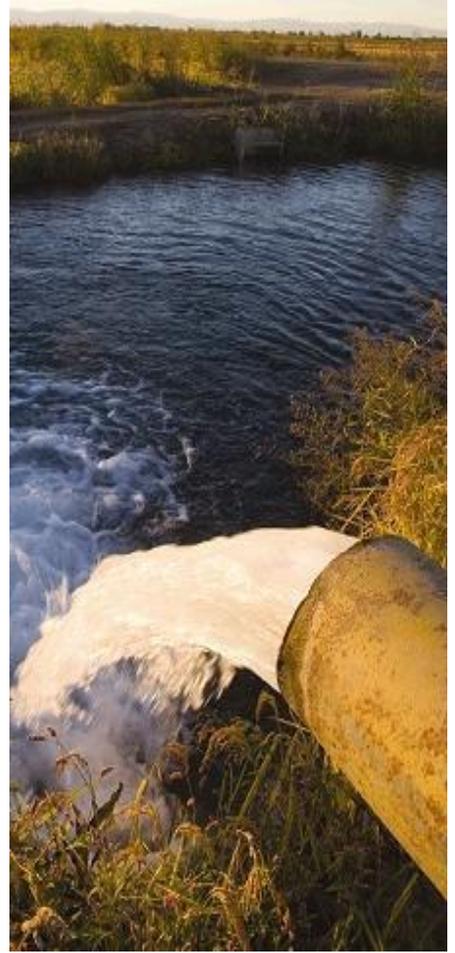


SUSTAINABILITY AND THE CLEAN WATER STATE REVOLVING FUND

A BEST PRACTICES GUIDE



JULY 2012

EPA-832-R-12-005

PREFACE

The Environmental Protection Agency's (EPA) Clean Water and Drinking Water Infrastructure Sustainability Policy was officially released on October 1, 2010 and was developed with input from a variety of federal, state, and local officials with the goal of promoting sustainable infrastructure within the water sector. The policy focuses on promoting planning processes that support sustainability, promoting community sustainability, and promoting sustainable water and wastewater systems along with the targeting of Clean Water and Drinking Water State Revolving Fund assistance.

Along with EPA's Sustainability Policy, in 2009 the U.S. Department of Housing and Urban Development (HUD), the U.S. Department of Transportation (DOT), and the EPA formed the Interagency Partnership for Sustainable Communities (Partnership) to help improve access to affordable housing, expand transportation options, and lower transportation costs while protecting the environment in communities nationwide. Through this partnership, the Clean Water State Revolving Fund (CWSRF) along with EPA's Office of Sustainable Communities sponsored three pilot projects with New York, Maryland, and California to provide technical assistance and policy options to explore how their programs may be improved to encourage more sustainable development and communities.

EPA's Office of Wastewater Management has developed this Best Practices Guide to provide an overview of a variety of state policies and practices supporting the priorities outlined in the Sustainability Policy and pilot projects. Currently, many states have unique and effective policies that directly address these issues whether it be through program requirements and incentives, project priority system structure, innovative financial mechanisms, technical assistance, or outreach to communities and potential borrowers. As a significant source of funding for wastewater infrastructure, CWSRF programs can influence how some communities develop infrastructure projects. This guide is intended for state programs as they consider policies and initiatives to promote community and water infrastructure sustainability. While this guide will primarily focus on the CWSRF, some policies used by the Drinking Water State Revolving Fund (DWSRF) are highlighted, and many CWSRF policies may be applicable to DWSRF programs.

The information in this guide is drawn primarily from existing state policies, with special thanks to Stacy Barna of the Texas Water Development Board and the State-EPA SRF Workgroup for providing guidance and information on the inner-workings of each unique state program. In addition, this guide contains references to certain documents EPA believes would be helpful to state SRF programs as well as suggestions for new and innovative practices that are not widespread among the states which could promote the goals of the sustainability policy and benefit state CWSRF programs.

STATE POLICIES AND PRACTICES

A. Planning Processes Supporting Sustainability

A primary focus of EPA’s Clean Water and Drinking Water Infrastructure Sustainability Policy is to promote utility planning processes that support sustainable water infrastructure and communities. The goal is for a robust planning process to occur during the development phase of the project, before the infrastructure solution is selected and designed. This will allow the utility to work with stakeholders in the community to ensure that the utility’s goals also support other relevant community priorities. It will also allow the utility to evaluate a range of infrastructure options, including, as appropriate, conservation approaches, decentralized treatment with centralized management, and green infrastructure based on factors such as public health, water quality, and economic health. In support of more effective planning by utilities, in February 2012 EPA released Planning for Sustainability: A Handbook for Water and Wastewater Utilities. Developed after extensive input from utility managers and selected states, the Handbook describes a series of steps utilities can take to enhance their existing planning processes and ensure that infrastructure investments are sustainable and support other relevant community goals. Although not specifically targeted to utilities applying for SRF funding, the Handbook can provide SRF managers with useful information to help them evaluate such applications.

1. Alternatives analysis including, as appropriate, green infrastructure and decentralized options

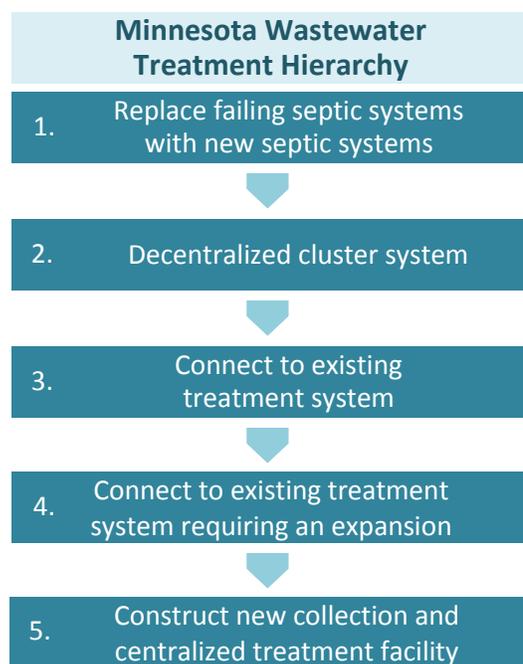
States should encourage potential CWSRF borrowers to work with their communities to evaluate project options, including those beyond traditional centralized wastewater solutions. Project options may be evaluated on the basis of water quality, fiscal and economic sustainability, and social criteria to ultimately choose the best solution.



Encouraging or assisting communities to undergo a comprehensive alternatives analysis can be an effective method to expand the type of projects a CWSRF program will fund while potentially providing communities with savings in life-cycle costs.

A simple method for promoting sufficient planning processes is to provide funding for these activities. The **Oregon** CWSRF program sets aside a \$3 million reserve solely dedicated to funding planning projects, while **Texas** offers assistance for planning and design separately from construction. In addition, projects that have completed planning in Texas within three years of a planning loan will receive priority for construction loans. Initiatives such as these can be especially useful for small and disadvantaged communities that cannot always afford the upfront costs to undertake a comprehensive alternatives analysis when determining what type of infrastructure project to pursue. When combined with technical assistance, planning and design loans can lead these small and disadvantaged communities to pursue new and innovative infrastructure designs such as green infrastructure, which may end up saving the community money in the long term.

Failing septic and decentralized systems are a significant water quality issue in many rural communities. Often, the chosen solution to such a problem is to connect these communities to an existing centralized treatment system or to construct a new treatment plant to serve these communities. However, new centralized treatment can lead to unplanned and inefficient development patterns and the inherent water quality issues it presents due to increased impervious cover. In **Minnesota**, in order to receive CWSRF funding, all unsewered communities must analyze the alternatives using a Wastewater Treatment Hierarchy and evaluate the feasibility of replacing failing individual septic systems or installing a decentralized cluster system before an expansion-based project such as new centralized wastewater treatment. While the results of such an analysis may determine that new centralized treatment is the best option, this process ensures that all viable alternatives are closely considered.



From a financial standpoint, states can use EPA’s Financial Alternatives Comparison Tool (FACT) to help communities identify the most cost-efficient method to obtain financing for a wastewater infrastructure project. This tool produces a comprehensive analysis that compares various financing options for a proposed project by incorporating financing, regulatory, and other important costs. Communities can use this tool to determine the best financing option, including combining funding from multiple sources, to fund their wastewater infrastructure projects. FACT can also be used as a marketing tool to show potential borrowers the financial benefits of using the CWSRF.

2. Interagency cooperation between funding sources and with other infrastructure agencies

By collaborating with other funding sources for wastewater infrastructure, CWSRF programs can identify common and complimentary priorities for projects, help communities identify the most beneficial source

of funding, and reduce the amount of paperwork and requirements for communities. In addition, by aligning water infrastructure investments with housing and transportation, communities can ensure that investments support local planning efforts, yield maximum returns for the community, and minimize rework and disruption.

One method of encouraging coordination among multiple funding sources is to create workshops where these entities can come together and directly engage communities in need of funding. In **Arizona**, the Rural Water Infrastructure Committee (<https://rwic.azwifa.gov/>) accomplishes this through meetings conducted throughout the state to discuss assistance options with government and nonprofit programs. There is a focus on rural communities, and the committee is intended to be a "One Stop" source of information for funding and technical assistance resources for rural communities seeking assistance with infrastructure projects. Arizona also has a uniform project information form recognized by multiple funding agencies allowing for the committee to direct communities to the appropriate funding source. Similar to Arizona's initiative, The **New York** State Water and Infrastructure Co-Funding Initiative (<http://www.nycofunding.org/>) provides potential borrowers with a central source of information and single contact for government funding sources. In addition, New York has an online assessment tool that communities can use to direct them to the appropriate government program to obtain financing.

In **Kentucky**, the facility plan for a potential project must take into consideration the community housing and transportation needs in sizing wastewater infrastructure and choosing appropriate interceptor alignments. Additionally, utilities are required to hold public meetings to discuss these facility plans and respond to feedback and to identify certain efficiencies, such as replacing a sewer line, in advance of a planned re-pavement of a street, not after. A simple policy like this can also stimulate dialogue in a community on how water and wastewater infrastructure can affect the development of housing and transportation patterns. Bringing together government agencies governing water and wastewater infrastructure, transportation, and housing can result in better coordination to respond to infrastructure needs. Without prior consultation and coordination as part of a comprehensive planning effort, communities often struggle to provide the full range of infrastructure to meet the needs of new development.

3. Capital Improvement Plans

A well designed Capital Improvement Plan can benefit utility operations by allowing for multiple potential projects to be evaluated simultaneously to ensure that the most urgent and cost-effective projects are funded first. A Capital Improvement Plan will also lead to a community planning for future investments and ideally working with other community groups and departments to integrate these plans within the community as a whole.

A Capital Improvement Plan in many ways functions as a priority list that a utility uses to determine which capital projects are to be funded. If given the opportunity to evaluate these plans, CWSRF programs can determine not just if a proposed project is feasible from an economic and engineering standpoint, but if the project is being evaluated from a system-wide strategic standpoint. Ideally, a

Capital Improvement Plan would be the result of a comprehensive alternatives analysis and asset management plan to inform any decisions about what infrastructure projects a utility should pursue. Capital Improvement Plans are eligible for CWSRF funding and can also be encouraged through financial incentives and priority setting systems discussed later, or they can be required through threshold criteria. For small and disadvantaged communities that do not have a capital improvement plan, CWSRF programs may look to assist them to develop one either through staff guidance or through a partnership with a nonprofit or other organization better equipped to meet the needs of these communities.

B. Community Sustainability

Development patterns in communities are greatly influenced by how investments are made in infrastructure, including wastewater infrastructure. By focusing investments on revitalizing existing communities and existing infrastructure, communities are less likely to confront abandoned capacity with an insufficient rate base but instead, make communities more healthy and livable. New infrastructure investments can be made in a manner to help ensure that any new development is done in a more sustainable and environmentally friendly approach while preserving existing open space. State CWSRF programs can work to promote these activities as well as provide funding to disadvantaged communities that may otherwise have difficulty obtaining funding.

1. Prioritizing investments in existing communities including the redevelopment of previously developed communities or limits on infrastructure growth

This investment approach targets resources to support the repair, replacement, and upgrade of existing infrastructure within the existing service footprint of a water sector utility. Such an approach can help avoid unsustainable growth patterns where new infrastructure cannot be supported financially by rate payers added through an extension of centralized treatment, or by existing ratepayers spreading out over a wider footprint. Instead, this approach can support growth through infill resulting in more rate payers per infrastructure dollar spent and, therefore, a more financially stable wastewater system.

Limits on how much growth a CWSRF program is willing to fund can be accomplished through a variety of ways both in CWSRF regulation or state statutes. For example, the **Iowa** Administrative Code explicitly prohibits funding projects for the “primary purpose of speculative growth” and states that projects must serve existing users. In addition, any level of growth in a facility plan must be justified with credible data. **Rhode Island** uses a similar approach by not funding infrastructure for growth or economic development and only provides funding for wastewater projects that serve an environmental needs area as determined by a local wastewater facilities plan. Both of these policies act to ensure that wastewater infrastructure projects serve the primary purpose of environmental protection and promote economic development in areas where public investments in infrastructure have already been made.

STATE SPOTLIGHT

In **Massachusetts**, collection system projects are only eligible for funding if at least 85% of the expected wastewater flow will be for flows in existence as of July 1, 1995. However, the state CWSRF can fund a project not meeting this criterion if it serves areas designated as city or town centers, rural village districts, or brownfields redevelopment areas, provided that concentrated development is encouraged. In these cases, any new growth resulting from a collection system expansion would likely not contribute to dispersed and inefficient development patterns. This policy differs from the policies of Iowa and Rhode Island in that it is more inclusive and allows for some growth in selected areas where it is deemed beneficial from an overall environmental benefits perspective. This is also a comprehensive policy that leads into other sustainability initiatives such as sustainable growth and brownfields remediation.

2. Encouraging sustainable growth

When water and wastewater infrastructure is extended for new developments, communities should ensure that any new development results in communities with adequate transportation and housing options along with a sufficient rate base. Such planned growth can result in more sustainable development patterns as well as a more stable rate base to fully fund future infrastructure repairs and upgrades.

In **Maryland**, the Priority Funding Areas Act of 1997 limited new growth to designated priority growth areas including previously developed communities as well as enterprise zones and neighborhood revitalization areas. The Act provides a focus for state investment to help limit development in previously undisturbed environments. In addition, projects must be consistent with the County Water and Sewer Plans. Any applicant for CWSRF funds must submit a map showing the project location within a Priority Funding Area and demonstrate the project's consistency with a local land use plan. Land use plans are reviewed by the Water Resources Planning Unit, which determines whether or not the planning documents support the proposed project. While this policy did not originate in the CWSRF program, it can be a template that state CWSRF programs can use to concentrate funding for projects within enterprise zones and revitalization areas instead of previously undeveloped environments.

New Jersey has a Smart Growth Financing Program within the state CWSRF program that offers up to 75% of project costs at 0% interest with the rest offered at market rate. Projects eligible for this program include those that serve Urban Centers and Urban Complexes designated by the State Planning Commission, brownfields areas, and designated Transit Villages, as well as projects that replace on-site septic systems in a way that is appropriate to a rural environment and does not result in growth-inducement. New Jersey also allows funding for reserve capacity costs, such as excess project capacity, in Smart Growth areas. In addition, through a partnership with the New Jersey Department of Transportation (NJDOT), NJDOT will fully fund reserve capacity costs for projects that serve Urban Centers, Urban Complexes, or Transit Villages.

3. Brownfields redevelopment

The redevelopment of brownfields sites has the benefit of remediating on-site contamination as well as promoting infill of previously developed land, which is consistent with an investment strategy supporting existing communities. In some cases, the cost of remediating a brownfields site may be less than the cost of new infrastructure on undeveloped land leading to an economic benefit in addition to an environmental benefit. Because of the inherent flexibility of the CWSRF, the state CWSRF programs are well poised to promote the cleanup and development of these sites and convert them from polluted areas of urban land into vibrant communities.

Several states have separate brownfields remediation programs that can be effective partners in redeveloping brownfields areas. **Indiana** has a separate brownfields Revolving Loan Fund (RLF) program dedicated to funding brownfields projects. The Indiana RLF, while having a lower funding ability than the CWSRF, can fund activities that the CWSRF cannot. For example, the CWSRF can only fund activities directly related to water quality while the RLF can fund other activities such as asbestos and lead-based paint removal as well as costs associated with the demolition and/or site preparation that are part of the site cleanup and not directly related to water quality. Situations where one program can fund activities that another cannot are prime candidates for co-funding projects where each program funds certain portions of the same project. By doing this, larger projects may be funded by sharing the cost across multiple funding sources. Coordinating priorities and funding can help both a CWSRF and brownfields program meet common goals and assist more communities than they could if they worked separately.

One of the roadblocks to moving brownfields projects forward is a lack of information on what the condition of a particular site is and what the cost is for remediation. Because each brownfields site is unique in its needs, the economic benefits of undergoing site remediation are unknown until a thorough assessment has taken place. Communities that are reluctant to redevelop a brownfields site due to the impression that it is too expensive may reconsider their options if they have a complete assessment that shows that remediation is an affordable option and may even be less expensive than extending infrastructure to land that is currently undeveloped. These types of assessments are eligible for CWSRF funding provided that there is a reasonable prospect of developing a fundable project as a result. By funding these studies, CWSRF programs can help communities make better decisions about which infrastructure projects to fund and can help cultivate brownfields projects that may not have been pursued without a complete site assessment.

4. Addressing the needs of disadvantaged communities

As stated in the Sustainability Policy, “priority for federal SRF construction financing and related subsidies will be given to communities that could not otherwise obtain financing.” Because many communities do not have access to the bond market, CWSRF funding can be an important source of financing for needed infrastructure improvements. In addition, for these disadvantaged communities CWSRF funding, along with technical assistance and guidance, can provide such communities the financial resources needed for

the planning and alternatives analyses necessary to support the long-term sustainability of their wastewater infrastructure.

When determining how to categorize and define disadvantaged communities, most definitions from CWSRF programs involve a number of socioeconomic factors such as median household income, poverty rate, and unemployment rate. In addition, the population size of a community is also commonly used as smaller communities are more likely to lack the technical, managerial, and financial (TMF) capacity to properly manage wastewater systems compared to larger communities. To assist such communities, **Kansas** provides a minimum of 10% of the total “Basic Program” and “Leveraging Program” funds to be available for municipalities of 5,000 or less. **Oregon** has a similar policy and reserves 15% of total available funds for communities of 5,000 or less. CWSRF program policies such as these ensure that a certain amount of available funds are reserved for disadvantaged communities.

In most cases, CWSRF programs assist disadvantaged communities through longer loan terms, interest rate reductions and, additional subsidization. Financial assistance for upfront planning and alternatives analyses can be especially useful for such communities to ensure that the most cost effective infrastructure solution is chosen to meet the specific needs of a community. For example, **Iowa** and **New York** assist communities in planning for future infrastructure investments by offering 0% interest loans for planning activities while several other states offer reduced interest rates for short-term loans that can also be used for planning purposes. In addition, technical assistance, especially for TMF capacity development, can also be funded by CWSRF activities to assist small and disadvantaged communities. Interest rates, additional subsidization, and other financial incentives along with technical assistance initiatives that can benefit small and disadvantaged communities are discussed later.

5. Open space preservation through land acquisition and conservation projects

Aside from traditional grey infrastructure and even new and innovative green infrastructure, open space preservation can be an integral part of a community’s water protection program by protecting natural watersheds and providing buffers between development and water resources. While these projects may be difficult to finance due to a lack of repayment sources, many innovative financing mechanisms, discussed later, can make this possible.

Protecting open space and undeveloped land can be an effective method of source water protection by providing a buffer from pollution sources and resulting in reduced treatment costs. A survey of the treatment costs and watershed characteristics of 27 drinking water utilities found that for every 10% increase in forest cover of the source area, chemical and treatment costs decrease by 20%.^{*} The simplest method that the CWSRF programs can use to protect open space is to encourage the funding of projects on already developed land, as discussed earlier. However, if a project does include a significant growth component, a CWSRF program may consider requiring that a portion of undeveloped land of similar size be preserved to offset the new development in order for the project to receive funding. This

^{*} Ernst C. *Protecting the Source: Land Conservation and the Future of America’s Drinking Water*. Trust for Public Land and the American Water Works Association, Water Protection Series. 2004, 56 pp.

would be similar to the compensatory mitigation of wetlands that is currently required when projects cause adverse impacts on existing wetlands.

C. Sustainable Systems

The physical and financial sustainability of a wastewater system is vital to a community to ensure that financial resources are used wisely to support broader community goals. This can be accomplished in a variety of ways including decreasing long-term operating costs through efficiency upgrades, ensuring an adequate revenue stream to fund operations, and having sufficient staff expertise and experience to effectively manage a wastewater system. The state CWSRF programs are well positioned to help and encourage communities to ensure the sustainability of their wastewater systems, especially systems that are in most need and have the most to benefit from these actions.

1. Water and energy efficiency

Upgrades or other eligible activities that lead to greater water and energy efficiency for wastewater utility operations can have a dual effect of reducing costs for the utility while reducing the need for limited natural resources. Because these activities can create significant cost savings, some have the ability to pay for themselves over time. In addition to the CWSRF programs, many states have separate agencies and programs dedicated to assisting public entities in identifying potential water and energy efficiency improvements. The CWSRF programs can collaborate with these agencies and programs to engage wastewater utilities. EPA is working with states and utilities to promote greater energy efficiency through the development of energy management programs. The Agency has developed Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities as the basis for its work with states and utilities. The Guidebook describes a step-by-step process for utilities to assess their current energy usage, conduct energy audits, and identify actions to improve energy efficiency.

The **Vermont** CWSRF has worked with Efficiency Vermont to notify the organization when owners of water systems or wastewater treatment plants apply for loans to allow Efficiency Vermont to suggest efficiency upgrades to conserve energy and water. Efficiency Vermont brings additional staff and specialized expertise to help communities decrease their energy and water needs and bring down costs to allow their wastewater systems to operate more efficiently. Efficiency Vermont in collaboration with the state Water Supply Division has also held workshops to encourage the use of water and energy conservation and to educate utilities on capacity development, long-term planning, rate structures, and asset management.

The **Massachusetts** Department of Environmental Protection has partnered with the Massachusetts Department of Energy Resources and several local utilities to perform energy audits at treatment facilities and provide recommendations for efficiency upgrades. Their joint goal is to focus state CWSRF and energy program investments to improve the energy efficiency of treatment facilities. In addition,

the **New York** CWSRF program has partnered with the New York State Energy Research and Development Authority to provide free energy audits on projects receiving American Recovery and Reinvestment Act (ARRA) funding to identify energy saving measures. These examples showcase the fact that many states have knowledge and resources within other state programs and agencies that can be utilized with innovative partnerships.

2. Ensuring adequate revenues to finance, operate, maintain, and replace essential infrastructure assets

Traditionally, user charges supporting wastewater infrastructure have not reflected the full costs of the long-term maintenance and eventual replacement of the system, which has resulted in delayed maintenance, and in many cases, increased long-term costs. Utilities with rate structures covering the full cost of operations will be in a better position to maintain wastewater systems and be less dependent on financial subsidies, including those provided by CWSRF programs.

Kentucky currently has a contract with the Kentucky Rural Water Association’s Utility Optimization Program to evaluate the user rates for selected utilities to determine their long-term viability and to help ensure that revenue is sufficient to cover costs for operations, maintenance, and the eventual replacement of infrastructure. This is part of a broad review of the overall capacity for systems being reviewed. This contract is funded through the DWSRF set-aside funds for drinking water systems only; however CWSRF programs may use similar contracts if funding is available. Many states have similar trade organizations or nonprofit entities that specialize in such assistance. Cooperative partnerships, such as what is occurring in Kentucky, can be invaluable in cultivating the long-term financial sustainability that many rural and small utilities need.

3. Asset management

Understanding the basic facts about a wastewater system’s assets is paramount for sound management, both from a financial and an operations standpoint. Basic asset management practices such as determining the desired level of service, inventorying existing assets, setting replacement schedules based on risk assessment, and assessing full life-cycle costs can help ensure effective management of

ENVIRONMENTAL FINANCE CENTERS

EPA provides grant funding to 10 university-based environmental finance centers (EFC), linked through their coordinating network. The EFCs can work with state SRF programs to provide technical assistance and guidance on a number of different issues. Since 2007, **Georgia** has worked with the EFC at the University of North Carolina to complete a survey of water and sewer systems in the state to collect information on user rates as well as rate structures. This information is organized in a “dashboard” on the EFC website, which allows communities to compare user rates and structures in a chosen geographic area to evaluate how their user rates and structures compare with neighboring communities based on a number of factors including number of connections, revenue generation, and water source. Information on median household income is also available to assess the affordability of varying user rates and rate structures.

existing and planned infrastructure investments. Proper asset management is also the foundation for capital improvement plans, project selection, and can help ensure funding strategies meet long-term needs.

The **New Mexico** CWSRF requires all “at risk” utilities (as determined by the state) to provide asset management plans as a condition to receive funding. Often, the communities in most need of a comprehensive asset management plan are those in financial risk. Mismanagement of infrastructure assets or simply not understanding the full extent of a system’s assets can lead to financial resources being targeted in the wrong places and increased costs in the future. Providing financial assistance to such communities can result in a less than optimal use of available funds and may result in rewarding systems with subpar management and operations. By directing funding towards facilities with proper asset management, potential financial issues can be prevented from occurring and the need for a community to receive future subsidized financial assistance can be reduced.

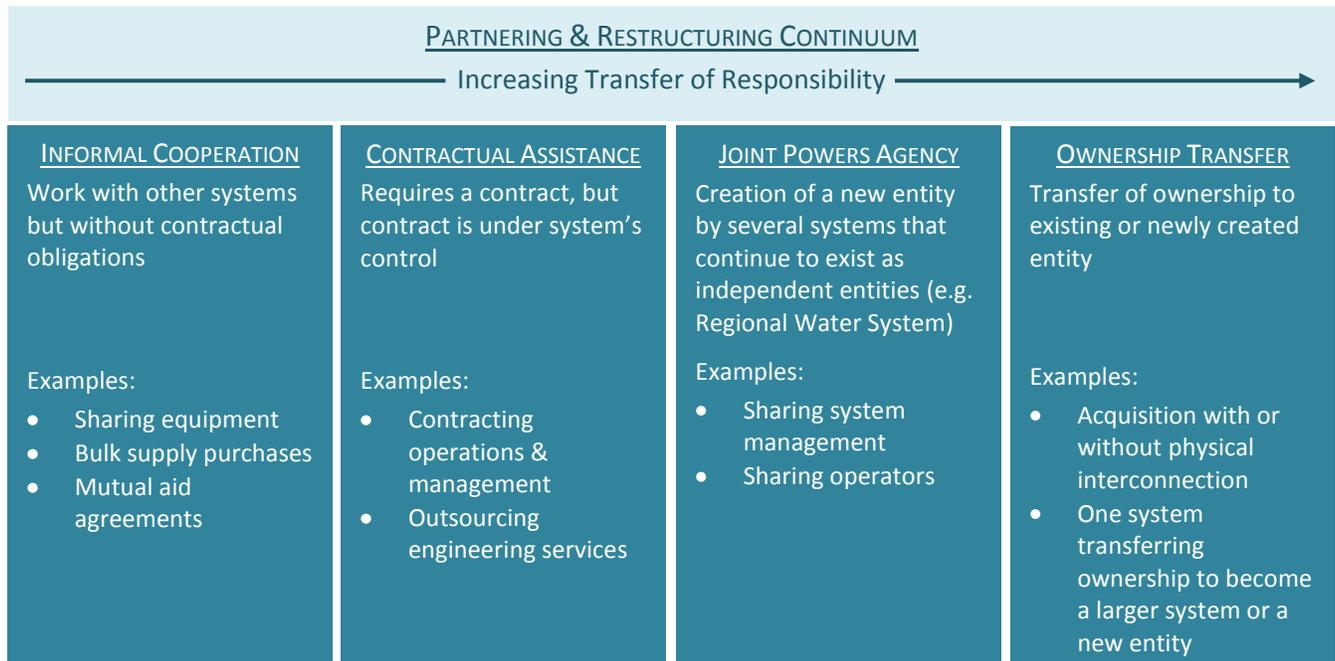
The **Maine** DWSRF program has required asset management training for selected community officials as a requirement for receiving any disadvantaged community assistance. The goal of this training is to produce an asset management plan that the community can use in the future. With this approach, CWSRF assistance can be used as a method or incentive to introduce communities to the benefits and necessity of a proper asset management plan. Although this is currently a policy of Maine’s DWSRF program, it could easily be applied to a CWSRF program as a requirement for any community receiving additional subsidization or for financial assistance in general.

4. Partnering or restructuring of wastewater operations

Small communities with proportionally small wastewater systems often have trouble finding the resources to operate and maintain their systems. One potential solution to this problem is to partner with other systems or consolidate the management and administrative tasks from a number of nearby small systems into a larger regional system that can share resources and decrease operational costs.

The partnering or restructuring of a wastewater system can mean two or more communities sharing management staff and selected maintenance activities, connecting to a common system, or sharing portions of a system. These types of arrangements should be considered as viable alternatives to constructing redundant treatment systems or continuing financial assistance to communities that could increase efficiency through the restructuring of operations. There are varying degrees in which partnering arrangements can be made from sharing equipment or staff to creating a regional wastewater utility. The degree to which a community might consider such an arrangement will depend on its unique needs, but in many cases partnering or restructuring some portion of operations can eliminate unnecessary duplication of resources and result in significant savings. State CWSRF programs can encourage partnering or restructuring through its inclusion in the alternatives analysis that a community undergoes when it is considering what type of project to pursue. In addition, many small communities may benefit from technical assistance from either their CWSRF program or from various nonprofit or trade organizations that have the necessary technical expertise to determine the most

viable solution from an economic and technological standpoint. The following table shows various ways that wastewater utilities can partner or restructure to increase efficiency and achieve desired environmental results.



Adapted from 2007 EPA report, "Restructuring and Consolidation of Small Drinking Water Systems – A Compendium of State Authorities, Statutes, and Regulations"

5. Building technical, managerial, and financial (TMF) capacity to support sustainable systems

Some systems face a combination of technical, managerial, and/or financial (TMF) challenges that may inhibit their ability to become sustainable and provide services. Appropriate training and sufficient knowledge is necessary for a fully functional utility operation, and many states currently have programs that provide training opportunities to assist communities, particularly small communities. Sufficient TMF capacity can ensure proper management of a system, making loans less risky and ultimately making the community less reliant on CWSRF subsidies in the long term.

In **Minnesota**, when a decentralized cluster system is proposed, it is required that a community produce a centralized management plan detailing a responsible party for the maintenance and upkeep of the system. In addition, the community must produce a financing plan with dedicated revenues for operations and maintenance and debt service, as well as a management plan with a schedule for inspections, pumping, and repair/replacement. This type of requirement can ensure that a decentralized system will have an identified responsible entity for the maintenance and upkeep of the system along with the necessary revenues for long-term maintenance. Without proper maintenance, decentralized systems can fall into disrepair necessitating future expenditures for replacement or eventually a connection to centralized treatment.

The **California** DWSRF program has developed a web-based tool called the TMF TuneUp (<http://neien.des.ucdavis.edu/tmf/>) that utilities can use to measure their TMF capacity. There are a variety of topics covered in the tool including the age of infrastructure, staffing issues, financial issues, and general knowledge of the water system. As a result of this assessment, systems with low scores can receive a training plan that can help them plan for infrastructure replacement as well as improve the management and maintenance of the existing infrastructure. Such a tool can be especially useful for small and disadvantaged communities that may not be aware of an issue in their TMF capacity or the training opportunities that they can utilize. **Washington** also has a similar tool targeted at small communities (<http://www.doh.wa.gov/ehp/dw/Programs/capacity2.htm>).

STATE SPOTLIGHT

An effective way to address concerns of utility system sustainability with potential borrowers is to work with nonprofits or other organizations that specialize in working with small and rural communities. **Idaho** currently has a contract with the Rural Community Assistance Corporation to assist small communities with capacity development. Organizations such as this may have more experience working with disadvantaged communities and may be able to provide more effective assistance than the CWSRF or other state programs. Partnerships like this can be used to engage communities on a number of system sustainability issues, including assistance with rate structures and the development of an asset management plan. Additionally, CWSRF programs may not have the resources to provide continued guidance once financial assistance is provided. Issues surrounding technical, managerial, and financial capacity do not end when loans are approved, and providing continued guidance after the issuance of loans can greatly improve the long-term viability of a system. By doing this, problems down the road, such as the deterioration of infrastructure and service, may be avoided and these small and disadvantaged communities may become less reliant on state assistance to meet their needs.

FINANCIAL INCENTIVES AND MECHANISMS

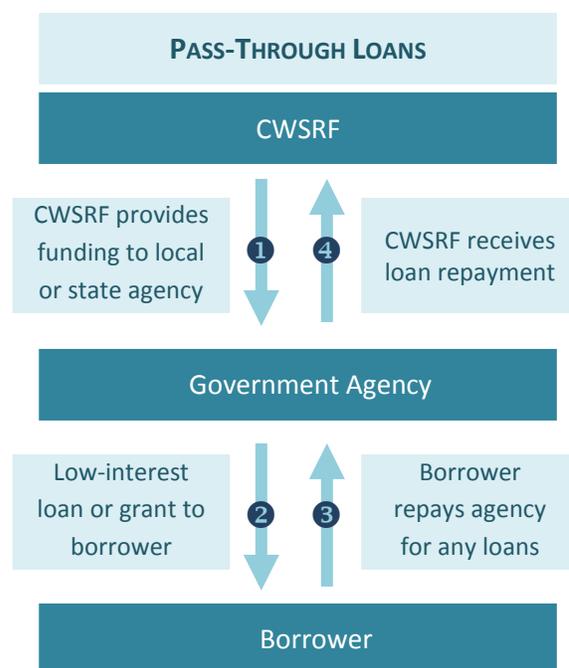
The inherent financial flexibility allowed in the CWSRF programs has been vital to their success. This flexibility has allowed the states to tailor their funding strategies to provide assistance to communities while maintaining the long-term viability of the fund. Financial incentives such as interest rate reductions have long been used in pursuing certain funding priorities such as disadvantaged communities; while additional subsidization in many cases has been used for green projects. However, many states utilize the full flexibility of the program using more innovative funding mechanisms, many of which can be used to target projects meeting the goals of the sustainability policy.

The most common method in which states use financial incentives to promote certain practices is through interest rate reductions. Many states base their interest rates largely on the financial status of the community, with lower rates available for disadvantaged communities. Other states target their

interest rates more narrowly. For example, as previously mentioned **New Jersey** offers 75% interest-free loans for projects with a “smart growth” designation while states like **Colorado** and **South Dakota** offer reduced interest rates for nonpoint source projects. **Iowa** and **New York** assist communities in planning for future infrastructure investments by offering 0% interest loans for planning activities while several other states offer reduced interest rates for short-term loans that can also be used for planning purposes. In addition to interest rate reductions, another more nontraditional way of reducing annual repayment costs for a community is through extended term financing that allows for financing terms of up to 30 years through purchases of local debt to spread the cost of repayment over a longer period of time. This type of financing option is most commonly provided to disadvantaged communities.

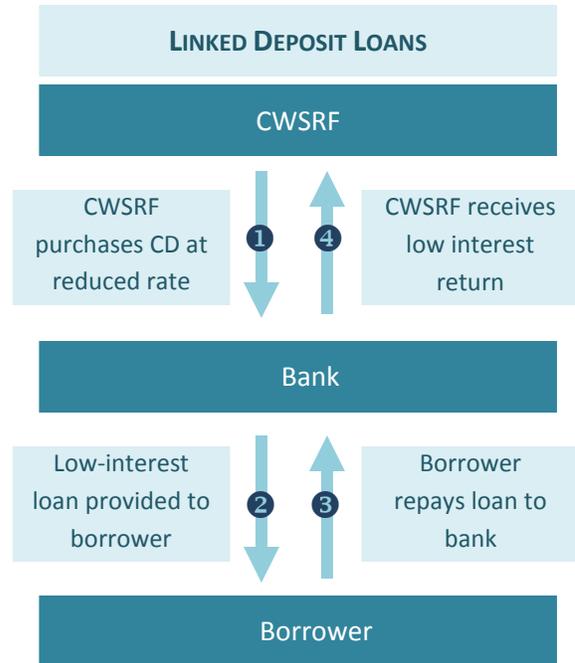
Since the implementation of the American Recovery and Reinvestment Act in 2009, states have had the option of providing additional subsidization to communities in the form of principle forgiveness, grants, or negative interest loans. While Congress provided this authority to benefit communities unable to otherwise afford a loan, some states further restrict the use of this authority to avoid its use to subsidize unsustainable infrastructure. For example, **Texas** will not provide additional subsidization to disadvantaged communities for projects that expand centralized treatment for growth, while **South Carolina** will only provide additional subsidization to communities with sufficient technical, managerial, and financial (TMF) capacity. These are examples of policies that ensure that any additional subsidization is used wisely and not provided for growth-centric projects or to systems that do not have the capability of managing and maintaining their proposed infrastructure project. In addition, South Carolina offers additional subsidization to communities that take ownership of non-viable wastewater systems as a way to incentivize the partnering or restructuring of operations.

Aside from traditional financing mechanisms for assisting certain communities or promoting certain types of projects, there are a number of innovative financing mechanisms that can attract new types of borrowers as well as promote more innovative projects. One of the roadblocks to funding nonpoint source projects and many green projects is that it is frequently difficult for potential borrowers to secure a dedicated source of repayment. However, conduit lending mechanisms such as pass-through and linked deposit loans allow for these types of projects to be funded. For pass-through loans, a CWSRF program makes a loan to another government agency that then provides funding to private borrowers for projects. Assistance can be provided to borrowers in the form of loans or even grants. Linked deposit loans are similar except the CWSRF works with a bank by purchasing a certificate of deposit (CD) at a reduced rate in exchange for the bank providing below market rate loans to borrowers. In both of these scenarios, the risk and management for the loans are placed



with the government partner or bank that can allow for a number of smaller projects to be funded that may be too cumbersome in number to be effectively managed by a CWSRF program. For traditional CWSRF assistance, the borrower (e.g. the entity managing project construction) must have a dedicated source of repayment for the loan, but in these mechanisms it is the bank or government agency that must secure a source of repayment. Additionally, some smaller borrowers such as homeowners or farms may be more comfortable working with local banks or local government agencies than the state CWSRF program.

Another innovative approach to providing financial assistance to communities is through portfolio financing. In this type of agreement, the CWSRF program agrees to fund multiple projects or project phases that are part of a larger infrastructure plan. This type of agreement can be very effective when it is linked to a capital improvement plan detailing proposed infrastructure projects and how they integrate with the community as a whole. While assistance agreements would only be made once each individual project or phase is ready for construction, there would be an agreement to fund the rest of the project portfolio as each project is ready to proceed. This would have benefits for the CWSRF program in that it introduces multiple projects into the pipeline and would benefit the participating community in that it would give assurance that financing is available for multiple projects to assist with long-term planning.



STATE SPOTLIGHT

For a number of years, **Ohio** has run very successful sponsorship and linked deposit programs to fund a variety of projects. From 2000 through 2010, Ohio’s Water Resource Restoration Sponsor Program has provided over \$121M in funding for 82 projects. In this program, a Publicly Owned Treatment Works (POTW) agrees to add the cost of a nonpoint source project to their loan in return for a reduced interest rate. This arrangement can work best when the complete project costs the POTW the same or slightly less as a combined project than it would have as a traditional treatment works project at normal CWSRF interest rates. This also removes the repayment responsibility from the nonpoint source project and can result in more nonpoint source projects being funded. In addition, Ohio’s Linked Deposit program has provided over \$75.5M in funding for 1,955 projects from 1993 through August 2011. While the sponsorship program has primarily focused on wetlands and other restoration projects, Ohio’s Linked Deposit program has mostly funded projects supporting agricultural best management practices. However, the linked deposit program has also funded 93 projects addressing home sewage treatment systems illustrating how a wide variety of project types can be funded using this type of financing mechanism.

PROJECT PRIORITY SYSTEM CRITERIA

The most common method that states use to set priorities for the types of projects to be funded are the priority setting systems used to rank and evaluate projects. The criteria used for these systems vary widely from state to state but generally include categories such as water quality benefits, public health considerations, compliance with state and federal regulations, and the financial need of the community. In addition, most states have criteria tailored to the individual priorities for their state to further refine the ranking of projects beyond the most important factors. States generally fund projects in the order they are ranked with bypass provisions related to readiness to proceed to ensure that CWSRF funds are utilized in a timely manner.

The topics related to the Clean Water and Drinking Water Sustainability Policy are already commonly addressed in the priority setting systems of many states. While criteria addressing these issues often have a small value compared to categories related to water quality, including sustainability measures in a priority setting system can have an effect on how projects are ranked if the system is properly designed. For example if a priority setting system has 500 available points and sustainability criteria accounts for only 10 of these points, it is unlikely that a project qualifying for these points will change in ranking. However, a system with 100 available points and 10 points from sustainability is more likely to result in a change in ranking for projects that include these elements. When considering revisions to the project priority system it is important to ensure that sustainability criteria have a noticeable effect on project ranking while preserving the importance of priorities relating to water quality and public health that the CWSRF program is intended to address.

It is inevitable that project priority system criteria will have to be revised periodically to conform to changing state and programmatic priorities. However, it will likely take several years for a revised project priority system to have a measurable effect on the type of projects being funded, as communities may be slow to adapt to changing priorities. Therefore, while criteria may still be slightly adjusted on an annual basis to make it clearer and more effective, initiating major changes to setting priority systems on an annual or semi-annual basis will likely create confusion for potential borrowers and dissuade them from trying to adjust to changing priorities. Instead, whenever a major change is made to a priority system it is likely best that the effects of such a change are closely monitored and evaluated for several years before attempting any additional major changes.

One of the most effective ways to effectively communicate a state's unique wastewater infrastructure priorities is through its project priority system. States should present their priority system in a clear and readily understandable way and include it in their Intended Use Plan and marketing materials such as brochures. In several states, priority systems are only accessible through state code or regulations and in many cases can be difficult to find and understand. Unless state priorities are readily available and easy to understand, potential borrowers will have little incentive or ability to submit projects that meet these priorities. For example, states such as **Alabama** have a well organized, readily available, and easily understandable project priority setting system included in their pre-application form ensuring that

applicants are aware of the state's priorities before submitting a final funding application. By engaging potential borrowers with information on a state's priorities relating to sustainability, communities will have greater awareness of the benefits of sustainable practices and will have greater incentive to include design elements supporting sustainability knowing that they are more likely to receive financial assistance.

LOOKING FORWARD

As this Best Practices Guide illustrates, there are numerous examples policies and practices that state CWSRF programs are already implementing that follow the principles outlined in EPA's Clean Water and Drinking Water Infrastructure Sustainability Policy. EPA encourages states to explore these principles further and continue to work with local communities to ensure the long-term environmental and financial sustainability of their wastewater facilities and natural environments. Although the CWSRF program only encompasses a portion of the total funding for wastewater infrastructure, the inherent financial subsidy can be used as an effective mechanism for promoting activities such as asset management and water and energy efficiency that have an upfront cost, but achieve long-term savings. As state policies and practices continue to evolve, EPA will continue to provide a forum for states to share new ideas and work together to promote sustainable wastewater systems.

MATRIX OF PROJECT PRIORITY SYSTEM CRITERIA

Alternatives analysis including green infrastructure and decentralized options	Interagency cooperation between funding sources and with other infrastructure agencies	Capital Improvement Plans
<ul style="list-style-type: none"> ▪ Maryland has a cost efficiency criterion that calculates the cost of a project in comparison to either the pounds of nutrient reduction, number of households, drainage acres, or feet of stream or shoreline restoration (whichever is most applicable). While this calculation is done by the CWSRF and not the community, it can be used to ensure that the most cost-effective projects are funded. ▪ Indiana provides points to projects that have undergone a complete life-cycle cost analysis used in an alternative selection process. This provision incentivizes communities to consider alternative project options. ▪ Florida has a cost-to-benefit index provision that adjusts a project’s score based on the total cost of the project to its priority score (benefit). Vermont also has a similar provision. ▪ Mississippi has a cost efficiency category based on the number of residences served. 	<ul style="list-style-type: none"> ▪ Maine provides priority points to projects that utilize grant or loan money from other sources such as USDA, CDBG, or even the Maine Department of Transportation. ▪ Alaska and Maryland also have similar provisions. 	<ul style="list-style-type: none"> ▪ Idaho, Missouri, and Georgia provide priority points for the submission of a Capital Improvement Plan. ▪ Several states including Texas, Alabama, Kentucky, New Jersey, Utah, Tennessee, and Rhode Island provide priority points for a variety of facility plans, regional plans, watershed management plans, and growth plans. The submission of such plans demonstrates that the community has considered the broader effect of wastewater infrastructure.

MATRIX OF PROJECT PRIORITY SYSTEM CRITERIA

Prioritizing investments in existing communities	Encouraging sustainable growth
<ul style="list-style-type: none"> ▪ Alabama provides points to projects that do not contain a “significant growth component”. Growth is defined as new centralized treatment, new or expanded collection systems, treatment plant upgrades where the purpose is to increase the design flow, or any publicly owned treatment works project to serve future growth. There is a substantial number of points in this ranking category that significantly discourages growth-oriented projects. ▪ In South Carolina, if the majority of the cost for a proposed project is for growth, the project will not receive any priority points and will rank last in order of priority. The project will not be scored on any of the other criteria in the priority system. ▪ Texas provides priority points for projects serving an unserved area of an existing developed community. This is a way of encouraging the expansion of a system to serve infill development. ▪ Indiana provides a small number of points for rehabilitating a facility that was constructed over 20 years ago in comparison to newer facilities and provides fewer points to new interceptors than to other needs categories. ▪ New Jersey and Virginia both provide more points for system rehabilitation than for new systems. 	<ul style="list-style-type: none"> ▪ Maryland offers priority points to projects that provide for “sustainable development,” which refers to the growth in capacity or new development in a “sustainable community” (e.g. proximity to transit, brownfields, or Department of Housing and Community Development designated Community Legacy Area) ▪ New Jersey provides priority points to projects that serve municipalities designated by the State Planning Commission to encourage sustainable growth. These communities are generally urban centers or other areas of dense development. ▪ Connecticut provides a small number of points for projects located within a Development Designation Community in coordination with the Connecticut Housing Partnership Program. ▪ Utah provides priority points to projects serving a Quality Growth Community. A Quality Growth Community must enact plans and ordinances regarding planning and land use decisions and encouraging efficient use of infrastructure and water and energy resources. ▪ Ohio awards points to project applications that include a sustainable growth plan, provided that the project is located in an area covered by the plan, the plan identifies preferred development areas, any new growth is located in those development areas, and a variety of other criteria associated with sustainable growth principles are met. ▪ Rhode Island provides points to projects that prevent water pollution within a growth center.

MATRIX OF PROJECT PRIORITY SYSTEM CRITERIA

Brownfields redevelopment	Addressing the needs of disadvantaged communities	Open space preservation
<ul style="list-style-type: none"> ▪ Indiana provides priority points if a project involves the remediation or redevelopment of a brownfields site in conjunction with the Indiana Brownfields Program. This provision has the benefit of not only promoting brownfields remediation, but also promoting coordination between two different funding programs. ▪ New Mexico has a brownfields redevelopment component that considers both redevelopment potential and water quality preservation. Redevelopment potential is based on a number of factors, including whether or not there are potential investors, there is support from the municipality, and its location relative to transportation or commercial districts. ▪ Idaho provides priority points for a project that uses a brownfields site for facility construction 	<ul style="list-style-type: none"> ▪ Colorado provides priority points based on both a ratio of sewer cost per family and median household income (MHI) and a ratio of total project cost per tap. ▪ Idaho and New Hampshire both base economic hardship on the ratio of the monthly user charge to MHI, while Indiana uses a ratio of the annual wastewater user charge to MHI. Nebraska uses a similar but more incremental approach by taking a ratio of the annual loan costs per person to MHI. ▪ Illinois, Missouri, and New York all have economic hardship criteria based solely on MHI. 	<ul style="list-style-type: none"> ▪ Alabama provides priority points for projects that include components for open space preservation. ▪ Tennessee provides priority points for projects with zoning regulations that demonstrate preservation of green space.

MATRIX OF PROJECT PRIORITY SYSTEM CRITERIA

Water and energy efficiency	Ensuring adequate revenues	
<ul style="list-style-type: none"> ▪ Georgia provides priority system points for water and energy efficiency upgrades, including leak detection and metering, along with water reuse and recycling as part of separate green project ranking criteria. ▪ Massachusetts provides priority points for projects that include energy efficiency upgrades. However, if the upgrades were recommended by a third party audit, assessment, or feasibility study, more points are available. This type of policy provides an incentive not just to improve energy efficiency but also to ensure that upgrades are undertaken as part of a comprehensive energy audit. ▪ In addition to water reuse, Florida provides priority system points for residuals reuse. ▪ Many other states including Texas, New Hampshire, Montana, and Hawaii, provide some number of priority system points for energy or water efficiency. 	<ul style="list-style-type: none"> ▪ Florida provides priority system points for systems that have developed appropriate rate structures and pricing to build, operate, and maintain systems as well as for systems that have explicitly allocated funds for the rehabilitation or replacement of aging infrastructure. ▪ In addition to awarding points to sewer systems with a full-cost pricing user charge, Maryland also provides points to non-sewerage projects with a dedicated fee system. This goes beyond having a dedicated source of repayment for these projects to also having a revenue stream that can be used for maintenance and replacement. ▪ Missouri, Georgia, and Alabama also have provisions in their priority setting systems providing points to systems that utilize some form of full-cost pricing. 	
Asset management	Partnering or restructuring of operations	Technical, managerial, and financial capacity
<ul style="list-style-type: none"> ▪ Texas provides priority points for the inclusion of an asset management plan. However, the number of points awarded can vary based on the amount of information and level of detail included in the plan. ▪ Alabama, Georgia, Maryland, North Carolina, and Idaho all provide priority points for the submission of an asset management plan. 	<ul style="list-style-type: none"> ▪ South Carolina uses a sliding scale for awarding points for restructuring with points awarded for activities ranging from systems taking ownership of another to cooperative actions between systems. ▪ Kentucky provides priority points for the consolidation of wastewater systems as well as the consolidation of septic systems into clustered decentralized systems. ▪ Several states including Missouri, North Carolina, Indiana, and Georgia provide priority points for the regionalization or consolidation of system operations. 	<ul style="list-style-type: none"> ▪ Illinois has a rating category for operational excellence that awards points based on an evaluation of the operations of existing facilities.

TOOLS AND RESOURCES

- EPA, Clean Water State Revolving Fund Program – includes information on up to date program guidance and requirements, contact information, and other available resources
<http://www.epa.gov/cleanwatersrf>
- EPA, “Planning for Sustainability: A Handbook for Water and Wastewater Utilities”:
<http://water.epa.gov/infrastructure/sustain/upload/EPA-s-Planning-for-Sustainability-Handbook.pdf>
- EPA, Financing Alternatives Comparison Tool (FACT) – financial analysis tool to help compare the costs of various financing tools for infrastructure projects
http://water.epa.gov/grants_funding/cwsrf/fact.cfm
- EPA, Check Up Program for Small Systems (CUPSS) – asset management tool for small water and wastewater utilities for inventorying assets, maintenance, and associated costs:
<http://water.epa.gov/infrastructure/drinkingwater/pws/cupss/index.cfm>
- EPA, State Revolving Fund Financial Planning Model – tool for state Clean Water and Drinking Water SRF programs to plan future funding policies including bond issuances and additional subsidization
Available from EPA by request
- Center for Neighborhood Technologies (CNT), Green Values Stormwater Management Calculator – assesses cost-effectiveness and environmental benefits of green infrastructure options:
<http://logan.cnt.org/calculator/calculator.php>
- EPA, “Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities”:
<http://water.epa.gov/infrastructure/sustain/upload/Final-Energy-Management-Guidebook.pdf>
- EPA, Energy Use Assessment Tool for small and medium water and wastewater utilities – Allows a utility to conduct a utility bill analysis to assess baseline energy use and costs prior to a full-scale energy audit
Available from EPA by request – EnergyUseTool@epa.gov
- Energy Star/Portfolio Manager for water and wastewater utilities – tool for utility managers to manage energy use and cost to compare performance against similar facilities:
http://www.energystar.gov/index.cfm?c=water.wastewater_drinking_water
- EPA, “Asset Management: A Best Practices Guide”:
http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_assetmanagement_bestpractices.pdf
- EPA, “Asset Management: A Handbook for Small Water Systems”:
http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_asset_mgmnt.pdf
- EPA, “Setting Small Drinking Water Rates for a Sustainable Future – rate setting guide for small utilizes to assess annual costs, revenue needs, reserve requirements, and setting user rates:
http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_final_ratesetting_guide.pdf
- EPA Environmental Finance Center Network: <http://www.epa.gov/envirofinance/efcn.html>
- The following nonprofit organizations work closely with rural utilities on a variety of issues:
 - Rural Community Assistance Partnership: <http://www.rcap.org/>
 - Rural Community Assistance Corporation: <http://www.rcac.org/>
 - National Rural Water Association: <http://www.nrwa.org/>