ATTACHMENT 1

ENVIRONMENTAL PRIORITY POINT SYSTEM

The Department of Environmental Protection has established an Environmental Priority Point System to place proposed wastewater treatment projects in a listing according to their relative priority of environmental impact or benefit. The system contains five (5) basic priorities which relate to the public health hazard created by the wastes or to the use of the waters to which wastes are discharged. In addition to these five basic priorities there is a subsystem with point values of 0, 6 or 12 points that indicates the intensity of the problem as being either low, medium or high. The subsystem points are added to the priority base points to arrive at the overall Environmental Priority Points for ranking the environmental importance of projects. Additional points will be awarded to projects to further rank them for the distribution of loan subsidization in the form of principal forgiveness. The details on the additional subsidization and awarding of points are described further in the section entitled *2019 CWSRF Wastewater Infrastructure Project Priority Ranking System*.

All five priorities and the subsystems are discussed in detail below.

		Base Points
Priority 1	Water Supply Protection	30 Points

The project to be funded will eliminate a source of ground or surface water supply contamination. This priority denotes that a potential public health hazard does exist and that without such project alternative sources of water would be required or additional water treatment would be necessary.

Priority 2	Lakes Protection	25 Points

This priority denotes that the project will eliminate or improve facilities discharging directly or indirectly to lakes and ponds which create detrimental impacts on trophic state.

Priority 3	Shellfishery Protection	20 Points

This priority includes projects that will eliminate sources of contamination to shell fishing areas. The project will eliminate sources of waste that are partially or wholly responsible for a shellfishery area presently being closed.

Priority 4	Water Quality Concerns	15 Points

This priority denotes that the project will reduce the level of pollutants to waterbodies of present classification or where a proposed project can be expected to raise quality to the next higher classification.

Priority 5	Facility Needs	10 Points

This category includes all structural deficiencies of collection, transport and treatment systems. Such things as untreated sewage creating a public health hazard, a project to meet general water quality standards or a treatment plant not meeting effluent criteria would be in this category.

PRIORITY SUBSYSTEMS

The priorities of water supply and shellfisheries involve other agencies in the state. The Maine Center for Disease Control – Division of Environmental Health is responsible for the water supply program in Maine (Priority 1). The Department of Marine Resources manages shellfishing areas (Priority 3). Accordingly, these agencies have developed the subsystems which relate to the intensity of the problem for these priorities. DEP staff has developed the subsystems for priority 2, 4 and 5. Inland Fish and Wildlife is the agency responsible for management of inland and anadromous fisheries. DEP receives input from Inland Fish and Wildlife when water quality problems impact these fisheries.

The intensity of the problem (Low, Medium, and High) is identified by the subsystem for that category. The agency having jurisdiction applies the subsystem to each project in their category of responsibility. For example, if a category 3 project (Shellfishery Protection) was determined to be a medium intensity problem by the Department of Marine Resources it would be assigned 26 points on the priority list (3-M). Several projects may be in the same category and assigned equal points. The second regular session of the 113th Legislature included median household income, MHI, as a factor in determining funding priority. Projects with the same point assignment will be ordered by MHI with the lowest income community receiving the highest priority within that subsystem category.

Environmental Priority Points Assignment

		Low	Medium	High
1.	Water Supply Protection	30	36	42
2.	Lakes Protection	25	31	37
3.	Shellfishery Protection	20	26	32
4.	Water Quality Concern	15	21	27
5.	Facility Needs	10	16	22

1. Water Supply Protection

Five criteria are used in this subsystem with each having a point value of 1, 2, or 3 points. The summation of criteria points assigned in criteria 1 – 5 determines the level of intensity (low, medium, or high). The assignment to a level of intensity is arrived at as follows:

Subsystem Points		Criteria Points
Low	(0)	Range (0 – 5)
Medium	(6)	Range (6 – 10)
High	(12)	Range (11 – 15)

Points

Criteria	**1**	**2**	**3**
1. Population Served	< 2,000	2,000 - 10,000	> 10,000
2. Degree of Dependence on Water Source	Alternate Source	Emergency Source	No Other Source
3. Difficulty of Treatment	Proven		Experimental
4. Existing Treatment	Full	Minimal	None
5. Cost of Treatment	< 1% of Revenue	1% - 10% of Revenue	> 10 % of Revenue

2. Lakes Protection

Subsystem Points		
Low	(0)	Facility has minor effect on trophic state of a lake.
Medium	(6)	Existence of marginal trophic quality or increasing trophic conditions.
High	(12)	Conditions exist in a lake which cause non-attainment of class GPA.

3. Shellfishery Protection

Four criteria are used in this subsystem with each having a point value of 1, 2, or 3 points. The summation of criteria points assigned in criteria 1 – 4 determines the level of intensity (low, medium, or high). The assignment to a level of intensity is arrived at as follows:

Subsystem Points		Criteria Points
Low	(0)	Range (0 – 4)
Medium	(6)	Range (5 – 8)
High	(12)	Range (9 – 12)

Points

Criteria	**1**	**2**	**3**
1. Shellfish Production	Potential	Limited	Commercial
2. Projected Area Reclassification	Conditionally Restricted	Restricted	Approved or Conditionally Approved
3. Economic Importance	< 10 licenses	10 – 20 licenses	> 20 licenses
4. State & Local Interest	Low Interest	Medium Interest	High Interest

Definition of Terms

Shellfish Production:

Potential	A shellfish growing area is considered to be a potential growing area when all environmental factors (chemical, physical and biological) exist within levels suitable for the propagation of shellfish, or if historical records indicate the area to be one time productive.
Limited	A shellfish area is considered to have limited harvesting when current or past shellfish availability would yield quantities of less than 1 bushel per tide and/or less than 5 acres in size.
Commercial	A shellfish area is considered to have commercial harvesting when current or past shellfish availability would yield quantities greater than 1 bushel per tide and/or greater than 5 acres in size.

Projected Area Reclassification:

Conditionally Restricted	If after abatement, the projected reclassification at best would meet the standards for Depuration and/or Relay Harvesting allowed except during specified conditions (rainfall, sewage treatment plant (STP) bypass or seasonal), then the lowest number of value related points will be given.
Restricted	If after abatement, the projected area reclassification would meet the standards for Depuration and/or Relay Harvesting, then the next highest value related points will be assigned.
Approved or Conditionally Approved	If after abatement, the projected area reclassification would meet the standards for open harvesting, harvesting allowed except during specified conditions (rainfall, STP bypass or seasonal), the highest number of value related points will be given.

Economic Importance:

Value related points will be assigned to those areas where the shellfishing resource is consideration to have an economic impact on the local economy. The factor utilized in this determination will be the number of commercial harvesters in the town or towns abutting the resource. Consideration should be taken for past, present and future harvesters.

State and Local Interest (Shellfish Management Program):

Value related points will be given to those areas where a sincere interest in pollution abatement, shellfish management, aquaculture or other related interests in the marine resources has been demonstrated.

Low Interest	Municipal program with open license sales and no conservation requirements, limited enforcement.
Medium Interest	Municipal program with conservation requirements.
High Interest	Strong municipal program with active shellfish committee, conservation requirements, and shellfish warden.

4. Water Quality Concerns

Subsystem Points

Low	(0)	Water quality standards are achieved; however, project would help maintain water quality.
Medium	(6)	Water quality standards are achieved; project would result in improved habitat, production or other enhancement of the fishery or other tangible improvements to water quality.
High	(12)	Water quality standards are not achieved for designated class; project would result in improvements to water quality, but not necessarily bring it into compliance.

5. Facility Needs

Subsystem Points

Low	(0)	A project with the base point assignment has a relatively minor problem by comparison with others in this category. A deficiency exists or the potential for a public health hazard is evident but the operational impact if any is minor and the public health dangers only slight.
Medium	(6)	This sub-priority indicates the existence of a substantial problem that may involve several of the factors in the Facility Needs category. The structural deficiencies cause problems and/or the risk of public health problems is more than slight.
High	(12)	The assignment of this level is made only for those facilities having the most severe structural or operational problems and/or a public health hazard exists.

2019 CLEAN WATER STATE REVOLVING FUND (CWSRF)
WASTEWATER INFRASTRUCTURE PROJECT
PRIORITY RANKING SYSTEM

For Federal Fiscal Year (FFY) 2019, the Department will use a rating system based on the existing Environmental Priority Point System to determine project order for receiving loan principal forgiveness. The primary objective for distributing funds is to focus on projects that will realize the most environmental benefit. However, additional points will be given for green components in projects, legal requirements necessitating a project, the degree of expected environmental success, availability of co-funding with other funding agencies, and benefits that can be derived from regionalization of water quality improvement efforts.

The CWSRF is a well-established program with an existing system for ranking projects based on five environmental priority levels with sub ratings within each. The Environmental Priority Point System results in a point score being assigned that ranges from 10 to 42 points. That point score will be adjusted in consideration of the factors as discussed above. Each adjustment will be in the form of a percent increase to the base point rating. The environmental priority points and the adjustments will be summed to obtain a final number of points that will represent the proposed project's priority score. The priority score will be the order of precedence in establishing the projects for funding and distribution of principal forgiveness for affordability, climate adaptation plans, and fiscal sustainability plans or improvements. The methodology for adjusting the Environmental Priority Points for the factors above is more fully described in the Additional Points Added To Environmental Priority Points section.

2019 PRINCIPAL FORGIVENESS

To the extent available, the Department will provide loan principal forgiveness to applicants for economic hardship assistance and incentives to encourage development of climate adaptation plans and implementation of or improvements to fiscal sustainability plans. The Department has not received notification from EPA of the State's 2019 CWSRF capitalization grant allotment. To assist communities that might have a difficulty financing their project and to provide sustainability incentives for wastewater infrastructure, the Department intends to offer additional subsidy, allowed under the 2019 Appropriation Act, to loan recipients in the form of loan principal forgiveness. The additional subsidy will be distributed in accordance with Section 603(i) of the Federal Water Pollution Control Act and EPA's Sustainability Policy for targeting SRF assistance.

Affordability Principal Forgiveness

To the extent available, affordability principal forgiveness for 2019 will be available for those applicants' projects that have the most environmental benefit and would experience a significant hardship financing the project if additional subsidies were not provided.

Public Law 113-121, the "Water Resources Reform and Development Act of 2014" (WRRDA) amended section 603(i) of the Federal Water Pollution Control Act (FWPCA); requiring the State to establish affordability criteria to assist in identifying municipalities that would experience a significant hardship raising the revenue necessary to finance a project, if additional subsidization is not provided. The Department developed affordability criteria utilizing the required minimum criteria of income and unemployment data, and population trends; as well as the additional criteria of poverty rate and the sewer user rate as a percentage of the median household income. The affordability criteria and analysis were provided to the public for comment on August 11, 2015 with a comment period until August 28, 2015. No comments were received and the affordability criteria became final on August 31, 2015.

The Department's methodology for developing an affordability analysis was to compare the above five criteria for a municipality to the State's average for those criteria, then assess a percentage over the State average that would likely constitute a significant hardship for the municipality to raise the revenue necessary to finance the project. Three of the five criteria index the municipal rate to the State rate. In this process the indexing expresses the municipal rate as a ratio to the State rate. An index of 1.0 indicates that the municipality's rate is the same as the State rate. An index of less than 1.0 indicates that municipality's rate is less than the State's and conversely, a rate greater than 1.0 indicates that a municipality's rate is greater than the State's. Although the other two criteria could not be indexed, methods were developed to also assess establish points of 1.0 to be the State average for those criteria. With five criteria, each valued at 1.0 for the State average, the points were then summed to make the total of the State average points to be 5.0. Each municipality's affordability points are then added up and compared to the State's. A municipality with points below 5.0, would generally be considered to be in better position to afford a project, where as a municipality with points above 5.0 would likely be in more need of financial assistance. In establishing what constitutes a significant hardship in raising the necessary project revenue, the Department established that a municipality's affordability points must exceed the total of the State average points by 40% in order to be eligible for additional subsidization (principal forgiveness). Therefore, the sum of a municipality's affordability criteria must be a minimum of 7.0 (140% of 5.0) points to be eligible for possible affordability principal forgiveness. Details on the affordability criteria and the affordability analysis methodology are presented below.

Criteria and Methodology:

- **Poverty Rate**

Data from U.S. Census Bureau – American FactFinder
http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

Use ACS 5-Year Estimates – **Poverty Level – All People**

Poverty Rate Index (PRI) is calculated as the ratio of the municipality's poverty rate to the State's poverty rate.

PRI = (Municipal Poverty Rate) ÷ (State Poverty Rate)

- **Income**

The income data for the community is the Median Household Income. When available, income data presented to the Department shall be prioritized in this order:

1) A State approved system-wide income survey that was finalized within the past three years;
2) Census Designated Place (CDP) data, if the sewered area closely approximates the CDP area; then
3) Town data.

CDP and town data shall be from the U.S. Census Bureau – American FactFinder
http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml
American Community Survey Use 5-year MHI estimates.

The U.S. Census Bureau has an application on its website that lets you see the CDP boundaries without needing any GIS expertise: http://tigerweb.geo.census.gov/tigerweb/. Zoom into a small portion of the state at a time and select the "Places and County Subdivisions" checkbox to see the CDP boundaries.

Income Index (II) is calculated as the ratio of the State's Median Household Income to the municipality's Median Household Income.

II = (State Median Household Income) / (Municipal Median Household Income)

Note: (Some projects, such as those for control of non-point sources of pollution, may not have traditionally defined sewer user rates. In those cases, the Department will use the average percentage of all the applicants for 2019 as a means of maintaining equity across the board.)

- **Unemployment Rate**

Data from U.S. Census Bureau – American FactFinder
http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

Use ACS 5-Year Estimates – **In Labor Force – Civilian Labor Force - Unemployment**

Unemployment Rate Index (URI) is calculated as the ratio of the municipality's unemployment rate to the State's unemployment rate.

URI Points = (Municipal Unemployment Rate) ÷ (State Unemployment Rate)

- **Population Trend**

Data from U.S. Census Bureau – Population Estimates – Use most current information for the population trend over the past 10 years.

Maine Census Data for 2007 can be found at SRF Loan Fund, Maine Department of Environmental Protection – **Census Population Data for CWSRF funding**

2017 ACS 5-Year Population Estimate data can be found at the U.S. Census Bureau – American FactFinder http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml .

The most current 10-year population trends (PT) for municipalities are compared to the State's population trend over the same period.

PT as Percent = ((Current Municipal Population) – (Municipal Population 10 years prior)) ÷ (Municipal Population 10 years prior) x 100

Ranges for the municipalities' 10-year population trends are established in 5% increments above and below the State's rate/average (SR) and points assigned as follows:

Population Trend Range	**Points**
Greater than 5% above the State Rate: > (SR+5%)	0.0
State Rate to 5% above the State Rate: (SR+5%) to SR	0.5
State Rate to 5% below the State Rate: SR to (SR-5%)	1.0
5% below the State Rate to 10% below the State Rate: (SR-5%) to (SR-10%)	1.5
10% below the State Rate to 15% below the State Rate: (SR-10%) to (SR-15%)	2.0
15% below the State Rate to 20% below the State Rate: (SR-15%) to (SR-20%)	2.5
More than 20% below the State Rate: < (SR-20%)	3.0

- **Sewer User Cost as a Percentage of the Median Household Income (MHI)**

Yearly Sewer User Cost data for a typical single-family residence is provided by the municipality using the CWSRF User Rate Calculator. Financial and user information is entered into the Calculator to generate an estimated Equivalent Dwelling (or Domestic) Unit (EDU) User Rate/Cost.

Median Household Income data is derived as outlined previously under "Income".

Sewer User Cost as a Percentage of the MHI (UC/MHI) Points are calculated by dividing the municipality's yearly sewer cost for a typical single-family residence by the municipality's Median Household Income then multiplying by 100.

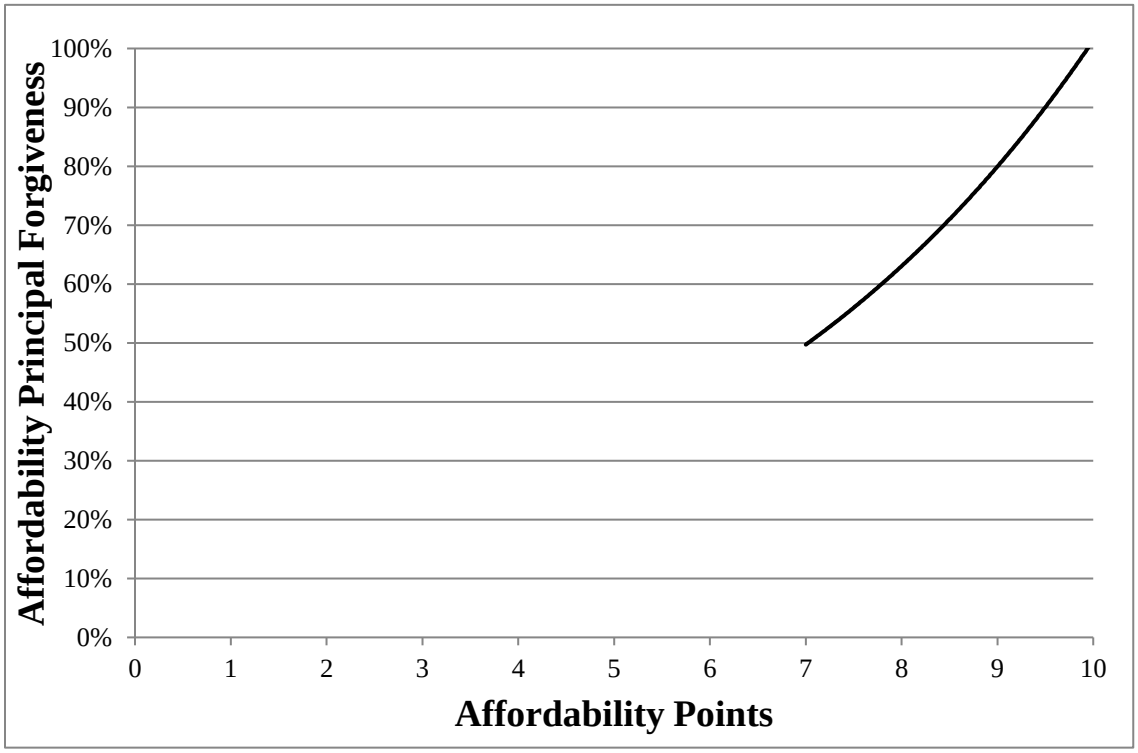
UC/MHI Points = (Single Family Residence Yearly Sewer User Cost) ÷ (Municipality's MHI) x 100

Affordability Principal Forgiveness Percentage:

The following formula will be used to determine possible percentage of affordability principal forgiveness for municipalities that have affordability points of 7.0 or more, i.e. 140% of State average.

Affordability Principal Forgiveness Percentage = (Municipality's Affordability Points)^2

This non-linear formula has the effect of providing proportionally greater assistance in the form of principal forgiveness to communities that are more in need of financial assistance and have higher Affordability Points. This is depicted graphically below.



The principal forgiveness for 2019 will be available for those applicants' projects that will realize the most environmental benefit and are dependent upon the project's environmental ranking compared to other ranked applicant's projects in the funding year. The Department will offer affordability principal forgiveness to the applicant with the highest environmental ranking, then subsequently to applicants with progressively lower rankings until the available affordability principal forgiveness has been committed. The percentage of principal forgiveness that will be offered, within the limits of availability, is defined earlier in this section. **Borrowers that received affordability principal forgiveness from the Department in both previous funding years (2017 & 2018) are not eligible for affordability principal forgiveness in the 2019 funding year.**

Climate Adaptation Plan and Fiscal Sustainability Plan Principal Forgiveness

To the extent available, the Department is making principal forgiveness available as incentives to encourage the development of climate adaptation plans (CAP) and the implementation or expansion of fiscal sustainability plans (FSP). The Department intends to offer CAP and FSP principal forgiveness to assistance recipients that are financing an infrastructure (construction) project and those recipients that are not financing an infrastructure project, but wish to receive funding for a CAP or FSP.

The breakdown of this funding and requirements to receive it are described as follows.

FOR ASSISTANCE RECIPIENTS WITH AN INFRASTRUCTURE (CONSTRUCTION) PROJECT:

1. **Climate Adaptation Plans (CAP) –** The Department intends to offer up to $20,000 per applicant in principal forgiveness, to the extent available, for the development of a CAP. The award of principal forgiveness for applicants with an infrastructure (construction) project will be based on the project's Environmental Priority Point System ranking. See Attachment 3 for details.

   Any unused principal forgiveness in this category will first be used for CAPs without an infrastructure project, then for fiscal sustainability plans with an infrastructure project, then without, and lastly for affordability principal forgiveness, if needed.

2. **Fiscal Sustainability Plans (FSP) -** Loan recipients for all wastewater treatment works projects are required to develop and implement an FSP. An FSP is basically an asset management plan that takes into consideration water and energy conservation efforts. See Attachment 4 for details. As such, energy audits are now subsidized as part of a new FSP or improvements to an existing one.

   The Department intends to offer up to $50,000 per applicant in principal forgiveness, to the extent available, for the development and implementation of an FSP or the improvement to an existing plan. The award of principal forgiveness for applicants with an infrastructure (construction) project will be based on the project's Environmental Priority Point System ranking with a preference to applicants that have not received any principal forgiveness from the Department for the development of a prior Asset Management Plan or Fiscal Sustainability Plan. This incentive offer requires a 100% match from the loan applicant. The applicant's match can be in the form of additional CWSRF borrowing, in-kind services, or other funding.

   Any unused principal forgiveness in this category will first be used for FSPs without an infrastructure project, then for CAPs with an infrastructure project, then without, and lastly for affordability principal forgiveness, if needed.

FOR ASSISTANCE RECIPIENTS WITHOUT AN INFRASTRUCTURE (CONSTRUCTION) PROJECT: These are standalone loans with 100% principal forgiveness and do not require that the applicant also have an infrastructure (construction) project that they are funding through the CWSRF.

3. **Climate Adaptation Plans (CAP) –** The Department intends to offer up to $20,000 per applicant in principal forgiveness, to the extent available, for the development of a CAP. The award of principal forgiveness for applicants without an infrastructure (construction) project will be based on the applicant's CWSRF Affordability ranking. See Attachment 1 for Affordability ranking details and Attachment 3 for CAP details.

   Any unused principal forgiveness in this category will first be used for CAPs with an infrastructure project, then for fiscal sustainability plans with an infrastructure project, then without, and lastly for affordability principal forgiveness, if needed.

4. **Fiscal Sustainability Plans (FSP) -** The Department intends to offer up to $50,000 per applicant in principal forgiveness, to the extent available, for the development and implementation of a new FSP. The award of principal forgiveness for applicants without an infrastructure (construction) project will be based on the applicant's CWSRF Affordability ranking. This offer is only for new FSPs[1] where the applicant has not received any previous principal forgiveness from the Department for the development of an Asset Management Plan or a Fiscal Sustainability Plan. This incentive offer requires a 100% match from the loan applicant. The applicant's match can be in the form of in-kind services or other funding. The intent of this offer is to not use additional CWSRF borrowing as the match to simplify the loan process at no cost to the borrower. However, if the applicant must borrow their match from the CWSRF, special arrangements may be made. See Attachment 1 for Affordability ranking details and Attachment 4 for FSP details.

   Any unused principal forgiveness in this category will first be used for FSPs with an infrastructure project, then for CAPs with an infrastructure project, then without, and lastly for affordability principal forgiveness, if needed.

DISTRIBUTION OF UNALLOCATED PRINCIPAL FORGIVENESS

If applicants on this year's final IUP do not commit to a loan for the estimated assistance amount, the Department reserves the right to reallocate any additional uncommitted principal forgiveness to the remaining applicants on the IUP that have not closed on a loan. The distribution of the uncommitted principal forgiveness would be in accordance with the procedures outlined in the previous paragraphs, with the exception that the Department, at its discretion, could remove the maximum limit per borrower for affordability principal forgiveness.

The Department reserves the right to utilize unallocated principal forgiveness from previous years' allocations and utilize them for affordability principal forgiveness on projects that experience unforeseen cost overruns. The method of award would be in accordance with the procedures outlined in the borrower's IUP funding year.

[1] Under this section the Department reserves the right to offer FSP principal forgiveness to applicants that are improving an existing Asset Management Plan or FSP and have previously received principal forgiveness, only if the applicant is borrowing CWSRF funds for an infrastructure project and has not yet entered a binding commitment on that loan.

ADDITIONAL POINTS ADDED TO ENVIRONMENTAL PRIORITY POINTS

Each of the following factors is rated as a percent of the environmental priority points determined in the Environmental Priority Point System. The various factors are summed and added to the environmental priority points for a final priority rating score.

1. "Green" projects (criteria stated in guidance by EPA). Projects assigned this factor include green infrastructure, water or energy efficiency improvements or other environmentally innovative activities. While these can be freestanding projects, often they may be elements of larger projects. To evaluate green components, the dollar value of green elements will be determined as a percent of the total project cost. This percent will be multiplied be a constant value of 0.2 to obtain a percentage increase to the environmental priority points. See Attachment 2 for details on "Green" projects.

   Increase in points up to: 20%

2. Regulatory requirements. This factor is applied if the project is necessary to meet a regulatory requirement such as a license condition, implementation of required plan or study (e.g. an approved CSO plan or a toxicity reduction plan), or the requirements of a consent agreement or court order.

   Required by consent agreement or court order - increase in points: 20%

   Other specific regulatory requirement
   (e.g. Compliance Initiative Letter, Letter of Warning, Notice of Violation)
   - increase in points: 10%

3. Expected degree of success in addressing pollution concerns. This factor reflects the Department's estimate of how effectively the proposed project will address the local environmental problems for which the environmental priority points were assigned under the Environmental Priority Point System. In rating this factor, the Department recognizes that most projects have inherent limitations and water quality problems often have multiple contributing sources.

   Added reliability or decreased discharges – increase points: 5%

   Significant reduction of a discharge – increase points: 10%

   Elimination of one of several discharges – increase points: 15%

   Elimination of a significant discharge – increase points: 20%

   Elimination of a sole discharge source – increase points: 25%

4. Regionalization of work. This factor recognizes that some proposed projects may represent efforts by two or more jurisdictions to solve water quality issues of common concern. Often, such effort can be more efficient and make better use of public resources to find cost-effective regional solutions.

Increase in points: 15%

5. Co-funded projects. If an applicant indicates that grant or loan money may be available from other sources (e.g. MDOT, EDA, FEMA, CDBG, State grant, STAG or RD), this has the potential to leverage all available funds with the result of more beneficial projects being done. The Department will consult with the other agencies to determine if grants and/or loans have been applied for the proposed project and the other agencies' intent to fund before assessing these extra points.

Increase in points: 20%

Attachment 2

(Note: As of the date of this printing, EPA has not issued an update to the 2012 Green Project Reserve Guidance.)

2012 Clean Water State Revolving Fund 10% Green Project Reserve: Guidance for Determining Project Eligibility

I. Introduction: The Fiscal Year (FY) 2012 Appropriation Act (P.L. 112-74) included additional requirements affecting the Clean Water State Revolving Fund (SRF) program. This attachment is included in the *Procedures for Implementing Certain Provisions of EPA's Fiscal Year 2012Appropriation Affecting the Clean Water and Drinking Water State Revolving Fund Programs*. This attachment includes the details for determining green project reserve (GPR) eligibility for the Clean Water SRF program.

Public Law 112-74 states: "*Provided*, That for fiscal year 2012, to the extent there are sufficient eligible project applications, not less than 10 percent of the funds made available under this title to each State for Clean Water State Revolving Fund capitalization grants shall be used by the State for projects to address green infrastructure, water or energy efficiency improvements, or other environmentally innovative activities." These four categories of projects are the components of the Green Project Reserve (GPR).

II. GPR Goals: Congress" intent in enacting the GPR is to direct State investment practices in the water sector to guide funding toward projects that utilize green or soft-path practices to complement and augment hard or gray infrastructure, adopt practices that reduce the environmental footprint of water and wastewater treatment, collection, and distribution, help utilities adapt to climate change, enhance water and energy conservation, adopt more sustainable solutions to wet weather flows, and promote innovative approaches to water management problems. Over time, GPR projects could enable utilities to take savings derived from reducing water losses and energy consumption, and use them for public health and environmental enhancement projects. Additionally, EPA expects that green projects will help the water sector improve the quality of water services without putting additional strain on the energy grid, and by reducing the volume of water lost every year.

III. Background: For the FY 2010 GPR Guidance, EPA used an inclusive approach to determine what is and is not a „green" water project. Wherever possible, this guidance references existing consensus-based industry practices to provide assistance in developing green projects. Input was solicited from State-EPA and EPA-Regional workgroups and the water sector. EPA staff also reviewed approaches promoted by green practice advocacy groups and water associations, and green infrastructure implemented by engineers and managers in the water sector. EPA also assessed existing "green" policies within EPA and received input from staff in those programs to determine how EPA funds could be used to achieve shared goals.

The FY 2012 SRF GPR Guidance provides States with information needed to determine which projects count toward the GPR requirement. The intent of the GPR Guidance is to describe projects and activities that fit within the four specific categories listed in the FY 2012 Appropriations Act. This guidance defines each category of GPR projects and lists projects that are clearly eligible for GPR, heretofore known as categorically eligible projects. For projects that do not appear on the list of

categorically projects, they may be evaluated for their eligibility within one of the four targeted types of GPR eligible projects based upon a business case that provides clear documentation (see the *Business Case Development* sections in Parts A & B below).

GPR may be used for planning, design, and/or building activities. Entire projects, or the appropriate discrete components of projects, may be eligible for GPR. Projects do not have to be part of a larger capital project to be eligible. All projects or project components counted toward the GPR requirement must clearly advance one or more of the objectives articulated in the four categories of GPR discussed below.

The Green Project Reserve sets a new precedent for the SRFs by targeting funding towards projects that States may not have funded in prior years. Water quality benefits from GPR projects rely on proper operation and maintenance to achieve the intended benefits of the projects and to achieve optimal performance of the project. EPA encourages states and funding recipients to thoroughly plan for proper operation and maintenance of the projects funded by the SRFs, including training in proper operation of the project. It is noted, however, that the SRFs cannot provide funding for operation and maintenance costs, including training, in the SRF assistance.

CWSRF 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 must otherwise be eligible for CWSRF funding. The GPR requirement does not create new funding authority beyond that described in Title VI of the CWA. Consequently, a subset of 212, 319 and 320 projects will count towards the GPR. The principles guiding CWSRF funding eligibility include:

0.2 All Sec 212 projects must be consistent with the definition of "treatment works" as set forth in section 212 of the Clean Water Act (CWA).

- 0.2-1 All section 212 projects must be publicly owned, as required by CWA section 603(c)(1).
- 0.2-2 All section 212 projects must serve a public purpose.
- 0.2-3 POTWs as a whole are utilized to protect or restore water quality. Not all portions of the POTW have a direct water quality impact in and of themselves (i.e. security fencing). Consequently, POTW projects are not required to have a direct water quality benefit, though most of them will.

0.3 Eligible nonpoint source projects implement a nonpoint source management program under an approved section 319 plan or the nine element watershed plans required by the 319 program.

- 0.3-1 Projects prevent or remediate nonpoint source pollution.
- 0.3-2 Projects can be either publicly or privately owned and can serve either public or private purposes. For instance, it is acceptable to fund land conservation activities that preserve the water quality of a drinking water source, which represents a public purpose project. It is also acceptable to fund agricultural BMPs that reduce nonpoint source pollution, but also improve the profitability of the agricultural operation. Profitability is an example of a private purpose.
- 0.3-3 Eligible costs are limited to planning, design and building of capital water quality projects. The CWSRF considers planting trees and shrubs, purchasing equipment, environmental cleanups and the development and initial delivery of education programs as capital water quality projects. Daily maintenance and operations, such as expenses and salaries are not considered capital costs.
- 0.3-4 Projects must have a direct water quality benefit. Implementation of a water quality project should, in itself, protect or improve water quality. States should be able to estimate the quantitative and/or qualitative water quality benefit of a nonpoint source project.
- 0.3-5 Only the portions of a project that remediate, mitigate the impacts of, or prevent water pollution or aquatic or riparian habitat degradation should be funded. Where water quantity projects improve water quality (e.g. reduction of flows from impervious surfaces that adversely affect stream health, or the modification of irrigation systems to reduce runoff and leachate from irrigated lands), they would be considered to have a water quality benefit. In many cases, water quality protection is combined with other elements of an overall project. For instance, brownfield revitalization projects include not only water quality assessment and cleanup elements, but often a redevelopment element as well. Where the water quality portion of a project is clearly distinct from other portions of the project, only the water quality portion can be funded by the CWSRF.

0.3-6 Point source solutions to nonpoint source problems are eligible as CWSRF nonpoint source projects. Section 319 Nonpoint Source Management Plans identify sources of nonpoint source pollution. In some cases, the most environmentally and financially desirable solution has point source characteristics and requires an NPDES discharge permit. For instance, a septage treatment facility may be crucial to the proper maintenance and subsequent functioning of decentralized wastewater systems. Without the septage treatment facility, decentralized systems are less likely to be pumped, resulting in malfunctioning septic tanks.

0.4 Eligible projects under section 320 implement an approved section 320 Comprehensive Conservation Management Plan (CCMP).

0.4-1 Section 320 projects can be either publicly or privately owned.

0.4-2 Eligible costs are limited to capital costs.

0.4-3 Projects must have a direct benefit to the water quality of an estuary. This includes protection of public water supplies and the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife, and allows recreational activities, in and on water, and requires the control of point and nonpoint sources of pollution to supplement existing controls of pollution.

0.4-4 Only the portions of a project that remediate, mitigate the impacts of, or prevent water pollution in the estuary watershed should be funded.

0.5 GPR projects must meet the definition of one of the four GPR categories. The Individual GPR categories do not create new eligibility for the CWSRF. The projects that count toward GPR must otherwise be eligible for CWSRF funding.

0.6 GPR projects must further the goals of the Clean Water Act.[2]

[2] Drinking Water Utilities can apply for CWSRF funding

CWSRF Technical Guidance

The following sections outline the technical aspects for the CWSRF 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 maintain and restore 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

1.2-1 Implementation of green streets (combinations of green infrastructure practices in transportation rights-of-ways), for either new development, redevelopment or retrofits including: permeable pavement[3], bioretention, trees, green roofs, and other practices such as constructed wetlands that can be designed to mimic natural hydrology and reduce effective imperviousness at one or more scales. Vactor trucks and other capital equipment necessary to maintain green infrastructure projects.

1.2-2 Wet weather management systems for parking areas including: permeable pavement 2, bioretention, trees, green roofs, and other practices such as constructed wetlands that can be designed to mimic natural hydrology and reduce effective imperviousness at one or more scales. Vactor trucks and other capital equipment necessary to maintain green infrastructure projects.

1.2-3 Implementation of comprehensive street tree or urban forestry programs, including expansion of tree boxes to manage additional stormwater and enhance tree health.

1.2-4 Stormwater harvesting and reuse projects, such as cisterns and the systems that allow for utilization of harvested stormwater, including pipes to distribute stormwater for reuse.

1.2-5 Downspout disconnection to remove stormwater from sanitary, combined sewers and separate storm sewers and manage runoff onsite.

1.2-6 Comprehensive retrofit programs designed to keep wet weather discharges out of all types of sewer systems using green infrastructure technologies and approaches such as green roofs, green walls, trees and urban reforestation, permeable pavements and bioretention cells, and turf removal and replacement with native vegetation or trees that improve permeability.

1.2-7 Establishment or restoration of permanent riparian buffers, floodplains, wetlands and other natural features, including vegetated buffers or soft bioengineered stream banks. This includes stream day lighting that removes natural streams from artificial pipes and

[3] The total capital cost of permeable pavement is eligible, not just the incremental additional cost when compared to impervious pavement.

restores a natural stream morphology that is capable of accommodating a range of hydrologic conditions while also providing biological integrity. In highly urbanized watersheds this may not be the original hydrology.

1.2-8 Projects that involve the management of wetlands to improve water quality and/or support green infrastructure efforts (e.g., flood attenuation).[4]

1.2-8a Includes constructed wetlands.

1.2-8b May include natural or restored wetlands if the wetland and its multiple functions are not degraded and all permit requirements are met.

1.2-9 The water quality portion of projects that employ development and redevelopment practices that preserve or restore site hydrologic processes through sustainable landscaping and site design.

1.2-10 Fee simple purchase of land or easements on land that has a direct benefit to water quality, such as riparian and wetland protection or restoration.

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.

1.3-6 Hardening, channelizing or straightening streams and/or stream banks. 1.3-7 Street sweepers, sewer cleaners, and vactor trucks unless they support green infrastructure projects.

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 that capture, treat, infiltrate, or evapotranspire water on the parcels where it falls and does not result in interbasin transfers of water.

1.4-3 GPR project is in lieu of or to supplement municipal hard/gray infrastructure.

[4] Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, vernal pools, and similar areas.

1.4-4 Projects considering both landscape and site scale will be most successful at protecting water quality.

1.4-5 Design criteria are available at: http://cfpub.epa.gov/npdes/greeninfrastructure/munichandbook.cfm and http://cfpub.epa.gov/npdes/greeninfrastructure/technology.cfm

1.5 Examples of Projects Requiring A Business Case

1.5-1 Fencing to keep livestock out of streams and stream buffers. Fencing must allow buffer vegetation to grow undisturbed and be placed a sufficient distance from the riparian edge for the buffer to function as a filter for sediment, nutrients and other pollutants.

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 -- shower heads, toilets, urinals and other plumbing devices

2.2-1b Where specifications exist, WaterSense labeled products should be the preferred choice (http://www.epa.gov/watersense/index.html).

2.2-1c Implementation of incentive programs to conserve water such as rebates.

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, or upgrading existing 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 detection equipment to existing meters (not replacing the meter itself).

2.2-5 Water audit and water conservation plans, which are reasonably expected to result in a capital project.

2.2-6 Recycling and water reuse projects that replace potable sources with non-potable sources,

2.2-6a Gray water, condensate and wastewater effluent reuse systems (where local codes allow the practice)

2.2-6b Extra treatment costs and distribution pipes associated with water reuse.

2.2-7 Retrofit or replacement of existing landscape irrigation systems with more efficient landscape irrigation systems, including moisture and rain sensing equipment.

2.2-8 Retrofit or replacement of existing agricultural irrigation systems with more efficient agricultural irrigation systems.

2.3 Projects That Do Not Meet the Definition of Water Efficiency 2.3-1 Agricultural flood irrigation.

2.3-2 Lining of canals to reduce water loss.

2.3-3 Replacing drinking water distribution lines. This activity extends beyond CWSRF eligibility and is more appropriately funded by the DWSRF.

2.3-4 Leak detection equipment for drinking water distribution systems, unless used for reuse distribution pipes.

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 POTW, since less water would need to be collected and treated; therefore, there are also energy and financial savings.

2.5 Examples of 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 Projects that result from a water audit or water conservation plan

2.5-3 Storage tank replacement/rehabilitation to reduce loss of reclaimed water.

2.5-4 New water efficient landscape irrigation system (where there currently is not one).

2.5-5 New water efficient agricultural 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 quality projects, use energy in a more efficient way, and/or produce/utilize renewable energy.

3.2 Categorical Projects

3.2-1 Renewable energy projects such as wind, solar, geothermal, micro-hydroelectric, and biogas combined heat and power systems (CHP) that provide power to a POTW. (http:///www.epa.gov/cleanenergy). Micro-hydroelectric projects involve capturing the energy from pipe flow.

3.2-1a POTW owned renewable energy projects can be located onsite or offsite.

3.2-1b Includes the portion of a publicly owned renewable energy project that serves POTW‟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 Projects that achieve a 20% reduction in energy consumption are categorically eligible for GPR[5]. Retrofit projects should compare energy used by the existing system or unit process[6] to the proposed project. The energy used by the existing system should be based on name plate data when the system was first installed, recognizing that the old system is currently operating at a lower overall efficiency than at the time of installation. New POTW projects or capacity expansion projects should be designed to maximize energy efficiency and should select high efficiency premium motors and equipment where cost effective. Estimation of the energy efficiency is necessary for the project to be counted toward GPR. If a project achieves less than a 20% reduction in energy efficiency, then it may be justified using a business case.

3.2-3 Collection system Infiltration/Inflow (I/I) detection equipment

3.2-4 POTW 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 a capital project are eligible. Guidance to help POTWs develop energy management programs, including assessments and audits is available at http://www.epa.gov/waterinfrastructure/pdfs/guidebook_si_energymanagement.pdf

3.3 Projects That Do Not Meet the Definition of Energy Efficiency 3.3-1 Renewable energy generation that is *privately* owned or the portion of a publicly owned renewable energy facility that does not provide power to a POTW, either through a connection to the grid that the utility draws from and/or a direct connection to the POTW.

3.3-2 Simply replacing a pump, or other piece of equipment, because it is at the end of its useful life, with something of average efficiency.

3.3-3 Facultative lagoons, even if integral to an innovative treatment process.

3.3-4 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 Project must be cost effective. An evaluation must identify energy savings and payback on capital and operation and maintenance costs that does not exceed the useful life of the asset. http://www.epa.gov/waterinfrastructure/pdfs/guidebook_si_energymanagement.pdf

[5] The 20% threshold for categorically eligible CWSRF energy efficiency projects was derived from a 2002 Department of Energy study entitled *United States Industrial Electric Motor Systems Market Opportunities Assessment, December 2002* and adopted by the Consortium for Energy Efficiency. Further field studies conducted by Wisconsin Focus on Energy and other State programs support the threshold.

[6] A unit process is a portion of the wastewater system such as the collection system, pumping stations, aeration system, or solids handling, etc.

3.4-2 The business case must describe how the project maximizes energy saving opportunities for the POTW or unit process.

3.4-3 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/cupss) to document current energy usage and track anticipated savings.

3.5 Examples of Projects Requiring a Business Case

3.5-1 POTW projects or unit process projects that achieve less than a 20% energy efficiency improvement.

3.5-2 Projects implementing recommendations from an energy audit that are not otherwise designated as categorical.

3.5-3 Projects that cost effectively eliminate pumps or pumping stations.

3.5-4 Infiltration/Inflow (I/I) correction projects that save energy from pumping and reduced treatment costs and are cost effective.

3.5-4a Projects that count toward GPR cannot build new structural capacity. These projects may, however, recover existing capacity by reducing flow from I/I.

3.5-5 I/I correction projects where excessive groundwater infiltration is contaminating the influent requiring otherwise unnecessary treatment processes (i.e. arsenic laden groundwater) and I/I correction is cost effective.

3.5-6 Replacing pre-Energy Policy Act of 1992 motors with National Electric Manufacturers Association (NEMA) premium energy efficiency motors.

3.5-6a NEMA is a standards setting association for the electrical manufacturing industry (http://www.nema.org/gov/energy/efficiency/premium/).

3.5-7 Upgrade of POTW lighting to energy efficient sources such as metal halide pulse start technologies, compact fluorescent, light emitting diode (LED).

3.5-8 SCADA systems can be justified based upon substantial energy savings.

3.5-9 Variable Frequency Drive can be justified based upon substantial energy savings.

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 likely to result in a capital project.

4.2-2 Utility Sustainability Plan consistent with EPA SRF‟s 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)

4.3-3a Note: GHG Inventory and mitigation plan is eligible for CWSRF funding.

4.2-3b EPA Climate Leaders:
http://www.epa.gov/climateleaders/basic/index.html
Climate Registry: http://www.theclimateregistry.org/

4.2-4 Planning activities by a POTW to prepare for adaptation to the long-term effects of climate change and/or extreme weather.

4.2-4a Office of Water – Climate Change and Water website: http://www.epa.gov/water/climatechange/

4.2.5 Construction of US Building Council LEED certified buildings or renovation of an existing building on POTW facilities.

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 U.S. Green Building Council website: http://www.usgbc.org/displaypage.aspx?CategoryID=19

4.2-6 Decentralized wastewater treatment solutions to existing deficient or failing onsite wastewater systems.

4.2-6a Decentralized wastewater systems include individual onsite and/or cluster wastewater systems used to collect, treat and disperse relatively small volumes of wastewater. An individual onsite wastewater treatment system is a system relying on natural processes and/or mechanical components, that is used to collect, treat and disperse or reclaim wastewater from a single dwelling or building. A cluster system is a wastewater collection and treatment system under some form of common ownership that collects wastewater from two or more dwellings or buildings and conveys it to a treatment and dispersal system located on a suitable site near the dwellings or buildings. Decentralized projects may include a combination of these systems. EPA recommends that decentralized systems be managed under a central management entity with enforceable program requirements, as stated in the *EPA Voluntary Management Guidelines.* http://www.epa.gov/owm/septic/pubs/septic_guidelines.pdf

4.2-6b Treatment and Collection Options: A variety of treatment and collection options are available when implementing decentralized wastewater systems. They typically include a septic tank, although many configurations include additional treatment components following or in place of the septic tank, which provide for advanced treatment solutions. Most disperse treated effluent to the soil where further treatment occurs, utilizing either conventional soil absorption fields or alternative soil dispersal methods which provide advanced treatment. Those that discharge to streams, lakes, tributaries, and other water bodies require federal or state discharge permits (see below). Some systems promote water reuse/recycling, evaporation or wastewater uptake by plants. Some decentralized systems, particularly cluster or community systems, often utilize alternative methods of collection with small diameter pipes which can flow via gravity, pump, or siphon, including pressure sewers, vacuum sewers and small diameter gravity sewers. Alternative collection systems generally utilize piping that is less than 8 inches in diameter, or the minimum diameter allowed by the state if greater than 8 inches, with shallow burial and do not require manholes or lift stations. Septic tanks are typically installed at each building served or another location upstream of the final treatment and dispersal site. Collection systems can transport raw sewage or septic tank effluent. Another popular dispersal option used today is subsurface drip infiltration. Package plants that

discharge to the soil are generally considered decentralized, depending on the situation in which they are used. While not entirely inclusive, information on treatment and collection processes is described, in detail, in the "*Onsite Wastewater Treatment Technology Fact Sheets*" section of the EPA Onsite Manual http://www.epa.gov/owm/septic/pubs/septic_2002_osdm_all.pdf and on EPA"s septic system website under Technology Fact Sheets. http://cfpub.epa.gov/owm/septic/septic.cfm?page_id=283

4.2-6c For the purposes of the CWSRF, decentralized systems are considered to be section 319 projects and Davis-Bacon does not apply.

4.3 Projects That Do Not Meet the Definition of Environmentally Innovative

4.3-1 Air scrubbers to prevent nonpoint source deposition.

4.3-2 Facultative lagoons, even if integral to an innovative treatment processes.

4.3-3 Surface discharging decentralized wastewater systems where there are cost effective soil-based alternatives

4.3-4 Higher sea walls to protect POTW from sea level rise.

4.3-5 Reflective roofs at POTW 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 or 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;

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 Examples of Projects Requiring a Business Case

4.5-1 Constructed wetlands projects used for municipal wastewater treatment, polishing, and/or effluent disposal.

4.5-1a Natural wetlands, as well as the restoration/enhancement of degraded wetlands, may not be used for wastewater treatment purposes and must comply with all regulatory/permitting requirements.

4.5-1b Projects may not (further) degrade natural wetlands.

4.5-2 Projects or components of projects that result from total/integrated water resource management planning consistent with the decision criteria for environmentally innovative projects and that are Clean Water SRF eligible.

4.5-3 Projects that facilitate adaptation of POTWs to climate change identified by a carbon footprint assessment or climate adaptation study.

4.5-4 POTW upgrades or retrofits that remove phosphorus for beneficial use, such as biofuel production with algae.

4.5-5 Application of innovative treatment technologies or systems that improve environmental conditions and are consistent with the Decision Criteria for environmentally innovative projects such as:

4.5-5a Projects that significantly reduce or eliminate the use of chemicals in wastewater treatment;

4.5-5b 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. (National Biosolids Partnership, 2010; *Advances in Solids Reduction Processes at Wastewater Treatment Facilities Webinar*; http://www.e-wef.org/timssnet/meetings/tnt_meetings.cfm?primary_id=10 CAP2&Action=LONG&subsystem=ORD%3cbr).

4.5-5b(i) Includes composting, class A and other sustainable biosolids management approaches.

4.5-6 Educational activities and demonstration projects for water or energy efficiency.

4.5-7 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).

4.5-8 Sub-surface land application of effluent and other means for ground water recharge, such as spray irrigation and overland flow.

4.5-8a Spray irrigation and overland flow of effluent is not eligible for GPR where there is no other cost effective alternative.

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 IV.A.a. in the *Procedures for Implementing Certain Provisions of EPA's Fiscal Year 2012 Appropriations 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 must address the decision criteria for the category of project
- 5.0-2 Business cases should be adequate, but not exhaustive.
  - 5.0-2a There are many formats and approaches. EPA does not require any specific one.
  - 5.0-2b Some projects will require detailed analysis and calculations, while others many not require more than one page.
  - 5.0-2c Limit the information contained in the business case to only the pertinent "green" information needed to justify the project.
- 5.0-3 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 Quantifiable water and/or energy savings or water loss reduction for water and energy efficiency projects should be included.
- 5.1-2 The cost and financial benefit of the project should be included, along with the payback time period where applicable. (NOTE: Clean Water SRF requires energy efficiency projects to be cost effective.)

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/

ATTACHMENT 3

Clean Water State Revolving Fund (CWSRF)
Requirements and Guidance
for a
Climate Adaptation Plan (CAP)

DEPLW1278-B-2018

Maine CWSRF Adaptation Plan Requirements

The Department is providing an incentive to encourage municipalities and districts to develop a Climate Adaptation Plan (CAP) for their wastewater treatment system. Under this context, the "wastewater treatment system", a.k.a. system, will consist of the municipality's or district's infrastructure assets to collect, convey, treat, and discharge municipal sewage. The incentive will be provided in the form of a standalone principal forgiveness loan to borrowers that want to develop a Climate Adaptation plan. The amount of the incentive will be established annually during the development of the Intended Use Plan (IUP). The intent of the CAP is for loan recipients to assess the wastewater treatment system's vulnerabilities to climate change and developing a plan for system resiliency.

The climate adaptation plan must be prepared by a licensed engineer and submitted to the Department within **one year** from the loan closing date.

The **Climate Adaptation Plan** should identify hazards associated with climate change, evaluate their impacts on critical assets, identify adaptation practices, and present recommendations that build resiliency into the critical assets. Some impacts to critical assets will develop slowly over time (sea level rise, air and water temperature changes, precipitation changes, etc.) and other impacts may happen suddenly (storms, tidal surge, ice jams, etc.). Therefore, it is important to consider what practices may be implemented over time as adaptation practices, and what practices may be deployed in the near term to respond to more immediate weather events as preparedness practices for your emergency operations plan. For example, emergency operations' planning is often intended to define actions taken during a specific weather event. Adaptation planning identifies protective measures, or practices, to implement prior to an anticipated weather event so that the level of emergency response needed during a weather event is reduced.

The CWSRF Climate Adaptation Plan shall consist of the following steps:

The format for the final report is at the discretion of the author and contributors; however, each of the following steps should be addressed. The Maine DEP will meet with the applicant prior to starting the CAP to answer any questions about these expectations and requirements.

1. **Identify Participating Personnel:** The Authorized responsible person in charge of the facility whether that is the Superintendent/Town Manager/Public Works Director/or Boards is required.

   Primary Participants (expected/required):

   - Superintendent
   - Town/City/District Manager
   - CWSRF Environmental Engineer
   - Maine Emergency Management Agency (MEMA)
   - Consultant Engineer
   - Local Emergency Management Agency (for preparedness strategies) - one meeting expected

   The Climate Adaptation Plan shall identify the following for each primary participant:

   a. Relevant Qualifications
   b. Experience in Subject Matter
   c. Resume of Key Personnel

   Depending on how comprehensive the applicant addresses the utility, efforts to further include other key individuals will be involved with the project may prove to be helpful and a more efficient use of resources. For example, the following list contains some common participants when developing a climate adaptation plan.

   Additional Participants (discretionary):

   - Town Planner / Regional Planner
   - Board of Directors
   - General Public
   - Select Board
   - Drinking Water Program
   - Insurance Company

2. **Identify System Hazards:** Identify the natural hazards and their potential risk to your system. The following list of potential natural hazards may be applicable to your system. The list is not meant to be all inclusive as additional hazards might be applicable.

   - Heavy Precipitation & Floods (riverine, flash, inland, urban, coastal)
   - Severe Storms (i.e. Nor' Easters, Hurricanes, Heavy Snowfall, Ice Storms)
   - Stronger winds
   - Sea Level Rise (i.e. inundation, marsh migration)
   - Storm Surge with Sea Level Rise
   - Ocean Acidification
   - Drought
   - Temperature changes

Examples of impacts to wastewater operations because of natural hazards:

- Assets impacted such as pump stations, collection piping, energy supply, and communications (i.e. flooding, ice jams, erosion).
- Accessibility to the critical assets (i.e., during an emergency can you get to the treatment plant, a pumping station, or an emergency generator, etc. via roads, water crossings, etc.)
- Treatment plant operations
- Service and demand use
- Water quality (i.e. surface, ground)

Common planning considerations for this task include:

i. Reviewing historic information (example, using information from a previous storm)

ii. Projecting future conditions of the climate:

- How far in the future should you plan for?
- Use future climate change estimates / projections of temperature and precipitation that correspond with your plan or the life of the asset in consideration.
- Consider worst case scenarios of hazards to vulnerable assets.
- Make use of best available data

An explanation of what scenarios were selected and what data sources were used will be very helpful to the analysis and implementation of your adaptation plan, and should be included in the final report.

3. **Identify Vulnerable Assets & Determine Consequences:** Evaluate the critical assets of the treatment system to determine their vulnerability to the identified hazards, e.g. determining elevations of assets, locations of asset, etc. Develop a characterization of consequence and likelihood for each hazard. Determine the possible impacts to the assets and the resulting consequences, e.g. equipment damage, service interruption, etc. What are the impacts to the entire facility, e.g. collection system, pump stations, treatment plant, etc.?

   Referencing supplemental information, that has already been collected, where still relevant, may be incorporated into this step to make use of previous research and to limit new research.

4. **Identify and Evaluate Adaptation Practices:** Identify possible short and long-term adaptation practices for the vulnerable critical assets. These could be a change in operating procedures or practices that may or may not include a capital expense. Estimate the costs to reduce or eliminate the critical assets' vulnerability to the hazard. Planning horizons may also dictate using worst case scenarios for climate projections.

Prioritize the resiliency options based on their effectiveness, cost, and practicality to implement, and determine cost estimates for adaptions measures. Considerations to be noted would include the age and lifespan of the asset, cost estimates for adaptation measures, a priority ranking between the identified critical vulnerable assets and practices, as well as practices that can be taken as "no regret" solutions.

Other near-term considerations to include are actions that would be needed to respond to a hazard before the adaptation practice is in place. These practices will likely overlap with preparedness strategies. Emergency Management personnel could be included to help identify these immediate needs.

Make recommendations as to the adaptation practices that are appropriate for each vulnerable critical asset. Take into consideration any compliance with technical standards such as FEMA and ASTM standards for coastal applications**.** Where possible identify funding sources or mechanisms for implementing recommendations.

5. **Develop Implementation Plan:** Develop a plan to implement the recommended adaptation practices to reduce damage to equipment or interruption to service. Each adaptation practice, or suite of practices if similar and aids in accomplishing this task (mostly applies to larger facilities), should be identified for short-term (within 1-5 years), and long-term (within 6+ years) implementation. Using the outcomes of Step 4 and integrating them into Step 5, included in the final plan would be a timeline or schedule, process, and potential funding sources or mechanisms to be pursued for implementation, as well as the timeline for known or planned maintenance, retrofit, upgrade, or replacement, and use of the Adaptation Plan to inform decision-making processes.

   The plan should include a schedule for implementing identified adaption measures. If implementation of the recommended measures requires a capital expense, information pertaining to it should also be integrated into the utility's asset management plan.

6. **Submit CAP:** The Climate Adaptation Plan shall be submitted to the Department for review and approval at the following times:

   - At any point in the drafting process, Maine DEP is available to meet or assist the applicant to answer any questions about the plan;
   - A draft plan will be submitted at the 80% completion for review;
   - Final review and approval will be given at 100 % Completion; and,
   - A follow-up optional meeting with the applicant would be available to gather feedback about the Climate Adaptation Plan opportunity, in order to help improve the process and outcomes for future applicants and for Maine DEP staff.

Key Terms and Definitions:

These working definitions were created in coordination with Maine state agencies. Sources of definitions for Risk Assessment and for Vulnerability can be found from the Global Change Research Program at GlobalChange.gov http://www.globalchange.gov/climate-change/glossary.

TERM	DEFINITION
Weather	Weather is the atmospheric condition at any given time or place, measured from variables such as wind, temperature, humidity, air pressure, cloudiness, and precipitation. Weather can vary from hour-to-hour, day-to-day, and week-to-week.
Climate	Climate is the average weather condition at a given place over a period, for example, meteorologists often make comparisons against a 30-year period, called a climate normal. Long-term climate is usually defined as a century or more.
Climate Change	Climate Change is a difference in the climate over multiple decades or longer. Long-term variations in climate can result from both natural and human factors.
Adaptation	Adaptation is an adjustment in natural or human systems that adequately and appropriately capitalizes on beneficial opportunities or reduces negative effects due to a changing climate.
Resilience	Resilience is the capacity to prepare for, respond to, and rapidly recover from significant hazard events with minimal damage to social well-being, the economy, and the environment.
Risk Assessment	Studies that estimate the likelihood of specific sets of events occurring and their potential positive or negative consequences.
Vulnerability	The degree to which physical, biological, and socio-economic systems are susceptible to and unable to cope with adverse impacts of climate change.

References & Further Resources:

The following resources are listed for reference only and are not meant to be an endorsement or requirement of a particular method for the climate adaptation plan development.

A. Technical Assistance:

All state and federal assistance is available at no cost.

Maine Department of Environmental Protection

- Maine Climate Change Clearinghouse – the Department of Environmental Protection has developed a centralized source of information to assist communities mitigate and adapt to environmental changes while recognizing beneficial opportunities and moderating negative effects.

US Department of Homeland Security

- Critical Infrastructure Vulnerability Assessments – the Department's Protective Security Coordination Division conducts specialized field assessments to identify vulnerabilities, interdependencies, capabilities, and cascading effects of impacts on the nation's critical infrastructure.
- Infrastructure Survey Tool – the Infrastructure Survey Tool (IST) is a voluntary, web-based security survey conducted by Protective Security Advisors (PSAs) in coordination with facility owners and operators after an Assist Visit to identify and document the overall security and resilience of the facility.

US Environmental Protection Agency

- Flood Resilience Guide – this basic guide for water and wastewater utilities has a user-friendly layout, embedded videos, and flood maps to guide you through flooding threats and identify practical mitigation options that protect your critical assets. The U.S. EPA developed this guide to help drinking water and wastewater utilities become more resilient to flooding. This approach was successfully tested during a pilot project at a small drinking water system, the Berwick Water Department (BWD), in Berwick, Maine. This guide is particularly useful for small and medium utilities. It provides easy-to-use worksheets with corresponding videos (based on the Berwick pilot). Although this guide focuses on flood resilience, the same approach can be applied to enhancing resilience to other hazards

- Climate Resilience Evaluation & Awareness Tool (CREAT) – is a risk assessment application, which helps utilities in adapting to extreme weather events through a better understanding of current and long-term weather conditions. Find out which extreme weather events pose significant challenges to your utility and build scenarios to identify potential impacts. Identify your critical assets and the actions you can take to protect them from the consequences of extreme weather events on utility operations. Generate reports describing the costs and benefits of your risk reduction strategies for decision-makers and stakeholders.

B. Analysis Tools: evaluate environmental changes related to the changing climate.
Non-regulatory

- Maine's Climate Future – 2015 Update, University of Maine

- Coastal Hazard Resources – the Department of Agriculture, Conservation and Forestry Contains information and mapping tools for Maine's Highest Annual Tide, Sea Level Rise / Storm Surge, Marsh Migration, Potential Hurricane Inundation, and Maine FEMA Floodplain Maps.

- Regional Sea Level Rise Modelling:
  - Midcoast
  - Washington County
  - Lincoln County
  - Casco Bay (wetlands)
  - Saco Bay

Regulatory

- Flood Map Service – Federal Emergency Management Agency

C. Process Support Tools: help guide integration of data into decision-making processes.

- Infrastructure Survey Tool – US Department of Homeland Security
- Flood Resilience Guide – A Basic Guide for Water and Wastewater Utilities, – US Environmental Protection Agency

  Contains Berwick, ME Water Department Treatment Plant Flood Resilience Project
  - Berwick, ME Case Study - Flood Resilience Guide - VIDEO
- Climate Resilience Evaluation & Awareness Tool (CREAT) – http://water.epa.gov/infrastructure/watersecurity/climate/creat.cfm

D. Planning Roadmaps:

- Climate Change Adaptation Roadmap – US Department of Homeland Security
- Adaptation Strategies Guide for Water Utilities – US Environmental Protection Agency
- Being Prepared for Climate Change – A workbook for Developing Risk-Based Adaptation Plans – US Environmental Protection Agency
- New England Regional Climate Adaptation Plan – US Environmental Protection Agency

E. Clearinghouses on Best Practices:

- U.S. Climate Resilience Toolkit – US Global Change Research Program contains a 5-step framework to discover and document climate hazards, then develop workable solutions to lower climate-related risks, case studies to see how people are building resilience for their businesses and in their communities; a catalog of more than 200 digital tools can help you take steps to build resilience, from engaging a community to developing a climate action plan; and, the CRT includes additional resources to reach experts, reports, trainings, and information on the impacts of climate change to specific topics of interest.

ATTACHMENT 4

Clean Water State Revolving Fund (CWSRF)
Requirements and Guidance
for a
Fiscal Sustainability Plan (FSP)

DEPLW1274-C-2018

Maine CWSRF Fiscal Sustainability Plan Requirements

Starting **October 1, 2014,** a Fiscal Sustainability Plan (FSP)[7] will be required of loan recipients for a project that involves the repair, replacement, or expansion of a treatment works.[8] The FSP shall be documented in writing, with some components of the plan likely utilizing computerized asset management software.[9] The FSP shall be made available to Maine DEP staff for inspection at the loan recipient's office upon request. Loan recipients shall implement, maintain and update the plan as appropriate, at least annually.

Early in the loan process and prior to the loan commitment date, the Department will consult with the loan applicant to establish the assets and planning area to be covered by the FSP. At a minimum, the planning area will cover the project being funded and similar assets. For example, if the project is for the upgrade to a pumping station, the FSP planning area would include all pumping stations on a larger system and might include other assets like the sewers on a smaller system. The scope of the FSP will be determined by the Department with input from the loan recipient and agreed upon prior to loan commitment.

If the loan recipient has previously developed an FSP meeting the CWSRF program minimum requirements listed below, the loan recipient shall certify that an FSP has been implemented and meets CWSRF program requirements prior to the loan closing date. The *Fiscal Sustainability Plan Certification* form (a copy of which can be found in Appendix A) states that the loan recipient certifies that the FSP has been implemented, as specified, and meets the federal statutory

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[7] FSPs are now required due to the passage of Federal Public Law 113-121, that amended Section 603(d)(1)(E) of the Federal Water Pollution Control Act.

[8] This requirement does not apply to a loan if, prior to this date, the project was listed on a CWSRF Intended Use Plan or the loan recipient submitted an application for CWSRF funding assistance.

[9] There are many commercially available asset management software programs. Programs should be selected based on specific facility needs. EPA has a free asset management program (CUPSS) designed for small facilities (less than 1,000 connections). It is available free of charge at http://www.epa.gov/cupss/index.html. Please contact the Maine DEP CWSRF program for information about free training resources for CUPSS.

requirements. If the loan recipient has not previously developed an FSP meeting the minimum requirements, the loan documents will require the recipient to develop and implement the FSP and complete the FSP certification form. The allotted time to implement and certify the FSP shall be determined by Maine DEP on a case-by-case basis, but prior to the final disbursement of loan funds.

The costs to develop and implement the FSP, including the purchase of computerized asset management software, staff training or the use of consultant services, are eligible expenses for CWSRF loan reimbursement.

The CWSRF Fiscal Sustainability Plan shall contain:

1. **Inventory of assets**. The FSP shall include an inventory of all critical assets[10] located in the FSP plan area. At a minimum, this will include: type of asset, installation date, estimated useful life, condition, and service history.

2. **Evaluation and Prioritization of Assets.** The plan shall include a system to evaluate the condition and performance and to prioritize the assets. This system should consider, at a minimum, the following asset characteristics: age, condition, service history, remaining useful life, importance to the protection of public health and/or water quality, importance to the operation of the system, and asset redundancy or lack thereof.

3. **Evaluation of Water and Energy Conservation Efforts.** Loan recipients shall certify that they have evaluated and will be implementing water and energy conservation efforts as part of the FSP. The evaluation of any projects identified in the FSP shall take into consideration water and energy conservation efforts. (Appendix B contains the *Water and Energy Conservation Certification* and Appendix C contains EPA's *Guidance on Evaluation and Implementation of Water and Energy Conservation Efforts*. Note: Some of the water and energy conservation efforts listed in the guidance might not be applicable to the FSP plan area defined by the Maine DEP.)

4. **Asset Management and Funding Plan**. The FSP shall include a plan and schedule for the maintenance, rehabilitation and/or replacement of assets and a plan for funding the activities. At a minimum, this should include the project descriptions, costs, timeframes, and potential funding sources. (See *Maine CWSRF FSP Guidance* below and Appendix D for a *Capital Improvement Plan Example*)

[10] Critical assets to be included in the plan will depend on the complexity of the system and the type of assets and be established prior to loan commitment. Maine DEP will determine the appropriate information required in the FSP and the plan area on a case-by-case basis, with input from the loan recipient.

Maine CWSRF Fiscal Sustainability Plan Guidance

The following guidance was developed by Maine DEP to assist the loan recipient in the development and implementation of a Fiscal Sustainability Plan.

Fiscal Sustainability Planning is a process similar to asset management planning that allows the loan recipient to get the most value from each asset and have the financial resources to continually provide established levels of service. In addition to the asset management components of inventorying, evaluating, and ranking critical assets; the FSP also looks at evaluating and implementing water and energy conservation efforts and developing a plan for funding the activities of the asset management plan. The FSP should be coordinated with the loan recipient's overall master planning documents and any other applicable studies, audits, and evaluations. Recommendations or findings in documents that could influence asset prioritization or plan scheduling may include: future treatment capacity needs, current and future permit compliance, excessive inflow and infiltration, operational inefficiency and shortfalls, safety concerns, and coordination with other scheduled utility and infrastructure maintenance.

Time and resources will be required to develop and implement the principles of fiscal sustainability planning. Fiscal sustainability planning needs to become an integral part of the organization's philosophy. Successful fiscal sustainability planning includes input and acceptance by the staff responsible for managing, operating, and maintaining the assets.

Successful fiscal sustainability planning will require the loan recipient to:

- Establish achievable level of service goals.
- Understand the assets available to achieve these goals.
- Identify areas of improvement.
- Determine the FSP scope of work.
- Create a plan to achieve specified goals.

Level of Service is essentially a benchmark used to establish performance goals. Levels of service may be based on user needs or desires, regulatory requirements, internal goals or other performance goals. Fiscal sustainability planning allows the loan recipient to create a consistent path toward reaching level of service goals, as well as a way to measure progress along the way.

FSP Team - Creating an FSP team is a good way to start the FSP discussion, establish the level of service goals, and help identify information and resources needed to develop and implement the FSP. By establishing an FSP team with a diverse background of skills and knowledge, a more complete and accurate plan can be developed in a timely manner. An FSP team ideally will consist of facility managers, decision-makers, operations and maintenance staff, financial and administrative staff, and consultants, as needed. Depending on the complexity of the system, the size of the staff, the resources available and the scope of the plan, the team may be smaller or larger, but it should at a minimum cover the knowledge areas necessary to develop an FSP that can achieve the desired level of service goals.

Asset Condition Assessment - One of the key steps to developing an FSP is to understand the condition of the system's assets. By identifying the condition of the assets, the loan recipient has the ability to evaluate them, either in comparison to similar assets or to standard performance expectations. A simple way to characterize and evaluate assets is to create an asset condition assessment system. An asset condition assessment system is a set of criteria created to consistently evaluate assets. The loan recipient assigns values or phrases to the assets with the understanding that those values or phrases have a pre-established meaning. By defining what these values or phases mean, the owner can consistently evaluate their assets. There are a variety of ways to define the condition of the system's assets. Many computerized asset management software programs provide loan recipients the ability to select from multiple values and/or phrases that are assigned a specific weight during the asset prioritization portion of the FSP. It is left up to the loan recipient to determine what the values and phrases mean and when they should be assigned. Maine DEP recommends that the FSP team should determine which criteria it wants to record and what the conditions assigned to the assets mean before compiling an inventory of the assets to be managed.

FSP Capital Improvement Plan (CIP) – Proper management of the FSP will require a strategy for funding the recommended asset maintenance and replacement plan and schedule. A Capital Improvement Plan (CIP) is a tool commonly used by various organizations to outline when asset rehabilitation or replacement projects should take place and the amount of funds needed to accomplish them. A CIP is especially useful when proposing projects to a board, the ratepayers, or local government officials and may already be a requirement. The CIP helps demonstrate the organization's needs in a concise and non-technical format and helps decision-makers make better planning and financial decisions into the future. The CIP should capture, at a minimum, the FSP goals and funding requirements. An example CIP is included in Appendix D.

FSP Maintenance –It will not be enough to simply make an FSP and put it on the shelf. FSPs are considered "living documents" in the sense that they should be updated regularly to capture physical, organizational and financial changes. Whether it is an emergency repair, a new regulatory requirement, retirement of an asset, ratepayers' concern or changes in available funding, the CIP should reflect those changes as well. In addition, if the planning area of the initial FSP does not include the entire wastewater system, the planning area should evolve and expand over time to include the entire system.

APPENDIX A

Fiscal Sustainability Plan Certification

Maine CWSRF Fiscal Sustainability Plan (FSP) Certification

Loan Recipient: _____ CWSRF Loan Number: _____

Project Name: _____

The passage of the *Water Resources Reform and Development Act (WRRDA) of 2014* makes significant changes to Titles I, II, V, and VI of the *Federal Water Pollution Control Act*, as amended. Effective October 1, 2014, all loan recipients proposing to repair, replace, or expand their treatment works are required to develop and implement a Fiscal Sustainability Plan (FSP).

As stated in section 603(d)(1)(E) of the *Federal Water Pollution Control Act*, as amended:

> *"(E) for a treatment works proposed for repair, replacement, or expansion, and eligible for assistance under subsection (c)(1), the recipient of a loan shall –*
>
> *(i) develop and implement a fiscal sustainability plan that includes –*
>
> *(I) an inventory of critical assets that are part of the treatment works;*
>
> *(II) an evaluation of the conditions and performance of inventoried assets or asset groupings;*
>
> *(III) a certification that the recipient has evaluated and will be implementing water and energy conservation efforts as part of the plan; and*
>
> *(IV) a plan for maintaining, repairing, and, as necessary, replacing the treatment works and a plan for funding such activities; or*
>
> *(ii) certify that the recipient has developed and implemented a plan that meets requirements under clause (i);"*

Recipients of a Maine Department of Environmental Protection CWSRF program loan are required to certify that they have met these requirements for the critical assets within the FSP plan area and developed an FSP that includes, at a minimum, the specific criteria contained in the *Maine CWSRF Fiscal Sustainability Plan Requirements*. The Department, with input from the loan recipient, has determined that the planning area for the FSP is (*The Department will edit this section of the form to include the planning area; e.g. the sewers within sub-basin X, all of the sewer system, all of the pumping stations, the wastewater treatment facility, or all of the wastewater collection and treatment system*). The Department reserves the right to inspect the FSP to determine compliance.

I (*name*), _____, (*title/position*) _____, of (*loan recipient*) _____ hereby certify that to the best of my knowledge that the Fiscal Sustainability Plan has been developed consistent with the criteria contained in the *Maine CWSRF Requirements and Guidance for a Fiscal Sustainability Plan* and has been fully implemented for the planning area described above.

_____ _____

(Signature) (Date)

APPENDIX B

Water and Energy Conservation Certification

Maine CWSRF
Water and Energy Conservation Certification

Loan Recipient: _____

Project Name: _____

CWSRF Loan Number: _____

The passage of the *Water Resources Reform and Development Act* (WRRDA) of 2014 makes significant changes to Titles I, II, V, and VI of the *Federal Water Pollution Control Act*, as amended. Effective October 1, 2014, all loan recipients proposing to repair, replace, or expand their treatment works are required to develop and implement a Fiscal Sustainability Plan (FSP).

As stated in section 603(d)(1)(E)(i)(III) of the *Federal Water Pollution Control Act*, as amended, as part of the FSP, the recipient of a Clean Water State Revolving Fund loan is required to certify that water and energy conservation efforts have been evaluated and will be implemented.

> *"(III) a certification that the recipient has evaluated and will be implementing water and energy conservation efforts as part of the plan;…"*

I (*name*), _____, (*title/position*) _____, of (*loan recipient)* _____ hereby certify to the Maine Department of Environmental Protection that we have evaluated and will be implementing water and energy conservation efforts as part of the Fiscal Sustainability Plan.

_____ _____

(Signature) (Date)

APPENDIX C

Guidance on Evaluation and Implementation of Water and Energy Conservation Efforts

Guidance on Evaluation and Implementation of Water and Energy Conservation Efforts

Supplemental Information for Implementing Section 603(d)(1)(E)(i)(III)

Under Section 603(d)(1)(E)(i)(III) of the Federal Water Pollution Control Act, as amended, a recipient of a Clean Water State Revolving Fund (CWSRF) loan for "repair, replacement, or expansion" of a treatment works must certify that it has evaluated and will be implementing water and energy conservation efforts as part of its fiscal sustainability plan. As stated in *Initial Interpretative Guidance for Certain Amendments in the Water Resources Reform and Development Act to Titles I, II, V and VI of the Federal Water Pollution Control Act*, the Environmental Protection Agency recommends that the CWSRFs evaluate whether a recipient has selected, to the maximum extent practicable, water and energy efficient approaches in the selected project. (Please note that some of the following links might not continue to be active, however a search of EPA's website should provide corrected links.)

Energy Conservation

Energy assessments help utilities identify the amount of energy being used in various aspects of its operations. Energy audits, in turn, allow utilities to identify and prioritize projects that will result in operational and capital improvements to their infrastructure and operations, cost savings, and other climate-related benefits like reductions in greenhouse gas emissions and the use of renewable energy.

Energy Use Assessments

Several tools are available to help utilities conduct energy assessments, including:

> **EPA's Energy Use Assessment Tool -** this is a free Excel-based tool that can be downloaded and is specifically designed for small and medium sized wastewater and water utilities. It enables utilities to analyze their current energy bills and analyze energy consumption for major pieces of equipment. It also allows the utility to develop a printable summary report outlining current energy consumption and costs, generate graphs depicting energy use over time, and highlight areas of potential improvement in energy efficiency. It is available at http://water.epa.gov/infrastructure/sustain/energy_use.cfm
>
> **NYSERDA Energy Benchmarking Tool -** The New York State Energy Research and Development Agency (NYSERDA) has developed a tool to help wastewater utilities assess and benchmark their current energy usage, along with a number of other useful self-audit checklists, available at http://www.nyserda.ny.gov/Energy-Efficiency-and-Renewable-Programs/Commercial-and-Industrial/Sectors/Municipal-Water-and-Wastewater.aspx

Energy Audits

Energy audits can be broadly characterized according to the following three levels:

- Level 1 (Walk Through Audits)
  - Generally last several hours at the facility
  - Usually result in suggestions of low cost improvements in areas like HVAC or lighting

- Level 2 (Energy Survey and Analysis Audits)
  - One or two days in duration, plus additional time to review energy bills, etc.
  - In addition to HVAC/lighting recommendations, usually result in recommendations for equipment upgrades in existing processes (e.g., variable frequency drives, more efficient motors, etc.)

- Level 3 (Process Energy Audit)
  - One or more days at the facility, time to analyze energy bills and pump curves, and time for additional data gathering
  - Audit covers energy use in both existing and alternative processes, potential design modifications, and optimization of processes and equipment
  - Audit suggestions covered detailed operational and process suggestions for both short-term and long-term payback periods as well as capital intensive projects that may require outside funding
  - Most likely to result in significant savings

EPA hosted a webinar in August 2014 describing a number of energy assessment and audit tools available to states and potential recipients of CWSRF funding. The webinar slides are available at http://water.epa.gov/infrastructure/sustain/upload/NRWA-Energy-Audits-for-Small-Utilities-8-4-14.pdf

Tools available to help wastewater utilities obtain or conduct energy audits include:

- **EPA's Energy Use Assessment Tool**—described in more detail above. Available at http://water.epa.gov/infrastructure/sustain/energy_use.cfm
- **EPRI Energy Audit Manual for Water and Wastewater Facilities—**available at www.cee1.org/ind/mot-sys/ww/epri-audit.pdf
  Maine DEP Sample Audit RFP Language—designed to help utilities obtain assistance for Level 3 Audits, available at http://www.maine.gov/dep/water/grants/SRF/2014/model_energy_audit_rfp.pdf
- **The Center for Energy Efficiency (CEE) self-audit checklists—available at** www.cee1.org/ind/mot-sys/ww/epri-audit.pdf
- **Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities—**available at http://www.epa.gov/waterinfrastructure/pdfs/guidebook_si_energymanagement.pdf

Both energy assessments and audits are eligible for funding under the CWSRF, and several organizations can help utilities with these activities, including:

- State Energy Offices (http://www.naseo.org/members-states)
- Electric utilities serving wastewater utilities (http://www.dsireusa.org/)
- Technical assistance providers like the National Rural Water Association, RCAP, and others
- Department of Energy Industrial Assessment Centers (http://energy.gov/eere/amo/industrial-assessment-centers-iacs).

Water Conservation

Water conservation includes efficiency and reuse efforts to not only conserve our raw water supply, but to also reduce flow to wastewater treatment plants. Therefore, one way CWSRF borrowers can fulfill the water conservation requirement is to consider alternative or complementary projects that result in reduced wastewater flows and therefore reduce a treatment works' capacity needs. There are a number of water conservation projects borrowers can consider, including:

- **Water Reuse—**recycling and water reuse projects that replace potable sources with non-potable sources [possible water reuse conservation elements]:
    - Gray water, condensate, and wastewater effluent reuse systems
    - Extra treatment costs and distribution pipes associated with water reuse

- **Water Efficient Devices—**installing or retrofitting water efficient devices, such as plumbing fixtures and appliances [possible water efficient devices conservation elements]:
    - Shower heads, faucets, toilets, urinals, etc.
    - Education and incentive programs to conserve water such as rebates

- **Water Meters—**installing any type of water meter in a previously unmetered area, or replacing existing broken/malfunctioning water meters or upgrading them if rate structure is based on metered use

- **Water Audits and Conservation Plans—**performing audits of entire utilities or individual users (e.g., large corporations) to assess the amount of water being consumed, the need for retrofits, etc.

Utilities can also fulfill this requirement by considering water conservation projects that are not CWSRF eligible.

Water Efficiency Tools

Tools are readily available to help utilities determine how much water is being conserved, including:

- **EPA'sWaterSense Program—**Tools and resources to promote water efficiency are available at http://www.epa.gov/watersense/. States, local governments, and utilities can partner with WaterSense to get access to additional tools and resources to help them design and implement water efficiency and conservation programs. Partnership is free.

- **EPA's Water Conservation Plan Guidelines—**Helpful recommendations to utilities for creating and implementing a Water Conservation Plan, depending on the size of the population served by the utility, available at http://epa.gov/watersense/pubs/guide.html

- **AWWA Water Audit Software—**Free software specifically designed to help utilities perform water audits, to help quantify and track water losses, and determine areas for improved efficiency. Available at http://www.awwa.org/resources-tools/waterknowledge/water-loss-control.aspx

- **AWE Water Conservation Tracking Tool—**A tool to evaluate water savings, costs, and benefits of conservation programs for a specific water utility, available to AWE members at http://www.allianceforwaterefficiency.org/tracking-tool.aspx

- Many states have guidelines and example plans to help utilities develop water conservation plans. For example:

  TWDB Water Conservation Plan—Texas Water Development Board has developed a set of guidelines, tutorials, and example plans to help utilities create a water conservation plan that can be adopted and utilized by different entities.
  Available at http://www.twdb.texas.gov/conservation/municipal/plans/

APPENDIX D

Capital Improvement Plan Example

CAPITAL IMPROVEMENT PLAN EXAMPLE

Year Desired	Project Name	Project Description	Project Need	Is the date flexible? (Y or N)	Project Cost Estimate	Estimation Method	Potential Funding Source(s)	Operations Adjustments	LOS impact
2015	Downtown pump station replacement	Replace 40 year old dry-well wet-well pump with surface mounted pump package	Old pumps and electrical equipment frequently malfunction; pumps are not pumping efficiently	No. This pump station is critical to downtown businesses and does not have redundancy	$178,800	Consultant's sewer system evaluation study	40% SRF loan; 50% CDBG grant 10% from revenues	Operator training with new pumping equipment will be required	This will improve the pumping reliability in the downtown area and reduce customer complaints from sewer backups
2016	None								
2017	None								
2018	District vacuum truck replacement	Replace District vacuum truck that is 15 years old with new truck	Old truck needs constant repairs; parts are no longer manufactured	Yes, but needs to be replaced within 1 to 2 years	$104,250	Listing price from vacuum truck manufacturer's stock catalog	100% commercial bank loan	None	Will allow secondary treatment and collection system to operate efficiently; increases cleanup responsiveness
	Long Road sewer replacement	Replace 1200 LF of sewer main and 6 manholes along Long Rd.	Clay sewer main pipe is 50+ years old; cracked and leaking pipe is causing I/I issues for treatment plant	Yes. Project could be delayed up to 1 year	$683,200	Consultant's estimate	70% RD grant; 30% from capital reserves	None	Project will help achieve LOS goal to decrease treatment plant energy costs
2019	None								
2020	None								

Year Desired	Project Name	Project Description	Project Need	Is the date flexible? (Y or N)	Project Cost Estimate	Estimation Method	Potential Funding Source(s)	Operations Adjustments	LOS impact
2021	None								
2022	Small Creek brick manhole replacement	Cap off CSO outfall line intake to manhole and replace leaking brick manhole with new reinforced concrete manhole	This project is required by the District's CSO Master Plan and discharge permit	No. This project must meet date for regulatory requirements	$292,000	Cost neighboring sewer district paid for brick manhole replacement with reinforced concrete manhole	90% CDBG grant; 10% capital reserves	None.	Project will allow system to meet LOS requirement to be in compliance with regulatory standards
2023	None								
2024	Aeration Lagoon #1 dredging	Aeration Lagoon #1 is in need of dredging to maintain operability	Aeration lagoons require routine dredging every 5-10 years	No. This project will be required to continue proper operation of Lagoon #1	$564,050	Based on historical dredging cost including inflation index	80% SRF loan; 20% CDBG grant	Flow will need to be diverted to Lagoon #3 during dewatering and dredging	Will maintain LOS goal of regulatory compliance
2025	None								
2026	None								
2027	WWTP disinfection house upgrade	Expand disinfection house to accommodate additional chemical mixing tank	Equipment has been well maintained but is reaching end of useful life; redundancy is needed	Yes. Project can be delayed up to 1 or 2 years, but risks equipment failure and permit violation	$421,600	Consultant's estimate	70% SRF loan; 30% capital reserve funds	New disinfection tank and equipment should be rotated into operation periodically	Will maintain LOS goal of regulatory compliance
Total					$2,243,900				