org](http://www.wef.org)

# The Evolving Landscape for Financial Capability Assessment

*Clean Water Act Negotiations  
and the Opportunities of  
Integrated Planning*

## ACKNOWLEDGEMENTS

The Evolving Landscape for Financial Capability Assessment...Clean Water Act Negotiations and the Opportunities of Integrated Planning was produced by the National Association of Clean Water Agencies (NACWA) under the direction of its Board of Directors and Executive Director Ken Kirk. This publication was developed by Eric Rothstein, Principal with the Galardi Rothstein Group under the direction of NACWA's Money Matters Task Force and NACWA staff.

# EXECUTIVE SUMMARY

The U.S. Environmental Protection Agency (EPA)'s recent Integrated Planning Framework<sup>1</sup> is a significant step toward broader adoption of more holistic approaches to water quality management. It enables permittees to craft more effective and efficient solutions to achieve compliance and offers the promise of better balancing of point source and non-point source water quality measures. Most importantly, the new Framework is intended to provide communities greater control over the pace and sequencing of their water quality investments to maximize the economic and environmental effectiveness of these investments.

Continued reliance upon the outdated financial capability assessment approach outlined in EPA's 1997 CSO-targeted document<sup>2</sup>, however, will continue to frustrate both the regulatory and permittee communities – and the intent of the CWA itself. In the same way that a holistic approach to water quality improvement is necessary to achieve ultimate environmental objectives – as exemplified by EPA's Integrated Planning Framework – a fundamental change is also needed in how community financial capability is assessed.

Financial Capability Assessment (FCA), especially in the context of integrated planning, must set aside the static, “snapshot” methodology used to prescribe schedule limits contained in the 1997 Guidance and instead better consider a

community's changing economic situation by forecasting revenue and expense streams over the life of a water quality program. Projections of system-wide rate increases can be used to estimate residential customer bills given assumptions about projected economic growth informed by historical experience. If a community has seen (or is anticipated to see) real declines in median household income, for example, as has been the case in many “rust belt” communities, a more informative indicator of burden is how wastewater bills are projected to compare to median income in 5, 10 and 20 years – at various income levels (see pages 15 and 16 for more discussion and an example of this forecasting).

Financial Capability Assessment...must set aside the static, “snapshot” methodology used...in the 1997 [EPA] Guidance and instead better consider a community's changing economic situation by forecasting revenue and expense streams over the life of a water quality program.

Such forecasting does not require data intensive analyses or complex regulatory protocols. Rather, permittees and regulators may leverage work already contemplated for the effective management of utilities to better evaluate financial capability.<sup>3</sup> Strategic financial planning methods used to arrange capital improvement project financing offer straightforward and effective methods

<sup>1</sup> U.S. Environmental Protection Agency (EPA) Memorandum: Integrated Municipal Stormwater and Wastewater Planning Approach Framework; from Nancy Stoner and Cynthia Giles to EPA Regional Administrators and Regional Permit and Enforcement Division Directors; June 5, 2012.

<sup>2</sup> U.S. Environmental Protection Agency (EPA), Combined Sewer Overflows: Guidance for Financial Capability Assessment and Schedule Development, EPA 832-B-97-004, February 1997 (hereinafter “1997 Guidance”)

<sup>3</sup> U.S. Environmental Protection Agency (EPA), Association of Metropolitan Water Agencies (AMWA), American Public Works Association (APWA), American Water Works Association (AWWA), National Association of Clean Water Agencies (NACWA), National Association of Water Companies (NAWC), Water Environment Federation (WEF), Effective Utility Management, A Primer for Water and Wastewater Utilities (June 2008).

to define program implementation schedules that are not overly burdensome. These planning methods contemplate appropriately paced water quality investment, are tailored to individual permittees' unique circumstances, and are sufficiently flexible to support holistic water resource management.

The National Association of Clean Water Agencies (NACWA) has been a leading advocate for reform of financial capability assessment methods for almost a decade. The recent financial challenges faced by most U.S. communities have reminded regulators of the need for balance, and consideration of the cumulative claims imposed by environmental regulations impacting local governments. Given EPA's embrace of integrated planning principles, now is the time to adopt more holistic, flexible financial capability assessment methods.

In addition to its Integrated Planning Framework, EPA has recently acknowledged that its 1997 Guidance may have certain limitations and has initiated a dialogue with the U.S. Conference of Mayors to provide additional clarification on how financial capability assessments can better account for the unique challenges facing the clean water community.<sup>4</sup> Most notably, EPA has indicated that clean water utilities, when evaluating financial capability using the 1997 Guidance, can include all wastewater and stormwater costs when considering the demands placed on median household income. In addition, the American Water Works Association (AWWA), the Water Environment Federation (WEF) and the U.S. Conference of Mayors recently completed a project that they hope will provide guidance on financial capability assessments using the EPA Guidance framework, largely through the use of alternative measures beyond demand on median household income.

Broader change to the underlying methods used in the 1997 Guidance...is needed, especially in the context of EPA's new *Integrated Planning Framework*.

These are all positive steps in the right direction. NACWA plans to participate actively in the EPA/Conference of Mayors dialogue as it proceeds and is confident that the new AWWA/WEF/Mayors effort will provide valuable information to assist communities working within the framework of the 1997 Guidance. Broader change to the underlying methods used in the 1997 Guidance, however, as outlined in this paper, is needed, especially in the context of EPA's new Integrated Planning Framework. Accordingly, NACWA will continue to advocate for a comprehensive revision to EPA's underlying methodologies.

## INTRODUCTION

As early as 2004, NACWA identified that among the most significant challenges facing wastewater utility permittees in complying with the CWA were problematic aspects of EPA's approach to the assessment of financial capability. As outlined in its 1997 Guidance<sup>5</sup>, EPA

<sup>4</sup> U.S. Environmental Protection Agency (EPA) Memorandum: Assessing Financial Capability for Municipal Clean Water Act Requirements; from Nancy Stoner and Cynthia Giles to EPA Regional Administrators, Regional Water Division Directors and Enforcement Division Directors; January 18, 2013, pp. 2.

<sup>5</sup> U.S. Environmental Protection Agency (EPA), Combined Sewer Overflows: Guidance for Financial Capability Assessment and Schedule Development, EPA 832-B-97-004, February 1997.

assessments are based on a two-phased test referencing a “residential indicator” estimate of program burden (in terms of claims on Median Household Income (MHI)) and an index of service area financial indicators. NACWA’s November 2007 paper, *Principles for Assessment and Negotiation of Financial Capability: A Compilation of Resources*, addressed many of the conceptual flaws with this methodology and underscored fundamental principles involved in assessing financial capability. Referencing these principles, several NACWA members have successfully negotiated Consent Decrees that contemplate programs with provisions and milestone schedules not anticipated by EPA’s 1997 Guidance.

In fact, the perspectives of all parties engaged in Consent Decree negotiations have evolved due to a number of important developments including:

- Turbulent economic conditions, particularly since 2008, which have compromised communities’ financial capabilities.
- Development and adoption of watershed-based approaches to water resource management that recognize, among other considerations, the importance of non-point source control in achieving water quality improvements.
- Development and (ongoing) testing of innovative solutions to water quality management challenges that rely on innovative grey and green infrastructure solutions, many of which convey community and sustainability benefits beyond those available from traditional “capture, store and treat” solutions.
- Recognition of the potential merits of an Integrated Planning Framework for identifying and prioritizing community water resource management investments. More holistic and integrated water management approaches are gaining additional traction as they begin to demonstrate that they can advance water quality improvement more efficiently and effectively than prescriptive permit requirements or pre-defined Consent Decree program elements.
- Observed trends showing rapidly increasing costs to achieve diminishing increments of water quality benefit.
- Heightening appreciation of the cumulative cost of environmental regulation across the spectrum of utility services. (For example, there is heightened awareness that financial capability must be assessed in the context of compliance not only with sewer system overflow control requirements (as contemplated in EPA’s Guidance) but also with other CWA requirements including stormwater, which continue to escalate, as well as ever increasing requirements of the Safe Drinking Water and Clean Air Acts – all of which impose financial claims on community stakeholders).

These developments are shifting the regulatory and planning landscape of CWA compliance and offer important opportunities to improve how financial capability is assessed. These improvements may provide regulators better information on the practical constraints of financing capital improvements; they may also help public agencies prioritize and pace their system development to fully leverage opportunities presented by sustainable water resource management practices.



## Purpose

This paper identifies how approaches to financial capability assessment (and negotiation of CWA permits and Consent Decree schedule provisions) may be enhanced given the changing context for CWA compliance (e.g., the Integrated Planning Framework) and evolving perspectives of interested stakeholders. The suggested methodological improvements reiterate and expand on guiding principles put forth in NACWA's earlier publications.

The paper should also serve to provide permittees with guidance on how they may approach negotiation of program schedule and re-prioritization provisions given the evolving regulatory landscape. In so doing, it is intended to help permittees move beyond EPA's 1997 Guidance and avoid permitting and enforcement actions that adhere to its methods for assessing financial capability. While this paper notes the potential use of alternative measures, it prescribes methodological alternatives that address the fundamental flaws of the 1997 Guidance methodology and that were used successfully in recent negotiations of Consent Decrees (several of which call for program schedules well in excess of the 20-year limits articulated in the EPA Guidance).

## Definitions

In outlining updated approaches to CWA permit and enforcement negotiations, it is useful to clearly articulate and distinguish meanings of several terms that guide policy discussions and decisions. In earlier NACWA publications, for example, important distinctions between the terms "Financial Capability" and "Affordability" were outlined.<sup>6</sup> Financial Capability, in this context, relates to a community's ability to finance capital infrastructure investments. Affordability refers to the ability of individual utility customers to pay for service without undue hardship. As the implications of Integrated Planning are considered, it is similarly useful to consider important distinctions between wastewater discharge limits and watershed protection (holistically inclusive of stormwater management, other pollutant source control, water supply protection, etc.).

Indeed, as CWA enforcement and integrated planning extend beyond point sources - specifically wastewater collection, transmission and treatment systems - the contextual meaning of the term "permittee" may be clouded. Where permittees, for purposes of financial capability assessments, have more traditionally been considered those holding NPDES permits for wastewater system discharges, Integrated Planning brings stormwater permit holders (e.g., MS4 permits) into the mix. It behooves all parties to recognize that financial burden is defined by the cumulative impact of water resource and other environmental service-related fees and charges on the community at large.

Along these same lines, it is equally important to recognize the diverse institutional frameworks within which agencies charged with water quality management operate. For example, in many communities municipal utilities are charged with water and wastewater service delivery, while public works departments of general government deliver drainage and watershed protection services. Other communities receive service from wholly separate wastewater districts (often serving regionally) where individual communities deliver water and drainage services and are

<sup>6</sup> NACWA (Nov. 2007), pp. 11.

often among a wastewater district's satellite systems. Increasingly, in part to advance holistic water resource management, utility responsibilities are being consolidated or more formally aligned across the spectrum of drinking water, wastewater and stormwater services. These complexities further cloud definitions of permittees (e.g., regional District and/or satellite systems) and complicate how financial capability may be assessed.

Integrated Planning also suggests a more expansive view of terms defining compliance program requirements - most notably the CWA's call for measures to be "cost-effective" and implemented "as expeditiously as practicable." Integrated solutions that leverage green infrastructure and other innovative stormwater options may limit the relevance of "knee of the curve" analyses of more traditional "capture, store and treat" solutions.<sup>7</sup> Cost-effectiveness may be defined as the lowest life cycle cost means to achieve given water quality benefits. In some cases, for example, this may mean delaying a project to defer financing expenses where faster implementation may offer limited water quality benefit. In other cases, this may mean project scheduling to enable an adaptive management approach to allow time for less capital intensive, adaptive solutions to gain credence. Similarly, requirements for the design and construction of grey infrastructure improvements under "expeditious" schedules defined by engineering and project delivery constraints may very well no longer be appropriate. The most expeditious manner to achieve potentially more cost-effective water quality benefits may well require deliberate long-term monitoring and adaptive implementation of both point and non-point source control measures.

## FINANCIAL CAPABILITY ASSESSMENTS IN CLEAN WATER ACT ENFORCEMENT

### Financial Capability Matrix

EPA's FCA practices have evolved since passage of the Clean Water Act. As noted in NACWA's initial FCA-related publication,<sup>8</sup> EPA's 1997 Guidance document essentially represents the culmination of EPA's development of FCA methodologies found in its Interim Economic Guidance for Water Quality Standards issued in 1995 and Financial Capability Guidebook<sup>9</sup> (particularly pp. 38-46), issued in 1984. However, the 1997 EPA Guidance has not been materially altered for 15 years despite the advocacy and Consent Decree negotiation outcomes noted above or fundamental methodological shortcomings that have limited its usefulness in practice. These problems have become more acute both with the recent economic downturn and with opportunities presented by holistic watershed management.

As noted, EPA's 1997 Guidance outlines a two-phase analysis whereby a Residential Indicator and the permittee's Financial Indicators are identified. The Residential Indicator provides for a determination of current and projected program costs as a percentage of the permittee's Median Household Income (MHI); the permittee's Financial Indicators reference a variety of measures of

<sup>7</sup> Or perhaps heighten the relevance of a more expansive form of "knee of the curve" analysis under an Integrated Water Management paradigm as suggested in *The Need For An Integrated Water Quality Affordability Strategy* by Robert A. Weimar, PE, BCEE and Brandon C. Vatter, PE, Hatch Mott MacDonald.

<sup>8</sup> Financial Capability and Affordability in Wet Weather Negotiations, White Paper (October 2005), p.7

<sup>9</sup> EPA 823-B-95-002 and EPA 832-B-84-104

financial strength and performance. In combination, using the matrix below, the Residential and Financial Indicators are intended to offer insight into the extent of economic burden that a defined program will impose on a community.

EPA Guidance Financial Capability Matrix			
Permittee Financial Capability Indicators Score ( <i>Socioeconomic, Debt and Financial Indicators</i> )	Residential Indicator (Cost Per Household as a % of MHI)		
	Low (Below 1.0%)	Medium (1% - 2%)	High (Above 2%)
Weak (Average below 1.5)	Medium Burden	High Burden	High Burden
Medium (Average between 1.5 and 2.5)	Low Burden	Medium Burden	High Burden
Strong (Average Above 2.5)	Low Burden	Low Burden	Medium Burden
* United States Environmental Protection Agency, "Combined Sewer Overflows: Guidance for Financial Capability Assessment and Schedule Development," EPA 832-B-97-004, February 1997. P.41			

EPA's Guidance also offers general boundaries for adjustments to program schedules established to reflect "normal engineering and construction practices." These boundaries are based on differing levels of economic burden and, in essence, reflect the notion of enabling schedule relief in response to "widespread social and economic impact" as articulated in EPA's Economic Guidance for Water Quality Standards (April 1995).<sup>10</sup> The EPA Guidance contains several statements concerning the potential use of FCA results, noting that enforcement actions are subject to negotiation and that "special circumstances" will be considered. NACWA members have successfully used this flexibility in the Guidance to negotiate more favorable schedules based on unique financial conditions in their communities, but the absence of more formal methods of accounting for these conditions in EPA's FCA procedures has led to challenging negotiations and inconsistent implementation.

[M]any stakeholders, including NACWA and the U.S. Conference of Mayors, have articulated a host of issues with the 1997 Guidance.

## Challenges of use of EPA Guidance FCA Methodology

As noted, many stakeholders, including NACWA and the U.S. Conference of Mayors, have articulated a host of issues with the 1997 Guidance. These challenges include, but are not limited to:

<sup>10</sup>The Guidance states that communities in the "low" burden category would "generally" be expected to implement CSO controls based on a normal engineering and construction schedule. For those in the "medium" burden category, implementation schedules of "up to" 10 years may be appropriate. In the "high" burden category, schedules of up to 15 or even 20 years may be negotiated (p. 46).

- The limited ability of the indicator-based Financial Capability Matrix approach<sup>11</sup> to determine the extent of burden imposed by compliance program requirements. Specific concerns include:
  - The impossibility of a program of even infinite cost to ever be designated as a High Burden for any community with a strong financial indicator index,<sup>12</sup>
  - Averaging of indicators despite undoubted differences in their relative importance, and
  - Use of a “snapshot” of indicator values without consideration of past or emerging trends impacting these values.
- The absence of any meaningful reference to utility rates or customer bills under alternative rate increase programs that could provide a direct measure of how program costs will impact ratepayers (at all levels of income). Variances in individual communities’ ratemaking practices notwithstanding, customer bill projections offer more practical insight into community financial capabilities than indirect references to claims on ratepayer income.
- The use of inadequate and duplicative financial indicators – potentially with unintended consequences. The indicators are inadequate because of the availability of additional, better indicators of financial capability – like local poverty rates. Plus, some of the current indicators offer limited insight into community financial capability – like looking at only property tax burden and not total tax burden, or using property tax collection rates as a surrogate for wastewater bill payment collection rate. The current indicators are also duplicative in that bond ratings already consider many of the same financial indicators used in the index, and because MHI is already employed in the Residential Indicator calculation. All this potentially results in schedule relief for those whose indicator scores are relatively poor, putting communities that have worked hard to retain strong bond ratings at a disadvantage.
- Singular use of MHI values without consideration of the distribution of incomes across service populations or disproportionate impacts on subgroups within the service area. In addition, MHI values are referenced without adjustments for exceptional local and regional claims on income due to relatively higher shelter costs (e.g., Boston area, San Francisco Bay area), tax burdens, or other factors. Moreover, the Residential Indicator’s focus on program costs as a percentage of MHI does not address parallel claims accruing from water and stormwater service rates – to say nothing of the tenuous basis for the threshold values assigned to burden levels in the Guidance matrix.<sup>13</sup>

<sup>11</sup> The development of indicators and use of the Financial Capability Matrix is the only method for determining burden using prescribed data and calculation procedures. The plethora of other factors advanced in Consent Decree negotiations to date are being relegated to offerings “of additional documentation that would create a more accurate and complete picture of their financial capability” (Guidance, p. 6).

<sup>12</sup> Conceptually, this issue could be troubling for communities that have strained to retain or achieve strong financial performance metrics despite degrading economic conditions. More likely, yet along similar lines, the matrix renders perverse outcomes whereby communities that have managed their financial operations sufficiently well to land in the mid-range of Permittee Financial Indicator index values could be required to complete their water quality improvements faster than those who have been unable to do so.

<sup>13</sup> For a review of the origins and bases of different metrics, see Section 6: Affordability Thresholds and Regulatory Guidance, *Affordability of Wastewater Service*, Water Environment Federation, 2007.

The AWWA/WEF/USCOM affordability assessment tool addresses some of these challenges by offering insight and guidance on how to enhance and append the information employed within the two-phase indicator framework.<sup>14</sup> There is no question that use of more and better information to characterize the prospective burden of water quality program costs using the 1997 Guidance will improve resulting assessments of financial capabilities. However, more fundamental change to the underlying methodology would result in a more valid representation of permittees' abilities to finance and implement water quality improvements and allow for more consistent application.

### Advocacy to Date...the Evolving FCA landscape

Numerous alternative approaches and measures have been advanced in advocacy and Consent Decree negotiations to date, with varying (and uncertain) degrees of success. For example, several permittees<sup>15</sup> have provided information on income distributions within their communities to go beyond the 1997 Guidance's sole focus on Median Household Income. More fundamentally, other permittees have advanced strategic financial plans to demonstrate that building financial capabilities over extended periods is required to enable manageable program financing. These efforts have had an impact. Before 2007 no major metropolitan permittee had been deemed to face a "High Burden" enabling schedule relief under the Guidance. But since then several communities have been acknowledged as facing such a burden and granted over 20-year compliance schedules.<sup>16</sup> This evolving landscape suggests that fundamental change to FCA methods in EPA's matrix framework should be considered to allow for more consistent consideration of these measures. To date, however, the Agency has continued to call for use of the dated methodologies in the Guidance "or other relevant EPA or State tools" (p. 5) as the basic framework for evaluating a community's financial capability.

## INTEGRATED PLANNING FRAMEWORK

### Integrated Planning Framework Calls for Revised Financial Capability Guidance

Despite this continued adherence to the 1997 Guidance, EPA has recently embraced Integrated Planning as a means of assisting municipalities in achieving the objectives of the CWA in a more effective and financially sustainable way.<sup>17</sup> Several of the stated Principles and Plan Elements called for in the framework speak directly to financial capability related issues. Principles include that the Plans will:

<sup>14</sup> Identifying alternative affordability metrics across the range of income within a community as well as socioeconomic indicators available from U.S. Census data and other national, state and local sources. Census data includes information on income distribution (by census tract, household type, etc.), poverty rates, households receiving public assistance, housing costs and associated burden. Other data sources include information on average water and wastewater bills and their claim on household incomes, local tax revenues as a percent of gross taxable, local unemployment trends, local government revenue trends and future long-term liabilities.

<sup>15</sup> Including, for example, the cities of Akron, Atlanta, and Honolulu as well as the St. Louis Metropolitan Sewerage District and Northeast Ohio Regional Sewer District.

<sup>16</sup> Including, for example, the cities of Honolulu and Kansas City as well as the St. Louis Metropolitan Sewerage District, the Northeast Ohio Regional Sewer District, and MSD Greater Cincinnati.

<sup>17</sup> U.S. Environmental Protection Agency (EPA) Memorandum: Integrated Municipal Stormwater and Wastewater Planning Approach Framework; from Nancy Stoner and Cynthia Giles to EPA Regional Administrators and Regional Permit and Enforcement Division Directors; June 5, 2012, pp. 1-2.

- Maximize the effectiveness of funds through analysis of alternatives and the selection and sequencing of actions needed to address human health and water quality related challenges and non-compliance. (p. 3)
- Evaluate and address community impacts and consider disproportionate burdens resulting from current approaches as well as proposed options. (p. 4)
- Ensure that a financial strategy is in place, including appropriate fee structures. (p. 4)

Plan Element 4 most explicitly addresses financial capability assessment issues. It calls for: “A process for identifying, evaluating, and selecting alternatives and proposing implementation schedules which addresses (among other points):

- A description of the relative priorities of the projects selected including a description of how the proposed priorities reflect the relative importance of adverse impacts on public health and water quality and the permittee’s financial capability;
- Proposed implementation schedules; and
- For each entity participating in the plan, a financial strategy and capability assessment that ensures investments are sufficiently funded, operated, maintained and replaced over time. The assessment of the community’s financial capability should take into consideration current sewer rates, stormwater fees and other revenue, planned rate or fee increases, and the costs, schedules, anticipated financial impacts to the community of other planned stormwater or wastewater expenditures and other relevant factors impacting the utility’s rate base. Municipalities can use as a guide the document CSO Guidance for Financial Capability Assessment and Schedule Development, EPA (832-B97-004) or other relevant EPA or State tools.

## Integrated Planning Attributes Challenge Established FCA Methods

EPA’s Integrated Planning Framework calls for the continued use of the 1997 Guidance. However, several of the attributes of the framework do not lend themselves to consideration under the 1997 Guidance (or at least its application in practice<sup>18</sup>). In fact, nowhere in the 1997 Guidance indicator formulations are there methods to incorporate current and future rate or fee increases, or address project prioritizations. Integrated Planning calls for holistic planning of water quality improvement measures including wastewater and stormwater management while the 1997 Guidance nominally looks only at current and projected wastewater treatment and CSO control costs.<sup>19</sup> The 1997 Guidance is focused on assessing program requirements for Long-Term Control

[S]everal of the attributes of the [Integrated Planning] framework do not lend themselves to consideration under the 1997 Guidance.

<sup>18</sup> This distinction has been of profound importance in the context of several Consent Decree negotiations where permittees have cited provisions in the Guidance that enable flexibility and consideration of “additional documentation that would create a more accurate and complete picture of their financial capability” (Guidance, p. 6) yet have been challenged by rote application of the Guidance is prescribed calculations, burden determinations and associated scheduling boundary provisions by enforcement agencies.

<sup>19</sup> As noted above, some communities have more recently been allowed to consider all wastewater costs together when evaluating financial capability. This reflects a recent change in U.S. Environmental Protection Agency’s policy that is still not being applied consistently.



Plans while the Integrated Planning Framework's embrace of sustainability<sup>20</sup> potentially opens the door for consideration of such factors as the energy requirements of potential control alternatives. Finally, Integrated Planning calls for adjustment and adaptation over time based on changing circumstances<sup>21</sup> while the 1997 Guidance's "snapshot" assessment effectively limits consideration of implementation dynamics.

## Financial Capability Implications of Integrated Planning Framework

Certainly some of these challenges can be (and in some cases have been) addressed through a more expansive reading of the 1997 Guidance prescriptions. For example, some permittees have performed calculations of current and projected costs on the basis of their entire capital improvement program rather than strictly on wastewater treatment and CSO related costs. Similarly, other permittees have submitted information on the costs per household at varying levels of income within their communities and derived conclusions about the distribution of burdens.

However, Integrated Planning may (and arguably should) serve as a call for fundamental revision – enabling relief from the challenges encountered to date and the opportunity to make methodological improvements. These improvements (hereinafter the IP FCA framework) may begin with revising perspectives about the definition of permittees (as suggested in Definitions p. 5) – recognizing the need to consider institutional boundaries defined by watershed management responsibilities rather than focusing on NPDES discharge permit holders alone. Similarly, an IP FCA Framework would, by definition, consider the full breadth of water resource management/water quality improvement services that place cumulative claims on individual rate, fee and taxpayers.<sup>22</sup> Perhaps most fundamentally, an IP FCA framework could better reflect the realities of securing the needed water quality program financing – which must be responsive to many complexities including:

[A]n IP FCA framework could better reflect the realities of securing the needed water quality program financing – which must be responsive to many complexities... These complexities...are effectively ignored when using the "snapshot" approach contemplated under the current EPA Guidance.

- Forecasting wastewater service revenues over time to account for changing water consumption patterns (both independent of price changes and due to price elasticity of demand), economic development trends, and influences on customer account populations.
- Predicting future Operations and Maintenance expenses to factor in various influences on individual expenses ranging from general price escalation to specific trends impacting individual line items. For example, health insurance and pension benefit expenses have

<sup>20</sup> U.S. Environmental Protection Agency's Integrated Planning memo Element 4 addresses alternative evaluation and selection and calls for "Identification of...other environmental and public health benefits associated with each alternative" (p. 5)

<sup>21</sup> See, for example, Element 6: Improvements to the Plan calling for: "A process for identifying, evaluating and selecting proposed new projects or modifications to ongoing or planned projects and implementation schedules based on changing circumstances." (p. 6)

<sup>22</sup> Therefore, the perspective for assessing financial capability may not be restricted to wastewater system requirements alone but rather is a matter of also looking at drinking water and stormwater management obligations that may cross the service purview of individual permittees.

risen at multiples of general inflation rates while selected automation technologies have actually declined in cost.

- Specifying and scheduling capital improvement projects to enable cost-efficient project delivery, smooth structuring of debt service payments, and ensure total outstanding indebtedness does not compromise the ability to raise capital on favorable terms.
- Providing adequate reserves (and liquidity instruments) and project delivery contingencies to limit the potential for unforeseen events to disrupt services or compromise capital program implementation.
- Structuring sustainable service rates and rate increases and considering the potential role of low-income assistance programs (where available and feasible).

These complexities, which utilities must continually balance, are effectively ignored when using the “snapshot” approach contemplated under the current EPA Guidance.

## FINANCING REGULATORY COMPLIANCE AND WATER QUALITY IMPROVEMENT

For most clean water utilities subject to questions of financial capability, the practical complexities discussed above are highlighted when securing credit and servicing debt obligations. Debt issuances<sup>23</sup> require water resource utilities to demonstrate their financial capabilities not only through reference to financial indicators (as noted by the Guidance) but also through Pro Forma Fund Summary cash flow forecasts. These forecasts are most credible when they reflect:

- Recent trends in factors impacting the net revenue streams available to service obligations,
- Planned compliance with (often covenanted) financial performance targets (e.g., debt service coverage metrics, fund balance minimums),
- Conservative assumptions about the factors impacting future net revenue streams (e.g., interest rates, inflation/escalation rates, account and usage growth, etc.),
- Practical limitations on the ability to cost-effectively manage delivery of a broad array of individual water quality improvement projects.

[A]ssessment of financial capability boils down to whether a community can bear the impacts of the associated service rate [increases] required to make the necessary investments over time.... [T]he permittee financial indicators referenced in Phase II of the 1997 Guidance... do little...to help gauge the fundamental question of how a community/permittee may finance water resource services without imposing undue burdens.

<sup>23</sup> Debt issuances in this context include not only revenue bond issues but also loans secured through State Revolving Funds, and other forms of indebtedness secured by water resource utility and community revenues streams.

The importance of cash flow forecasts incorporating these elements is most evident when examining the typical revenue streams for clean water utilities. Traditionally, the revenue streams available to address utility obligations have been predominantly rate revenues and various miscellaneous revenues (e.g., system development and connection fees, interest earnings, charges for discrete services) collected by wastewater service providers. In some communities, these service revenue streams have been supplemented by various forms of taxes and special assessments, while increasingly communities are establishing charges for stormwater management/watershed protection services. In other words, assessment of financial capability boils down to whether a community can bear the impacts of the associated service rate, fee or tax levels and increases required to make the necessary investments over time.<sup>24</sup>

While the permittee financial indicators referenced in Phase II of the 1997 Guidance may provide some useful perspective, they do little (individually or collectively in the form of an index) to help gauge the fundamental question of how a community/permittee may finance water resource services without imposing undue burdens.

## FINANCIAL CAPABILITY – ENDURING PRINCIPLES

This key role that prospective rate, fee or tax increases play in determining financial capability explains much of the dysfunction associated with regulatory enforcement actions that have referenced FCAs using the 1997 EPA guidance. Regulators point to the formulations of the 1997 Guidance matrix to assess burden while utility and community stakeholders concern themselves with future rate increases that do not factor into the Guidance calculations. A more appropriate role for the 1997 Guidance calculations may be to conduct an initial screening of FCA considerations – as was largely the case for several recent Consent Decree negotiations – followed by a more detailed analysis of cash flow and impacts on revenue over the life of the program.

Regulators point to the formulations of the 1997 Guidance matrix to assess burden while utility and community stakeholders concern themselves with future rate increases that do not factor into the Guidance calculations.

Recognizing that the burden of prospective rate and fee levels on a community is the primary financial capability question also brings to the forefront a number of enduring principles associated with these revenue sources:

- Service rates and charges often do not reflect the full economic value of wastewater and stormwater service as environmental benefits remain market externalities.

<sup>24</sup> While increasingly non-traditional financing options are also being considered for development of water resource system improvements, these options ultimately rely on the same types of revenue streams. In particular, selected communities have entertained Public-Private Partnerships (PPP) whereby their private sector partners arrange infrastructure development financing rather than requiring use of the community's credit capacity. However, these PPP arrangements – as opposed to PPPs focused solely on alternative project delivery options (e.g., design-build) – require some form of pledge or transfer of property interest in the utility's revenue streams.

- In many communities, wastewater and stormwater services remain underpriced relative to both the true costs of service and the value of services provided.
- Financial burden is a function of claims on income from payments on all water resource services. Sharp, rapid changes in claims on income that disrupt customer budgeting and financial planning processes impose financial burdens (not acknowledged under the Guidance).
- System-wide revenue increases impose varying financial burdens across the income/wealth distributions of served populations. Non-uniform rate structures and low-income affordability programs, while often suggested as potential fixes, offer limited means to mitigate these disproportionate burdens.
- Material extension of capital improvement schedules (e.g., 10-20+ years) may enable financing of relatively substantial infrastructure developments, typically without necessitating disruptive rate increase programs. Time really does matter.

With these principles as a backdrop, an IP FCA framework can be advanced (based on the basics of infrastructure system financing noted above) that focuses on the development of manageable long-term plans to finance cost-effective water quality improvements.

## AN INTEGRATED PLANNING-BASED FINANCIAL CAPABILITY ASSESSMENT FRAMEWORK

Aligning with the principles of Integrated Planning, an enhanced framework for conducting Financial Capability Assessments would be comprised of three (3) fundamental components:

1. Water Quality-Based Project Prioritization
2. Cash-Flow Forecasting
3. Analysis of Burden

These components would be significant enhancements to the 1997 Guidance. They are responsive to key issues that have beleaguered Consent Decree negotiations and must be addressed to enable effective Integrated Planning.

### Water Quality Based Project Prioritization

EPA's integrated planning framework memorandum notes "Integrated Plans should:

*Maximize the effectiveness of funds through analysis of alternatives and the selection and sequencing of actions needed to address human health and water quality related challenges and non-compliance.*

*Provide appropriate opportunity for meaningful stakeholder input throughout the development of the plan.”<sup>25</sup> (emphasis added)*

At a minimum therefore, the cost-effectiveness of CWA requirements must no longer solely consider the costs of overflow control technologies or stormwater Best Management Practices (BMPs) but should include costs incurred (including project financing) to achieve long-term water quality benefits.<sup>26</sup> Furthermore, cost-effectiveness must acknowledge that clean water investment benefits are also a function of other stakeholder-defined factors (e.g., community amenity value of green solutions). An enhanced methodology for determining cost-effectiveness is therefore warranted.

In previous publications, NACWA has outlined the conceptual framework for just such an enhanced methodological approach.<sup>27</sup> This approach is drawn from similar public decision challenges characterized by the need to prioritize resource investments that yield different types of (often non-monetary) benefits. It calls for evaluation of alternative “portfolios” of program investment options such that the selected alternative yields the greatest returns in terms of overall environmental benefit to the community at acceptable levels of risk. In practice, this methodological enhancement would require little more than a structured and transparent project prioritization framework – exactly what the Integrated Planning Framework contemplates – using well-defined project evaluation criteria informed by stakeholder input. Procedurally, it involves simple, yet disciplined scoring and ranking of program elements. Because it recognizes that project benefits must be broadly defined across wastewater and stormwater impacts to watersheds, and gauged in part by stakeholder perspectives, this new methodology serves the principles of Integrated Planning in ways unimagined by EPA’s 1997 Guidance. In fact, EPA’s Framework has essentially established what NACWA has been advocating for in terms of a new prioritization framework. Unfortunately, EPA’s Framework continues to rely on the 1997 Guidance to assess the financial impacts of the various alternative program investment options.

EPA’s Framework has essentially established what NACWA has been advocating for in terms of a new prioritization framework. Unfortunately, EPA’s Framework continues to rely on the 1997 Guidance to assess the financial impacts of the various alternative program investment options.

### Cash-Flow Forecasting<sup>28</sup>

Because the Integrated Planning Framework calls for plans to “[e]nsure a financial strategy is in place, including appropriate fee structures”<sup>29</sup> - enhancements to the Guidance’s “snapshot”

<sup>25</sup> U.S. Environmental Protection Agency (EPA) Memorandum - June 5, 2012, Principles to Guide the Development of Integrated Plans #3 & 8., p. 3

<sup>26</sup> Drawn from The Need For An Integrated Water Quality Affordability Strategy, Robert A. Weimar, PE, BCEE and Brandon C. Vatter, PE, Hatch Mott MacDonald.

<sup>27</sup> Principles for Assessment and Negotiation of Financial Capability: A Compilation, Prepared for NACWA by: CH2MHILL and Galardi Rothstein Group, August 2007.

<sup>28</sup> Section text drawn from Financial Capability Assessment Revisited: Structuring Consent Decrees To Recognize Capital Financing Constraints And Market Change by Eric Rothstein, Utility Management Conference, February 2010.

<sup>29</sup> U.S. Environmental Protection Agency (EPA) Memorandum - June 5, 2012, Principles to Guide the Development of Integrated Plans #7, p. 3

assessment are due. This is particularly important for two fundamental reasons articulated in prior critiques of the Guidance<sup>30</sup>:

- Projected net revenue streams available to finance water quality improvements over time largely define community financial capabilities.
- Prospective wastewater bills that will be imposed on a community, rather than a confluence of indicators, best reflect financial burdens.

Drawing from processes commonly used for raising capital in credit markets, an enhanced IP FCA Framework can be constructed to test whether projected flows of funds will enable financing of program implementation. In general, these cash-flow projections would be comprised of forecasts of:

- Service rate (and applicable tax) revenue growth under potential rate increases;
- Revenues from miscellaneous sources including connection fees, industrial waste and septage charges, and interest earnings;
- Operations and Maintenance (O&M) expenses including additional expenses associated with new capital to be constructed over the forecast period; and
- Capital project financing expenses including debt service on existing and new debt obligations (e.g., revenue bonds, State Revolving Fund (SRF) loans, and other debt instruments).

Projected system-wide rate increases may readily be used to project estimated residential customer bills as a percentage of Median Household Income given assumptions about projected MHI growth

informed by historical experience. For example, if a community has seen (and is anticipated to see) real declines in Median Household Income, as has been the case in many “rust belt” communities, a more informative indicator of burden is how wastewater bills are projected to compare to MHI in 5, 10 and 20 years – across various levels of the income distribution spectrum. For example, the Metropolitan St. Louis Sewer District offered the following graphic to illustrate the differing impacts of projected rate increases across sections of their service area characterized by profoundly different income levels.<sup>31</sup>

[A]n enhanced IP FCA Framework can be constructed to test whether projected flows of funds will enable financing of program implementation.

[A] more informative indicator of burden is how wastewater bills are projected to compare to MHI in 5, 10 and 20 years – across various levels of the income distribution spectrum.

---

<sup>30</sup> Environmental Finance Advisory Board (EFAB), EFAB Comments On CSO Financial Capability Assessment Guidance, October 2007 and National Association of Clean Water Agencies (NACWA), Principles for Assessment and Negotiation of Financial Capability: A Compilation of Resources, November 2007

<sup>31</sup> Metropolitan St. Louis Sewer District, CSO LTCP Update, Section 10: Financial Capability Assessment, p. 10-9, August, 2009.



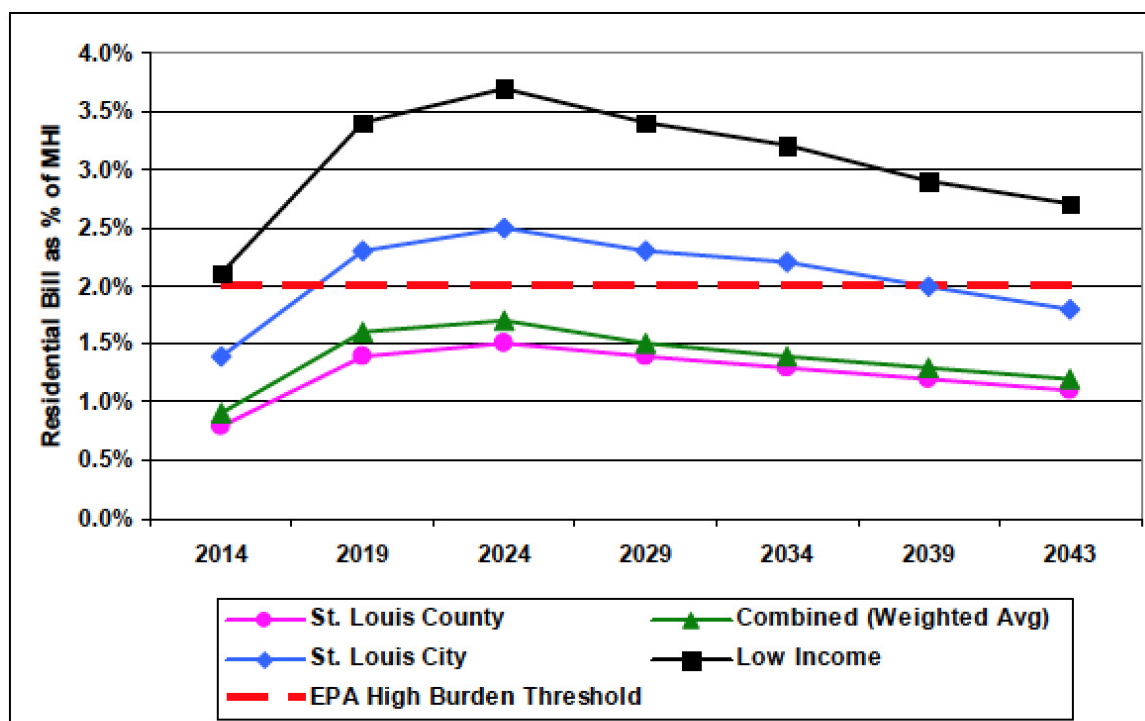


Figure 10-2 Baseline Scenario: Projected Typical Residential Bills as Percent of MHI by Ratepayer Group

This cash-flow forecasting framework provides opportunities to incorporate in meaningful ways many of the points about which additional documentation has been presented in prior Consent Decree negotiations (and which the 1997 Guidance matrix approach does not readily accommodate). For example, these forecasts incorporate a number of assumptions related to future economic conditions (e.g., future customer account growth, inflation factors, and interest rates). Such assumptions may reflect just the sort of trend data that permittees in communities suffering economic and population decline have offered as important considerations for appropriate assessment of their financial capabilities. In fact, these assumptions provide a methodological vehicle to reflect just the sort of alternative measures suggested as potential enhancements to the 1997 Guidance, yet in a more meaningful way.

Building on these types of cash-flow analyses, permittees would be required to develop projections of net revenues available for capital financing under a service (and tax) rate increase plan that is structured to impose an acceptable burden while not compromising the permittee's long-term financial viability. In determining appropriate rate increase plans, judgment will need to be applied (just as is the case now in practice). For example, annual service rate/tax increase programs that are less than or equal to 2x annual inflation or MHI escalation rates could be presumed to be a manageable pace for building capital financing capacity in most circumstances. However, these types of guidelines for the pace and magnitude of scheduled rate increases and the ultimate level of claims on permittee households' incomes must be tailored to local considerations and constraints. For example, local legal constraints may restrict the size or structure of rate/tax increases in any given year or rate-setting period. Many permittees must obtain voter approval to incur bonded indebtedness; others are effectively required to impose cost-of-service based rates (that limit rate structure options). These attributes must be recognized in defining rate/tax increase assumptions that directly impact calculations of net revenues available for capital financing.

Implementation of most water quality improvement programs will require a significant period of time for effective project planning, permitting, and design activities such that multi-year rate/tax increase programs may be tailored to these cash-flow requirements within local constraints. In some cases, permittees may ramp up financing capacity without imposing delays in program implementation; in other cases, manageable rate increases may not accommodate project implementation as quickly as physically possible. In still other cases, if permittees have exceptionally low existing rates, “lumpy” program implementation needs, or near-term program implementation requirements that would not elicit significant rate increases, more substantial early rate increases may be employed to establish rate stabilization funds that can smooth future rate increase requirements. In defining schedule requirements, it is important to recognize the significant benefit of material schedule relief – whereby longer-term programs enable deliberate, non-disruptive rate increase programs to build substantial project financing capacity.

As noted, cash flow analyses provide a substantially better means of assessing permittee financial capabilities by directly measuring claims on income and the availability of funds to finance capital investments. They also better address principles articulated in EPA’s Integrated Planning Framework. For example, by definition, they accomplish principle #7 to “ensure that a financial strategy is in place.” Without undue complication, cash-flows may be modelled for multiple revenue and expense streams across institutional boundaries (e.g., wastewater and stormwater utilities). In fact, strategic financial planning models may be crafted to reflect multi-agency initiatives and inform decision-makers of projected collective financial impact (that may not be readily assessed using the 1997 Guidance). They also lend to testing (as called for in Principle #3) to “[m]aximize the effectiveness of funds through analysis of alternatives and the selection and sequencing of actions ...”

[C]ash flow analyses provide a substantially better means of assessing permittee financial capabilities... and better address principles articulated in EPA’s *Integrated Planning Framework*.

## Analysis of Burden

Like the 1997 Guidance, projections of water quality improvement program claims on MHI produced from cash-flow analyses by themselves will fail to address differing impacts on significant customer groups within a permittee’s service area as well as disproportionate burdens across the distribution of income levels within permittee service areas. A simple and recommended means of providing additional documentation of these burdens is the calculation of projected bill claims for these customer groups or across differing quartiles or quintiles of the permittees income distribution. This may be accomplished simply with cash flow forecast models that develop projections of future rate increases and associated typical bills (as illustrated by the Metropolitan St. Louis Sewer District example). Projected bills are simply expressed in terms of the median household income levels within income quartiles as well as broadly across the service area population.

Fundamentally, the burden placed on sub-populations or communities within a permittee’s service area (rather than gauged by system-wide, median household metrics) must be considered

in defining limits on financial capability.<sup>32</sup> These sub-populations may be residents in a particular geography – for example, those within the city limits of a regional system<sup>33</sup> – or simply in the lower quintiles of the income spectrum. In any event, evaluating and understanding their burden is an important consideration in defining tenable, practicable programs and associated implementation schedules. The affected sub-populations or communities may not necessarily be low income, but because of large disparities in income levels, a sub-population representing a significant portion of the service area may exceed benchmark thresholds for affordability.

Analyses of disproportionate burdens are of paramount importance for assessment of financial capability, but also can help to ensure conformance with environmental justice principles in program implementation. These analyses may aid communities' understanding of the plight of their economically disadvantaged populations and help define appropriate community-level strategies to render aid.

EPA often cites a number of options for addressing disproportionate burdens on low-income ratepayers. In general, these options fall into two broad categories: (1) programmatic measures and (2) residential service rate options that discount water quality billings such that low-income users are assured continued access to services required to protect public health.<sup>34</sup> However, it is important to recognize that the availability of these options depends on community specific and state legal factors – and factors impacting the efficacy of each significantly limit the extent to which these measures may be viewed as “taking care of” the low-income affordability problem. In many jurisdictions discounting service rates for any sub-population is legally prohibited while others require that a cost-of-service basis support rate differentials.<sup>35</sup> Similarly, in many communities there are significant legal barriers to utility revenue (as opposed to general government/community) funding of low-income assistance programs. Even where such programs are in place, typical limits on their reach and ability to provide sustained relief constrain the extent to which they may be viewed as anything more than relief for the most acute affordability challenges.

<sup>32</sup> For many wastewater agencies, sub-population impacts are more than just a consideration. The burden on the sub-population – a city within the larger service area, for example – can be the primary driver for system-wide financial capability analyses.

<sup>33</sup> U.S. Environmental Protection Agency's (EPA) Interim Economic Guidance for Water Quality Standards, Section 2.2 provides that: “In the case of a sewage agency serving several communities, once project costs are allocated to each community served, the economic analysis is conducted on a community by community basis.”

<sup>34</sup> **Low-Income Affordability Programs** –include various forms of bill assistance programs whereby low-income customers are relieved of payment responsibility for some or all of their accrued wastewater service account balances. In many communities, these programs are supplemented by (and often tied to) water conservation / retrofit programs designed to help low-income households manage their future water use. Other programmatic measures may include financial counseling and structuring of payment plans. **Residential Service Rate Options** – include measures to assign income-qualified customers to a separate customer classification subject to reduced rates and, more commonly, structuring of general service rates that provide for lower costs per unit of volume at volume levels designated as minimum requirements to meet customers' health and sanitary needs.

<sup>35</sup> As concerns about the affordability of water resource services rise and regulatory agencies increasingly reference use of “non-uniform rate structures”, it is important to keep in mind that “non-uniform rates” can mean many different things. The term “non-uniform rates” is often used to describe income-qualified discounting of established service rates. But this is not always the case. In some instances, “non-uniform rates” means simply rate structures (uniformly applicable to all users) with differential pricing across the consumption spectrum (e.g., inclining-block rates), while in other instances, “non-uniform rates” contemplate separate classification of customer sub-populations (e.g., residential, commercial, industrial) to effect cost-of-service rate differentials. There are profound differences in the legal constraints and implementation complexities of these different types of “non-uniform rate structures”.

For purposes of enhancing financial capability assessments within the Integrated Planning Framework, these complexities place into context EPA's recent prescription that "strongly encourages municipalities to consider establishing lower rates or subsidies for low-income customers."<sup>36</sup> Because these programs are of limited effectiveness, the importance of calculations of prospective bill impacts across permittees' income distributions is especially important. As a matter of environmental justice, it must be recognized that enforcement actions that would impose acute burdens on a community's low-income populations strain that community's financial capability – affordability programs and rate structure options notwithstanding.

## Enhanced Assessment Procedures – Implementation Requirements

In advancing how the 1997 Guidance framework may be substantially enhanced, NACWA is acutely aware of the challenges faced by regulators in defining transparent, understandable and repeatable procedures that may be applied consistently across regions. It is also sensitive to the danger of imposing on permittees unduly complex FCA and subsequent reporting requirements. This is why the enhanced IP FCA framework reflects what is already required of effectively managed utilities:<sup>37</sup>

- A form of project evaluation and prioritization is already required in Consent Decree negotiations to define program components that meet cost-effectiveness criteria. The enhanced IP FCA framework merely expands the scope and audience for these analyses – in large measure embracing a "Triple Bottom Line" (TBL) perspective.<sup>38</sup> "Knee of the curve" analyses of alternative control technologies, rather than being the sole focus of candidate project evaluations, are among the criteria employed in familiar project scoring and ranking procedures.<sup>39</sup>
- Multi-year financial planning is a fundamental utility management tool that enables permittees to determine future revenue needs to support necessary expenditure patterns. Pro Forma Fund Summary formats may vary<sup>40</sup> but the basic requirement is akin to that which is required for debt issuances. Use of these same projections with a few modifications to capture projected bill impacts in terms of claims against customer incomes (e.g., system MHI, lowest quintile MHI) imposes arguably less burden than the current Guidance that is disconnected from regular utility financial management practice.

<sup>36</sup> U.S. Environmental Protection Agency (EPA) Memorandum: Assessing Financial Capability for Municipal Clean Water Act Requirements; from Nancy Stoner and Cynthia Giles to EPA Regional Administrators, Regional Water Division Directors and Enforcement Division Directors; January 18, 2013, pp. 2.

<sup>37</sup> U.S. Environmental Protection Agency (EPA), Association of Metropolitan Water Agencies (AMWA), American Public Works Association (APWA), American Water Works Association (AWWA), National Association of Clean Water Agencies (NACWA), National Association of Water Companies (NAWC), Water Environment Federation (WEF), Effective Utility Management, A Primer for Water and Wastewater Utilities (June 2008).

<sup>38</sup> See, for example, S. Kenway, C. Howe and S. Maheepala, Triple Bottom Line Reporting of Sustainable Water Utility Performance, AwwaRF Report 91179, January 2008; and Raucher, R.S., D. Garvey, K.C. Hallett, J. Henderson, C. Wagner, and other. 2007. An Economic Framework for Evaluating the Benefits and Costs of Biosolids Management Options. Final Report. Co-published by the Water Environment Research Foundation (Alexandria, VA) and IWA Publishing (London, U.K.)

<sup>39</sup> See, for example, American Water Works Association Research Foundation (AwwaRF), Capital Planning Strategy Manual (2003).

<sup>40</sup> Templates for which could be readily developed based on strategic financial planning models used in the context of recent Consent Decree negotiations as highlighted in Section 8 below.

- Consideration of the potential burden of prospective bills across ratepayer populations is likewise a regular aspect of utility financial management and customer service functions. Ensuring financial viability and quality customer service requires utilities to know the demographics of their customer bases and be responsive to the economic conditions in their communities.

Therefore, an enhanced IP FCA framework is not anticipated to require a material expansion in the scope of information required of permittees and ultimately reviewed by regulators. The resultant submittals will more directly address Integrated Planning principles and render a clearer picture of community financial capabilities that the existing Guidance seeks in its request for additional documentation.

Beyond defining how supplemental information may be considered in the current FCA matrix's two measures, an enhanced IP FCA framework, developed through permittee and regulator collaboration, could address how more substantive information indicative of community financial capability may be developed and presented. The enhanced framework could be advanced by:

- Defining (among many available and familiar examples) the type of TBL project evaluation procedures that will support improved, more expansive, project evaluation and prioritization,<sup>41</sup> and
- Defining how cash flow forecasting may be used to support “reopener” provisions in future Consent Decrees given that both economic dynamics and the flexibility called for in the CWA effectively require some easily managed mechanisms to adapt to changing financial circumstances.

Moreover, the enhanced IP FCA framework – because it features disciplined prioritization and cash-flow analyses – would facilitate development of project schedules that ensure program cost-effectiveness. Not only would the costs associated with program financing be readily incorporated, but also sequencing of individual projects could be structured to optimize environmental returns and support adaptive management.

## PRECEDENTS AND POLICY DIRECTION

Fortunately, there are a number of examples of recently completed Consent Decree negotiations that have mirrored attributes of an enhanced IP FCA framework. For example, cash flow analyses were used extensively to support (and grant) the City of Atlanta's recent request for a 13-year extension of its SSO Consent Decree obligations and the City and County of Honolulu's 25+-year comprehensive Consent Decree addressing collection system and secondary treatment requirements.<sup>42</sup> New York City, Kansas City, and the Northeast Ohio Regional Sewer District

<sup>41</sup> This could include development of guidance around how other project evaluation criteria may be scored and weighted in project evaluation procedures – offering a defined methodological framework for consideration of the additional documentation called for in current Guidance.

<sup>42</sup> See the City of Atlanta, First Amended Consent Decree, 1:98-CV-1956-TWT, Financial-Capability-Based Schedule Extension Request Report filed with U.S. Federal District Court (April 2010).

(among others) have negotiated agreements that facilitate the use of green infrastructure solutions and reflect recognition of the financial and schedule implications of more holistic approaches to water quality improvement. These examples suggest that the evolving landscape for financial capability assessments is indeed malleable but may demand the concerted efforts of the regulated community. They further highlight how important it is for individual permittees to have a clear understanding of the FCA topography and develop strategies for their own negotiations.

## IMPORTANT CONSIDERATIONS FOR UTILITIES

In developing appropriate strategies for Clean Water Act negotiations related to program definition and scheduling, permittees are faced with several conundrums. While the current EPA Guidance is fundamentally flawed, it is also often treated as a “gatekeeper” for consideration of financial capability-based concerns. Enforcement agencies often assert that the calculations are required to initiate negotiations. In this context, permittees are faced with the option of performing the requisite calculations and attempting to use “additional documentation” to better characterize their circumstances or declining to participate in the exercise by offering cash flow forecast data in substitute. Though most permittees have performed the simplistic matrix calculations, both approaches have been employed with success. Importantly, the latter strategy of dispensing with Guidance calculations should be recognized as a legitimate, and in many cases, compelling option.

[D]ispensing with [the 1997 EPA] Guidance calculations should be recognized as a legitimate, and in many cases, compelling option.

Integrated Planning offers considerable promise for more effectively accomplishing water quality improvements that will benefit permittee communities. Orchestrating the associated, potentially multi-jurisdictional, financial (and project delivery) obligations will involve new challenges that will require flexible scheduling to accomplish. Permittees must therefore gauge the practicalities and politics of, along with the local regulatory community’s ability and willingness to support, a broader portfolio of responsibility.

Collectively, the permittee community through organizations like NACWA also face a strategic imperative to obtain meaningful and practical legal and regulatory support for Integrated Planning. EPA’s acknowledgement of potential benefits, as reflected in its recent framework memorandum, is an important first step. Yet, real reform may only be realized by overcoming the institutional boundaries that have precipitated the current “stove-piping” of water quality management responsibilities. Satellite systems and local flood control/drainage service providers should not have to face the prospect of costly enforcement actions (but rather should entertain the merit of regulatory sponsored incentives) for it to make economic sense to embrace holistic water quality management. Perhaps more elementarily, the permittee community must speak with a strong collective voice to prevent misinterpretations of existing Guidance and practice from gaining currency in the environmental advocacy and regulatory communities.



## CONCLUSIONS

To date, and characteristic of their good faith, most permittees have pursued an approach to schedule development that achieves the greatest environmental benefits as soon as practicable. Realistic project delivery timing and tenable rate increase programs have defined their proposed program schedules. Though the regulatory community has, at times, been reluctant to work within these constraints, permittees' demonstrated commitment has most recently tended to carry the day and offer important precedents for permittees to note in enforcement negotiations.

The enhanced IP FCA framework for the development of water quality investment programs and consent decree schedules offers significant and needed enhancements to current EPA guidance and practice. Enforcement actions and scheduling practices have historically adopted an unduly narrow and prescriptive view of how to comply with the CWA, including, in some cases, the Combined Sewer Overflow (CSO) Policy.<sup>43</sup> Namely, calls for remedial measures to be "cost effective" and implemented "as expeditiously as practicable" meant that the lowest cost improvements to achieve remediation should be installed as quickly as physically possible. Yet, as financial constraints become increasingly acute and water quality improvement is recognized to require more than point-source control, it is clear that cost-effectiveness and timeliness cannot be viewed irrespective of financial consequence or available holistic measures. Rather, costeffectiveness must reflect the need for prioritization within financial constraints and across broadly defined water quality management measures. Program schedules must reflect requirements to service and secure debt obligations, and enable geographically distributed, green infrastructure solutions to take hold.

The enhanced IP FCA framework is also responsive to the EPA's intent for reviewing and revising current Guidance. In its recent memorandum<sup>44</sup> outlining its planned dialogue with local government representatives, the Agency indicated that it will focus on:

- How to expand the use of benchmark indicators of household, community and utility affordability' such as increasing arrearages, late payments, disconnection notices, service terminations, and uncollectable accounts;
- How to meet the obligations of the CWA by utilizing flexibilities in the statute and implementing regulations to prioritize necessary investments;
- How rate structures present both limitations and opportunities;
- How innovative financing tools, including public private partnerships, are related to affordability;
- How to facilitate consistent policy implementation at EPA Regional offices; and
- How other community specific factors, including obligations under the Safe Drinking Water Act, should be considered in developing appropriate compliance schedules

<sup>43</sup> U.S. Environmental Protection Agency (EPA), Combined Sewer Overflow (CSO) Control Policy, Federal Register, vol. 59, No. 75, p.18688 – 18698, April 19, 1994

<sup>44</sup> U.S. Environmental Protection Agency (EPA) Memorandum: Assessing Financial Capability for Municipal Clean Water Act Requirements; from Nancy Stoner and Cynthia Giles to EPA Regional Administrators, Regional Water Division Directors and Enforcement Division Directors; January 18, 2013, pp. 2.

The three primary enhancements to the Guidance-prescribed procedures outlined in this paper – watershed or TBL prioritization, cash-flow analyses and analysis of disproportionate burden – speak to many of these focus areas. In doing so, they do not simply acknowledge a basis for concern but also provide a foundation for methodological revisions to FCA calculations and procedures that may be consistently applied by regulators.

Finally, looking ahead as water resource service rates continue to claim greater shares of customers' disposable income, it becomes important to recognize the implications of coming limits of financial capability. Once permittees are pressed to the limits of their financial capabilities, resources are not available to fund the next round of regulations. As industry decision-makers – regulators, permittees, and governing boards –contemplate new requirements for nutrient removal, mitigation of compounds of emerging concern, or climate change adaptation, as well as continued system renewal and rehabilitation, tough choices will be required.

For permittees, once a viable strategic financial plan is established that imposes the limits of locally feasible shouldering of ratepayer burden, a “zero-sum protocol” should prevail. Just as individuals manage their budgets, regulators and permittees would be required to recognize that new requirements will either necessitate deferrals of previously scheduled projects, or must be deferred until financing capacity is available. The “zero-sum” requirement must prevail since permittees' overall financial capacities are “maxed out.” Arguably, only by evolution from the historical approach to regulatory enforcement that mandated remediation irrespective of cost, to one that recognizes financial limitations and mandates effective prioritization of limited resources may it be possible to assure permittees' continuing financial viability and ability to continue to achieve water quality improvements.

# **Principles for Assessment and Negotiation of Financial Capability: A Compilation of Resources**

**November 2007**

---

## Copyright Notice and Disclaimer

This work is protected by copyright owned by the National Association of Clean Water Agencies (NACWA). As owner of the copyright, NACWA hereby grants users of this work a nonexclusive royalty-free license to reproduce this work for educational and information sharing purposes subject to the following limitations:

- 1) This work must be reproduced in its entirety, without alterations.
- 2) All copies of this work must include this page (Copyright Notice and Disclaimer).

Persons desiring to reproduce this work for purposes other than those listed above should contact NACWA to discuss the intended use and to obtain appropriate permission.

Knowledgeable professionals prepared this work under contract to NACWA. Neither NACWA nor its contractor has any obligation to update this work or notify users of any changes to the information discussed in this work. Neither NACWA nor its contractor assumes any liability resulting from the use of or reliance upon any information, conclusions, or opinions contained in this work.

## Acknowledgements

This compendium Report prepared for NACWA by:

CH2M HILL  
Galardi Rothstein Group

Financial Capability Assessment Task Force:

**Adel Hagekhalil, Division Manager, Wastewater Engineering Services**

*Los Angeles (City), CA, Bureau of Sanitation*

**Lisa Hollander, First Assistant General Counsel**

*Northeast Ohio Regional Sewer District (NEORS)*

**Tim Houghton, Executive Assistant**

*Honolulu Department of Environmental Services*

**Martin Umberg, Sewers Chief Engineer**

*Cincinnati, Metropolitan Sewer District of Greater Cincinnati*

## Table of Contents

- ❖ Introduction and Overview of Assessing Financial Capabilities for Negotiation and Management of Clean Water Programs
- ❖ *Document 1: Annotated Guiding Principles for Financial Capability Assessment of Clean Water Programs* (NACWA, October 2007)
- ❖ *Document 2: Potential Revisions to the EPA Financial Capability Assessment Methodology: A Conceptual Example* (NACWA, October 2007)
- ❖ *Document 3: Review of EFAB Comments on CSO Financial Capability Assessment Guidance* (NACWA, October 2007)

## Introduction

This document, *Principles for Assessment and Negotiation of Financial Capability: A Compilation of Resources*, compiles work completed following the publication of NACWA's 2005 white paper *Financial Capability and Affordability in Wet Weather Negotiations* (*White Paper*), which offered a critical review of the U.S. Environmental Protection Agency's (EPA) financial capability assessment guidance.<sup>1</sup> These new documents have expanded upon the points highlighted in NACWA's *White Paper*, and have outlined principles and approaches for more effective assessment of financial capabilities.

NACWA developed this compilation for its clean water agency members (referred to throughout as permittees or clean water agencies<sup>2</sup>) and their communities. Wet weather discharges including sanitary and combined sewer overflows continue to be top enforcement priorities for U.S. EPA and the government has set specific annual goals for establishing court-mandated programs for municipalities to address these issues. NACWA continues to advocate for more responsible national policy and enforcement practices that recognize and are responsive to permittees' environmental stewardship and fiduciary responsibilities. Other stakeholders, including the Environmental Finance Advisory Board (EFAB), are also recommending changes to EPA's current policies and guidance. EPA's existing financial capability guidance, which, as outlined in NACWA's 2005 *White Paper*, has many limitations, is still used as the primary resource for enforcement personnel. NACWA remains hopeful that federal policy and EPA's guidance on financial capability will ultimately be revised to incorporate the new concepts and approaches detailed in the Association's *White Paper*. In the interim, however, this compilation of resources will provide the NACWA membership critical information necessary to strike an effective balance between stewardship goals and financial responsibilities.

This compilation is intended to offer NACWA members guidance and information for use in balancing customer service and environmental stewardship goals with financial responsibilities. It also offers perspectives that may be used to establish a sound negotiation position with enforcement agencies that recognizes the required balancing of program costs and implementation schedules ("time and money"). This compilation begins with a discussion of how to use the various documents, and provides additional information for use in the assessment and negotiation of clean water program implementation.

<sup>1</sup> United States Environmental Protection Agency, *Combined Sewer Overflows: Guidance for Financial Capability Assessment and Schedule Development* (1997) – hereinafter generally referred to as "EPA's 1997 Guidance" or "the EPA Guidance"

<sup>2</sup> "Permittees" refers herein to agencies issued National Pollution Discharge Elimination System (NPDES) permits and are subject to enforcement of the federal Clean Water Act.



## Assessing Financial Capabilities for Negotiation and Management of Clean Water Programs

NACWA has consistently advocated that local economic impacts are an important consideration in the development of environmental programs and enforcement priorities. That environmental requirements must be feasible and affordable for communities is recognized by a number of United States Environmental Protection Agency (EPA) publications, as well as the Clean Water Act (CWA) itself. However, as noted in NACWA's 2005 *White Paper*, "public agency experience with the Agency's implementation of its own guidance documents, along with its more vigorous use of enforcement, has revealed numerous limitations and shortfalls in the Agency's standard approaches to assessing financial capability and affordability at the local level." NACWA's *White Paper* calls for "...a more holistic, economically sustainable" framework to guide financial capability assessments, but to date there has been little movement at the federal level to make any major changes.

Given this recent experience, it is important that clean water agencies concerned with managing the financial implications of clean water programs have a full and complete understanding of the EPA guidance documents on financial capability. This would include recognizing what is and is not historically considered in enforcement actions, as well as recognizing the shortcomings of the Guidance (as summarized herein and in the NACWA *White Paper*). Clean water agencies may use this knowledge in the preparation of their Financial Capability Assessment (FCA) filings and in negotiation of any final programs or enforcement documents.

### A. Permittees' Fiduciary Responsibilities

Permittees required to finance major capital improvement programs face a significant challenge. Permittees not only have responsibility for compliance with various environmental laws and regulations, but also are charged with effective stewardship of public funds. The realities of communities' competing priorities can result in difficult decisions on how best to invest public money. While there are clear regulatory requirements that dictate certain spending, other investments can and should be prioritized. Permittees developing FCA submittals and establishing their negotiation positions must balance the need to spend in order to meet regulatory mandates with other needed investments to ensure that reasonable limits of annual expenditure are established.

For permittees, a reluctance to commit to certain environmental investments that yield limited environmental benefit per dollar of expenditure is not a matter of recalcitrance – it is a matter of responsibility.

### B. Financial Considerations for Negotiation Strategy

Communities preparing negotiation strategies should understand the need to evaluate and plan for future changes in the marketplace that could compromise their ability to implement a particular clean water program effectively. Flexibility in dealing with risks due to uncertain future conditions should be included in the negotiation strategy. For example, definitive schedules for significant volumes of work irrespective of construction market conditions or program management logistical constraints can be extremely problematic. Recent experience with world-wide construction material price escalation illustrates the unpredictability of market dynamics and their impacts on program costs.

For communities facing inflexible deadlines for completion of clean water program milestones, this cost escalation could impose enormous and largely unplanned rate or tax increases.

Even though enforcement actions impose specific implementation milestones, clean water agencies can protect themselves from future conditions that may present unaccounted for obstacles to implementing a particular program. This is accomplished by examining assumptions used in developing any long-term program

assessing risks, and providing for protection from these risks in the program. Several approaches have been successfully negotiated by clean water agencies and include:

- Placement of a cap on program cost over a defined implementation period, where program costs are defined holistically (to include requirements for Clean Water Act compliance, asset management, and other prospective capital expenditure requirements).
- Definition of annual spending limitations on holistically defined program costs such that rate increases may be mitigated.
- Monitoring of agreed-upon program implementation metrics such that variances from projections used as the context of negotiations (e.g., cost estimates, contractor mobilization periods) give rise to schedule relief or revision of program requirements.
- Regular review of factors used for assessing financial capabilities or other factors (e.g., those identified in Appendix A to the Annotated Guiding Principles herein). Eligibility for, or direct provision of, schedule or program scope relief could be obtained if selected factors reach negotiated threshold values.

Clean water agencies should consider whether specific milestones should apply only to the limited number of environmental investments that clearly yield the highest available environmental returns per dollar of expenditure. Fixed schedules for the remedial measures components (e.g., early action plans) of clean water programs also make sense from both an economic and environmental perspective; fixed schedules for entire long-term programs are difficult to develop and attain because of changing conditions and flexibility should be sought.

### **C. Using this Compilation – Recommended Approaches to Financial Capability Assessment**

In negotiating long-term programs, clean water agencies should look beyond the prescriptive language of the current EPA Guidance and use the more general provisions discussed in the Guidance that encourage consideration of unique local conditions in the economic assessment process. As highlighted in NACWA's 2005 *White Paper* and the recent Environmental Financial Advisory Board<sup>3</sup> (EFAB) reviews, the prescriptive approach found in EPA's 1997 Guidance does not provide for full and accurate representation of the financial impacts of clean water investment programs. Permittees should recognize that their financial capability assessment filings afford them a unique opportunity to highlight the multitude of needs that make demands on limited community resources. These claims typically extend beyond the narrow focus of specific enforcement actions, and they often represent measures mandated, or at least recommended, by EPA and state enforcement agencies (e.g., asset management). These filings further provide an opportunity to demonstrate how certain cost and financing factors that are relegated to "additional considerations" in narrowly constructed filings, are in fact particularly significant and unique local conditions that should be the primary basis for evaluation. A more holistic analysis may afford permittees an opportunity to demonstrate their attempts to effectively balance economic and environmental concerns, consistent with their (uniquely held) fiduciary responsibilities.

NACWA's Annotated Guiding Principles (Document 1) and associated conceptual model (Document 2) offer assistance in developing such a holistic analysis. They recognize the primacy of local conditions and competing claims on community resources, mitigate impacts on low-income communities, and acknowledge the tradeoffs of time and money in defining program requirements. Though they do not prescribe specific methods for

<sup>3</sup> A critical review of EFAB's comments on EPA's CSO Financial Capability Assessment Guidance, which echoes many of the points of NACWA's white paper but does not address several of the fundamental problems with EPA's guidance, is provided as the final component of this compilation.

compiling information required by EPA Guidance, several strategies are implicit. For example, in defining program costs, the breadth of requirements for water quality investments (e.g., CSO, SSO, stormwater management, asset management) must be considered, not just those costs identified in a Long-Term Control Plan (LTCP). In addition, local construction cost escalation data may be used rather than referring to Consumer Price Index values. Permittees may even offer adjustments to Median Household Income values to reflect impacts of exceptionally high shelter costs or local tax burdens.

If nothing else, the Annotated Guiding Principles and conceptual model may effectively provide an outline for submitting “additional considerations” for EPA review. In so doing, permittees may structure their commentary on financial capability concerns in a manner consistent with NACWA advocacy. Section IV also offers permittees an alternative methodological approach to financial capability assessment that is consistent with NACWA’s guiding principles.<sup>4</sup> It offers one approach to retrieving local concerns and prioritization needs, which are central to a true assessment of financial capability, from the list of potential “additional considerations.”

Permittees should understand that concerns over the absence of a framework for dealing with “additional considerations” and the methodological limitations of EPA’s 1997 Guidance have engendered calls for its review and revision. In Document 3, NACWA has reviewed the EFAB comments on EPA’s Guidance and has attempted to frame the dynamics of ongoing developments related to financial capability assessments. EFAB has offered comments that echo many of those made by NACWA in its 2005 *White Paper* yet do not call for the fundamental changes advocated by NACWA. This climate of potential change may afford permittees an opportunity to make or reinforce points that gain currency with EPA, or which may be viewed favorably in litigation.

---

<sup>4</sup>This approach has several significant advantages in that it recognizes the complexity of assessment of financial capability (rather than requiring a prescriptive two-part test), may be tailored to reflect local conditions and concerns, and is a transparent process for evaluating the relative impacts of program alternatives.

*Document 1*

Annotated Guiding Principles for Financial  
Capability Assessment of Clean Water Programs



## Purpose

The National Association of Clean Water Agencies (NACWA) has led the wastewater industry in advocating for the development and implementation of water quality policies that are grounded in practical insights and technical expertise. In 2005, NACWA published a white paper, *Financial Capability and Affordability in Wet Weather Negotiations* that provides a critical review of the U.S. Environmental Protection Agency's (EPA's) Financial Capability Assessment (FCA) guidance documents. It also delineates policy considerations to mitigate adverse economic impacts of Clean Water Act enforcement practices.

Referencing that *White Paper*, EPA's Assistant Administrator for Water, Benjamin Grumbles, called for a thorough review and revision of the FCA, specifically EPA's 1997 document "CSO Guidance for Financial Capability Assessment and Schedule Development".

To support EPA's review of the FCA, and to further the discussion on financial capability assessment, NACWA prepared a set of Guiding Principles to:

- Outline principles to guide revision of financial capability assessment practices, and
- Define economic considerations that wastewater agencies may appropriately highlight in negotiating Clean Water Act enforcement measures.

This document suggests clarifying definitions for a number of commonly used terms and provides context for the guiding principles for Financial Capability Assessments first offered by NACWA in July 2006.<sup>5</sup> In Section IV, an alternative methodological framework for conducting Financial Capability Assessments is presented to foster further discussion.

## Definitions

The discussion on the financial implications of long-term water quality-based control programs and the rising costs of water and wastewater services has been characterized by loose and often times interchangeable use of the terms "financial capability" and "affordability". Other terms, including "widespread economic hardship" and "low-income ratepayer impacts" have peppered the dialogue, causing further confusion. In order to ensure a degree of precision and clarity, the following definitions and context of the two most commonly used (and misused) terms are offered:

- **Financial capability** is the relationship between a community's<sup>6</sup> economic condition and the investments needed to make water quality-related improvements. A community's ability to pay for these needed improvements is determined by its existing and potential future economic situation. Based on an assessment of a community's economic situation, the scope of any improvements and the timeframe for making the improvements is determined.
- **Affordability** relates to whether individual utility ratepayers or customers can pay their utility bills without undue hardship or unreasonable sacrifice in their lifestyle or in their essential spending patterns.<sup>7</sup>

<sup>5</sup> The Guiding Principles were shared with many stakeholders, including the U.S. Environmental Protection Agency, in an earlier draft form.

<sup>6</sup> The term "community" is intended to include the affected service area population, or portion thereof, of all wastewater entities, regardless of governance type (city, county, regional provider, special district, etc.).

<sup>7</sup> This concept is drawn from a forthcoming Water Environment Federation Special Publication focused primarily on low-income assistance program planning and implementation considerations.

These definitions focus on prospective impacts and reflect an implicit public policy imperative that water quality investments must be considered in the context of other claims on limited available resources. Financial capability relates to broad community impacts and spending constraints; affordability to individual customer/ratepayer budgets. The definition of financial capability points to the reality that a community's capacity to finance water quality improvements depends on competing claims for other environmental investments (e.g., air quality improvements), as well as a full spectrum of public and social services.

Notably, these definitions frame but do not address at least three important questions that are fundamental to the debate on the financial implications of clean water policies:

- The definition of financial capability does not offer guidance on *how* prioritization of water quality investment across competing community objectives may be accomplished, particularly within a regulatory framework.
- The definition of financial capability defers the question of whether financial capability for further water quality investment is a function, in part, of past investment histories.<sup>8</sup> Given competing community priorities, not only may a community's "existing and potential economic situation" warrant consideration, but so also may the extent to which it has already invested in water quality.<sup>9</sup>
- The definition of affordability focuses on individual ratepayer impacts but is silent as to where the responsibility for ensuring the affordability of service resides.

NACWA's Guiding Principles speak to the limitations of existing EPA Guidance for effectively addressing these public policy questions and offer perspectives on how community financial capability may be considered in defining the scope and timing of water quality investments. In the subsequent sections, each of NACWA's Guiding Principles is presented with accompanying discussions of such policy implications.

## NACWA Guiding Principles

Individual NACWA Guiding Principles are offered in the following sections *in italics* followed by a discussion of their implications for conducting financial capability assessments and water quality investment policy.

### I. Economic Capability

#### ***A. The first consideration in a financial capability assessment must be the community's economic situation.***

<sup>8</sup> Alternative schools of thought exist about the relevance of past water quality investments for the determination of financial capability. One school of thought would suggest that past investments are only relevant to the extent that a community continues to pay debt service on these investments, thereby limiting capability for future investment. Alternatively, to the extent that one may view past, fully financed, water quality investments as limiting the prospective environmental return of future water quality investments, it may be argued that prior water quality investment is a relevant factor even in the absence of debt service obligations. More generally, it may be argued that significant prior water quality investment suggests the merit of environmental investments elsewhere (e.g., air quality).

<sup>9</sup> For example, to the extent that Chicago's Tunnel And Reservoir Plan (TARP) program or San Francisco's Clean Water Program represent substantial and seminal past investments, traditional enforcement actions based on prospective assessment of financial capability generally deny recognition of previous investments and communities' competing claims on limited resources.



- *Prescriptive formulas for calculation of financial capability and thresholds for expenditure (e.g., median household income or MHI) are just one indicator of a community's ability to afford a particular program.*
- *Local conditions (e.g., scheduled water rate increases, rising energy costs, population and employment projections, low-income population percentage, construction market, shelter costs, etc.) are the primary factors in determining economic capability. Criteria must be developed to incorporate site-specific local conditions into the capability analysis.*
- *A framework or structured procedure should be established for evaluating local conditions to ensure a degree of national consistency. However, the framework must allow the specific local conditions to ultimately define the schedule and cost incurred for any particular program.*

### Discussion:

EPA's current FCA Guidance provides reasonable litmus tests as to whether low median household incomes warrant schedule or program requirement relief. The current FCA Guidance also provides some reasonable measures as to whether poor community financial performance indicates real limitations on local debt financing capacity. Yet contrary to EPA enforcement practices in numerous cases, these barometers alone are insufficient<sup>10</sup> to determine whether potential program costs represent high burdens (requiring schedule relief or reduced program requirements). Many communities may pass these litmus tests and yet not be in a position to finance water quality improvements without imposing untenable burdens or deferring other, more beneficial environmental investments. Financial capability, as suggested by the above definition, is a function of a broad array of interdependent factors that reflect not only resident and community income and wealth but also the economic prospects of diverse populations within a permittee's service area. Prescriptive formulas that focus only on median income values and broad measures of community financial performance cannot adequately represent or consider this diversity, and therefore cannot adequately assess financial capability.

In considering potential revisions to the current EPA FCA Guidance, recognition of the **primacy** of local conditions in determining financial capability would represent a significant advance. However difficult (as discussed below), this is **essential** for effectively assessing community financial capability. In the same way that an individual's ability to finance an investment is driven by numerous (non-income related) individual circumstances – including family wealth, dependent care requirements, essential service costs, and so on – the same is true for communities. Equally challenging is the fact that the relative importance of these factors differs from community to community and region to region. Potential adverse economic considerations are much more pronounced in “rust belt” communities than the booming southwest, and shelter costs are much more problematic in Hawaii and California than the Midwest. Accordingly, the consideration of local conditions must be tailored to reflect prevailing economic imperatives.

Financial capability assessment procedures that consider a community's economic **outlook** and the potential impact of program requirements over time, rather than the ‘snapshot’ approach of current EPA Guidance, are also important for assessing how individual communities can implement capital projects to solve water quality problems. For example, the static aspect of the current FCA Guidance has led to EPA conclusions that neither the City of Atlanta's nearly \$4 billion water-quality improvement program nor the Northeast Ohio Regional

10

Enforcement practices essentially have defined these litmus tests, in combination, as necessary conditions for a finding of high burden warranting schedule relief. Central to NACWA's guiding principles is the thesis that financial capability is not a threshold defined by selected financial benchmarks, but rather is a function of an array of (mostly local) factors. Therefore, the magnitude and pace of water quality investments must reflect these factors.

Sewer District's \$4 billion in expenditures over 30 years present high burdens to their communities. Common sense, if not defined assessment procedures, suggest the contrary. In fact, the Guidance suggests that for communities with strong financial performance indicator scores, there is virtually no program cost high enough to present a sufficient burden. While affluent communities certainly are likely to have greater capabilities than poorer communities to finance water quality improvements, this capacity is not infinite.

These and other examples support the contention that broadly applied prescriptive formulas without adequate consideration of local factors are untenable. There is no question, however, that tailoring financial capability assessments to site-specific local conditions could exacerbate inconsistencies in national enforcement practices, which are already heightened by variations in policy interpretation across EPA regions. As a consequence, a framework that is transparent, auditable and sufficiently flexible to accommodate a broad range of considerations is required.

In many respects, these evaluation requirements are typical of public resource investment decisions, where multiple priorities must be balanced across different, often competing, objectives. This suggests the potential value of formal prioritization methodologies that have been used successfully in, for example, portfolio management of financial resource decisions. Document 2 in this compilation includes a draft structure for prioritization of water-quality investment methods.

***B. Economic capability for clean water programs must be assessed in light of other investment demands and potential environmental benefit.***

- *Water quality-related investments should be viewed holistically as components of a community's overall environmental investment (i.e., Combined Sewer Overflow (CSO), Sanitary Sewer Overflow (SSO), Stormwater, Total Maximum Daily Load (TMDL) programs).*
- *A utility has a fiduciary obligation to utilize its limited resources in such a way as to maximize the benefit to its community, so water quality-related projects must be prioritized based on cost effectiveness.*

**Discussion:**

Investment decisions, whether to manage personal wealth or community resources, call for consideration of available alternatives. Similar to individual investors, local governments fulfilling their fiduciary responsibilities seek to invest resources in ways that will maximize returns (in the form of community benefit) at acceptable levels of risk. EPA's current FCA Guidance uses discrete measures of community resources (e.g., median household incomes, community financial indicators), in isolation, to define capability to finance water quality investments. In certain communities, however, dedicating limited available resources for certain water quality investments will preclude investments that will provide more substantial benefit, resulting in sub-optimal resource allocations that, by definition, are not cost-effective.

Cost effectiveness must be considered in the context of a "portfolio" of available investment alternatives to achieve environmental benefit. Cost effectiveness, then, is about potential benefit relative to costs incurred, and a necessary condition is for benefits to exceed associated costs. But cost effectiveness is not established solely by benefit/cost ratios greater than one. For example, it is not cost effective to make an investment that yields benefits two times greater than associated costs if that will preclude another equivalent investment yielding benefits three times greater than costs. Rather than being an absolute measure, cost effectiveness is a relative measure, requiring consideration of other available alternatives.

In this respect, water quality investments can only be appropriately prioritized when they are considered from the holistic view of total watershed management.<sup>11</sup> In personal investing, investments are not optimized by considering the projected returns of individual stocks or bonds, but by balancing risks and returns in one's portfolio of investments. Similarly, the benefits of water quality investments cannot be properly considered in isolation based on, for example, compliance with individual provisions of the Clean Water Act. Rather, holistic water quality investment strategy requires balancing of investments to yield overall benefit within available resource constraints.

A holistic view also avoids investments being driven by the arbitrary sequencing of enforcement actions or compliance requirements. For example, investments in CSOs should not be prioritized over investments in SSOs or sediment remediation simply because a CSO-related enforcement action precedes other actions. Agencies facing prospective enforcement actions and/or compliance needs on multiple fronts may rightfully assert that limited resources ought to be applied first to those investments yielding the greatest or most immediate benefit per dollar of investment, with investments of lesser benefit deferred. This scheduling priority should not be a function of which enforcement action is taken first, but rather a function of water quality improvement returns. A holistic perspective requires not only an appropriate scope but also recognition of constraints on the *pace* with which water quality investments can be made.

A holistic perspective suggests that the magnitude and scope of water quality investments should generally be a significant, though not overly burdensome, claim on a community's resources. We all recognize that water quality is critically important for the health and vitality of our communities. In the same way that it is inappropriate to assert that massive water quality investment programs are not burdensome, it is equally inappropriate for communities to forestall significant environmental investments due to other, ever-present priorities. A utility's fiduciary responsibility is not to avoid water quality investments but rather to ensure that its significant allocation of resources to water quality investments are paced to yield the highest return within the real (and locally determined) constraints on its community's financial capabilities.

***C. Environmental improvements should be structured so as to mitigate the potential adverse impact of their cost on distressed populations.***

**Discussion:**

As stated above, EPA's current Guidance results in FCAs that provide a static review of the availability of community resources, rather than an evaluation of how the associated burden is distributed among sub-populations. The FCA Guidance is effectively silent on the potential adverse impacts of program implementation on distressed populations. In the same way that individuals who are responsible for disadvantaged relatives must divert resources to their care, thereby limiting their financial capability to make other investments, communities' financial capabilities cannot be separated from the public challenges presented by distressed populations.

Addressing the needs of distressed populations may, in fact, limit the total resource pool available to make water quality investments. Mitigation of the potential adverse impacts of water quality investments should

<sup>11</sup> Arguably, a truly holistic perspective may be even more expansive. Even if restricted to environmental investments subject to EPA enforcement, water quality investments should be prioritized across the spectrum of options that include investments in air quality, drinking water quality, wetland preservation, and so on.

extend beyond rate design and targeted programs to facilitate low-income assistance<sup>12</sup>. It is appropriate to include environmental justice considerations in determination of site and schedule requirements for water quality programs.

## II. Program Scope and Timetable

***A. The scope of and implementation schedule for water quality-related improvements must be tailored to the affected community's unique financial condition.***

- *Water quality-based improvement programs must be designed to maximize water quality benefit while maintaining a healthy economic balance for the community.*
- *The appropriate pace of environmental investments cannot be prescribed (e.g., 20 years) but rather must reflect the community's financial capabilities and investment alternatives.*
- *There is no legislative limitation on extended implementation schedules. Regulatory limitations, to the extent they exist, can be addressed and overcome.*

*Considering financial capability in light of other investment demands and potential environmental benefits ensures that the greatest water quality improvement is obtained at the earliest possible time.*

### **Discussion:**

While the discussions above address many issues related to program scope, similar considerations govern questions of implementation schedule. In particular, not only is there no regulatory or legislative limitation on schedules, but arbitrary schedule prescriptions can lead to sub-optimization of investment resources. Implementation schedules should reflect investment priorities; projects conveying lower environmental benefit per dollar should not be prioritized above higher-benefit alternatives simply to meet arbitrarily prescribed schedules. In addition, schedule variances should be evaluated in the same context as project options: in terms of the benefit or costs associated with advancing or deferring program implementation. Fundamentally, benefits that accrue from scheduling projects earlier should exceed the opportunity costs of deferral. While there is certainly a “slippery slope” to consider (e.g., what harm will it do to defer a project another year, and then another?), requirements for accelerating program investments (particularly those that will impose significant financial burdens) should be justifiable on the basis that more relaxed scheduling requirements would result in relatively less net benefit.

<sup>12</sup> Rate design options include a variety of methods to provide distressed populations access to wastewater services at subsidized costs; programmatic measures are discussed in a forthcoming WEF special publication.

## *Document 2*

# Potential Revisions to the EPA Financial Capability Assessment Methodology: A Conceptual Example

## I. Purpose

Outlined below are potential revisions to EPA's procedures for Financial Capability Assessments (FCA) to address methodological limitations encountered in recent CWA enforcement actions and identified in the 2005 NACWA *White Paper*. This conceptual example outlines an alternative methodology to assessment of potential economic impacts of water-quality improvement programs that provide:

- A flexible, yet formulaic, methodology for calculation of program impacts relative to costs, thereby providing an analytical framework to support regulatory enforcement and negotiation.
- Recognition of the importance, even primacy, of local and regional factors in assessing economic impact.
- Through alternative weighting schemes, recognition of differences in the relative importance of various factors depending on economic conditions and potential infrastructure market impacts.
- Disciplined recognition of a number of factors previously relegated to passing reference as 'additional considerations' including a number of environmental / social justice and program delivery considerations about which the current FCA methodology is effectively silent.

## II. Methodological Approach

The proposed methodological enhancement to the prescriptive FCA approach builds upon the recognition that effective assessment of financial capabilities requires consideration of a broad array of (often competing) factors whose relative importance may vary across regions and localities. This multi-attribute decision problem is characteristic of public resource allocation issues,<sup>13</sup> and lends itself to application of formal prioritization techniques to evaluate relative impacts and costs of alternative water quality program and schedule configurations.

Conceptually, the proposed enhancements are simple, retain a structured performance-based assessment methodology critical for regulatory enforcement, and address many of the limitations of the current FCA methodology. In brief, the approach recognizes and/or affirms a limited number of fundamental program implementation impacts. These broad impacts are further defined by specific factors which may be measured. Weights are assigned to the defined program impacts to reflect the relative importance that stakeholders place on their importance. Well-defined performance scales for each factor helps ensure consistency and accuracy in the scoring and ranking of program alternatives.

An illustrative example is provided in Table A-1. This example employs four categories of impacts:

- **Household Financial Impacts** – Factors impacting individual households' ability to pay additional program-related costs.
- **Community Financial Impacts** – Recognition of economic trends and factors as well as existing claims on community financial resources.

<sup>13</sup> As opposed to private sector resource allocation issues that tend to focus more on singular objectives of profit maximization. In many respects, the public resource allocation challenge is much more complicated due to the multitude of considerations (e.g., economic, social, environmental) and stakeholder perspectives that must be balanced.



- **Environmental / Social Justice Impacts** – Explicit recognition of impacts on low-income and disadvantaged communities.
- **Program Delivery Impacts** – Accommodation of market saturation, logistical coordination requirements, and contractor availability in scheduling.

For each of these categories of impact and specific factors, weights are assigned to reflect their relative importance to impacted stakeholders. Conceptually, these weights may be negotiated at the state and local level to enable permittees and regulators to tailor their evaluation of program impact to recognize the prevailing economic and environmental concerns in their regions and communities.<sup>14</sup>

For each factor assigned a non-zero importance weighting, scores are assigned for the program and community using the performance scales provided for each such factor.<sup>15</sup> To the extent practicable, performance scales should enable the unambiguous scoring of program impacts, lending to auditable (yet flexible) evaluation of program impacts. The draft performance scales offered below provide some initial concepts for appropriate performance scales and illustrate formulations that facilitate objective scoring.

As can be seen, the specific factors incorporate most, but not all, of the local considerations and concerns identified in the NACWA 2005 *White Paper*. Their inclusion has been carefully structured to comply with formal prioritization system requirements, thereby ensuring the validity of a scoring and ranking process. Specifically, impact categories must be fundamental, independent and non-redundant to ensure mathematical validity of calculations.<sup>16</sup>

Several if not all of these factors (and their associated weights and performance scales) undoubtedly warrant discussion and negotiation between interested stakeholders. As presented, the framework attempts to employ specific, verifiable measures to offer a methodological context for many of those factors previously relegated to additional considerations. Performance scales are, to the extent practicable, tied to national and state indices to help ensure consistency across EPA regions. The framework may be tailored to have FCAs recognize the primacy of local factors, as noted in NACWA's Guiding Principles, yet remain a performance-based framework to facilitate regulatory enforcement.

<sup>14</sup> Weights assigned in the example are illustrative. Weights assigned to Household Financial Impact (40) and Community Financial Impact (35) are relatively high compared to those assigned for Environmental Justice (10) and Program Delivery (15) principally because the latter two categories are an expansion of the current FCA methodology wherein Median Household Income (MHI) and Community Financial Health indicators alone are evaluated. To the extent that MHI and Community Financial Health Indicators should continue to be viewed as principal considerations, heavier weighting of these factors may accomplish this objective and preserve a measure of continuity with prior FCA methodologies. Similarly, within the Household Financial Impact and Community Financial Impact categories, weights assigned to the prior FCA measures are constrained (as an example) to be weighted at not less than 80 and 75 of the 100 points assigned within each category.

<sup>15</sup> DRAFT conceptual performance scales are provided for each factor as comments in the applicable cell of the spreadsheet. These comments are revealed by 'passing over' the cell with one's mouse (or selecting View \Comments from the Toolbar) and are provided in the following section.

<sup>16</sup> By fundamental, NACWA means that the impacts fully define what is important to consider in evaluating the program in discrete, measurable terms. Non-redundancy requires that impact categories not address effectively the same or overlapping aspects of program impact. Independence of categories insures that impacts relative to one category are not, in effect, dictated by the occurrence of impacts in another category. These requirements insure that the impacts assigned to program implementations are not double-counted and are additive.

Arithmetically, the weighting and scoring process provides for an accumulation of a 'Total Impact Score' simply by multiplying factor weights against scores, applying the impact category weights to the weighted factor score, and adding weighted impact scores across categories.<sup>17</sup> Conceptually, total impact scores may be compared to indices of environmental benefit associated with alternative program configurations and schedules to prioritize options that offer the best tradeoffs of program impact vs. environmental benefit.

### III. Issues Addressed in Proposed Methodology

The four categories of impact enumerated in Table A-1 conceptually address a number of issues relegated to additional consideration in the current FCA methodological framework. By category of impact, these issues include:

- **Household Financial Impacts** – the MHI factor employed in the current FCA (with scale preserved) is supplemented by factors to recognize the impacts of other claims on available resources. In particular, shelter costs provide acknowledgement that local ratepayers in communities like Boston and Honolulu face significantly higher claims against available MHI to pay mortgage (and associated property tax) costs. These claims impinge upon these residents' ability to pay ever-increasing wastewater service costs. Similarly, utility rate and tax factors are enumerated to enable consideration of other factors limiting ratepayers' ability to increase spending on wastewater service costs. The associated scales generally reference national averages to ensure that these factors substantively affect household impact scores only when individual households face relatively acute challenges as compared to households in other communities.
- **Community Financial Impacts** – in addition to the Financial Indicators from the current FCA methodology (with performance scales preserved and which are heavily weighted in the example), this category of impact incorporates several local factors. The historical water quality investments and non-water quality environmental investment factors attempt to address the imperative for communities to establish a well-balanced environmental investment portfolio. Arguably, a community's ability to (appropriately) invest in further water quality enhancements is dictated, to some extent, by the availability and return of other environmental investment options (and the community's existing and past water quality investments).<sup>18</sup>
- **Environmental Justice Impacts** – the designation of environmental justice as *fundamental* elevates the prospective consideration of these factors (while its low weighting, by example, retains focus on the first two impact categories). While it may be argued that addressing distributional inequities in a community is a local problem and is not indicative of a community's overall financial capability, this

<sup>17</sup> Weights may be adjusted to reflect relative importance of factors within the context of regional / local economic and environmental imperatives. Weights should be assigned as 0 - 100 with the summation of all weights for a set of factors equal to 100. Scores must be from 0 - 10 and assigned using the scales delineated in the comments associated with each factor.

<sup>18</sup> Alternative schools of thought with respect to the relevance of past water quality investments serve to illustrate the potential for this methodological approach to bring forward, in a structured framework, prevailing public policy issues. One school of thought would suggest that past investments are only relevant to the extent that a community continues to pay debt service on these investments, thereby limiting capability for future investment. Alternatively, to the extent that one may view past, fully financed water quality investments as limiting the prospective environmental return of future water quality investments, it may be argued that prior water quality investment is a relevant factor, even in the absence of debt service obligations. More generally, it may be argued that significant prior water quality investment suggests the merit of environmental investments elsewhere toward different but no less important environmental issues (e.g., air quality) that may yield higher environmental benefit returns when considered from a holistic perspective.

- impact category recognizes that there are constraints on wastewater service cost redistributions, especially for rental properties, and expands the narrow view that that environmental justice issues are more related to construction disruptions and other non-monetary impacts.
- **Program Delivery Impacts** – the designation of program delivery as *fundamental* to the ability to complete projects and realize water quality benefits also elevates consideration of these factors which have been largely dismissed in the context of consideration of additional considerations. This dismissal may reflect an argument that most of these factors can, and perhaps should, be translated to changes in program cost estimates. However, these factors are incorporated herein to highlight the importance of effective management of major program implementations and the fiduciary responsibilities of all key decision-makers to ensure cost-effective program delivery.

#### IV. Initial Concepts for Impact Factor Performance Scales

Undoubtedly, negotiation of appropriate program impact factors, weights and scoring systems will require considerable discussion and debate, which complicates the relatively rote prescriptions of the current FCA Guidance. This added complexity is appropriate, however, if the FCA methodology is to evolve from testing threshold conditions (e.g., MHI percentage) to promoting community investment in those projects and programs that yield the highest benefit per dollar of expenditure within their financial constraints. In the section below, initial concepts for Program Impact Factor Performance Scales are offered for consideration.

#### Household Indicators

Median Household Income*	
Score	
10	MHI is in lowest 10% of national distribution
5	MHI is within 10% of national average
1	MHI is in highest 10% of national distribution
<i>Forced Weighting of factor among Household Indicators: Must be greater than or equal to 75</i>	

Shelter Costs	
Score	
10	In highest 10% of national distribution of shelter costs
5	Shelter costs within 10% of national average
1	In lowest 10% of national distribution of shelter costs

Water, Wastewater, Stormwater Rates	
Score	
10	In highest 10% combined residential water, wastewater and stormwater bills (for 10kgal usage) in US
5	Within 10% of combined residential water, wastewater and stormwater bills (for 10kgal usage) in US
1	Lowest 10% of combined residential water, wastewater and stormwater bills (for 10kgal usage) in US

State /Local Tax Structure	
Score	
10	In highest 10% combined residential state & local tax bills (per \$ assessed valuation) in US
5	Within 10% of combined residential state & local tax bills (per \$ assessed valuation) in US
1	Lowest 10% of combined residential state & local tax bills (per \$ assessed valuation) in US

## Community Financial Impacts

Historical Water Quality Investments	
Score	
10	Avg. per annum Clean Water Act compliance investments greater than X% of local government capital budget.
5	Avg. per annum Clean Water Act compliance investments greater than Y% of local government capital budget.
1	Avg. per annum Clean Water Act compliance investments greater than Z% of local government capital budget.

Non- Water Quality Environmental Investments	
Score	
10	Projected per annum Non-CWA EPA mandated compliance investments greater than X% of local government capital budget.
5	Projected per annum Non-CWA EPA mandated compliance investments greater than Y% of local government capital budget.
1	Projected per annum Non-CWA EPA mandated compliance investments greater than Z% of local government capital budget.

Economic / Population Trends	
Score	
10	Greater than 3% avg. per annum decline in employment levels or population over last 5 years.
8	Greater than 1% and less than 3% avg. per annum decline in employment levels or population over last 5 years.
5	Between 1% decline and 1% increase in avg. per annum change in employment levels or population over last 5 years.
3	Greater than 1% and less than 3% avg. per annum increase in employment levels or population over last 5 years.
1	Greater than 3% avg. per annum increase in employment levels or population over last 5 years.

<b>Financial Health Indicators *</b>	
Employ existing FCA 'weak' to 'strong' scales, normalized to 0 - 10 scale by dividing sum by 1.5 and rounding	
	<i>Example Forced Weighting: Must be greater than or equal to 75.</i>

## Environmental Justice / Social Justice Impacts

<b>Low Income Ratepayer Percentage</b>	
<b>Score</b>	
<b>10</b>	Greater than 20% below 100% of federal poverty line in last 5 years.
<b>5</b>	Between 10% and 20% of population below 100% of federal poverty line in last 5 years.
<b>1</b>	Less than 10% of population below 100% of federal poverty line in last 5 years.

<b>Localized Construction Disruption</b>	
<b>Score</b>	
<b>10</b>	Greater than __% of construction to occur within disadvantaged communities.
<b>5</b>	Between _% and _% of construction to occur within disadvantaged communities.
<b>0</b>	No construction to occur within disadvantaged communities.

<b>Specific Community Impacts</b>	
This was put as a placeholder for unique situations impacting particular sub-populations. Examples could include fisherman impacted by water quality variations, neighborhoods impacted by sludge hauling, etc. These sub-criteria may defy ready assignment of general performance scales but rather must be tailored at local levels.	

<b>Rent/Tenant Impacts</b>	
As a proxy for potential impacts to rents, employ measures of available low-rent housing like % occupancy of rental properties with rental rates at __% of MHI. Unavailability of alternatives would enable landlords to directly pass on cost increases whereas a renters' market may enable some cost absorption.	

## Program Delivery Impacts

<b>WQ Infrastructure Market Saturation</b>	
<b>Score</b>	
<b>10</b>	Projected 10-yr water quality infrastructure investments within 100 mile region exceed \$X billion.
<b>5</b>	Projected 10-yr water quality infrastructure investments within 100 mile region exceed \$Y billion.
<b>1</b>	Projected 10-yr water quality infrastructure investments within 100 mile region exceed \$Z million.

## Program Management

Employ 1, 2, or 3 scale indicating whether sub-factors are "expected to" impact construction costs by less than X% (1), by X - Y% (2) or by greater than Y% --- normalized to 0 - 10 scale by dividing sum by 1.2 and rounding.

- Schedule Management
  - Change order management
- Surety / Bonding  
Cost Escalation

**Table A-1**

**Financial Capability Assessment  
Program Evaluation Matrix -- Conceptual Example  
6/12/2007**

[illegible]

\* Functional spreadsheet is available on NACWA's website ([www.nacwa.org](http://www.nacwa.org))



## *Document 3*

# Review of EFAB Comments on CSO Financial Capability Assessment Guidance



## I. Executive Summary

In April 2007, NACWA reviewed comments by the EPA's Environmental Financial Advisory Board (EFAB) on the EPA's 1997 CSO Financial Capability Assessment (Guidance). The EFAB review was conducted at the request of EPA's Office of Wastewater Management in part due to the issues raised by NACWA's 2005 *White Paper*. In many respects, the EFAB review echoes concerns previously expressed by NACWA, and in so doing reiterates the need for revisions to the Agency's methodology. In particular, EFAB's comments are merited in that they recognize that improved assessments of financial capability require:

- Consideration of existing and prospective rates, rate structures, and the imperatives of long-term strategic capital improvement and financial planning
- Separate evaluation of potential impacts on disadvantaged communities not adequately represented by reference to Median Household Income measures
- Broad definition of cost components, including prospective requirements for asset maintenance, renewal and rehabilitation informed through asset management evaluations
- Refinement of the financial indicators used in the two-step analysis procedure, particularly those referencing property values and tax revenues

NACWA believes, however, that EFAB's comments are unduly limited and fail to address several fundamental problems with the EPA's current methodology. Some of these limitations relate to fundamental concerns articulated in NACWA's 2005 *White Paper*, and its subsequent Guiding Principles (Section III); other limitations involve issues related to affordability addressed in other contexts. The most significant limitations include:

- EFAB's acceptance of the current two-step analytical framework, which preserves a prescriptive approach rather than establishing a flexible framework for considering unique, site-specific factors and optimizing water quality investments
- EFAB's implicit acceptance of a paradigm that looks to "ability to pay" rather than to return on environmental investments as the basis for defining program cost and scheduling requirements
- EFAB's suggested consideration of incremental evaluation of financial capability in a framework similar to that advocated for individual drinking water regulations

EFAB was specifically requested to limit its review to the existing 1997 Guidance and unfortunately did not consider whether there are different, more holistic ways of conducting financial capability assessments.

NACWA hopes that the following detailed comments on EFAB's review will provide its members with insight into the additional considerations that can be included in financial capability negotiations. NACWA hopes to work collaboratively with the EPA to establish a more holistic assessment framework.

## II. EFAB: Considerations in Assessing Residential Household Impact

### A. Average Costs Per Household Versus Estimated Household Expenditures

EFAB highlights the fact that potential impacts of program costs for individual households will depend significantly on prevailing and prospective rate structures and the distribution of usage within the residential

population. In so doing, EFAB rightly asserts that consideration of actual rate levels<sup>19</sup>, and thereby the utility's financial plan, would represent an improvement to the Guidance's current focus solely on program costs. EFAB further points out that these impacts will change over time and consideration of projections of rate impacts would afford a better assessment of financial capability. Perhaps most importantly, EFAB assumes that permittees will have developed some form of strategic financial plan and rightly suggests that estimates derived from these plans are appropriately considered in negotiation processes.

EFAB also properly notes that rate structures and targeted investments may help to mitigate impacts on disadvantaged households. Yet, EFAB seemingly suggests that concerns of low-income affordability may be addressed entirely through low-income subsidizing rate structures. It falls back to suggesting use of an *average* household user as effectively the sole basis for consideration of costs imposed on residential users. This retrenchment dismisses the reality that rate structures alone, particularly those that require income qualification, have pronounced limitations and that social justice concerns related to program implementation are not confined to cost burdens.

### **B. Expanding the Definition of Costs**

EFAB echoes NACWA's expressed concerns about the narrow definition of costs used in the current FCA Guidance. It notes that the definition 'does not seem to take into consideration some of the fundamental principles of proactive asset management, an approach strongly promoted by EPA.' However, EFAB's suggested approach to broadening the definition of costs is problematic. EFAB suggests including:

*additional components if the permittee can demonstrate that these costs will indeed be passed on to the customer (for example, the permittee has an approved capital improvement plan and expenditure history that demonstrates the use of capital reserve funds and significant capital rehabilitation and replacement expenditures).*

In many cases, however, permittees have not fully assessed their prospective renewal and replacement requirements or service area stormwater management needs and incorporated these estimates into approved capital plans. Indeed, one of the fundamental points of EPA's policy prescriptions is that these requirements have not historically been recognized and addressed in communities' capital plans, contributing to the current national infrastructure funding gap. The current absence of specific plans to address water resource management requirements holistically should not be interpreted to mean that these types of costs will not be incurred in the future – particularly insofar as EPA has established regulations and enforcement measures that will require these expenditures. While the absence of specific capital plans may necessitate rough estimation of associated costs, it is certain that the zero cost value that is effectively assigned by excluding these costs is a gross underestimate of communities' prospective liabilities.

### **C. Consideration of the Impact of Capital Investment Planning and Financing Options on Costs**

EFAB suggests that "a permittee should be required to present estimated household expenditures as projected in an approved CIP or financial plan" and points out that "the availability of extended term financing (30-40 years) compared to shorter financing (20 years) could have an impact on rates". Both these points align with NACWA's points related to consideration of program cost impacts over time and the importance of strategic financial planning.

<sup>19</sup> It should be acknowledged, however, that from a regulatory perspective, assessments based on rate levels rather than cost measures may be even more difficult to accomplish equitably across permittees whose current and projected rates are not only a function of compliance costs but also a variety of other cost and utility management factors.

#### **D. Incremental vs. Cumulative Financial Impacts**

Though some EFAB members disagreed, the EFAB review suggests that EPA consider application of the National Drinking Water Advisory Council's recommendations related to Small System Variances (for compliance with drinking water contaminant limits). These recommendations call for evaluation of the incremental impact of individual regulations rather than consideration of their cumulative impact. EFAB also notes that both incremental and cumulative measures could be employed, yet suggests that cumulative measures would be properly relegated to 'secondary financial information used for negotiation'.

These suggestions would exacerbate rather than mitigate current problems with the financial capability assessment procedures. Incremental evaluations would move the assessment process away from, rather than towards, holistic consideration of water quality investment costs to be borne by communities' ratepayers. Certainly, given the objectives of financial capability assessments, it should be measures of incremental impacts that are relegated to secondary financial information while cumulative impacts (using broadly defined costs) retain primacy.

#### **E. Reliance on Single Indicator to Assess Residential Household Impact**

EFAB echoes NACWA's points on the adequacy of a single indicator of residential household impact. EFAB further suggests "EPA consider a composite residential indicator similar to the composite financial indicator". In so doing, EFAB advocates movement toward the approach outlined in *Review of EFAB Comments on CSO Financial Capability Assessment Guidance*. EFAB's example, however, seems to indicate that a relatively limited composite may suffice, though there would seem every opportunity to broaden the scope of review to other fundamentally important factors (e.g. shelter costs).

#### **F. Commercial Customer Impact**

EFAB also highlights the potential importance of program cost impacts on communities' commercial sectors, however it suggests that the diversity of the sector would make development of a commercial indicator impractical. While there is no question that the commercial sector is very diverse, the noted importance of the health of this sector argues against commercial impact measures being relegated to secondary financial information. Rather, it argues for a modification to the financial indicators, as suggested in *Review of EFAB Comments on CSO Financial Capability Assessment Guidance*.

### **III. EFAB: Considerations in Assessing System Financial Capability**

EFAB makes a number of suggestions to improve the individual measures used to derive the financial indicator employed in the second step of the FCA methodology. These are further elaborated in the last section of the EFAB comments<sup>20</sup>, the most significant of which is EFAB's call for abandonment of debt metrics based on property values (given that most permittees are sewer rate revenue supported). These suggestions represent appropriate refinements only within the context of a methodology that has significant limitations. EFAB's comments do not, however, address a fundamentally questionable attribute of the financial indicators score calculation, namely the implicit equal weighting of each factor.

### **IV. EFAB: Clarifying Policies and Approaches Related to Financial Capability and Affordability**

The Board points out the potential for confusion among state and local officials given other EPA policies and guidance related to financial impacts. They further note that "it may be reasonable to set regulatory relief triggers at a higher bar than grant eligibility metrics". In both respects, the Board highlights important policy

<sup>20</sup>

Specific suggested edits to the FCA Guidance are provided in the EFAB comment section 5: "Suggested Revisions to the Debt Indicators in the Financial Capability Assessment Guidance". These revisions largely reflect improvements to the measures and procedures potentially employed in the FCA methodology and, as such, are not reviewed individually herein.

issues related to decision-making and water quality resource investments. However, in a context-setting sentence, the Board explicitly reiterates a fundamental principle in EPA's approach to conduct of financial capability assessments that is inherently objectionable. Specifically, the Board notes that EPA "financial assessment policies share a common theme in their attempts to help assess '**ability to pay**' for environmental objectives/services [*emphasis added*]".

What EFAB fails to note is that establishment of threshold criteria invites sub-optimal resource allocations and inappropriate regulation. The fundamental question should not be how much can possibly be paid, but rather how much *should* be paid to best utilize available resources. Permittees cannot pay for sub-optimal water quality investments irrespective of whether or not their financial indicators or household incomes would suggest that they could afford to do so.

It is this aspect of the Guidance, and EFAB's tacit acceptance thereof, which is most problematic for prospective consideration of financial capability in wet weather enforcement. Indeed, the most troublesome aspects of the EFAB comments are the errors of omission insofar as the Board effectively declined to speak to fundamental problems. Defining financial capability in terms of 'ability to pay' incorrectly frames the problem. Given all the other claims on communities' resources and the broad spectrum of environmental challenges they face, EPA and permittees should define a financial capability framework that seeks to maximize benefits per dollar of resource investment.

