

The following information REVISES and/or SUPPLEMENTS certain sections of RUS Bulletins 1780-2 and 1780-3. All documents referenced are available at the Iowa Rural Development website: [http://www.rurdev.usda.gov/IA\\_we\\_ContractDocs.html](http://www.rurdev.usda.gov/IA_we_ContractDocs.html).

**SECTION 3.d.** is revised to read as follows:

*IA Guide 13j, Water/Sewer Project Information*, must be completed and submitted with the preliminary engineering report. While the applicant will provide much of the information for this document, it is essential that the engineer consider the number of residential, non-residential, and bulk users, and expected water/sewer flows, when developing alternatives for the proposed facility. Therefore, this document should be prepared jointly between the applicant and engineer to ensure the information is consistent, and submitted at the same time.

**SECTION 6.a.** is supplemented with the following:

The Preliminary Engineering Report (PER) identifies, discusses, evaluates, and recommends the best project alternative. Construction costs should not be the only factor in selecting the best alternative. For Rural Development funded projects, a life cycle cost (LCC) analysis, completed on the feasible alternatives, will ensure the best alternative is selected for both the tax payer and applicant. A LCC analysis, sometimes called a present worth (PW) analysis, must be included in the PER. The following guidance provides a standardized and simplified method to complete the LCC analysis requirement.

The “real” federal discount rate from Appendix C of OMB Circular A-94 will be used for determining present worth of the feasible alternatives. The current discount rate is posted at the Iowa Rural Development web site.

The LCC analysis will be based on a 20 year period for evaluation of feasible alternatives. Before the PW can be calculated a detailed worksheet identifying the annual O&M costs and short lived assets (SLA) (items that need repair or replacement in the first 20 years of the project) must be prepared. These costs are then used to determine the PW values. Sample documents are available on the Iowa Rural Development web site to calculate the PW of the identified items using the current federal discount rate. Project Engineers will include the LCC analysis in the PER using the sample documents or they may develop and use their own documents as long as it provides the same detail and information. The LCC analysis will be determined by the following simplified method:

*Present Worth = Construction Cost + PW of Annual O&M Cost + PW of SLA + PW of Salvage Value.*

PW of Annual O&M costs. These are costs that occur every year. For projects with existing systems, use the improved facility project costs in the analysis. For new systems, base estimates on actual costs of existing facilities of similar size and complexity. Include documentation in the PER to substantiate operation and maintenance cost estimates. Typical O&M costs are salaries, benefits, DNR testing requirements, water purchases, water treatment, taxes, accounting and auditing fees, legal fees, interest, utilities, oil and fuel, insurance, annual repairs and maintenance items, supplies, chemicals, office supplies, printing, and other miscellaneous cost items. The present worth of a uniform recurring annual cost (O&M costs) is:

PW = O&M cost x UPW (uniform present worth, conversion factor)

$$UPW = \frac{(1+d)^t - 1}{d(1+d)^t} \quad \begin{array}{l} t = 20 \text{ years} \\ d = \text{federal discount rate} \end{array}$$

**PW of Short Lived Assets (SLA).** These are items that require maintenance, repair, or replacement that do not occur every year. For this LCC analysis we are only interested in evaluating costs in the first 20 years of the project. Examples of SLA include pump/motor repair or replacement, painting, and small equipment replacement. Use the cost in today's dollars for the maintenance, repair, or replacement in this determination. The present worth of a non-annual recurring cost (SLA) is:

$$PW = SLA \text{ cost} \times SPW \text{ (single year present worth, conversion factor)}$$

$$SPW = \frac{1}{(1+d)^t} \quad \begin{array}{l} t = \text{year in which event cost occurs} \\ d = \text{federal discount rate} \end{array}$$

**PW of Salvage Value.** Including salvage value in the LCC analysis is optional. The salvage value, if used, will be calculated for each feasible alternative. Salvage value is determined using a straight line depreciation method of capital cost times the percent of useful life remaining beyond 20 years. If the alternative being considered has several items with different useful life periods, then calculate the items separately and add them together. The present worth of salvage value is:

$$PW = \text{Construction Cost} \times \text{Useful Life \%} \times SPW \text{ (single year present worth, conversion factor)}$$

$$\text{Useful Life \%} = \frac{\text{years remaining}}{\text{useful life}}$$

$$SPW = \frac{1}{(1+d)^t} \quad \begin{array}{l} t = 20 \text{ years} \\ d = \text{federal discount rate} \end{array}$$

**SECTION 7.b.** is supplemented with the following:

Page 33 of IA Guide 42 – provide a draft of the engineering fees for the proposed project. For more information on the engineer's responsibilities, please refer to the EJCDC Form E-500, Standard Form of Agreement, and applicable attachments and exhibits as described in Iowa Guide 42, Engineering Agreement and Information.

### **ADDITIONAL INFORMATION**

For additional information and guidance in preparing the preliminary engineering report, please refer to the following:

- IA Guide 42, Engineering Agreement and Information - Provides the expectations for the engineering agreement and services.
- IA Guide 13k, Checklist for Preliminary Engineer Report (PER) - The checklist Rural Development uses to review a Preliminary Engineer Report.
- Sanitary Sewer Project Guidelines - Information on typical design features of sewer projects.
- Owner Construction and Owner Performed Services Requirements - Outlines requirements for requesting Rural Development concurrence in nontraditional delivery methods.

If you have any questions during the preparation of the Preliminary Engineer Report, please call the Rural Development State Engineer at 515-284-4152.