

Minnesota Field Office Technical Guide - Section I Cost Data

Introduction

This section contains folders for Payment Schedules, Conservation Practice Cost Information, and Crop Budgets. The Payment Schedules folder contains the payment schedules for conservation programs. The Conservation Practice Cost folder contains statewide typical practice costs, information about “practice total average annual costs”, and guidance on developing site specific cost estimates for use in providing cost information during the planning process. The Crop Budgets folder contains links to access general crop budgets that include estimated income, expenses, and net returns per acre for use during the planning process. Providing conservation costs is part of the planning process as described in the National Planning Procedures Handbook.

General

Conservation practice costs are part of analyzing and evaluating economic effects. NRCS policy is that economic effects of alternative actions should be provided to NRCS customers in order for them to make informed resource decisions. The purpose of the Cost Data Section is to provide NRCS personnel guidance the development and use of average conservation practice costs and cost estimates.

Cost information is used to determine cost effectiveness in the analysis of alternative plans as well as during evaluation of alternatives. Economic data (costs/prices) are used by our producers in making informed natural resource decisions. Producers need both Conservation Practice Cost information and Conservation Program Contract Payment Schedule information to make informed decisions about participation in Farm Bill Programs.

Basic Principles

An understanding of a few basic economic principles and concepts is useful in appreciating how and why farmers react to changes in economic conditions. Many economic principles are only a formal organization of basic common sense that can help the conservation planner provide economically feasible and cost effective alternatives to producers. Producers make decisions on the allocation of land, capital and labor inputs. Each one of these inputs has a cost associated with it. The implementation of a conservation practice alters the input mix and the costs of production. The conservation planner needs to be prepared to discuss the resource changes and costs necessary to successfully install, operate and maintain the conservation alternative that is being recommended.

Costs

Three types of cost information are provided to producers by NRCS planners during the planning process. The cost information worksheet and the typical statewide practice cost table are both ways for the planner to provide cost information to producers to use when making conservation decisions. Program payments are a way to reduce the producer’s cost to implement a conservation plan.

Conservation Program Payment Schedules

The conservation program payment schedules included in this section of the technical guide show the amount a program participant would receive. The program payment rate is the amount of the practice implementation cost that can be received by participation in a conservation program.

Because payment rates are set by program policy and are based on what practices or components of practices that are eligible under program rules; payment rates are not the total cost to install the practice. Payment information is used by producers as part of the decision to participate in a program to implement a conservation plan and for cash flow planning as part of making an informed conservation decision. The conservation program contract payment rates are not total installation costs or site specific cost estimates.

Conservation Practice Cost Information

The “Typical Statewide Practice Cost” table includes the typical scenarios of the various ways the conservation practice is installed and the cost to do so. These conservation practice costs provide a general cost based on typical methods and statewide average component costs. The table includes the estimated cost per unit, typical scenario size and estimated total installation cost, and estimated “average annual cost” for each scenario for all the conservation practice in the MN FOTG. Typical statewide practice cost will provide the planner and producer with cost information and the average annual cost used to compare practice alternatives. The average annual cost is also a measure of the amount of average annual benefits needed for the practice to pay for itself (breakeven).

The cost of the conservation practice/s are a critical part of the producer’s decision to implement a conservation practice/s. The cost to install conservation practices can vary based on the type of installation selected. Each conservation practice has multiple options and inputs, so general conservation practice cost information provided by NRCS is based on general ranges of costs over a large area (usually statewide prices). This information is used by planners to compare the costs and evaluate the cost effectiveness of alternatives. Typical statewide practice costs are not site specific cost estimates.

Conservation Practice Cost Information Worksheet

The purpose of the practice cost information worksheet is to provide general cost information (“ballpark estimate”) about scope of the cost of the conservation practices being considered in the proposed conservation plan. The worksheet shows the range of typical practice installation costs for each practice. Statewide typical costs are based on regional or statewide cost data and typical practice scenarios. Bids or site estimates are suggested for more detailed cost information.

Cost Estimates

Cost estimates are based the design and specifications for the practice/s on a specific site. Site specific cost estimates can be developed using a variety of tools. The cost estimate is tailored to the producer’s specific site and includes all the costs associated with practice installation. Cost estimates are used by producers to make decisions about cash flow planning, determine credit needs, and to determine the difference between their total costs and the program payments. Cost estimates can include contingency and the costs for other components which are not eligible for or included in estimation process used for development of conservation program payment rates. Component costs for site specific cost estimates are based on local prices for the components.

Planners need to provide producers with information on inputs/components and quantities needed for the site so that the producer can gather prices and develop a site specific cost estimate. This section of the technical guide includes some general guidance on cost estimates and typical tools used by producers to develop cost estimates. The producer gathering bids or their own local costs is the primary use of cost estimates. The producer can also request the planner to develop a site specific cost estimate. The procedure to be used by planners in developing cost estimates is in the

National Resource Economics Handbook, Part 613 Developing Cost Data for Conservation Planning, Amend. 4, August 2015.

Conservation Practice Costs for Cash Flow Planning and Scheduling Installation

Planners should be able to discuss and explain the practice costs, practice standards and specifications, and the time frame for implementation of the practice/s. Cash flow management is important for farm operations to plan the timing of income and expenses. Cash flow considerations are an important part of the conservation planning process as one looks at the time frames to schedule and capital needed to install conservation practices. Cash flow and credit planning is used by producers to determine the scheduling of practices so that plan installation is a logical sequence that fits the operation's capacity for capital investment in conservation.

Economic Effects of Program Payments

Program payments reduce the total cost to install conservation practices. The purpose of a conservation program contract is provide assistance to implement conservation. Program payments do not alter benefits, but do alter costs. The economic effect is an increase in the benefit to cost ratio. Payback and breakeven time periods are also shortened. The time from planning to final practice installation varies; but a well prepared plan where the program participant is not only willing, but also ready and financially able can make for a smooth implementation and completion of a conservation program contract

The planner needs to be prepared to discuss the expected time between certification of a completed practice and the receipt of a program payment so the producer can complete cash flow analysis. Knowing what the costs are, when they will need to be paid, the program payment amount, and when a program payment would be received are all critical to cash flow planning. The producer will also consider credit needs in scheduling installation of conservation practices to be prepared to cover short term installation costs during construction and during the time frame between when installation is complete and when a conservation program contract payment would be made if participating in a contract. The use of credit impacts cash flow planning as interest charges also need to be included in cash flow analysis.

The use of credit increases the cost of conservation because the participant will also have the interest or finance charges in addition to other installation costs. For example if a participant borrows \$100,000 for a conservation installation at 8% interest rate and takes a year to get the practices all installed. They would have an additional cost of \$8,000 in interest payments and owe \$108,000. Further on this example if there is a program payment of \$50,000, then the participant would still have \$58,000 to pay off or continue to finance and pay interest charges on.

Definitions of Economic Terms used in Cost Data

Amortization. The process of calculation to take a lump sum and put it into periodic payments (principal and interest).

Average Annual Benefits. Average annual benefits are the amortized stream of benefits expected over the life of the conservation practice or system.

Average Annual Costs. Average annual costs are the sum of the amortization of the installation cost over their expected life plus the annual operation and maintenance costs.

Benefit Cost Ratio. The benefit to cost ratio (benefits divided by costs) is one of several ways to determine the economic worth of a conservation measure. A ratio of 1 or greater means benefits exceed costs. The benefits and costs must be from a common time basis, usually converted to average annual values through the use of amortization or discounting.

Breakeven Point. Breakeven point is where the benefits equal the costs.

Financial Life. The time frame equal to the time to repay a loan or time frame that financing of production is expected to take place.

Installation Costs. Installation costs are expenditures for initial construction of resource improvement. These costs include engineering services, land rights, etc.

Life Span (Years). The design life span is the expected physical useful life of the practice. It should reflect the number of years the practice is expected to accomplish the conservation objective assuming normal maintenance and repair are applied. At the end of this time the practice is no longer serving its original purpose in using or conserving the resource and, therefore, a new capital investment will be needed to replace the practice. For annual practices the life span years is 1. In conservation practice costs for planning purposes NRCS uses design life span years when completing amortization calculations. Other life spans may be used by producers or planners when completing economic analysis.

Operation and Maintenance Cost (O&M). These represent the annual cost based on the value of materials, equipment and services needed to operate the resource improvement, and to make repairs necessary to maintain the practice in sound operating condition during its life span (useful life). For annual practices that require no maintenance the O&M is zero. The O&M should be the average amount of money expended annually to maintain the function of the practice for the expected life. This is expressed as a percentage of installation costs in the statewide typical practice cost table calculations of the estimated average annual cost.