# SRF APPLICANT ENGINEERING REPORT FORMAT

Water System Name _____

Water System Number _ _ _ _ _ _ _

SRF Project Number _ _ _

## A. DESCRIPTION OF THE WATER SYSTEM

Describe the following:

- Type of system
- Types of water sources and current treatment
- General location
- Number of service connections and number of persons served

## B. PROBLEM

Discuss the following:

- Describe the problem being addressed by the project.

## C. ALTERNATIVES

It is essential that all feasible alternatives be evaluated. For example: if the problem is a contaminated well, alternatives may include drilling a new well, installing treatment on the existing well, blending the water with other uncontaminated sources, purchasing water from another system, or physically consolidating with an adjacent water system. Alternatives that are obviously not feasible for economic or physical reasons (e.g. desalination) do not have to be evaluated. An alternative should not be discarded for political reasons (e.g. simply because the adjacent system is not interested in consolidating). Alternatives that involve significantly different concepts need to be evaluated.

In addition to evaluating and discussing the "feasibility" of <u>each</u> alternative, the engineering report must estimate and compare the capital costs, and "operations and maintenance" (O&M) costs, including certified operating personnel, and disposal of waste from treatment, over 20-year period. The report must also analyze the technical effectiveness (including reliability) of

each alternative. See table below for example for evaluating and selecting alternatives.

| Example | Capital | Operation & Maintenance over 20 years including personnel costs | Feasibility (yes/no) | Technical Effectiveness (Rate 1 to 5, 5 = Best) | Rank |
|---|---|---|---|---|---|
| Alt 1 | $2,000,000 | $3,000,000 | yes | 4 | 3 |
| Alt 2 | $2,000,000 | $3,000,000 | yes | 5 | 2 |
| Alt 3 | $3,000,000 | 1,000,000 | yes | 5 | 1 |
| etc | | | | | |

SDWSRF will fund the highest ranked alternative. The highest rank must be determined by comparing the "long-term cost-effectiveness" of the alternatives. Technical effectiveness and feasibility should also be considered. Preference is given to the project alternative that achieves an acceptable result at the least cost over the long-term.

Furthermore, applicant must provide breakdown of capital costs, and operation and maintenance costs for each alternative (see example below).

| Item | Estimated Cost |
|---|---|
| Install Membrane Filtration Plant | $98,000.00 |
| New plumbing and pumps | $10,000.00 |
| 50,000 gallon storage | $50,600.00 |
| Washwater handling system | $30,000.00 |
| Building improvements | $15,000.00 |
| Expand water collection gallery by 20 feet | $15,000.00 |
| Labor | $15,000.00 |
| Subtotal | $233,600.00 |
| Contractor profit @ xx% | $23,360.00 |
| Contingency @ xx% | $58,400.00 |
| Design, Inspection @ xx% | $46,720.00 |
| **Total** | **$362,080.00** |

| Item | Estimated Cost |
|---|---|
| Membrane replacement | $500.00 |
| Analytical/Compliance | $10,000.00 |
| Total | $10,500.00 |
| **20 year PW Capital and O&M Cost** | **$572,000.00** |

## D. DESCRIPTION OF PROJECT (Selected Alternative)

- Describe generally what the water system is proposing to construct including all of the significant components.

- Describe how the new facilities will tie-in with the existing system.

- Describe your analysis of how this project will resolve the problem and how appropriate and effective you think it will be. Do you anticipate operational difficulties with the proposed process? Is the treatment proposed appropriate for the technical expertise or size of the system?

- Describe any components that address water security, water conservation, and/or energy conservation/reliability deficiencies per application enclosure titled SDWSRF Enhancing Project Impact. This enclosure can be found at the website below:

http://www.cdph.ca.gov/ps/ddwem/SRF/Application/PDFs/Security_Energy_Conservation.pdf

## E. ELIGIBILITY

- If there is any land that will be purchased with SRF funds, make sure the report discusses the necessity for such land. Only land or land access that is integral to the construction of source, treatment or distribution facilities is eligible.

- Identify project elements that may be partially eligible (such as a pro-ration of lab space devoted to the water treatment plant).

## F. PRELIMINARY DESIGN

This section should describe the preliminary design and other technical aspects of the project. Establish assumptions, methodology, criteria, etc. with respect to water demand, growth projection, design capacities, flow rates, design parameters, etc. Specifically address the following:

- Overall conceptual design (e.g. layout, flow diagrams, choice of unit processes, redundancy, reliability features).

- The current peak flow water demand.

- How was the anticipated growth and resultant water demand determined?

- If the project is to be phased, a description of the phases and the priority for completion of the phases is to be included.

- Cost estimates (see example below)

- Schedules

- Describe any CEQA documents, forms or worksheets

- Describe the methodology used to calculate the current "average residential water rate". Does the system have a large industrial or commercial demand? How does it impact the peak flow demand? How will the cost of the loan portion of the project impact the residential consumers. All of these calculations and the result should be shown in your report.

- What is the useful life of the project? The useful life is normally determined by the useful life of the major components of the project.

| Item | Estimated Cost | SRF Funding | Other Funding |
|---|---|---|---|
| Install Membrane Filtration Plant | $98,000.00 | $98,000.00 | 0 |
| Washwater handling system | $30,000.00 | $30,000.00 | 0 |
| Building improvements | $15,000.00 | 0 | $15,000.00 |
| Labor | $15,000.00 | $15,000.00 | 0 |
| Subtotal | $158,000.00 | $158,000.00 | 0 |
| Contractor profit @ xx% | $15,800.00 | $15,800.00 | 0 |
| Contingency @ (up to 25% of construction costs) | $39,500.00 | $39,500.00 | 0 |
| Design, Inspection @ 20% | $31,600.00 | $31,600.00 | 0 |
| **Total** | **$244,900.00** | **$229,400.00** | **$15,000.00** |

## G. WATER RIGHTS

In this section describe the source of the water supply that will be used to operate the project. The water system may have (1) water rights **OR** (2) may have a legal right to a supply of water (e.g. long-term water supply agreement) that will be required as condition of the Notice of Application Acceptance.

(1) For systems with water rights, describe the type of water right being used by the applicant, and whether or not the applicant possesses, or can reasonably be expected to possess, sufficient water rights to meet the projected 10-year water demand. Be aware that an applicant cannot merely have submitted an application to

the State Water Resources Control Board, but they must have been granted the water right.

(2) Systems with a legal right to a supply of water will be required to have a long-term water service agreement that is the length of the SDWSRF loan. Also, describe whether or not the applicant possesses, or can reasonably be expected to possess, sufficient legal rights to meet the projected 10-year water demand.

Comment, if applicable, on the potential long-term availability of groundwater in the project area (i.e. mountain communities, limited or dropping water tables, overdraft).

## H. PLANNING

Is the project consistent with local (county) planning documents? How was this determined? What county planning documents were checked?

## I. PROPOSED SCHEDULE

1. *ABC water system* intends to submit final plans and specifications with a detailed cost breakdown for the entire project (including non-SRF funded portions) to CDPH's_____District Office by _____ (date). (This condition must be met prior to issuance of the funding agreement.)

2. *ABC water system* intends to complete construction of the project no later than _____. (For large project, District may impose some intermediate deadlines).

Report Prepared By _____ Date _____

Report Approved By _____ Date _____