

# COLORADO OPEN LANDS

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## Calculating the Stewardship and Easement Defense Reserve

### Introduction

The Model CE Costs Spreadsheet has been created by Colorado Open Lands to calculate our Stewardship and Legal Defense Reserve for each conservation easement. COL uses this spreadsheet to justify the suggested donation. This worksheet is organized into four parts. Part A, the assumptions, is the hard part. Most cells should be changed to reflect the specific conservation easement. Once the assumptions have been entered for the particular property, the numbers are automatically calculated in Parts B (formulas), C (Annual Expenses), and D (Reserves Needed to Fund Annual Expenses). Each formula in parts B, C, and D list the assumptions that are used for each calculation. As a result, the estimate of the annual monitoring costs and the size of the reserve needed both to produce the income to fund those costs and to maintain funds in the reserve in order to keep pace with inflation is calculated.

### Basic Premise

The key to this worksheet is that each land trust has either full or part time staffing and an office. Even if a land trust does not have staff or an office now, it may in the future. If, in the unfortunate case, the land trust does not continue, the easement will be transferred to another land trust that may have staff and an office. Therefore, estimate the costs of monitoring an easement by including the staff and overhead costs.

### The Assumptions

The assumptions are the basis for calculating the stewardship reserve. Some of the assumptions are very straightforward, such as annual salary, reimbursement per mile, and hours worked per year. Some involve some experience and additional calculations, such as staff hours to complete post-monitoring record keeping and the overhead per staff member per hour.

Other assumptions can be more complicated. For example, calculating the costs of approving a reserved right or the chances that there will be a potential violation can be done. These events occur infrequently, but they do happen and each land trust needs to budget for them. It is easy to see that the Stewardship Reserve needs to produce a steady income stream to pay for monitoring costs and to account for the effects of inflation. But, if a reserved right costing \$300 is exercised in 2004, the Reserve cannot be expected to produce \$300 additional in that one year alone. Therefore, it is necessary to take a few extra steps to calculate additional costs.

### Risk Analysis

In risk analysis, two things are calculated: the cost of the event and the likelihood the event will happen. For example, a car insurance company will determine from a driver's age, gender, and driving record how often the driver is likely to total a car and what replacing the car will cost. Dividing the cost of replacing the car by the estimated frequency of the accident, they add a specific amount to each premium that, over time, will reimburse the company for the costs of replacing your car.

The same concept applies to conservation easements. For example, what is the estimated cost of approving a reserved right and how often will the land trust have to do this? Assume that it costs \$300 in staff and travel time to approve a reserved right and this event is estimated to occur once in 20 years. For this example, divide \$300 by 20 years. Each year, the Reserve needs to produce \$15 extra to compensate the land trust for the time and effort expended when that event occurs. When a land trust has enough easements, like the car insurance company with enough automobile insurance policies, the revenues generated from the reserve will average out, because not all easements are likely to need special, time-consuming attention at the same time.

## **Summary**

The Model CE Costs Spreadsheet provides a consistent way to calculate reserve needs. It is tailored to each individual conservation easement and provides justification for a donation request. It should be updated annually for the CPI and 30-year T-bill interest rates (see "Updating the CPI and 30 Year T-bill Interest Rate"). These numbers do not come out until April or May; however, the numbers do not vary too much from year to year so the lag time in updating the spreadsheet should not make a significant difference. The spreadsheet will help calculate the needs of the Stewardship Reserve to ensure a stable conservation easement stewardship and legal defense program over the long term.

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## Updating the CPI and 30 Year T-bill Interest Rate

At the end of the Stewardship Reserve Formula, several items need to be updated annually. The appropriate time to do this is in late April when the federal government has had a chance to publish the needed numbers. Note: when there is mention of the ‘previous’ year, it refers to the last year not the current year. In other words, if you working on this in April 2016, you want to find the numbers for the year 2015 to plug into the formula. The following outlines what sections of the formula need to be changed and how to change them.

### Commentary Section

The first year in the “Year” column should be the changed to the current year. All the subsequent years will automatically change when you hit enter.

### Investment Analysis Section

*Step 1:* Go to the end of the “Year” column and add in a new row, labeling it the previous year.

*Step 2:* Change all the formulas in the row called “Average” to include the newly added row.

*Step 3:* Change all the formulas in the row called “Average” to drop the very first row. What you are doing is maintaining the 20 year average by adding the previous year (e.g. adding 2016 just after 2015) and dropping the first year in the table (e.g. dropping 1995) in the formula.

*Step 4:* Add the numbers for the previous year into the new row. You will need to get the average 30-year Treasury Bond rate of return and the average inflation rate for the previous year. See the directions below to determine these numbers.

*Step 5:* Remove the first row in the table (e.g. delete 1995 so that the table starts with 1996).

*Step 6:* At the bottom of this table note the source of the data and when it was gathered.

### Average 30-year Treasury Bond rate of return

*Type:* [www.federalreserve.gov/releases/h15/data.htm](http://www.federalreserve.gov/releases/h15/data.htm)

*Scroll down:* Selected Interest Rates / Historical Data/Instruments / U.S. Government Securities / Treasury constant maturities 30-year / (30-year historical)

*Click:* Annual (a csv file will download)

*See:* Look down the column to find the most recent year and always check to see if the last year is still listed as the same as COL's spreadsheet – sometimes they update this number)

*Final Number:* Plug this number into the 'previous' year spot in the column listed as 30 Yr US Treasury Bond Yield in the Investment Analysis section (section 1).

### **Average Inflation Rate**

*Open:* Excel

*Retrieve:* Excel document 'CPI data from BLS Statistics'

*Go online:* <http://stats.bls.gov>

*Click:* Subjects/Inflation and Prices

*Click:* Consumer Price Index

*Scroll to:* CPI Databases

*Click:* All Urban Consumers (Current Series) (located under Most Requested Statistics) (Top Picks)

*Check box:* U.S. All items 1982-84=100

*Click on:* Retrieve Data. A table will come up that shows the CPI for the last 10 years.

*Copy:* The number in the Annual column for the year you are adding.

*Paste into:* Excel spreadsheet "CPI data from BLS Statistics" in the appropriate box.

*Formula:* The formula should automatically calculate the CPI for last full year.

*Final Number:* Plug that number into the previous year spot in the column "Consumer Price Index Urban Consumers" in the Investment Analysis section in the Model CE Cost Spreadsheet.