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# Most HOA's Do NOT Need To Be 100 Percent-Funded *The First Mathematical Proof*

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Many association board members – and even some reserve specialists – will tell you with bravado that it is an “ideal” goal for your association to be 100% funded for depreciation-to-date. To say so is often incorrect and misleading.

Other people will tell you that your association doesn't need to be 100% funded, but they cannot explain why – they just have a gut feeling that “*you don't need to have that amount of money sitting around...*”

Until now, it appears no one has offered a mathematical analysis to actually prove why most associations do not need to be 100% funded for depreciation-to-date – yet can still fund anticipated reserve expenses over time.

The following analysis uses quantitative examples to illustrate which associations do not need to be 100% funded. This realization should hopefully steer Board members away from an inordinate focus on being 100% funded as the “gold standard” of financial strength. And various State legislators would do well to understand the math involved when drafting Civil Code applicable to community associations.

In addition, a new concept will be introduced that acknowledges that each association has a unique pattern of capital expenses over time – thus we can define the “Maximum Percent Funded Estimate” that each association can expect over the next 30 years. That number is different for each association and is usually less than 100%.

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## Overview

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- What is the **Percent-Funded Estimate**?
- Why most HOA's do NOT need to be 100% funded for depreciation.
- Is it acceptable to be at or near 0% funded? (Usually not, but there are some cases...)
- Mathematically customizing the Percent-Funded measure for each Association.
- Should being 100% funded be “the gold standard” for reserve funding?

There's often a conflict between people's perception of how well funded their association is via the Percent-Funded Estimate and what the reserve study *actually* recommends (using the Cash Flow Funding method).

Some associations are over 100% funded for depreciation-to-date, yet the cash flow analysis says they need to increase reserve funding. Conversely, some HOA's are less than 100% funded yet their cash flow analysis suggests that the HOA can decrease reserve funding!

Wouldn't the foregoing lead one to conclude that the *Percent-Funded Estimate* is somewhat misleading as a measure of financial health?

No two associations are alike and each one has different capital expense patterns over time. Our analysis of numerous 30-year funding plans has demonstrated that many associations do not need to be 100% funded during the next 30 years.

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## Definition: The Percent-Funded Estimate

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The **Percent-Funded Estimate** is a common measure of the financial strength of your association and is a required disclosure in the State of California per California Civil Code 1365. It is a ratio of how much cash in reserves your association has relative to the total depreciation-to-date on the association's capital assets.

$$\frac{\text{(Amount of money in Reserve Account)}}{\text{(Total depreciation to-date of the association's capital assets)}}$$

*For example, if your association only has a \$200,000 road to maintain and the road is 10 years old with a 20 year useful life, the depreciation-to-date would be \$100,000 because half of the life of the road is "used up." If your association has only \$50,000 in reserves in the 10<sup>th</sup> year, the "Percent-Funded Estimate" would be 50%. If the association has \$100,000, it would be 100% funded for depreciation-to-date.*

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## Being 100% Funded is only necessary for very few Associations

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Upon analysis of reserve funding scenarios for many associations, here are the findings:

1. What determines whether an association needs to be 100% funded is the degree to which the association's capital expenses are "clustered" in any one year.
  - a) Associations with all of their reserve expenses occurring in one year will need to be 100% funded in that year because they will be rendering all of their capital assets to a new/renovated condition in that year.
  - b) Associations with more than one capital expense and if those expenses are spread out evenly over time usually never need to be 100% funded – except, of course, when the HOA was new.
2. An association with only ONE capital asset (reserve component) to maintain, would need to be 100% funded because it will need all the money required to replace that ONE capital asset in a future year. To fairly distribute the cost of depreciation of that asset over time for all owners, it

would make sense to be 100% funded for that item during each year leading up to the replacement year.

In most reserve studies, if an association has more than a few capital expense line items in the cash flow analysis, the likelihood that all these expenses occurring in the same year is very low – very much like a rare line-up of the planets in the solar system.

Each association has a different expense pattern over time. Some associations have highly clustered expense patterns as in this example (note how all expenses “line up” in Year 2014):

<b>RESERVE COMPONENTS</b>	Useful Life	Remain Life	Cost to Replace	2011	2012	2013	2014	2015
<b>ROOFING</b>								
Comp Shingle Roof Replace	30	3	\$195,000				\$195,000	
Skylights - Replace	30	3	\$22,500				\$22,500	
<b>PAINTING</b>								
Stucco - Paint	15	3	\$31,250				\$31,250	
Paint Trim/Siding	6	3	\$47,500				\$47,500	
Paint Touch-Up	1	0	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Pool Wrought Iron - Paint	4	3	\$1,900				\$1,900	
<b>PAVING</b>								
Asphalt Sealcoat	3	0	\$2800	\$2800			\$2800	
Asphalt Petromat Overlay	20	3	\$28,750				\$28,750	
<b>SWIMMING POOL</b>								
Pool Resurface	15	3	\$10,500				\$10,500	

And other associations have very sparse expense patterns (full 30 years not shown):

<b>RESERVE COMPONENTS</b>	Useful Life	Remain Life	Cost to Replace	2011	2012	2013	2014	2015
Roof - Home #1 (1981)	30	0	\$10,000	\$10,000				
Roof - Home #2 (1982)	30	1	\$10,000		\$10,000			
Roof - Home #3 (1983)	30	2	\$10,000			\$10,000		
Roof - Home #4 (1984)	30	3	\$10,000				\$10,000	
Roof - Home #5 (1985)	30	4	\$10,000					\$10,000
Roof - Home #6 (1986)	30	5	\$10,000					
Roof - Home #7 (1987)	30	6	\$10,000					
Roof - Home #8 (1988)	30	7	\$10,000					
Roof - Home #9 (1989)	30	8	\$10,000					
Roof - Home #10	30	9	\$10,000					
~	~	~	~					
Roof - Home #30	30	29	\$10,000					

As you can see from the above example, this HOA only needs to generate \$10,000 per year. It does not need to be 100% funded in any of the years of the 30-year cost projection – as will be described later. In fact, the maximum percent funded amount in each of the 30 years is very low. Would you believe their percent funded estimate for each of the next 30 years is below 10%, yet their cash flow analysis funding plan works?

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**Being at or near 0% funded sometimes happens  
(And it may or may not be cause for concern)**

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When proper 30-Year Cash Flow Optimization techniques are employed, the resulting reserve funding plan will allow an association to fund the next 30 years of expenses without a reserve account deficit in the next 30 years. What this means is that in one of the 30 years, the reserves might actually be spent down to zero or close to zero. And then, with planned reserve contributions thereafter, reserve funds ramp up again.

Therefore, with an optimized 30-year reserve cash flow funding plan, it is possible for an association to be essentially 0% Funded at one point during the 30 years if the association spends all of its reserve funds to pay for large projects completed in that year. Yet this may not be cause for alarm if the contribution to reserves is healthy immediately thereafter and the cash flow funding plan shows that year is the “planned low point” of the 30-year reserve funding plan.

An association at the low point in its reserve funding cycle will appear poorly-funded to some of its homeowners as well as to new buyers and lending institutions who don’t understand how the

cash flow analysis works. This is an unfortunate side-effect of focusing on the *Percent Funded Estimate* as a measure of financial status.

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**NEW CONCEPT: “Maximum Percent Funded Estimate”**  
**Each Association has a different range of percent funded estimates for each year in their 30-year cash flow analysis. The maximum percent funded estimate in those 30-years is often less than 100%**

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For associations that have reserve component capital assets that do not all need replacement in the same year (e.g. do not need to be 100% funded as described above), the *percent funded estimate* for each of the next 30 years has a natural fluctuation, depending on future cycles of reserve expenses.

For these associations, the percent funded estimate may range from at or near zero percent in the lowest year to a number that is often less than 100% -- and sometimes substantially less than 100%.

The year in which the highest percent funded estimate occurs is usually in the year prior to large reserve expenses because the association has had to build reserve funds in anticipation of these expenses. The unique range of projected percent-funded estimates (min Percent Funded to max Percent Funded) for each association should be the yardstick by which an association measures its financial status, not how close is the HOA to being 100% funded for depreciation-to-date.

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### **Extreme Example: A 6.4% Funded Estimate Scenario that works!**

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The next question one might ask is, “*What is the lowest possible maximum percent-funded estimate for an association during a 30-year cash flow projection.*” And, “*What type of capital expense pattern would provide that scenario?*”

As it turns out, a 30-year optimized cash flow analysis with a very sparse expense pattern allows an association to successfully fund every reserve expense shown in the projection, yet the association will have astonishingly low percent funded estimates in each year. The ultimate sparse expense pattern is one in the association has exactly the same expense amount each year but it has many components.

For example, consider the prior example where we had 30 roofs, with only one \$10,000 roof being replaced each year during the 30-year expense projection... (refer to the sparse expense pattern example spreadsheet above).

Next, let’s calculate a Straight-Line Depreciation analysis for the same data (see below). Note that there is \$155,000 of “depreciation-to-date.” Therefore, if the HOA wanted to be 100% funded, *they would need to have \$155,000 in reserves each year!* Yet the cash flow analysis shows that the HOA only needs to generate \$10K of cash flow each year to fund 100% of reserve expenses going forward.

## STRAIGHT-LINE DEPRECIATION ANALYSIS & PERCENT FUNDED ESTIMATE

<b>RESERVE COMPONENT</b>	Estimated Useful Life (years)	Estimated Remaining Life (years)	Estimated Current Cost to Replace	End Dec 2010 Depreciation to Date	Jan 1, 2011 Beginning Fund Balances	FY 2010 Annual Depreciation
Roof - Home #1 (1981)	30	0	\$10,000	\$10,000	\$645	\$333
Roof - Home #2 (1982)	30	1	\$10,000	\$9,667	\$624	\$333
Roof - Home #3 (1983)	30	2	\$10,000	\$9,333	\$602	\$333
Roof - Home #4 (1984)	30	3	\$10,000	\$9,000	\$581	\$333
Roof - Home #5	30	4	\$10,000	\$8,667	\$559	\$333
Roof - Home #6	30	5	\$10,000	\$8,333	\$538	\$333
Roof - Home #7	30	6	\$10,000	\$8,000	\$516	\$333
Roof - Home #8	30	7	\$10,000	\$7,667	\$495	\$333
Roof - Home #9	30	8	\$10,000	\$7,333	\$473	\$333
Roof - Home #10	30	9	\$10,000	\$7,000	\$452	\$333
Roof - Home #11	30	10	\$10,000	\$6,667	\$430	\$333
Roof - Home #12	30	11	\$10,000	\$6,333	\$409	\$333
Roof - Home #13	30	12	\$10,000	\$6,000	\$387	\$333
Roof - Home #14	30	13	\$10,000	\$5,667	\$366	\$333
Roof - Home #15	30	14	\$10,000	\$5,333	\$344	\$333
Roof - Home #16	30	15	\$10,000	\$5,000	\$323	\$333
Roof - Home #17	30	16	\$10,000	\$4,667	\$301	\$333
Roof - Home #18	30	17	\$10,000	\$4,333	\$280	\$333
Roof - Home #19	30	18	\$10,000	\$4,000	\$258	\$333
Roof - Home #20	30	19	\$10,000	\$3,667	\$237	\$333
Roof - Home #21	30	20	\$10,000	\$3,333	\$215	\$333
Roof - Home #22	30	21	\$10,000	\$3,000	\$194	\$333
Roof - Home #23	30	22	\$10,000	\$2,667	\$172	\$333
Roof - Home #24	30	23	\$10,000	\$2,333	\$151	\$333
Roof - Home #25	30	24	\$10,000	\$2,000	\$129	\$333
Roof - Home #26	30	25	\$10,000	\$1,667	\$108	\$333
Roof - Home #27	30	26	\$10,000	\$1,333	\$86	\$333
Roof - Home #28	30	27	\$10,000	\$1,000	\$65	\$333
Roof - Home #29	30	28	\$10,000	\$667	\$43	\$333
Roof - Home #30 (2010)	30	29	\$10,000	\$333	\$22	\$333
<b>TOTALS</b>			<b>\$300,000</b>	<b>\$155,000</b>	<b>\$10,000</b>	<b>\$10,000</b>
Reserve Account Balance, estimated (or projected) as of start of new fiscal year:						\$10,000
Percent Funded Estimate ( reserves / recommended fund balance ):						6.45%
*Reserve Deficiency ( 100% Funded reserve balance minus actual reserve balance ):						\$145,000
*Reserve Deficiency Per Unit						\$4,833

Assuming this association follows the cash flow plan and only generates \$10,000 each year, yet the depreciation-to-date is \$155,000 each year, the percent funded estimate is calculated as follows:

$$\frac{\$10,000 \text{ (Amount of money in Reserve Account)}}{\$155,000 \text{ (Total depreciation to-date of the association's capital assets)}}$$

The foregoing calculation yields a shockingly low 6.45% funded estimate! It doesn't matter if the roofing cost per home is \$10,000 or \$50,000 – the result is the same 6.45%.

*Caution: This discussion is not intended to encourage HOA's to be satisfied with a low percent-funded estimate. The determination of whether a sub-100% percent-funded estimate is acceptable must be done in conjunction with a thorough understanding of each HOA's unique cash flow analysis.*

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## A 30-Year Cash Flow Analysis Funds 100% of Future Expenses!

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Suppose your Board of Directors was given supernatural power to precisely predict all future expenses for the next 30 years and they set the budget for each of the next 30 years as shown in their 30-Year Optimized Cash Flow Analysis... The Board would therefore be ensuring that 100% of the capital expenses in the next 30 years would be funded by regular monthly member assessments.

Isn't this essentially a 100% funding plan? Not for depreciation-to-date, but indeed the Board would be funding 100% of forthcoming expenses. The question then becomes – is it more important to:

- Be 100% funded for depreciation-to-date when you don't need all that money?
- Or only have the right amount of money when needed in the 30-year cash flow analysis?

California Civil Code 1365.5 requires that the percent-funded estimate is disclosed to members. When condos are sold, real estate agents and lending institutions are now frequently inquiring about how well-funded associations are – on a “percent-funded” basis. Unfortunately, they're missing the point: The same Civil Code drafted by the state legislators does NOT require that associations are 100% funded for depreciation-to-date. It merely requires that associations disclose the percent funded estimate to members and “*estimate the annual contribution necessary to repair, replace, restore, or maintain the reserve components*” for the next 30 years and approve a funding plan to do so:

**California Civil Code 1365.5(e)(4)** -- *An estimate of the total annual contribution necessary to defray the cost to repair, replace, restore, or maintain the components identified in paragraph (1) during and at the end of their useful life, after subtracting total reserve funds as of the date of the study.*

**California Civil Code 1365.5(e)(5)** -- *A reserve funding plan that indicates how the association plans to fund the contribution identified in paragraph (4) to meet the association's obligation for the repair and replacement of all major components with an expected remaining life of 30 years or less*

A 30-year cash flow analysis funding plan satisfies *Civil Code 1365.5(e)(4 and 5)* above by funding expenses for the next 30 years. Yet it in most cases, it will not ensure 100% funding for depreciation-to-date during those years, thus proving mathematically that being 100% funded isn't always necessary.

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