ACTIONABLE SOLUTIONS FOR PUBLIC WATER SYSTEMS
ABOUT US

The Mayors Innovation Project is a learning network among American mayors committed to “high road” policy and governance: shared prosperity, environmental sustainability, and efficient democratic government. We are a project of COWS based at the University of Wisconsin.

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The United States’ public drinking water and wastewater systems have been fundamental in meeting people’s most basic needs, providing a foundation for public health and economic opportunity. We know that cities and their residents are better off with strong, public water systems. The challenge is that these take time, investment, and political will to build and maintain, resources that are not always available in cities. The goal of this document is to fill this gap, providing clear, concise, and directive best practices for sustainably operating and financing robust water systems. We provide actionable solutions for mayors and city leaders to operate public water utilities: financing maintenance and improvements, implementing an integrated water management approach, and engaging the residents served by these systems. Proposed solutions and approaches place economic equity at the center as well as advocate for environmentally-sustainable systems.

WATER 101

There are five major types of water that moves through a city: drinking, waste, storm, surface, and ground water. When considering the centralized components of drinking and wastewater systems, it is important to think not only about the capital-intensive, highly visible treatment plants or pumping stations, but also the hundreds of miles of underground pipes, each of which needs repair and eventual replacement during a typical 75-to-100-year life span.

MAINTAINING INFRASTRUCTURE

In order for utilities to function optimally, appropriate infrastructure must be installed and effectively maintained. Many cities are vulnerable to significant operational failure due to the combined factors of aging infrastructure, insufficient capital, tight operating budgets, and retirement of system operational experts. Priorities become implementing large scale consent decree-driven projects and managing the almost daily crises of water main breaks and other immediate system needs. Reducing system vulnerability requires significant investment in facility condition assessments and capital improvement programming, and financial and strategic planning.

WATER QUALITY

One of the basic functions of water utilities is to provide safe drinking water for their communities. Water utilities should aim to achieve a set of objective goals to keep watersheds healthy, regardless of the source or treatment technology. In addition to working within the utility on programming to optimize the handling and distribution of high-quality water, public water operators can collaborate with fellow municipal water providers, agencies, unions, and/or non-governmental organizations.

GOVERNMENT COMPLIANCE

City and water utility leaders must fully understand and implement the laws, regulations, and guidelines established by federal and state entities for all types of water systems. These safeguards are the bedrock of our cities’ ability to provide safe drinking water for all people and protect the watersheds on which we all depend.

SMART SYSTEMS

Geographic Information Systems (GIS) now offer city and utility leaders a planning and management tool that would have been unthinkable only a couple of decades ago. GIS data can now be used to help utilities to organize, prioritize, and inform public projects that are taking place across the service area. The information that this software can provide, when used effectively, has enormous impacts on efficiency and cost saving at the project level, especially when paired with real-time service data provided through smart metering and the Internet of Things. To benefit, cities must have the capacity to purchase and use such smart systems, however, which might be a challenge for struggling utilities. Here too, partnerships with neighboring municipalities and academic institutions may be beneficial.
EXECUTIVE SUMMARY: ACTIONABLE SOLUTIONS FOR PUBLIC WATER SYSTEMS

PRIVATIZATION IN THE CONTEXT OF WATER

DEFINING PRIVATIZATION

The private water industry has positioned itself as a solution to cities struggling to balance their budgets, proposing deals that span a large spectrum of options. Generally speaking, the term privatization refers to the transfer of managerial and financial responsibilities of a public water utility to private water corporations.* In these arrangements, the private sector takes on a decision-making role that can directly impact system investments, water rates, and other water management policies. Privatization shifts the primary focus of running a water system from provision of service for all people to maximization of private profits.

IMPACTS OF PRIVATIZATION

Unfortunately, private water corporations cannot and do not fill the investment gap our water systems face. In many cases, deals have backfired on cities, leaving them with skyrocketing water rates, cost-cutting that jeopardizes water quality, and failing infrastructure. Rather than contract with the private water industry, there are countless cities across the country who are not only maintaining public control of their drinking and wastewater systems, but also setting the example of how to provide quality service, stable rate setting, and infrastructure improvements for consumers. Informed, strong city leadership is necessary to retain municipal control of water utilities.

CITY SOLUTIONS FOR ROBUST WATER MANAGEMENT

This section reviews actionable solutions to preserve public control of water systems and to maintain a strong municipal water system, with the end goal of supporting cities to protect precious water resources.

INTEGRATED WATER MANAGEMENT

Cities can transition to a more resilient water system by adopting an integrated water management framework. Integrated water management (IWM) refers to a set of principles, and the approaches that follow, that recognize all water is a resource. The core principles of an IWM approach means that systems must manage all water as an asset, whatever form it is in when it first enters the city – rain, as one example, can be an invaluable resource rather than a nuisance, and should be treated as such. The full-length version of this report offers strategies for realizing integrated water management in practice.

PLAN FOR CLIMATE RESILIENCE

Water systems are particularly vulnerable to the effects of climate change, both through deepening droughts and the increasing intensity of rainstorms. To ensure a well-functioning, safe water system for the future, cities must act now to increase their resilience. Cities should plan for and work to mitigate expected climate change impacts in all infrastructure projects and management approaches.

COMMUNITY ENGAGEMENT AND BUILDING TRUST

Community Engagement is what drives the cohesive relationship between water utilities and community constituents. A water utility needs to actively address issues that often plague communities relating to equitable access and affordability of drinking water. A water utility is also responsible for understanding and addressing community concerns pertaining to taste and odor of tap water, water shut-offs, billing issues, low pressure, and boil notices. The full-length version of this report offers strategies in data transparency, developing authentic relationships with key community stakeholders, and offering up clear channels of communication.
FINANCING

Understanding the intricacies of water utility financing supports mayors and other leaders to be stronger advocates for safe, reliable, and equitable water service in cities. Utilities can pursue innovative mechanisms to finance projects, building on the traditional route of municipal bonds and state or federal subsidized grants and loans to also employ green bonds, environmental impact bonds, and cross-department partnerships that can access new financing streams.

In the full-length version of this report, this section covers how utilities can find efficiencies in their water systems to cut down on costs and how to plan long-term for improving financing schemes.

INCREASING REVENUE

Since the decline in federal funding for utilities, the rates paid by residents and commercial users for services are the primary revenue mechanism for most utilities. This presents significant challenges for utilities, as the decline in federal investment has increasingly meant that the full cost of operations, maintenance and capital investments must be carried by people and companies. Local leaders must understand the basics of rate-setting, especially options for rate structures and affordability considerations. The full-length version of this report offers strategies for raising rates adequately and equitably, structuring rates to promote affordability and conservation, how to roll out impact fees, and the many financing tools utilities might consider leveraging.

WORKFORCE DEVELOPMENT AND GOVERNANCE

Adequately staffing a water utility is crucial to its capacity to function effectively. Staffing includes those employed by the utility in both permanent and contract positions, across blue collar, management, and consulting roles. This section explores strategies related to building workforce capacity and improving workplace culture to create water utilities that function better from the inside out.
GETTING STARTED

✓ Implement Integrated Water Management (IWM) as a guiding framework to protect and restore water resources: integrate into one utility, realizing the co-benefits of IWM, and collaborating across political boundaries.

✓ Engage the community to build trust, promote data transparency, develop authentic relationships with key community stakeholders, and offer clear channels of communications.

✓ Assess options for financing, including long-term planning frameworks; improving energy efficiency in operations; reducing leaks and costs of infiltration/inflow; and reducing volume through land-based solutions.

✓ Increase available revenue by raising rates adequately and equitably; by structuring rates to promote affordability and conservation; by charging impact fees for development; exploring alternative sources of revenue; and by partnering with other city departments.

✓ Promote workforce development programs in utilities that build capacity and advance a supporting workplace culture.