People, Partnerships, and Communities

The purpose of the People, Partnership, and Communities series is to assist The Conservation Partnership to build capacity by transferring information about social science related topics.

USDA Natural Resources Conservation Service

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Using Cost Estimates in Conservation

What is a conservation cost estimate?

A cost estimate shows the amount of money and resources needed to install and maintain a conservation practice, system or project. Cost estimates are usually calculated and displayed using standard cost engineering or capital investment approaches. A typical cost estimate might look as follows:

Table 1. Typical Cost Estimate

Practice: 380: Farmstead and Feedlot Windbreak
Description (or narrative): 380-11s: Single row, 8' spacing; half mile long

Effective Life: 15.00 years *Amount:* 0.5 mile

Installation Components						
	Item	**Cost/Unit**	**Units**	**Amount**	**Times**	**Total**
Ground Preparation						
	Tractor - 80 HP	$25.00	hour	0.5	1	$12.50
	Disk - 16" wide tandem	$15.00	hour	0.5	1	$ 7.50
Fencing (190)						
	3 strand barbed wire	$1,700.00	mile	0.5	1	$850.00
	Gate	$400.00	each	1	1	$400.00
Tree Planting (382)						
	Eucalyptus trees	$0.25	each	330	1	$82.50
	Tree Tubing	$0.50	each	330	1	$165.00
	Labor - General Farm	$0.50	each	330	1	$165.00
Weed Control						
	Round-up	$75.00	gallon	0.33	1	$24.75
	ATV Sprayer	$6.00	hour	1	1	$6.00
		Total Installation Costs				$1,682.50
		Annualized Installation Costs				$190.61
Annual Maintenance Components						
Weed Control						
	Tractor - 80 HP	$25.00	hour	0.5	2	$25.00
	Disk - 16" wide tandem	$15.00	hour	0.5	2	$15.00
		Annual Maintenance Costs				$40.00
		Total Annual Costs				$230.61

This example shows the typical ingredients in a cost estimate: installation costs, annual maintenance costs, an interest rate, effective life, amounts, cost/unit, times applied etc.

What are the purposes of cost estimates?

A variety of cost estimates can be made, depending on their purpose. The purpose of the cost estimate shown in Table 1 might be to provide financial information to a farmer or rancher trying to decide whether or not to install a conservation practice. This purpose could be further reinforced by including additional information about the income tax consequences of installing this practice (i.e. does it qualify for accelerated depreciation?).

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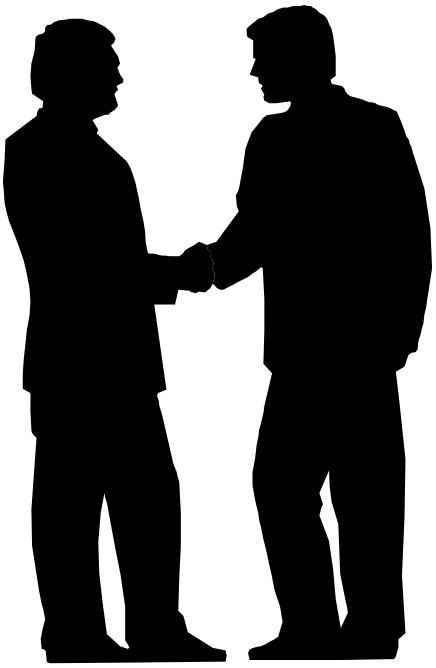


If the purpose of a cost estimate is to qualify for a government program, less financial information than shown in Table 1 might suffice (i.e. the approximate cost for field windbreaks is between $1,400 and $1,700 per half mile).

Cost estimates are commonly used to determine whether or not a project or investment makes financial sense -- that is, do the benefits exceed the costs? These types of cost analyses (i.e. payback, net present value, cost-benefit analyses) need additional details about the timing of cost outlays. Look for coverage of these types in future PPCs.

Cost estimates are commonly used as input into natural resources models that play a decision support role. For example, several natural resources models have been built that employ *cost effectiveness analysis*. A typical cost effectiveness analysis uses data about the *cost* per unit of some natural resource concern (i.e. $3/ per ton of sediment reduced) to determine the least cost ways to achieve various goals (i.e. reduce 50% of sediment at some stream point in the least cost way).

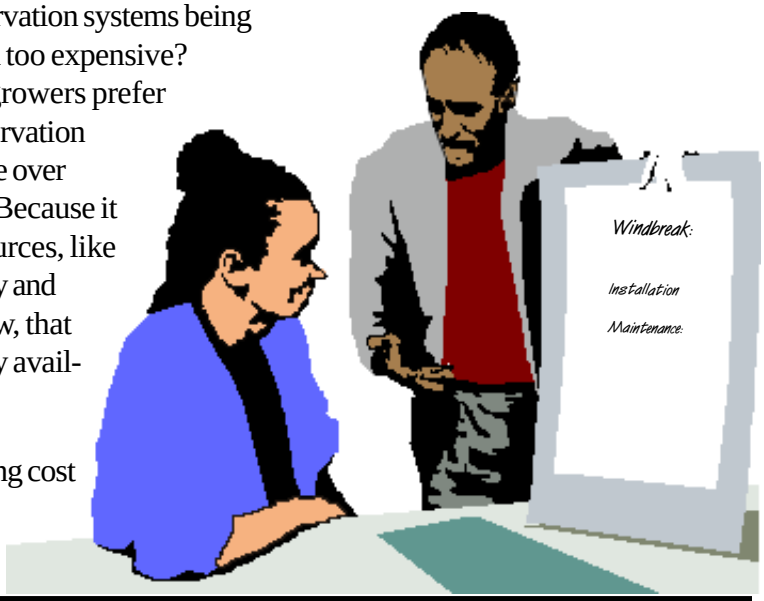
In summary, the type of cost estimate needed (and level of detail to calculate and display) depends on the purpose of the cost estimate.

What can a cost estimate tell a planner?

During the benchmark phase of planning, cost estimates can help planners to understand their customers' motivation better. Why has conservation adoption been so difficult to achieve? Are the conservation systems being promoted too expensive? Why do growers prefer one conservation alternative over another? Because it uses resources, like machinery and know-how, that are readily available?

Developing cost estimates during the benchmark phase of planning can help planners "break the ice" when dealing with targeted customers. Asking customers to provide assistance in developing the cost estimate may show these customers that a planner is paying attention to their interests. With businesses, these interests usually involve cost and profitability. The cost estimate can provide one more communication link between a conservation planner and business manager.

During the formulation and evaluation of alternatives, cost estimates can tell planners about the likelihood of adoption. "Good" conservation systems can make bad investments. How many times have conservation planners and engineers been chided about "gold-plated" practices or systems? A good cost estimate can warn a planner or engineer about a trend towards



"gold plating" in their system design.

During the implementation phase of planning, a good cost estimate can help a planner use adaptive management methods. A price tag that's too high usually sends an immediate message -- farmers will walk away from the high cost conservation system. Planners might use feedback about "high cost" systems as feedback to find "lower cost" alternatives.

Where can I get more information?

The latest information about conservation cost estimating can be obtained from your state economist and by staying tuned to the economics section of the Social Sciences Institute web site (http://people.nrcs.wisc.edu/SocSciInstitute/).

How can cost estimates be used to spend conservation program or project dollars wisely?

For area-wide planning, cost estimates are often used in cost benefit or cost effectiveness analysis. Cost estimates supply information to decision makers trying to understand whether benefits exceed costs, or whether natural resources objectives can be achieved in some less costly manner.

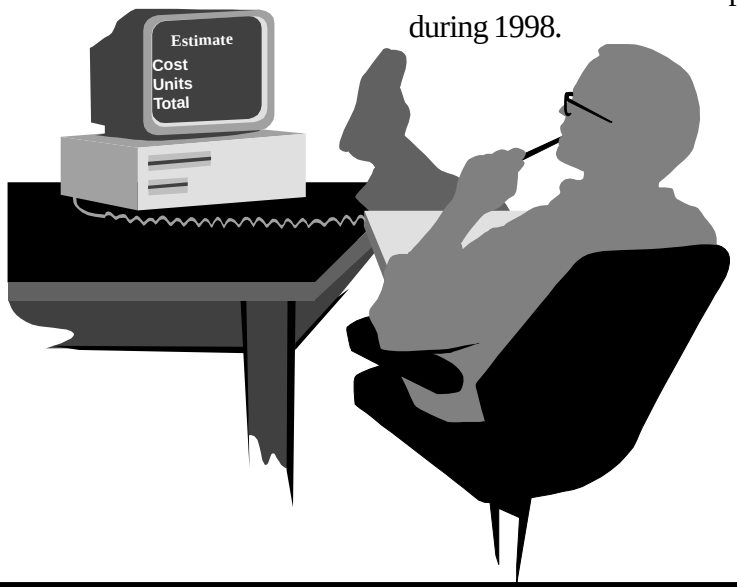
Cost estimates alone won't help spend conservation dollars wisely. This objective can be achieved when the cost estimates are added to a general mix of decision-making tools (i.e. that deal with effects, institutional development, monitoring and evaluation, etc.).

How do you make a conservation cost estimate?

The mechanics behind completing a cost estimate can be learned from several sources: NRCS state economists, engineering cost books, the *Economics of Conservation Handbook*, etc.

The NRCS Resource Economics and Social Sciences Division may consider new policy for establishing uniform standards for completing conservation cost estimates. If developed, these standards will help planners use the right cost estimate for the right purpose.

The Social Sciences Institute has developed a prototype software application (the Cost Builder) that automates the completion of cost estimates. This software application will be integrated with a national default database of conservation costs that is under development. Look for releases of these products during 1998.



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Product Catalog Available

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