



Association of Professional Reserve Analysts

Standards of Practice

Updated 10/17/2025

Table of Contents

Introduction	3
Part I. Definitions and Scope.....	3
Part II. Standards of Practice.....	4
SECTION 1 – Physical Analysis.....	4
SECTION 2 – Financial Analysis.....	4
Part III. Limitations, Exceptions, and Exclusions.....	7
SECTION 1 – Site Visit.	7
SECTION 2 – Physical Analysis.....	8
SECTION 3 – Financial Analysis	9
IV. Reserve Study Report Contents	9
V. Terms & Definitions.....	10

Introduction

These Standards of Practice provide guidelines for the Association of Professional *Reserve Analysts* and define certain terms relating to Reserve Studies. It is the intention of these Standards to be viewed as a minimum standard and not as a limitation on the opinion, recommendations, or practice of the individual *Reserve Analyst*. Italicized words in these Standards are defined in Part V, Glossary of Terms.

Part I. Definitions and Scope

- A. A *Reserve Study* is a budgeting tool intended to aid the directors of *Associations* or other entities responsible for maintaining residential property, retail property, special districts or any other physical plant/property for the future repair, replacement, and restoration of major components of the common areas during the *Economic Life* of a property.
- B. A *Reserve Study* is a collaboration between the client and *Reserve Analyst* that brings together the client's unique firsthand knowledge with the Analyst's professional expertise.
- C. A *Reserve Study* is comprised of two parts:
 - a. ***Physical Analysis***: Information about the physical condition and repair/replacement cost of the property *Components* the client is obligated to maintain. The *Physical Analysis* comprises the *Component Inventory* and the *Component Assessment and Valuation*. The *Component Inventory* should be relatively "stable" over time while the results of the *Component Assessment and Valuation* will change over time.
 - b. ***Financial Analysis***: The evaluation and analysis of the client's reserve income and expenditures. The *Financial Analysis* opines the *Funding Plan*, which provides the *Status* and recommends an appropriate reserve contribution.
- D. A *Reserve Study Site Visit* is performed to determine the *Component Inventory* and the *Component Assessment and Valuation* subject to the limitations, exceptions, and exclusions outlined in Part III.
- E. There are four standard Levels of Service
 - a. Level I – Full Study
 - b. Level II – Update with Site Visit Study
 - c. Level III – Update without Site Visit Study
 - d. Level IV – Pre-Completion Study

Part II. Standards of Practice

SECTION 1 – Physical Analysis

- A. Information within the *Physical Analysis* Section comes from either a *Site Visit* or a previous *Reserve Study* and from any research with the client, client's representatives, vendors, or other sources.
- B. In general, construction defects, acts of God, environmental hazards, future code changes, and unpredictable events shall not be considered. The *Reserve Analyst* will assume that the *Reserve Components* have been properly built and installed. The *Reserve Analyst* shall at minimum consider all major components that have a predictable remaining useful life of 30 years or less except when specifically contracted for or dictated otherwise by applicable statute.
- C. A *Physical Analysis* is not intended to be exhaustive in nature and may include representative sampling.
- D. The purpose of a *Physical Analysis* is to estimate the general condition of systems and components and their repair, replacement, or restoration needs beyond that which can be performed as an operating expense.
- E. The condition assessment of like systems or components may be evaluated and funded for as a group. Individual failures within these groups need not be separately accounted for.
- F. *In general, a Reserve Component* is an asset that is:
 - a. *Client* responsibility
 - b. With limited *Useful Life* expectancy
 - c. Predictable *Remaining Useful Life* expectancy
 - d. Above a *Minimum Cost*
 - e. Or where required by applicable statutes

SECTION 2 – Financial Analysis

- A. The *Financial Analysis* is a function of the expenditures outlined in the *Physical Analysis* and the current financial condition of the *Client*.
- B. The *Financial Analysis* portion of a *Reserve Study* shows the *Status* of the *Reserve Fund*.
- C. *Starting Balance*: In general, the starting balance shall be estimated according to the following principles: Reliable, memorialized, consistent, defensible.

Starting Balance Procedure:

1	Balance sheet effective date from recent financial statement.		
2	Remaining months in year based on effective date.		
3	Reserve fund balance per balance sheet:		\$
4	Total remaining months' <i>Reserve Contributions</i> per budget:	+	\$
5	Estimated <i>Prepared-In-Year</i> after-tax interest income:	+	\$
6	Other ¹ <i>Prepared-In-Year</i> in/out flows:	+/-	\$
7	Total remaining months' estimated expenses based on effective date:	-	\$
8	<i>Starting Balance</i> (Add lines 3 through 7)	=	\$

1 Special reserve assessments, excess operating funds transfers, lawsuit/insurance proceeds, loan proceeds/repayments, etc.

If an alternate Starting Balance Method is used, it must conform to the Starting Balance Principles and be disclosed.

- D. *Percent Funded* shall be the percentage of the actual or estimated cash balance versus the *Fully Funded Balance*. *Percent Funded* is not required *Reserve Study* content and when included may be presented for fewer than all report years.

Fully Funded Balance shall be calculated according to the following where lowercase *ffb* refers to a single component and uppercase *FFB* refers to the sum of all components.

The *Fully Funded Balance* (*ffb*) for each component shall be calculated by either of the following two equations:

a. Simple Fully Funded Balance (ffb) Equation

Fully funded balance (*ffb*) for component *n* at year *t*

$$ffb_{nt} = Cost_{nt} \times Effective\ Age_{nt} \div Useful\ Life_n$$

b. Interest & Inflation Sensitive Fully Funded Balance (ffb) Equation

Fully funded balance (*ffb*) for component *n* at year *t*

i = interest rate assumption

π = inflation rate assumption

$$ffb_{nt} = Cost_{nt} \times Effective\ Age_{nt} \div Useful\ Life_n \times (1 + (1 + i)^{-RUL_{nt}} - (1 + \pi)^{-RUL_{nt}})$$

Note on the above single component equations:

The effect of interest earnings on reserve funds can be significant in building the reserve fund over time. The effect of inflation on future costs is material to the total funds needed. The second equation is more sensitive to interest and inflation when interest and inflation assumptions differ.

The total annual *Fully Funded Balance* (*FFB*) shall be calculated for each year by the following equation:

c. Total Annual Fully Funded Balance (FFB) Equation

Fully Funded Balance sum for all *n* components at year *t*

$$FFB_t = \sum_{n=first}^{last} ffb_{nt}$$

Percent Funded shall be calculated for each year by the following equation:

d. *Percent Funded (PF) Equation*

Percent Funded at year t

$$PF_t = \frac{FFB_t}{Balance_t}$$

- E. The *Financial Analysis* portion of a *Reserve Study* recommends a *Funding Plan* based on the *Status* and the future financial needs of the projects within the *Component* list.
- F. The *Funding Plan* shall be prepared using either the *Cash Flow Method* or *Component Method* and shall recommend a periodic Reserve Contribution.
- G. The *Funding Plan* shall have one of the four following *Funding Goals*: Full Funding (*Fully Funded*), *Threshold Funding*, *Statutory Funding*, or *Baseline Funding*.
- H. The *Funding Plan* shall meet the *Funding Principles*.
- I. The *Funding Plan* shall include a reasonable and fiscally responsible provision for inflation and interest. A general description of the method for which inflation and interest are calculated as well as the rates used shall be included in the report.
- J. The necessary funding increases shall begin as soon as reasonably possible and not be delayed to future years.
- K. Future costs estimates are based on the current costs and the inflation provision.
- L. *Financial Analysis* shall include a 30-year summary of the *Funding Plan*.
- M. The *Funding Plan* shall include a description of the method for deriving the beginning balance based on information provided by the client.
- N. When adequacy is used it is defined by the following Adequacy Framework (figure 1.2):

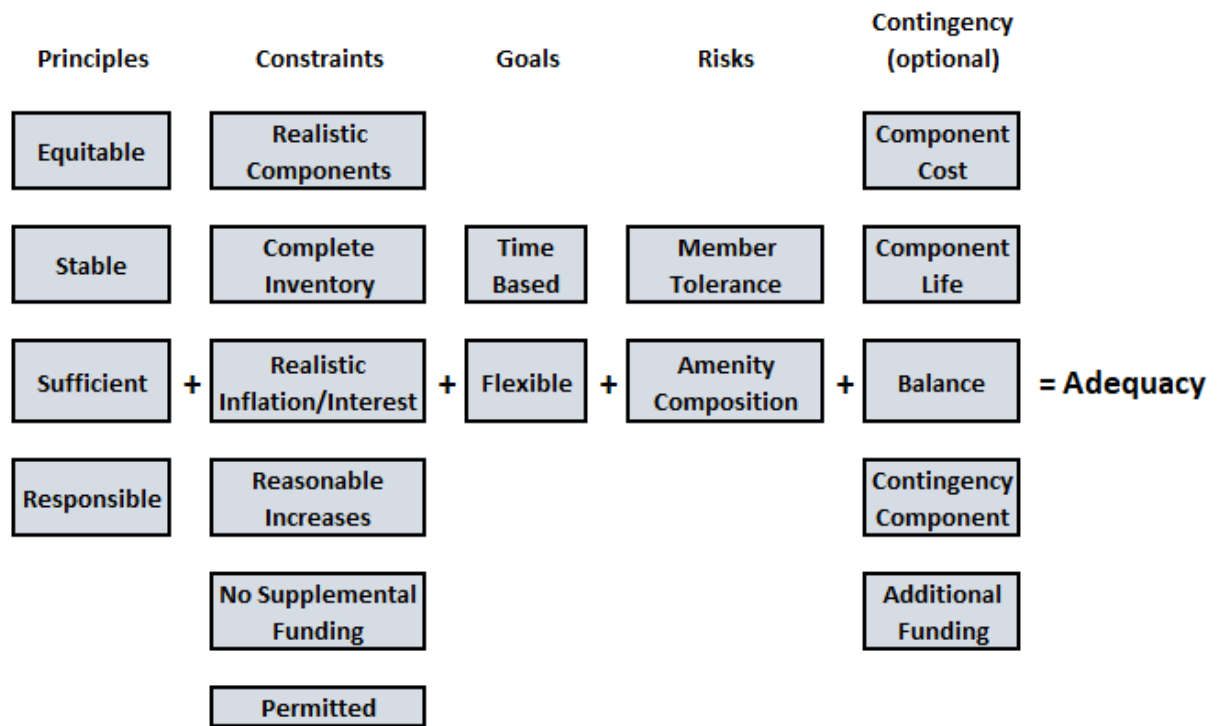


Figure 1.2 Adequacy Framework

Part III. Limitations, Exceptions, and Exclusions

SECTION 1 – *Site Visit*.

The following are typically excluded from the *Site Visit*. Items excluded from the *Site Visit* are not necessarily excluded from the *Physical Analysis* or *Financial Analysis*.

- A. Systems or components of a building, or portions thereof, which are not *Readily Accessible*, or are excluded due to circumstances beyond the control of the *Reserve Analyst* or which the Client has agreed or specified to be excluded.
- B. Systems or components, or portions thereof, which are under ground, under water, or where the *Reserve Analyst* must come into contact with water.
- C. Determining compliance with manufacturers' installation guidelines or specifications, building codes, accessibility standards, conservation or energy standards, regulations, ordinances, covenants, or other restrictions.
- D. Structural, architectural, forensic, geological, environmental, hydrological, land surveying, or soils- related examinations.
- E. Acoustical or other nuisance characteristics of any system or component of a building, complex, adjoining property, or neighborhood.

- F. Conditions related to animals, insects, or other organisms, including fungus and mold, and any hazardous, illegal, or controlled substance, or the damage or health risks arising there from.
- G. Risks associated with events or conditions of nature including, but not limited to; geological, seismic, wildfire, and flood.
- H. Water testing any building, system, or component or determine leakage in shower pans, pools, spas, or any body of water.
- I. Differentiating between original construction or subsequent additions or modifications.
- J. Fire extinguishing and suppression systems and components or determining fire resistive qualities of materials or assemblies.
- K. Elevators, lifts, and dumbwaiters.
- L. Lighting pilot lights or activating or operating any system, component, or appliance that is shut down, unsafe to operate, or does not respond to normal user controls.
- M. Operating shutoff valves or shutting down any system or component.
- N. Dismantling any system, structure, or component or removing access panels.

Note:

The *Reserve Analysts* may, at his or her discretion:

- 1) Include in the *Site Visit* any building, system, component, appliance, or improvement not included or otherwise excluded by these Standards of Practice. Any such inclusion to the *Site Visit* shall comply with all other provisions of these Standards.
- 2) Include photographs in the written report or take photographs for *Reserve Analyst's* reference without inclusion in the written report. Photographs may not be used in lieu of written documentation.

Components excluded for the *Site Visit* may be included in the *Physical Analysis*, in part or in whole, if they meet the necessary qualifications to be a *Reserve Component* as outlined in Part II Section 1.F at the discretion of the *Reserve Analyst*.

SECTION 2 – Physical Analysis.

The following are typically excluded from the *Physical Analysis*:

- A. Specifying repairs/replacement procedures or estimating cost to correct.
- B. Systems or components that do not have a predictable *Remaining Useful Life*.
- C. Systems or components provided for in whole under a maintenance contract.

- D. Systems or components provided for in whole within another part of the budget.
- E. Leased systems or components.
- F. Services of a legal nature including legal interpretations or opinions of any documents, maps, etc.

SECTION 3 – Financial Analysis

Systems or components that typically experience an *Extended Useful Life* may be excluded from the financial analysis.

The following are excluded from the *Financial Analysis*:

- A. Expected rates of return on investments significantly beyond that of current savings rates.
- B. Expected settlements or monies owed or to be transferred to reserves before the final amount has been set and approved.
- C. Limitations to increases of the reserve contribution or assessments from Governing Documents.
- D. Investment strategies or financial planning advice beyond that of the recommended reserve contribution.
- E. Auditing or other accounting services, *Reserve Analyst* shall assume financial information provided by the client or client's representative is accurate.

IV. Reserve Study Report Contents

A *Reserve Study* shall conform to the *Reserve Study* Contents Checklist found within the APRA Application for Membership and Professional Reserve Analyst (PRA) Designation. In addition to these requirements, the *Reserve Study* shall disclose any deferral or exclusion that has a material impact to the results of the study.

V. Terms & Definitions

*Note: All definitions apply to derivatives of these terms when italicized in the text.

<i>Adequate (Adequacy)</i>	The long-term reserve funding plan's sufficiency as judged by a framework of constraints, principles, and goals (see Adequacy Framework). Adequacy is not defined by percent funded and is more encompassing than <i>Status</i> .
<i>Cash Flow Method</i>	A method of calculating Reserve contributions where contributions to the Reserve Fund are designed to offset the variable annual expenditures from the Reserve Fund. Different <i>Reserve Funding Plans</i> are tested against the anticipated schedule of Reserve expenses until the desired Funding Goal is achieved.
<i>Client</i>	For the purposes of this document " <i>Client</i> " shall encompass homeowners associations, condominiums, cooperatives, schools, commercial buildings, mutual utility properties, worship facilities, and any other entity interested in the long-range planning for the maintenance and replacement of their major components.
<i>Component or Reserve Component</i>	An individual line item in the <i>Reserve Study</i> developed or updated in the <i>Physical Analysis</i> . These elements form the building blocks of the <i>Reserve Study</i> . <i>Components</i> typically are: 1) <i>Client</i> responsibility, 2) with limited <i>Useful Life</i> expectancies, 3) predictable <i>Remaining Useful Life</i> expectancies, 4) above a <i>Minimum Cost</i> , and 5) as required by applicable statutes.
<i>Component Assessment and Valuation</i>	The task of estimating <i>Useful Life</i> , <i>Remaining Useful Life</i> , and Repair or Replacement Costs for the <i>Reserve Components</i> . This task is accomplished either with or without onsite visual observations, based on Level of Service selected by the client.
<i>Component Inventory</i>	The task of selecting and quantifying <i>Reserve Components</i> . This task is accomplished through any of the following: onsite visual observations, review of <i>Client's</i> design and organizational documents, review of a previous <i>Reserve Study</i> , review of established <i>Client</i> precedents.
<i>Component Method</i>	A method of calculating Reserve contributions where the total reserve contribution is based on the sum of contributions for individual <i>Components</i> .
<i>Contribution Change Rate</i>	Reserve Fund contribution increase or decrease expressed as a percentage for each year. Note: This can be used as an indicator of <i>Adequacy</i> and <i>Status</i> .
<i>Critical Year</i>	The year(s) of lowest reserve fund balance or <i>Percent Funded</i> . Critical Year plays an essential role in the Cash Flow method, and it is the basis for Baseline and Threshold funding goals.
<i>Current Cost</i>	A component's current replacement cost as of the date of the financial analysis. Current cost may be less or greater than the total replacement cost depending on the defined replacement scope.
<i>Deficit</i>	An actual (or projected) <i>Reserve Balance</i> less than the <i>Fully Funded Balance</i> . The opposite would be a <i>Surplus</i> .
<i>Economic Life</i>	The portion of the total life of a property up until the infrastructure is no longer economically viable to maintain and a significant reinvestment, rebuilding, or structural renovation is necessary.

<i>Effective Age</i>	The difference between <i>Useful Life</i> and <i>Remaining Useful Life</i> . Not always equivalent to chronological age since some <i>Components</i> age irregularly. Used primarily in <i>Fully Funded Balance</i> computations.
<i>Extended Useful Life</i>	Systems or <i>Components</i> generally designed to have a life longer than the scope of the report or 30 years from the date of the report. Funding of such items is at the discretion of the preparer.
<i>Financial Analysis</i>	The portion of a <i>Reserve Study</i> where <i>Status</i> of the Reserves and a recommended Reserve contribution rate (<i>Reserve Funding Plan</i>) are derived. The <i>Financial Analysis</i> is one of the two parts of a <i>Reserve Study</i> .
<i>Full Study</i>	Complete qualitative and quantitative study, includes site visit.
<i>Fully Funded</i>	100% Funded. When the actual (or projected) <i>Reserve Balance</i> is equal to the <i>Fully Funded Balance</i> .
<i>Fully Funded Balance (FFB)</i>	Total Accrued Depreciation. An indicator against which Actual (or projected) <i>Reserve Balance</i> can be compared. In essence, it is the <i>Reserve Balance</i> that is proportional to the current Repair/replacement cost and the fraction of life “used up”. This number is calculated for each <i>Component</i> , then summed together for an annual total. Two formulae can be utilized, depending on the provider’s sensitivity to interest and inflation effects. Note: both yield identical results when interest and inflation are equivalent.
<i>Funding Goals</i>	Independent of <i>Methodology</i> utilized, the following represent the basic categories of <i>Funding Plan</i> goals: <i>Baseline Funding</i> - Establishing a <i>Reserve Funding</i> goal of keeping the Reserve cash balance above zero. <i>Fully Funded</i> - Setting a <i>Reserve Funding</i> goal of attaining and maintaining Reserves at or near 100% funded. <i>Statutory Funding</i> - Establishing a <i>Reserve Funding Goal</i> of setting aside the specific minimum amount of funds required by applicable statutes. <i>Threshold Funding</i> - Establishing a <i>Reserve Funding</i> goal of keeping the <i>Reserve Balance</i> above a specified dollar or <i>Percent Funded</i> amount. Depending on the threshold this may be more or less conservative than “ <i>Fully Funded</i> ”.
<i>Funding Plan</i>	<i>Client</i> ’s plan to provide income to a <i>Reserve Fund</i> to offset anticipated expenditures from that fund.
<i>Funding Principles</i>	Sufficient funds when required, stable contribution rate over the years, evenly distributed contributions over the years, and fiscally responsible.
<i>Inflated Expenditures</i>	The combined annual expenditures for a given year inflated to reflect their estimated future replacement cost.
<i>Methodology</i>	A statement which addresses the procedures and methods used to prepare a <i>Reserve Study</i>
<i>Minimum Balance</i>	The Threshold Goal’s lowest <i>Reserve Balance</i> as established by the client or recommended within the <i>Financial Analysis</i> .
<i>Minimum Cost</i>	The threshold expense designated for a component to be considered for inclusion in the component inventory, determined through collaboration between the client and reserve analyst.
<i>Percent Funded</i>	The ratio, at a particular point of time (typically the beginning of the Fiscal Year), of the actual (or projected) <i>Reserve Balance</i> to the <i>Fully Funded Balance</i> , expressed as a percentage. Note: This can be used as an indicator of <i>Status</i> .

<i>Physical Analysis</i>	The portion of the <i>Reserve Study</i> where the <i>Component Inventory</i> and <i>Component Assessment and Valuation</i> adjustment tasks are performed. This represents one of the two parts of the Reserve Study.
<i>Pre-Completion Study</i>	Preliminary reserve study conducted before project completion, focusing on estimated component lifespans, projected replacement costs, and initial funding recommendations. Designed to help establish an initial reserve contribution plan for new developments.
<i>Prepared-For-Year</i>	The fiscal year for which the study is prepared for. The Prepared-For-Year is normally the fiscal year after study preparation.
<i>Prepared-In-Year</i>	The fiscal year in which the study is prepared in. The Prepared-In-Year is normally the year before the Prepared-For-Year.
<i>Quantity</i>	The total amount of each <i>Component</i> per its unit of measure.
<i>Readily Accessible</i>	Can be reached, entered, or viewed without difficulty, moving obstructions, or requiring any action which may harm or endanger persons or property.
<i>Remaining Useful Life (RUL)</i>	Also referred to as <i>Remaining Life (RL)</i> . The estimated time, in years, that a <i>Reserve Component</i> can be expected to continue to serve its intended function. Components have “zero” <i>Remaining Useful Life</i> in the year of their replacement.
<i>Reserve Analyst</i>	A person with experience and training, such as a PRA, who prepares Reserve Studies.
<i>Reserve Assessment</i>	The portion of assessments contributed to the <i>Reserve Fund</i> .
<i>Reserve Balance</i>	Actual or projected funds as of a particular point in time that the <i>Client</i> has identified for use to defray the future repair or replacement of those major <i>components</i> which the <i>Client</i> is obligated to maintain. Also known as Reserves, Reserve Accounts, Cash Reserves. Note: This can be used as an indicator of <i>Status</i> .
<i>Reserve Component</i>	see <i>Component</i> .
<i>Reserve Contribution</i>	The cyclical cash transfer to the reserve fund as indicated by the reserve funding plan (also known as reserve transfer, reserve provision, reserve allocation).
<i>Reserve Fund</i>	Those funds set aside for the future repair, replacement, or restoration of the <i>Reserve Components</i> .
<i>Reserve Study</i>	A budgeting tool, prepared by a <i>Reserve Analyst</i> , which identifies the <i>Status</i> of the <i>Reserve Fund</i> and recommends a stable and equitable <i>Funding Plan</i> to offset anticipated future “major common area expenditures”. The <i>Reserve Study</i> consists of two parts: the <i>Physical Analysis</i> and the <i>Financial Analysis</i> .
<i>Site Visit</i>	A visit to the common areas of the <i>Client</i> for the purpose of determining the <i>Component Inventory</i> and the <i>Component Assessment and Valuation</i> .
<i>Special Assessment</i>	An assessment levied on the members of the <i>Client</i> in addition to regular assessments. <i>Special Assessments</i> are often regulated by Governing Documents or applicable statutes.
<i>Starting Balance</i>	The Prepared-For-Year’s beginning balance.

<i>Starting Balance Procedure</i>	The process followed by the reserve preparer in forecasting the Starting Balance.
<i>Status</i>	The current condition as indicated by cash balance, <i>Percent Funded</i> , or <i>Contribution Change Rate</i> . Note: Status is not an indicator of <i>Adequacy</i> .
<i>Surplus</i>	An actual (or projected) <i>Reserve Balance</i> greater than the <i>Fully Funded Balance</i> . See “ <i>Deficit</i> ”.
<i>Unit Cost</i>	The cost of a <i>Component</i> . The <i>Unit Cost</i> is multiplied by the <i>Component’s Quantity</i> to obtain the total estimated replacement cost for the <i>Component</i> .
<i>Unit of Measure</i>	Refers to the method of measurement applied to a particular <i>Component</i> . The following are examples: • <i>Square Feet</i> • <i>Lineal Feet or Linear Feet</i> • <i>Each</i> • <i>Square Yards</i> • <i>Lump Sum</i> • <i>Squares</i>
<i>Update with Site Visit</i>	Qualitative only update and review study, includes site visit.
<i>Update without Site Visit</i>	Financial only update study, does not include site visit.
<i>Useful Life (UL)</i>	<i>Total Useful Life or Depreciable Life</i> . The estimated time, in years, that a <i>Reserve Component</i> can be expected to serve its intended function in its present application or installation.