



E C O S

Water Infrastructure Financial Leadership

Successful Financial Tools for Local Decision Makers

September 2017

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How to Use This Document



This document is designed for local decision makers to navigate the complex process of investing in water infrastructure. It will help you identify what is needed for financial planning, determine how to fund and finance a project, and consider which strategic approaches can be used to protect your local investments. This document also compiles existing resources and descriptions of successful community examples as tools to help inform your water infrastructure investment decisions.

Many resources are available to meet your financial leadership needs. This document has interactive features throughout each section to enhance your experience and connect you to these helpful resources. Anywhere you see an **orange icon** or **orange text**, you can click that item to access relevant resources. Some of these resources are other sections within the document, and others will take you to external websites.

For Example:

Click on either the **icon outlined in orange** or the **orange highlighted** text to jump to the resource you are interested in learning more about.



Several examples of how utilities and communities have partnered to improve operating efficiencies, leverage combined community resources to qualify for financing, and provide more affordable services to residents are included in **Appendix A**. **Click the icon to learn more about these approaches to system partnerships.**

EPA's Water System Partnerships website features a wide range of resources for communities looking to engage in system partnerships.

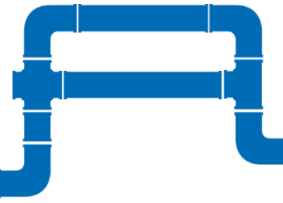
Click to jump to relevant resources

Water Infrastructure Financial Leadership Companion Resource for States and Foundations

A companion resource to this document, *State and Foundation Water Finance Partnerships* provides examples of how states and foundations have approached blended financing strategies and describes additional opportunities for further collaboration in water infrastructure funding.



Introduction: Water Infrastructure Financial Leadership



The U.S. Environmental Protection Agency's [Water Infrastructure and Resiliency Finance Center](#) (Water Finance Center) provides financing information to help community leaders make informed decisions for drinking water, wastewater, and stormwater infrastructure (collectively referred to as “water infrastructure”). The Water Finance Center works with stakeholders to share models of financial leadership and success for water infrastructure to protect human health and the environment.

In 2016 and 2017, The Water Finance Center and the Environmental Council of the States (ECOS) convened partners from states, foundations, private organizations, academia, national associations, and local decision makers to discuss opportunities to support clean and safe water for Communities in Need across the United States. These discussions identified the need for a resource to provide practical examples of successful practices used by communities in funding and financing water infrastructure projects.

Financial leadership practices for water infrastructure and services are an integral component of the overall economic health of every community. The health of all communities—small or large, wealthy or in need—depends on adequate infrastructure that can reliably deliver safe drinking water, and provide wastewater and stormwater management consistently. Through effective financial leadership practices, utilities are anchor institutions that create jobs and provide public health services to sustain their local economies.

This document, *Water Infrastructure Financial Leadership*, provides an overview of three key steps in financial leadership for local leaders that are managing water infrastructure. These are applicable for all communities but is specifically designed to assist “Communities in Need” (see box at right for further information) that are beginning to think about, or are in the process of, investing in water infrastructure.

CHARACTERISTICS OF “COMMUNITIES IN NEED”

This document can apply to any community seeking to plan or fund an infrastructure project. Specific examples of Communities in Need are included to show how communities with limited resources can achieve water infrastructure financial leadership. Communities in Need can range in demographics and characteristics. Indicators of a Community in Need include those with:

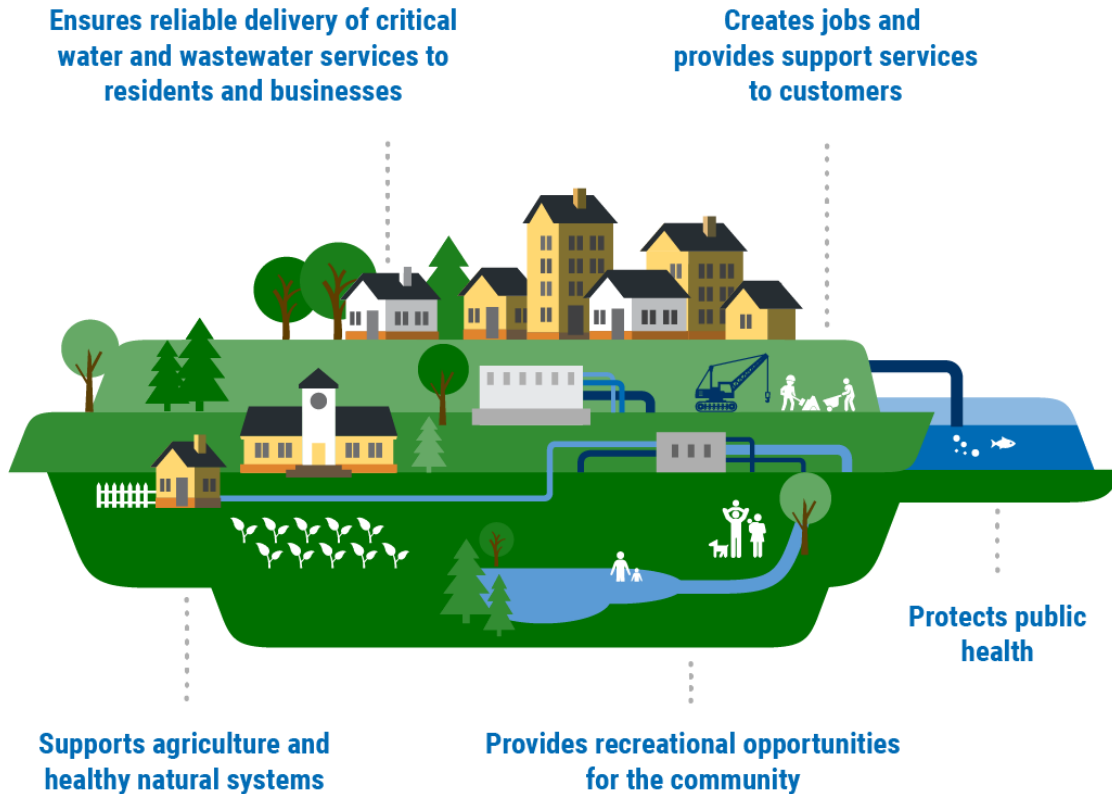
- High unemployment
- Declining rate base/population
- Median household income (MHI) level below the Federal Poverty Level (FPL)
- Low bond/credit rating that limits its ability to finance improvement projects

Communities in Need may also be referred to as:

- Disadvantaged communities
- Economically challenged communities
- Resource constrained communities
- Environmental Justice (EJ) communities

Reliable Water Infrastructure: Why is it Important?

Reliable water infrastructure protects public health, delivers a critical resource to residents and businesses throughout the community, provides recreation opportunities, supports agriculture and healthy natural systems, and allows for economic development, among other community benefits.



PLANNING YOUR PROJECT: KEY INFRASTRUCTURE PROJECT PHASES

The diagram on the following page depicts the three major phases of an infrastructure project, including the key activities that take place in each phase. It highlights how the important aspects of financial management support all phases of infrastructure planning, investment, and development. Each phase of a community water infrastructure project is also supported by the building blocks of financial “readiness” described in Step 1 of this document.

The diagram can be used as a roadmap for planning the path for your next infrastructure project, beginning with financial planning and management, which lead to the core project steps of pre-development planning, development and construction, and concluding with the ongoing operation and maintenance of your new infrastructure.

To ensure that your community’s infrastructure investment is protected, it is important to carefully plan each of the three core steps of the project prior to breaking ground. Effective project planning, using this diagram as a guide, can help to safeguard the project as well as the completed infrastructure from unexpected costs that can fall on the shoulders of rate payers.

Key Infrastructure Project Phases

Ongoing Financial Management

General financial management and ongoing asset management are necessary to maintaining a financially viable utility, which is the first step to investing in and managing infrastructure.



What Can This Document Help Me Do?

Water Infrastructure Financial Leadership provides descriptions of financial leadership practices and real-world case examples of how utilities and communities have implemented these practices. These case examples are drawn from communities across the country with varying levels of resources and community needs.

Click an icon to navigate to each section of the document.

Step 1: Preparing Your Community for Water Infrastructure Projects

Plan for infrastructure maintenance and upgrades to get your community ready for funding and financing.



Step 2: Bringing Capital Into Your Community

Learn about different ways that you can use your community resources to fund infrastructure projects and your options in finding funding and financing from external sources.

Step 3: Maintaining Strong Financial Leadership Practices

Support your community's long-term financial health through economic development, household affordability programs, ongoing management of your rates, and communicating the value of water to your customers.



Other Information



- Key Terms
- Acronyms

Real-world Examples of These Steps in Action



Step 1: Preparing Your Community for Water Infrastructure Projects



“Does my community know what its water infrastructure needs are? Are we ready to fund or finance those water infrastructure needs?”

Water infrastructure projects are a major undertaking for communities of all sizes. They require thorough planning to identify the community’s infrastructure needs and analyze the different options available for the project. This preparation builds a foundation of strong financial management at each step in the process. Because “readiness” is the critical foundation of securing financial resources and completing infrastructure projects, it is the backbone of the first step in this document.

As you begin to think about your community’s infrastructure needs, and the monetary needs associated with making these investments, you will answer the question: “Is my community ready to fund or finance our water infrastructure needs?” Readiness means that a community has a strong foundation of planning and financial management in place that will allow it to be a good candidate for funding and financing, and to manage those financial resources effectively once they are in-hand.

Readiness has three important components that are described in this section: Asset Management; Financial Planning; and Stakeholder Engagement. **Click on the icons below to view more information on each topic.**



As your community begins to think about future infrastructure investments, utility and community leaders work together to ensure that each of the building blocks of readiness are addressed. By addressing the three building blocks of readiness, your community can increase its eligibility for funding and financing, as well as its ability to manage capital effectively once you receive it.

1.1 Asset Management

Asset management is the critical foundation for understanding near and long-term operational and capital needs. This information forms the basis for capital planning and a capital funding strategy. Asset management is the practice of managing infrastructure capital assets to minimize the total cost of owning and operating them, while delivering the service level customers desire. It helps you answer the following three basic (but critical) questions:

- What assets do you have and where are they located?
- When do your assets need to be repaired or replaced?
- How much is each asset going to cost you in the near-term and the long-term?

Asset management goes hand-in-hand with your ongoing financial planning, described below. By implementing asset management practices, you will have a clear picture of your infrastructure-related expenses and future investment needs, which will inform your financial planning process.



Asset Inventory

An asset inventory is an inventoried list or survey of all system assets (e.g., source, treatment, transmission, and distribution infrastructure). The list includes each asset's age, location, condition, criticality, probability of failure, consequence of failure, and remaining useful life. Along with the asset inventory, the system should provide service area and facility maps.



Operation and Maintenance Program

The proper operation and maintenance (O&M) of a system's assets are necessary elements of an effective asset management program, building on the asset inventory and informing the capital improvement plan. The strategy for O&M varies based on each asset's criticality, condition, and operating history. An effective program maintains a record of each asset's maintenance history, needs, and costs.



Capital Improvement Plan

Capital improvement planning determines a utility's asset rehabilitation and replacement projections, based on the asset inventory and O&M data. The capital improvement plan addresses the type, timing, and cost of short- and long-term asset rehabilitation and replacement needs, as well as new investment requirements to meet the needs of the local community.

Asset Management Resources

[Successfully Protecting Your Investment In Drinking Water Infrastructure: Best Practices from Communities and Local Experts](#)

This document highlights benefits of planning and maintenance of infrastructure through asset management.

[Reference Guide for Asset Management Tools](#)

This document can help small- and medium-sized drinking water or wastewater systems to identify resources that can be used to implement asset management practices.

[Asset Management for Water and Wastewater Utilities](#)

EPA’s website outlines the important steps of asset management for water and wastewater utilities. It describes the benefits of effective asset management and provides links to a range of asset management resources.

Additional Asset Management resources can be found in [EPA’s Water Finance Clearinghouse](#)

1.2 Financial Planning

Financial planning is the ongoing process of evaluating your utility’s current and future financial state by assessing money in (revenue) against money out (expenses), anticipated future needs, and developing budgets and reserves to plan for those needs.



Rate Study with Affordability Considerations

A rate study is a detailed examination of revenue requirements to provide prudent and adequate funding levels for operations and maintenance (O&M) and future capital infrastructure improvements. It provides options for developing a rate structure that allocates costs to utility customers. This study will inform an overall capital financing and operations funding strategy.

Household affordability is an important element when considering rate structures. While it is important to ensure reliable revenue and to charge rates that reflect the true cost of service, there may be customers that have difficulty paying for services. Some utilities have created Customer Assistance Programs to provide services to these customers.



Alternatives Analysis

An alternatives analysis is a thorough assessment of different infrastructure alternatives to evaluate various economic, social, and sustainability criteria—based on the goals and objectives of the utility—and assess the impacts of alternatives based on these criteria. An analysis includes the procurement, construction, and operational costs of each alternative, creating a system for comparing the range and types of benefits against the cost, and confirming that the alternatives will meet relevant compliance goals.



Budgets

A budget is essential to managing water system finances. Budgeting consists of managing the utility’s revenue and expenditure streams, and balancing the streams to ensure continued operations and capacity for capital improvements. It is important to have two separate budgets: one operating budget for ordinary O&M and one capital budget for future infrastructure improvements.



Reserve Accounts

A reserve fund for future expected or unexpected expenses is an element of sustainable financial planning and resiliency in emergencies. To create a reserve fund, it is necessary to evaluate monthly cash flows, average emergency costs, priority future investments, and current equipment condition. These accounts may be considered a financial viability indicator—particularly when assessed alongside other financial activities.

Financial Planning Resources

[Financial Health Checkup for Water Utilities](#)

This tool can help you assess the financial performance of your water or wastewater utility, and explains each indicator of financial health in simple terms. The tool demonstrates the financial strengths and weaknesses of your system over the past five years, and is designed to be used by utility professionals, local decision makers, and technical assistance providers.

[The Basics of Financial Management for Small-Community Utilities](#)

This guide provides a review of basic financial management aspects of utility operations for board members and operators of drinking water and wastewater utilities in small communities. The guide addresses short- and long-term budgeting; how to develop a budget plan; systems for accounting and disbursing funds; and other general financial and record-keeping practices.

[Drinking Water and Wastewater Utility Customer Assistance Programs](#)

This document shows how drinking water and wastewater utilities across the United States are implementing customer assistance programs to provide better access to essential drinking water delivery and wastewater management services.

Additional financial planning resources can be found in [EPA's Water Finance Clearinghouse](#).

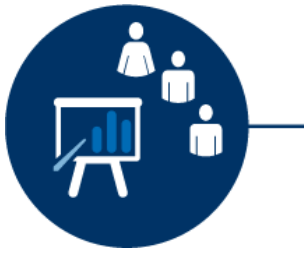
1.3 Stakeholder Engagement

Communicating the value and importance of drinking water delivery and wastewater/stormwater management services is essential for ratepayers to accept the costs needed to reliably deliver these services. Engagement with stakeholders, including customers, board members, and other community leaders, is necessary for building support within the community for water infrastructure revenue requirements. Determining the communication strategy up front is essential.



Communication to Governing Bodies/Decision Makers

Leaders who make decisions on water infrastructure projects want to understand the full picture of infrastructure needs in their community. Utilities can achieve this through clear, concise communication on the short- and long-term financial needs to continue to provide public health services and sustain the local economy. Governing bodies such as board members, water commissions, and local elected officials (depending on your management structure) should also receive in-depth



background training and education to understand the full needs and operations of the system, and the consequences for the community associated with water infrastructure failures.

Communication to Customers and Community Groups

Customer and community outreach is another important aspect of building support for utility rates and infrastructure investment needs. Water utilities are critical anchor institutions for the community in protecting public health and supporting economic development – if customers understand the important benefits of reliable drinking water, wastewater, and stormwater services, utilities will be better positioned to communicate future needs.

Stakeholder Engagement Resources

[Communicating the Value of Drinking Water Services: Using Campaigns and Community Engagement Efforts](#)

This document summarizes numerous national and state campaigns developed to communicate the value of water to increase public awareness of the value of water services. These campaigns cover a variety of topics including the costs of replacing aging infrastructure, the importance of building the water sector workforce, and issues around water availability and conservation.

[Getting in Step: Engaging Stakeholders in Your Watershed](#)

This guide is for federal, state, tribal, and local agency personnel that are involved in watershed management activities, and are building a stakeholder group. It includes steps for getting started and keeping the ball rolling, and the key building blocks of stakeholder outreach.

[Value of Water Campaign](#)

The Value of Water Campaign educates and inspires the nation about how water is essential and invaluable. It provides tools, resources, and information that grows awareness among the public and decision makers about the value of water.

Additional stakeholder engagement resources can be found in [EPA's Water Finance Clearinghouse](#).

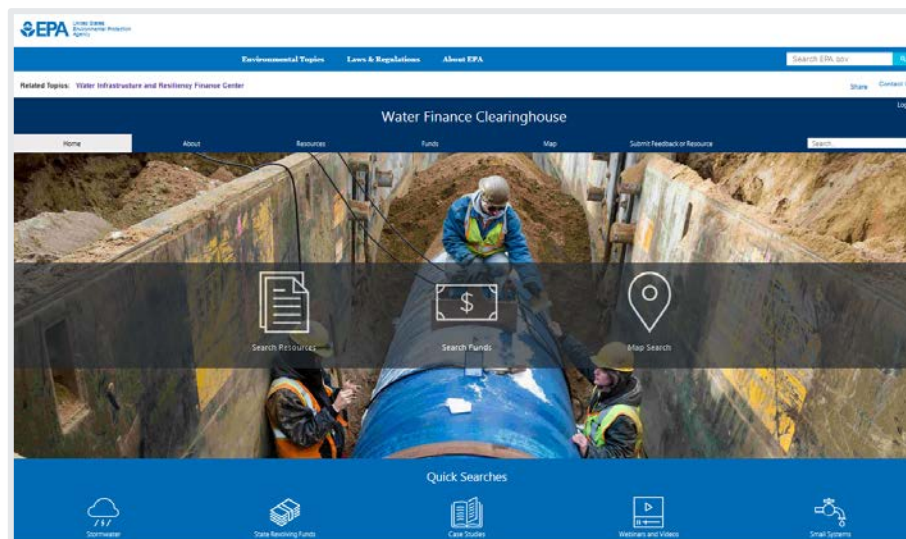
WATER LOSS: AN IMPORTANT COMPONENT OF FINANCIAL VIABILITY

The term “water loss” is associated with drinking water that is produced and sent to distribution, which the utility is unable to bill for. This can be a result of leaks, theft, meter inaccuracies, or unmetered locations.

Water loss means lost revenue for a drinking water utility. It is important for utilities to maximize their billings for treated water by monitoring for water loss throughout their distribution system, implementing asset management practices, and installing meters in currently unmetered locations.

THE WATER FINANCE CLEARINGHOUSE

The U.S. EPA Water Finance Center has developed a “Water Finance Clearinghouse” to help community and utility leaders make informed decisions for their drinking water, wastewater, and stormwater infrastructure needs. The Clearinghouse is your one-stop-shop for searching funding and financing sources, and learning about important topics and challenges around infrastructure funding and financing. The Clearinghouse has two searchable databases—one for funds and one for resources.



Funding Sources: Clearinghouse users can identify water infrastructure funding and financing sources, including:

- Public sector loans and grants—federal, state, and local
- Philanthropic sources

Financing Mechanisms and Approaches: Users can explore how specific funding and financing approaches can be used to achieve water quality and quantity goals, including:

- Public-Private Partnerships
- Public-Public Partnerships
- Bonds, Taxes, and Fees
- Customer Assistance Programs
- Rate and Revenue Structures
- Incentives

Funding Access and Readiness: Includes resources to prepare communities to access capital, and once accessed, utilize it efficiently to address their needs:

- Pre-development Assistance
- Asset Management
- Technical Assistance for Financing
- Coordinated Funding Opportunities
- Financial Analysis Tools
- Program Costs

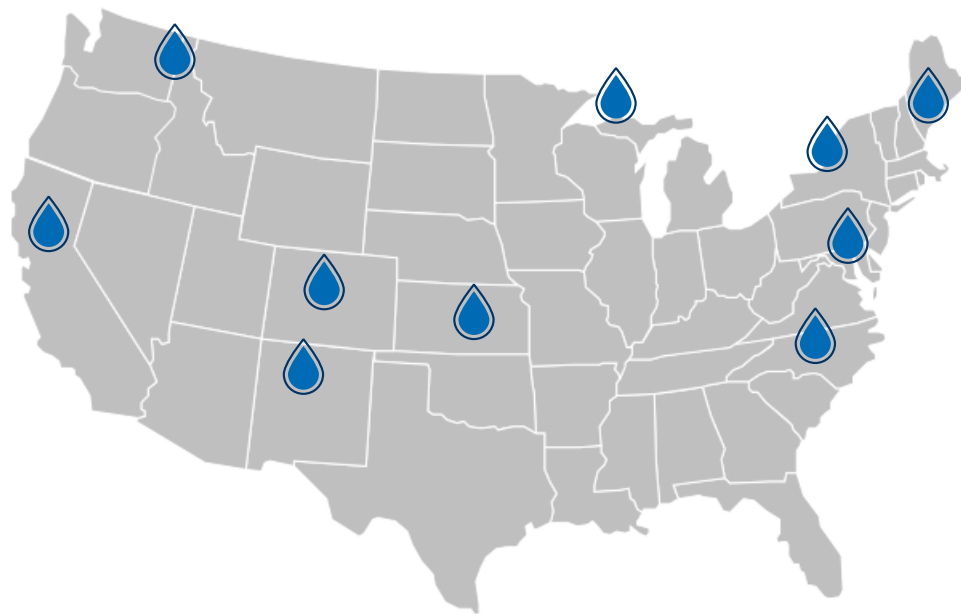
Special Topics and Additional Filters: Includes resources that cover specific water financing topics and challenges.

[VISIT THE WATER FINANCE CLEARINGHOUSE ONLINE](#)

ENVIRONMENTAL FINANCE CENTERS

The Environmental Finance Centers (EFCs) are university-based and non-profit organizations creating innovative solutions to the difficult how-to-pay issues of environmental protection and improvement. The EFCs work with the public and private sectors to promote sustainable environmental solutions while bolstering efforts to manage costs.

The EFCs provide technical assistance to communities and support state governments and other organizations to provide environmental programs and services in fair, effective, and financially-sustainable ways. Some centers conduct research into water utility financing, rate-setting, and innovative business models. The centers are a great source of information useful to utilities of all sizes. Currently there are ten EFCs in the U.S.



The EFCs host regular workshops and webinars on finance topics, and can provide direct technical assistance. Examples of assistance provided by the EFCs to utilities and communities include:

- Asset Management planning
- Revenues and expense analysis
- Long-term capital planning
- Sources of outside funding
- Resiliency planning
- Near-term financial planning and rate setting
- Effective budgeting strategies
- Options for lowering energy use and water loss
- Collaboration with other water systems

[VISIT THE ENVIRONMENTAL FINANCE CENTERS ONLINE](#)

Step 2: Bringing Capital into Your Community

“How can my community fund water infrastructure through our rates or other sources of revenue? Do we need financing through a loan or bond?”

After your community is ready to make an infrastructure investment through the building blocks described in **Step 1**, you will move to another critical step in any infrastructure project: identifying funding or financing to pay for the project.

Most infrastructure projects are funded by rates collected by the utility. This section expands on funding strategies that go beyond using only funds collected from the system’s rate base, and focuses on three important strategies and practices that decision makers can consider when securing financial resources. This section will teach your community about:



1. Generating Revenue to Fund Water Infrastructure and Operations: Learn how to fund your water operations and infrastructure needs using your own resources, and think outside the box about how you can generate additional revenue through non-rate-based approaches to increase your cash-flow.



2. Establishing System Partnerships: Learn how partnerships with other systems can help fund your community’s infrastructure needs and improve your utility’s long-term financial sustainability through cost savings.



3. Finding Funding and Financing: Learn about the different types of capital available to pay for infrastructure investments.

FUNDING VS. FINANCING: WHAT’S THE DIFFERENCE?

Funding: Providing “one-way” financial resources to support a need, program, or project. This term is used when 1) a utility fills the need for funds through generating its own internal reserves. The use of rate revenues, cash reserves, and connection fees is referred to as “pay as you go” or “Pay Go” funding, and 2) the recipient obtains a grant or similar form of funds that do not require repayment and do not carry an interest expense. “One-way” refers to the characteristic of not requiring repayment of principal or interest to the funder.

Financing: The “two-way” acquisition of money for a program or project. The term financing is used when the monetary resource need is filled from external, borrowed money where principal and interest are owed to the source of funds. This includes CWSRF and DWSRF funds provided as loans, municipal bonds, and other sources of monetary resources that require repayment of principal and interest. Typically these resources will tie to a capital asset and will not be available for supporting ongoing operational expenses.

2.1 Generating Revenue to Fund Water Infrastructure and Operations

Most infrastructure projects are funded (at least in part) through revenue generated by the utility. Utility revenue generation can come in a variety of forms, including user rates (the fees that your customers pay for your water, wastewater, and stormwater services) and other less common forms of revenue generation. Infrastructure projects are often funded by bonds issued by the utility or community and repaid from system revenues. This section explores the ways that your community can fund its infrastructure needs with money generated using its own resources.

2.1.1 User Rates

User rates are fees charged to customers for water services (e.g., treatment and delivery of drinking water, collection and treatment of wastewater and stormwater). Pricing of water services can be structured in a variety of ways. Some of the most common rate structures are described below.

Full cost pricing factors all costs of delivering the entire service into pricing, including past and future operations, maintenance, and capital costs. Full cost pricing can take the form of any of the rate structures below as long as all costs are recovered.

Common Pricing Structures that Encourage Water Conservation

- **Increasing block rates:** The price of water goes up as the amount used increases. “Block rates” create tiered pricing that increase with water usage (e.g., the first block is charged at one rate, the next block is charged at a higher rate, and so on).
- **Time of day pricing:** Higher prices are charged for water used during a utility’s peak demand periods.
- **Water surcharges:** A higher rate is charged for “excessive” water use (e.g., water consumption that exceeds the local or regional average). Also called conservation pricing.
- **Seasonal rates:** Water prices rise or fall based on weather conditions and the corresponding demand for water.

Other Examples of Nontraditional Rate Structures

Traditional rate structures can create a paradoxical relationship between the utility’s financial health and the goal of promoting efficient water use: more efficiency and conservation within the system means less revenue for the utility. Given the variability of weather and other uncertainties, these rate models can also produce variable revenues that do not match cost variability, making financial management more difficult. Several alternative rate models seek to remedy the incentive problem and stabilize a utility’s revenues. Alternative rate structures have also been utilized to address customer affordability considerations. Four examples of these alternative rate models are described below.

PeakSet Base Model: This model charges individualized base rates calculated using a customer’s historical maximum month of consumption. The base rate is recalculated on a set timescale (e.g., every three years) in accordance with the customer’s peak demand month.



[Click here for more information about the PeakSet Base Model](#)

Consumption-based Fixed Rates: This model splits the revenue requirement into three components: fixed, variable, and a new “fixed–volumetric” component (sometimes referred to as a “supply charge”) that is typically based on the customer’s peak use over a given period.



[Click here for more information about the Consumption-based Fixed Rate Model](#)

Customer Select Model: This model lets customers select a level of water use that meets their needs. It charges a fixed amount for all use within that consumption level. Water use that exceeds the chosen level is charged at a higher rate (like many cell phone rate plans). This model lets customers select what level of service they can afford, and leads to conservation benefits as customers seek to stay within their selected level.

Click the icon to learn about how the Clayton County Water Authority in Clayton County, Georgia piloted the Customer Select rate model.



[Click here for more information about the Customer Select Model](#)

WaterWise Dividend Model: This model supplements an existing rate structure. The utility pays conservation dividends to customers who use less than their historic average for a given period.



[Click here for more information about the WaterWise Dividend Model](#)

2.1.2 Rate Stabilization Funds

An important component to the utility’s overall financial health is the predictability of rates and revenue. Unforeseen expenses or drops in revenue can place substantial financial burden on the system and its customers.

Rate stabilization funds are a type of financial reserve that can help buffer the impacts that occasional revenue shortfalls may have on your utility and your customers. Decreased water sales, leading to reduction in revenues, can happen for a variety of reasons (including cool temperatures, wet weather events, mandatory drought restrictions, an economic downturn, and increased conservation and efficiency). Reserve funds can help you to stay financially solvent during these periods. Establishing a larger, predictable “cost of service” fixed fee with a variable usage fee is beneficial for some communities by ensuring a base level of regular revenue.

Having a rate stabilization fund in place can also help to boost your credit and bond rating, which makes financial capital less expensive (through lower interest rates) when you employing strategies for bringing capital into your community discussed in Section 1. Rate stabilization funds are one of the Environmental Finance Center’s [Six Keys to Improving Your Water Utility’s Credit Rating](#), which are also described on [page 26](#) of this document.

2.1.3 Innovative Revenue Generation Approaches

Utilities fund most their infrastructure investments through local revenue-generating mechanisms (e.g., customer rates and other fees for water, wastewater, and stormwater services). Many utilities have also created additional revenue streams to pay for new infrastructure investments to reduce rate increases for their customers.

Non-rate-based revenue can help to improve the organization’s overall financial health by creating new sources of income for unexpected expenses and diversifying the utility’s income in communities with decreasing volumes of water sold and collected (e.g., due to declining populations or water conservation programs). With creative thinking, many opportunities for new revenue streams are possible. Some examples of how utilities have approached this are included below.

Leasing space on water towers: Water towers are valuable real estate because they are often located in or near towns. Because of their proximity to population centers, water utilities have been able to sell space on their towers for cellphone antennas and advertising. *Click the icon to read about how the village of Menomonee Falls, Wisconsin has leased space on their water towers for more than twenty years.*



Selling grid service to a local electric utility: Grid service refers to an arrangement where a local electric utility pays the water utility for agreeing to temporarily curtail some of its electric load when needed to help the electric utility match supply to demand. The water utility is still paid for agreeing to this arrangement even if it is never asked to shed load. *Click the icon to learn about the Cucamonga Valley Water District's participation in an energy demand response program in Southern California that helps to generate revenue and improves the utility's energy efficiency.*

Selling fertilizer as a product: Utilities have found a range of ways to recycle and sell product reclaimed from wastewater, including as organic-nitrogen fertilizer for gardeners and farmers. In addition to providing an additional revenue stream, the utilities save on waste disposal costs. *Click the icon to learn about how Milwaukee Metropolitan Sewerage District has produced and sold "Milorganite" fertilizer since 1926.*



Selling water and wastewater line protection: Homeowners own the lateral service lines that connect the main distribution lines to their home. Replacement cost is generally \$2,500–\$3,500, and is the responsibility of the homeowner. Some utilities have sold a service that acts as an "insurance" for customers, guaranteeing the utility will fix their lateral service lines when necessary. This can make use of the utility's existing expertise and resources to provide a sought-after service to the customer. *Click the icon to read about how Connecticut Water Service's Linebacker Protection Program protects customers against costly infrastructure repairs.*

Selling services for consulting or system management to other utilities: Utilities currently have more ability to connect with other systems than they have at any other time in history. Many are taking advantage of this increased ability by selling services, such as consulting or system management services, to other utilities near and far.

DC Water created the "[Blue Drop](#)" organization to share best practices and consulting services with other utilities; the consulting services are offered at an affordable rate to other systems, and provide a non-rate-based revenue stream for DC Water.

The Putnam Public Service District in Putnam County, West Virginia has secured contracts with three small neighboring communities to provide system management services, creating an additional revenue stream for Putnam and helping its neighboring communities keep water rates affordable for their residents. *Click the icon to read about how DC Water, Putnam Public Service District, and other utilities are selling utility services to other systems in Appendix A.*



2.2 System Partnerships

Water systems frequently develop partnerships with other systems to gain technical and managerial efficiencies, save on operating costs, and work together to acquire capital for infrastructure projects. Partnerships can exist between neighboring towns, or even across county and state lines, and help utilities to provide more reliable and affordable services to their communities.

Partnerships can range from informal arrangements, like sharing equipment or a pooled purchasing arrangement (e.g., for purchasing of chemicals), to more complex arrangements, such as sharing management responsibilities and debt obligations. When systems partner, they can lower their individual operating costs to keep rates low, improve their ability to qualify for financing, and find lower interest rates.



Several examples of how utilities and communities have partnered to improve operating efficiencies, leverage combined community resources to qualify for financing, and provide more affordable services to residents are included in **Appendix A**. *Click the icon to learn more about these approaches to system partnerships.*

[EPA's Sustainable Water Infrastructure Water System Partnerships website](#) features a wide range of resources for communities looking to engage in system partnerships. EPA also has an additional Water Systems Partnerships website that is specific to [Building the Capacity of Drinking Water Systems](#).

2.3 Finding Funding and Financing

After determining the needed infrastructure investment and how to proceed with the project, you must determine how to pay for the project. This section describes several of the most common sources of funding and financing used by communities for infrastructure projects. The [Water Finance Clearinghouse](#) (highlighted on **page 11** of this document) is a great starting place if you are looking for specific funding and financing sources in each of these categories.

2.3.1 Governmental Sources

Many communities look at national- and state-level sources when seeking financial support for infrastructure projects. Often these come in the form of federal dollars that are distributed to states and administered at the state level, such as the [Clean Water State Revolving Fund \(CWSRF\)](#) and [Drinking Water State Revolving Fund \(DWSRF\)](#). The CWSRF (established in 1987) and DWSRF (established in 1997) comprise 102 environmental finance banks administered by the states and Puerto Rico. These federal-state partnerships provide low-cost financing to help communities address water infrastructure needs.

Many of these sources also have a specific focus on Communities in Need or low income communities; some also explicitly emphasize stormwater projects as eligible for funding. The table below highlights some of the largest governmental sources for water infrastructure projects. Communities should check directly with their states for other state-specific funding programs.

Examples of National/State Funding and Financing Sources

Agency	Program	Drinking Water	Wastewater	Stormwater	Grants	Loans	Low Income Community Focus
EDA	EAA	■	■	■	■	■	■
EDA	Public Works	■	■	■	■	■	■
EPA	WIFIA	■	■	■		■	
FEMA	Disaster Mitigation Funding	■	■	■	■		
HUD	CDBG	■	■	■	■	■	■
States/EPA	DWSRF	■				■	
States/EPA	CWSRF		■	■		■	
USACE	State planning assistance	■	■	■	■		
USDA	RBDG	■	■	■	■		■
USDA (RUS)	WEP	■	■	■	■	■	■

Acronyms:
 CDBG: Community Development Block Grant
 CWSRF: Clean Water State Revolving Fund
 DWSRF: Drinking Water State Revolving Fund
 EAA: Economic Adjustment Assistance
 EDA: Economic Development Association
 EPA: United States Environmental Protection Agency
 FEMA: Federal Emergency Management Agency
 HUD: United States Department of Housing and Urban Development
 RBDG: Rural Business Development Grants
 RUS: Rural Utilities Service
 USDA: United States Department of Agriculture
 WIFIA: Water Infrastructure Finance and Innovation Act

There are also non-profit funding and financing sources that are typically funded through a state or federal funding source. One example is the National Rural Water Association (NRWA) [Rural Water Loan Fund](#). NRWA provides training and technical assistance to small and rural water and wastewater utilities through 49 affiliated State Rural Water Associations. The Rural Water Loan Fund provides low-cost loans for short-term repair costs, small capital projects, or pre-development costs associated with larger projects.

Another example is the Rural Community Assistance Program (RCAP). RCAP is a national-level organization that has six regional affiliates. RCAP offers loans as a national service through its [Revolving Loan Fund](#), administered by one of its regional programs—Communities Unlimited. In addition, many of the other RCAP regional partners offer their own localized grant and loan programs.

2.3.2 Philanthropic Sources

Charitable foundations and other philanthropic organizations have also been a source of monetary support for community planning and infrastructure projects. Philanthropic support typically comes in two forms:

- **Grants:** A monetary award to an organization or individual to undertake specific activities or projects, as defined in the grant. Grant funds are not required to be repaid—this is a form of *funding*.
- **Impact Investing:** An investment made into a company or organization with the intention of generating specific impacts that align with the investing organization’s mission, along with a financial return for the

investing organization. Impact investment rate terms range from below market-rate to market-rate, depending on the investing organization's strategic goals, providing a lower-cost alternative for borrowers to traditional, market-rate loans—this is a form of *financing*.

Detroit, Michigan is an example of an economically-stressed community that successfully secured foundation funding to complete two infrastructure/community development projects. *Click the icon to read a case example in Appendix A that describes Detroit's experiences with using foundation grant funding for two stormwater infrastructure projects.*



2.3.3 Private Sources

Communities have successfully leveraged private sources of funding and financing to pay for their infrastructure projects. Private capital typically takes one of two forms in the infrastructure funding context:

- **Private Financing (Loans):** Private financial groups and individual investors can offer private loans for infrastructure projects. Impact investing loans from non-governmental organizations is also possible. Typically, private loans have higher interest terms than public funds and philanthropic impact investing loans but may offer other types of incentives attractive to borrowers.
- **Private Financing (CDFIs):** The [Community Development Financial Institutions](#) (CDFI) Fund is a fund from the U.S. Department of the Treasury, which distributes funding to private financial institutions that are recognized for providing service and support to communities in need. In turn, these institutions use the CDFI funds to provide flexible financing to communities.
- **Public-Private Partnerships:** (Also known as P3s or PPPs) A contract between the private sector and a government entity for public infrastructure projects, with payment based on a number of terms and conditions.
- **Privatization:** When a private entity purchases the utility's assets from the municipality. The private entity then owns the assets.

2.3.4 Water Bonds

A bond is a debt obligation issued by a nonprofit organization (state, city, county, or other) to finance its capital expenditures. It is a debt investment in which an investor loans money to an entity (state, city, county, or other), which borrows the funds for a defined period at a variable or fixed interest rate. The interest paid on municipal bonds is tax-exempt, making them an attractive low-cost way to obtain capital.



Bonds can be issued at a variety of levels, including the local level. *Click the icon to learn how the mid-sized community of Bend, Oregon issued \$63 million in bonds to fund a membrane filtration plant.*

Bonds can also be issued at the state level. In 2015, the State of Texas began to sell bonds to provide a low-interest financing option for communities across the state that needed water infrastructure upgrades but may not have been able to qualify for financing on their own. *Click the icon to learn more about the Texas statewide bond approach.*



Resources for Finding Funding and Financing

[New and Emerging Capital Providers for Infrastructure Funding \(Water Research Foundation Project #4617\)](#)

This Water Research Foundation report identifies and assesses the applicability of new and emerging capital financing alternatives for water utilities in the United States. It includes descriptions, information about applicability/use, advantages, disadvantages, and lessons learned for each financing alternative.

[Using CDFIs to Finance Community Development Projects](#)

This Opportunity Finance Network presentation introduces community borrowers to Community Development Financial Institutions (CDFIs). It explains what a CDFI is, how to find them, and what kind of financial products they can offer to your community.

Additional Funding and Financing resources can be found in [EPA's Water Finance Clearinghouse](#).

Water Bond Highlight: DC Water's Pioneering Environmental Impact Bond

In September 2016, DC Water (the water and wastewater service provider for Washington, DC) issued an Environmental Impact Bond (EIB) to finance a range of large-scale Green Infrastructure installations as a part of its 20-year Long Term Control Plan to reduce combined sewer overflows. The EIB terms included a “Pay for Success” model, in which payment to the private sector by the public entity is based on measured outcomes. The DC Water EIB represents the first use of the Pay for Success model in the water sector, and the first to be issued as a tax-exempt municipal bond. Read the full Water Finance Center case study on the DC Water EIB [online](#).

DC Water's Environmental Impact Bond: A First of its Kind
U.S. EPA Water Infrastructure and Resiliency Finance Center
April 2017

Background
As part of its green infrastructure investment strategy, in September 2016, DC Water issued an Environmental Impact Bond (EIB) pursuant to the terms of a Purchase Placement Agreement (PPA). The EIB was designed with innovative terms that allowed the “Pay for Success” model to be used to address combined sewer overflows in the water sector. The EIB was the first of its kind in the water sector, and the first to be issued as a tax-exempt municipal bond. DC Water's goal was to use the EIB to finance the water sector's performance-based infrastructure investments to reduce combined sewer overflows in the Potomac River watershed.

Financing Structure
The EIB is a 20-year tax-exempt municipal bond with a maturity date in year five. The bond issue was placed with two institutional investors, Capital City Advisors Investment Group and Global Infrastructure Partners. The bonds were issued at a \$25 million face value and an initial 3.0% interest rate, payable semi-annually, for the first five years. The stated maturity date is October 1, 2036. The maturity date rate is 4.5%.

Overview of the Transaction
DC Water's EIB payment obligation is subordinate to its publicly issued bonds. This means that its regularly scheduled interest payment rates, as well as the maturity date, the EIB payment obligation can only be met if DC Water has provided for full scheduled payments on its maturing senior obligations.

U.S. EPA Water Infrastructure and Resiliency Finance Center

COMBINING FUNDING AND FINANCING SOURCES TO MAKE YOUR MONEY WORK SMARTER

A common challenge for communities seeking funds for infrastructure projects is being able to utilize a single source to fund the full cost of the project. Often, a single source cannot offer sufficient money to cover all project financial needs. Communities have used a range of strategies to blend multiple funding and financing sources to pay for a single project.

Benefits of Combining Funding and Financing Sources

Improve Ability to Access Other Funds	Some funding/financing sources require matching funds to qualify. Sources may also have restrictions on the project phases that can be covered by their funds, so, for example, a community may use one source to cover pre-development costs to help bring in additional funds for construction.
Manage Interest Rates	Using one secured source of money (e.g., grant money) to “buy down” the interest rate on another source of money, or paying off high interest loans before paying off lower (less expensive) loans/sources of money.
Provide Supplemental Community Benefits	Securing additional funding to access or add secondary community benefits to an infrastructure project (e.g., receiving grant money to add a community park space above a covered water reservoir).
Share Costs with Partners	Sharing funding with another utility, community, or partner organization to fund a large-scale regional project (managed jointly by several communities/utilities/organizations), or several smaller projects in a region (each project managed by an individual community/utility/organizations).

Key Elements to Success When Combining Multiple Funding and Financing Sources

Meet Early and Often: Strive to set the pace for a successful project from the start—the earlier you can meet with key parties (project design team, funding/financing organizations, stakeholders), the better.

Regularly Update Funders and the Public: Keep your funders and the public in the loop—and help them develop a sense of ownership in the project. Public involvement is necessary for the successful implementation of any project.

Involve Regulators: Make regulators your advocates—there is nothing to lose but valuable time and money with compliance challenges.

Coordinate Funding Requirements: Minimize duplication by targeting funding where it best fits the project, relative to implementation phases and eligibility requirements.

Manage Implementation Schedules: Manage project implementation cycles around funding cycles.

Be Ready to Move: Projects will move to construction quickly and efficiently when the pieces are already in place and ready to go as soon as the funding/financing becomes available.

Source: Pennvest (Pennsylvania Infrastructure Investment Authority)

How Can My Community Learn More About Combining Funding and Financing Sources?

If combining sources to fund a project is something that your community is interested in pursuing, your local technical assistance providers and state finance authorities can help your community to come up with a package that works for you. You can also use the [Water Finance Clearinghouse](#) to find a range of funding and financing sources that can be combined for your project.



Several examples of how communities of different sizes and a range of economic contexts have successfully combined funding and financing sources are included in **Appendix A**. Each example of combined project funding includes a summary table of the total project cost, and all funding/financing sources utilized by the community. **Click the icon to learn more.**

Step 3: Maintaining Strong Financial Leadership Practices

“How can my drinking water and wastewater utility continue to contribute to the long-term financial health of my community?”

Financial leadership for water utilities goes beyond the practices described in **Step 1** and **Step 2**, which focus on planning for infrastructure investments, generating revenue funding, and accessing financing. A utility’s financial stability ultimately determines its ability to access project financing needed to make necessary infrastructure investments. The focus of this section, Step 3, is on how a utility can ensure the long-term financial sustainability of its system, and also improve its community’s financial sustainability through ongoing economic development support, customer assistance programs, and proactive management of customer rates.

3.1 Contributing to Community Economic Development

The role of water service providers in working with the local economic development office has grown in recent years. Increasing the utility’s rate base through community economic development can improve the ability to attract capital for utility infrastructure projects.

Most communities have an economic development office or a representative whose specific mission is to attract new businesses to the area. It is important for communities to appreciate and recognize the vital services provided by reliable water infrastructure as an important part of the community’s overall efforts to attract business.

Water utilities can help their community economic development organizations understand the extent to which drinking water or wastewater services should be promoted (if capacity is available) or improved (if shortcomings exist that would discourage new business) to increase the community’s ability to attract new economic growth opportunities.

When water service providers work with their communities on economic development, the overall health of the community’s economy and the utility’s rate base can both benefit, allowing the community to continue to invest in its water infrastructure.



Appendix A includes several examples of how utilities have increased the economic development opportunities of their communities, bringing in new businesses, creating jobs, and spurring new residential development.

Click the icon to learn about how utilities in Camden County (New Jersey), Snoqualmie (Washington), and Sturgis (South Dakota) improved their overall financial health and contributed to the long-term economic development of their communities.

3.2 Addressing Household Affordability

For many utilities, especially those operating in communities facing substantial levels of need, many customers are in arrears (behind or overdue) on their bills at any given time. This can negatively affect the cash flow and overall financial viability of the utility, as well as create a burden for customers and the local economy.

Water and wastewater utilities across the United States have developed customer assistance programs (CAPs) that use bill discounts, special rate structures, and other means as an approach to help financially constrained customers maintain access to drinking water and wastewater services.

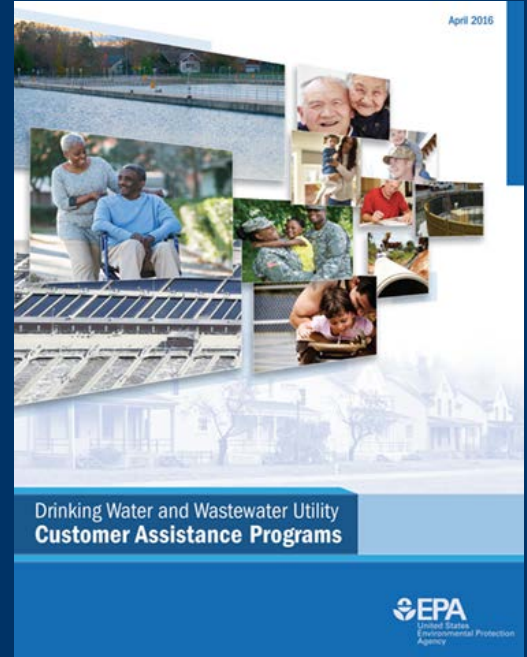
Research has shown that CAPs can improve the financial health of the utility, allowing you to save on administrative and legal costs commonly associated with collecting customer debts, and managing disconnection and reconnection of water services.

While restrictions and regulations around CAPs vary state by state, utilities across the country have found ways to implement these programs that work for their unique community needs and operating contexts. The EPA [Drinking Water and Wastewater Utility Customer Assistance Programs](#) document provides comprehensive documentation of these programs.



Appendix A includes several examples of CAPs in action.

Click the icon to read about a select number of customer assistance programs in Atlanta (Georgia), Connecticut Water Service, Camden County (New Jersey), and Detroit (Michigan).



CUSTOMER ASSISTANCE PROGRAMS IN ACTION

In 2016, EPA released the *Drinking Water and Wastewater Utility Customer Assistance Programs* compendium. This document shows how drinking water and wastewater utilities across the United States are implementing customer assistance programs to provide better access to essential drinking water delivery and wastewater management services.

The customer assistance programs highlighted in this document help households address issues with affordability and help to protect public health throughout their communities. They also help ensure that the utilities can sustainably provide their core services, price services appropriately, and preserve a broad customer base.

The document is available on [EPA's Water Finance Center website](#).

3.3 Checking Up on Your System's Financial Health

3.3.1 Reviewing Rates as Your Operating Context Evolves

As your utility and community evolve over time, water infrastructure needs to evolve as well; a new center of economic development may grow in a previously undeveloped part of town, a main may break unexpectedly leading to repair and replacement needs, or population may grow past previous projections.

It is important that utilities review their customer rates on a regular basis to account for changes in the community and the utility's overall operating context. By analyzing rates relative to infrastructure needs regularly, utilities can plan for future needs, keeping rates predictable and affordable for their communities.

Step 1 in this document includes more information about how to conduct a rate study.

[Environmental Finance Center Rate Resources](#)

The University of North Carolina Environmental Finance Center hosts a range of rate-related resources for utilities, including a Water and Wastewater Rates Analysis Tool. The tool is designed to help utilities set rates for the following year by projecting expenses, revenues from rates, and fund balance for the next few years.

3.3.2 Managing Your System's Credit Rating

In addition to ensuring that your utility's rates are sufficient to cover its costs now and in the future, it is also important to monitor your system's credit rating. Your credit rating is the opinion of independent rating agencies about your level of credit risk. Lenders use credit ratings as a tool to better understand a potential borrower's financial health when making financing decisions; a higher credit rating increases the ability to qualify for loans and obtain the best interest rate possible. (Note: Depending on local financial structures and other system characteristics, some utilities may not have credit ratings.)

It is important that your system check up on its credit rating regularly, and consider whether any actions can be taken to improve that rating. Several important factors that credit rating agencies consider when assigning a rating are listed below (source: [Standard & Poor's – S&P](#)).

- Sources of funding (revenue diversity and stability)
- Strength in operations
- Debt structure
- Historical performance, current year, and future projections
- Cash flow and overall liquidity
- Strength of management team

You can also read about [Six Keys to Improving Your Utility's Credit Rating](#) on the next page, and access information about the rating criteria used by S&P for various sectors including Public Finance Waterworks, Sanitary Sewer, and Drainage Utility Systems on the [S&P website](#).

3.4 Communicating the Value of Water to Your Community

To improve the overall health of your community's water infrastructure, one of the most critical actions that you can take as a community leader is to communicate regularly and often with your constituents about the value of water. Water is the lifeblood of any healthy community; it is especially vital to economic growth, public health, quality of life, and environmental quality. By communicating the value of water to your community and key utility stakeholders, you will build long-term support for investments in water infrastructure, improving the utility's ability to invest in the projects that the community needs most. For more resources and information on communicating the value of water in your community, refer to **Step 1** in this document.

SIX KEYS TO IMPROVING YOUR UTILITY'S CREDIT RATING

When seeking financing, credit rating is critical to being an “attractive borrower.” Having a high credit rating will help improve your community’s chances of being approved for the financing that you seek, and will also help to keep your interest rates low. Below are the University of North Carolina Environmental Finance Center’s [Six Keys to Improving Your Utility’s Credit Rating](#).

1

Existence of a Rate Stabilization Fund: This is money that is set aside for a rainy (or not so rainy) day. In general, the existence of these funds boosts a utility’s rating. However, anything more than planned, occasional use of the funds can send the wrong signal. Recurring reliance on the rate stabilization fund indicates that rate increases are not happening as they should.

2

Low Dependence on Connection Fees: These one-time fees as new customers hook up to the system can hurt the utility’s financial performance if development slows down and it is too reliant on these fees. From a credit-worthiness perspective, these fees can overstate revenues available to the utility for debt service.

3

Significant Portion of Revenues from Fairly Reliable Customers: Examples of this include wholesale customers, a large university, or a military base. Large customers serve to stabilize the local economy. This can be a slippery slope, though, because too much concentration on one large customer can have devastating financial impacts on the utility if that customer leaves the community.

4

Insignificant Additional Upcoming Debt: A utility that has small projected needs for debt is a less risky borrower than a utility facing large additional debt. To improve the chances of finding a funder and to reduce the interest on large debts, having a preapproved multiyear rate increase can help the utility’s credit rating.

5

Fully-Funded Pension and Post-Employment Benefits: The Governmental Accounting Standards Board and credit rating agencies have recently emphasized these types of long-term liabilities in financial statements. A utility’s pension plan must be part of the parent government’s umbrella plan to have its credit rating based on the assumption that the utility’s funded ratio is proportional to that of the parent government.

6

Strong Management Team: The management team’s ability to quickly implement measures to respond to challenges is instrumental in a higher credit rating because it helps the rating agency to look beyond the utility’s current financial results to evaluate the direction in which its financial indicators may be heading.



APPENDICES

Appendix A: Real-World Examples of Financial Leadership Practices in Action

The case examples included in this document represent a wide range of communities (from very small to very large, including rural, urban, and suburban) and utilities (both public and private) from across the United States.

The purpose of the case examples is to demonstrate how communities from a range of geographies and demographic contexts have successfully implemented the financial leadership practices described throughout the steps in this document. Each case examples features one or more financial leadership practice in its descriptive write-up. The table below summarizes all of the case examples included in this Appendix, and features community characteristics, as well as an indication of what topic(s) the write-up covers (indicated with a ✓ mark in the “Case Example Content” columns).

Financial Leadership Case Examples

Community Characteristics						Case Example Content					
State	Community or Utility Name	Population Served	State MHI	Local MHI	Service Area Poverty Rate*	Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/Community Assistance
Arkansas	Lonoke White Public Water Authority	72,228	\$41,371	\$53,631	11.9%		✓				
California	Cucamonga Valley Water District	176,534		\$77,396	8.8%			✓			
	San Francisco Public Utilities Commission	870,887	\$61,818	\$81,294	12.4%	✓	✓				
	Santa Clara Valley Water District	1.9 million		\$96,310	8.3%					✓	
Connecticut	Connecticut Water Services, Inc.	400,000 customers served across Connecticut and Maine	\$70,331	N/A	10.5%			✓			✓

Community Characteristics						Case Example Content					
State	Community or Utility Name	Population Served	State MHI	Local MHI	Service Area Poverty Rate*	Financial Planning/Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/Community Assistance
District of Columbia	DC Water	681,170	\$70,484	\$70,484	18.0%			✓			✓
Georgia	Atlanta	463,878	\$49,620	\$47,527	24.6%						✓
	Clayton County Water Authority	279,462		\$40,938	23.3%			✓	✓		
Maryland	Crisfield	2,671	\$74,551	\$33,056	25.8% ⁺			✓			
Michigan	Detroit	677,116	\$49,576	\$25,764	40.3%		✓				✓
Nevada	North Douglas County	48,020	\$51,847	\$58,535	9.4%	✓	✓				
New Jersey	Camden County Municipal Utilities Authority	511,038	\$72,093	\$25,042 (Camden City)	39.9%					✓	✓
Oregon	Bend	87,014	\$51,243	\$52,989	12.5%		✓				
Pennsylvania	Hazle Township	9,517	\$53,599	\$38,047	18.9%		✓				
	Pennsylvania American Water	2 million served across state of Pennsylvania		N/A	13.2%			✓			
South Dakota	Sturgis	6,688	\$50,957	\$35,818	15.8%					✓	
Texas	Statewide	N/A	\$53,207	N/A	15.9%	✓	✓				
Virginia	Lynchburg	79,812	\$65,015	\$39,589	24.8%		✓				
	Middleburg	828		\$123,435	3.7% [^]		✓			✓	
Washington	Snoqualmie	13,169	\$61,062	\$124,264	1.8%			✓		✓	
West Virginia	Putnam Public Service District	13,123 served in Putnam County and surrounding area	\$41,751	\$56,774	10.4%			✓			
Wisconsin	Menomonee Falls	36,119	\$53,357	\$73,350	3.7%			✓			
	Milwaukee Metropolitan Sewerage District	951,448 served in Milwaukee County		\$43,873	20.3%			✓	✓		

*Numbers based on most recent United States Census Bureau data at time of 2017 publication date

+Poverty rate for Crisfield City not available; MHI is listed for Somerset County

^Poverty rate for Middleburg not available; MHI is listed for Loudoun County

City of Atlanta (Georgia)

➔ **Care & Conserve Program to Offset Rising Water Service Rates**

Case Example Content: City of Atlanta (Georgia)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
					✓
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 463,878 • State MHI: \$49,620 • Local MHI: \$47,527 • Service Area Poverty Rate: 24.6% 					

The City of Atlanta has faced challenges around aging water infrastructure and compliance. In response, the Department of Watershed Management was forced to raise water and sewer rates to some of the highest in the nation to meet compliance.

To ensure that low income customers could continue to access drinking water and wastewater services, the City created the "Care & Conserve" program. This program helps with bill payment assistance and educates ratepayers on water conservation strategies to further reduce their water and sewer bills, which in turn also reduces demand on the City's water and wastewater treatment facilities.

In addition to water conservation strategies, the Care & Conserve program also helps low income customers avoid future high bills by offering no-cost assistance with plumbing problems and with installation of water efficiency devices. These measures benefit all customers of the Department of Watershed Management by helping to reduce the burden of outstanding debt on the system and further promoting the most efficient use of water resources.

The Care & Conserve program is available to families who are below a threshold of 200 percent of the poverty index, and is funded through a combination of city funds, grants, and private funds. With a current budget of \$1.6 million, Care & Conserve has served low income families since its inception in 1995. The Department of Watershed Management estimates that the program typically serves 185–200 calls per month, including 25–30 showerheads replaced per month, 20–30 low flow toilets installed per month, 19–37 faucets replaced, and 25-30 water audits conducted.

In addition to water and sewer assistance, Care & Conserve care specialists also provide community members with references to employment services and other community resources.

[Click here for more information about Atlanta's Care & Conserve Program](#)



[Click here for Care & Conserve FAQs, including average monthly level of service provided](#)



City of Bend (Oregon)

→ Bond Issuances to Fund a Membrane Filtration Treatment Plant for Public Health Protection

Case Example Content: City of Bend (Oregon)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
	✓				
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 87,014 • State MHI: \$51,243 • Local MHI: \$52,989 • Service Area Poverty Rate: 12.5% 					

In 2013, the City of Bend began construction of a new membrane filtration treatment plant—the Bridge Creek Water Supply System—to comply with Cryptosporidium limits under the Safe Drinking Water Act. The estimated cost for the new system was \$56 million. The City had only \$1 million available in its Water Fund at the onset of the project; the new system was paid for with a loan and revenue from city water utility rates. The Bridge Creek Project was completed in April 2016, and has the capacity to treat up to 11.8 million gallons of water a day.

In May 2016, the City approved \$63 million worth of bonds to pay for the project. With the plant already constructed and operational, the bonds were used to pay back a loan the city took out to fund construction of the Bridge Creek system at a lower interest rate than the initial loan.

The bonds are tied to the revenue generated from the operation of the City’s water system and the fees that Bend residents pay for service. The City Councilmembers who voted to approve the water bonds considered it to be the lowest cost way to pay for the project, minimizing financial risk to the City.

[Click here for more information and project details on the Bridge Creek Water Supply System](#)



Camden County Municipal Utilities Authority (New Jersey)

→ Keeping Rates Stable and Building the Local Workforce

Case Example Content: Camden County Municipal Utilities Authority (New Jersey)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
✓				✓	
Community Characteristics: <ul style="list-style-type: none"> Population Served: 511,038 State MHI: \$72,093 Local MHI: \$25,042 (Camden City) Service Area Poverty Rate: 39.9% 					

Camden County Municipal Utilities Authority (CCMUA) in Camden County, New Jersey operates in one of the most economically stressed communities in the United States. Although Camden County’s average poverty rate is only 13.1%, there are several large pockets of low-income, highly-stressed neighborhoods, such as in Camden City where the poverty rate is 39.9%. Even in this challenging context, CCMUA has utilized a range of strategies to become a sustainable “utility of the future” to not only provide clean wastewater management to residents, but to also serve as a more visible part of the community as an anchor institution for the local economy and an important resource to its residents.

CCMUA has implemented several programs to address combined sewer overflow (CSO) events and to meet its goal of optimizing operations while improving cost efficiency to keep rates affordable for its residents. The Authority borrowed \$500 million dollars to replace its process units and implemented an environmental management system to optimize water quality at a low interest rate from the SRF.

CCMUA is also part of the Camden SMART (Stormwater Management and Resource Training) Initiative, a six-entity coalition led by the City of Camden to tackle extreme urban water infrastructure challenges. Camden SMART is a community-driven movement to improve water quality and enhance the quality of life of Camden residents through green and grey infrastructure techniques for stormwater management.

The Camden SMART Initiative has contributed significantly to the community and achieved the following:

- 49 green infrastructure projects completed
- 1,458 trees planted
- 223 rain barrels distributed
- 4,000 residents engaged
- 40+ partnerships created
- 61+ million gallons of stormwater captured
- \$5 million invested in the City of Camden from 2011–2014

CCMUA also partners with AmeriCorps on a program called PowerCorps Camden, which deploys AmeriCorps members to work on numerous projects, including maintaining stormwater inlets, cleaning and greening vacant lots, improving community space and parks for Camden’s youth, revitalizing public land, and pursuing other green infrastructure projects. By leveraging innovative partnerships and funding opportunities, CCMUA has achieved stable service rates for the past seventeen years, keeping water services affordable for Camden’s residents.

[Click here for more information about Camden SMART](#) 

[Click here for more information about PowerCorps Camden](#) 

Clayton County Water Authority (Georgia)

→ Piloting the Customer Select Rate Model to Keep Water Affordable and Stabilize Revenue

Case Example Content: Clayton County Water Authority (Georgia)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
		✓	✓		
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 279,462 • State MHI: \$49,640 • Local MHI: \$40,938 • Service Area Poverty Rate: 23.3% 					

Clayton County Water Authority, located outside of Atlanta Georgia, was approached by the Environmental Finance Center at the University of North Carolina to examine the possibility of using the Customer Select rate plan. The Water Authority was considering modifying its rates to meet the following goals: (1) keep water affordable to customers, (2) provide more stable utility revenue, and (3) encourage water conservation.

The Customer Select Rate Plan is based on the plans offered by many cell phone service providers, in which an allotment of use is included in one fixed charge. The customer chooses a plan and pays an overage fee if he/she uses more. The proposed rate schedule (for residential water and irrigation) presented five plans and their associated charges. The rates were modeled using a revenue neutral model, based on CCWA’s actual 2011 residential water and irrigation revenue, and assumed that most customers would look to their previous year’s use to determine which plan to select. The research effort provided the following insights in to the use of this rate model:

Benefits of the Customer Select approach:

- Increased revenue stability: customers “lock into” plans.
- Gives customers choice, meaning less administrative burden than budget-based rates of utility determining block rates for customers.
- Moves to a model of water and sewer as service, rather than a commodity.
- Promotes conservation, especially at the point where overage fees begin to accrue.
- Relatively easy to add secondary services (like service line protection) a la carte.

Challenges of the Customer Select approach:

- Complicated budgeting process
- Does not fit with seasonal use of water (water use is not as consistent month-to-month as cell phone use, or other consumer services). Allowing roll-overs could help, but might dissuade conservation.
- Customers will request real-time water use information; to provide this service, metering upgrades will be required.

The Clayton County Water Authority used this exercise as a “thought experiment” to inform future discussions about rates.

[Click here for more information about the Environmental Finance Center at the University of North Carolina](#)



[Click here for more information about the Customer Select rate plan research effort](#)



Connecticut Water Service, Inc. (Connecticut, Maine)

➔ **Linebacker Program to Protect Homeowners from Costly Infrastructure Repairs**

Case Example Content: Connecticut Water Service, Inc. (Connecticut, Maine)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
		✓			✓
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 400,000 customers served across Connecticut and Maine • State MHI: \$70,331 • Local MHI: n/a • Service Area Poverty Rate: 10.5% 					

Connecticut Water Service, Inc. is a private for-profit company that provides drinking water to approximately 400,000 people in the states of Connecticut and Maine through its two wholly-owned public water utility subsidiaries, the Connecticut Water Company and the Maine Water Company.

The company’s Linebacker Protection Program protects homeowners from costly repairs for water, wastewater, and in-home plumbing emergencies. Single family homeowners have the option to get coverage for the water service line (the water line between the curb and the home), in home plumbing, and wastewater line between the home and septic tank or property line if served by City sewer, with annual fees ranging from \$85–\$185 depending on the level of coverage selected.

Connecticut Water began offering linebacker protection to its customers in the year 2000, with thousands of repairs covered since then for its customers. The Connecticut Water 2016 Annual Report cited that over 20,000 customers were enrolled in the Linebacker program. From 2012–2017, the Linebacker program saved residents more than \$2.3 million in covered repairs.

[Click here for more information about the Linebacker Protection Program](#)



City of Crisfield (Maryland)

→ Leveraging Funding Sources for a Renewable Energy Upgrade and Associated Cost Savings

Case Example Content: City of Crisfield (Maryland)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
		✓			
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 2,671 • State MHI: \$74,551 • Local MHI: \$33,056 • Service Area Poverty Rate: 25.8% (Poverty rate for Crisfield not available. Poverty rate listed for Somerset County) 					
Combined Project Capital Sources Used			Reasons for Combining Various Capital Sources		
Total Funds: \$4.17 million <ul style="list-style-type: none"> • CWSRF (Loan): \$453,000 • CWSRF (Subsidy): \$3.17 million • HUD CDBG (Grant): \$530,000 			<ul style="list-style-type: none"> • Single source not sufficient to cover project needs • Manage interest rates • Bring additional community benefits to the project 		

The City of Crisfield, located on Maryland's Eastern shore, struggled to supply efficient and affordable water services to its residents. Given the high energy costs of operating the wastewater plant, the City applied for financing to build a wind turbine to power the City of Crisfield Wastewater Treatment Plant. Prior to this renewable energy upgrade project, the energy consumed by the wastewater treatment plant accounted for over half of the City's energy expenditures.

The City estimated that a single wind turbine at 750 KW would save between \$140,000–\$165,000 each year on energy costs. During peak demand, the wind turbine could support the treatment plant's total energy requirements, and during off-peak periods excess energy would be fed back into the commercial electric power grid.

The Crisfield wind turbine project was financed through several different mechanisms. In 2013, Maryland's Water Quality State Revolving Fund (SRF) provided two separate forms of monetary support. The SRF provided a low-interest loan of \$453,000 and an additional \$3.17 million in loan principal forgiveness. In addition to the CWSRF funding, the City of Crisfield also received a grant of \$530,000 from HUD's CDBG program. Collectively, these sources funded the design and construction of the wind turbine for Crisfield's wastewater plant, which is scheduled for completion in 2017.

[Click here for more information about Crisfield's wind-powered wastewater treatment plant](#)



Cucamonga Valley Water District (California)

→ Automated Demand Response Program Participation to Generate Revenue and Increase System-Wide Energy Efficiency

Case Example Content: Cucamonga Valley Water District (California)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
		✓			
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 176,534 • State MHI: \$68,818 • Local MHI: \$81,294 • Service Area Poverty Rate: 12.4% 					

The Cucamonga Valley Water District in California provides drinking water and wastewater treatment services to the Rancho Cucamonga region in Southern California. Since 2012, the District has participated in Southern California Edison’s (SCE’s) Demand Response program as an additional revenue stream on top of its foundational water service rates.

In Southern California, electric utilities manage around power “brownouts” by managing demand during peak load hours. Through the SCE Automated Demand Response Program, the Water District has agreed to allow 5.3 Megawatts of its load to be turned off for up to two hours during the electric utility’s “peak demand” time, giving the electric utility the ability to meet other loads.

Through this program, the local Southern California Edison electric utility and the Water District share a win-win: the electric utility has been able to avoid the construction and operation of a new peaking plant, which would be utilized only a handful of times each year. In return, the Water District received an initial rebate of \$400,000 for its participation. The was used by the Water District to pay for a series of energy upgrades to the District’s infrastructure; these upgrades were required for the Water District to participate in the SCE program, but they will also provide new system-wide control and efficiency benefits to the water utility. In addition, the Water District saves an average of \$80,000 per year by mitigating peak demand charges from the electric utility.

[Click here for more information about the SCE Demand Response Program](#)



[Click here for a Project Profile on the Water District’s participation in the Demand Response Program](#)



DC Water (Washington, District of Columbia)

➔ **Sharing Best Practices with the Industry and Creating Innovative Revenue Streams**

Case Example Content: DC Water (Washington, District of Columbia)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
		✓			✓
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 681,170 • State MHI: \$70,484 • Local MHI: \$70,484 • Service Area Poverty Rate: 18.0% 					

DC Water, like many utilities, is routinely faced with the need for costly capital improvement and the simultaneous goal of buffering ratepayers from higher rates. To create a non-rate revenue stream, DC Water launched the non-profit spinoff Blue Drop in late 2016. Using marketing products and services DC Water has already developed, Blue Drop provides peer-to-peer consulting services to other utilities at a lower cost than is offered by private consulting firms.

Blue Drop took the best practices and lessons learned from DC Water to develop consulting services in four categories: stakeholder engagement; utility leadership; fleet operations; and emergency management and security services. In addition to providing expertise and guidance through consulting services, Blue Drop also offers management services to help other utilities achieve greater efficiency and economies of scale.

DC Water made the decision to create Blue Drop as a standalone entity to be nimble and quick in their business practices, protect ratepayers if the initiative is unsustainable, and avoid political roadblocks that can arise when a city is contracted by another government entity. Blue Drop received an initial \$5 million investment from DC Water, and any net revenues from Blue Drop go directly to DC Water. DC Water staff work on Blue Drop projects, though the goal is to develop an independent Blue Drop staff as revenue and operating budgets increase. At the time of publishing, Blue Drop has indicated that its model has begun to generate revenue and demand for its consulting and shared services is growing.

[Click here for more information about Blue Drop](#)


City of Detroit and Detroit Water and Sewerage Department (Michigan)

→ Combining Grant Funds to Manage Stormwater and Transform the Urban Landscape

Case Example Content: City of Detroit (Michigan)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
	✓				
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 677,116 • State MHI: \$49,576 • Local MHI: \$25,764 • Service Area Poverty Rate: 40.3% 					
Combined Project Capital Sources Used			Reasons for Combining Various Capital Sources		
Total Funds: \$2 million <ul style="list-style-type: none"> • GLSCGI (Grant): \$1 million • Erb Foundation (Grant): \$500,000 • Kresge Foundation (Grant): \$500,302 			<ul style="list-style-type: none"> • Single source not sufficient to cover project needs • Bring additional community benefits to the project 		

The Recovery Park stormwater retention projects are two combined, complementary projects, which are directly managed by the Detroit Water and Sewerage Department (DWSD) with financial assistance from several funders.

The first project, conducted by the Lower East Side Action Plan (LEAP) and Greening of Detroit, transformed a sixteen-square mile area where 30 percent of the lots were left vacant. Lots were transformed into urban farm plots, providing stormwater retention capacity and creating employment opportunities. Water collected in the retention area is used for farming and decreases urban runoff through the land’s absorption and evapo-transpiration processes.

The second project is managed in partnership with a green infrastructure engineering firm and the non-profit group, Sustainable Water Works, to control and retain runoff in Recovery Park. The project created shallow retention ponds on select city-owned lots to capture runoff and retain stormwater for more productive uses. It uses existing streets to channel stormwater through swales into ponds with a capacity to hold a two-year rainstorm without overflow. Together these projects possess a capacity of 1.2 million gallons of water, reducing pressure on the city’s combined sewer system and pioneering an innovative green infrastructure system.

To fund the two projects, DWSD first applied for and secured a Great Lakes Shoreline Cities Green Infrastructure Grant (GLSCGI) in 2014, receiving \$1 million directly for the combined green infrastructure projects. GLSCGI is a regional grant program, funded by the U.S. EPA for green infrastructure in the Great Lakes region.

In addition to the GLSCGI funding, DWSD and its project partners, the Detroit Economic Growth Corporation, received \$500,000 from the Kresge Foundation for the administration of the projects and management of the Federal funds. As a Michigan-based organization, the Kresge Foundation has a **commitment** to supporting community development and sustainability projects in Detroit. The remaining \$500,000 in grant funding came

from the Erb Family Foundation, for innovation and improvements in stormwater management systems through green infrastructure.

[Click here for more information about Recovery Park](#) 

[Click here for more information about the Greening of Detroit](#) 

[Click here for more information about the Detroit Economic Growth Corporation](#) 

[Click here for more information about the Lower East Side Action Plan \(LEAP\)](#) 

➔ **Detroit, Michigan Water Residential Assistance Program (WRAP) to Support Low-Income Customers and Encourage Water Conservation**

Case Example Content: Detroit Water and Sewerage Department (Michigan)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
					✓

After the City of Detroit filed for bankruptcy in 2013, the Detroit Water and Sewerage Department (DWSD) faced negative public perceptions and regulatory challenges around water shutoffs. In an effort to address affordability issues, DWSD created the Water Residential Assistance Program (WRAP) in 2016. The program was designed with the input of a Blue Ribbon Panel of urban experts, who focused on identifying the root causes of failure in similar assistance programs to ensure that WRAP would be sustainable.

WRAP assists low-income customers by providing bill payment assistance, water conservation education, and other services that promote self-sufficiency. Specific program benefits include:

- Assistance of up to \$1,000 per household per year and \$25 monthly bill credit, plus help with arrears
- Home water audit for households above 120 percent of average usage
- Home repairs up to \$1,000 per household to fix minor plumbing issues leading to high usage
- Water saving kits and consumer training classes
- Other supportive “WRAP-Around” services

WRAP is available to families who are at or below a threshold of 150 percent of the poverty index. The program currently has \$4.4 million in funding, which is funded by leasing assets to the Great Lakes Water Authority and selling bonds. At present, WRAP serves 50,000 low-income residents in Detroit.

[Click here for more information about the Water Residential Assistance Program \(WRAP\)](#) 

Lonoke County (Arkansas)

→ Mixing Grants, Loans, and a “Take or Pay” Rate Structure to Fund Distribution System Upgrades

Case Example Content: Lonoke County (Arkansas)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
	✓				
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 72,228 • State MHI: \$41,371 • Local MHI: \$53,631 • Service Area Poverty Rate: 11.9% 					
Combined Project Capital Sources Used			Reasons for Combining Various Capital Sources		
Total Funds: \$57.8 million <ul style="list-style-type: none"> • EPA Cooperative Agreement (Grant): \$843,000 • ANRC (Loan): \$30.9 million • USDA RD (Loan): \$24.5 million • Lonoke White Public Water Authority (Matching Funds): \$1.5 million 			<ul style="list-style-type: none"> • Blend funds with partners • Single source not sufficient to cover project needs • Improve ability to access other funds • Manage interest rates 		

As populations grow, many utilities are faced with the need to secure new, long-term water sources for their community. The scale of these projects can often overwhelm the ability or capacity of a single utility. When this need arose in Lonoke County, eight water systems collaborated to create the Lonoke White Public Water Authority (LWPWA) to seek funding to upgrade their processing and distribution systems to supply their urban and rural communities.

To fund a county-wide upgrade to eight water processing and distribution systems, the LWPWA explored private capital, bond markets, grants, and state and federal financing options. Initial dedication to securing exclusively grant or low-interest funding caused LWPWA’s project to stall for two years. After the initial slow start, LWPWA began forging a relationship with the Arkansas Natural Resource Commission (ANRC) and USDA RD, to create a funding package for the regional project. Although the agencies had experience working together the scale of the project and differing needs of the communities required close collaboration and flexibility between the funding entities. The funding package specified which entities would grant or loan money and coordinated how the money could be spent.

The EPA provided an \$843,000 grant, used for the preliminary engineering report, environmental reviews, cost of engineers, and financial/management support. The ANRC offered a \$30.9 million loan, which was used first (because it accrued interest on the total loan amount immediately) on infrastructure and development costs. After other interest accruing funds were exhausted, the project used the \$24.5 million low interest loan from USDA RD. (Note: Because one community in the Authority had a population exceeding USDA RD requirements, this community could not access these funds).

In addition to these external sources of funding, the LWPWA also developed a new “Take or Pay” system to ensure a minimum guaranteed income level for the system to support the project and help LWPWA become more attractive to lenders—enabling the LWPWA to provide \$1.5 million in matching funds for the project. A “Take or Pay” system is a structure where customers either take the product from the supplier (water/water services in this case), or pay a penalty to the supplier up to an agreed upon ceiling.

The partnership among the water systems made the large-scale, long-term scope of the project possible, with close communication between partners and flexibility to adapt as the project evolved serving as additional keys to success.

[Click here for more information about the Lonoke White Public Water Authority \(LWPWA\)](#)



City of Lynchburg (Virginia)

→ Leveraging Multiple Funding Sources to Manage Pollution in the Chesapeake Bay

Case Example Content: City of Lynchburg (Virginia)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
	✓				
Community Characteristics: <ul style="list-style-type: none"> Population Served: 79,812 State MHI: \$65,015 Local MHI: \$39,589 Service Area Poverty Rate: 24.8% 					
Combined Project Capital Sources Used			Reasons for Combining Various Capital Sources		
Total Funds: \$3.6 million <ul style="list-style-type: none"> Virginia Resource Authority (Loan): \$1.7 million Stormwater Local Assistance Fund (Grant): \$1.7 million City of Lynchburg General Fund: \$275,000 			<ul style="list-style-type: none"> Blend funds with partners Single source not sufficient to cover project needs Improve ability to access other funds Bring additional community benefits to the project 		

The Chesapeake Bay TMDL Stormwater Management project is a series of five projects identified by the City of Lynchburg, incorporated into the Total Maximum Daily Load (TMDL) Action Plan to meet the 5 percent reduction goal of the Chesapeake Bay TMDL. The Chesapeake Bay TMDL was established by the Environmental Protection Agency in 2010 to set pollution limits to address poor water quality in the Bay.

The projects included conversion of two existing Best Management Practices (BMPs) into Level 2 Bio-Retention BMPs, the conversion of a stormwater pond into a constructed wetland and two stream restoration projects on tributaries of Blackwater Creek and Rock Castle Creek. The design phase of these projects began in 2015.

In 2016, the City of Lynchburg applied for financial assistance to fund the five water quality projects in support of the Chesapeake Bay TMDL goals. According to the City of Lynchburg FY 2017 Operating Budget, the City received a zero percent interest loan for \$1.7 million from the Virginia Resource Authority, which it used as a local match for a \$1.7 million grant that the City had already received from the Stormwater Local Assistance Fund (SLAF).

In addition to the \$3.4 million on outside funding and financing for the projects, the City of Lynchburg General Fund contributed \$275,000 as a transfer from the General Fund to the City's Stormwater Fund to fully fund the \$3.6 million budget for the projects. Construction began in 2016, with an anticipated completion date of 2018.

[Click here for more information about the City of Lynchburg Chesapeake Bay TMDL Action Plan](#)



[Click here to view the City of Lynchburg FY 2017 Operating Budget](#)



Village of Menomonee Falls (Wisconsin)

→ Keeping Rates Low through Water Tower Leases to Cellular Service Companies

Case Example Content: Village of Menomonee Falls (Wisconsin)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
		✓			
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 36,119 • State MHI: \$53,357 • Local MHI: \$73,350 • Service Area Poverty Rate: 3.7% 					

The Village of Menomonee Falls, Wisconsin Water Utility—a mid-sized municipal utility—has leased water tower space to cellular service providers since 1996. As of 2017, Menomonee Falls had several contracts with five different wireless companies to lease space on its two water towers.

The most recent of these contracts is a five-year contract with T-Mobile for \$28,500 per year, which was approved unanimously by the Village Board in March 2017. The contract includes a three percent annual increase for each of the five years, with the option for up to four more automatic five-year term renewals. Menomonee Falls also holds additional contracts with T-Mobile, as well as contracts with other major service providers, including Verizon Wireless, Sprint, and AT&T. These contracts provided a total revenue of \$217,388 in 2016, making the leases approximately 3.5 percent of the utility’s total 2016 revenue, according to the Village of Menomonee Falls 2017 Budget.

All the revenue generated by the cellular contracts is retained by the utility and is recognized in its annual budget, offsetting operating costs and keeping rates low for its customers.

[Click here for more information about the Village of Menomonee Falls, Wisconsin Water Utility](#)



[Click here to view the Village of Menomonee Falls 2017 Budget](#)



Town of Middleburg (Virginia)

→ Partnering with Developers to Invest in Water Infrastructure

Case Example Content: Town of Middleburg (Virginia)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
		✓		✓	
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 858 • State MHI: \$65,015 • Local MHI: \$123,435 • Service Area Poverty Rate: 3.7% (Poverty rate not available for Middleburg. Poverty rate listed for Loudoun County.) 					

In partnership with a developer, the Town of Middleburg, Virginia added a new \$11 million drinking water and wastewater treatment plant in 2012 after several years of planning for a luxury resort and horse ranch in the town.

An entrepreneur began planning for a \$100 million, 168-room resort and ranch in 2005. At the time, Middleburg’s existing water and wastewater treatment facilities were not sufficient to support the resort’s anticipated needs. The town council negotiated with Salamander Resorts to fund a new \$11 million treatment plant, which would serve both the resort and Middleburg’s residents.

The new treatment plant was constructed, fully funded by Salamander resorts, and completed in June 2012 with the resort completed shortly afterwards in 2013. The addition of the new treatment plant added jobs to the local economy, both for the construction of the plant and in the construction and operation of the new resort. The treatment plant also increased Middleburg’s potential for additional future economic development with improved water services for new businesses.

[Click here for more information about the Middleburg, Virginia development project](#)



Milwaukee Metropolitan Sewerage District (Wisconsin)

➔ Selling Nutrient-Rich Fertilizer for Financial and Environmental Benefits Since 1926

Case Example Content: Milwaukee Metropolitan Sewerage District (Wisconsin)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
		✓	✓		
Community Characteristics: <ul style="list-style-type: none"> Population Served: 951,448 served in Milwaukee County State MHI: \$53,357 Local MHI: \$43,873 Service Area Poverty Rate: 20.3% 					

Since 1926, the Milwaukee Metropolitan Sewerage District (MMSD) in Milwaukee, Wisconsin has produced and sold the nutrient-rich fertilizer “Milorganite” (an abbreviation for “Milwaukee Organic Nitrogen”). Milorganite production began as a recycling program for MMSD in 1926, and today the product is the #1 organic-nitrogen fertilizer, sold in lawn and garden stores across the United States.

Milorganite is produced by MMSD using through a process that includes microbial digestion, followed by dewatering, and finally drying in kiln driers at temperatures of 900–1200°F. Milorganite is subject to more than twenty safety checks to ensure that it complies with safety guidelines for shipping and distribution across the country.

The production and sales of Milorganite have led to substantial financial and environmental benefits for MMSD, becoming one of the key pillars of MMSD’s organizational success and long-term health.

- According to the MMSD *2016 Operations & Maintenance and Capital Budget*, Milorganite net annual revenue was projected at \$7,830,000 for the year, making it the District’s second largest revenue source after user charge billings (user charge billings were estimated at \$73,280,000 for 2016, making Milorganite approximately ten percent of the utility’s total revenue).
- MMSD has achieved a record 98.4 percent capture and cleaning rate for wastewater in its 411 square mile service area, far surpassing the national goal of 85 percent for metropolitan capture and cleaning of all rain and wastewater that enters their sewer systems.
- MMSD estimates that 9.8 billion pounds of waste have been diverted from landfills as a result of the Milorganite recycling program since it began in 1926.

[Click here for more information about the history of Milorganite and how it its produced](#)



[Click here for the MMSD 2016 Operations & Maintenance and Capital Budget to learn more about Milorganite’s impact on MMSD’s overall financial structure](#)



North Douglas County (Nevada)

→ Partnering Across Community Lines and Combining Funds to Access Safe Water

Case Example Content: North Douglas County (Nevada)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
✓	✓				
Community Characteristics: <ul style="list-style-type: none"> Population Served: 48,020 State MHI: \$51,847 Local MHI: \$58,535 Service Area Poverty Rate: 9.4% 					
Combined Project Capital Sources Used			Reasons for Combining Various Capital Sources		
Total Funds: \$3.7 million <ul style="list-style-type: none"> DWSRF: \$1.1 million AB198 – State of Nevada (Grant): \$901,000 USDA RD (Grant): \$782,302 USDA RD (Loan): \$900,000 			<ul style="list-style-type: none"> Blend funds with partners Single source not sufficient to cover project needs Improve ability to access other funds 		

The North County Regional Water Project (NCRWP) resolved arsenic compliance issues in the Indian Hills General Improvement District (IHGID) and provided the communities of East Valley, North County, West Valley, and Carson City with a water supply that did not require costly treatment.

An initial study was authorized by Douglas County to explore the possibilities of utilizing water supplied by the Town of Minden to meet the demands of Douglas County, IHGID, and Carson City. The selected NCRWP project has significant regional benefits, provides a reliable water supply, and increases interconnectivity between the region’s major water suppliers by constructing a pipeline extending from Carson City, NV to Minden, NV. Multiple meetings were held with all involved entities to reach agreements on the project alternative and funding share for each entity. The IHGID Board, as recommended by the Nevada Water and Wastewater Review Committee, voted to participate and merge their funding as a contribution to the larger regional project.

To fund this large infrastructure project, the associated governments of the NDCRWP came together to access different funding streams. The IHGID could access USDA Rural Development (RD) funding that is not available to areas of higher population density, such as Carson City. The IHGID received a \$901,420 AB198 (State of Nevada) Grant, a \$783,302 USDA Grant, a \$900,000 USDA Loan, and a \$1,105,630 DWSRF loan which was used across the project for engineering and administrative costs as well as construction and contingency costs.

[Click here for more information about the Indian Hills General Improvement District](#)



Pennsylvania American Water (Pennsylvania)

→ Selling Frequency Regulation Services to Generate Additional Revenue

Case Example Content: Pennsylvania American Water (Pennsylvania)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
		✓			
Community Characteristics: <ul style="list-style-type: none"> Population Served: 2 million served across state of Pennsylvania State MHI: \$53,599 Local MHI: n/a Service Area Poverty Rate: 13.2% 					

Pennsylvania American Water, a subsidiary of American Water, partnered with Enbala Power Networks to provide frequency regulation to the Pennsylvania-New Jersey-Maryland energy market. Enbala is a smart grid network that balances energy use across power grids in real time. It captures and aggregates process storage in response to the real-time needs of the system, and pays industrial and commercial users to help with this grid-balancing process.

During a pilot test project, a single 700-horsepower pump at a wastewater pumping station was connected to Enbala’s energy balancing platform, which automatically ramped the pump up and down within a narrow range to provide frequency regulation. In return for this constant participation Pennsylvania American Water will be paid \$20,000 annually, which represents between two and three percent of the pumping station’s annual energy bill.

Operators at the pump station see no noticeable difference in service or operation, and American Water plans to enroll other assets in the Pennsylvania-New Jersey-Maryland frequency regulation market as additional revenue streams.

[Click here for more information about the American Water partnership with Enbala Power Networks](#)



[Click here for more information on the Pennsylvania American Water demonstration project](#)



Putnam County (West Virginia)

→ Partnering with Smaller Communities to Provide Water and Sewer Services and Generate Revenue

Case Example Content: Putnam County (West Virginia)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
		✓			
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 13,123 served in Putnam County and surrounding area • State MHI: \$41,741 • Local MHI: n/a • Service Area Poverty Rate: 13.2% 					

Putnam Public Service District (PSD) is a public drinking water and wastewater utility that provides drinking water services to 1,714 customers, sewer services to 3,568 customers, and both drinking water and sewer services to an additional 7,713 customers. Recently, Putnam PSD began to provide services and operate the water utilities for numerous surrounding small communities, including the Towns of Buffalo, Eleanor, and Poca. These collaborations have ensured that small, rural communities continue to receive quality water services while securing new, non-rate-based revenue sources for Putnam PSD.

Prior to partnering with Putnam PSD, the Town of Buffalo’s SBR Sewage Treatment Plant, Sewage Lagoon Treatment Plant and the collection system were operated by a private company. Buffalo released a call for proposals for a new service contract, and Putnam PSD won the \$258,000 annual contract to provide management and treatment services for the Town of Buffalo. Putnam’s reputation for quality services, its proximity to Buffalo, and its ability to communicate the benefits that it could provide to the Buffalo community were key components in its successful bid for the work.

When the lead wastewater treatment operator for the rural Town of Eleanor started making plans to retire, community leadership approached Putnam PSD with the possibility of taking over their treatment and collection needs. Putnam recognized that the Town of Eleanor’s needs were relatively limited and designed the contract to allow a work as-needed structure. This \$26,000 annual contract ensures affordable, quality water services for the Town of Eleanor and provides an additional revenue stream for Putnam PSD.

Separate from Buffalo and Eleanor, the Town of Poca was faced with an uncertain future and unsustainable revenues. As a result of this challenging context, the town made the decision to integrate their systems into Putnam PSD. Putnam PSD worked with the Town of Poca to identify ways to produce as many benefits for the stressed community as possible in the transition. Putnam PSD agreed to retain all existing utility employees and also lowered rates for the Town of Poca to ensure their rates were in line with their existing rate structure.

These contracts and collaborations have resulted in important sources of revenue for Putnam PSD. By being a responsive and flexible partner, Putnam PSD has been able to provide vital management and operational services for many surrounding small communities while creating new revenue streams for their own utility.

[Click here for more information about Putnam Public Service District](#)


San Francisco (California)

→ **Bond Issuances to Improve Infrastructure Resiliency**

Case Example Content: San Francisco (California)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
✓	✓				
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 870,887 • State MHI: \$61,818 • Local MHI: \$81,294 • Service Area Poverty Rate: 12.4% 					

San Francisco’s sewer system is over 100 years old, and presents management challenges common to any aging system. To address the needs of the system proactively and avoid costly failures, the San Francisco Public Utilities Commission (SFPUC) issued \$240 million in Wastewater Revenue Bonds in May 2016.

The proceeds of these bonds fund eligible projects in sustainable stormwater management and wastewater projects included in the SFPUC Sewer System Improvement Program (SSIP). The SSIP is a 20-year, multi-billion dollar investment plan to upgrade the aging and seismically vulnerable sewer system in San Francisco, proactively creating a more resilient system to withstand earthquakes and extreme weather events. A plan of this type requires careful financial planning, and a range of financial leadership strategies—one key example in this case is bond issuances.

As of 2017, SSIP Phase I was underway to address the most urgent upgrades through green infrastructure projects; an urban watershed assessment; a biosolids digester facilities project; multiple treatment plant and facility upgrades; and systems improvements to highly vulnerable infrastructure areas. SFPUC is expected to report on the amount of funds allocated to eligible projects and the remaining balance on an annual basis.

SFPUC has a rating of Aa3/AA over the long term; this bond is the first to be certified under the Water [Climate Bonds Standard](#), a screening tool that specifies the criteria that must be met for bonds labelled as “green” or earmarked for funding water-related, low carbon initiatives. The Climate Bonds Standard differs from traditional bond standards in that it only certifies water infrastructure bonds where the issuer has carried out a vulnerability assessment, and if necessary, prepared an appropriate management response to any risks identified therein.

[Click here for more information about the Sewer System Improvement Program \(SSIP\)](#) 

Santa Clara Valley Water District (California)

→ Supporting a Thriving Economy with Large-Scale Water Reuse

Case Example Content: Santa Clara Valley Water District (California)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
				✓	
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 1.9 million • State MHI: \$61,818 • Local MHI: \$96,310 • Service Area Poverty Rate: 8.3% 					

In Silicon Valley, the region’s historic economic driver was agriculture. By the 2000s, most farms had been replaced by technology companies. In light of several recent years of drought, the quickly-growing region requires careful water management and stewardship from the Santa Clara Valley Water District. Without reliable water services, the region’s economy cannot be sustained.

In July 2014 the \$72 million Silicon Valley Advanced Water Purification Center opened, with the purpose of diversifying and stretching water supplies for an area grappling with water shortages amidst a thriving economy and rapidly growing population through water reuse.

The purification center is the largest center of its kind in Northern California, and is the new primary water resource for Silicon Valley. It recycles wastewater to produce eight million gallons a day of high-quality purified water for the primary uses of landscaping irrigation and industrial cooling.

The highly efficient facility takes water that has already been through two levels of wastewater treatment and puts it through three additional high-tech cleansing processes—micro-filtration, reverse osmosis, and ultraviolet light disinfection. Instead of being released into the bay, this high-quality purified water is distributed through the regional recycled water system, which serves approximately 835 industrial and municipal customers who are heavily reliant on water to do business. Compared with standard recycled water, the enhanced variety has lower levels of total dissolved solids, keeping chemical and maintenance costs relatively low.

The plant’s goal is to vastly expand potential use in the region, allowing the local economy to continue to grow. Before the plant came online, recycled water served approximately five percent of the county’s total water demands. The plant will double that figure. By 2025 the plant will provide up to 45,000 acre-feet per year of purified recycled water used to replenish groundwater supplies and potentially to customers for drinking water.

[Click here for more information about the Silicon Valley Advanced Water Purification Center](#)



City of Snoqualmie (Washington)

→ Partnering with Businesses to Support Water Infrastructure Development and Local Growth

Case Example Content: City of Snoqualmie (Washington)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
		✓		✓	
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 13,169 • State MHI: \$61,062 • Local MHI: \$124,264 • Service Area Poverty Rate: 1.8% 					

In 1998 the City of Snoqualmie and Weyerhaeuser Development Corporation (WEYCO) partnered to update Snoqualmie’s water systems with a water reclamation facility. The city had limited water rights and the wastewater treatment facility was exceeding its discharge permit—creating both water supply and wastewater treatment challenges. Snoqualmie is a small city with several pockets of low-income population. In the late 1990s, its predicted population growth threatened to outpace the City’s ability to provide adequate services.

WEYCO is a major local landowner and was interested in real estate development. In the mid-1990s, WEYCO began plans for an urban golf community in Snoqualmie, known as Snoqualmie Ridge. The 1,343-acre golf community would feature a PGA golf course, an attached housing development, and require 1 million gallons of water a day for landscaping during the summer.

Because the golf course created a major demand for recycled water in the region, WEYCO funded an \$18 million capital project to upgrade the City’s existing facilities. WEYCO also spent \$4 million to install the necessary distribution systems, including all utility pipes needed for the development. The upgraded facility accommodated flows of 2.08 million gallons a day, and produced Class A reclaimed water for irrigating the Snoqualmie Ridge golf course and local public spaces.

Following the development projects, the City managed the upgraded water reclamation facility, with an estimated yearly operational cost of \$240,000. Snoqualmie City paid for these operations by charging the same rate for reclaimed water as for standard drinking water. This partnership solved both of Snoqualmie City’s water supply and wastewater discharge issues, created a water source capable of satisfying the demand of WEYCO’s new golf community, and generated a new large-scale revenue source for the utility as the water service provider to the new community, an economic win-win for the business and the utility.

[Click here for more information about the City of Snoqualmie and WEYCO partnership](#)



City of Sturgis (South Dakota)

→ Expanding Infrastructure to Increase Community Economic Development Opportunities

Case Example Content: City of Sturgis (South Dakota)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
				✓	
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 6,688 • State MHI: \$50,957 • Local MHI: \$35,818 • Service Area Poverty Rate: 15.8% 					

Sturgis is a city in eastern South Dakota with a population of 6,688 and a median household income of \$35,818. In September 2013, the city was awarded a \$244,357 match grant from the Local Infrastructure Improvement Program (LIIP), a state program designed to assist in funding the construction or reconstruction of infrastructure for the purpose of serving economic development projects.

As a result of this grant, the City of Sturgis was able to extend utilities—water, sewer, electric, gas—to a newly annexed portion of the City. It supported the immediate development of Belle Joli Winery, South Dakota’s first and only “sparkling wine” production facility. This \$1 million infrastructure investment project created new local jobs and supported the development of a major year-round tourist draw. Belle Joli also enhances South Dakota’s agricultural sector, using local grapes to produce their sparkling wines.

The newly constructed infrastructure also facilitated the development of a \$3.2 million, 19-unit residential project to meet the housing demand of Sturgis’ growing workforce. The new housing development significantly enhances property values and tax revenues, allowing the community to see an immediate return for their infrastructure investments.

Through its implementation of the LIIP, the City of Sturgis was able to fast-track economic development projects by connecting them with high-priority economic development initiatives. These projects have increased year-round tourism sales tax revenues, as well as property tax dollars generated from residential and commercial growth, making Sturgis a stronger community with a sustainable economy.

[Click here for more information about the Local Infrastructure Improvement Program](#)



State of Texas

→ State Water Bonds as a Tool to Provide Lower-Interest Local Financing

Case Example Content: State of Texas					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
✓	✓				
Community Characteristics: <ul style="list-style-type: none"> • Population Served: n/a • State MHI: \$53,207 • Local MHI: n/a • Service Area Poverty Rate: 15.9% 					

In 2015 Texas began to sell over \$800 million in municipal debt to fund major, statewide water infrastructure projects. With its rapid population growth, economic growth, and declining water supplies resulting from multiple years of drought, Texas’ demand for water is growing even as its supply continues to shrink.

Texas plans to upscale the program, selling \$8 billion in debt over the course of the next ten years—and estimates funding a total of \$27 billion in projects with the bond proceeds over the next 50 years. Under this program, the state—which has a strong credit rating—will sell bonds and then loan the proceeds to local governments for water infrastructure projects.

This system allows the state to supply lower-interest loans to municipalities which might not otherwise be able to qualify for financing. Texas is able to leverage its own strong credit rating instead of relying on less stable municipal credit ratings, providing support to its in-need communities by offering low-cost financing options.

[Click here for more information about the State Water Implementation Fund for Texas \(SWIFT\)](#)



Village of Stockton, Hazle Township (Pennsylvania)

→ Extending Safe Water to a Village with a Contaminated Supply

Case Example Content: Village of Stockton, Hazle Township (Pennsylvania)					
Financial Planning/ Project Planning	Project Capital	Revenue Generation	Revenue Management	Economic Development	Customer/ Community Assistance Programs
	✓				
Community Characteristics: <ul style="list-style-type: none"> • Population Served: 9,517 • State MHI: \$53,599 • Local MHI: \$38,047 • Service Area Poverty Rate: 18.9% 					

The Village of Stockton had historically drawn its water from three small surface ponds. The State of Pennsylvania found in 2014 that these ponds were subject to runoff pollution and were contaminated with giardia, bacteria, and iron. In addition, the ponds were connected to most homes in the village through an old, degraded three-inch piping system that in many places was limited to the width of less than half an inch of flow.

Following issuance of a precautionary warning to not use the water from the old system, the nearby City of Hazleton provided a portable water tank as a temporary measure until a permanent solution could be found.

The Pennsylvania Department of Environmental Protection worked with the City of Hazleton, Hazle Township, and others to apply for funding to install a two-mile, 12-inch water distribution line connecting 43 homes in the Village to the City of Hazleton’s system. The \$2.2 million of funding needed to carry out the project came from the state DWSRF and was arranged through the Pennsylvania Infrastructure Investment Authority (PENNVEST).

By partnering with the City of Hazleton, Stockton to abandon its old, unregulated water system and gain a safe, reliable source of drinking water, as well as full fire protection.

The project was considered a milestone for safe drinking water in Pennsylvania because it demonstrated how funding can be linked with compliance efforts to correct source water and distribution system challenges. It also demonstrates how a major public health risk can be eliminated when a local village and a municipal water utility partner together, allowing an unsafe water system to be replaced with a high-quality source of water.

[Click here for more information about the Village of Stockton’s new water supply](#) 

Appendix B: Key Terms and Acronyms

Key Terms

Alternatives Analysis	(Also referred to as “multi-attribute analysis”) The evaluation of different choices/options available to achieve a particular infrastructure objective, through the comparison of different factors such as cost, risks, effectiveness, operational capability, and other community-based criteria.
Asset Management	The practice of managing infrastructure capital assets to minimize the total cost of owning and operating assets while delivering the desired service levels.
Capital	An economic resource, measured in terms of money, that communities use to purchase and invest in what they need (e.g., infrastructure) to provide services (e.g., water services) to their constituents.
Customer Assistance Program	Programs designed to help financially-constrained customers maintain access to drinking water and wastewater services. These programs help households address issues with affordability and help protect public health throughout the community. They also help ensure the utility can sustainably provide its core services, price services appropriately, and preserve a broad customer base.
Federal Poverty Level	A measure of income issued annually by the Department of Health and Human Services. The Federal Poverty Level is used as an indicator for living wages and to determine eligibility for certain benefit programs.
Finance	Refers to the theory and activity of managing large amounts of money, especially by governments or companies.
Financing	The “two-way” acquisition of money for a program or project. The term financing is used when the monetary resource need is filled from external, borrowed money where principal and interest are owed to the source of funds. This includes Clean Water SRF and Drinking Water SRF funds provided as loans, municipal bonds, and other sources of monetary resources that require repayment of principal and interest. Typically, these resources will tie to a capital asset and will not be available for supporting on-going operational expenses.
Funding	Providing “one-way” financial resources to support a need, program, or project. This term is used when 1) a utility fills the need for funds through generating

its own internal reserves. The use of rate revenues, cash reserves, and connection fees is referred to as “pay as you go” or “Pay Go” funding, and 2) the recipient obtains a grant or similar form of funds that do not require repayment and do not carry an interest expense. “One-way” refers to the characteristic of not requiring repayment of principal or interest to the funder.

Fund(s)

A sum of money saved or made available for a particular purpose. This definition covers all sources of money that can be made available to support O&M and capital needs of a water sector utility—including grants, loans, bonds, and direct revenues from operations.

Grant

A monetary award to an organization or individual to undertake specific activities or projects, as defined in the grant. Grant funds are not required to be repaid.

Impact Investing

An investment made into a company or organization with the intention of generating specific impacts that align with the investing organization’s (typically a philanthropic foundation’s) mission, along with a financial return for the investing organization. Impact investment rate terms range from below market-rate to market-rate, depending on the investing organization’s strategic goals, providing a lower-cost alternative for borrowers to traditional, market-rate loans.

Median Household Income

A common economic indicator, which measures the combined gross income for all household members over the age of fifteen. “Median” divides the household incomes of a specific group (e.g., residents of a given city or state) into two equal groups: half living above that amount and half living below that amount.

Municipal Bond

A debt obligation issued by a nonprofit organization (state, city, county, or other) to finance its capital expenditures. A bond is a debt investment in which an investor loans money to an entity (state, city, county, or other), which borrows the funds for a defined period at a variable or fixed interest rate.

Pay As You Go

(Also known as ‘Pay Go’) A payment plan where the utility or community pays for capital projects as they are completed by utilizing existing reserves or freeing up other money from existing sources (e.g., rate revenues or connection fees). Pay Go does not involve any borrowed money or new revenue streams; it is based only on the community/utility’s existing financial resources.

Public-Private Partnerships

(Also known as P3s or PPPs) A contract between the private sector and a government entity for public infrastructure projects in which the private sector partner bears management responsibility, and payment is based on a number of terms and conditions.

Rate Stabilization Fund

A reserve fund to buffer a utility and its customers from the impacts of sudden changes in revenue (particularly revenue shortfalls).

Acronyms

CAP	Customer Assistance Program
CDBG	Community Development Block Grant
CWSRF	Clean Water State Revolving Fund
DWSRF	Drinking Water State Revolving Fund
EDA	United States Economic Development Administration
FPL	Federal Poverty Level
HUD	United States Department of Housing and Urban Development
MHI	Median Household Income
NRWA	National Rural Water Association
O&M	Operations & Maintenance
PPP	Public-Private Partnership
RCAP	Rural Community Assistance Program
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDA RD	United States Department of Agriculture Rural Development
USDA RUS	United States Department of Agriculture Rural Utility Service
U.S. EPA	United States Environmental Protection Agency
WIFIA	Water Infrastructure Finance and Innovation Act
WIRFC	Water Infrastructure and Resiliency Finance Center (also “Water Finance Center”)



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