Implementing THE RESERVE STUDY

STRATEGIES FOR FUNDING RESERVES

BY PAUL HUIJING, P.E.

In prior articles, we reviewed the rationale for conducting a reserve study and how to read the study to gain an understanding of association reserve responsibilities and finances. Now we will put the study into action. Starting with association goals, this article describes the process of calculating the unit owner contributions required to meet the reserve fund obligations for capital repairs and replacement. During the association annual budget process, reserve contributions are finalized based on the reserve study.

Your reserve professional will create the common component inventory and set expected remaining life for each component. The reserve study should include an annual listing of expected expenditures in the coming years. While actual experience may deviate from this listing, it will serve as a financial roadmap/timeline for the association reserve spending over the long term. An example of annual expenditure detail is shown in Figure 1. Using this detailed plan, the association can plan spending over the near and long term to maintain the community. The reserve study should be updated periodically to account for component replacements, review financial assumptions, and evaluate components as they age.

The reserve professional will likely propose a plan to fund the reserve replacement schedule created. The initial funding plan typically begins the discussion with the association. Answering "what if" funding questions will allow the association to choose a suitable option to achieve its funding goals. The final funding plan creates a schedule of reserve contributions to achieve the goals of the association and provide the capital needed to perform the needed replacements.

FUNDING GOALS

The basic goals of a reserve funding plan are stability and sustainability. Association fees should be predictable so owners and boards can plan effectively.

There are four basic funding goals/objectives, described below, which may be used to develop a reserve funding plan. The goals balance the risk tolerance of the association, fiduciary responsibility, and legal requirements.

1 Full Funding

- Goal to have reserves on hand equivalent to the value of the deterioration of each reserve component to date
- Long-term objective to achieve and/or maintain 100 percent funded reserves
- Most conservative funding goal

FIGURE 1: Example of Annual Expenditure Detail

2 Baseline Funding

- Goal to have sufficient reserves on hand to never completely run out of money
- Pay reserve expenses without regard to the association's percent funded
- Least conservative method
- Not a common goal, but may be used as a starting point

3 Threshold Funding

- Funding goal between 100 percent full funding and cash-positive baseline funding
- Specific percent funded target or a minimum cash balance target between full funding and baseline funding

4 Statutory Funding

- Goal to follow requirements of laws or codes
- No states in New England have specific funding requirements
  - Massachusetts and Connecticut require "adequate" reserves

FUNDING CALCULATION METHODS

There are two calculation methods typically used to develop funding plans - component calculation method and cash flow calculation method. Both methods incorporate variables for inflation and interest on investments. Both pay for the same repairs and replacements listed in the annual expenditure table. Typically, the reserve analyst will seek to set the funding contribution at a starting value and increase annually at the rate of inflation. Increasing contributions at the rate of inflation will be most equitable over time for current and future owners. The challenge reserve analysts face is that many associations are underfunded and may need higher rates of contribution growth, special assessments, or loans to catch up.

Component Calculation Method

The component calculation method, often called the straight line method, develops a funding plan for each individual reserve component based on its cost, useful life, and remaining life. Total funding is the sum of funding for each component. In simpler terms, each component is assigned a "savings account" and the amount of depreciation of each component per year is deposited in that account. The amount of the depreciation deposits is determined by the reserve study based on current cost and useful life.

At any point of time, the fully funded balance of a component is:

$$\text{FULLY FUNDED BALANCE} = \frac{\text{COMPONENT AGE}}{\text{USEFUL LIFE}} \times \text{CURRENT COMPONENT COST}$$

Once a component is replaced by the association, the saving process starts again to fund the next replacement.

The component method is widely believed to be the most conservative reserve funding method. This method structures a funding plan that enables the association to pay all reserve expenditures as they come due and enables the association to achieve the ideal level of reserves over time. Contributions to the reserve fund vary annually based on annual depreciation and requirements for achieving 100 percent funding as a goal. The annual variability of contributions can be a disadvantage. Figure 2 shows an ex-

ample of a component method funding plan with variable contributions.

Cash Flow Calculation Method

The cash flow calculation method develops a bare minimum funding plan based on current reserve funds and projected expenditures for all components during a specific timeframe (typically 30 years). It is not tied to the useful life of an individual component. This funding method structures a funding plan to enable the association to pay for all reserve expenditures as they come due, but is not necessarily concerned with the ideal level of reserves through time. In this scenario, there are no specific accounts for each component that are funded each year. The funds for all components needed each year are totaled and the contributions adjusted to meet the current year expenses. The cash flow method is sometimes referred to as the "pooled" method because funds are not dedicated to a particular component.

For example, if the roof is the only component to be replaced this year at a cost of $100,000, then the minimum balance in the reserve account at the start of the year will be $100,000 to maintain a positive balance. The cash flow method tests reserve contributions against reserve expenditures through time to determine the minimum contribution necessary for a positive balance. The minimum starting contribution, with the input annual increase rate, is set to meet the minimum balance in all future years. This method can overshoot target funding after a large expenditure hump has passed if the increase in annual contributions is held steady. In these cases, funding adjustments must be made.

Often, a hybrid cash flow approach can accomplish these adjustments. The hybrid approach may start with minimum cash flow to get over a spending hump and then adjust contribution increases as needed to avoid under- or over-funding. An association seeking full funding in 30 years is shown in Figure 3. For this under-funded association, the minimum cash flow with a 3 percent annual increase is used from 2019 through 2036. Sufficient funding is accumulated for 2029 and 2032 large expenditure years. After 2036 the association is on a path to full funding and the contributions can be reduced. The hybrid cash flow method can incorporate achieving full, threshold, or statutory funding goals.

Unlike the component calculation method, the cash flow method cannot precisely determine the reserve funding percentage for any single component. However, the percent funded for all components can be determined. The cash flow calculation method is typically used for under-funded associations with a goal/objective of full funding, threshold funding, baseline funding, or statutory funding. However, the cash flow method is less conservative. Reserve contributions typically will be smaller than under the component calculation method.

FIGURE 2: Example of a Component Method Funding Plan With Variable Contributions.

Community Association
Projections
Component Calculation Method

Fiscal Year	Beginning Balance	Member Contribution	Interest Contribution	Expenditures	Ending Balance	Fully Funded Ending Balance	Percent Funded
2019	$100,000	$203,672	$1,176	$25,759	$279,090	$1,094,425	26%
2020	$279,090	$158,851	$2,443	$3,986	$436,397	$1,175,315	37%
2021	$436,397	$159,151	$2,303	$181,360	$416,491	$1,078,760	39%
2022	$416,491	$158,710	$3,328	$15,192	$563,337	$1,156,319	49%
2023	$563,337	$158,665	$3,682	$111,662	$614,022	$1,135,516	54%
2024	$614,022	$158,037	$4,505	$44,812	$731,752	$1,186,809	62%
2025	$731,752	$154,186	$5,549	$12,116	$879,372	$1,274,991	69%
2026	$879,372	$149,454	$6,624	$4,489	$1,030,960	$1,374,493	75%
2027	$1,030,960	$150,010	$5,662	$293,324	$893,308	$1,176,141	76%
2028	$893,308	$146,367	$6,711	$4,670	$1,041,716	$1,278,728	81%
2029	$1,041,716	$137,240	$2,759	$711,590	$470,127	$646,867	73%
2030	$470,127	$111,746	$3,539	$17,293	$568,119	$733,600	77%
2031	$568,119	$110,770	$4,250	$13,645	$669,495	$827,739	81%
2032	$669,495	$109,754	$2,021	$431,946	$349,324	$488,392	72%
2033	$349,324	$110,711	$2,617	$27,391	$435,261	$569,242	76%
2034	$435,261	$113,533	$3,385	$5,260	$546,919	$676,957	81%
2035	$546,919	$115,012	$3,216	$141,615	$523,532	$645,609	81%
2036	$523,532	$117,898	$3,919	$19,475	$625,874	$744,032	84%
2037	$625,874	$120,051	$3,946	$118,972	$630,898	$742,274	85%
2038	$630,898	$123,225	$4,787	$5,693	$753,217	$861,658	87%
2039	$753,217	$125,997	$5,313	$54,384	$830,143	$934,485	89%
2040	$830,143	$129,375	$6,204	$5,923	$959,799	$1,061,937	90%
2041	$959,799	$131,419	$6,043	$159,481	$937,780	$1,032,909	91%
2042	$937,780	$135,054	$6,866	$21,932	$1,057,768	$1,150,156	92%
2043	$1,057,768	$138,950	$7,753	$17,305	$1,187,166	$1,277,001	93%
2044	$1,187,166	$142,559	$8,443	$50,183	$1,287,985	$1,374,283	94%
2045	$1,287,985	$146,448	$9,272	$34,738	$1,408,967	$1,492,225	94%
2046	$1,408,967	$147,898	$8,673	$241,698	$1,323,840	$1,397,633	95%
2047	$1,323,840	$148,328	$7,521	$320,782	$1,158,906	$1,220,653	95%
2048	$1,158,906	$152,236	$8,454	$24,698	$1,294,897	$1,353,841	96%

NOTE: In some cases, the projected Ending Balance may exceed the Fully Funded Ending Balance in years following high Expenditures. This is a result of the provision for contingency in this analysis, which in these projections is never expended. The contingency is continually adjusted according to need and any excess is redistributed among all components included.

With equivalent goals, the contribution difference will not likely be dramatic because the same annual list of expenditures is being funded.

IMPLEMENTING THE RESERVE STUDY

To effectively use the reserve study prepared for an association, several requirements must be met. The format of the report must be understandable and well organized. Funding goals should be established and calculations to meet those goals performed. Working with the reserve professional, association boards should carefully weigh the sustainability of the funding plan chosen. CM

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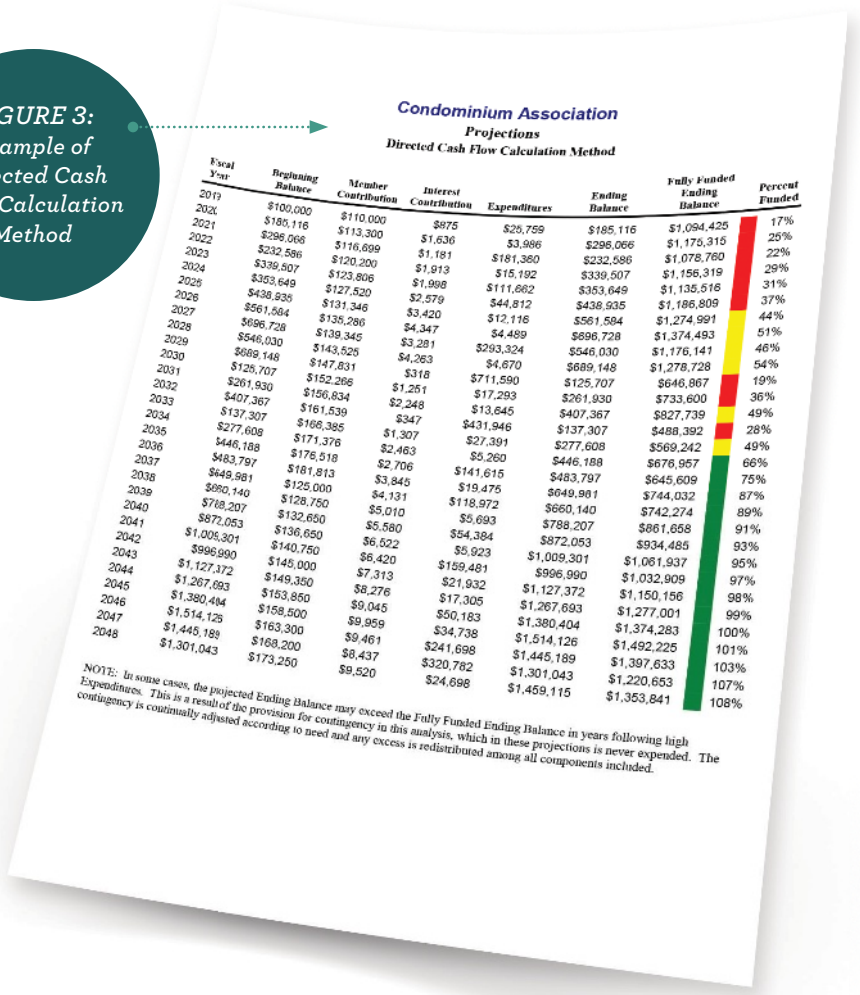
FIGURE 3: Example of Directed Cash Flow Calculation Method



Condominium Association
Projections
Directed Cash Flow Calculation Method

Fiscal Year	Beginning Balance	Member Contribution	Interest Contribution	Expenditures	Ending Balance	Fully Funded Ending Balance	Percent Funded
2019	$100,000	$110,000	$875	$25,759	$185,116	$1,094,425	17%
2020	$185,116	$113,300	$1,636	$3,986	$296,066	$1,175,315	25%
2021	$296,066	$116,699	$1,181	$181,360	$232,586	$1,078,760	22%
2022	$232,586	$120,200	$1,913	$15,192	$339,507	$1,156,319	29%
2023	$339,507	$123,806	$1,998	$111,662	$353,649	$1,135,516	31%
2024	$353,649	$127,520	$2,579	$44,812	$438,935	$1,186,809	37%
2025	$438,935	$131,346	$3,420	$12,116	$561,584	$1,274,991	44%
2026	$561,584	$135,286	$4,347	$4,489	$696,728	$1,374,493	51%
2027	$696,728	$139,345	$3,281	$293,324	$546,030	$1,176,141	46%
2028	$546,030	$143,525	$4,263	$4,670	$689,148	$1,278,728	54%
2029	$689,148	$147,831	$318	$711,590	$125,707	$646,867	19%
2030	$125,707	$152,266	$1,251	$17,293	$261,930	$733,600	36%
2031	$261,930	$156,834	$2,248	$13,645	$407,367	$827,739	49%
2032	$407,367	$161,539	$347	$431,946	$137,307	$488,392	28%
2033	$137,307	$166,385	$1,307	$27,391	$277,608	$569,242	49%
2034	$277,608	$171,376	$2,463	$5,260	$446,188	$676,957	66%
2035	$446,188	$176,518	$2,706	$141,615	$483,797	$645,609	75%
2036	$483,797	$181,813	$3,845	$19,476	$649,981	$744,032	87%
2037	$649,981	$125,000	$4,131	$118,972	$660,140	$742,274	89%
2038	$660,140	$128,750	$5,010	$5,693	$788,207	$861,658	91%
2039	$788,207	$132,650	$5,580	$54,384	$872,053	$934,485	93%
2040	$872,053	$136,650	$6,522	$5,923	$1,009,301	$1,061,937	95%
2041	$1,009,301	$140,750	$6,420	$159,481	$996,990	$1,032,909	97%
2042	$996,990	$145,000	$7,313	$21,932	$1,127,372	$1,150,156	98%
2043	$1,127,372	$149,350	$8,276	$17,305	$1,267,693	$1,277,001	99%
2044	$1,267,693	$153,850	$9,045	$50,183	$1,380,404	$1,374,283	100%
2045	$1,380,404	$158,500	$9,959	$34,738	$1,514,126	$1,492,225	101%
2046	$1,514,126	$163,300	$9,461	$241,698	$1,445,189	$1,397,633	103%
2047	$1,445,189	$168,200	$8,437	$320,782	$1,301,043	$1,220,653	107%
2048	$1,301,043	$173,250	$9,520	$24,698	$1,459,115	$1,353,841	108%

NOTE: In some cases, the projected Ending Balance may exceed the Fully Funded Ending Balance in years following high Expenditures. This is a result of the provision for contingency in this analysis, which in these projections is never expended. The contingency is continually adjusted according to need and any excess is redistributed among all components included.