

# Guide to PERs for Clean Water SRF



SC Department of Health and Environmental

This guide provides information for developing a Preliminary Engineering Report (PER) under the Clean Water State Revolving Fund (CWSRF) that meets the requirements for funding construction projects covered by Section 212 of the Clean Water Act.

The first step the project sponsor must take in applying for a CWSRF loan is to submit a PER to the South Carolina Department of Health and Environmental Control (DHEC). The PER will be reviewed by an SRF project manager, who will work closely with the engineer preparing the PER, to ensure that the PER contains the following relevant information:

1. **General Information:**

- a. Name, address and phone number of the project sponsor (i.e., town, utility, owner, or corporation), as well as the name and title of the responsible officer;
- b. Name, address and phone number of the engineering firm, as well as the name of the engineer responsible for the design;
- c. General description of the service area and surroundings (e.g., type of economy, estimated percentage residential, estimated percentage industrial, terrain, location, possible rate of development); and,
- d. Number and type of customers to be served (e.g., domestic, industrial, commercial, agricultural, etc.).

2. **Discussion of Need:** Describe in detail the need for the proposed project. Keep in mind that the primary purpose of the CWSRF is to fund projects that enhance the water quality of the state's surface and ground waters. Projects for the construction of "treatment works" as described in Section 212 of the Federal Clean Water Act (e.g., domestic wastewater projects that are proposed solely for the anticipation of future growth) may also be funded however they will only be funded if projects that improve water quality are not ready to proceed. Please refer to DHEC's Integrated Priority Ranking System for Wastewater and Non-Point Source Projects, found on the SRF Guidance webpage, <http://www.scdhec.gov/srfguidance>, for more information on how projects are prioritized for funding based on improving water quality.

3. **Discussion of Alternatives Considered for Meeting the Need:** Describe in detail the alternatives available, including the discussion of a "no action" alternative. The number and types of alternatives depend upon the scope and complexity of the project. When appropriate, regionalization and land treatment should be evaluated. A Cost and Effectiveness (C&E) analysis of the alternatives considered is required and is discussed in Item 4 below.

4. **Presentation of Cost and Effectiveness (C&E) Analysis of Alternatives Considered for Meeting the Need:** For the alternatives listed in Item 3 above, including the "no action" alternative, use a summary table to present the results of a C&E analysis that incorporates water and energy efficiency (See Attachment A for guidance). In addition to the summary table, the C&E

Certification Form, DHEC 3152 (See Attachment B), must be included as an attachment to the PER.

5. **Discussion of the Rationale for the Alternative Selected:** Describe in detail the rationale for the alternative selected. Both non-monetary and monetary factors should be addressed by the rationale. Non-monetary factors may include, but are not limited to, environmental effects, implementability, operability, performance reliability and institutional issues. Monetary factors should include capital costs and operation and maintenance costs as included in the C&E analysis.

The level of detail depends upon the scope and complexity of the project; however, the discussion should present a concise, technically reasonable rationale. As with any construction project to be permitted, the selected alternative must be consistent with the Water Quality Management Plan (208 Plan) for the area in which the proposed project is located.

6. **Cost Estimate of the Selected Alternative:** Provide a total capital cost estimate for the selected alternative. The cost estimate must include all project costs and must be categorized as indicated below (a-j). It is not necessary to break out eligible versus ineligible costs or address loan term in the PER. For planning purposes, review Attachment C to learn more about SRF eligible costs, adjustment of the loan amount and loan term.
- a. **Planning and Design** - This category includes the cost of any planning, design, and engineering services, performed by outside/private consultants, incurred prior to construction (e.g., preparing the PER, permit fees, plans and specifications, advertising, pre-bid conference, bidding procedures, pre-construction conference, loan application, administration).
  - b. **Land** - This category includes the actual cost of the land that is integral to the project - including rights-of-way and easements.
  - c. **Legal and Appraisal** - This category includes legal and appraisal costs associated with obtaining land, and attorney and bond council fees associated with the SRF loan application and loan closing process.
  - d. **Construction** - This category includes the costs associated with the construction of the project by a contractor.
  - e. **Contingency for Construction** - The SRF Program allows for contingency based on the eligible construction cost as follows – 10% of the construction cost that is \$10 million or less plus 5% of the construction cost that exceeds \$10 million.
  - f. **Equipment** – This category includes the cost of any equipment that is directly purchased by the sponsor such as pumps, generators, etc. There is no contingency allowed on equipment; therefore, the engineer should be conservative in estimating the equipment costs.
  - g. **Materials** - This category includes the cost of any materials such as pipe, valves, brick and mortar, etc., that are directly purchased by the sponsor.
  - h. **Contingency for Materials** - This category applies only to materials that are directly purchased by the sponsor. The SRF program allows a contingency of 2.5%.

- i. **Construction Engineering** - This category includes the costs associated with engineering services during construction, such as inspections, change orders, overview of contractors, shop drawings, record drawings, concrete or soil testing, pay estimates, and draw requests.
  - j. **Loan Closing Fee** - There is a non-refundable loan closing fee, which cannot be financed within the SRF loan. For the amount of this fee please contact Trish Comp with the RIA-OLG at 803-737-3808.
7. **Design Parameters and Calculations for the Selected Alternative:** Specify design parameters and provide design calculations in sufficient detail to demonstrate that:
    - a. All necessary components of the project have been included and properly designed;
    - b. Cost estimates are reasonable; and,
    - c. The selected alternative can be expected to meet the project need.
  8. **Location Map:** A map must be included in the PER that shows the location of the facilities to be constructed (treatment plant, wastewater collection and transmission facilities, etc.). The sizes of all wastewater lines must be included on the map.
  9. **Planning Area Map:** For projects involving a new plant, plant expansion, or interceptor, a map must be included showing the boundaries of the area planned to be served.
  10. **Any other applicable information required by Section R.61-67.200, Standards for Wastewater Facilities Construction.**
  11. **Environmental Evaluation:** Except in cases where DHEC determines that the proposed project qualifies for a categorical exclusion (based on review of a detailed project description and location map) the PER must include an evaluation of the environmental effects of the alternatives. The evaluation must include sufficient information to enable DHEC to complete an environmental review to determine if the project will *significantly* impact the environment.

In general, the project sponsor should avoid alternatives which significantly affect, directly or indirectly, sensitive areas such as:

- |                                   |                              |
|-----------------------------------|------------------------------|
| ▶ Endangered species              | ▶ National natural landmarks |
| ▶ Flood plains (See Item 12)      | ▶ Special coastal resources  |
| ▶ Historical/archaeological sites | ▶ Wetlands                   |
| ▶ Important farmlands             | ▶ Wild and scenic rivers     |

To obtain information to evaluate the environmental effects, applicable State and Federal agencies, listed below, must be solicited. The relevant agency comments usually will serve to substantiate a claim of “No Significant Impact”. The engineer preparing the PER may submit a detailed description and location map of the alternatives to the applicable agencies, requesting input. Alternatively, the engineer may provide this same information to DHEC’s SRF program, which will coordinate obtaining environmental input from the agencies. *The sponsor and engineer are encouraged to take advantage of this service provided by DHEC.*

Copies of the correspondence sent to the environmental agencies, and their corresponding responses, *must* be included within the PER. If an environmental agency indicates possible impacts to the environment, the PER should address how such impacts will be minimized.

To expedite DHEC's review of the PER, the engineer may submit a draft copy of the PER for review prior to receiving comments from all of the relevant environmental agencies. However, the PER is not considered complete until all relevant agency responses are included and addressed.

The following is a list of State and Federal agencies whose input may be required for the environmental evaluation:

- ▶ S.C. Department of Archives and History (*Historic/Archaeological Sites*)
- ▶ S.C. Department of Natural Resources (*Fish and Wildlife*)
- ▶ S.C. Department of Parks, Recreation & Tourism (*State Parks*)
- ▶ Federal Emergency Management Agency (*Flood Plains*)
- ▶ U.S. Department of Agriculture, Natural Resources Conservation Service (*Important Farmland*)
- ▶ U.S. Department of Commerce, National Marine Fisheries Service (*Endangered Marine Species and their Habitat*)
- ▶ U.S. Department of the Interior, Fish and Wildlife Service (*Wetlands, Endangered Species, Coastal Barrier Resources*)
- ▶ U.S. Department of the Interior, National Park Service (*National Natural Landmarks, Wild and Scenic Rivers*)

Depending on project specifics, intra-DHEC environmental input also may be required on issues of Coastal Zone resources (DHEC's Office of Ocean and Coastal Resource Management) and/or navigable waterways (DHEC's Bureau of Water).

In addition to the above environmental issues, the engineer may be required to address compliance with Executive Order No. 12898, Environmental Justice in the PER.

- 12. Federal Flood Risk Management Standard:** Any project that utilizes SRF funds for new construction, substantial improvement, or to address substantial damage to structures and facilities must evaluate the potential impact on floodplains. If, after evaluation of all practicable alternatives, the proposed project will be located in or will affect a floodplain, a floodplain assessment must be prepared and submitted to SRF with the PER. This assessment must document the mitigating measures or design modifications that will be taken to reduce the threats from locating the project in the floodplain.

Detailed guidance is available in Part II of the document available at:

[https://www.fema.gov/sites/default/files/documents/fema\\_implementing-guidelines-EO11988-13690\\_10082015.pdf](https://www.fema.gov/sites/default/files/documents/fema_implementing-guidelines-EO11988-13690_10082015.pdf).

- 13. Public Participation:** A public meeting and/or hearing must be held for all projects except for those having little or no environmental effect. In general, all projects except for those that qualify for a CE will be required to have a public meeting. In lieu of a special meeting, this may be accomplished through discussion of the project during regularly scheduled board or council

meetings, which are open to the public. However, for any meeting to qualify as a public meeting for the SRF, public notice must be made at least 30 days prior to the date of the meeting. The notice must specify that the proposed project will be discussed. This discussion must include the need for the project, alternatives evaluated, rationale for the selected alternative and the environmental and financial impacts of the selected alternative.

In certain special cases involving environmental concerns or other public issues one or more additional public meeting(s) and/or hearing(s) may be required for the project. Should this be necessary, the Department project manager reviewing the project will instruct you as to details of this public participation process. The PER must include documentation (e.g., copy of public notice, newspaper articles, etc.) and a discussion of the public participation process, including any comments received and responses provided.

14. **Signature and Seal:** The PER submitted must bear the signature and seal of a professional engineer, registered in the State of South Carolina.

#### **DHEC SRF Review Process:**

DHEC will review the PER for compliance with State Regulation 61-67 (*Standards for Wastewater Facilities Construction*) and special SRF requirements and conduct an environmental review to determine if the project will significantly affect the environment. The possible outcomes of the review are as follows:

1. When the project is of a type that qualifies to be excluded from the necessary environmental evaluation, DHEC will prepare and issue a public notice of Categorical Exclusion (CE) with concurrent approval of the PER. DHEC determines if a project qualifies for a CE following receipt of a detailed project description and location map.
2. If DHEC concludes that there will be no significant environmental impact, a "Finding of No Significant Impact" document will be prepared and made available for public comment for a period of thirty (30) days. If the public notice period lapses with no public comments, DHEC will issue a letter approving the PER. If comments are received, approval of the PER may hinge on resolution of applicable comments.
3. If DHEC concludes that the project will have a significant environmental impact, the sponsor must:
  - ▶ modify the project to reduce the environmental impact;
  - ▶ select another alternative and evaluate its environmental impact; or,
  - ▶ prepare an environmental impact statement.

**For More Information:**

For more information, contact the SRF project manager (if the project has been assigned) or the SRF section ([SRF-Info@dhec.sc.gov](mailto:SRF-Info@dhec.sc.gov); 803-898-4300).



## Attachment A

### Cost and Effectiveness (C&E) Evaluation of CWSRF Project Alternatives to include Water and Energy Efficiency

Section 602(b)(13) of the Federal Water Pollution Control Act was amended by the Water Resources Reform and Development Act, 2014 to require study and evaluation of the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out a proposed project or activity to be funded with Clean Water (CW) SRF assistance. The cost of such analysis is an eligible SRF project cost. The SC CWSRF is requiring the results of the cost and effective analysis to be presented in the Preliminary Engineering Report (PER).

EPA's interpretive guidance for Section 602(b)(13) says:

The statute requires that a cost and effectiveness analysis involve, at a minimum:

- the study and evaluation of the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought under this title; and
- the selection, to the maximum extent practicable, of a project or activity that maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account—
  - the cost of constructing the project or activity;
  - the cost of operating and maintaining the project or activity over the life of the project or activity; and
  - the cost of replacing the project or activity.

*The Department presents the following C&E methodology as an example; however, alternate methods of analysis may be used. Contact the SRF Project Manager assigned to the project for more information.*

***NOTE: The C&E Certification Form, DHEC 3152 (see Attachment B) and the summary table, as described in Item 4 of the PER Guide, to include assessment of water and energy efficiency, are required to be part of the PER.***

#### Cost and Effectiveness Analysis

1. Perform for each technically feasible alternative (including the no action alternative).
2. The analysis should convert all costs to present day dollars.
3. The planning period is typically 20 years but may be longer or shorter depending on the type of project components.
4. The discount rate to be used should be the "real" discount rate taken from Appendix C of OMB circular A-94 and found at [www.whitehouse.gov/omb/circulars/a094/a94\\_appx-c.html](http://www.whitehouse.gov/omb/circulars/a094/a94_appx-c.html).

5. The total capital cost (construction plus non-construction costs) should be included.
6. Annual O&M costs should be converted to present day dollars using a uniform series present worth (USPW) calculation.
7. The salvage value of the constructed project should be estimated using the anticipated life expectancy of the constructed items using straight line depreciation calculated at the end of the planning period and converted to present day dollars.
8. The present worth of the salvage value should be subtracted from the present worth costs.
9. The net present value (NPV) is then calculated for each technically feasible alternative as the sum of the capital cost (C) plus the present worth of the uniform series of annual O&M ( $USPW_{O\&M}$ ) costs minus the single payment present worth of the salvage value ( $SPPW_S$ ):

$$NPV = C + USPW_{O\&M} - SPPW_S$$

10. A summary table showing the analysis components: capital cost, annual O&M cost, salvage value, present worth of each of these values, and the NPV, should be developed for review and must be included in the PER. All factors (major and minor components), discount rates, and planning periods used should be presented within the table. The table should also incorporate an explanation of each alternative's potential for water and energy efficiency<sup>1</sup> and associated cost savings.
11. Short lived asset costs should also be included in the life cycle cost analysis if determined appropriate by the consulting engineer or agency. Life cycles of short-lived assets should be tailored to the facilities being constructed and be based on generally accepted design life. Different features in the system may have varied life cycles.

#### SRF-required Certification

12. Provide a completed Cost & Effectiveness Certification Form (DHEC 3152) as an attachment to the PER. (See Attachment B.)

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<sup>1</sup> Water efficiency efforts to consider include water reuse, water efficient devices, water meters, water audits and conservation plans. Energy efficiency efforts to consider include energy audits and assessment results, energy use of proposed alternatives, emissions of various alternatives and greenhouse gas reductions, and use of renewable energy. If SRF's Green Project Reserve (GPR) is being pursued, water and energy efficiency can be addressed via the GPR discussion and/or business case.





# Cost and Effectiveness Certification



SRF Project Number \_\_\_\_\_

Project Name \_\_\_\_\_

Project Sponsor \_\_\_\_\_

Section 602(b)(13) of the Federal Water Pollution Control Act (FWPCA) requires a recipient of a loan to certify that the recipient:

- 1) has studied and evaluated the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought under the Clean Water State Revolving Fund Loan Program; and
- 2) has selected, to the maximum extent practicable, a project or activity that maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account –
  - (i) the cost of constructing the project or activity;
  - (ii) the cost of operating and maintaining the project or activity over the life of the project or activity; and
  - (iii) the cost of replacing the project or activity.

Pursuant to Section 602(b)(13) of the FWPCA, all Project Sponsors will evaluate and certify that cost and effectiveness has been addressed as part of the Preliminary Engineering Report.

### Certification

**Pursuant to Section 602(B)(13), we certify that the requirements of Section 602(B)(13), as set forth in items (1) and (2) above, have been completed.**

\_\_\_\_\_  
Signature of Project Engineer

\_\_\_\_\_  
Printed Name of Project Engineer

\_\_\_\_\_  
Signature of Project Sponsor's Representative

\_\_\_\_\_  
Printed Name of Project Sponsor's Representative

Submit by email to DHEC project manager or by mail to:  
SRF Section - Water Facilities Permitting Division, S.C. DHEC, 2600 Bull Street, Columbia, SC 29201

## INSTRUCTIONS – DHEC 3152

**PURPOSE:** The *Cost and Effectiveness Certification* is used to certify that an SRF Project Sponsor has complied with the actions required by Section 602(b)(13) of the Federal Water Pollution Control Act (FWPCA).

**GENERAL INFORMATION:** Pursuant to Section 602(b)(13) of the FWPCA, US EPA requires SRF Project Sponsors to conduct a cost and effectiveness analysis and to select, to the maximum extent practicable, a project or activity that maximizes the potential for water and energy conservation, as appropriate. This requirement applies to any Clean Water project (e.g., wastewater, stormwater, non-point source) where the Project Questionnaire was submitted on or after October 1, 2015.

**INSTRUCTIONS:** The Project Engineer or the Project Sponsor's Representative enters the project information. The Project Engineer and the Project Sponsor's representative sign the Certification.

Submit this form with the Preliminary Engineering Report for the proposed project.

**DHEC REVIEW AND FILING:** The SRF Section will use this form to document compliance with Section 602(b)(13) of the FWPCA by an SRF project. The form will be kept in the PER file for the named project and will be retained for twenty years following the final SRF disbursement to the Project Sponsor - per Retention Schedule 15796.

## Attachment C

### SRF-Eligible Costs ♦ Adjustment of Loan Amount ♦ Loan Term

#### **SRF-Eligible Costs**

*Not all costs associated with a project will be eligible for funding through an SRF loan, however all costs (eligible and non-eligible) must be included in the loan application. Read below for information that will assist in presenting the project costs **for the loan application**. Note: A loan application is “complete” when all SRF construction permit(s) has/have been issued and the financial/loan application submitted to the RIA-OLG has been approved.*

**Planning and Design** – For planning and design costs to be eligible for funding under the CWSRF program, documentation must clearly identify expenses incurred as only for the proposed project and must be dated no earlier than 36 months from the date the Rural Infrastructure Authority Office of Local Government (RIA-OLG) determines the loan application complete.

**Land** – To be eligible for funding under the CWSRF, land must be purchased less than one year prior to the date the loan application is complete. **Also**, to be covered by the loan, purchase price of land may not exceed fair market value, as documented by a certified appraiser. The “Land Acquisition for CWSRF Funding” (DHEC 2553), will need to be completed and included with the first draw request. (SRF forms may be found at <http://www.scdhec.gov/srfforms>.)

**Legal and Appraisal** – The legal and appraisal costs associated with obtaining land (including ROW and easements) are eligible for funding under the CWSRF program if incurred less than one year prior to the date of a complete loan application.

**Materials** – The cost of supplies such as fuel, oil, and tools used by the sponsor to install the materials is not eligible for funding under the SRF.

**Force account labor** – The use of the sponsor’s own employees or equipment, to carry out planning and design engineering or construction engineering or used to install SRF-financed equipment or materials, **is not eligible** for funding under the SRF.

#### **Adjustment of Loan Amount**

All construction portions of a project are required to be bid prior to loan closing. Based on bid results, the construction portion of the loan commitment may be adjusted downward to bid(s) plus contingency or increased by a maximum of 10% exclusive of contingency, depending on the availability of funds. Any bid amount exceeding 10% of the construction portion of the loan commitment is the sole responsibility of the project sponsor.

#### **Loan Term**

Some categories of cost (land, construction, materials) may include items that qualify for up to a 30-year term, based on the useful life of the project components. Please note that planning and design engineering costs, legal and appraisal costs, and construction engineering costs will be limited to a 20-year financing term.