

Part 613 – Developing Cost Data for Conservation Planning

Subpart B – Cost Data

613.10 Introduction

- A. The cost data worksheet contains information documenting the typical costs of implementing a practice or activity. This information describes a typical practice or activity scenario, which includes sufficient description of the resource concerns and setting so as to identify where the scenario applies the geographic area covered by the scenario, the scenario unit type, the life span of the practice or activity, the discount rate (if used for additional analysis), and the costs associated with implementing the practice or activity. States are encouraged to use a multidisciplinary approach with technical specialists to help develop scenarios and cost data.
- B. The cost data in the worksheet represents the actual costs to a land user to install or implement a practice or activity based on the typical scenario. The cost data are “program neutral,” and are not adjusted for costs that are approved for program payments or to encourage participation in financial assistance programs.
- C. The total cost in the worksheet does not represent the total costs of a practice or activity over its life; it represents the total cost to install the practice or activity and the cost to operate and maintain the practice or activity for the first year. In actuality, some costs occur only one time and other costs can occur over several years of the practice life. Only the first year of operation and maintenance, foregone income, and risk will be included in the total implementation cost.
- D. Total Implementation Cost = (Materials + Equipment/Installation + Mobilization + Acquisition of Technical Knowledge + Administration/Permit) + (First year of: Operation/Maintenance + Foregone Income + Risk).

613.11 Cost Data

A. Typical Implementation Scenario

Each State will develop cost data for a typical scenario. The typical scenario describes the most commonly used inputs and costs associated with a practice or activity installation in a typical setting for a geographic area. The typical scenario is the basis for cost data development. More than one scenario may be described for a practice or activity to reflect different conditions such as size, alternative materials, significant equipment or labor costs that exist within the geographic area. It is recommended that States limit the number of scenarios for a particular practice or activity to reduce workload, including only the most commonly applied scenarios and scenarios the agency is promoting. A scenario must have sufficient information about where the treatment is applicable. This is especially important to distinguish between multiple practice activities. The scenario must include the following:

- (i) Brief description of the location and site setting
- (ii) Typical installation size (number of acres, sq. ft., cu ft., lin. ft., etc.)
- (iii) Broadly identified resource concerns to be addressed
- (iv) Commonly associated or facilitating practices

B. Geographic Area

The geographic area is the area covered by the scenario. The geographic area may be statewide if there are no compelling geographic cost differences.

C. Unit for Cost Estimate

The unit for cost estimate is used for a specified conservation practice or activity scenario. Different scenarios within the same practice or activity may have different units. Units are not required to be the same as the national practice standard units and may vary from payment units and from reporting units. Units should be the most logical to achieve the practice purpose and in the simplest unit for cost estimating. Examples include acres, animal units, feet, number, or cubic yards.

D. Practice Life (Years)

A practice's or activity's "useful" life is based on how long the materials or activity is expected to last or when they are expected to be replaced by newer technology.

E. Discount Rate (Percent/Year)

Rate of return is used to evaluate the benefits and costs over time of conservation practices or activities. The discount rate is the rate by which monetary benefits and costs that accrue in the future are adjusted so that they can be compared with current values.

F. Cost Data Categories

- (1) Cost data are grouped into nine categories. For each practice or activity, the typical cost of implementation will be documented. For cost data that cannot be itemized or do not clearly fall into one of the defined categories, the most similar category will be used.
- (2) The cost data may be obtained from various data sources including contract receipts, contractors, vendors, agricultural suppliers, conservation partners, external cost databases, Internet data sources, published catalogs, agricultural statistics, cost estimating models or tools, contract payment records, discipline experts, and other reliable sources.
- (3) Cost data documentation should include the date, the source of information, and how the cost was determined. If there are no costs in a category, include a statement that there are no costs and place a \$0 in the unit cost column. Examples of the cost data categories are found in exhibit A-1.

- (4) The cost data categories are defined as follows:

(i) Materials

Materials are inputs used to make, develop, or implement a practice or activity. Examples of materials may include items such as sand, gravel, grass seed, soil amendments, plants, piping, and concrete.

(ii) Equipment

Equipment is defined as tools, machinery, or similar items needed to implement a practice or activity. Equipment may stay on site, be used annually, or only used during practice installation. The land user is not required to purchase equipment to implement a practice or activity. Equipment can be purchased, leased, custom hired, or bartered with a neighbor to perform work. Purchasing cost or equipment rental rate may be used to estimate the cost of equipment. The costs of the other methods may also be used. If equipment is used for an annual practice or activity, the purchase price of the equipment is amortized to estimate its yearly cost.

(iii) Labor

Labor is the time and wage rate for hiring individuals or self-labor needed to implement the practice or activity. Labor may be described in terms of cost per hour or as a fixed contract price for completion of a particular task. Labor cost is occasionally included in

materials or equipment cost. This does not include labor costs associated with operation or maintenance of a practice.

(iv) Mobilization

Mobilization is the cost of moving equipment, materials, and labor to and from the installed practice or activity site. It may also include site access costs such as a temporary road, bridge, or trail.

(v) Operation and Maintenance (O&M)

- Operation includes the administration, management and performance of nonmaintenance actions needed to keep the completed practice or activity safe and functioning as intended. Maintenance includes work to prevent deterioration of the practice or activity, repairing damage, or replacement of the practice or activity to its original condition if one or more components fail. This cost category includes work performed by the participant to keep the applied conservation practice or activity functioning for the intended purpose and life of the practice.
- O&M costs, as utilized in cost data are annual costs. O&M costs are assumed to be constant throughout the life of the practice or activity. In some cases, O&M is higher the first year (such as brush management and spot treatment of missed plants). In other cases, it is cost every several years (such as cleaning out a sediment basin every 3 years). And in some other cases, O&M may not be a significant cost until the last few years of the practice life (such as pumping plant). For the purposes of cost data, O&M is assumed to be a constant, annual cost.

(vi) Acquisition of Technical Knowledge

The cost category that includes cash expenditures to obtain direct technical assistance over and above what NRCS (or a similar agency) would typically provide. It is the cost to the land manager of acquiring technical knowledge, through personal study or educational course, to operate or manage a practice activity that is "new" to the land user. It may include time and other expenditures related to learning how to plan, oversee, and record new farm activities, or related to training on how to properly operate or maintain a practice or enhancement activity (practice or activity) that is "new" to the land user. It may also include the cost of hiring a private consultant or specialist to assist in implementing the practice.

(vii) Foregone Income

The cost category that includes the annual net income lost from a change in land use, or land taken out of production, or the opportunity cost of accepting less farm income in exchange for improved resource conditions due to the practice. Foregone income may be a one-time cost during the installation year, or it may be an annual cost occurring after the installation year, such as taking land out of production. More detailed guidance on foregone income is located in subpart D of this handbook and Tech Note 200-ECN-3, "Guiding Principles in Calculating Foregone Income for Conservation Planning," May 2015.

(viii) Risk

Risk is the probability of loss of income including the cost of uncertainty or the probability of financial loss associated with implementing a practice or activity. If a land user believes their risk is adequately accounted for when calculating the cost of a new practice or activity, they will be more inclined to adopt a new practice or activity.

(ix) Administration and Permit Costs

Administration includes the costs of completing paperwork, attending meetings, and regulatory management costs of implementing a practice or activity. Permit cost is the cost of obtaining all necessary legal documents to implement the practice or activity.

613.12 Additional Considerations for Developing Cost Data

A. Contingency Costs

Contingency costs are often included in “on the ground” cost estimates. Contingency costs are defined as: “An amount added to cost estimate to allow for items, conditions, or events for which the occurrence or effect is uncertain and that experience shows will likely result in additional costs.” Contingency costs include planning and estimation errors and omissions, minor price fluctuations, inflation, minor design changes within the project, and variations in market and environmental conditions. However, because contingency costs are site specific, extremely variable, and a good faith effort was made to obtain and document the best, most-accurate cost data, they will not be included in cost data worksheet. The planner should recognize that contingency costs may exist when presenting the cost data to the client, but contingency costs are not included in the cost data.

B. Supplementary Notes

As needed, additional blank lines may be added to document or other cost information or supplemental notes to clarify decisions or add explanation.

C. Economies of Scale

The unit costs may vary depending on the total units purchased for a project or activity. If materials are purchased in bulk, the vendor may likely reduce the cost per unit. For example, 5,000 feet of pipe may cost \$5 per foot. But, if only 100 feet of pipe are purchased, pipe may cost \$8 per foot. The cost data developer must make an educated decision on the most common units purchased for a practice or activity and use the relevant per unit cost in the cost worksheet. Subject matter specialists and program managers may also need to be consulted to arrive at the most reasonable type of unit to associate with a practice for a typical scenario description.

D. Guidance for Limited Use of Components

- (1) States must develop well-defined scenarios. However, for a very limited number of complex practices or activities, it may be helpful to use components to avoid having to create an excessive number of scenarios for a practice. When components are used, they must be described by a scenario and the component must meet the conservation practice standard. Use components only when it will reduce the number of scenarios.
- (2) Components may be developed considering the following:
 - (i) Relatively high cost items whose inclusion or exclusion will significantly alter the cost of implementing the practice.
 - (ii) Stand-alone items that can be added or taken away from a practice without affecting other costs for the practice.
 - (iii) Will be handled in the same manner as a typical scenario for a practice or activity.

E. Multistate and Coordination Considerations

Cost data should be reasonably consistent across State lines. States should coordinate the development of cost data for practices and activities offered across State boundaries. Opportunities should be provided for public and stakeholder input for cost data development, including State Technical Committees, local work groups, and other conservation partners.

F. Use of Amortization

Cost data may not be amortized, with the exception of items procured that last beyond the practice or activity life. For example, a residue management practice has a 1-year life, but requires the acquisition of a no-till drill that has a 10-year life. The no-till drill may be rented, custom-hired, or purchased. If the drill is purchased, the 10-year life of the drill may be amortized to estimate a 1-year cost that is included in the cost data.

613.13 Cost Data Source Documentation

A. Cost data sources must be referenced to facilitate updating cost data the next year and defend the cost estimates. At a minimum, the data references must include the data source, the location, and date. A data source is needed for each cost identified in the nine cost categories.

B. Data sources may include contract receipts, vendor estimates, agricultural supplier information, conservation partners estimates, Internet data sources, published catalogs, agricultural statistics, cost estimating models or tools, privately developed cost databases, contract payment records, and other reliable sources. The data location may include the business address, Web site, or phone number where the data provider can be contacted to update cost information in the preceding years. The date the cost data was collected is required documentation. Cost data documentation may include notes, scanned documents, or Web links.

C. There are three options for storing cost data source documentation.

- (1) Include the documentation directly in the cost data worksheet
- (2) Provide the documentation in a separate worksheet “tab” in the worksheet
- (3) Provide the documentation in a separate electronic file or hardcopy file

D. Care should be taken to select the appropriate documentation method to facilitate the removal of data references before posting data to the FOTG or sharing information with the public. Examples of cost data source references are found in subpart E, section 613.40.

613.14 Rounding

A. After the cost data has been developed, it may be desirable to round the cost to provide clarity and efficiency in planning. Rounding is optional and is done prior to uploading into the planning software. Rounding to the nearest base-ten even number will help to avoid odd numbers like \$250.03 or \$1.38. Examples of rounding are displayed in figure 613-B1.

B. Before rounding, consider the tradeoff between efficiency gains and the overall impact of accuracy. Practices that cost small dollar amounts per unit but that are typically implemented in very large quantities per year should be rounded with care—if they are rounded at all—to ensure accuracy. For example, \$0.385 for pipe fittings may not rounded to 40 cents, but may be rounded from \$385.50 to \$390 for 100 pipe fittings.

Figure 613-B1 Rounding Examples

Under \$5: Round to the nearest \$0.10
\$5-\$9.99: Round to nearest \$0.50
\$10-\$49.99: Round to nearest \$1.00
\$50-\$99.99: Round to nearest \$5.00
\$100-\$999.99: Round to nearest \$10.00
\$1,000 and up: Round to the nearest \$100