

Instructions for the Asset Inventory (AI) Calculator

This spreadsheet is used to calculate connection fees (hook-up fees etc) and equipment replacement reserves.

As assets age the replacement cost must be factored into utility budgets by establishing adequate reserves. Failure to do this is probably the number one shortfall in smaller utility financial planning. The Asset Inventory calculator will provide the necessary reserve computation.

Data entry is in the white cells. The light yellow cells are computed and protected. You may enter the water system name.

There are two "conditional formatting" background colors to alert the user for possible mistakes. If the background is red, then there is either missing required data or the entry is in error. If the background is violet, then that means "check for possible missing data or accuracy", but the entry is not an error otherwise.

The column titles all contain drop down comment boxes with the instructions for entries in that column. In order to use the calculator you will find the data collection is the hardest part.

It is suggested to either keep similar categories together such as all piping, pumps etc. or list items in order of shortest life remaining, however you may enter assets in any order.

The calculator is unique in that it calculates a minimum, stable reserve component to be added annually to your budget. Most "depreciation" calculators divide an item's cost by the years to be replaced and then add them all together. The cost derived using "straight-line depreciation" is often very much more than necessary. The calculator will show you the minimum needed to meet your goals.

To select items to be included in the reserve fund calculation enter the information on that component from left to right on the spreadsheet, the inflation factor in column K, enter an "x" in column O, and the interest from your savings account in column P. The future cost for any particular item is calculated for you in column Q. The calculator looks at previous reserve allocations, when items are replaced and future costs to process the minimum necessary savings. **NOTE:** It is possible that in order to replace an expensive item in a short amount of time that you will not see an increase in the needed amount to the reserve fund when you enter other items! **The reason is the amount necessary to replace the first item may be large enough to cover the costs of all the future items after the first item is replaced.** If this is the case, you will see an "overage" indicated at the top of the sheet.

If you wish to simply establish a cash reserve for other than equipment replacement you need an extra "step". For instance, if you wanted to include establishing a \$10,000 emergency reserve in the calculations you would enter "Emergency Reserve" as an asset, enter the current year as the install date, the number of years over which you wish to accrue the funds under "Estimated Effective Life", \$10,000 in either "Original Cost" or "Replacement Cost" and enter \$10,000 in column M under "Debt and Grants", and then the entries as described above. **This ensures the amount is not computed in the connection fee.**

If you have cash on-hand you'd like to apply to reserve funds, enter the amount and the calculator will re-compute the allocation to reserves. Remember, this is done annually and things will change annually as well. The spreadsheet will then show the needed monthly and annual contribution to reserves factoring in the cash on hand. **Make sure you remember the cash entered is allocated and not available for other uses!**

This worksheet is code protected and may not be accessed by the user, other than formatting cells, columns and rows.

A-1 Condition Assessment

Condition Rating	Description	Maintenance Level	Condition Multiplier
1	Good/Expected Condition	Normal Preventive Maintenance (PM)	1
2			0.95
3	Minor Defects Only	Normal PM, Minor Contract Maintenance (CM)	0.8
4			0.7
5	Moderate Deterioration	Normal PM, Major CM	0.5
6			0.35
7	Significant Deterioration	Major repair, rehabilitate	0.2
8			0.1
9	Virtually Unserviceable	Rehab unlikely	0.05
10	Unserviceable	Replace	0

A-2 Critical Number

Critical Number	Description
1	The water system would essentially shut down if this component fails. This asset has no backup and is so important that an emergency plan must be in place as well as funding to replace it. Example: Single well pump failure; single reservoir failure; anything that could cause a violation of the Safe Drinking Water Act.
2	This asset would have a serious impact on the water system if it failed, however, procedures could fix the problem within a reasonable time. Example: Two wells and primary wellpump fails; Electrical compents in panels fail: backflow assembly did not pass testing; key pipe failure that could be repaired; single chlorinator failure; pressure reducing valve failure.
3	The condition of this asset causes continued unnecessary operational costs to your utility. Examples: deteriorating buildings, equipment and rolling stock; leaks in piping; old and worn-out electrical equipment.
4	This asset's condition or failure may cause inconvenience to customers via reduced service, outages, or minor taste or odor complaints. Examples: excessive leaks, valves frozen partway closed, hydrants not working so flushing cannot be done; poor billing program.
5	These assets have been in service for a long time and their condition may not be well known. Evaluation should take place and a determination made as to what may be needed.

Asset Type	Average Effective Life (years)	Asset Type	Average Effective Life (years)
Intake Structures	40	Lab Monitoring Equipment	5-10
Wells/Springs	40	Tools & Shop Equipment	10
Chlorination Equipment	7-10	Office Furniture	10
Small motors	10-15	Computers	5
Storage Tanks	60	Vehicles	10
Pumps	10-15	Civil Structures	75
Pipe	60-90	Electrical Motors (large)	30
Valves	20-30	Electrical panels	20-25
Backflow Devices	15-20	Controls	15-25
Meters	10-15	Building assets	60
Hydrants	30-45		