Integrated Planning...
Is It Worth Taking a Second Look?

A look at the pros and cons when considering an integrated planning approach to wastewater and stormwater management.

What is integrated planning and how is it connected to the U.S. Clean Water Act? The Clean Water Act is focused primarily on improving the quality of the nation’s water. This law was enacted in 1972 with the overall objective of the elimination or reduction of pollutants being discharged into U.S. waterways in order to attain water quality levels associated with fishable and swimmable water quality criteria. Many municipalities have achieved significant progress in the implementation of the act’s objectives and the protection of public health and the environment. However, challenges remain.

Integrated planning is an innovative approach endorsed by the U.S. Environmental Protection Agency (EPA) designed to help communities already dealing with difficult financial hardships identify opportunities to achieve clean water by controlling and managing releases of wastewater and stormwater runoff more efficiently and cost effectively. The integrated planning approach helps communities prioritize infrastructure investments to address the most serious water quality issues and provides flexibility to use innovative, cost-effective stormwater and wastewater management solutions (see Figure 1).
Throughout the United States, and especially concentrated in the East and Midwest, are combined sewer overflow (CSO) communities, where combined wastewater and stormwater can overflow to receiving streams during significant rain events. These CSO communities fall under National Pollutant Discharge Elimination System (NPDES) permitting requirements pertaining to these discharges, and are in the process of developing/implementing long-term control plans (LTCPs) to address the CSO discharges. In some instances, however, the implementation of LTCPs could take up to 20 years and require significant funding. In addition, while continuing to implement the first segment of the LTCPs, communities are also faced with significant stormwater obligations through their municipal separate storm sewer system (MS4) program, aging infrastructure issues in the sanitary sewer system, and the general economic hardship experienced nationwide. As CSO communities move forward with the implementation of LTCPs, it has been recognized that the full range of water quality impacts are not being addressed as quickly as had been anticipated.

The early focus of many communities was on the simple and quick solution of removing the CSO discharges and CSO events, without looking at the water/sewage system holistically. Communities were driven to spend for LTCP implementation to the point of financial hardship and burden under EPA guidance, without being allowed to consider other expenditures needed to address all related water quality impacts, and the connection and redundancy between the impacts of stormwater, wastewater, and CSOs. This methodology may have resulted in the unintended consequence of constraining a municipality from focusing on the most serious water quality issues first.

**An Innovative Approach**

An integrated planning process has the potential to identify and prioritize critical path items to achieve a holistic approach to meeting the full range of water quality objectives of the Clean Water Act, allowing communities to address the most critical projects first, by focusing on the community-specific needs. In addition, it allows for the implementation of projects in a way where they are both planned and implemented as to not create redundant efforts; nor negatively impact other areas as a result of a project. An integrated approach is accomplished by identifying efficiencies in competing requirements and needs that arise from separate wastewater and stormwater projects, including capital investments and operation and maintenance requirements.

This approach can also lead to the implementation of more sustainable and comprehensive solutions, such as the addition of green infrastructure (GI) and projects that support other quality of life attributes to enhance the vitality of communities. Some communities have been calling this concept “right-sizing” (see Figure 2). In addition, an integrated approach allows communities to look at their financial commitment to addressing their LTCP-implemented solutions and determine if green infrastructure can be utilized in tandem or in place of the gray practice solutions to meet or exceed the LTCP goals; the deciding factor being a reduction in cost that comes in well under the traditional gray practice solution. This effort could be further enhanced by considering water quality goals as part of an overall MS4 stormwater effort.

Although the original intent of the Clean Water Act may have been a holistic approach, its implementation led to a very narrow and project-area-specific focus.

**Figure 1. Integrated plan overview.**

Although the original intent of the Clean Water Act may have been a holistic watershed approach, as discussed in multiple guidance documents, its implementation led to a very narrow and project-area-specific focus. More recently, EPA has endorsed an integrated approach through its Integrated Planning Framework (see article on page 10).
This has allowed additional flexibility on compliance schedules for reviewing the potential benefits of integrated planning throughout a watershed.

The application of an integrated planning approach is voluntary, placing the responsibility to develop an integrated plan on local governments and relevant utilities. As a first step, permitted organizations interested in pursuing an integrated planning approach should contact their state’s environmental agency, as well as their EPA Regional Office. While many cities have existing water, wastewater, and/or stormwater capital plans, the Integrated Plan Framework approach allows those plans to be incorporated into NPDES permits or negotiated into a consent decree. To date, cities such as Seattle, WA, Columbus, OH, and Milwaukee, WI, have in place, or are in the process of incorporating, an integrated plan to meet their Clean Water Act goals.

In August 2012, the City of Columbus submitted a request to the Ohio EPA stating it wished to explore whether there were better alternatives than the city’s existing Wet Weather Management Plan (WWMP). Columbus had already implemented a significant number of projects under the WWMP, and what remained to be completed involved addressing sanitary sewer overflows and basement backups. In addition, Columbus recognized the existing WWMP relied heavily on gray infrastructure and tunnels, did little to address discharges from the storm sewer system, and incorporated little or no green infrastructure. As a result, Columbus has been approved to revise its WWMP using the integrated planning approach, and the following items are to be addressed:

- Submit an integrated plan that will replace the existing WWMP
- Comply with EPA’s Integrated Planning Framework and “General Accountability Considerations for Green Infrastructure”
- Modeling that demonstrates compliance of the integrated plan with the consent order
- Water quality comparison of the new integrated approach compared to the WWMP
- Proposed schedule and milestones as part of the integrated plan
- Legal authority justification to complete private property work

What Does EPA Say?
The integrated planning approach is not about lowering existing regulatory or permitting standards or delaying necessary improvements; rather, it is intended to help municipalities cost-effectively meet their Clean Water Act obligations by maximizing the benefits of their infrastructure improvement investments through the appropriate sequencing of work.

Integrated planning can provide municipalities the flexibility to utilize this approach to prioritize and plan their wastewater, sanitary sewer, and stormwater expenditures, while taking into account the capital needs to maintain their current infrastructure. In June 2012, EPA released the “Municipal Stormwater and Wastewater Planning Approach Framework” to help local governments meet water quality objectives and prioritize capital investments. While an overarching principle of the EPA framework is to maintain existing regulatory standards, the goal is to allow local governments to meet those requirements in an efficient and cost-effective manner through the reevaluation of the sequencing and scheduling of projects based upon local needs and priorities. Through recent agreements with EPA, some permitted organizations have successfully been able to reopen LTCP-related consent decrees.
Public input plan
Conduct and document results of suburban outreach

In addition to preparing these items for submittal in 2015, Columbus will simultaneously undertake identified projects that follow integrated planning approach guidelines. Columbus hopes to be a leader and an example of a community implementing the integrated planning approach.

Is It Worth The Effort?
Many communities have adopted the concepts associated with an integrated planning approach without actually calling it that. If your community already looks at the management of your water resources holistically or on a watershed basis, chances are you already have a good idea about the concepts behind integrated planning. However, if your community's program and LTCP is more aligned with managing your regulatory programs on an individual basis, then integrated planning is something that you could and should consider.

Some of the fears that have been expressed with this approach suggest that the regulatory agencies are encouraging these concepts to promote increased regulatory reform. However, if you take the time to look at the thought process behind integrated planning and critically consider how these concepts could work into your community's current requirements, it might make sense. This approach can be beneficial both from an economic and resources standpoint. It's simply a better way to manage the future of water, wastewater, and stormwater, allowing us as a nation to get closer to attaining the goals of the Clean Water Act.

Sources
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