

PAYING FOR WATER SYSTEMS

A GUIDE FOR LOCAL LEADERS

MARCH 2019



INTRODUCTION

There are few cities that do not face challenges regarding funding of their drinking, waste, and/or stormwater systems. Some systems, especially those that are smaller or still suffering in the wake of economic crises, struggle to access needed capital. Many encounter difficulties raising rates to bring in sufficient revenue for system operation and maintenance, much less to capture sufficient funds to pay for new debt.

Whatever the size or nature of the challenges facing a city's urban water system, this brief lays out an overview of the existing mechanisms to raise needed funds as well as some promising new methods for mayors and other elected leaders to consider. Addressing economic equity as well as pushing for the most environmentally sustainable systems is a central concern.

Cities have a staggering need for investment in water system repair and improvement due to several converging trends. The majority of pipes in urban drinking water systems were constructed in the early or mid-20th century with an average lifespan of 100 years; utilities' typical replacement rate is just 0.5% a year, primarily due to budget constraints, creating a large backlog of deferred maintenance.¹ Additionally, the American Society for Civil Engineers (ASCE) estimates that few urban water systems are right-sized for their current or projected populations, due to changes in population² and wet weather limitations. The important—but costly—regulatory push for improved ecosystem health via state and federal consent orders to reduce combined sewer overflows and minimize the concentration of various nutrients and pollutants in drinking and wastewater has further exacerbated the financial strains facing public utilities. Improved efficiency in fixtures and more emphasis on water conservation measures can also reduce revenue under current rate structures.

SUMMARY

Many publicly owned and operated local water utilities are struggling to pay for needed repairs and upgrades.

Elected officials can advocate for finding new efficiencies as a first step, but this is typically not enough.

Generating new revenue via rate increases, impact fees, and other tools, while potentially politically difficult, is often absolutely critical.

Financing mechanisms can often be tailored to the environmental and financial goals of a utility.

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Given the extent of disrepair and changes in demand, The American Society for Civil Engineers (ASCE) rated the nation's drinking water infrastructure a "D" and wastewater infrastructure a "D+" in 2017.³ To address these issues, the American Water Works Association estimates a need for \$1 trillion in investment in drinking water infrastructure over the next quarter century.⁴ ASCE estimates a need to invest \$271 billion in the country's wastewater and stormwater systems over the next twenty years.⁵ While a costly investment, these projections account for not only needed maintenance but also leapfrogging to upgrade or replace system components to 21st century standards. To perform this sorely needed upgrade and replacement of capital assets – and to meet growing needs for operation and maintenance – it is critical for utilities to identify creative ways to develop and cross-leverage infrastructure investments.

One cause of inadequate investment in water systems is a major shift over the past few decades from federal to state and local funding for water infrastructure. The UNC Environmental Finance Center (EFC) notes that during the 1970s and 1980s, the federal government provided a massive investment in subsidized funding to utilities (mostly in grants), which peaked in 1977 at \$17 billion in 2014 dollars.⁶ However, in 2014 this investment plummeted to just \$4.4 billion, disbursed primarily as subsidized loans rather than grants. State and local spending comprised the other 96 percent of investment. While the source data did not specify a distinction between state or local spending, the EFC estimates that the vast majority of this spending was by local governments or utilities. The current federal investment for capital projects is primarily administered via the State Revolving Funds (SRFs) for drinking and wastewater.⁷

Water infrastructure systems are complex, but elected and staff leaders in cities are well poised to advance more sustainable funding arrangements while addressing the affordability of the water bill for their lowest-income residents. In this brief, we will not weigh in with recommendations for state or federal governments, though they are critical to how public utilities can be financed and operated. We will also not address financing for privately owned or operated utilities. We will instead focus on the most sustainable, equitable toolkit to finance and operate publicly-owned water utilities, for which elected city or utility leaders can advocate.

SOLUTIONS

FINDING EFFICIENCIES

In conjunction with exploring the financing and funding options to follow, utilities should also examine system operations, finding any additional efficiencies and other cost savings that do not affect (or may even improve) function.

Long-Term Planning Frameworks

Even as climate change and migration introduce uncertainty into future projections, utilities typically plan five to ten years in advance for capital projects, asset management, and more, and should include long-term conservation and other efficiency and sustainability goals in these plans. These planning tools help utilities prioritize the limited funds that they do have by investing in more efficient infrastructure. There are three primary frameworks that utilities should use in conjunction to spread capital investments over time, prioritize spending, and possibly find cost-saving efficiencies:

- **Asset Management Plans (AMP)** – AMPs track and assess the current status of utility assets, enabling managers to plan for the most needed repair, replacement, or upgrades. As the US Environmental Protection Agency (EPA) describes, “a high-performing asset management program includes detailed asset inventories, operation and maintenance tasks, and long-range financial planning.”⁸
- **Capital Improvement Plans (CIP)** – Adopting a robust capital improvement planning approach helps utilities schedule out needed capital projects over the span of one to two decades. Proactive planning for capital costs – a major portion of each utility’s costs – is essential because ratepayers will have to front any financing gaps (after using federal or other sources) of each capital project’s cost.⁹ CIPs include assessments for right-sizing (adjusting system size to fit demand), potential efficiencies from regionalizing systems, and other ways to estimate future needs.
- **Effective Utility Management (EUM)** – EUM ties together fundamentals of sound, financially and environmentally sustainable utility management principles to enable planning with an understanding of both current performance and future outlook. The core tenets of EUM include: leadership; strategic business planning; knowledge management; measurement; and continual improvement management.¹⁰

Reducing Leaks and Infiltration/Inflow

Currently, a significant amount of drinking water is lost due to leaks, and wastewater systems are subject to inflow and infiltration (I/I), which reduces revenue or raises costs. An estimated 14 to 18 percent of municipal drinking water is lost through leaks, inaccuracies in tracking, and unauthorized use.¹¹ The same metric has not been estimated nationally for I/I, but its effects are significant for wastewater systems.

Several approaches to leak detection, from low to high tech, can assist drinking water utilities in reducing non-revenue water loss and wastewater utilities in addressing infiltration of fresh water into sewer laterals. One tool for drinking water utilities is a thorough water audit, which identifies leaks, unauthorized consumption, or authorized non-revenue use like firefighting by using the methodology developed by the International Water Association and the American Water Works Association.¹²

Utility or city staff can also integrate GIS mapping and any records about various factors affecting pipe integrity to map, then proactively repair, areas of the water system most likely to break. The Innovation Team in Syracuse, NY worked with the Data Science for Social Good fellowship based at the University of Chicago to develop a predictive modeling system of the City’s drinking water pipes that included data about pipe material and age, soil type, and other factors that weaken pipes.¹³ Using this system, crews were able to prioritize repairs on the water mains identified as most likely to break.

Utilities can require crews to test the integrity of nearby pipes as a routine step in any project. This approach offers a growing number of higher-tech tools, some of which install sensors or use sound waves to locate leaking pipes. Upgrading water meters to report usage in real time, or close to it, can also help identify leaks both on the customer's side of the meter and between meters in the system.

Improving Energy Efficiency for Operations

Adopting energy efficient technologies for water system operations is an instrumental first step in reducing a city's total carbon emissions (water and wastewater systems usually consume 30-40 percent of a city's total energy use) and saves money long-term.¹⁴ Up to 80 percent of a typical drinking water utility's processing or distribution costs and 25-40 percent of a wastewater utility budget is applied toward energy use, so energy efficiency and onsite energy generation in water systems can reduce costs for utilities.¹⁵

The EPA has released a report called "Energy Efficiency in Water and Wastewater Facilities" which outlines many steps that cities and utilities can take to increase the efficiency of their water and wastewater infrastructure.¹⁶ Cities and utilities can install efficient pumping systems, use downhill energy capture (a form of hydropower that captures the energy created when water moves downhill through motors), and strategic water storage to avoid pumping at peak times. Water treatment facilities can also ensure that their Supervisory Control and Data Capture (SCADA) systems are up to date, as this is a foundational water monitoring system that gives utilities a more accurate read on how and where water is used. One of the simplest steps water facilities can take to improve their efficiency is replacing lights and lighting systems with LEDs on timers to reduce facility energy consumption.

There are further efficiency opportunities within wastewater treatment. Sheboygan, WI upgraded its aging wastewater treatment infrastructure to invest in a micro-turbine system that burns biogas produced by the plant's digesters, resulting in 20 percent less energy use compared to pre-installation baselines. This saves the utility up to \$63,000 annually, and has made the plant 70 to 90 percent self-sufficient in energy production.¹⁷ DC Water's Blue Plains Advanced Wastewater Treatment Plant – the largest of its type worldwide – uses biodigesters to generate enough electricity from thermal hydrolysis to cut the plant's energy consumption by a third.¹⁸



Sheboygan, WI
Source: Brett VA, CC by 2.0

The need for affordable water is profound: an estimated 14 million (12 percent) of U.S. households have water bills that are too expensive, or above the EPA's recommended threshold of 4.5 percent of household income.

Land-Based Solutions

Land-based solutions can also generate efficiencies by reducing the treatment load in both water and wastewater systems. Source water protection, which often means buying conservation easements along waterways upstream of a city, can reduce the treatment burden at drinking water plants. New York, NY acquires “hydrologically sensitive” land through outright purchase or conservation easements, enabling the city to preserve natural areas undeveloped in order to protect water quality by supporting plants along the banks or wetlands that filter out contaminants and prevent erosion.¹⁹

At the other end of the system, green infrastructure added to service areas with combined sewer systems can reduce the volume of stormwater that ends up in the wastewater system. This can provide its own benefits like aesthetic and air quality improvements,²⁰ have positive health impacts, and help avoid costly fees for violating consent decrees or other regulatory mechanisms. A study of green infrastructure in Lancaster, PA projects “a value of more than \$120 million in avoided gray infrastructure capital costs and nearly \$5 million in annual benefits beginning after the 25-year implementation period.”²¹

INCREASING REVENUE

Raising Rates Adequately and Equitably

Rates paid by customers for service are the primary revenue mechanism for utilities. Depending on utility governance, elected officials may have a large role in decision making about when and how rates are raised. The need for rate increases is a reality for virtually all utilities across the country due to rising operation and management (O&M) costs. For several decades, utilities spent about an equal amount of public funds on O&M costs and capital projects. Since the mid-1990s, a gap between these costs has widened and now utilities spend about twice as much on O&M as on capital projects.²² It is therefore important for elected officials to understand some basics of rate-setting, especially options for rate structures and affordability considerations.

The need for affordable water is profound: an estimated 14 million (12 percent) of U.S. households have water bills that are too expensive, or above the EPA's recommended threshold of 4.5 percent of household income.²³ Unlike for energy, there is no federal assistance available for individual ratepayers struggling to afford drinking, waste, and stormwater bills. Utilities are therefore implementing programs to address the cost of water service, broadly referred to as customer assistance programs. As the EPA outlined in a 2016 report about customer assistance programs, these tools fall under several categories for eligible residents: bill discounts; flexible billing (especially switching to a smaller, monthly bill instead of quarterly payments); rebates (or, more equitable still, direct installation) for efficient fixtures; and temporary assistance programs.²⁴ Any utility should seek to implement at least one kind of assistance program, working within the limits of their state.

City and utility leaders must select a rate structure in concert with an assistance program that, between the two, will cover the utility's capital and operational costs. There are a handful of rate structures in widespread use, each geared to a different outcome for both the utility and the ratepayer. The Environmental Finance Center at UNC currently has data on rate structures within 12 different states on their website.²⁷ The most prevalent rate structures they identified are: 1) Uniformity, where every 1,000 gallons is charged at the same rate; 2) Increasing Block rates where those with larger volumes of use incur higher per-gallon rates; and 3) Decreasing Block rates where the price per 1,000 gallons decreases at larger volumes. Less prevalent structures identified are:

- **Increasing/decreasing block-** rates increase over an initial range and decrease over subsequent ranges, or vice versa;
- **Flat fee-** one price per billing period for unlimited water consumption that varies by customer class;
- **Seasonal uniform-** uniform rates that vary by season;
- **Uniform at One Block's Rate-** customer pays one rate per 1,000 gallons, but that rate is determined by their total usage."

An example of one cutting-edge approach to keeping utility bills affordable is Philadelphia, PA's Tiered Assistance Program (TAP), an income-based rate program.²⁵ TAP groups rate payers into tiers based upon their income level in relation to federal poverty levels (FPL). Customers who are at 0-50 percent of the FPL have their bill capped at 2 percent of their monthly income. Customers' rates at 51-100 percent of the FPL are capped at 2.5 percent of their monthly income. Customers whose income is 101-150 percent of FPL have their bill capped at 3 percent of their monthly income. And finally, TAP caps monthly bills at 4 percent for customers who are at 151 percent or more of the FPL. In addition, TAP doesn't require interest payments and late fees on past due bills (from before the implementation of TAP) if customers pay their bill in full and on time for 24 months. Customers at 151 percent or above the FPL also have the ability to apply for special hardship assistance.²⁶ Not every state allows different rate structures among the same customer type, given the complex legal requirements or precedents that can limit their use. State regulations often stipulate that rates must be structured based on the true cost of service. Be sure to check if charging different rates to customers based on their tier of usage or income bracket is legal in your state.



Philadelphia, PA
Source: [PMillera4](#) CC BY-NC-ND 2.0

These structures can be set up to capture revenue in a way that is more responsive to customer usage than flat fees or uniform rates, but the higher degree of variability built in can make it harder for utilities to project revenue and budget appropriately for O&M. There is a variety of alternative pricing models that utilities can consider to increase their resiliency in the face of fluctuating demand. One such example is the PeakSet Base system, which removes the financial penalty from utilities when customers are more efficient consumers.²⁸ Some states' legislation remains unclear about whether a water utility can use revenue generated from rates to fund assistance programs to a subset of the ratepayers. However, most utilities can and do charge a different rate for residential versus commercial customers.

Utilities that are not bound to the cost of service standard should explore conservation pricing to ensure the long-term sustainability of water resources, even if supply is not currently a concern. Conservation pricing refers to a toolkit of rate structures that encourage conservation by reducing a customer's rate when they use less or avoid usage during peak system demand. A quarter of drinking water utilities use some form of conservation pricing, which includes increasing block rates (users are charged a higher rate with increasing usage), time of day rates (charging a higher rate during peak demand periods), water surcharges (charging a fee for usage in excess of regional averages), or seasonal rates (charging higher rates in the summer).²⁹ By contrast, flat fee structures do not send any cost signal about conservation, and declining block rate structures (used by one-tenth of drinking water utilities), actually incentivize high-demand industrial users – but also wasteful outdoor irrigation – by reducing the rate at higher tiers of usage.³⁰ When implementing a conservation price structure, it is critical that utilities calibrate rates to still recoup sufficient revenue despite the desired reduction in demand. It is important to take income level into account when considering conservation pricing. A low-income customer might use more water than others due to a variety of factors, including (but not limited to) larger household sizes and lower efficiency due to leaks, broken meters, inefficient toilets, and more. Cities should be make sure low-income customers have access to the ability to increase the efficiency of their household water infrastructure and are not punished for having larger households, putting a strain on their ability to pay their water bill.

Utilities that can establish different rates should use that flexibility to implement additional options for low-income households. For more detailed information about the legality of various customer assistance programs for public water utilities in all 50 states, refer to the UNC Environmental Finance Center report listed in the Resources section at the end of this report.³¹

When introducing both rate increases and assistance plans, deliberate and targeted communication with community stakeholders is crucial. City and utility leaders should survey the socioeconomic data of their community to determine the best rate structures and assistance programs to meet community needs. Direct dialogue with community leaders can also shed light on selecting an appropriate assistance program. Further, utilities and city leaders should roll out robust communications strategies to ensure that constituents are aware of rate structure changes and their potential eligibility for assistance programs. Enrollment in assistance programs should be as transparent and simple as possible and should not, if possible, require government-issued identification (this disproportionately targets undocumented residents and residents of color). Finally, utilities should maintain comprehensive customer assistance helplines to respond to questions and concerns.

Impact Fees

A number of utilities are expanding their use of impact fees. This is a fee charged either one time to developers during construction, such as to cover the cost of a new connection and system expansion, or to the property owner on an ongoing basis, such as through stormwater fees based on the property's impermeable surface area. Philadelphia, PA developed one of the first stormwater impact fees, assessing a fee to both residential and commercial properties based on the amount of impervious surface area.³² Under state law, all cities in Texas mandate a connection fee for new construction. Austin, TX recently raised the fee for new housing developments to meet revenue requirements from the state and to help increase city water utility revenue.³³

Alternative Sources of Revenue

While rates will undoubtedly generate the bulk of revenue, utilities can pursue many creative and often environmentally sustainable tactics to supplement revenue.

- Generating surplus renewable energy - Oakland, CA's East Bay Municipal Utility District has the first water treatment facility that is a net producer of energy, procuring food scraps to power twelve biodigesters.³⁴ This innovative strategy to divert organic waste and generate energy also brings in about \$500,000 in annual electricity sales.³⁵ In regards to drinking water, the Portland Water Bureau (PWB) generates enough energy to power 150 homes by operating turbines in several of its water mains; the private company that installed and maintains the turbines, Lucid Energy, currently sells the energy to Portland's electric utility and shares a portion of the profits with the PWB.³⁶ A city's first step to build a biodigester should be to make sure it can power the facility itself before expanding it to sell-back energy.
- Selling fertilizer from wastewater biosolids - Several utilities, including DC Water,³⁷ are using purified biosolids extracted in the water reclamation process to produce and sell fertilizer.
- Leasing utility-owned property or services - The Water Research Foundation has identified other ways to leverage property or in-house expertise. A few examples include water utilities in El Paso, TX that lease land for ranchers to graze cattle; the Utilities Commission in Orlando, FL contracts with the City to service police vehicles in its fleet shop; utilities across the country rent out space on water towers for cellular antennas; and utilities with lab space contract with smaller utilities that do not to provide testing services.³⁸ Gresham, OR added a solar array in 2010³⁹ to their biodigestion facility, making it a fully net zero facility.



Lake Merritt, Oakland, CA
Source: Kai Morgener. CC by-NC 2.0

Innovative Additions to Conventional Municipal Bonds

DC Water, the utility serving the Washington, D.C., region, utilizes a range of mechanisms built on the conventional municipal bond structure, including century bonds, green bonds, and environmental impact bonds. The utility continues to be an innovator among public water utilities, issuing the first municipal century bonds (municipal bonds that are paid off over 100 years, in contrast to the more typical 30 to 50 year repayment periods) to pay for a very large stormwater tunnel project as part of the \$2.6 billion total DC Clean Rivers Project.⁴² The century bonds will contribute to underground stormwater infrastructure, including the construction of 13 miles of tunnels that are designed to last well beyond the bond period without requiring significant maintenance. Additionally, these bonds were certified green, leveraging the growing “green bond” market of certified environmentally-sustainable investments.⁴³

DC Water has also experimented with environmental impact bonds (EIB), which pair the conventional municipal bond structure with an additional performance contract – a version of the “pay for success” models sometimes used for social service provisions.⁴⁴ DC Water found a market among private investors for its EIB focused on the use of above-ground stormwater infrastructure as part of its DC Clean Rivers Project, namely low-impact development and use of green infrastructure tools. Private investors are lending \$25 million to the project and will receive \$3.3 million in an “outcome payment” if runoff is reduced by more than 41.3 percent. If runoff is reduced by between 18.6 and 41.3 percent, investors will recoup their investment with no additional outcome payment. If runoff is reduced by less than 18.6 percent, investors will make a \$3.3 million “risk share payment” to DC Water.



Washington, DC
Source: [Daniel Mennerich](#), CC by-NC-ND 2.0

Partner with Other City Departments

Water utilities can and should partner with other city departments to make the most out of limited budgets. All utilities can partner with economic or workforce development agencies to create job training programs to hire qualified operations staff while saving on turnover and training costs. Water utilities that partner with streets departments to sequence pipe repairs with street repairs may be able to share the costs of digging and street repair. The economic benefits of clean surface water and aesthetic enhancements of green infrastructure could each be incentive for a partnership with economic development agencies. In one example of this thinking, the Environmental Services Department and Parks & Recreation, Planning, and Community Development Departments of Grand Rapids (MI) formally partnered in an MOU to leverage funding and labor costs to upgrade stormwater infrastructure while improving recreational opportunities in Joe Taylor Park.⁴⁰

LEVERAGE FINANCING

The primary financing tool for capital projects is the use of municipal bonds. Through this tool, a utility can borrow large sums at a relatively low interest rate (compared to private sector borrowers) by pledging its future rate revenue.⁴¹ The borrowing costs are lower in part because the repayment periods are much longer than for a typical loan; as many as thirty to fifty year periods are common. However, not all utilities have equal borrowing power, as the major credit rating firms rate utilities based on the ability of their customers to actually pay that revenue and other factors affecting credit worthiness; this is a problem especially for utilities in shrinking and/or very high poverty cities.

Green Revolving Funds

Green revolving funds use initial seed capital to fund municipal energy and water efficiency projects, which then generate savings on operations bills – savings that are then added back into the revolving fund to pay for the next round of projects, thereby creating a fully municipally-run source of capital that also incentivizes water and energy efficiency.⁴⁵ Green revolving funds have been used extensively in higher education, and now in the City of San Antonio (TX).⁴⁶ San Antonio's fund was started in 2011 using American Recovery and Reinvestment Act funds to catalyze energy conservation projects, and currently, about \$1.2 million is returned to the fund each year.

State and Federal Sources of Subsidized Grants or Loans

Utilities can apply for a variety of funding sources to access subsidized capital from federal and state agencies. These programs are structured such that the more federal sources you can leverage for co-funding, the more favorably each given federal agency will look upon a particular capital project. Here is a partial list of the federal funding sources available:

- State Revolving Funds (SRFs) –SRFs are federally-funded, state-administered programs providing subsidized loans (and occasionally grants) to utilities. The Drinking Water SRF program funds drinking water utilities to install or replace treatment plants, storage facilities, distribution systems, and other infrastructure that will increase compliance with the Safe Drinking Water Act requirements.⁴⁷ The Clean Water SRF program funds wastewater utilities to construct publicly owned treatment works and improve energy efficiency at plants, and funds any entity to address nonpoint source pollution, stormwater management, water reuse, and decentralized wastewater treatment projects.⁴⁸ However, some cities find the cost of capital to be uncompetitive, and the paperwork involved in SRF applications unduly cumbersome.

- CDBG – The Housing and Urban Development Administration awards Community Development Block Grants to cities for “long-term needs to repair, construct, or buy public infrastructure.”⁴⁹
- USDA Rural Development Grants – There is some flexibility with regard to how “rural” is defined in different states, so some fairly urban areas qualify for this source of long-term, low-interest loans for drinking, waste, and stormwater infrastructure.⁵⁰
- WIFIA Financing – Signed in 2014, the Water Infrastructure Financing and Innovation Act’s basic premise is to support very large/expensive projects with subsidized financing.⁵¹ While administered separately, WIFIA is designed to work closely with SRF programs, and can finance up to 49 percent of eligible projects. The program is still in its early stages, with a small budget of \$17 million and only 43 applications for its first round;⁵² twelve projects were invited to apply for loans totaling \$2.3 billion.⁵³
- State-specific resources - State-based financing opportunities change frequently, but the Environmental Finance Center Network maintains a list of potential infrastructure financing opportunities, with resources specific to various regions or states.⁵⁴
- Looking outside the typical water financing streams – Utilities can explore partnerships with other agencies to access some portion of financing for other infrastructure upgrades. For example, Seattle, WA incorporated a green infrastructure installation as part of its design criteria for the Mercer Street Corridor project, which was awarded a grant through the transportation-focused TIGER program.⁵⁵

Resilience “Bonds”

Resilience or catastrophe bonds are financial tools that leverage bets by investors that a given disaster (say, \$X million in hurricane damage, or a storm surge Y feet in excess of the constructed sea wall) will not happen over the given bond term, usually less than five years.⁵⁶ If the disaster does not happen, the investors receive a better-than-average rate of return; however, if the pre-defined level of disaster occurs, the insurance purchaser receives the original capital as a payout to cover financial losses from the event. These bonds have not yet been used widely, though the New York Metropolitan Transit Authority was the first municipal entity to purchase one in 2013 to assist with Hurricane Sandy recovery.⁵⁷ Given the high capital costs involved with centralized water infrastructure, resilience bonds may become a more promising financing tool, especially for cities located along the coast or inland waterways.

A Note on Public-Private Partnerships

Over 2,000 municipalities have entered into some form of public-private partnership (P3), also known as an alternative water project delivery model, to manage all or part of their water systems.⁵⁸ While contracting with private operators or consultants can generate efficiencies for certain aspects of system operations, fully signing over operation or even ownership of a public utility into private hands can limit public oversight of water system operations and introduce some harmful cuts to the system. The UNC Environmental Finance Center offers case studies of nine communities using P3s and assesses both positive and negative financial outcomes.⁵⁹

CONCLUSION

Deepening your understanding of water utility financing as an elected official will enable you to be a stronger advocate for safe, reliable, and equitable water service in your city. Even as the scale of needed investment grows, utilities can develop rate structures, impact fees, and new products or services that generate needed revenue fairly. 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.

GETTING STARTED

1. Assess how your city is managing its drinking, waste, storm, surface, and groundwater, especially to analyze where the largest costs are incurred or borrowing is most extensive (for example, is your city operating under a federal consent decree to reduce combined sewer overflows?).
2. Learn about your city's specific water utility structure and financial status: its capital and operating budgets; its rate structure and any customer assistance programs; the condition and location of physical assets like pipes, plants, and distributed tools; its governance, including state influence on rate decisions from agencies such as a Public Utilities Commission; the extent of public versus private operation.
3. Build a relationship with your water utility manager/CEO(s). Using your understanding of your city's water system, you can be a powerful advocate in supporting utility leaders when they request a rate increase or other investments in the system.
4. Build relationships with community leaders across a range of neighborhoods and interests, and ask them questions about affordability (both in terms of rates and in impacts of water crises). Are lower-income families in the neighborhood able to access assistance programs, or do they experience fines or water shut-offs? Is there a street that always floods, causing property damage, despite being outside of the floodplain?
5. Building on your relationship with utility management, consider lending your time or staff time to assistance with letters of support for grant and loan program applications – state and federal money, while subsidized, comes with a large time cost.

RESOURCES

[Tools to Assist Water Utilities with Financial Decision Making](#) (UNC Environmental Finance Center 2016). A clearinghouse of resources related to drinking and waste water utility financial decisions, including tools to analyze rates and revenue, benchmarking, affordability, and capital finance.

[Utility Financial Sustainability and Rates Dashboard](#) (UNC Environmental Finance Center 2013). An interactive dashboard that compares rate data and financial sustainability metrics for utilities across various states.

[Seven Strategies for Identifying Who is Willing and Able to Pay for Household Water Services](#) (Urooj Ahmad 2017). A set of questions to consider who in your city is unable to pay for water services, conduct more effective outreach to residents eligible for assistance programs, and analyze their effectiveness.

Drinking Water Infrastructure: Who Pays and How (And For What?) (American Rivers 2013). A primer on financing drinking water infrastructure as well as critical insight about how to balance conservation, the need for revenue, and affordability for ratepayers.

The Economic Benefits of Investing in Water Infrastructure (Value of Water Campaign 2017). This brief provides perspective on the scale of water infrastructure investment needs and current practices, and analyzes the potential economic benefits from increased water investment.

Energy Efficiency in Water and Wastewater Facilities: A Guide to Developing and Implementing Greenhouse Gas Reduction Programs (EPA 2013). A guide by the EPA providing actionable steps cities can and should take to reduce water and wastewater utility GHG emissions and improve efficiency.

ENDNOTES

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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. We can be contacted at:

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