

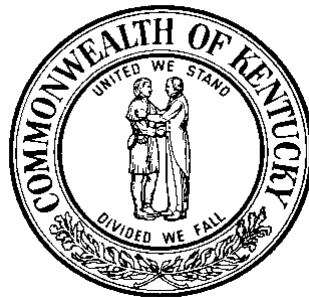
INTENDED USE PLAN

Draft

DRINKING WATER STATE REVOLVING FUND

State Fiscal Year 2018

COMMONWEALTH OF KENTUCKY



PREPARED BY THE

KENTUCKY INFRASTRUCTURE AUTHORITY

&

ENERGY AND ENVIRONMENT CABINET

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INTRODUCTION

The Intended Use Plan (IUP) is a document the Kentucky Infrastructure Authority (KIA) prepares for the U.S. Environmental Protection Agency (EPA) and others interested in Kentucky's Drinking Water State Revolving Fund Program (DWSRF, the Fund). The IUP is prepared in accordance with the provisions of the Safe Drinking Water Act (SDWA) Amendments of 1996 and P.L. 113-76, and the Consolidated and Further Continuing Appropriations Act 2017 (April 28, 2017). The purpose of the IUP is to communicate Kentucky's DWSRF plan for state fiscal year 2018 to potential borrowers from the Fund, the state's public water systems (PWSs), the public, the Environmental Protection Agency (EPA), and other interested parties. The IUP also includes the Priority System Guidance Document, which is the set of criteria used to score and rank projects.

An annual Intended Use Plan is required by Section 1452 of the SDWA and is an integral part of the process to request the Federal Fiscal Year (FFY) 2017 Capitalization Grant. The IUP will identify how the funds available to Kentucky's DWSRF will be used during each state fiscal year (SFY) to support the goals of the DWSRF. The 2018 IUP includes:

1. A description of the short and long term goals of the Fund;
2. The criteria and methods established for ranking projects;
3. Administration and operation policies of the Fund including set-aside activities;
4. The public participation process;
5. The sources and uses of available funds; and,
6. The Project Priority List - a list of eligible projects whose sponsors expressed interest in low interest rate loans from the DWSRF.

What is the Drinking Water State Revolving Fund?

The DWSRF is a national program by which EPA provides grants to states to further the goals of the SDWA. The national DWSRF originated in 1996, as recognition of SDWA compliance costs led to support for a DWSRF program. The EPA implements the national DWSRF program in such a manner that preserves for states a high degree of flexibility to operate their programs in accordance with each state's unique needs and circumstances.

Kentucky's DWSRF financing program provides low interest loans for drinking water infrastructure projects that promote the goals of the SDWA. Projects identified to receive funding are selected from the ranked group of Project Profiles submitted during an Annual Call for Projects. The ranking is based on the public health criteria outlined in the SDWA. The Fund is administered by KIA while the Kentucky Energy and Environment Cabinet (EEC) through the Division of Water (DOW) performs environmental and technical reviews on projects that seek assistance from the DWSRF. Since its inception in 1997, Kentucky's DWSRF has committed funds to 155 drinking water infrastructure projects, totaling more than \$390.1 million (through June, 2017).

Eligibility

An eligible borrower must be a public water system that is also a governmental agency, as defined in KRS 224A.011. Some examples include:

- Municipal corporations
- Cities
- Agencies
- Commissions
- Authorities
- Districts

An eligible borrower must demonstrate the technical, financial and managerial capability to ensure compliance with the requirements of the Safe Drinking Water Act, unless the completion of the project receiving financial assistance will ensure compliance and the owners or operators of the systems agree to undertake feasible and appropriate changes in operations to ensure compliance over the long term. Contact KIA or DOW if you need assistance determining if your utility is eligible.

Examples of eligible projects include:

- Planning, design, and construction of drinking water intake, treatment, or distribution systems
- Purchase of water systems by other public water systems
- Storage tanks
- Clearwells
- Drilled wells and wellhead areas
- Security related activities
- Emergency measures for the protection of public health
- Refinancing or buying eligible debt obligations of a public water system
- Any other structure or facility that the DOW considers necessary to the efficient and sanitary operation of a public water system

Significant Federal Requirements

Davis-Bacon Compliance

Federal labor laws regarding prevailing wages, hours of work, and rates of pay shall apply to construction carried out in whole or in part with assistance from DWSRFs. These requirements are collectively known as the Davis-Bacon laws. All DWSRF funded projects will be required to comply with the Davis-Bacon laws and incorporate these provisions into any project work that has been or will be contracted. For more information on Davis Bacon laws please visit:

<http://www.dol.gov/whd/regs/compliance/whdfs66.pdf>

Additional Subsidization

As of the date of this IUP, the FFY 2017 capitalization grant has not been awarded. For planning purposes, KIA is operating under preliminary federal allotment figures. Upon authorization of the FFY 2017 capitalization grant, this IUP will be updated to reflect actual grant provisions. The principal forgiveness provision of the FFY 2016 grant required that at least 20 percent, or \$2,588,200, and not more than 30 percent, or \$3,882,300 be made available to provide additional subsidization to eligible applicants. The State will make such additional subsidization in the form of loans with principal forgiveness based on the system’s median household income (MHI). Fifty percent of the loan amount, up to a maximum of \$1.3 million per borrower, may be offered as principal forgiveness to projects that qualify for the lowest non-standard interest rate. Principal forgiveness will not be provided on loan increase requests that result from scope changes, specification changes, or bid variations.

American Iron and Steel (AIS)

The Consolidated and Further Continuing Appropriations Act of 2015 requires the use of American Iron and Steel (AIS) products in all DWSRF projects. Implementation guidance can be found at the link below:

<https://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement>.

Structure of the DWSRF Program in Kentucky

KIA and the DOW jointly administer the program via a Memorandum of Agreement in accordance with Kentucky Revised Statute (KRS) 224A.1115 and Kentucky Administrative Regulation (KAR) 200 KAR 17:070¹. The following contacts can assist with DWSRF inquiries:

Contact	Agency	Subject
Ashley Adams (502) 573-0260 Ashley.Adams@ky.gov	KIA	Loan Application, Financial Terms, Interest Rates, General Information
Jocelyn Gross (502) 573-0260 Jocelyn.Gross@ky.gov	KIA	Project Profile Submittal
Jory Becker (502) 782-6887 Jory.Becker@ky.gov	DOW	Set-Aside Activities, Request for Proposals (RFPs)
Russell Neal (502) 782-7026 Russell.Neal@ky.gov	DOW	DW Priority List; Environmental Review; Technical, Financial and Managerial Capacity of Public Water Systems
Buddy Griffin (502) 564-3410 Buddy.Griffin@ky.gov	DOW	Procurement, Bidding Requirements

¹ KRS Ch 224A.1115 and 200 KAR 17:070 may be found on the Internet from the Kentucky Legislature Home Page address: <http://lrc.ky.gov/home.htm>.

DRINKING WATER STATE REVOLVING FUND GOALS

The Sustainable Infrastructure Initiative

The primary goal of the DWSRF program is to assist PWSs in providing safe drinking water at an affordable cost to their customers. The program offers low cost financing to PWSs for eligible drinking water infrastructure construction projects, planning and design costs relating to eligible projects, and eligible security projects. Through set-aside funds, the DWSRF is also used to improve environmental programs that support the goals of the SDWA. Examples include capacity development, operator certification, source water protection and wellhead protection. Effective and efficient administration of the DWSRF program, combined with below-market interest rates and long-term financing, will assist PWSs in providing sufficient quality and quantity of affordable potable water throughout Kentucky. Progress is reported for each SFY in the Annual Report to the EPA. Kentucky is also working to provide knowledge and tools to ensure that the investments made in our water infrastructure to move us toward a more sustainable footing. The goal can be achieved through strong infrastructure planning and management practices. Some of the key areas for action are:

- Asset Management - A management framework that ensures the right investments are made at the right time.
- Water & Energy Efficiency - Ensuring that water sector systems adopt sustainable practices and technologies for improving their efficiency, reducing costs and addressing future needs.
- Infrastructure Financing & the Price of Water Services - Options to pay for water infrastructure needs.
- Alternative Technologies & Assessment - Using the best, newest and innovative solutions when investing in water infrastructure.

Short-Term Goals

Goal #1: Enhance loan closing procedures and refine repayment terms.

Goal #2: Promote the principles of EPA's Sustainable Infrastructure (SI) Initiative to loan recipients through education and outreach so that SI practices are considered in planning, design, and construction activities.

Goal #3: Improve SRF training to borrowers, project administrators, Area Development Districts, and the engineering community.

Goal #4: Identify distressed borrowers through compliance monitoring and provide targeted financial and managerial guidance.

Goal #5: Develop a focused marketing strategy in conjunction with EEC to target systems with compliance and energy efficiency needs.

Goal #6: Work toward the use of electronic forms and data as opposed to paper documents, where possible.

Long-Term Goals

Goal #1: Work with the EEC to explore solutions to increase energy efficiency for drinking water utilities and future non-compliance issues under the SDWA.

Goal #2: Streamline loan processes and improve communication and the sharing of data between KIA and DOW.

Goal #3 Create a utility portal within the Water Resources Information System (WRIS) to improve communication and reporting between the utility, KIA, and regulatory agencies.

CRITERIA FOR PROJECT SELECTION

Project Priority List

Kentucky's Priority System Guidance Document was established to determine the order in which projects are evaluated for funding. Kentucky's priority ranking formula was designed by the DOW and is based on the following criteria: (1) most serious risk to human health, (2) compliance with the requirements of the SDWA, and (3) systems most in need on a per-household basis according to state affordability criteria. A Project Priority List is produced annually based on this ranking system. The Project Priority List is comprised of one list which serves as both a "fundable list" and a "comprehensive list." The fundable list is defined as a list of projects eligible for funding with available funds for the SFY 2018. The projects on the comprehensive list may receive funding in the event that a project from the fundable list is withdrawn, deemed ineligible, or unable to meet the DWSRF program requirements within the given time frame.

During the Call for Projects, which began October 14, 2016 and ended December 16, 2016, KIA and DOW invited all eligible borrowers to submit DWSRF project information via the WRIS. An official press release through the Governor's Office, along with an email distribution was sent to all drinking water utilities, area development districts, mayors, county judge/executives, and the engineering community. A sample of the Call for Projects email is attached in Appendix B. Designated projects submitted via the WRIS during the Call for Projects process were considered for funding and placement on the Project Priority List. Projects were evaluated and assigned a score based upon the ranking criteria in the Priority System Guidance Document. In the event of a tie, the following factors were utilized to rank each project: (1) service of a small system as defined by population; (2) projects with existing enforcement actions (i.e. Agreed Orders) and (3) financial need as evidenced by the MHI of the applicant. More information on tie breakers can be found in the priority ranking guidance attached in Appendix C.

The 2018 Project Priority List (Appendix A) shows that Kentucky has sufficient eligible projects to meet the binding commitment requirements of the FFY 2017 Capitalization Grant. A brief description of the following fields will be helpful in reviewing the list.

Rank: Rank of project on the comprehensive Project Priority List.

Score: Total number of points the project received using ranking criteria in Appendix C.

Loan Number: Priority list tracking number for project. This is the assigned loan number for the project throughout the process and should be referred to on all correspondence regarding the project.

Applicant: Name of applicant identified on the Project Profile Form or the community in which the project is associated.

Loan Package Title: Short description of project components (may include multiple WRIS numbers).

Requested Loan Amount: Amount of desired SRF loan identified in the Project Profile Form.

Invited Loan Amount: The amount of DWSRF funds that KIA has allocated to the proposed project. If this field lists a dollar amount greater than zero, then the project is invited for funding.

Principal Forgiveness Amount: Estimated amount of principal forgiveness that a project is eligible to receive if sufficient principal forgiveness is available.

GPR Amount: Amount of desired SRF loan identified that may qualify as green infrastructure. The drinking water capitalization grant does not require that funds be used for projects which address green infrastructure, water or energy efficiency improvements, or other environmentally innovative activities (collectively referred to as "green" projects). However, projects on the priority list were awarded ranking points for components that could be identified as green.

WRIS #: The WRIS number is assigned by an Area Water Management Council after a project has received endorsement by a regional planning group. Information stored in the WRIS database includes geographic information system (GIS) data, information on water resources, and drinking and wastewater facilities. It is used by different entities and provides much of the information needed for all aspects of water resource planning.

The 2019 IUP process will begin in October 2017. The annual Call for Projects will be open from October to December 2017 during which time projects will be accepted for ranking in the SFY 2019 funding cycle. **An applicant must submit a request for each project to be ranked for the 2019 cycle even if it was included on a previous year's Project Priority List.** The following tentative schedule will apply:

2019 Call for Projects	October 2, 2017 - December 13, 2017
Creation of Project Priority List	January 2, 2018 - March 30, 2018
Public Notice Period for IUP	May 1, 2018 - June 1, 2018
Finalize 2019 IUP and send to EPA	Prior to June 30, 2018

Email notifications will be sent in September 2017 to all drinking water utilities, area development districts, mayors, county judge executives, economic development directors, and the Kentucky Society of Professional Engineers announcing the Call for Projects.

FUND ADMINISTRATION AND OPERATION

Invitation Process

As required by the SDWA, to the maximum extent practicable, highest priority projects are funded first, as ranked in the Project Priority List. Projects are vetted and many variables are considered prior to disbursement of loan invitations. Projects that don't demonstrate readiness or have current audits (2014, 2015, 2016) may be bypassed. For all others, a letter of invitation to submit a loan application is emailed to applicants and provides instructions to electronically accept or decline the invitation through KIA's website. Potential applicants that do not submit a loan application, complete with Kentucky e-Clearinghouse comments, by the deadline, may also be bypassed (see *Bypass Process Prior to Loan Commitment* below) and subsequent eligible project(s) will receive invitations. This process will continue until all estimated available funds have been allocated. If upon receipt of the loan application, the project scope differs significantly from what was scored in the ranked project profile, KIA reserves the right to have the project reassessed by DOW. Changes in project scope can potentially impact funding eligibility.

Upon receipt of a complete loan application, KIA staff will review the information and prepare a credit analysis. A loan request will be presented to the KIA Board for financial review and conditional approval for each qualifying applicant. Upon KIA Board approval, a Conditional Commitment Letter will assure that funding will remain committed to the project for a period established in the letter, provided all of the conditions of the letter are met. If, during the loan commitment period, an unforeseeable circumstance arises that causes delay in the construction progress, beyond the current funding cycle, the project may be bypassed to the following funding cycle (see *Bypass Process Post Loan Commitment* below).

Actual project funding amounts may vary from amounts presented in the Project Priority List due to updated cost estimates and funding received from other sources. Increases to existing loans must be approved prior to the date of initiation of operation. The application invitation process is designed to commit available funds as soon as possible with limited invitation iterations. Given an uncertain invitation acceptance rate, KIA will invite significantly more project dollars than are available to fund during the first round of invitations. If more projects than anticipated accept an invitation to apply it is possible that presentation of an invited project or projects to the KIA Board will be delayed until later in the year, will not be funded, or will be invited to apply for other KIA loan programs. If this situation occurs we will communicate with individual borrowers as expeditiously as possible.

Bypass Process Prior to Loan Commitment

A high-priority project that does not demonstrate capacity or is not ready to proceed within the given timeframe will be bypassed. A bypassed project will become ineligible for DWSRF funding in the current funding year and must reapply through the annual Call for Projects process to be re-ranked for future funding cycles. Some examples that justify a bypass include, but are not limited to the following:

- Incomplete or unavailable audits
- Borrower does not demonstrate readiness based upon project schedule
- Non-compliance or delinquent payment on an existing KIA loan
- Incomplete loan application
- Applicant unresponsiveness
- Applicant cannot establish a dedicated source of revenue for the repayment of the loan.

Bypass Process Post Loan Commitment

All DWSRF program requirements must be met by the term outlined in the Conditional Commitment Letter. An extension of up to six months for approved applicants that experience extenuating circumstances may be granted. For borrowers that experience extenuating circumstances that cause delay beyond the loan commitment period in the funding cycle in which the commitment expires, the project funding may be bypassed in order to free loan funds for other projects. The loan commitment may resume in the following funding cycle.

Funding Limits and Large Project Financing

Kentucky's DWSRF generally limits the amount of funds that will be made available to any one borrower to \$4 million from each available funding source during the year. Prior to 2016, after initial approval, a project would be required to be reranked and invited to apply during subsequent years if the borrower wished to pursue incremental funding or large project financing. This requirement has been discontinued beginning in 2016. After a project is initially funded by KIA, it will receive priority funding, up to an additional \$4 million from each available funding source, during subsequent funding cycles, based on funding limits and the original project budget amount. This will minimize the uncertainty of some borrowers about the future availability of additional project funds. If a project was eligible to receive principal forgiveness during its initial funding year, it will continue to be eligible to receive principal forgiveness in future years based on the parameters that are in effect for that funding year. Limits may also be imposed on borrowers that have outstanding loan balances or loan commitments that increase the concentration risk for the total loan portfolio.

Planning and Design Loans

KIA recognizes that larger or particularly complex projects may require a lengthy planning and design process and thus may not be ready for construction within the allotted twelve months after the conditional commitment letter is issued or perhaps even with a six month extension period. For ranked projects that require funding for planning and design before funding is available to draw

(under a construction loan), KIA will encourage the applicant to apply for a Planning and Design loan rather than a full construction loan. The standard interest rate will apply during the five year term of the loan. However, if the applicant initiates construction within a prescribed time frame after approval of plans and specifications for the project, the loan can be converted to a construction loan with the interest rate that the applicant would otherwise qualify for and the loan terms established in the Conditional Commitment Letter. Planning and Design loan borrowers will receive a priority funding position to apply for a construction loan in a subsequent year's Intended Use Plan, based upon project readiness. Subsequent construction loans will be subject to interest rates and principal forgiveness amounts for the funding cycle in which the construction loan is approved by the KIA board.

Addition of New Projects to the Project Priority List

The Project Priority List may be amended during the year to add eligible projects. Major revisions to the IUP require public notice.

Emergency Projects

The Project Priority List may be amended during the year for declarations of emergencies designated by the Governor. An emergency project might involve an unanticipated failure requiring immediate attention to protect public health. The emergency project must meet all eligibility and loan requirements, but the additional public review and comment requirement may be waived. The EPA must approve these deviations.

Small Systems

To the extent possible, a minimum of 15 percent of all funds credited to the project fund will be used to assist systems serving fewer than 10,000 persons.

Refinancing

KIA is willing to accept governmental agency requests to refinance non-KIA loans. Refinancing projects will be considered by KIA only when all the following criteria are met:

1. There are sufficient funds available in the DWSRF to meet all other identified project needs for the program year;
2. The applicant can show significant savings as a result of the refinancing;
3. The applicant can identify an environmental problem within their jurisdiction that they are willing to immediately address with the savings achieved through the refinancing; and
4. Projects must meet all the applicable program requirements.

Financial Terms of Loans

Interest Rates

The KIA Board must establish interest rates at least annually. Staff intends to present rates for Board consideration at the beginning of the State fiscal year. The rates are based on prevailing market conditions with the 20 Bond General Obligation (GO) index as a reference rate. The current standard rate is 2.75 percent with two non-standard rates of 1.75 percent and 0.25 percent. These rates are subject to change.

Interest rate	MHI Threshold	Loan Type
Standard Rate	> or = \$43,740	Construction
Mid Non-Standard Rate	\$34,993 - \$43,739	Construction
Lowest Non-Standard Rate	< or = \$34,992	Construction
Standard Rate	NA	Planning and Design

Income surveys are permitted for all DWSRF eligible projects and must be completed 90 days prior to board presentation. The survey is applicable to the project service area only and an 80 percent response rate is required. Borrowers must use the standardized survey form located on KIA's website and must be current within two years. KIA staff must be notified immediately upon invitation if a survey will be conducted. Survey results will not affect principal forgiveness allocation, only interest rate adjustment.

Repayment Terms

Planning and design loans will be amortized over, but not to exceed, five years. If the planning and design loan is rolled into a DWSRF construction loan, the term for the planning and design amount will convert to the term approved for the construction loan.

Construction loans have a standard 20 year repayment term. At the KIA Board's discretion, the repayment term for a construction loan for a service area that is eligible for the lowest non-standard rate may be extended to 30 years, but not beyond the expected design life of the project.

Principal and interest payments on each loan will commence not later than the date specified in the Assistance Agreement.

Loan Servicing Fees

A loan servicing fee of 0.25 percent on the annual outstanding loan balance will be charged as a part of each semi-annual loan payment in accordance with 200 KAR 17:070, Section 12. The fee is assessed to recover administrative expenses incurred over the life of the loan. These fees are accounted for outside of the program fund and will be used for necessary DWSRF program expenses.

Borrower Loan Compliance and Financial Monitoring

The borrower's ability to repay its loans has a direct effect on the financial condition of the DWSRF fund. Additionally, maintaining a positive operating cash flow and capital asset reserve funding program will protect both the utility and its customers financially against unforeseen capital replacements in the future. Upon acceptance of a loan each borrower agrees to a number of post closing conditions, some of which are noted below, to remain in compliance with the terms of the loan.

- a) If more than \$750,000 of Federal funds is disbursed during any one (borrower) fiscal year, the borrower is required to have a single or program-specific audit conducted for that year in accordance with Title 2 U.S. Code of Federal Regulations (CFR) Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance)..
- b) The borrower must provide audited financial statements to KIA within six months of the entity's fiscal year end date. KIA will review each borrower's financial performance and, if necessary, will work with them to identify ways to remedy any financial non compliance issues.
- c) Borrowers are required to fund a repair and replacement reserve account equal to five percent of the KIA loan amount over 20 years and maintained for the life of the loan. This requirement may be waived if a documented replacement program is in place and being actively funded at a level that is acceptable to KIA.

Fund Transfers between the CWSRF and the DWSRF

Transfers between the SRF programs are allowed up to a maximum of 33 percent of the total DWSRF capitalization grants received. KIA reserves the right to transfer the maximum allowable 33 percent of uncommitted repayment funds from the Clean Water SRF to the Drinking Water repayment fund as loan demand arises. This decision will be evaluated annually by DOW and KIA. These funds will be distributed using the same criteria and method as described in the governing IUP. Funds not transferred within one fiscal year of receipt of a capitalization grant award shall be reserved for transfer in future years.

SET-ASIDE ACTIVITIES

The federal authority to establish assistance priorities and to carry out oversight and related activities of the DWSRF program, other than financial administration of the fund, resides with the EEC after consultation with other appropriate state agencies. Federal regulations allow states to "set aside" up to 31 percent of each capitalization grant for various programs, aside from project loans, that support the act. Kentucky will set aside 31 percent of the 2017 capitalization grant. Any set-aside funds that

are not taken in one year or are transferred into the construction account will be reserved for use in a future year. Required set-a-side work plans are included as Appendix E.

The following is a list of Kentucky’s set-aside allotments:

Set-Aside Description	KY’s 2017 Allotment
DWSRF Program Administration (4% maximum)	4.0%
State Program Management (10% maximum)	10.0%
Small Systems Technical Assistance (2% maximum)	2.0%
State and Local Assistance (15% maximum)	15.0%
Total	31.0%

DWSRF Program Administration - Sect. 1452(g)(2) - four percent maximum

Section 1452(g)(2) of the SDWA allows up to four percent of the DWSRF capitalization grant to be set aside for administration of the DWSRF program. Kentucky will set aside four percent from the 2017 capitalization grant for administration.

The EEC will set-aside three percent and the KIA will set aside one percent of the 2017 capitalization grant, as agreed upon in Memorandum of Agreement between the two parties. The EEC and KIA conduct regular activities to develop and maintain the DWSRF program. These include reporting activities, payment processing, pre-application activities, travel, application review, engineering review, environmental review, project management, program coordination, construction progress inspection, training, evaluating infrastructure needs for the Needs Survey; portfolio management, audit management, cash management, securities management, financial management, financial analysis and capacity review. A formal work plan is not required under this set-aside category.

State Program Management – Sect. 1452(g)(2)(A) - 10 percent maximum

Section 1452(g)(2)(A) allows a state to set aside 10 percent of its annual capitalization grant to support other program initiatives of the SDWA. Kentucky will set aside 10 percent of the 2017 capitalization grant under this category to support the following:

1. Compliance activities associated with the drinking water program, including receipt and review of data, issuing and tracking public notifications and Consumer Confidence Reports and violations, database management and revisions, SDWIS and SDWIS Prime impacts, preparing and issuing annual compliance reports, coordinating enforcement activities, implementation of the Enforcement Referral Policy, providing technical and compliance assistance and conducting inspections and sanitary surveys.
2. Other activities include: state regulation development, preparing primacy applications, conducting training events for drinking water personnel, assisting with engineering reviews, assessing the impacts of Clean Water Act decisions and permit action on drinking water

systems, oversight of the drinking water lab certification program, providing technical assistance to water systems, implementation of a similar AWOP-based program for disinfection byproduct control, plans and specifications review for SRF funded projects, assessing drinking water security and emergency response activities, and strengthening inter-agency relationships as they relate to the program.

Funds may be used for travel and equipment as specified in work plans.

Technical Assistance – Sect. 1452(g)(2)(D) - two percent maximum

Section 1452 (g)(2)(D) of the SDWA allows a state to set aside a maximum of two percent of its annual capitalization grant to support technical assistance initiatives. Kentucky will set aside two percent of the 2017 capitalization grant to provide small systems technical assistance to include the following: Training and guidance on disinfection by-product (DBP) compliance, turbidity and RTRC through one-on-one utility and group presentations; on-site water plant and distribution evaluations for DBPs, turbidity, and RTRC compliance and optimization; Performance Based Training for a minimum of one small system; AWOP involvement towards DBP optimization. Funding will also be used to provide training to DOW staff on the latest treatment technologies, regulations, how to conduct inspections, and small water system issues.

Funds may be used for travel and equipment as specified in work plans.

State/Local Assistance – Section 1452(k) - 15 percent total, 10 percent maximum for any one activity.

Section 1452(k) of the SDWA allows up to 15 percent of the DWSRF capitalization grant to be set aside to support local assistance and other program initiatives of the SDWA with a 10 percent maximum allotment for the individual program areas as outlined below:

- Loans for source water protection through land acquisition or conservation easements
- Loans for Source Water Quality Protection
- Technical, managerial, or financial assistance via the Capacity Development Program
- Source Water Protection Program
- Wellhead Protection Program

Kentucky will set aside 15 percent from the 2017 capitalization grant under the State and Local Assistance category, as follows:

Set-Aside Description	KY's 2017 Allotment
Capacity Development	10.0%
Source Water Assessment	2.0%
Wellhead Protection	3.0%
Total	15.0%

Capacity Development, ten percent

- Activities may include, but are not limited to, identification of PWSs that may need assistance obtaining or maintaining financial, managerial, or technical capacity to operate in compliance with the SDWA; capital improvement and asset management planning; developing and assisting with water system management training events and enhanced tracking of technical, managerial, and financial information.
- Providing training and certification exam opportunities to operators and potential operators. Auditing existing exam questions and developing new exams and training material to ensure that the testing process is up-to-date with current trends and regulations.
- Contractual services may also be acquired to assist PWSs with emergency response planning.

Source Water Assessment Program, two percent

- Additional assistance may be provided to support U.S. Geological Survey stream gauging activities for source water assessment and protection purposes.

Wellhead Protection Program, three percent

- Activities may include, but are not limited to, initiating and maintaining contact with PWSs to establish wellhead protection programs; assisting with technical delineations of wellhead protection areas including pumping tests, geological and hydro-geologic write-ups, modeling and dye tracing; GUDI determinations; providing technical assistance with Groundwater Protection Plans; assisting public water systems with problems and issues related to groundwater quality and quantity; assisting with development of management strategies to be used in wellhead protection; and providing public education assistance.
- Continued development and expansion of the Source Water Assessment Program, a new program modeled from Washington State, that provides funding for non-capital projects to protect source water.

Funds may be used for travel and equipment as specified in work plans.

FUNDS AVAILABLE TO BE COMMITTED AND DISBURSED

Kentucky's DWSRF is capitalized by appropriations from the U.S. Congress and the Kentucky General Assembly. The fund provides, in perpetuity, financial assistance to Kentucky's eligible DWSRF projects. As of June 30, 2016 the DWSRF had net assets of \$225,435,000 and 127 active loans. During SFY 2018, Kentucky will rely on funding as outlined in Table A to provide financial assistance and to support the operations of KIA and DOW.

Table A				
Kentucky DWSRF Sources and Uses of Funds for 2018				
July 1, 2017 through June 30, 2018				
	Federal	State		
Funding Sources	Contribution	Contribution	Other	Total
Loan Repayments (P&I)			15,382,300	15,382,300
Interest Earnings (from cash on hand)			100,000	100,000
Banked Prior Year Set-Aside Funds			5,500,000	5,500,000
2017 Capitalization Grant	12,830,000	2,566,000		15,396,000
Total Funding Sources	12,830,000	2,566,000	20,982,300	36,378,300
Funding Uses				
Financial Assistance	8,852,700	2,566,000	11,081,300	22,500,000
Leverage Bond Debt Service			4,401,000	4,401,000
Banked Prior Year Set-Aside Funds			5,500,000	5,500,000
FFY 2017 Administration (4%)	513,200			513,200
FFY 2017 State Program Management (10%)	1,283,000			1,283,000
FFY 2017 Technical Assistance (2%)	256,600			256,600
FFY 2017 Local and Other Assistance (15%)	1,924,500			1,924,500
Total Funding Uses	12,830,000	2,566,000	20,982,300	36,378,300

In SFY 2018, KIA will have an estimated \$22,500,000 available to fund eligible DWSRF projects. This is comprised of the 2017 capitalization grant of \$12,830,000, state match funds of \$2,566,000, estimated loan repayments of \$15,382,300 and \$100,000 interest earnings on existing cash balances. Funding is reduced by leverage bond debt service of \$4,401,000, administrative costs of \$513,200 (4 percent) and other set-aside costs totaling \$3,464,100 (27 percent). Any set-aside funds that are not taken in one year or are transferred into the construction account will be reserved for use in a future year.

The \$2,566,000 state match will consist of proceeds from the sale of tax-exempt revenue bonds with debt service provided by the Commonwealth. The anticipated submission date for the 2017 capitalization grant application is July 31, 2017, with the grant award, 11 construction funds and 50 percent of set asides being made available on October 1, 2017. The remaining 50 percent of set

asides are expected to be made available on March 1, 2018. The estimated federal to state cash draw ratio for the DWSRF for the FFY 2017 capitalization grant is 83:17.

Transfers between the Clean Water State Revolving Fund and the Drinking Water State Revolving Fund programs are allowed up to a maximum of 33 percent of the total DWSRF capitalization grants received.

KIA received budgetary authorization to issue agency leverage bonds during the 2016-2018 biennium in an amount not to exceed \$25 million. Additionally, authorization for \$25 million that was granted during the 2014-2016 biennium was reauthorized. Bond proceeds are deposited into the fund and used to make eligible DWSRF loans. For this authorization to become effective, KIA must obtain approval from the Kentucky Infrastructure Authority Board, the Capital Projects and Bond Oversight Committee, the Office of the State Budget Director and the Office of Financial Management in the Finance and Administration Cabinet with respect to the timing and amount of the leverage bond issuance. KIA may elect to defer issuance of bonds or to not commit the entire authorization amount.

PUBLIC PARTICIPATION

The draft 2018 DWSRF IUP including the Project Priority List will be made available for public review and comment on the KIA website at www.kia.ky.gov and the Division of Water website at www.water.ky.gov from June 14, 2017 through July 14, 2017. A public meeting is scheduled for Friday, July 7, 1:00 p.m., EST, at the office of the Kentucky Infrastructure Authority, 1024 Capital Center Drive, Ste. 340. Written comments are accepted during the review and comment period and will be summarized in the Final IUP, Appendix E.

APPENDIX A
COMPREHENSIVE PROJECT PRIORITY LIST

APPENDIX B
CALL FOR PROJECTS LETTER



KENTUCKY INFRASTRUCTURE AUTHORITY

Matthew G. Bevin
Governor

1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601
Phone (502) 573-0260
Fax (502) 573-0157
<http://kia.ky.gov>

October 14, 2016

To Whom It May Concern:

The Kentucky Infrastructure Authority and the Kentucky Division of Water are announcing the 2018 Drinking Water State Revolving Fund Call for Projects.

The Drinking Water State Revolving Fund Call for Projects Will Be Open from October 14, 2016 to December 16, 2016

If you have a drinking water project that will need funding during the 2018 state fiscal year (July 1, 2017 through June 30, 2018), we want to hear from you as your project may be eligible for funding from the Drinking Water State Revolving Fund (DWSRF). The DWSRF is a competitive program. To qualify to apply for a low interest DWSRF loan, your project **MUST** be ranked and listed on the 2018 DWSRF Priority List developed by the Division of Water (DOW). Projects will not be carried forward from the 2017 project priority list to the 2018 project priority list.

You Will Need a Project Profile for Your Project

To submit a project for inclusion on the DWSRF Priority List you must work with your local Area Water Management Council (AWMC) through the Area Development District (ADD) to complete or update a Project Profile (and related mapping) in the Water Resource Information System (WRIS). All information needed by DOW to review and rank potential DWSRF projects has been incorporated into the Project Profile template. Complete the [fill in template](#) and then send the information to your AWMC before their next meeting. Once your project has been submitted you will receive an email confirmation. Please ensure that project cost estimates have been updated.

Your Project Profile **MUST be Approved by the Area Water Management Council**

For your project to be included in the DWSRF Priority List your Project Profile must have AWMC approval. The Project Profile includes the information necessary to evaluate potential DWSRF projects. The ADD staff may have already contacted you to provide additional information to update your existing project profiles. To give the ADD staff time to get your profile approved by the AWMC, you must get the profile information to your AWMC before their next meeting.

DOW strongly encourages you to read the [Priority System Guidance Document](#) before you submit your Project Profile as you might obtain some useful ideas to improve your project's overall score. **Only those projects that can start construction by March 31, 2019 will be considered for funding.**

Current Interest Rates

Projected interest rates for the program will be provided in the 2018 CWSRF Intended Use Plan (IUP) which will be available late Spring 2017. Rates provided in the IUP are subject to approval by the KIA Board. KIA currently offers three interest rates for the CWSRF program. The standard rate of 2.75% is available for borrowers with a median household income (MHI) at or above \$43,342, the MHI of the Commonwealth according to U.S. Census estimates from American Factfinder. A 1.75% rate is offered to borrowers whose MHI is between \$43,342 and \$34,673 (80% of the Commonwealth MHI). The 1.75% rate also applies to those projects that facilitate compliance with an order or judgment addressing environmental non-compliance or those systems that are considered regional. To qualify for the 0.25% rate, the borrower must have an MHI at or below \$34,673.

Sustainable Infrastructure Initiative

A brochure that highlights the [Sustainable Infrastructure](#) (SI) initiative launched by EPA and the Kentucky Division of Water in 2008 is available on KIA's and DOW's websites. Projects that incorporate some of the practices and recommendations described in the SI brochure may receive additional points, resulting in a higher ranking on the DWSRF Project Priority List. The DOW encourages you to contact them with any questions or feedback regarding the SI initiative.

Questions?

If you have questions about completing the questionnaire or project eligibility for priority list inclusion, please contact Anshu Singh (anshu.singh@ky.gov) or Jory Becker (jory.becker@ky.gov) at the Water Infrastructure Branch or call (502) 564-3410. For more information on loan requirements, terms or eligibility, please contact Jami Johnson (jami.johnson@ky.gov) or Brandi Norton (brandi.norton@ky.gov) at KIA or call (502) 573-0260.

Sincerely,



Sandra Dunahoo, Board Chair
Kentucky Infrastructure Authority

APPENDIX C
PRIORITY SYSTEM GUIDANCE DOCUMENT

KENTUCKY

Priority System Guidance Document

For Drinking Water Projects
Eligible To Be Funded By The

**KENTUCKY DRINKING WATER STATE REVOLVING
FUND**

2018 Funding Cycle



ENERGY AND ENVIRONMENT CABINET
Department for Environmental Protection
Division of Water

300 Sower Boulevard – 3rd Floor
Frankfort, Kentucky 40601
Phone: (502) 564-3410
Fax: (502) 564-4245
water.ky.gov

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INTRODUCTION

PURPOSE

The Drinking Water State Revolving Fund (DWSRF) priority system was developed to prioritize eligible projects for funding from the DWSRF. The DWSRF funds are intended to facilitate the ability of a Public Water System (PWS) to obtain and maintain financial, managerial and technical capabilities for compliance with the Safe Drinking Water Act (SDWA). This includes compliance with existing and future national drinking water standards or other activities to significantly further the health protection objectives of the SDWA.

METHODOLOGY

The structure of the priority system incorporates new rules and initiatives promulgated since the 1996 amendments to the SDWA. The amendments encompass financial, managerial, and technical capacity; Surface Water Treatment Rule; Total Coliform Rule; Lead and Copper Rule; Asbestos Standard; Enhanced Surface Water Treatment Rule; Disinfectants and Disinfection Byproducts Rule; Groundwater Rule; and best available and affordable technology. Projects are prioritized based on scores derived from a comprehensive review of each project using the DWSRF ranking criteria.

PRIORITY FORMULA

Violations of drinking water standards occur for a variety of reasons. A proactive approach has been developed to determine priority based on infrastructure needs to address the goals of the SDWA.

APPLYING THE PRIORITY SYSTEM TO PROJECTS

The Division of Water (DOW) assigns points in each of nine categories: Regionalization, Public Health Criteria-Treatment, Public Health Criteria-Distribution, Extension of Service, Security, Compliance and Enforcement, Public Water System Financial Need, Asset Management, Sustainable Infrastructure, and Project Readiness (see Table 1, DWSRF Ranking Criteria). Points are based on information provided by PWSs and/or their consultants, and submitted by local area development districts through the Water Resources Information System (WRIS). The total score is of the sum of all points assigned in each of the nine categories.

TIE BREAKER

It is possible the points assignment process could result in two or more projects having the same total score. A tie breaker has been developed for this situation considering the following factors: maintaining priorities to be funded in the order as set forth by the priority formula, expending DWSRF dollars to maximize the benefit toward compliance with the SDWA, and providing funding of projects that are affordable to the households that benefit from the project.

Those PWSs serving a population of 10,000 people or less are prioritized over those serving populations over 10,000. Consideration is then given to those projects with existing enforcement actions (i.e. Agreed Orders). Lastly, the financial need as evidenced by the median household income (American Community Survey 5-Year Estimates 2009-2013) of the applicant is taken into consideration.

I. REGIONALIZATION

This category allows affordable alternatives for a PWS to obtain and maintain financial, managerial and technical capabilities to comply with the SDWA through mergers, interconnections, and emergency planning.

A. **Elimination of a Public Water System (PWS) through a merger or acquisition (elimination of a PWSID)**

Under this category, points will be provided to projects promoting regionalization. This is not the same as an interconnection where two or more water systems provide potable water supplies to one another, but retain their own individual identities and PWSIDs. The merger must result in the dissolution of the PWSID of the receiving PWS. (Example: Sun Water Works is extending a transmission main to Beach Water Works because their wells are contaminated. Under formal agreement, the entire Beach Water Works service area will now be converted to the Sun Water Works service area and the wells and treatment plant will be closed. Beach Water Works will no longer be in the business of producing water or maintaining a distribution system and therefore will not have a PWSID number.)

Points Received: 50

B. **Elimination of a water treatment plant as a result of an interconnection**

This section applies points to a project that will result in the elimination of a water treatment plant, as a result of an interconnection, that is in need of rehabilitation, modification or expansion to comply with the SDWA. This is different from a merger in that both utilities will remain solvent with individual PWSIDs. (Example: Coral Water Works is extending a transmission main to the Reef Water Works system that will allow the aging water treatment plant to be closed down. Coral Water Works will provide all of the water to the Reef Water Works distribution system under a purchase contract, however, Reef Water Works will remain in business as a distribution system only and will retain a PWSID number.)

Points Received: 25

C. **Acquisition of a supplemental potable water supply**

Points Received: 15

D. **Replacement or supplemental raw water supply**

Points Received: 15

E. **Acquisition of an emergency potable water supply**

A PWS is responsible for ensuring, even in drought conditions, sufficient quantity and quality of raw and potable water supplies are available to meet demands. This section provides points to projects that are securing supplemental potable water supplies rather than constructing a new water treatment plant; or to projects looking to replace an existing raw water supply. This section also provides points to those utilities that protect public health by planning for emergencies through an interconnection with a neighboring utility.

Points Received: 15

RESTRICTIONS:

Reservoirs, dams, dam rehabilitation, and water rights are not eligible for funding from the DWSRF.

II. PUBLIC HEALTH CRITERIA – TREATMENT

This category provides points to treatment projects that will provide improved compliance with the National Drinking Water Standards of the SDWA.

A. Treatment Facilities

i) **Construction of a new water treatment plant (where one does not presently exist) or expansion of an existing plant**

New water treatment facilities or water treatment plant expansions are limited to 20 points unless a need for best available technology is demonstrated based on raw or finished water quality or other extenuating circumstances. Additional points may be applied under B, C, or D for such cases.

Examples include but are not limited to, the construction of a new water treatment plant or an expansion of an existing water works facility where it is unfeasible to purchase a supplemental supply from another PWS; construction of a new intake structure; or upgrade of intake pumps or any other treatment processes resulting in an increase in the production capacity of the plant, etc.

Points Received: 20

ii) **Rehabilitation and/or upgrade of the water treatment plant**

Water treatment plant rehabilitation projects are limited to 10 points unless the proposed project is needed to acquire or maintain compliance with the National Drinking Water Standards of the SDWA. In such cases, additional points may be applied under B, C, or D.

Examples may include, but are not limited to the functional replacement of treatment processes due to age/condition, the upgrade of any treatment process to meet drinking water standards with no increase in treatment capacity, etc.

Points Received: 10

iii) **Redundant processes/emergency power generators**

Redundant processes and/or emergency power generators at the treatment facilities.

Points received: 10 for each unit

B. Treatment – Acute Public Health Risk

i) **Infrastructure options to meet Cryptosporidium removal/inactivation requirements**

Examples of treatment projects include, but are not limited to, installation of membrane technology, additional filtration, improvements to sedimentation basins such as softening or construction of a pre-sedimentation basin, ozone, UV, chlorine dioxide, etc.

Points Received: 25

ii) **Modifications to meet CT inactivation requirement**

Disinfection techniques need to comply with CT inactivation requirements of the Surface Water Treatment Rule and the Groundwater Rule. Examples of treatment projects include, but are not limited to, alternate disinfection feed points, baffling of clearwells, etc.

Points Received: 20

C. Treatment – Chronic Public Health Risk

i) **Modifications to address disinfection byproducts requirements**

Examples of treatment projects include, but are not limited to, changing disinfectants, modification of disinfection feed points, Granular Activated Carbon (GAC), coagulation, etc.

Points Received: 25

Kentucky Priority System Guidance Document for Drinking Water

ii) **Modifications to address VOC, IOC, SOC, radionuclide requirements**

Examples of treatment projects include, but are not limited to, aeration, improved coagulation, non-conventional treatments, air stripping, new chemical feed, etc.

Points Received: 15

D. **Treatment- Infrastructure to address Secondary Contaminants**

Examples of treatment projects under II(d) to address Secondary Contaminants include, but are not limited to, water softening, sedimentation basin covers, corrosion control systems, green sand filters, new chemical feed system for manganese removal, etc.

Points Received: 10

RESTRICTIONS:

Points will be assigned to project components under B, C, and D where a need for the project can be adequately demonstrated. A history of non-compliance may be required for certain treatment applications in order to receive points. In some cases, specific monitoring must warrant the need for the project in order to receive points.

III. PUBLIC HEALTH CRITERIA – DISTRIBUTION

This category provides points to distribution projects that will provide improved compliance with the National Drinking Water Standards of the SDWA.

A. **Hydraulics/Storage**

Examples of projects under this category include waterline replacements, new water storage tanks or pump stations, and rehabilitation of existing storage tanks or pump stations. The applicant must be prepared to demonstrate the need for the project whether it be loss of pressure, inadequate storage, or significant water loss to support the need for the project. For waterline replacement projects, scores are applied based upon the number of roads that are affected. ***It is imperative*** road names be provided in the Project Profile to receive all applicable points.

i) **Replacement of inadequately sized waterlines, lines with leaks, breaks, or restrictive flows due to age, or lead or asbestos-cement pipe**

Points Received: 10 for each road

RESTRICTIONS:

Identify the primary reason for the replacement in the Project Profile. A waterline may in fact, need to be replaced because it is both undersized and made up of asbestos-cement. However, points can only be applied under one category (see example below). If a project consists of multiple replacements throughout an area, each alignment can be assigned 10 points for either inadequately sized lines; leaks, breaks or restrictive flows; or asbestos cement or lead waterlines.

Example:

Project A consists of a county-wide waterline replacement project broken down as follows:

i.	Replacement of 2,000 LF of undersized waterline along Riley Road	10 pts.
ii.	Replacement of 3,000 LF of undersized waterline along Fair Road	10 pts.
iii.	<u>Replacement of 1,000 LF of asbestos-cement waterline along Oaks Rd.</u>	10 pts.
		30 pts.

On the contrary, if a waterline is both undersized and is composed of asbestos-cement (within the same alignment), only 10 points could be applied, as follows:

▪	Replacement of 2,000 LF of undersized waterline along KY Road	10 pts.
▪	<u>Replacement of 2,000 LF of asbestos-cement waterline along KY Road</u>	0 pts.
		10 pts.

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- ii) **Rehabilitation or replacement of a water storage tank**
Points Received: 30 for each tank
- iii) **New water storage tank**
Points Received: 20 for each tank
- iv) **New or rehabilitated pump station (not associated with a new tank)**
Points Received: 10 for each pump station

B. Finished Water Quality

- i) **Infrastructure to address inadequate turnover and disinfection byproducts (DBPs)**
Examples include the installation of a water storage tank mixing system to address a DBP issue, or looping of waterlines to improve service. If unable to comply with the DBP Rule then information should be provided in the project profile to support the need.
Points Received: 20
- ii) **Redundant equipment/emergency power generators**
Provide redundancy or emergency power within the distribution system
Points Received: 10 for each unit

C. Extension of Service

This section applies points to waterline extension projects. The waterline extension must be for the use of existing households and to serve areas where existing potable water supplies such as wells or cisterns are contaminated or where there is insufficient financial and technical capability to maintain a compliant water supply system. Twenty points will be applied to a waterline extension project under this category for the first 10 households. Every 10 households thereafter will accumulate two additional points, to be added to the total score.

**Points Received: 20 up to 10 existing homes and
2 for every additional 10 existing homes thereafter**

Example:

Project A consists of a county-wide waterline extension project, extending approximately 40,000 LF of waterlines to 150 existing homes throughout the county.

▪ <i>First 10 households</i>	<i>20 pts.</i>
▪ <i>140 remaining households (14*2pts=28pts)</i>	<i>28 pts.</i>
	<i>Total: 48 pts.</i>

RESTRICTIONS:

The DWSRF cannot fund waterline extension projects to primarily accommodate growth. The need must apply to at least 50 percent of the households potentially affected by the project.

IV. SECURITY

A. Measures taken at the water treatment plant facilities or within the distribution system

This category allows points to be applied to a project for measures taken at the physical location of the water treatment plant facilities or within the distribution system, with the intent to prevent, deter, and readily respond to terroristic acts. Examples include, but are not limited to, fencing, video surveillance of treatment and/or storage facilities, alarms, signs, lock gates, and radio intercom systems.

Points Received: 5 for each component

RESTRICTIONS:

Salaries for security personnel are not eligible for funding through the DWSRF.

V. COMPLIANCE AND ENFORCEMENT

- A. Entities with executed Court Orders or Agreed Orders**
Project must achieve full or partial compliance with an Order or other enforcement action by addressing terms of the Order.
Points Received: 50
- B. Primary system has not received any SWDA Notices of Violation within the previous state fiscal year-July through June, i.e. July 2015 – June 2016)**
Points Received: 25

VI. PUBLIC WATER SYSTEM FINANCIAL NEED

- A. Borrowers with a median household income (MHI) below 80 percent of the Commonwealth's MHI**
As determined by the current American Community Survey (ACS) 5-Year Estimate
Points Received: 20
- B. Borrowers with a MHI between 80 and 100 percent of the Commonwealth's MHI**
As determined by the current American Community Survey (ACS) 5-Year Estimate
Points Received: 10

VII. ASSET MANAGEMENT

- A. System has an Asset Management Program or similar planning document**
Points will be given if the system has a documented inventory of its treatment and distribution system assets and has analyzed the condition of each asset, including risks of failure. Also included must be anticipated dates of rehabilitation and ultimate replacements and the amount of revenues needed for rehabilitation or replacement of each asset.
Points Received: 20
- To obtain points under this category, supporting documents, such as an asset inventory along with a capital improvement plan based off the inventory, must be uploaded into the WRIS. If WRIS is used as an inventory tool, indicate in the textbox.
- B. System's monthly wastewater bill, based on 4,000 gallons, as a percentage of Median Household Income is:**
- | | |
|-----------------------------|----------------------------|
| Greater than or equal to 2% | Points Received: 10 |
| Between 1 and 1.99% | Points Received: 5 |
| Below 1% | Points Received: 0 |
- C. System has specifically allocated funds for the rehabilitation and replacement of aging and deteriorating infrastructure (The funds allocated to the current sinking fund account should not be a requirement of an existing loan, but a good business practice)**
Points Received: 10

To obtain points under this category, supporting documents must be uploaded into the WRIS.

VIII. SUSTAINABLE INFRASTRUCTURE

A. Green Infrastructure

Green stormwater infrastructure includes a wide array of practices at multiple scales managing wet weather and maintaining and restoring natural hydrology by infiltration, evapotranspiration, and harvesting and reuse. On a regional scale, green infrastructure is the preservation and restoration of natural landscape features, such as forests, floodplains, and wetlands, coupled with policies such as infill and redevelopment that reduce overall imperviousness in a watershed. On the local scale, green infrastructure consists of site- and neighborhood-specific practices, such as bioretention, trees, green roofs, permeable pavement, and cisterns.

Points Received: 5 each with a maximum of 10

Examples:

- *Pervious or porous pavement*
- *Bioretention*
- *Green roofs*
- *Rainwater harvesting/cisterns*
- *Gray water use*
- *Xeriscape*
- *Landscape conversion programs*
- *Retrofitting or replacing existing irrigation systems with moisture and rain sensing equipment*

Projects That Do Not Meet the Definition of Green Infrastructure:

- Stormwater controls that have impervious or semi-impervious liners and provide no compensatory evapotranspirative or harvesting function for stormwater retention.
- Stormwater ponds that serve an extended detention function and/or extended filtration. This includes soil-lined detention basins.
- In-line and end-of-pipe treatment systems that only filter or detain stormwater.
- Underground stormwater control and treatment devices such as swirl concentrators, hydrodynamic separators, baffle systems for grit, trash removal/floatables, oil and grease, inflatable booms and dams for in-line underground storage and diversion of flows.
- Stormwater conveyance systems that are not soil/vegetation based (swales) such as pipes and concrete channels. Green infrastructure projects that include pipes to collect stormwater may be justified as innovative environmental projects.

B. Water Efficiency

EPA's WaterSense program defines water efficiency as the use of improved technologies and practices to deliver equal or better services with less water. Water efficiency encompasses conservation and reuse efforts, as well as water loss reduction and prevention, to protect water resources for the future.

Points Received: 5 each with a maximum of 10

Examples:

- *Installing or retrofitting water efficient devices such as plumbing fixtures and appliances, for example: showerheads, toilets, urinals, and other plumbing devices*
- *Implementation of incentive programs to conserve water such as rebates*
- *Installing WaterSense labeled products*
(<http://www.epa.gov/watersense/index.html>)

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- *Installing any type of water meter in previously unmetered areas if rate structures are based on metered use or includes backflow prevention devices if installed in conjunction with water meter.*
- *Replacing existing broken/malfunctioning water meters with Automatic Meter Reading systems (AMR), meters with built in leak detection, or backflow prevention devices if installed in conjunction with water meter replacement.*
- *Retrofitting/adding AMR capabilities or leak equipment to existing meters (not replacing the meter itself).*
- *Conducting water utility audits, leak detection studies, and water use efficiency baseline studies, which are reasonably expected to result in a capital project or in a reduction in demand to alleviate the need for additional capital investment.*
- *Developing conservation plans/programs reasonably expected to result in a water conserving capital project or in a reduction in demand to alleviate the need for additional capital investment.*
- *Recycling and water reuse projects that replace potable sources with non-potable sources such as gray water, condensate, and wastewater effluent reuse systems (where local codes allow the practice) and extra treatment costs and distribution pipes associated with water reuse.*
- *Retrofit or replacement of existing landscape irrigation systems to more efficient landscape irrigation systems, including moisture and rain sensing controllers.*
- *Projects that result from a water efficiency related assessments (such as water audits, leak detection studies, conservation plans, etc) as long as the assessments adhered to the standard industry practices referenced above.*
- *Distribution system leak detection equipment, portable or permanent.*
- *Automatic flushing systems (portable or permanent).*
- *Pressure reducing valves (PRVs).*
- *Internal plant water reuse (such as backwash water recycling).*
- *Water meter replacement with traditional water meters**
- *Distribution pipe replacement or rehabilitation to reduce water loss and prevent water main breaks**
- *Storage tank replacement/rehabilitation to reduce water loss**
- *New water efficient landscape irrigation system (where there currently is not one).**

Projects That Do Not Meet the Definition of Water Efficiency:

- *Covering open, finished water reservoirs*

C. Energy Efficiency

Energy efficiency is the use of improved technologies and practices to reduce the energy consumption of water projects, use energy in a more efficient way, and/or produce/utilize renewable energy.

Points Received: 10 each with no maximum

Examples:

- *Renewable energy projects, which are part of a public health project, such as wind, solar, geothermal, and micro-hydroelectric that provide power to a utility (<http://www.epa.gov/cleanenergy>). Micro-hydroelectric projects involve capturing the energy from pipe flow.*
- *Utility-owned renewable energy projects can be located on-site or off-site, includes the portion of a publicly owned renewable energy project that serves the utility's energy needs, and must feed into the grid that the utility draws from and/or there is a direct connection.*
- *Utility energy management planning, including energy assessments, energy audits, optimization studies, and sub-metering of individual processes to determine high energy use areas, which are reasonably expected to result in energy efficiency capital projects or in a reduction in demand to alleviate the need for additional capital investment.*

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- *Energy efficient retrofits, upgrades, or new pumping systems and treatment processes (including variable frequency drives (VFDs)).**
- *Pump refurbishment to optimize pump efficiency (such as replacing or trimming impellers if pumps have too much capacity, replacing damaged or worn wearing rings/seals/bearings, etc.).**
- *Projects that result from an energy efficiency related assessments (such as energy audits, energy assessment studies, etc).**
- *Projects that cost effectively eliminate pumps or pumping stations. **
- *Projects that achieve the remaining increments of energy efficiency in a system that is already very efficient.**
- *Upgrade of lighting to energy efficient sources (such as metal halide pulse start technologies, compact fluorescent, light emitting diode, etc).**
- *Automated and remote control systems (SCADA) that achieve substantial energy savings (see AWWA M2 Instrumentation and Control).**

**Denotes that a business case may be required*

Projects That Do Not Meet the Definition of Energy Efficiency:

- *Simply replacing a pump, or other piece of equipment, because it is at the end of its useful life, with something of average efficiency. (Note: replacing it with higher efficiency equipment requires a business case)*
- *Hydroelectric facilities, except micro-hydroelectric projects. Micro-hydroelectric projects involve capturing the energy from pipe flow.*

D. Environmentally Innovative

Environmentally innovative projects include those that demonstrate new and/or innovative approaches to delivering services or managing water resources in a more sustainable way.

Points Received: 5 each with a maximum of 10

Examples:

- *Total/integrated water resources management planning, or other planning framework where project life cycle costs (including infrastructure, energy consumption, and other operational costs) are minimized, which enables communities to adopt more efficient and cost-effective infrastructure solutions.*
- *Plans to improve water quantity and quality associated with water system technical, financial, and managerial capacity.*
- *Eligible source water protection planning, including periodic, updated, or more detailed source water delineation or assessment as part of a more comprehensive source water protection program; or source water monitoring (not compliance monitoring) and modeling as part of a more comprehensive source water protection program.*
- *Planning activities by a utility to prepare for adaptation to the long-term effects of climate change and/or extreme weather.*
- *Utility Sustainability Plan consistent with EPA's SRF sustainability policy.*
- *Greenhouse gas (GHG) inventory or mitigation plan and submission of a GHG inventory to a registry (such as Climate Leaders or Climate Registry), as long as it is being done for a facility which is eligible for DWSRF assistance.*
- *Source Water Protection Implementation Projects such as voluntary, incentive based source water protection measures, where the state primacy agency has determined that the use of such measures will reduce or preclude the need for treatment.*
- *Construction of US Building Council LEED certified buildings, or renovation of an existing building, owned by the utility, which is part of an eligible DWSRF project. All building costs are eligible, not just stormwater, water efficiency and energy efficiency related costs. Costs are not limited to the incremental additional costs associated with LEED certified buildings. Any level of certification (Platinum, Gold, Silver, Certified) is eligible.*

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- *Projects, or components of projects, that result from total/integrated water resources management planning (including climate change) that are DWSRF eligible.**
- *Projects that significantly reduce or eliminate the use of chemicals in water treatment.**
- *Treatment technologies or approaches that significantly reduce the volume of residuals, minimize the generation of residuals, or lower the amount of chemicals in the residuals.**
- *Trenchless or low impact construction technology.**
- *Using recycled materials or re-using materials on-site.**
- *Educational activities and demonstration projects for water or energy efficiency (such as rain gardens).**
- *Projects that achieve the goals/objectives of utility asset management plans.**

**Denotes that a business case may be required*

Projects That Do Not Meet the Definition of Environmentally Innovative:

- Higher sea walls to protect water infrastructure facilities from sea level rise.
- Reflective roofs at water infrastructure facilities to combat heat island effect.

IX. PROJECT READINESS

To be considered “project ready”, the borrower must have completed a majority of the planning phase and be ready to bid the project. All three of the criteria under this category must be met in order to receive the full 30 points.

Note: A full environmental review does not have to be finalized however the cross-cutter scoping process must be complete. Plans do not have to be approved by the Division of Water, but they must have been submitted for review. Potential borrowers may be asked to provide proof to substantiate claims.

- A. Borrower has submitted complete technical plans to the Division of Water; and,**
- B. Borrower has conducted a full environmental review for all components of the project or has completed the cross-cutter scoping process (including eClearinghouse, US Fish and Wildlife Service, National Resources Conservation Service, U. S. Fish and Wildlife, and U. S. Army Corps of Engineers); and,**
- C. Borrower has received funding commitments from other funding sources; or the DWSRF is the sole source of funding.**
Points Received: 30

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DWSRF Ranking Criteria

I	Regionalization	Possible Points
A	Elimination of a Public Water System (PWS) through a merger or acquisition (<i>Elimination of a PWSID</i>).	50
B	Elimination of a water treatment plant through an interconnection	25
C	Acquisition of a supplemental potable water supply	15
D	Replacement or supplemental raw water source	15
E	Acquisition of an emergency potable water supply	15

II	Public Health Criteria – Treatment	Possible Points
A	<u>Treatment Facilities</u>	
	i) Construction of a new water treatment plant (where one does not presently exist) or expansion	20
	ii) Rehabilitation and/or upgrade of the water treatment plant	10
	iii) Redundant processes/ emergency power generators	10
B	<u>Treatment – Acute Public Health Risk</u>	
	i) Infrastructure options to meet Cryptosporidium removal/ inactivation requirements	25
	ii) Modifications to meet CT inactivation requirement	20
C	<u>Treatment – Chronic Public Health Risk</u>	
	i) Modifications to address disinfection byproducts requirements	25
	ii) Modifications to address VOC, IOC, SOC, radionuclide requirements	15
D	Treatment – Infrastructure to address Secondary Contaminants	10

III	Public Health Criteria – Distribution	Possible Points
A	<u>Hydraulics/Storage</u>	
	(i) Replacement of inadequately sized waterlines, lines with leaks, breaks, or restrictive flows due to age, or lead or asbestos-cement pipe	10
	(ii) Rehabilitation or replacement of a water storage tank	30
	(iii) New water storage tank	20
	(iv) New or rehabilitated pump station (not an appurtenance to a new tank)	10
B	<u>Finished Water Quality</u>	
	(i) Infrastructure to address inadequate turnover and disinfection byproducts	20
	(ii) Redundant equipment/emergency power generators	10
C	<u>Extension of Service</u>	
	Waterline extensions to serve existing households with inadequate domestic water supplies such as contaminated wells or cisterns (Up to 10 existing homes)	20
	Two additional points for every additional 10 households thereafter	2

IV	Security	Possible Points
	Measures taken at the water treatment plant facilities or within the distribution system	5

V	Compliance and Enforcement	Possible Points
A	Entities with executed Court Orders or Agreed Orders (<i>Project must address the terms of the Order</i>)	50
B	System has not received any Notices of Violation within the previous state fiscal year – July 2015-June 2016	25

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VI	Public Water System Financial Need	Possible Points
A	Borrowers with a median household income (MHI) below 80 percent of the Commonwealth's MHI as determined by the current American Community Survey (ACS) 5-Year Estimate	20
B	Borrowers with a MHI between 80 and 100 percent of the Commonwealth's MHI as determined by the current ACS 5-Year Estimate	10

VII	Asset Management	Possible Points
A	System has an Asset Management Program or similar planning document	20
B	System's monthly water bill, based on 4,000 gallons, as a percentage of Median Household Income is:	
	Greater than or equal to 2.0%	10
	Between 1 and 1.99%	5
	Below 1%	0
C	System has specifically allocated funds for the rehabilitation and replacement of aging and deteriorating infrastructure	10

VIII	Green Projects (See Green Project Reserve Guidance Document)	Possible Points
A	<p><u>Green Infrastructure</u> : Green stormwater infrastructure includes a wide array of practices at multiple scales that manage wet weather and that maintains and restores natural hydrology by infiltrating, evapotranspiring and harvesting and using stormwater. On a regional scale, green infrastructure is the preservation and restoration of natural landscape features, such as forests, floodplains, and wetlands, coupled with policies such as infill and redevelopment that reduce overall imperviousness in a watershed. On the local scale, green infrastructure consists of site- and neighborhood-specific practices, such as:</p> <ul style="list-style-type: none"> • Bioretention • Green streets • Green roofs • Permeable pavement • Cisterns 	5 each/10 maximum

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B	<p><u>Water Efficiency:</u> The use of improved technologies and practices to deliver equal or better services with less water. Water efficiency encompasses conservation and reuse efforts, as well as water loss reduction and prevention, to protect water resources for the future. Examples include:</p> <ul style="list-style-type: none"> • Installing or retrofitting water efficient devices such as plumbing fixtures and appliances (toilets, showerheads, urinals) • Installing any type of water meter in previously unmetered areas (can include backflow prevention if in conjunction with meter replacement) • Replacing existing broken/malfunctioning water meters with AMR or smart meters, meters with leak detection, backflow prevention • Retrofitting/adding AMR capabilities or leak equipment to existing meters • Conducting water utility audits, leak detection studies, and water use efficiency baseline studies, which are reasonably expected to result in a capital project or in a reduction in demand to alleviate the need for additional capital investment • Developing conservation plans/programs reasonable expected to result in a water conserving capital project or in a reduction in demand to alleviate the need for capital investment • Recycling and water reuse projects that replace potable sources with non-potable sources (Gray water, condensate, and wastewater effluent reuse systems, extra treatment or distribution costs associated with water reuse) • Retrofit or replacement of existing landscape irrigation systems to more efficient landscape irrigation systems • Water meter replacement with traditional water meters * • Distribution pipe replacement or rehabilitation to reduce water loss and prevent water main breaks* • Storage tank replacement/rehabilitation to reduce water loss* • New water efficient landscape irrigation system, where there currently is not one* 	5 each/10 maximum
C	<p><u>Energy Efficiency:</u> Energy efficiency is the use of improved technologies and practices to reduce the energy consumption of water projects, use energy in a more efficient way, and/or produce/utilize renewable energy. Examples include:</p> <ul style="list-style-type: none"> • Renewable energy projects, which are part of a public health project, such as wind, solar, geothermal, and micro-hydroelectric that provides power to a utility • Utility-owned or publically-owned renewable energy projects • Utility energy management planning, including energy assessments, energy audits, optimization studies, and sub-metering of individual processes to determine high energy use areas • Energy efficient retrofits, upgrades, or new pumping systems and treatment processes (including variable frequency drives (VFDs)*) • Pump refurbishment to optimize pump efficiency* • Projects that result from an energy efficient related assessment* • Projects that cost effectively eliminate pumps or pumping stations* • Projects that achieve the remaining increments of energy efficiency in a system that is already very efficient* • Upgrade of lighting to energy efficient sources* • Automated and remote control systems (SCADA) that achieve substantial energy savings* 	10 each with no maximum

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D	<p>Environmentally Innovative: Environmentally innovative projects include those that demonstrate new and/or innovative approaches to delivering services or managing water resources in a more sustainable way. Examples include:</p> <ul style="list-style-type: none"> • Total integrated water resources management planning, or other planning framework where project life cycle costs are minimized, which enables communities to adopt more efficient and cost-effective infrastructure solutions • Plans to improve water quantity and quality associated with water system technical, financial, and managerial capacity • Source water protection planning (delineation, monitoring, modeling) • Planning activities to prepare for adaptation to the long-term affects of climate change and/or extreme weather • Utility sustainability plan consistent with EPA’s sustainability policy • Greenhouse gas inventory or mitigation plan and submission of a GHG inventory to a registry as long as it is being done for an SRF eligible facility • Construction of US Building Council LEED certified buildings, or renovation of an existing building • Projects that significantly reduce or eliminate the use of chemicals in water treatment* • Treatment technologies or approaches that significantly reduce the volume of residuals, minimize the generation of residuals, or lower the amount of chemicals in the residuals* • Trenchless or low impact construction technology* • Using recycled materials or re-using materials on-site* • Educational activities and demonstration projects for water or energy efficiency (such as rain gardens)* • Projects that achieve the goals/objectives of utility asset management plans* 	5 each/10 maximum
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*Denotes that a business case may be required.

IX	Project Readiness	Possible Points
	<p>A. Borrower has submitted complete technical plans and specifications to the Division of Water; and,</p> <p>B. Borrower has conducted a full environmental review for all components of the project or has completed the cross-cutter scoping process (including eClearinghouse, USFWS, NRCS, and USACofE); and,</p> <p>C. Borrower has received funding commitments from other funding sources, or the DWSRF is the sole source of funding</p>	30

APPENDIX D
GREEN RESERVE GUIDANCE

PART B – DWSRF GPR SPECIFIC GUIDANCE

DWSRF Eligibility Principles

State SRF programs are responsible for identifying projects that count toward GPR. The following overarching principles, or decision criteria, apply to all projects that count toward GPR and will help states identify projects.

- 0.1 All GPR projects and activities must otherwise be eligible for DWSRF funding. The GPR requirement does not create new funding authority beyond that described in Section 1452 of the SDWA.
- 0.2 GPR projects and activities must meet the definition of one of the four GPR categories. The individual GPR categories do not create new eligibility for the DWSRF. The projects that count toward GPR must otherwise be eligible for DWSRF funding.
- 0.3 GPR projects and activities must further the goals stated in Section 1452 of the Safe Drinking Water Act.
- 0.4 Projects and activities that utilize the DWSRF set-asides can also be eligible for GPR. Planning and assessment activities, such as conducting water or energy audits, are eligible, as well as green-oriented capacity development, source water protection, and total/integrated water resources management planning activities. Where applicable, the pertinent set-asides that can be used are noted in the next section.

DWSRF Technical Guidance

The following sections outline the technical aspects for the DWSRF Green Project Reserve. It is organized by the four categories of green projects: green infrastructure, water efficiency, energy efficiency, and environmentally innovative activities. Categorically green projects are listed, as well as projects that are ineligible. Design criteria for business cases and example projects that would require a business case are also provided.

1.0 GREEN INFRASTRUCTURE

- 1.1 Definition: Green stormwater infrastructure includes a wide array of practices at multiple scales that manage wet weather and that maintains and restores natural hydrology by infiltrating, evapotranspiring and harvesting and using stormwater. On a regional scale, green infrastructure is the preservation and restoration of natural landscape features, such as forests, floodplains and wetlands, coupled with policies such as infill and redevelopment that reduce overall imperviousness in a watershed. On the local scale, green infrastructure consists of site- and neighborhood-specific practices, such as bioretention, trees, green roofs, permeable pavements and cisterns.
- 1.2 Categorical Projects The following types of projects, done at a utility-owned facility or as part of a water infrastructure project, can be counted toward the GPR if they are a part of an eligible DWSRF project:

- 1.2-1 Pervious or porous pavement
 - 1.2-2 Bioretention
 - 1.2-3 Green roofs
 - 1.2-4 Rainwater harvesting/cisterns
 - 1.2-5 Gray water use
 - 1.2-6 Xeriscape
 - 1.2-7 Landscape conversion programs
 - 1.2-8 Retrofitting or replacing existing irrigation systems with moisture and rain sensing equipment
- 1.3 Projects That Do Not Meet the Definition of Green Infrastructure
- 1.3-1 Stormwater controls that have impervious or semi-impervious liners and provide no compensatory evapotranspirative or harvesting function for stormwater retention.
 - 1.3-2 Stormwater ponds that serve an extended detention function and/or extended filtration. This includes dirt lined detention basins.
 - 1.3-3 In-line and end-of-pipe treatment systems that only filter or detain stormwater.
 - 1.3-4 Underground stormwater control and treatment devices such as swirl concentrators, hydrodynamic separators, baffle systems for grit, trash removal/floatables, oil and grease, inflatable booms and dams for in-line underground storage and diversion of flows.
 - 1.3-5 Stormwater conveyance systems that are not soil/vegetation based (swales) such as pipes and concrete channels. Green infrastructure projects that include pipes to collect stormwater may be justified as innovative environmental projects pursuant to Section 4.4 of this guidance.
- 1.4 Decision Criteria for Business Cases
- 1.4-1 Green infrastructure projects are designed to mimic the natural hydrologic conditions of the site or watershed.
 - 1.4-2 Projects capture, treat, infiltrate, or evapotranspire stormwater on the parcels where it falls and does not include inter basin transfers of water.
 - 1.4-3 GPR project is in lieu of or to supplement municipal hard/gray infrastructure.
 - 1.4-4 Projects considering both landscape and site scale will be most successful at protecting water quality.
 - 1.4-5 Design criteria is available at <http://cfpub.epa.gov/npdes/greeninfrastructure/munichandbook.cfm> and <http://cfpub.epa.gov/npdes/greeninfrastructure/technology.cfm>

2.0 WATER EFFICIENCY

2.1 Definition: EPA's WaterSense program defines water efficiency as the use of improved technologies and practices to deliver equal or better services with less water. Water efficiency encompasses conservation and reuse efforts, as well as water loss reduction and prevention, to protect water resources for the future.

- 2.2 Categorical Projects
- 2.2-1 Installing or retrofitting water efficient devices such as plumbing fixtures and appliances
 - 2.2-1a For example – showerheads, toilets, urinals, and other plumbing devices
 - 2.2-1b Implementation of incentive programs to conserve water such as rebates
 - 2.2-1c WaterSense labeled products (<http://www.epa.gov/watersense/index.html>)
 - 2.2-2 Installing any type of water meter in previously unmetered areas:
 - 2.2-2a If rate structures are based on metered use,
 - 2.2-2b Can include backflow prevention devices if installed in conjunction with water meter.
 - 2.2-3 Replacing existing broken/malfunctioning water meters with:
 - 2.2-3a Automatic meter reading systems (AMR), for example:
 - 2.2-3a(i) Advanced metering infrastructure (AMI).
 - 2.2-3a(ii) Smart meters.
 - 2.2-3b Meters with built in leak detection,
 - 2.2-3c Can include backflow prevention devices if installed in conjunction with water meter replacement.
 - 2.2-4 Retrofitting/adding AMR capabilities or leak equipment to existing meters (not replacing the meter itself).
 - 2.2-5 Conducting water utility audits, leak detection studies, and water use efficiency baseline studies, which are reasonably expected to result in a capital project or in a reduction in demand to alleviate the need for additional capital investment.
 - 2.2-5a Funded through set-asides: Small Systems Technical Assistance, State Program Management – Capacity Development, or Local Assistance & Other State Programs – Capacity Development; where consistent with the state capacity development strategy
 - 2.2-5b For standard practices, see AWWA M36 *Water Audits and Loss Control Programs*.
 - 2.2-5c Free Water Audit Software, Version 4.1 (2010) (<http://www.awwa.org/Resources/WaterLossControl.cfm?ItemNumber=47846&navItemNumber=48155>)
 - 2.2-6 Developing conservation plans/programs reasonably expected to result in a water conserving capital project or in a reduction in demand to alleviate the need for additional capital investment.
 - 2.2-6a Funded through set-asides: Small Systems Technical Assistance, State Program Management – Capacity Development, or Local Assistance & Other State Programs – Capacity Development; where consistent with the state capacity development strategy
 - 2.2-6b For standard practices, see AWWA M52 *Water Conservation Programs – A Planning Manual*
 - 2.2-7 Recycling and water reuse projects that replace potable sources with non-potable sources,
 - 2.2-7a Gray water, condensate, and wastewater effluent reuse systems (where local codes allow the practice).
 - 2.2-7b Extra treatment costs and distribution pipes associated with water reuse.

- 2.2-8 Retrofit or replacement of existing landscape irrigation systems to more efficient landscape irrigation systems, including moisture and rain sensing controllers.
 - 2.2-9 Projects that result from a water efficiency related assessments (such as water audits, leak detection studies, conservation plans, etc) as long as the assessments adhered to the standard industry practices referenced above.
 - 2.2-10 Distribution system leak detection equipment, portable or permanent.
 - 2.2-11 Automatic flushing systems (portable or permanent).
 - 2.2-12 Pressure reducing valves (PRVs).
 - 2.2-13 Internal plant water reuse (such as backwash water recycling).
- 2.3 Projects That Do Not Meet the Definition of Water Efficiency
- 2.3-1 Covering open finished water reservoirs – Federally mandated, so not considered “above and beyond.”
- 2.4 Decision Criteria For Business Cases
- 2.4-1 Water efficiency can be accomplished through water saving elements or reducing water consumption. This will reduce the amount of water taken out of rivers, lakes, streams, groundwater, or from other sources.
 - 2.4-2 Water efficiency projects should deliver equal or better services with less net water use as compared to traditional or standard technologies and practices.
 - 2.4-3 Efficient water use often has the added benefit of reducing the amount of energy required by a drinking water system, since less water would need to be treated and transported; therefore, there are also energy and financial savings.
 - 2.4-4 Proper water infrastructure management should address where water losses could be occurring in the system and fix or avert them. This could be achieved, for example, by making operational changes or replacing aging infrastructure.
- 2.5 Example Projects Requiring a Business Case
- 2.5-1 Water meter replacement with traditional water meters (see AWWA M6 *Water Meters – Selection, Installation, Testing, and Maintenance*).
 - 2.5-2 Distribution pipe replacement or rehabilitation to reduce water loss and prevent water main breaks (see AWWA M28 *Rehabilitation of Water Mains*).
 - 2.5-3 Storage tank replacement/rehabilitation to reduce water loss.
 - 2.5-4 New water efficient landscape irrigation system (where there currently is not one).

3.0 ENERGY EFFICIENCY

- 3.1 Definition: Energy efficiency is the use of improved technologies and practices to reduce the energy consumption of water projects, use energy in a more efficient way, and/or produce/utilize renewable energy.
- 3.2 Categorical Projects¹

¹ EPA has concluded that existing literature does not support a 20% energy efficiency improvement threshold for drinking water systems; therefore, there is no categorical 20% threshold for pumping/treatment systems for the DWSRF. A business case is required.

- 3.2-1 Renewable energy projects, which are part of a public health project, such as wind, solar, geothermal, and micro-hydroelectric that provide power to a utility (<http://www.epa.gov/cleanenergy>). Micro-hydroelectric projects involve capturing the energy from pipe flow.
 - 3.2-1a Utility-owned renewable energy projects can be located on-site or off-site.
 - 3.2-1b Includes the portion of a publicly owned renewable energy project that serves the utility's energy needs.
 - 3.2-1c Must feed into the grid that the utility draws from and/or there is a direct connection.
 - 3.2-2 Utility energy management planning, including energy assessments, energy audits, optimization studies, and sub-metering of individual processes to determine high energy use areas, which are reasonably expected to result in energy efficiency capital projects or in a reduction in demand to alleviate the need for additional capital investment.
 - 3.2-2a Funded through set-asides: Small Systems Technical Assistance, State Program Management – Capacity Development, or Local Assistance & Other State Programs – Capacity Development; where consistent with the state capacity development strategy
 - 3.2-2b For standard energy management practices, see *Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities*, located at http://www.epa.gov/waterinfrastructure/pdfs/guidebook_si_energymanagement.pdf
 - 3.2-2c Energy Efficiency Step-By-Step Guide: <http://www.epa.gov/region09/waterinfrastructure/howto.html>
 - 3.2-3 National Electric Manufacturers Association (NEMA) Premium energy efficiency motors (<http://www.nema.org/gov/energy/efficiency/premium/>)
- 3.3 Projects That Do Not Meet the Definition of Energy Efficiency
- 3.3-1 Simply replacing a pump, or other piece of equipment, because it is at the end of its useful life, with something of average efficiency. (Note: replacing it with higher efficiency equipment requires a business case)
 - 3.3-2 Hydroelectric facilities, except micro-hydroelectric projects. Micro-hydroelectric projects involve capturing the energy from pipe flow.
- 3.4 Decision Criteria for Business Cases
- 3.4-1 Projects should include products and practices which will decrease environmental impacts, such as reducing greenhouse gas emissions, and provide financial savings.
 - 3.4-2 Projects should include approaches to integrate energy efficient practices into daily management and long-term planning (<http://water.epa.gov/infrastructure/sustain/energyefficiency.cfm>).
 - 3.4-3 Operator training in conjunction with any energy savings project is strongly encouraged in order to maximize the energy savings potential.

- 3.4-4 Using existing tools such as Energy Star’s Portfolio Manager (http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager) or Check Up Program for Small Systems (CUPSS) (<http://www.epa.gov/cupss/>) to document current energy usage and track anticipated savings.
- 3.5 Example Projects Requiring a Business Case
 - 3.5-1 Energy efficient retrofits, upgrades, or new pumping systems and treatment processes (including variable frequency drives (VFDs)).
 - 3.5-2 Pump refurbishment to optimize pump efficiency (such as replacing or trimming impellers if pumps have too much capacity, replacing damaged or worn wearing rings/seals/bearings, etc.).
 - 3.5-3 Projects that result from an energy efficiency related assessments (such as energy audits, energy assessment studies, etc), that are not otherwise designated as categorical.
 - 3.5-4 Projects that cost effectively eliminate pumps or pumping stations.
 - 3.5-5 Projects that achieve the remaining increments of energy efficiency in a system that is already very efficient.
 - 3.5-6 Upgrade of lighting to energy efficient sources (such as metal halide pulse start technologies, compact fluorescent, light emitting diode, etc).
 - 3.5-7 Automated and remote control systems (SCADA) that achieve substantial energy savings (see AWWA M2 *Instrumentation and Control*).

4.0 ENVIRONMENTALLY INNOVATIVE

- 4.1 Definition: Environmentally innovative projects include those that demonstrate new and/or innovative approaches to delivering services or managing water resources in a more sustainable way.
- 4.2 Categorical Projects
 - 4.2-1 Total/integrated water resources management planning, or other planning framework where project life cycle costs (including infrastructure, energy consumption, and other operational costs) are minimized, which enables communities to adopt more efficient and cost-effective infrastructure solutions.
 - 4.2-1a Funded through set-asides: Small Systems Technical Assistance, State Program Management, or Local Assistance & Other State Programs.
 - 4.2-1b Plans to improve water quantity and quality associated with water system technical, financial, and managerial capacity.
 - 4.2-1c Eligible source water protection planning.
 - 4.2-1c(i) Periodic, updated, or more detailed source water delineation or assessment as part of a more comprehensive source water protection program.
 - 4.2-1c(ii) Source water monitoring (not compliance monitoring) and modeling as part of a more comprehensive source water protection program.
 - 4.2-1c(iii) <http://www.epa.gov/safewater/dwsrf/pdfs/source.pdf>

- 4.2-1d Planning activities by a utility to prepare for adaptation to the long-term affects of climate change and/or extreme weather.
 - 4.2-1d(i) Office of Water – Climate Change and Water website: <http://www.epa.gov/water/climatechange/>
- 4.2-2 Utility Sustainability Plan consistent with EPA’s SRF sustainability policy.
- 4.2-3 Greenhouse gas (GHG) inventory or mitigation plan and submission of a GHG inventory to a registry (such as Climate Leaders or Climate Registry), as long as it is being done for a facility which is eligible for DWSRF assistance.
 - 4.2-3a EPA Climate Leaders: <http://www.epa.gov/climateleaders/basic/index.html>
 - 4.2-3b Climate Registry – <http://www.theclimateregistry.org/>
- 4.2-4 Source Water Protection Implementation Projects
 - 4.2-4a Voluntary, incentive based source water protection measures pursuant to Section 1452(k)(1)(A)(ii), where the state primacy agency has determined that the use of such measures will reduce or preclude the need for treatment. Under the FY 2010 appropriation, additional subsidization for these measures may be provided in the form of principal forgiveness or negative interest rate loans.
 - 4.2-5 Construction of US Building Council LEED certified buildings, or renovation of an existing building, owned by the utility, which is part of an eligible DWSRF project.
 - 4.2-5a Any level of certification (Platinum, Gold, Silver, Certified).
 - 4.2-5b All building costs are eligible, not just stormwater, water efficiency and energy efficiency related costs. Costs are not limited to the incremental additional costs associated with LEED certified buildings.
 - 4.2-5c <http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>
- 4.3 Projects That Do Not Meet the Definition of Environmentally Innovative
 - 4.3-1 Higher sea walls to protect water infrastructure facilities from sea level rise.
 - 4.3-2 Reflective roofs at water infrastructure facilities to combat heat island effect.
- 4.4 Decision Criteria for Business Cases
 - 4.4-1 State programs are allowed flexibility in determining what projects qualify as innovative in their state based on unique geographical and climatological conditions.
 - 4.4-1a Technology or approach whose performance is expected to address water quality but the actual performance has not been demonstrated in the state; or
 - 4.4-1b Technology or approach that is not widely used in the state, but does perform as well or better than conventional technology/approaches at lower cost; or
 - 4.4-1c Conventional technology or approaches that are used in a new application in the state.

- 4.5 Example Projects Requiring A Business Case
 - 4.5-1 Projects, or components of projects, that result from total/integrated water resources management planning (including climate change) consistent with the Decision Criteria for environmentally innovative projects and that are DWSRF eligible.
 - 4.5-2 Application of innovative treatment technologies or systems that improve environmental conditions and are consistent with the Decision Criteria for environmentally innovative projects, such as:
 - 4.5-2a Projects that significantly reduce or eliminate the use of chemicals in water treatment.
 - 4.5-2b Treatment technologies or approaches that significantly reduce the volume of residuals, minimize the generation of residuals, or lower the amount of chemicals in the residuals (Cornwell, 2009; *Water Treatment Residuals Engineering*; Water Research Foundation).
 - 4.5-2c Trenchless or low impact construction technology.
 - 4.5-2d Using recycled materials or re-using materials on-site.
 - 4.5-3 Educational activities and demonstration projects for water or energy efficiency (such as rain gardens).
 - 4.5-4 Projects that achieve the goals/objectives of utility asset management plans (http://www.epa.gov/safewater/smallsystems/pdfs/guide_smallsystems_assetmanagement_bestpractices.pdf; <http://www.epa.gov/owm/assetmanage/index.htm>).

DWSRF Business Case Development

This guidance is intended to be comprehensive; however, EPA understands our examples projects requiring a business case may not be all inclusive. A business case is a due diligence document. For those projects, or portions of projects, which are not included in the categorical projects lists provided above, a business case will be required to demonstrate that an assistance recipient has thoroughly researched anticipated ‘green’ benefits of a project. Business cases will be approved by the State (see Section III.A. in the *Procedures for Implementing Certain Provisions of EPA’s Fiscal Year 2011 Full-Year Continuing Appropriation Affecting the Clean Water and Drinking Water State Revolving Fund Programs*). An approved business case must be included in the State’s project files and contain clear documentation that the project achieves identifiable and substantial benefits. The following sections provide guidelines for business case development.

- 5.0 Length of a Business Case
 - 5.0-1 Business cases should be adequate but not exhaustive.
 - 5.0-1a There are many formats and approaches. EPA does not require any specific one.
 - 5.0-1b Some projects will require detailed analysis and calculations, while others may not require more than one page.
 - 5.0-1c Limit the information contained in the business case to only the pertinent ‘green’ information needed to justify the project.

- 5.0-2 A business case can simply summarize results from, and then cite, existing documentation – such as engineering reports, water or energy audits, results of water system tests, etc.
- 5.1 Content of a Business Case
 - 5.1-1 Business cases must address the decision criteria for the category of project.
 - 5.1-2 Quantifiable water and/or energy savings or water loss reduction for water and energy efficiency projects should be included.
 - 5.1-3 The cost and financial benefit of the project should be included, along with the payback time period, where applicable.
- 5.2 Items Which Strengthen Business Case, but Are Not Required
 - 5.2-1 Showing that the project was designed to enable equipment to operate most efficiently.
 - 5.2-2 Demonstrating that equipment will meet or exceed standards set by professional associations.
 - 5.2-3 Including operator training or committing to utilizing existing tools such as Energy Star’s Portfolio Manager or CUPSS for energy efficiency projects.
- 5.3 Example Business Cases Are Available at <http://www.srfbusinesscases.net/>.

APPENDIX E
SET-ASIDE WORK PLANS

	%	FFY 2017	Expended by:
Grant Amount \$:		\$ 12,941,000	
DWSRF Program Admin(4% max available):		\$ 517,640	
DOW (max 3%)	3	\$ 388,230	
KIA (1%)	1	\$ 129,410	
Subtotal Amount:		\$ 517,640	June 2019
State Program Mgt. (10% max available):		\$ 1,294,100	
Supplement PWSS Program	10	\$ 1,294,100	
DOW Personnel		\$ 1,161,058	
Contractual		\$ 133,042	
Subtotal Amount:		\$ 1,294,100	December 2018
Small Systems Tech. Assist (2% max):		\$ 258,820	
DOW Personnel	2	\$ 258,820	
Subtotal Amount:		\$ 258,820	December 2017
State/Local Assist (up to 15%-10% max):		\$ 1,941,150	
Capacity Development - TMF Assistance	10	\$ 1,294,100	January 2019
DOW Personnel		\$ 721,100	
Travel		\$ 30,000	
Contracts		\$ 246,000	
Dev/Implement Operator Cert Program		\$ 297,000	
Source Water Assessment Program:	2	\$ 258,820	June 2019
Contracts		\$ 258,820	
Wellhead Protection Program	3	\$ 388,230	October 2018
DOW Personnel		\$ 188,230	
Equipment		\$ -	
Travel		\$ -	
Contracts		\$ 200,000	
Subtotal Amount:		\$ 1,941,150	
Total Set Aside Amount:	31	\$ 4,011,710	
Total DOW Set Aside Amount:	30	\$ 3,882,300	
Total KIA Set Aside Amount:	1	\$ 129,410	

Supplement to the Public Water System Supervision Program State Program Management

Introduction

Kentucky's Public Water System Supervision Program (PWSS) conducts compliance determination and evaluation of public water systems, review of plans and specifications for public water system treatment and distribution facilities, and technical assistance.

The major activities projected for the PWSS program include the compliance activities associated with all current Safe Drinking Water Act (SDWA) rules and regulations including the Revised Total Coliform Rule (RTCR). The implementation of all SDWA rules and regulations, along with special primacy requirements, continues to impact Kentucky's staff resources.

The Division of Water (DOW) will use the PWSS Supplement Set-Aside funds to provide additional resources for:

- Primacy package and state regulation development;
- Compliance determination and evaluation of public water systems;
- Sanitary surveys and inspections;
- Safe Drinking Water Information System (SDWIS) impacts;
- Drinking water laboratory certification;
- Review of plans and specifications for public water system treatment and distribution facilities, including water availability;
- Technical, managerial, and financial assistance to all public water systems as needed;
- Training for the entire drinking water industry upon request; and
- Planning and coordination of various Division of Water programs related to the SDWA.

Compliance Activities

SDWA regulations require continued monitoring, evaluation, and reporting by both the public water systems and the primacy agency. The existing SDWIS database is nearing the end of its functionality and will be undergoing a major overhaul at the federal level. Additional resources may be required to coordinate with USEPA and their contractors in the implementation of the new, updated database. As of FFY 2010 enforcement activities and appropriate remedial measures are processed based on the USEPA Enforcement Referral Policy (ERP). The DOW is also responsible for the Drinking Water Laboratory Certification program, conducting chemistry and Cryptosporidium audits, reviewing microbiology audits, and program coordination.

State Program Management funds will be used to continue refinement of the sanitary survey process and further development of such initiatives as water audits and drinking water sanctions, in coordination with the Drinking Water Capacity Development Program.

Plans, Specifications and Water Quantity Review Activities

The Kentucky Division of Water reviews plans and specifications for drinking water treatment and distribution facilities for compliance with federal and state drinking water standards. The technical review process is one of continuous improvement and is modified and enhanced as necessary to implement new strategies and initiatives. Activities to be conducted include:

- Review and approval of drinking water plans and specifications to maintain/obtain compliance with the SDWA,
- Water availability assessments in conjunction with the DOW Watershed Management Branch,
- On-site construction inspections of infrastructure projects funded by the Drinking Water State Revolving Funds, and
- Development of standard operating procedures for the program.

Technical Assistance Program Activities

The Drinking Water program participates in the Area-Wide Optimization Program (AWOP) with the U.S. Environmental Protection Agency (USEPA). The program strives to optimize the treatment, maintenance, administration, and design of surface water treatment plants. The initiative includes:

- Developing evaluation processes to insure the best possible water quality is provided to all customers by each water system;
- Providing technical assistance to surface water systems to enable them to meet, not only the regulatory turbidity level, but also the more stringent turbidity goals of the AWOP; and
- Implementing similar AWOP-based program for disinfection by-product control.

In addition, the Technical Assistance program continues to train the DOW's staff in the goals, objectives, and technical aspects of water treatment plant and distribution system optimization. Based upon the same performance criteria, all surface water treatment systems are evaluated by a self-evaluation program, by DOW's Field Office personnel on-site, or by Technical Assistance personnel on-site. Technical Assistance staff also participates in sanitary surveys and limited emergency response.

Planning and Coordination Activities

The development of partnerships among various state programs is necessary to efficiently and effectively implement the SDWA. Kentucky's diverse programs for drinking water, groundwater, water quantity, water quality, enforcement, watershed, operator certification, and various other programs are required to coordinate their activities and products to support and enhance each other with the common goal of sufficient quantity and quality of potable water for all the citizens of the Commonwealth of Kentucky. Interagency coordination occurs with other

state agencies including the Public Service Commission, Division of Plumbing, and Division of Public Health and Safety as well as technical assistance providers and professional organizations.

Milestones

Surface water systems evaluated for optimization annually	Ongoing
Meet conditions of the USEPA Region 4 work plans allowing Kentucky to retain primacy for SDWA regulatory authority	Ongoing
Administer the Laboratory Certification Program	Ongoing
Evaluate the impact of implementing SDWIS Prime	Ongoing
Incorporate the Enforcement Referral Policy/Targeting Tool into capacity development and technical assistance activities	Ongoing
Evaluate/modify the Capacity Development Program to improve effectiveness and efficiency in the provision of TMF assistance	Ongoing

Deliverables

Compliance monitoring, evaluation, and reporting for SDWA standards with inclusion in State regulations	Ongoing
Plans and specifications review and approval based on SDWA, Ten States Standards, approved technologies, and standard operational procedures	Ongoing
Water availability assessments	Ongoing
Maintain latest version of the SDWIS database while evaluating SDWIS Prime	Ongoing
Surface and groundwater treatment plant evaluations for optimizing treatment processes	Ongoing
Updating Standard Operating Procedures for the planning and coordination of Division of Water programs to effectively and efficiently implement the SDWA requirements	Ongoing
Training to all interested drinking water industry stakeholders regarding new rules, implementation issues, and other miscellaneous professional updates	Ongoing
Coordination with state agencies and external partners to resolve drinking water issues of common concerns	Ongoing
Oversee the Laboratory Certification Program	Ongoing

Budget

The following funds were set-aside in the 2017 federal DWSRF Capitalization Grants to supplement the Public Water System Supervision Program under State Program Management.

Category:	Amount:
Personnel	\$ 921,106
Contractual	\$ 133,042
Total Direct Charges	\$ 1,054,148
Indirect Charges (36.21%)	\$ 239,952
Total	\$ 1,294,100

Outlay Strategy:

Personnel:

\$1,161,058: The average monthly payroll for employees working on this initiative is \$152,000 per month. These funds are projected to be expended March 2018 through December 2018.

Contractual:

\$133,042: The MSU Microbiology Lab contract provides funding for the state microbiology primacy lab as well as emergency analysis. The Lab Auditor contract provides funding for a contract employee conducting drinking water microbiology audits.

Small System Technical Assistance Funds

Introduction

Since 2004, regulations continue to affect small systems serving less than 10,000 in population. These rules lowered the Maximum Contaminant Levels (MCL) for total trihalomethanes, added new MCLs for haloacetic acids, chlorite and bromate, added Maximum Residual Disinfectant Limits (MRDL) for free chlorine, total chlorine and chlorine dioxide, lowered the Treatment Technique (TT) for turbidity and added individual filter effluent monitoring requirements. The Groundwater Rule had an impact on KY’s small drinking water systems as the majority of the very small systems with treatment plants use groundwater sources. The Revised Total Coliform Rule (RTCR) also affects small systems as a result of the tiered assessment process.

Kentucky has approximately 215 surface water systems (77 providers and 138 purchasers) impacted by the Surface Water Treatment rules and 119 groundwater systems (99 providers, 20 purchasers) that must comply with the Groundwater Rule. This has resulted in a total of 185 purchasing systems that must comply with the Disinfection Byproduct regulations, sanitary survey requirements, and limited options for resolving distribution issues. In addition, the Revised Total Coliform Rule also applies to all small water systems. The set-aside funding under this category will be used to provide compliance-based assistance by DOW staff to small systems throughout the state.

Milestones

Utilize the Enforcement Targeting Tool (ETT) to prioritize technical assistance activities.	Ongoing
Provide training and guidance on disinfection by-products (DBP), turbidity, and the RTCR through one-on-one utility and group presentations.	Ongoing
Conduct on-site water plant and distribution evaluations for DBP, turbidity, and RTCR compliance and optimization.	Ongoing
Involve small water systems in the Area-Wide Optimization Program (AWOP) efforts toward turbidity optimization through Comprehensive Performance Evaluations (CPE).	Ongoing
Involve small water systems in the AWOP efforts toward turbidity optimization through Performance Based Training (PBT).	Ongoing
Involve small systems in the AWOP efforts towards disinfection by-product optimization.	Ongoing
Provide training to the DOW staff on treatment, regulations, and inspections.	Ongoing

Deliverables

Training and guidance for disinfection by-products (DBP) and turbidity	Ongoing
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On-site water plant evaluations for DBPs and turbidity	Ongoing
Conduct 1 microbial/turbidity CPE per year	Ongoing
Performance Based Training (PBT) through the Area-Wide Optimization Program (AWOP) for microbial/turbidity	Ongoing
Performance Based Training (PBT) through the Area-Wide Optimization Program (AWOP) for DBPs	Ongoing
Conduct 1 DBP/CPE evaluation for small water system	TBD
Attend AWOP training and/or workshops	When Available

Budget

The following funds were set aside in the 2017 federal DWSRF Capitalization Grants in support of the Small System Technical Assistance Program.

Category:	Amount:
Personnel	\$ 205,331
Total Direct Charges	\$ 205,331
Indirect Charges (36.21%)	\$ 53,489
Total	\$ 258,820

Outlay Strategy:

Personnel:

\$258,820: The average monthly payroll for employees working on this initiative is \$43,000 per month. These funds are projected to be expended July 2017 through December 2017.

Capacity Development Program

Introduction

The Capacity Development Program is an initiative of the 1996 Amendments to the Safe Drinking Water Act (SDWA) that encompasses the technical, managerial, and financial (TMF) aspects of public water system (PWS) operation. The U.S. Congress recognized treatment and distribution of water for human consumption is an increasingly complex and expensive undertaking. Many PWSs do not have adequate TMF resources to continue to comply with requirements of the SDWA. Kentucky's Capacity Development Strategy is designed as a planning tool to identify PWSs with TMF related problems, address deficiencies, and determine how the drinking water needs of those systems' customers can best be met.

Review of Capacity Development Strategy

Kentucky's current Capacity Development Strategy was accepted by USEPA in 2009. The major objectives addressed by the strategy are:

- Prioritize systems most in need of improving capacity;
- Identify the factors that encourage or impair the capacity of water systems;
- Use the authority and resources of the SDWA to enhance technical, managerial, and financial capacity;
- Establish a baseline and measure the capacity improvements of systems in the state; and
- Involve stakeholders in Kentucky's efforts to improve drinking water system capacity.

Milestones and Deliverables

Submit annual Capacity Development Report to USEPA Region 4	December (annually)
Continue to conduct TMF evaluation of PWSs through the Sanitary Survey process	Ongoing
Develop guidance documents and tools to assist small public water systems in maintaining TMF capacity	Ongoing
Continue the review of the Sanitary Survey process; revise as necessary to improve effectiveness and efficiency	Ongoing
Develop a tool to rank and prioritize PWS based on TMF capacity as the basis for developing a Drinking Water Action Plan to enhance PWS compliance with the SDWA.	Spring 2017
Use the Drinking Water Action Plan to review and revise the DOW Capacity Development Strategy with submittal to USEPA EPA Region 4	Spring 2018
Update and develop the Sanitary Survey form with the capability for data extraction	Ongoing

Capacity Development Program Activities

Sanitary Survey and assistance activities continue to be a prime focus of the overall Capacity Development Program. The DOW staff has worked to develop a variety of guidance materials to assist PWSs in efforts to improve capacity.

Work is underway to develop a tool to rank and prioritize PWS as a basis for creating a Drinking Water Action Plan. Data obtained from the Sanitary Survey, compliance monitoring, infrastructure, and other stakeholders will be incorporated into the tool and used to assess the state of the industry. The ranking data and plan will provide a basis for prioritizing and implementing future infrastructure, technical assistance, and training needs for PWS. The Drinking Water Action Plan will also be used to evaluate and revise the Sanitary Survey process and to develop a Sanitary Survey document to allow for extraction the extraction of data for use in other associated programs, including the Water Resource Information System (WRIS) managed through the Kentucky Infrastructure Authority (KIA).

Budget

The following funds were set aside in the 2017 federal DWSRF Capitalization Grant in support of DOW's Capacity Development efforts.

Category:	Amount:
Personnel	\$ 572,073
Travel	\$ 30,000
Operator Certification*	\$ 297,000
Contractual	\$ 246,000
Total Direct Charges	\$ 1,145,073
Indirect Charges (36.21%)	\$ 149,027
Total	\$ 1,294,100

*See Operator Certification workplan for details

Outlay Strategy:

Personnel:

\$721,100: The average monthly payroll for employees working on this initiative is \$90,000 per month. These funds are projected to be expended June 2018 through January 2019.

Travel:

\$30,000: The Division of Water staff will need to remain current with regard to the technical, managerial, and financial aspects of public water systems. Our staff plans to attend:

- KRWA Annual and Management Conferences
- Council of Infrastructure Financing Authorities Conference

- USEPA Data Management Conference
- Association of Safe Drinking Water Administrators
- KY-TN Water Professionals Conference
- USEPA State Water Directors meetings
- USEPA Drinking Water Lab Auditor Training/Refresher Training
- TNI Auditor Training
- NELAC Conference
- USEPA Region 4 State Laboratory Manager/Assessor Meeting
- Area-Wide Optimization Program Meetings
- Area-Wide Optimization Program Annual Meeting
- Kentucky Water & Wastewater Operators' Association Conference and meetings
- Kentucky Water Resources Research Institute
- Out-of-state CPEs/PBTs
- Groundwater Protection Council
- National Groundwater Association
- Midwest Groundwater Council
- Geological Society of America
- American Institute of Professional Geologists/KY Society for Professional Geologists
- Drinking Water Infrastructure Needs Survey meetings

All travel requests will include registration, lodging, per diem, and transportation costs.

Contractual:

\$246,000: Assistance for Small Water Systems program will go toward providing small water systems managerial, financial, and technical assistance.

Operator Certification Program

Introduction

The Kentucky Operator Certification Program was developed and implemented in accordance with KRS223.160 through 223.220. KRS 224.10-110 directs the Cabinet to enforce administrative regulations adopted by the Secretary for the regulation and control of the purification of water for public and semipublic use and for the certification of water plant operators. Specific regulations pertaining to the certification program are located in 401 KAR Chapter 11. The USEPA approved the state's program in February of 2001.

There are approximately 392 public water systems in Kentucky. The public water systems are classified into a primary series of I, II, III, and IV according to design capacity of the treatment plant and into a secondary series of A and B based on the type of filtration used in the treatment process. A primary series of I, II, III, and IV is also used for classification of the distribution portion of the system and is based on the number of people served. All public water systems must be operated with a minimal number of state certified operators in direct responsible charge. Such individuals must possess a current drinking water treatment, distribution, and/or bottled water certification for the classification level of the system under their charge, or possess one of a higher level in the appropriate series. Operators acquire these certifications by demonstrating fulfillment of specific minimum education and experience requirements and by passing a state administered examination. Once acquired, certifications must be renewed every two years. In order to renew these certificates, a specified number of continuing education hours must be completed by the certified operator.

The Division of Water will use Drinking Water State Revolving Fund (DWSRF) set-aside funds to fund a portion of the costs to administer the drinking water operator certification program in the Division of Compliance Assistance (DCA). These moneys will fund administrative and technical staff within DCA, who will provide drinking water certification related services to operators of these public water systems.

Operator Certification Program Activities

The Operator Certification Program staff processes all applications and other forms related to registration of drinking water operators for certification exams and for renewal of previously earned certifications. They develop exams for each classification, administer the exams around the state, score the exams, and issue the certificates and/or letters with the results of the test. Classroom instruction is provided around the state to aid operators in preparation for exams and to help them acquire continued education credits necessary for certification renewal. Records are maintained on each operator. Certification efforts are designed to help protect public safety and health.

Deliverables

On-going:

- Review and process operator applications for certification testing.
- Develop new questions for the exam question banks.

- Track operator training hours for continuing education credit toward certificate renewal.
- Update operator information in the department’s database.
- Produce and distribute operator certificates and wallet cards.
- Provide certification training and administer certification exams.
- Issue new certificates and wallet cards.
- Develop training materials and/or update existing materials.

Monthly:

Provide administrative support to the Kentucky Board of Certification of Water Treatment and Distribution System Operators.

Annually:

Update existing certification exams as needed.
 Develop new certification exams as needed.
 Develop a testing and training schedule for operators.

Budget

DWSRF set-aside funds for the Operator Certification Program are requested in the amount of \$297,000. The funds will be used to provide salaries for staff working on activities related to the training and certification of drinking water treatment, distribution and bottled water operators.

Category:	Amount:
Personnel	\$ 235,620
Total Direct Charges	\$ 235,620
Indirect Charges (36.21%)	\$ 61,380
Total	\$ 297,000

Source Water Assessment Program

Introduction

Kentucky's counties have had an initial source water assessment completed as one of the requirements of Kentucky's Water Supply Planning statute (KRS 151.118, as amended).

Kentucky has approximately 450 public water systems with 30% served by groundwater sources and 70% by surface water sources. Wellhead assessments are developed using a community-based planning team attached to the public water system. Surface water source water assessments are developed by regional planning agencies (Area Development Districts) with oversight by planning councils that include county, city, and water system representatives.

Source Water Assessment Activities

The Source Water Assessment set-aside funds will be used to support the Kentucky stream gage network.

Integral to source water protection is the knowledge of stream flow. Knowledge of flow, both current and historical, provides the necessary information for permitted withdrawals and projecting future availability. The network also provides flow data that can be used for water withdrawals, TMDLs, waste load allocations, drought and flood mitigation and other source water protection activities. The United States Geological Survey (USGS) maintains gages on the major rivers and lakes in Kentucky but has not been able to fully support them in needed locations.

The Division of Water will use 2017 Source Water Assessment (SWA) set-aside funds for a contract to operate and maintain 46 current gaging stations.

Milestones

- Physical site location and construction of gaging platform;
- Installation of equipment;
- Development of gage rating curves; and
- Full on-line service.

Deliverables

Implementation of routine stream gage operations and maintenance (such as rating curve calibrations and equipment and satellite uplink)	Ongoing
Stream flow data and associated products available on the USGS website.	Ongoing

Budget

The 2017 Source Water Assessment Program funds were set-aside from the State and Local Assistance Program.

Category:	Amount:
Contractual	\$ 258,820
Total Direct Charges	\$ 258,820
Total	\$ 258,820

Outlay Strategy

Contractual:

\$258,820: The Division of Water has entered into an agreement with the United States Geological Survey (USGS). The USGS will maintain forty-six (46) gauging stations. These funds will be expended by June 2019.

Wellhead Protection Program

Introduction

The Division of Water implemented the Wellhead Protection Program in 1993 after its approval by the U.S. Environmental Protection Agency. This program is administered through Kentucky's water supply planning regulations (401 KAR 4:220). The Kentucky Wellhead Protection Plan program is a community-based pollution prevention program designed to protect the quality of groundwater utilized for public drinking water supplies. The wellhead protection plans are to be incorporated in the applicable County Water Supply Plan. The Division of Water's Watershed Management Branch is responsible for providing information and assistance to public water systems and communities conducting wellhead protection, and for the review and approval of Wellhead Protection plans.

There are currently 182 public water systems in Kentucky reliant wholly or in part on groundwater that are required to have a wellhead protection plan. These wellhead protection plans will be completed by public water systems and the local communities, with assistance from the Kentucky Division of Water, local and regional planning agencies (e.g. Area Development Districts), and the Kentucky Rural Water Association (KRWA).

The Division of Water will use money set-aside from the Drinking Water Supply Revolving Fund (DWSRF) to provide technical assistance, programmatic guidance, and data management assistance to communities developing wellhead protection plans. The Division of Water will assist in development of each wellhead protection plan, and will review all wellhead protection plans submitted for incorporation in the county water supply plan.

Wellhead Protection Program Activities

The Kentucky Wellhead Protection program intends to complete Phase I & II wellhead protection plans for all new public water systems using groundwater and to complete 5-year Wellhead Protection Plan updates for all public water systems scheduled to update their plans. The Kentucky Wellhead Protection program will assist public water systems in completing required 5-year updates to the wellhead protection plans with an emphasis on developing and implementing management and protection strategies within the wellhead protection areas. In addition, groundwater under the direct influence (GUDI) determinations will be conducted and/or reviewed.

The Division of Water provides technical and programmatic assistance to communities, water suppliers, and regional planners involved in developing wellhead protection plans. This assistance includes: providing written guidance to communities; conducting community outreach program coordination; providing individual consultation to water suppliers and local and regional planners; delineating WHP areas; conducting limited monitoring of groundwater sources, sponsoring technical workshops for wellhead protection; and providing maps, technical documents, educational information, and data to be included in wellhead protection plans. The Division of Water will also review all implementation schedules and wellhead protection plans for approval.

The Division of Water will provide technical assistance and programmatic guidance to public water suppliers. The Division of Water will assist in coordinating the WHP activities between local communities and water systems, regulatory agencies, technical assistance outlets, volunteer organizations (including local citizens), local planning councils, and regional planning agencies.

The Division of Water will provide technical assistance and programmatic guidance to public water suppliers conducting wellhead protection plan 5-year updates, including updating the plan to incorporate changes such as delineation of new source areas, updating contaminant source inventories, and updating the susceptibility analysis. The Division of Water will focus on the development and implementation of management and protection strategies in the 5-year updates.

Delineations of wellhead protection areas and Contaminant Source Inventory data for all wellhead protection areas in Kentucky will be maintained in GIS format for use as tool for internal DEP programs (e.g. UST, RCRA, Solid Waste, KPDES, etc.), and will be made available to USEPA, regional field offices, emergency response officials, local community officials and PWSS, and the general public on the Kentucky Geonet.

Scheduled public meetings are a required element of the WHP plan. Technical and programmatic assistance will be provided by the DOW at public meetings as requested by local communities, public water systems, and planning agencies. Programmatic focus will be on the completion of 35 five-year updates that will be due in 2017, as well as emplacement of Water Supply Protection Area signs in key areas around Wellhead Protection Areas.

Activities

- Develop wellhead protection plans with new public water systems, or those systems newly using groundwater in the 5-year update cycle
- Develop wellhead protection plans with public water systems in the 5-year update cycle
- Continue the development and expansion of the Source Water Protection Assistance Program, a recently implemented program, that provides funding for non-capitol projects to protect source water.
- Work with communities to develop and implement management strategies for the wellhead protection area
- Work with Kentucky Rural Water Association (KRWA) to coordinate their wellhead protection activities and align these activities with the programmatic goals of the Division of Water.
- Review wellhead plans submitted by KRWA
- Conduct fieldwork to assist PWS systems with problems and issues related to groundwater quality and quantity
- Update GIS coverage of wellhead protection areas (WHPAs), as delineated, and any changes which may occur in the 5-year update cycle
- Develop contaminant source inventory (CSI) coverage for wellhead protection areas in a GIS format to be used in education and planning processes.
- Work with the Groundwater Protection Plan (GPP) program to identify sites in wellhead protection areas that are required to have a GPP

- Conduct Groundwater Protection Plan (GPP) program inspections in WHPAs and provide technical assistance to businesses and individuals in developing and implementing effective GPPs
- Work with public water systems and the DOW’s drinking water program to determine GUDI status on systems using groundwater
- Report to USEPA on wellhead protection activities
- Conduct public education regarding groundwater protection and wellhead protection issues at public meetings, science fairs, schools, and other venues
- Participate in local, regional, and national meetings dealing with wellhead protection and other source water protection issues
- Sample raw water quality at several public water systems reliant on groundwater and developing or implementing WHP plans
- Interpret analytical results and discuss with operators, especially regarding naturally-occurring and NPS threats to groundwater quality
- Interpret water quality in regard to current and potential land use, as well as zone-of-influence and time-of-travel studies
- Incorporate water quality results into appropriate statewide and BMU reports
- Forward analytical data to the Groundwater Data Repository at UK

Deliverables

- All public water systems dependent on groundwater will have an approved wellhead protection plan. For those systems scheduled to revisit their wellhead protection plan, a 5-year update will be completed and approved by the Kentucky Division of Water.
- All wellhead protection areas in Kentucky will be delineated, digitally mapped, and will reside in a GIS-compatible database, and will be available to USEPA, internal DEP programs (e.g. UST, RCRA, solid Waste), regional field offices, emergency response officials, local community officials and PWSS, and the general public through the Kentucky Geonet.
- All significant potential contaminant sources within delineated WHP areas will be identified and this information will reside in a GIS-compatible database.
- The Source Water Protection Assistance Program projects will be reviewed, ranked and once awarded tracked for progress and completion.

Budget

The following funds are set-aside in the 2017 DWSRF Capitalization Grant in support of the Wellhead Protection Program.

Category:	Amount:
Personnel	\$ 149,329
Contractual	\$ 200,000
Total Direct Charges	\$ 349,329
Indirect Charges (36.21%)	\$ 38,901
Total	\$ 388,230

Outlay Strategy

Personnel:

\$149,329: The average monthly payroll for employees working on this initiative is \$25,000 per month. These funds are projected to be expended December 2017 through October 2018.

Contractual:

\$150,000: Continue the Source Water Protection Assistance Program to assist public water systems with implementing protection activities, including capping of abandoned wells.

\$50,000: The Division of Water has entered into an agreement with the United States Geological Survey (USGS). The USGS will maintain forty-six (46) gauging stations.

APPENDIX F
PUBLIC COMMENTS

**2018 Drinking Water State Revolving Fund Intended Use Plan
Public Comments**

-TBA-