

**New York
Clean Water State Revolving Fund
Sustainability Initiative**

**Advisory Group
Recommendations**

June 15, 2010



**Facilitated by New York State Environmental Facilities Corporation, as part of the
New York State Revolving Loan Fund Sustainability Initiative
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The Clean Water Collaborative State Revolving Fund Sustainability Initiative Advisory Group is making these recommendations to the New York State Department of Conservation and the New York State Environmental Facilities Corporation regarding the New York State Clean Water State Revolving Fund Program. This work is part of the New York State Revolving Fund Sustainability Initiative, a strategic planning effort to enhance the sustainability of New York's Clean Water State Revolving Fund. Members of the Clean Water Collaborative State Revolving Fund Sustainability Initiative Advisory Group include: Adrienne Esposito, Executive Director, Citizens Campaign For The Environment; Patricia Cerro-Rehill, Executive Director, New York Water Environment Association, Inc.; Erica Heintz, Executive Director, of the Legislative Commission on Rural Resources; Kathryn Garcia, Assistant Commissioner, New York City Department Environmental Protection; Dereth Glance, Executive Program Director, Citizens Campaign for The Environment; Alison Jenkins, Financial Policy Program Director, Environmental Advocates of New York; Robert Kukenberger, Vice President, CDM; Richard Lyons, Executive Director, Albany County Sewer District; Sean Mahar, Director of Government Relations and Communication, Audubon; John Mancini, Counsel, New York State Conference of Mayors; Deborah Peck Kelleher, Director of Environmental Policy, Senator Marcellino, New York State Senate; Carter Strickland, Jr., Deputy Commissioner of Sustainability, New York City, Department of Environmental Protection; and Tim Sweeney, Principal Analyst, the Legislative Commission on Rural Resources. Staff from the New York State Environmental Facilities Corporation, the New York State Department of Environmental Conservation, the New York State Energy Research and Development Corporation, New York State Department of Health and the New York State Department of State also contributed to the development of this report. Special thanks to Sara Pesek and Evan Newell from the Environmental Finance Center at Syracuse University who helped facilitate this effort.

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I. Introduction

These recommendations have been developed by an Advisory Group of the Clean Water Collaborative based on discussions between the Advisory Group and staff of the New York State Environmental Facilities Corporation (EFC) and the New York State Department of Environmental Conservation (DEC). The New York State Energy Research and Development Authority (NYSERDA) and the New York State Department of Health (DOH) participated. The New York State Department of State (DOS) also contributed to this effort. In addition, the United States Environmental Protection Agency (USEPA) has provided technical support through the Environmental Finance Center at Syracuse University (EFC/SU). Numerous interested parties were directly solicited for input.

The Clean Water Collaborative (the “Collaborative”) is presenting these recommendations to the EFC and DEC to serve as a roadmap for modification of New York’s Clean Water State Revolving Fund (CWSRF) in order to promote smart growth, increase energy efficiency, and support asset management while still maintaining the program’s focus on water quality. The Collaborative believes that these CWSRF program improvements are important incremental steps toward environmental and fiscal sustainability.

The Collaborative anticipates that EFC and DEC will work to incorporate these recommendations into the CWSRF Program. While the recommendations have been developed in close consultation with EFC and DEC staff, the Collaborative understands that in the course of working to implement these recommendations, closer scrutiny may find unforeseen resource requirements, possible undesired consequences, or unexpected legal constraints that may delay or preclude their implementation. It is anticipated that development of more detailed program modifications by EFC and DEC staff will begin early this summer. EFC and DEC have agreed to report at least twice a year to the Governor and the Collaborative on progress made with respect to the implementation of these recommendations. The first report will be due in September 2010. The Collaborative acknowledges that DOH has participated in this effort and is also considering potential revisions to the Drinking Water State Revolving Fund (DWSRF) program.

II. Background

In early 2008, DEC established the Clean and Safe Water Infrastructure Funding Initiative to focus attention on the need to direct resources to New York’s water and wastewater infrastructure. With the support of state fiscal year 07-08 budget funding, DEC produced a report Wastewater Infrastructure Needs of New York State that found “the conservative cost estimate of repairing, replacing and updating New York’s wastewater infrastructure is \$36.2 billion over the next 20 years.”^{1,2} Yet by 2008, annual federal funding to support this infrastructure had

¹ New York State Department of Environmental Conservation (DEC). 2008. *Wastewater Infrastructure Needs of New York State*, Albany, NY: DEC. Also available at http://www.dec.ny.gov/docs/water_pdf/infrastructurerpt.pdf (accessed May 2010).

dropped to \$700 million, just 30% of the \$1.35 billion appropriated in the Federal Fiscal Year (FFY) 2004 budget.³

In response, Governor Paterson formed the Clean Water Collaborative, a public-private partnership, to raise awareness of the issue.⁴ As a direct result of the Collaborative's efforts, New York received a record \$432 million to invest in wastewater infrastructure through the federal stimulus program (American Recovery and Reinvestment Act of 2009 or ARRA). In addition, the FFY 2010 appropriation for the nation's CWSRFs is \$2.1 billion. This represents a 200 percent increase in federal aid for wastewater projects from the FFY 2009 appropriation. This infusion of funding into the CWSRF is critical to New York's wastewater infrastructure, yet certainly more funding is still needed. The enormity of New York's needs also underscores the importance of more widespread and robust capital and asset management planning, so that in the future New York's wastewater infrastructure does not again return to the current level of disrepair.

The New York State Smart Growth Cabinet was established in 2007 and all state agencies were asked to identify programs that could be modified to promote smart growth.⁵ Governor Patterson also issued Executive Order 2 (EO-2) which focused on the need for energy efficiency and energy planning. EO-2 also directed all state agencies to cooperate on development of the State Energy Plan that was finalized in 2008. In response to both of these directives, DEC Commissioner Pete Grannis, who also serves as Chairman of the Board of EFC, asked staff from DEC, EFC, NYSERDA, and DOH to examine how both the Clean Water and Drinking Water SRFs might be modified to promote energy efficiency and smart growth.⁶ These fruitful discussions, summarized in "Promoting Smart Growth and Energy Efficiency through the State Revolving Funds,"⁷ resulted in certain immediate changes to the SRFs including support of smart growth principles and requiring energy efficiency features to be considered in design.⁸ The discussions prepared EFC for implementation of certain ARRA programs such as the green infrastructure program.

Based on this experience and the Collaborative's success in bringing much needed SRF funding to New York, Commissioner Grannis asked the Collaborative to take on the issue of policy improvements to the CWSRF focusing on smart growth, energy efficiency and asset management planning. In January 2010, EFC President Matthew Driscoll established the SRF Sustainability Initiative to facilitate input from the Collaborative as well as other interested

² New York State Department of Health (DOH) also completed a needs study that found that New York's Drinking Water Infrastructure will need \$38 billion over the next 20 years. See DOH, Drinking Water Infrastructure Needs of New York State, http://www.nyhealth.gov/environmental/water/drinking/infrastructure_needs.htm, DOH, (accessed May 2010).

³ DEC, 16.

⁴ New York State Environmental Facilities Corporation (EFC), Clean Water Collaborative, EFC, <http://www.nysefc.org/home/index.asp?page=1039>, (accessed May 2010).

⁵ New York State Department of State (DOS), "Smart Growth: Smart Growth History," DOS, <http://smartgrowthny.org/history.shtml>, (accessed May 2010).

⁶ DEC 2008 Press Releases, "Grannis Announces Initiative to Promote Smart Growth and Energy Efficiency Through Clean Water Funding Programs," <http://www.dec.ny.gov/press/43508.html> DEC, (accessed May 2010).

⁷ DEC and EFC. 2009. "Promoting Smart Growth and Energy Efficiency through the State Revolving Funds" http://www.nysefc.org/docs/smart_growth_draft_final_12-01-08.pdf, (accessed May 2010).

⁸ EFC. 2009. Final Intended Use Plan; Clean Water State Revolving Fund for Water Pollution Control Federal Fiscal Year 2009. Albany, NY: EFC. http://www.nysefc.org/docs/entire_cwsrf_2009_final_iup.pdf, (accessed May 2010). Also available in print.

parties and the public. In addition to the meetings of the CWC Advisory Group, sessions were held with the New York Water Environment Association (NYWEA), the NYS Association of Towns, the NYS Conference of Mayors (NYCOM), the New York Section of the American Water Works Association, and the USEPA as well as county representatives, local planning officials, business representatives, academics and environmental representatives. In addition, comments were solicited via website at SRFSustainability@nysefc.org.

In February 2010, USEPA named New York State as one of three states chosen as part of the CWSRF Pilot Program, a program that was borne out of the federal Sustainable Communities Partnership (also chosen were California and Maryland).^{9,10} Through this pilot program, USEPA provided funding for EFC/SU to provide technical assistance to the EFC by supporting the work of the SRF Sustainability Initiative. This assistance includes coordinating workshops and soliciting input as well as assisting EFC with collecting and compiling recommendations from many stakeholders involved in the Initiative.

Comments received indicated that stakeholders expect many changes in respect to how wastewater infrastructure is thought of, designed, regulated and financed over the next decade. There is a clear need for more integrated water resource management and planning, as well as for more integrated cross-discipline planning and regulation, yet the evolution to this new framework will take time.^{11, 12, 13} Changes to New York's CWSRF program must be iterative with ongoing assessment and modification.

Pursuant to the federal Clean Water Act, projects funded by the CWSRF must improve, maintain or protect water quality. New York's CWSRF program selects projects for funding by categorizing projects based on municipal size or type.¹⁴ Category A is for small municipalities (population of 3,500 or less); B for medium sized municipalities (population equal to 3,501 through 2 million); and C (population over 2 million) is for New York City.¹⁵ Category D includes hardship communities and Category E is for non-municipal projects. These projects are subject to a scoring system known as the Project Priority System (PPS). The PPS reflects a primary emphasis on water quality improvement and a secondary emphasis on water quality

⁹ United States Environmental Protection Agency (USEPA) News Releases By Date, February 5, 2010. "EPA Announces New Support for Sustainable Communities, new office, pilot programs to help communities minimize their environmental impact and increase economic opportunity" USEPA, <http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/24aa0923ea5b1f5f852576c1006cfc51!OpenDocument>, (accessed May 2010).

¹⁰ USEPA Smart Growth, "HUD-DOT- EPA Interagency Partnership for Sustainable Communities," USEPA, <http://www.epa.gov/dced/partnership/index.html>, (accessed May 2010).

¹¹ USEPA, "Coming Together for Clean Water Discussion Forum" Papers presented and discussion notes resulting from April 15, 2010 conference in Washington, D.C., <http://blog.epa.gov/waterforum/>, (accessed May 2010).

¹² Bolger, R., D. Monsma, R. Nelson. 2009. *Sustainable Water Systems: Step one redefining the nation's infrastructure challenge*. Washington, D.C.: The Aspen Institute. <http://www.aspeninstitute.org/publications/sustainable-water-systems-step-one-redefining-nations-infrastructure-challenge>, (accessed May 2010).

¹³ The Johnson Foundation and Water Environment Federation, "Considering the Clean Water Act: Conference Report," Conference at The Johnson Foundation at Wingspread, Racine, Washington, October 26-28, 2009, http://www.johnsonfdn.org/sites/default/files/conferences/whitepapers/10/03/10/Clean_Water_Act_3.02.10.web_.pdf, (accessed May 2010).

¹⁴ 6 NYCRR Part 649, http://www.nysefc.org/docs/6_nycrr_649_dec_cw_regs_final_eff_12_30_09.doc, (accessed May 2010).

¹⁵ Pursuant to 6 NYCRR 649.3 (c)(3), Category C includes municipalities where the population is identified as more than 2 million and this report does not support changing this category.

protection. The PPS also awards points based on other criteria such as conformance with management plans, requirement that the community undertake the project, and the financial need of the community.¹⁶ The projects are then listed in the Intended Use Plan (IUP) in the proper category and prioritized according to their scores to compete for funding in that category. Thus, changing the project ranking scoring system is a useful tool in supporting change.

Yet, New York's clean water program and the CWSRF have many other tools that can potentially be used to steer New York's wastewater infrastructure toward better sustainability ranging from education and outreach; to directing subsidy and better oversight; to ultimately requiring certain actions in order to either obtain funding or be permitted. The Advisory Group felt that, particularly in light of the present difficult economic climate in New York State for municipalities, initial steps should focus on tools that provide incentives and demonstrations rather than mandates. Early adopters should be encouraged by reward. It is hoped that these steps will help support and inform more specific requirements in the future. The Advisory Group also recognized the need to leverage and build upon components from other related programs as much as possible.

II. A. Smart Growth

The CWSRF can play an important role in supporting community development plans. The NYS Smart Growth Cabinet defines smart growth as:

“...sensible, planned, efficient growth that integrates economic development and job creation with community quality-of-life by preserving and enhancing the built and natural environments. Smart Growth encourages growth in developed areas with existing infrastructure to sustain it, particularly municipal centers, downtowns (“Main Streets”), urban cores, historic districts and older first-tier suburbs.”¹⁷

Planning is an important tool for protecting water resources. Smart growth policies can help minimize the impacts of development through a combination of tools including, but not limited to, development densities (based on local factors), incorporating adequate open space, preserving critical ecological and buffer areas, and minimizing land disturbance to protect water resources.¹⁸ Using these tools smart growth policies can help minimize the impacts of development by reducing impervious surfaces. When rain hits these impervious surfaces, pollutants on the ground are conveyed directly to waterbodies causing them to degrade and diverting groundwater from recharge areas. By reducing impervious surfaces such as streets, driveways and parking lots there are more areas where rain can percolate into the ground thereby reducing runoff and allowing for infiltration.

¹⁶ Note that Categories F for the linked deposit program and G for the Green Innovation Grant Program are selected differently. EFC. 2010. Final Intended Use Plan; Clean Water State Revolving Fund for Water Pollution Control Federal Fiscal Year 2010. Albany, NY: EFC http://www.nysefc.org/docs/cwsrf_2010_final_iup_-_entire_document_including_annual_multi-year_lists.pdf (accessed June 2010). Also available in print. IUP pp 4, 5, and 7.

¹⁷ DOS, “Smart Growth History.”

¹⁸ USEPA Office of Policy, Economics, and Innovation. 2006. *Protecting Water Resources with Higher Density Development*, Washington, D.C.: USEPA. http://www.epa.gov/dced/water_density.htm (accessed May 2010).

Green infrastructure and low-impact development practices which use natural systems to treat and convey water are increasingly being used to help communities improve their livability and protect water resources. Use of green infrastructure can enhance natural and built environments, preserve open space and improve a community's quality of life. Green infrastructure can be used to reduce the amount of paved surfaces and allow natural lands to filter rainwater and runoff and treat the rain where it falls. Where run-off is reduced or eliminated, run-off pollutant loads are also reduced or eliminated.¹⁹ In addition, green infrastructure can contribute to groundwater recharge to help restore and maintain base flow in local waterbodies.

Smart growth also directly affects infrastructure costs, including wastewater infrastructure. More compact development results in a smaller sewer system footprint and lower per capita costs. Growth and development that follow smart growth principles can reduce the cost of infrastructure over time by directing development into compact historic villages or city centers.²⁰ There can be significant cost savings realized through the use of green infrastructure.^{21,22} Not only can green infrastructure cost less over its lifetime it can provide ancillary benefits that also add economic value. Green infrastructure can provide valuable green spaces. For example, streetscapes with green horticultural elements improved property values in Philadelphia by up to 28%.²³

Some believe that green infrastructure is more visible to the public and can result in better appreciation of the value of water and the environment in a community. Some members of the Environmental Justice movement believe that green infrastructure can create local jobs to maintain green infrastructure areas. Several cities have recently created new job training programs focused on green infrastructure construction and maintenance.²⁴

Support of local government efficiency is also an important part of Smart Growth. By working to streamline government through consolidation and shared services, regional planning efforts are enhanced and costs reduced. Alternative and innovative administrative practices to provide wastewater services may provide more reliable and cost efficient solutions.²⁵ In order to affect development patterns it is necessary to tackle a wide variety of fiscal and social issues in addition to the CWSRF due to its limited funding and scope. This fact, and the nature of the smart growth issues, made this a challenging issue for the Advisory Group to address. Like New York, the USEPA is exploring how the SRF programs could or should be used to promote smart

¹⁹ USEPA Watershed Academy Modules: "Eight Tools of Watershed Protection in Developing Areas," USEPA, <http://www.epa.gov/watertrain/protection> (Section 2 of 19); and "Growth and Water Resources," <http://www.epa.gov/watertrain/smartgrowth/07set.htm>, (both accessed May 2010).

²⁰ USEPA Office of Wetlands, Oceans, and Watersheds. 2007. *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices*, Washington, D.C.: USEPA. <http://www.epa.gov/owow/nps/lid/costs07/>.

²¹ Center for Neighborhood Technology (CNT). Green Values Calculator. CNT. <http://logan.cnt.org/calculator/calculator.php>, (accessed May 2010).

²² Water Environment Research Foundation (WERF). 2009. *User's Guide to the BMP and LID Whole Life Cost Models*. United States: WERF. www.werf.org/Content/ContentFolders/ReportPDFs/SW/SW2R08.pdf, (accessed May 2010).

²³ Wachter, Susan, Kevin C. Gillen, and Carolyn R. Brown. 2008. "A Positive Force in Cities Green; Investment Strategies" in "Communities and Banking", Federal Reserve Bank of Boston, Spring 2008. <http://www.community-wealth.org/pdfs/news/recent-articles/04-08/article-wachter-et-al.pdf>, (accessed May 2010).

²⁴ The Council for Adult & Experiential Learning (CAEL). Profiles of Green Job Initiatives. CAEL. <http://www.cael.org/pdf/GreenJobInitiativesinOtherCities.pdf>, (accessed May 2010).

²⁵ For more information, contact DOS Division of Local Government Services, Local Government Efficiency Program. Information about sharing government services and grant applications are available online at <http://www.dos.state.ny.us/lgss/shareservices/index.html>, (accessed May 2010).

growth.²⁶ In the future, EPA is expected to provide a better understanding, as well as clearer guidance or specific requirements, as to how the CWSRF program can promote smart growth.

II. B. Reduce Energy Use

In wastewater treatment plants across the country electricity is the second largest operational cost making up anywhere from 25 to 40 percent of their total operating budget. Municipal wastewater treatment plants spend more than \$6.5 billion for electricity each year.^{27, 28} Additional demand for electricity at these plants is expected to increase by 20 percent over the next 15 years, especially as more energy demanding technologies are needed for nutrient removal systems and other advanced treatment technologies.^{29, 30} Reducing energy use at these facilities by using energy-saving technologies, as well as producing energy onsite, has the potential to greatly reduce operational costs, freeing those funds to cover other costs, repairs and upgrades. It also can help support climate change mitigation efforts by reducing the carbon footprint of these highly energy-intensive facilities.

Working with NYSERDA, EFC has already begun promoting the use of “FlexTech”³¹ energy assessments of facilities that are posed to receive funding from the CWSRF to help municipalities find energy saving opportunities. Thanks to additional funding from the Regional Green House Gas Initiative (RGGI) the full cost of these assessments has been covered by NYSERDA. In addition, in response to the Green Reserve provisions of American Recovery and Reinvestment Act of 2009 (ARRA), EFC has provided funding subsidy via principal forgiveness to cover some energy savings components of projects receiving funding. With the use of ARRA funding, EFC established the Green Innovation Grant Program (GIGP) that also provided grants for energy saving projects.³²

This year EFC plans to take these efforts further by providing additional subsidy for communities that adopt the recommendations of these assessments. In addition, there will be another round of GIGP funding and it is anticipated that some of it will be available for energy projects. Some have argued that these energy projects should not receive preferred assistance from the CWSRF, as they can receive support from other funding sources and are expected to provide a cost savings in a short time frame. However, the Advisory Group felt that there is still a need to support these efforts at this time. They believe that engineering standards are likely to require more energy efficient technologies in the future. In light of this, provisions could be adopted that would recommend that when a municipality realizes savings from energy efficiency

²⁶ USEPA Smart Growth, “HUD-DOT- EPA Interagency Partnership for Sustainable Communities.”

²⁷ EPRI. *Water and Wastewater Industries: Characteristics and Energy Management Opportunities*. Palo Alto, CA: EPRI, 1996. Report CR-106941.

²⁸ Alliance to Save Energy. *Watergy: Taking Advantage of Untapped Energy and Water Efficiency Opportunities in Municipal Water Systems*. Washington D.C.: Alliance to Save Energy, 2002.

http://ase.org/uploaded_files/watergy/watergysummary.pdf (accessed June 2010).

²⁹ DEC, *Wastewater Infrastructure Needs of New York State*, Page 35.

³⁰ EPRI. *Energy Audit Manual for Water/Wastewater Facilities*. Palo Alto, California: EPRI, 1994.

<http://www.cce1.org/ind/mot-sys/ww/epri-audit.pdf> (accessed June 2010).

³¹ New York State Energy Research and Development Authority (NYSERDA), “FlexTech Program,”

<http://www.nyserda.org/programs/flextech.asp>, (accessed May 2010).

³² EFC, “Green Innovations Grant Program” <http://www.nysefc.org/home/index.asp?page=687>, (accessed May 2010).

components that were paid for through a grant that those savings be reinvested into its budget or reserve fund for its wastewater treatment system.

II.C. Asset Management

One significant factor that has contributed to the present state of disrepair of New York's wastewater infrastructure is the failure of some communities to plan for the repair and replacement of their wastewater treatment infrastructure. In fact, only 40% of municipal wastewater treatment facilities in New York have developed capital improvement plans, an important component of an asset management plan. This issue is also underscored by a recent report from the NYS Office of the State Comptroller, "Cracks in the Foundation: Local Government Infrastructure and Capital Planning Needs" which found that New York's communities have been underfunding their capital needs over the last several decades.³³ Nationally, the General Accounting Office reported that revenue from user rates for 41% of municipal wastewater systems did not cover the full cost of wastewater service.³⁴ Recently, there have been efforts by USEPA, DEC, EFC and NYWEA to support the use of asset management plans. USEPA is presently developing better guidance on sustainable facility planning, and has convened a work group to promote more widespread understanding of asset management throughout all of USEPA's headquarters and regional staff. DEC has also been promoting the use of asset management and has begun to require asset management plans in certain enforcement cases. NYWEA has an asset management training program for local government officials and is actively promoting tools and case studies to support local officials as they move towards developing their own asset management plans. EFC is looking at existing requirements in its loan documents to see if these tools could help support this effort. NYCOM and other municipal groups regularly hold workshops on capital planning and asset management.

Asset Management is defined as managing infrastructure capital assets to minimize the total cost of owning and operating facilities, while delivering the service levels that customers desire. It is used to improve operational, environmental, and financial performance. An asset management plan is made up of (1) an inventory of assets, (2) an assessment of the criticality and condition of the assets, (3) the prioritization of capital projects needed, (4) the development of a capital improvement plan, and (5) the establishment of a budget that includes debt service, annual operation and maintenance costs, plus a reserve fund for capital reserve funds. The plan should also include the development of a public education plan.

There are many benefits to asset management planning. It can extend the longevity of a wastewater treatment plant as it supports the full service life of the equipment, which unfortunately is often substantially reduced due to the failure to perform necessary preventative maintenance. The process of developing an asset management plan can also determine and explain the full cost of a municipality's wastewater treatment that can be used as the foundation

³³ New York State Office of the Comptroller (OSC) Division of Local Government and School Accountability. 2009. *Cracks in the Foundation: Local Government Infrastructure and Capital Planning Needs*. Albany, NY: OSC. <http://www.osc.state.ny.us/localgov/pubs/research/capitalplanning.pdf>, (accessed May 2010).

³⁴ United States General Accounting Office (GAO). *Report to the Ranking Minority Member, Committee on Environment and Public Works, U. S. Senate. 2002. Water Infrastructure Comprehensive Asset Management Has Potential to Help Utilities Better Identify Needs and Plan Future Investments*. GAO-04-461. <http://www.gao.gov/new.items/d04461.pdf> (accessed May 2010).

for eligibility for a hardship loan or grant. Proper planning also helps moderate overall treatment plant capital and operating costs and can create more public awareness of the true cost of this infrastructure. It supports the establishment of capital reserve and maintenance reserve funds, ultimately reducing the need for financing in the future.³⁵ These benefits are also strengthened by the fact that when systems are being managed in an emergency or reactive maintenance environment costs are three to four times more expensive than by properly planned asset replacement and capital improvement planning.³⁶ Through asset management, a facility can be more environmentally protective as it can improve its ability to meet regulatory requirements by reducing infiltration and inflow and minimizing equipment failures that may result in separate sewer overflows.^{37, 38}

III. Recommendations

III.A. Recommendations for Smart Growth

The CWSRF should support well-planned and efficient land use development patterns.

1. Improve Outreach and Technical Assistance

As the importance of the relationship between community development and water quality protection becomes better understood this information needs to be better disseminated to local public officials, their advisors and community members. Guidance is needed about how to determine the true, long-term costs and obligations of infrastructure and how to review alternative types of infrastructure and approaches to its management. It is necessary to have technical assistance and information that is geared to local officials especially as new innovations such as the use of green infrastructure are considered. While the member agencies of the Smart Growth Cabinet have developed some materials/guidance, this communication and education effort needs to be enhanced specifically for CWSRF projects. For instance, DOS's recent local government efficiency grant program has funded studies of local government efforts regarding wastewater projects.³⁹

Recommendations:

- Provide more user-friendly guidance and information about how to determine the true initial and long-term costs and obligations of infrastructure and how to review alternative types of infrastructure and management approaches.
- Provide more user-friendly information to municipalities about the links between community development, land use patterns, and water quality protection, including

³⁵ USEPA Office of Wastewater Management, "About Asset Management," USEPA, <http://www.epa.gov/owm/assetmanage/>.

³⁶ Goldwater, David, 2010. "An Important Tool for Asset Management." *Utility Infrastructure Management: Journal of Finance and Management for Water and Wastewater Professional.*, <http://www.uimonline.com/index/webapp-stories-action?id=378>, (accessed May 2010).

³⁷ GAO, page 58.

³⁸ USEPA *Asset Management: A Handbook for Small Water Systems.* http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_asset_mgmnt.pdf (accessed June 2010).

³⁹ DOS Division of Local Government Services. 2009. *Local Government Efficiency Program Annual Report 2008-2009.* DOS. http://www.dos.state.ny.us/lgss/pdfs/lge_annrpt08.pdf. (accessed May 2010).

examples of planning approaches that encourage growth patterns that protect water quality.

- Support efforts to protect open space that provide water quality protection including financing acquisition of land and conservation easements in accordance with CWSRF policies.
- Provide information, outreach and technical assistance regarding green infrastructure and decentralized systems.
- Compile information regarding lessons learned through DOS's local government efficiency grant program.

2. Model Smart Growth Using Pilot Programs

Some communities in New York may not have comprehensive land use planning processes and, for those that do, there is often no link between the land use plan and water quality protection and planning. Ideally, any project using CWSRF financing would be consistent with the community's up-to-date land use plan. With this in mind, the Advisory Group believes that it would be helpful for communities to have some initial funding to do integrated planning before they apply for CWSRF funding. In practice, this could mean that applications that have undergone, or are consistent with, community planning goals could be funneled for consideration to the CWSRF. This initial funding would also help communities that cannot afford to pay for up front planning and engineering prior to completing a CWSRF application.

Recommendations:

- Monitor pilot local, state and federal sustainable planning efforts for applicability with SRF.
- Develop a pilot grant program using non-SRF funds to provide system-wide assessments and to support linkage to overall community planning and local government efficiency considerations.
- For projects that involve new infrastructure, prioritize projects that are consistent with smart growth principles.⁴⁰

3. Use CWSRF Scoring as a Tool to Achieve Smart Growth

There was concern that some proposed projects, specifically those that include new sewer collectors, might not merit priority for funding on their own and that the SRFs may inappropriately support sprawl. In response, EFC amended its program to score new sewer collectors separately in its 2009 CWSRF IUP. The Advisory Group supported this approach.

Recommendation:

- Continue to score new infrastructure such as sewer collector projects as separate, independent projects.

⁴⁰ Note that projects that are needed to address an identified water quality impairment should also remain a priority.

4. Renewing Communities

A fundamental element of smart growth is to encourage growth in developed areas with existing infrastructure to sustain it, also referred to as “in-fill” development. With respect to water infrastructure financing, one technique for encouraging in-fill development is to direct funding to repair and replace existing infrastructure, rather than toward constructing new infrastructure. The Advisory Group supports this in concept with a number of additional considerations. First, there are existing developed areas that do not have sewers or public treatment systems even though they have septic systems that need to be repaired or replaced. The Advisory Group felt that projects to redress these septic systems should be supported also. Second, there was a concern that by focusing on fixing and replacing existing infrastructure, it could result in the use of the same type of infrastructure as that which already exists (i.e., gray), and failure to consider the usefulness and effectiveness of using of green infrastructure in appropriate applications. Thus, key to this recommendation is that it should also support the use of innovative approaches such as decentralized systems and green infrastructure to replace existing infrastructure.

Finally, a concern was expressed that infrastructure work in existing developed areas might cost more than in undeveloped areas due to more complex, tighter work spaces. The Advisory Group believes an approach that focuses on community renewal will control costs in the long run by containing the amount of infrastructure that must be maintained. Likewise, new green infrastructure methods will reduce costs and support other community objectives.

Recommendations:

- Direct funding to repair, fix, replace and update existing infrastructure. Encourage financing of infrastructure for in-fill development and redevelopment in existing communities. Existing developed areas that do not yet have sewers or public treatment systems should also receive funding to address inadequate septic systems.
- Use subsidy to help promote the use of innovative infrastructure approaches to fix water quality problems in existing communities such as using decentralized systems managed by one entity, pursuing local government efficiencies, or by using green infrastructure.
- Recognize that larger cities may need different solutions than smaller communities.
- Continue efforts to secure funding for hardship communities.⁴¹

5. Regionalization without Sprawl

The Advisory Group noted that there are local government efficiency efforts that can provide fiscal and operational benefits. In some areas providing regionalized wastewater collection services can be beneficial, especially when an adjacent facility has excess capacity.

⁴¹ EFC offers a long term financing program with a greater interest rate subsidy for hardship communities. EFC. 2010. Final Intended Use Plan; Clean Water State Revolving Fund for Water Pollution Control Federal Fiscal Year 2010. Albany, NY: EFC http://www.nysefc.org/docs/cwsrf_2010_final_iup_-_entire_document_including_annual_multi-year_lists.pdf p. 13. (accessed June 2010). Also available in print. In addition, EFC’s draft IUP amendment if adopted will provide additional subsidization for projects in distressed communities which are communities where the MHI equal to or below the statewide average. Intended Use Plan; Clean Water State Revolving Fund for Water Pollution Control Federal Fiscal Year 2010 Amendment No. 1 Revised Draft April 2010. Albany, NY: EFC. http://www.nysefc.org/home/index.asp?page=12&dc_id=128. p. 4. (accessed June 2010).

Yet, care needs to be taken to assure that such actions do not encourage sprawl development. Alternative models where services are shared by local governments rather than actual sewers may be beneficial, especially to smaller communities.

Recommendations:

- Provide technical assistance to local governments so they can better analyze options for local government efficiencies and cooperation among municipalities.
- Provide additional priority or subsidy to projects that support local government efficiency.
- Direct technical assistance to communities regarding local government efficiencies and the use of innovative methods, including green infrastructure and decentralized systems.⁴²

6. Support Efficient Water Resource Management

While New York is fortunate to have significant water resources there are portions of the state that already face shortages. National predictions indicate that increasingly frequent water shortages are expected in the relatively near future.⁴³ The Advisory Group recognized that not only is efficient water resource management needed to prevent future shortages but that it also can reduce the need for, and cost of, wastewater infrastructure and energy use. Water conservation, including reduction of quantity used, water harvesting, and reuse (such as gray water systems) reduces the amount of wastewater that needs to be treated and discharged and released to lakes and streams, thus reducing the size of facilities needed to treat it.⁴⁴

Recommendations:

- Encourage the review of water usage patterns and projections at wastewater treatment plants and collection systems, including analyses of infiltration and inflow.
- Promote safe and energy efficient water reuse applications and remove unneeded barriers to its broader application.
- Continue support of USEPA's WaterSense® program and tools.

⁴² The intent of this reference to decentralized systems is limited to municipal wastewater, particularly the use alternative ways to address failing septic systems.

⁴³ CBS Evening News, *America's Dwindling Water Supply*, first published January 8, 2010. <http://www.cbsnews.com/stories/2010/01/08/eveningnews/main6073416.shtml>, (accessed May 2010).

⁴⁴ The State Legislature enacted the Water Efficiency and Reuse Law of 2005 (Chapter 619 of the Laws of 2005) requiring DEC to study the potential uses of greywater and treated municipal wastewater in New York State. DEC has completed a report of the study which contains recommendations for developing guidance for greywater and treated municipal wastewater reuse. DEC expects the report to be published in the summer of 2010.

III. B. Recommendations for Energy Use

The CWSRF should support energy conservation in CWSRF eligible projects.

1. Effective Energy Management

There are many ways to more effectively manage energy in wastewater infrastructure. Doing so has the potential to reduce ongoing operational costs significantly and increase the use of renewable energy. EFC and NYSERDA have begun to promote more efficient technologies and equipment.

Recommendation:

- Promote effective energy management at wastewater facilities.

2. Engineering Standards and Engineering Review of Projects

Engineering projects are required to meet widely accepted engineering practices. Typically, wastewater projects in New York meet the Great Lakes – Upper Mississippi River Board’s (GLUMRB) “Ten States Standards” or New England Interstate Water Pollution Control Commission (NEWIPCC) “TR -16 Guides.”^{45, 46} These standards should be updated to set more energy efficient practices. Beginning in 2008, EFC asked that applicants to the SRF include information on energy efficiency measures that were considered in project design.

Recommendations:

- Work with GLUMRB and NEWIPCC or others to develop and incorporate energy efficiency elements into the standards for wastewater treatment facilities and consider the need to factor energy use in other engineering standards.
- Consider energy consumption and peak demand in the engineering review of projects, and explore ways to encourage project design that considers energy efficiency.

⁴⁵ Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Manager (GLUMRB) <http://10statesstandards.com/waterstandards.html> , (accessed May 2010). The regulations for the Clean Water State Revolving Fund [(CWSRF) EFC 21 NYCRR 2602 Final Regulations - Effective 12-30-09 and CWSRF DEC 6 NYCRR 649 Final Regulations - Effective 12-30-09 http://www.nysefc.org/home/index.asp?page=12&dc_id=388 , (accessed May 2010)] require recipients to ensure all projects fulfill applicable requirements including 6 NYCRR Part 750 State Pollution Discharge Elimination System (SPDES) Permits, effective May 11, 2003, DEC, which accepts the Ten States Standards as guidance for design.

⁴⁶ NEWIPCC. *TR-16 Guides for the Design of Wastewater Treatment Works 1998 Edition*. Lowell, MA: NEWIPCC.

3. Energy Efficiency Evaluations

EFC is currently working with NYSERDA to identify opportunities for energy efficiency and/or energy generation at CWSRF financed facilities. EFC has partnered with NYSERDA to assist municipal applicants to perform energy evaluations of their proposed water quality projects regarding energy efficiency, onsite generation, or other energy savings aspects of the project.

Recommendations:

- Continue to work in concert with NYSERDA to provide energy efficiency evaluations for CWSRF projects and partner with other energy advisors in similar arrangements towards the goal of achieving optimal energy efficiency.
- Provide incentives to projects that adopt the recommendations in the energy evaluations.

4. Spur Innovation

The Advisory Group felt that there are still more innovation opportunities to increase energy efficiency in wastewater infrastructure, further reducing operational costs.

Recommendations:

- Promote further innovation of energy saving technologies, especially for new treatment processes needed to meet current and future water quality requirements.⁴⁷
- Support the development of a public repository to post lessons learned from the use of innovative energy technologies for CWSRF projects and recognize the use of successful innovations.
- Further investigate and support ways to spur private investment in innovation.

5. Renewable Energy

The Advisory Group believes that information about the potential for use of renewable energy at CWSRF eligible projects is not widely known. Municipalities require more information with regard to safe and clean technology for using renewable energy at wastewater infrastructure and how to cost-effectively meet multimedia environmental protection requirements.

Recommendations:

- Promote the use of renewable energy at CWSRF projects through education and work to identify and reduce barriers to the use of renewable energy.
- Promote use of methods to reduce greenhouse gas impacts of wastewater treatment.

⁴⁷ In addition to other 2010 SRF financing options, the CWSRF Innovative Technology Demonstration Program (ITD) may provide interest free loans to finance innovative projects. For more information, see <http://www.nysefc.org/home/index.asp?page=753>.

III. C. Recommendations to Support Proper Asset Management

The CWSRF should encourage good long-term planning to maintain infrastructure quality.

1. Fairness

The Advisory Group was concerned that there are municipalities who could, but failed to, properly maintain their wastewater facilities. These municipalities then have compliance problems at their plants which may, in turn, create a disproportionate burden on the available funding for wastewater treatment infrastructure. In addition, they believe that the current project prioritization system has the potential to reward these poorly maintained facilities over the support for municipalities who have taken a more responsible, proactive approach to maintenance, repair and replacement. The Advisory Group felt that this could ultimately become a negative incentive to proper care of these facilities. Notwithstanding this concern, the Advisory Group did believe that a project's water quality benefit remained the most important priority for funding and thus projects that are now causing significant water quality threats due to lack of maintenance should not be penalized at this point. The Advisory Group also noted that because consent orders are sometimes used to implement new more strict requirements on a facility, the mere existence of an order with DEC did not necessarily mean that a municipality was not being proactive. Further investigation revealed that while some municipalities have orders to transition them to new, more stringent requirements, most recent orders are to address permit violations.⁴⁸

In sum, the Advisory Group recognizes that the challenge in CWSRF implementation is to balance the primary water quality goal with encouraging good long-term asset management.

Recommendations:

- Support asset management planning through education and distribution of model plans.
- Provide technical and financial assistance to disadvantaged communities to develop and use asset management plans.
- Coordinate with the New York State Office of Comptroller to explain the need for local capital planning and provide information regarding how to establish reserve accounts under state law.
- Provide incentives for communities to adopt and use asset management plans.

2. Potential for Future Asset Management Requirements

Generally, the Advisory Group supported the use of incentives over requirements. However, they noted that asset management is the key to the long-term sustainability of wastewater facilities, and they seemed inclined to adopt requirements in this category after a period of aggressively incentivizing its use. They agreed that by supporting long-term proactive

⁴⁸ Most recent municipal consent orders are issued for the purpose of addressing violations. Since 2007, at least 41 out of the 68 consent orders issued resulted from violations of effluent standards. However, at least 8 consent orders issued for the purpose of meeting new nitrogen requirements. E-mail message from Koon Tang, DEC Division of Water to Sandra Allen, EFC Policy and Planning, April 5, 2010.

management and cost containment, asset management planning will likely result in better growth planning as well as reduced energy and water use.

Recommendations:

- Consider making asset management planning a requirement to receive funding from the CWSRF and/or a SPDES permit requirement in the future.
- Investigate ways for communities to include smart growth and energy efficiency in their asset management planning.

3. Transition to Sustainability

There was some discussion about establishing dual-priority ranking systems so that a separate source of funding would be available to support proactive municipalities and for newer types of projects. The Advisory Group was not inclined to adopt this approach at this time. They felt that proactive projects would benefit from new CWSRF incentives.

Recommendation:

- Consider transitioning over a period of time to providing less attractive funding, such as higher interest rates, to municipalities who fail to maintain wastewater infrastructure yet recognize that some distressed communities face severe hardships that will force them to seek continuing assistance.

4. Need for Properly Trained Operators

There is a shortage of properly trained wastewater treatment plant operators.⁴⁹ The Advisory Group believes that trained personnel are critical to ongoing asset management. Although operator training is not a direct function of the CWSRF, the shortage impacts CWSRF-financed facilities that risk being improperly run and maintained.

Recommendation:

- EFC and DEC as well as professional and municipal organizations such as NYWEA and NYCOM should continue to develop programs to attract a diverse pool of candidates for training and employment and to support continued training.

5. Climate Change

This year, New York State is developing a Climate Action Plan (under Executive Order 24⁵⁰) as well as a Sea Level Rise Report that is required by statute.⁵¹ It is expected that both of

⁴⁹ Water Environment Federation (WEF). 2008. *Task Force on Workforce Sustainability Final Report*. WEF. <http://www.wef.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=3616>, (accessed May 2010).

⁵⁰ Governor David Paterson, Executive Order Number 24, "Establishing A Goal To Reduce Greenhouse Gas Emissions Eighty Percent By The Year 2050 And Preparing A Climate Action Plan," Office of the Governor, http://www.state.ny.us/governor/executive_orders/xeorders/eo_24.html (accessed June 2010).

these reports will find that significant reductions in energy use at wastewater treatment facilities are needed to mitigate climate change and that adaptation measures will be needed to protect our valuable wastewater infrastructure. The location and effectiveness of wastewater infrastructure will also likely be impacted.

Recommendation:

- Upon the completion of the Climate Action Plan and the Sea Level Rise Report, consider whether projects should evaluate the need for adaptation measures and require those measures except in extenuating circumstances.

IV. Other Considerations

IV. A. Federal Changes

Nationally, CWSRF requirements have been changed in ARRA and the FFY2010 appropriation to require that funding be set aside to support green infrastructure, energy and water conservation and innovation.⁵² As noted above, EPA has begun to look at ways to make the SRF programs more sustainable and is exploring ways to incorporate and encourage smart growth and sustainability into all of its media areas. In addition, the US House has passed a CWSRF reauthorization bill and a similar bill has passed out of committee in the US Senate. Both of these bills include sustainability provisions. Any changes adopted under these federal actions will impact New York's CWSRF program.

IV. B. Future Water Resource Management

The future of water resource management will likely require a more holistic approach to how we deal with drinking water, wastewater and stormwater runoff.⁵³ However, water is regulated through a patchwork of federal and state laws, notably the Clean Water and Safe Drinking Water Acts (CWA and SDWA, respectively). Thus, the CWSRF and the DWSRF are subject to separate requirements. The newer focus under the CWA of stormwater and non-point source control has added even more pressure on the CWSRF. Stormwater and non-point source control is costly.⁵⁴ The Acts also require different regulatory approaches that do not fit well in the existing permitting focused manner regulating wastewater treatment facilities. This will likely force more changes to the Acts as well as to the SRFs in the future. Many believe that changes are needed to promote more watershed, ecosystem and regional management. Funding will be needed to support these changes.

⁵¹ DEC Sea Level Rise Task Force. DEC, <http://www.dec.ny.gov/energy/45202.html>, (accessed May 2010).

⁵² USEPA, "EPA Information Related to the American Recovery and Reinvestment Act of 2009 (Recovery Act)" / Documents/ http://www.epa.gov/water/eparecovery/docs/STIMULUS_Guidance_Green_Reserve.pdf, (accessed May 2010).

⁵³ Governor Paterson has proposed a bill that would provide significant enhancements to New York State's water resource management. This bill was introduced in the Senate S6335 and the Assembly A11436.

⁵⁴ USEPA. 2008. *Clean Watersheds Needs Survey 2004 Report to Congress*. Washington, D.C.: USEPA. <http://www.epa.gov/owm/mtb/cwns/2004rtc/toc.htm>, (accessed May 2010).

Much more consideration about these changes and their impact on the CWSRF will be needed in the future. The types of projects funded by the SRFs could change to support more green infrastructure and the use of other natural system designs, such as constructed wetlands at water treatment facilities. How project priority is determined could also become more water basin specific. One possibility that was mentioned was that New York could create regional SRFs in the future.

In addition to the need to better integrate across water disciplines there is also pressure to better understand and support environmental protection across media. For instance, Clean Air Act requirements may unnecessarily limit the reuse of digester gas.⁵⁵ This issue needs to be further investigated. In addition, federal and state regulation may unintentionally stifle local innovation and planning efforts. Finally, better understanding about the relationship between water treatment requirements and carbon will be needed in the future. Identification and dialogue about these areas should be ongoing.

V. Conclusion

The CWSRF can be used to support smart growth principles, reduce energy use and promote the use of asset management. Yet, the CWSRF provides only a portion of the funding needed for New York State's wastewater infrastructure. For instance, a total of \$1.4 billion was available for projects in 2009, yet there were \$11 billion in project funding requests. The CWSRF program can influence overall wastewater infrastructure planning, efficiencies and design in New York but it cannot direct these efforts for projects it does not fund. Thus, it is a helpful tool to support these efforts that should be part of an integrated approach, leveraging off of other state and federal efforts.

The recommendations contained in this report recognize the importance of both the CWSRF as well as the need for it to support related efforts. The Advisory Group supports continued efforts by the Clean Water Collaborative to enhance and sustain the funding available for this vital infrastructure and expects that DEC and EFC will continue to work with EPA, other state agencies, municipalities and stakeholders to continue to improve the CWSRF program and ultimately protect New York's precious waters.

⁵⁵ The Water Environment Research Foundation (WERF) has issued RFP OWSO11C10 titled "Barriers to Biogas Utilization for Renewable Energy" for research to identify and evaluate the barriers to the generation of heat and power from biogas. Proposals are due June 7, 2010.

Attachment A: Terms and Acronyms

Advisory Group	Clean Water Collaborative members involved in recommendations to the CWSRF
ARRA	American Recovery and Reinvestment Act of 2009
CAA	Clean Air Act
CWA	Clean Water Act
CWC	Clean Water Collaborative
CWSRF	Clean Water State Revolving Fund
DEC	New York State Department of Environmental Conservation
DOH	New York State Department of Health
DOS	New York State Department of State
DWSRF	Drinking Water State Revolving Fund
EFC	New York State Environmental Facilities Corporation
EFC/SU	Environmental Finance Center at Syracuse University
FFY	Federal Fiscal Year. The SRFs report based upon the FFY.
Flex Tech	energy evaluation program administered by NYSERDA
GIGP	Green Innovation Grant Program (program of the NYS CWSRF)
GLUMRB	Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Manager (GLUMRB)
IUP	Intended Use Plan, required for listing projects for consideration of funding through the Clean Water and Drinking Water SRFs
NYSERDA	New York State Energy Research and Development Authority
NYWEA	New York Water Environment Association
OSC	New York State Office of the Comptroller
PPS	Project Priority System
RGGI	Regional Greenhouse Gas Initiative
SDWA	Safe Drinking Water Act
SPDES	State Pollution Elimination Discharge System
SRF	State Revolving Fund; includes Clean Water and Drinking Water
Ten States Standards	The design standards for wastewater treatment facilities set by the ten states and provinces in GLURMB http://10statesstandards.com/waterstandards.html . These standards are required by NYSDEC permitting process and by the CWSRF regulations
the Collaborative	Clean Water Collaborative
USEPA	United States Environmental Protection Agency
WaterSense®	USEPA program to certify water saving products and promote their use through partnerships