

CLEAN WATER SRF-PLANNING REQUIREMENTS

INTER-DISCIPLINARY ENVIRONMENTAL (IER) REVIEW

Please e-mail the following items to the State Revolving Fund Loan Program for our coordination of a mandatory, 30-day inter-disciplinary environmental review (IER) of the proposed project:

- An electronic (.JPG or .PDF), 8½” x 11” color figure based on the appropriate portion of the most current photo-revision of a USGS 7.5-Minute topographic quadrangle map showing the location of the planning area
- An electronic (.JPG or .PDF), 8½” x 11” color figure based on the appropriate portion of the most current photo-revision of a USGS 7.5-Minute topographic quadrangle map showing the location of the proposed project
- A clear, concise project description (.DOC)

The State Revolving Fund Loan Program will forward the submittals to the following agencies and solicit their input:

TDEC, Division of Air Pollution Control

Tennessee Department of Transportation

TDEC, Division of Archaeology

Tennessee Department of Economic and Community Development

TDEC, Division of Water Resources

Tennessee Historical Commission

TDEC, Natural Heritage Program

Tennessee Wildlife Resources Agency

TDEC, Division of Solid Waste Management

United States Army Corps of Engineers

Tennessee Department of Agriculture

RECOMMENDED FACILITIES PLAN OUTLINE—CWSRF

The following is a suggested outline for the presentation of the required information for a Clean Water State Revolving Fund Facilities Planning document. Some of the information requested may not be applicable for certain projects.

1. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS
 - 1.1 Statement of the Problem
 - 1.2 Summary of the Alternative Solutions Considered
 - 1.3 Recommended Solution
2. PURPOSE AND NEED
 - 2.1 Study Purpose
 - 2.2 Need for the Project
3. GENERAL INFORMATION
 - 3.1 Existing Facilities and Area Served
 - 3.2 Optimum Performance Available with the Existing Facilities/Operational Problems
 - 3.3 Existing Collection System (indicate collectors, pumping stations, force mains, and WWTPs)
 - 3.4 Potential for Serving Additional Areas
4. INFILTRATION AND INFLOW
 - 4.1 Analysis of Infiltration and Inflow
 - 4.2 Steps Being Taken to Reduce Excessive Infiltration and Inflow
5. FUTURE CONDITIONS
 - 5.1 Planning Period (20 years)
 - 5.2 Land Use Projections
 - 5.3 Population Forecast
6. DEVELOPMENT OF ALTERNATIVES
 - 6.1 “No Action” Alternative
 - 6.2 Minimum of Three Alternatives in Addition to the “No Action” Alternative Compared For Cost- effectiveness, Water and Energy Efficiency, Environmental Impacts, and Feasibility
 - 6.3 Chosen Alternative
7. SELECTED PLAN DESCRIPTION
 - 7.1 Detailed Description of Chosen Alternative
 - 7.2 Fiscal Sustainability
 - 7.3 Public Involvement/Public Meeting
8. PROJECT COSTS
 - 8.1 Estimated Construction Costs and Overall Project Costs
 - 8.2 Proposed Financing
 - 8.3 Projected Operating Costs and User Charge Structure
9. ENVIRONMENTAL IMPACTS
 - 9.1 Planning Area and Project Area (indicated on USGS quad map) and a Brief Project Description
 - 9.2 Project Specific Impacts
10. ENVIRONMENTAL JUSTICE CONCERNS
 - 10.1 Identification of Minority and Low-Income Populations in Project Area
 - 10.2 Evaluation of Disproportionate Risks to Identified EJ Populations
 - 10.3 Identification of Public Participation Opportunities for Identified EJ Populations
 - 10.4 Evaluation of Environmental/Health Risks among Identified EJ Populations that may be Exacerbated by Proper Construction and Operation of the Selected Alternative

Maps and Figures

APPENDICES (supporting documentation as appropriate)

FACILITIES PLAN GUIDANCE DOCUMENT

The following guidance information delineates the specific information required for the technical and environmental reviews and directly corresponds to the suggested outline for a facilities planning document.

1. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The Facilities Planning document should begin with an executive summary describing the planning area. This should include a brief description of the problem, a summary of the alternative solutions considered, and the recommended solution to the problem.

2. PURPOSE AND NEED

Describe the study purpose and need for the project and present proof that the proposed project is warranted and needed to improve the public health, reduce pollution to restore surface and ground water, enhance the environmental condition of the planning area, or expand or upgrade the facilities based on the projected, reasonable growth of expected flows. Examples of this proof include: **copies of regulatory directives for existing facilities**, i.e., NPDES Permit requirements, court or enforcement orders; a copy of TDEC, Division of Water Resources' **Tier Evaluation** confirming that the receiving stream is a Tier I stream; and/or a copy of TDEC, Division of Water Resources' **draft Permit and transmittal letter; field reports, photographs, work orders**, etc.

A Tier II stream is acceptable if a new or increased discharge will not be required. The Water Quality Control Board must approve a new or increased discharge to a Tier II stream unless the Division of Water Resources (DWR) confirms that the pollutant loading will not increase.

3. GENERAL INFORMATION

This section should include a description of the location, age, performance, reliability, remaining useful life of **existing water/wastewater facilities** (treatment plants, pump stations, sludge management, pretreatment facilities, and collection system) and the effectiveness and suitability of existing onsite disposal systems. Discuss and analyze the condition of the existing system including the location of all **bypasses and overflows**, the location and description of **major industrial discharges**, the extent of **combined sewers**, and the location of significantly developed areas served by **onsite systems** and the documentation of associated problems. Also evaluate any/all water supply implications at the proposed WWTP discharge points.

Discuss and analyze the performance of the existing system by including overload conditions and design capacities; existing flows, and waste characteristics; and average, peak, and wet weather flows should also be included. Demonstrate current treatment plant performance by comparing daily monitoring reports submitted to the State with the NPDES permit and by comparing operating reports to the operation and maintenance (O&M) manual/program. In addition, present **Existing Effluent Limitations** (including **concentrations and mass limits**) for each surface water discharge alternative. If the project involves groundwater recharge, identify present and future groundwater uses, applicable groundwater regulations, and monitoring programs.

4. INFILTRATION AND INFLOW

In infiltration/inflow (I/I) reduction projects, discuss collection system evaluations that have been performed such as a **Sewer System Evaluation Survey, flow monitoring, smoke testing, etc.** The results should be presented in the facilities plan along with a **plan of action** to rehabilitate the system, **cost analysis, projected results**, and a realistic **schedule** for I/I removal.

Discuss the applicable possible outcome of the Sewer System Evaluation Survey from the following:

- If excessive I/I **do not exist**, no further study is required. I/I should be included as a component of the average daily flow base in the sanitary sewer system water budget.
- If excessive I/I **may or may not exist**, then further study is required.
- If excessive I/I **exists** in the system, propose an I/I correction program that includes cost estimates, schedule, and projected results. The program can be included as part of the project's performance standards and should be finished within one year to coincide with project performance certification completion.

5. FUTURE CONDITIONS

The planning period for SRF projects is the life of the SRF loan. This description should include **present and future maps, descriptions of future development, land use projections, and growth trends** in the project area. A **population forecast and flow forecast** based on the analysis of wastewater flow records should be included in the report, following the format displayed below (The reasonableness of the projections will depend on the results of the needs survey). **New/Revised NPDES permit limits** should be included in the report for the planning area (Residential wastewater strength approximates 200 mg/l BOD5 and SS or otherwise justified). The potential for serving additional areas should be addressed in order to ensure proper sizing of the new facility. The long-term goals of the community should be represented in the report.

FACILITIES PLAN GUIDANCE DOCUMENT

EXISTING AND PROJECTED FACILITY CONDITIONS

| POPULATION | EXISTING (20??) | PROJECTED (20?? <i>20 years later</i>) |
|---------------------------------------|-----------------|--|
| City of _____ | # | # |
| % Sewered | % | % |
| Planning Area Excluding City of _____ | # | # |
| % Sewered | % | % |
| Total Planning Area | # | # |
| % Sewered | % | % |

| WWTP FLOWS (GPD OR MGD) | EXISTING (20??) | PROJECTED (20?? <i>20 years later</i>) |
|---|-----------------|--|
| Residential | # | # |
| Commercial | # | # |
| Industrial | # | # |
| Infiltration/ Inflow (during rainfall events) | # | # |
| TOTAL FLOWS | # | # |

6. DEVELOPMENT OF ALTERNATIVES

The SRF loan recipient must propose a minimum of 4 alternatives (including the “No-action” alternative) to remedy the planning area’s wastewater problems. For each alternative for the planning period, develop a schedule and financing plan for the construction of all stages of the facility, to provide adequate capacity. Describe additional equipment, facilities, and process modifications needed to monitor and improve operations. If the area currently is served by onsite systems, explore the effectiveness and suitability of these systems, and possible modifications for improving performance. **Also, promote the effectiveness of improving the performance of the treatment facilities through public education and public management as well as determining areas for improved water and energy efficiency.** Sound reasons for rejected alternatives not considered worthy for further analysis must be given to warrant the selection of the chosen alternative.

The “**No-action**” alternative must describe the effects and consequences over the planning period that the community will experience should no action be taken to remedy the situation. The effects described should include environmental and social impacts, potential future costs incurred in order to maintain the existing system and correct ongoing problems, and penalties that will be levied upon the community should no action be taken.

Among others of your choosing, consider the following alternatives that may be applicable to your project:

OPTIMIZING THE PERFORMANCE OF EXISTING FACILITIES

Include an evaluation of additional operating controls and laboratory facilities needed to monitor and improve operations; possible process modifications (e.g., conversion of conventional activated sludge to contact stabilization, the addition of mechanical aeration to waste stabilization ponds, etc.); and the effectiveness and suitability of existing onsite disposal systems and possible modifications for improving performance through public education and public management.

UNSEWERED AREAS

For unsewered portions of communities with a population of 10,000 or less, evaluate consider the rehabilitation and management of onsite systems including the identification of the number, type, and location of onsite systems and an analysis of the reasons for onsite system failure.

CONVENTIONAL SEWERS AND INTERCEPTOR SEWERS

Where conventional and/or interceptor collection sewers are proposed as one alternative to serve developed areas, ensure that: The need for sewers is justified and documented and Other methods of collection and disposal (e.g., onsite system rehabilitation and alternative conveyance systems) are evaluated and compared to conventional sewers with regard to total cost and environmental impacts.

FLOW REDUCTION

Unless the average daily base flow is 70 gallons per capita per day or less or the applicant has an effective existing flow reduction program, the facilities plan must include an evaluation of flow reduction methods such as: public education and information; change in sewerage rates; installation of water meters and/or water saving devices; changes in local codes to require water saving devices in new homes, etc. The implementation steps proposed for the project area should be described in the facilities plan.

FACILITIES PLAN GUIDANCE DOCUMENT

ALTERNATIVE CONVEYANCE SYSTEMS AND TECHNOLOGIES

If an alternative conveyance system or alternative technology is proposed, the applicant must demonstrate that the process is proven and is the best possible solution for the problem. Provide documentation from other examples that the expected treatment results are within normal ranges and will meet effluent standards. Alternative technologies should be compared to conventional ones and evaluated with regard to total cost and environmental impacts. For projects that include the construction of alternative collection sewers, ensure justification of the need to abandon existing onsite systems. In addition, the applicant should consider using existing septic tanks and conveyance of treated wastewater by small sewers or consider the development of a septage management program.

LAND APPLICATION SYSTEMS

If land application is proposed, the loan applicant must ensure that the following key factors are adequately addressed in accordance with EPA's process design manual. The plan should identify suitable sites for land application. Preliminary design values that conflict with those in EPA's process design manual for loading an area should be justified by adequate supporting data. Preliminary land treatment costs should be compared to referenced costs. Document significant differences in land costs.

SLUDGE DISPOSAL

Several alternatives regarding sludge treatment and disposal must be given. The alternatives evaluated should be appropriate as to size and location of the project. Consideration concerning sludge recycling and reclamation must be made. In addition, proposed sludge treatment and disposal methods must comply with regulatory requirements.

SMALL COMMUNITIES

For small communities of 10,000 people or less, low cost technologies such as facultative ponds, trickling filters, oxidation ditches, land-disposal, rehabilitation and management of onsite systems, etc., should be evaluated. In the case of onsite systems, the applicant must identify the number, type, and location of systems in the area. An analysis of reasons for onsite systems failure should be included, along with accompanying laboratory results, work orders, and other documentation showing that the existing system provides a health/environmental risk.

7. SELECTED PLAN DESCRIPTION

All major system components of the selected plan must be included in description of the **chosen alternative**, along with reasonable cost estimates. The design parameters must comply with State standards, as listed in "Tennessee Clean Water Design Criteria for Sewage Works." The process and design must be capable of meeting applicable effluent limitations, such as the new/revised NPDES Permit (planning limits).

Determine the chosen alternative by employing a logical methodology that includes monetary evaluation, engineering evaluation, environmental impacts, public involvement, and implementation. The **monetary evaluation** should consider present or annual worth, useful life, interest during construction, construction staging, salvage value, replacement costs, capital costs, design, administrative, and construction costs. Projected operations and maintenance costs should be estimated and compared to the user charge structure implemented by the applicant. Also include proposed financing, including SRF Loan awards, local funding, various grants, etc., in the discussion.

The chosen alternative should also include an evaluation of the wastewater treatment works for areas of improved water and energy efficiency and implement these conservation efforts to the maximum extent practicable with the selected alternative.

The **selected plan** should discuss reliability, fiscal sustainability, and process complexity. For example, describe revenue generating applications, reduction or recovery of energy, water efficiency, reuse of treated wastewater, or other relevant factors.

The **environmental impacts** section should include a **USGS quad map** of the planning and project area (may be same map as that in the General Information section), a brief project description, and project-specific impacts.

Public Involvement is a crucial factor in project planning; therefore, SRF requires loan recipients to schedule a public meeting prior to facilities plan approval. A Public Meeting must be held to inform the public of the salient aspects of the planned project and to provide interested parties with an opportunity to comment. The Public Meeting must be advertised at least 14 days prior to the meeting date in order to maximize public participation. Advertise the meeting by using a minimum of one of the following means: publish in a local newspaper, post at banks, grocers, post offices, public libraries, city hall, etc., air on local television and/or radio stations, or insert with monthly utility bills. The advertisement must include the meeting date, time, and location, must specify the amount of the proposed loan, and state that the loan will impact the monthly sewer fees. The meeting must be scheduled on weekday evenings after 6:00 p.m. or on weekends in order to provide the public with the maximum attendance opportunity.

Topics to be discussed at the public meeting are, but not limited to, a complete description of the project, the project schedule, short-term impact verses long-term benefits, the total project cost to include the amounts of the potential SRF loan and other funding sources, and the project's impact on sewer user fees regarding the repayment of the Clean Water State Revolving Fund loan. Submissions to the SRF Loan Program **must include** an account of the public meeting (transcript, audio, or video recording, etc.); a written summary of the meeting; a Sign-in Sheet (if available); a copy of the published advertisement and Publisher's Affidavit from the newspaper, radio station, or television; and/or a copy or photo(s) of the actual advertisement posting, bill insert, or website address.

FACILITIES PLAN GUIDANCE DOCUMENT

Implementation of the project must be feasible. Include **inter-municipal service agreements** or **memoranda of understanding**, where applicable.

8. PROJECT COSTS

Projected costs for all alternatives must be tabulated and evaluated. Include present or annual worth, useful life, interest during construction, construction staging, salvage value, replacement costs, capital costs, design, administrative, construction costs, and projected operations and maintenance costs.

9. ENVIRONMENTAL IMPACTS

This section describes the existing environmental and facilities characteristics of the planning area. A **location map** of the project area, such as the one used for the Interdisciplinary Environmental Review, is a useful figure to include in this section. This map is typically a 7.5 Minute USGS Topographic Quadrangle Map with scale, north arrow, project name, and location labeled on the map.

Environmental Characteristics of the area should be described in detail in this portion of the planning document. Include information about **land use**, future development, growth trends in the project area, and pertinent figures/maps. The **Topography and Hydrology** of the area need to be addressed by describing the project area's typical landscape, surface and ground water issues (quantity, quality, and users), and ground water aquifers. The **Geologic** description of the area should include the major geological features in the project area and the physiographical province in which the project is located. Describe the physical properties of the **soils** by defining the general soil types of the project area and explaining their structural limitations and physical properties, when applicable. If possible, include soil maps of the area.

Historical and Archeological Features of the area need to be researched carefully during the planning stage. Clearance letters from the Historical Commission and other appropriate Federal and State agencies should be included in this section. Items concerning **Cultural Resources and Agricultural Lands** need to be addressed. Provisions to avoid disturbance or damages to historical or archaeological sites during construction activities, and avoidance of adverse effects to prime and/or unique agricultural land should be described in this section. In addition, **residential areas** near the proposed location should be recognized in the planning process. Measures to avoid significantly displacing population and altering the character of existing residential neighborhoods should be mentioned in this section of the planning document.

The **Water Supply** of the planning area should be described in detail. Ground sources of water and any possible contamination of water supply by the proposed project need to be described. Location of points of water withdrawal should be researched and reported. **Wild and Scenic Rivers** should be avoided, as should degradation of **Fish and Wildlife** habitats. **Endangered Species** in the area also need to be protected. Describe the flora and fauna in the planning area (particularly downstream from the proposed discharge point), and include a list of endangered species in the project area. Identify, locate, and describe the **Wetlands** in the project area. Minimize adverse effects during **stream crossings** by employing best management practices described in the facilities plan. Required permitting (such as ARAP, TVA, US Army COE, etc.) should be mentioned in this section, and the loan recipient should work to secure these permits. **Floodplain Issues** must be addressed. Include a **floodplain map** indicating project location, and indicate if the project will be subject to flooding. Aboveground portions of the project must be flood-proofed to the 100-year flood elevation. The general overall **Air Quality** of the planning area and measures taken to avoid adverse effects by the proposed project on ambient air quality should be described.

Remedial Actions will need to be taken to ensure the best possible environmental conditions during and after construction. Describe the best management practices (BMPs) that will be employed to reduce noise, dust, odor, erosion, and sedimentation from construction activities.

10. ENVIRONMENTAL JUSTICE CONCERNS

- Has any minority or low-income populations been identified within the project area?
- Does the selected alternative present disproportionate risks to the minority or low-income populations identified within the project area?
- Have the minority or low-income populations identified within the project area been provided an opportunity for public participation?
- Do the minority or low-income populations identified within the project area suffer from environmental/health risks that will be exacerbated by the proper construction and operation of the selected alternative?

MAPS AND FIGURES

- Topographic map with project area defined (8½" x 11")
- Map/Figure of City limits and planning/service area (8½" x 11")

APPENDICES

FACILITIES PLAN GUIDANCE DOCUMENT

ADDITIONAL REQUIRED DOCUMENTS FOR FACILITIES PLAN APPROVAL

- A copy of the Plan of Operation or “In Lieu of” letter for FP approval