

REPLACEMENT RESERVE SPREADSHEET INSTRUCTIONS

OVERVIEW/INTRO

Purpose and Use

This Excel workbook helps you estimate the long term replacement reserve requirements for affordable housing projects. It will help you determine the replacement schedule and costs for items such as refrigerators, doors and roofs over a 60 year period. You will enter data about the current condition of items in the project, their individual replacement costs and projected lifespans. You can then use the spreadsheets to estimate the annual reserve contributions (and refinancings) needed to meet the future replacement costs.

Disclaimer

Estimates created by this product are based upon data collected and entered by the users. You are responsible for the accuracy of the data collection and entry. The creators of this product make no representation as to the accuracy of the estimates generated by this product and assume no liability for the use of those estimates.

Requirements

In order to run these spreadsheets you will need :

- Excel 97 or a more recent version
- Microsoft Windows 95 or more recent version

NOTE: Since these spreadsheets use macros, you need to have up-to-date antivirus protection on your computer. The macros contained in these spreadsheets are harmless, but to use them you will have to "enable macros" in Excel. Doing so can make the computer vulnerable to macro viruses if it is not protected with up-to-date antivirus software.

STARTING OUT

Sample Workbook and Blank Workbook

You should have two versions of the workbook. One is a sample with data filled in, called "RR Estimates - Sample." This will give you an idea of how completed sheets should look.

The second workbook is "RR Estimates." No data has been entered in it. When starting a new project, make a copy of "RR Estimates" for entering the project data. Save the blank original for the next project. You can name the copy whatever you want.

When you open the workbook Excel will prompt you that it contains macros. Choose the "enable macro" option.

THE SPREADSHEETS

Overview of the Spreadsheets

There are four spreadsheets in the workbook:

- **Data Collection:** Here you can enter data from a project walkthrough and estimate the average expired life of replacement items. This data can then be entered into the Data Entry sheet.
- **Sample Costs and Lifespans:** This is provided for your reference. Here you'll find estimates of costs and lifespans for various replacement items.
- **Data Entry:** In this sheet you can select the appropriate replacement items for your project, for example refrigerators, cabinets, sidewalks and roofs. You will enter the current replacement cost, the average lifespan of a new item, and the expired lifespan of the actual items in the project. This information is used in creating the 60 year forecast of replacement reserve requirements.
- **Financial Assumptions and Chart:** This is where you set the initial replacement reserve balance and adjust the amount of the replacement reserve contributions and future refinances. A chart on this page gives you instant feedback as you adjust the assumptions, allowing you to estimate feasibility over the next 60 years.
- **Sixty Year Forecast:** This sheet details the information contained in the chart. It shows yearly expenditures for each replacement reserve item along with totals in future and current dollars.

General notes on spreadsheets:

- All data entry is in current dollars.
- It is important not to change the names of the spreadsheets. Macros within the workbook refer to spreadsheets by name; if the names are changed, some of the macros will not work. (You can use any name for the entire workbook.)
- All of the spreadsheets are protected. It is recommended that you do not turn off the protection for these sheets.
- Each of the spreadsheets has one or more macro buttons in the upper left hand corner. They are intended to simplify printing and other tasks.

Data Collection Sheet

Use this sheet at the site to record the condition of replacement items. Print out a blank copy, fill it out at the site, and then enter the data into the spreadsheet on the computer. The spreadsheet will compute the average expired life of the replacement items. You can then enter this data into the Data Entry sheet (or paste a link to it).

For each unit enter the unit number in the "Unit #" cell. Then enter a rating for each applicable replacement item. The ratings are from 0 to 5 and reflect the amount of life expired for the item:

- 0 = 0% expired (brand new)
- 1 = 20% expired
- 2 = 40% expired
- 3 = 60% expired
- 4 = 80% expired
- 5 = 100% expired (needs immediate replacement)

For each item, then enter the "Average Useful Years of Item." This is the lifetime that you expect such an item to last, e.g., 15 years for a refrigerator.

After you've entered this information, the spreadsheet calculates the average percent of life expired for all of the like items, for example, all of the refrigerators. You can then use this data in the "Data Entry" sheet.

This spreadsheet has buttons for adding and deleting both items (rows) and apartment units (columns). Use these to add items in your project that aren't on the sheet and to delete items that don't apply to your project.

For help in estimating the average lifespan of items, you can refer to the database included with this workbook in the sheet labeled "Sample Costs and Lifespans".

Sample Costs and Lifespans

This is provided for your reference. Here you'll find estimates of costs and lifespans for various replacement items. These are provided for guidance only - you'll need to determine the correct numbers for your project.

Data Entry Sheet

This sheet generates the per unit costs of replacement items. It consists of two sections: general project information at the top of the page and the data entry area below.

Be sure to fill in all the general project information at the top of the page as it is carried over into the other spreadsheets. After you fill in some of the cells you will have to wait

a few seconds. The spreadsheet is transferring information, such as the project name, to the titles of the other spreadsheets and charts.

The data entry area consists of various replacement items from ranges to roofs. To enter an item:

1. Click the white checkbox to the left of the item. This will highlight the cells that you need to enter. Use the TAB key to move from cell to cell.
2. Fill in the cells. The spreadsheet does some basic data validation, so you may be prompted to enter a number again, for example, if you try to enter a percent greater than 100%.
3. Click on the checkbox for the next item.

NOTE: The checkboxes are "on/off" switches. Clicking a checkbox that is on will turn it off and the data entered there will be erased. Turning it back on will allow you to start over with a clean slate for that item.

There are two basic types of items that you can enter - "single" and "measurement":

Measurement items include exterior painting, gutters, and roofing. To enter such items:

1. Choose the type of "measurement unit," such as "square foot."
2. Enter a "cost per measurement unit," for example, \$20. (In this example \$20 is the cost per square foot).
3. Enter the "number of measurement units," for example 3,000 square feet of exterior paint for the entire project.
4. The spreadsheet then calculates a "replacement cost per living unit."
5. Enter the "average useful years of item." This is the projected lifetime of the item when new, e.g., 15 years for a roof.
6. Enter the "per cent of life expired," - the percentage of the average life that has already been used.

Single items include ranges and kitchen sinks, although the distinction is not always as clear. You'll notice, for example, that the spreadsheet treats kitchen counters as single items, not measurement items. This means that you will enter an overall cost for the counters for one unit. To enter a single item:

1. Enter the "replacement cost per living unit," e.g., \$350 for a range.
2. Enter the "average useful years of item," - the overall lifetime of the item when new, such as 15 years for a refrigerator.
3. Enter the "per cent of life expired," - the percentage of the average life that has already been used.

The sheet also contains "Other" items. These are for you to define - tuck pointing might be an example. To enter an "other" item:

1. When you click on the checkbox you will be asked whether the new item is "single" or "measurement."
2. The data entry will be as above, with the addition that the first blank box will prompt you to enter the name of the item, such as "Tuck pointing."

NOTE: It is critical for all items that the "replacement cost per living unit" in fact be per living unit, not for the whole project. In some cases you will have to calculate these amounts. For example, "exterior doors" are calculated as a single item. This means that you'll need to calculate the overall cost of exterior doors for the project, then divide that number by the number of units. Enter the result into the "cost per living unit" cell. So, if you had 2 exterior doors in a 10-unit project, you'd enter ".2" ($2/10 = .2$).

Financial Assumptions and Chart Sheet

On this sheet you will enter the initial replacement reserve balance, schedule for ongoing replacement reserve contributions and future refinancing amounts. This is the last data you will enter in the workbook.

NOTE: The amounts you enter are all per unit.

Fill in the "grayed" cells. The data in the other cells is calculated by the sheet. Your data entry includes:

1. The "starting balance" in the replacement reserve account.
2. The "annual reserve deposit at year 1," e.g., \$200 per unit.
3. The "annual reserve deposit starting in year," where you enter both the year and the amount of the deposit, e.g., \$300 per unit starting in year 20.
4. Refinances - again you enter the year and the amount of refinance per unit.
5. The projected savings interest rate and expense inflation rate over the next 60 years. Although rates change over time, a common assumption in the industry is that expenses increase at 4% per year. Saving rates are more variable. At the time of this writing a conservative estimate would be in the 2% to 3% range.

The data entry is now done. The cells to the right of the data you entered show some information about the replacement reserve balance over the next 60 years. The chart below shows the same information graphically.

NOTE: The chart dollar amounts are per project (not per unit) and in current dollars.

As you enter your assumptions the effects over 60 years are reflected in two spots:

- the "balance" numbers in the upper right corner of the sheet
- the chart

As you adjust your reserve deposit and refinance assumptions your goal is to keep the reserve balances positive throughout the life of the project. On the other hand, you don't

want the balances to get too high, for example, a balance of \$500,000 for a 10-unit project is probably too much.

NOTE: The dollar amount labels on the chart will adjust to reflect the maximum balance. You need to keep your eye on the dollar amounts labels on the left side of the chart, not just the graph line. Keeping an eye on the "balance" numbers will also help with this.

Sixty Year Forecast Sheet

No data entry is done in this sheet. It takes the data from the other sheets and shows a year-by-year, item-by-item breakdown of expenditures and contributions to the replacement reserve account.

NOTE: The numbers in this sheet are for the whole project (not per unit).

The timing of the expenditures shown here are calculated from the "average years" and "per cent expired" data in the Data Entry sheet. For example, if you entered an expected life of 10 years and an expired percentage of 80% for the range hoods, the first expenditure for them will be after two years, because in two years the remaining 20% of their projected lives will have expired.

The amounts of the expenditures are calculated from the "replacement cost per unit" in the Data Entry sheet and the number of units in the project. For example, if you entered a replacement cost of \$100 for a range hood and there are ten units in the project, the expenditure would be \$1,000.

Using the "Print 60 Year Forecast" button will make the sheet easier to read in printed form. It will temporarily hide any unused "other" categories and increase the font size among other things. This takes a moment, so be patient. You will then be prompted to go to Excel's "Print Preview" screen where you can make further adjustments before printing. Once you exit Print Preview the sheet will return to it's original formatting.

TECHNICAL SUPPORT

For assistance in using this product please contact Eli Spevak at the Housing Development Center, in Portland, Oregon, at (503) 335-3668.