The Evolving Landscape for Financial Capability Assessment

Clean Water Act Negotiations and the Opportunities of Integrated Planning

NACWA
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EXECUTIVE SUMMARY

The U.S. Environmental Protection Agency (EPA)'s recent *Integrated Planning Framework*[1] 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Continued reliance upon the outdated financial capability assessment approach outlined in EPA's 1997 CSO-targeted document[2], however, will continue to frustrate both the regulatory and permittee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...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.

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).

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.[3] Strategic financial planning methods used to arrange capital improvement project financing offer straightforward and

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[1] 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.

[2] 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")

[3] 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).

effective methods 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.[4] 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[5], EPA

[4] 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.

[5] 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.[6] 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

[6] 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."[7] 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,[8] 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*[9] (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

[7] 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.

[8] *Financial Capability and Affordability in Wet Weather Negotiations*, White Paper (October 2005), p.7

[9] 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 *(Socioeconomic, Debt and Financial Indicators)*	**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).[10] 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:

[10] 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[11] 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 indictor index,[12]
    - 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.[13]

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[11] 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).

[12] 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.

[13] 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.[14] 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[15] 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.[16] 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.[17] 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:

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[14] 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.

[15] 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.

[16] 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.

[17] 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

[S]everal of the attributes of the [Integrated Planning] framework do not lend themselves to consideration under the 1997 Guidance.

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[18]). 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.[19] The 1997 Guidance is focused on assessing program requirements for Long-Term Control

[18] 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.

[19] 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[20] 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[21] 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.

[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.

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.[22] 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:

- 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

[20] 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)

[21] 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)

[22] 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[23] 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.

[23] 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.[24]

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.

[24] 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."*[25] *(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.[26] 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.[27] 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.

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Cash-Flow Forecasting[28]

Because the *Integrated Planning Framework* calls for plans to "[e]nsure a financial strategy is in place, including appropriate fee structures"[29] - enhancements to the Guidance's "snapshot"

[25] U.S. Environmental Protection Agency (EPA) Memorandum - June 5, 2012, *Principles to Guide the Development of Integrated Plans* #3 & 8., p. 3

[26] Drawn from *The Need For An Integrated Water Quality Affordability Strategy*, Robert A. Weimar, PE, BCEE and Brandon C. Vatter, PE, Hatch Mott MacDonald.

[27] *Principles for Assessment and Negotiation of Financial Capability: A Compilation*, Prepared for NACWA by: CH2M HILL and Galardi Rothstein Group, August 2007.

[28] 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.

[29] 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[30]:

- 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:

[A]n enhanced IP FCA Framework can be constructed to test whether projected flows of funds will enable financing of program implementation.

- 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. [31]

[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.

[30] 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

[31] Metropolitan St. Louis Sewer District, *CSO LTCP Update, Section 10: Financial Capability Assessment*, p. 10-9, August, 2009.

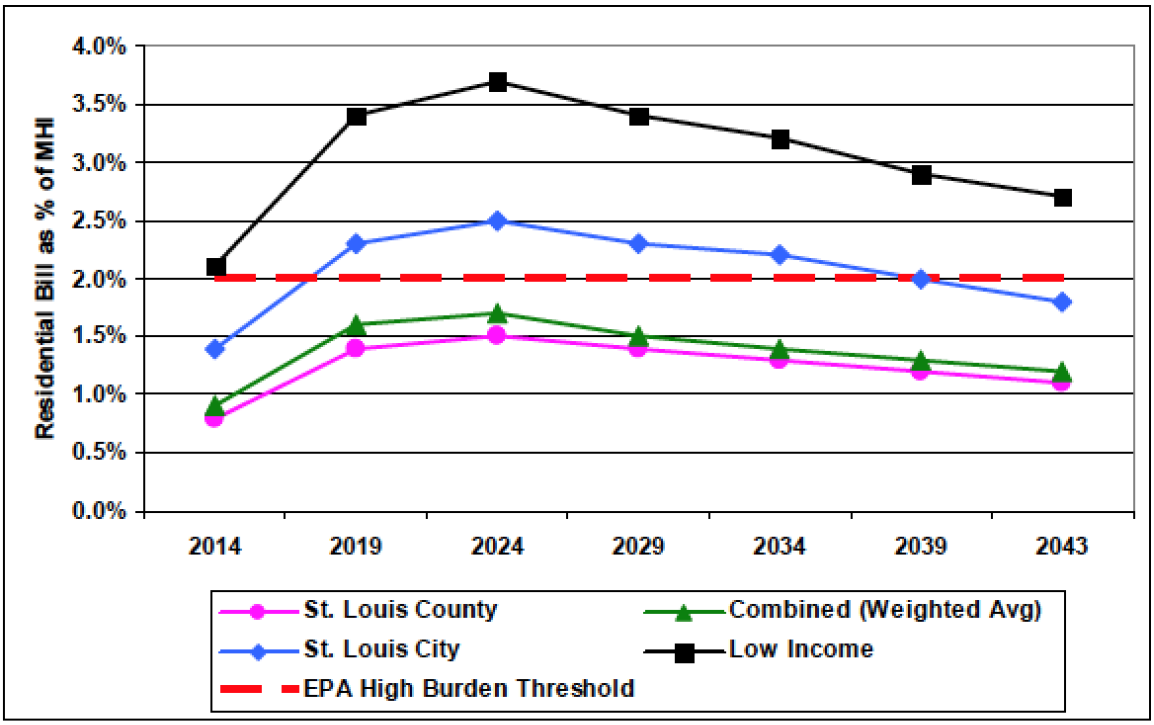

Figure 10-2 Baseline Scenario: Projected Typical Residential Bills as Percent of MHI by Ratepayer Group

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.[32] These sub-populations may be residents in a particular geography – for example, those within the city limits of a regional system[33] – 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.[34] 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.[35] 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.

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[32] 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.

[33] 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."

[34] *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.

[35] 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."[36] 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:[37]

- 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.[38] "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.[39]
- 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[40] 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.

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[36] 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.

[37] 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).

[38] 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.)

[39] See, for example, American Water Works Association Research Foundation (AwwaRF), *Capital Planning Strategy Manual* (2003).

[40] 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,[41] 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.[42] New York City, Kansas City, and the Northeast Ohio Regional Sewer District

[41] 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.

[42] 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 CONSIDERATONS 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.[43] 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, cost-effectiveness 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[44] 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

[43] U.S. Environmental Protection Agency (EPA), Combined Sewer Overflow (CSO) Control Policy, Federal Register, vol. 59, No. 75, p.18688 – 18698, April 19, 1994

[44] 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.