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## **CRP Technical Bulletin No. 1**

### **Reserve Fund Study Standards: The Essential Elements**

**Defining the Scope and Substance  
of a Reserve Fund Study  
As required by the CRP Committee  
Real Estate Institute of Canada**

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# Reserve Fund Study Standards: The Essential Elements

**CRP (Certified Reserve Planner)** is a professional designation initiated and owned by The Real Estate Institute of Canada. CRP members are professionals, focused on reserve fund planning and management and capable of performing reserve fund studies for their clients on a fee basis.

## Preamble

Reserve fund studies have evolved over the past 20 years in response to the requirement by condominium, non-profit and co-operative housing corporations to establish and maintain reserve funds for financing major repairs and replacement of their common elements and assets.

The current Condominium Act of Ontario clearly states in Section 36 (2):

*The corporation shall establish and maintain one or more reserve funds and shall collect from the owners, as part of their contribution towards the common expenses, amounts, that calculated on the basis of expected repairs and replacement costs and life expectancy of things comprising the common elements and the assets of the corporation, are reasonably expected to provide sufficient funds for major repair and replacement of common elements and assets of the corporation, but in no event shall the contributions to the reserve fund or funds be less than 5 per cent of the amount required for contributions to the common expenses exclusive of the reserve fund*

The New Condominium Act of Ontario (Bill 38) not only confirms the requirement to establish and maintain one or more reserve funds, but it also specifically requires in Section 95 the performance of reserve fund studies. The Act further requires that a reserve fund study must be performed in accordance with prescribed standards, to wit:

- (1) The corporation shall conduct periodic studies to determine whether the amount of money in the reserve fund and the amount of contributions collected by the corporation are adequate to provide for the expected costs of major repairs and replacement of the common elements and assets of the corporation.*
- (2) A reserve fund study shall be of a prescribed class, shall include the material that is prescribed for its class and shall be performed in accordance with the standards that are prescribed for its class.*
- (3) For the purposes of this Act, an update to a reserve fund study shall constitute a class of reserve fund study.*

Reserve fund studies were first performed in the mid-seventies. Throughout the eighties and the nineties, many firms and individuals from various backgrounds started to provide reserve fund studies, filling the demand by condominium and non-profit housing corporations.

Engineering firms were the predominant group in the reserve fund study field, claiming particular expertise and experience in reserve fund studies. They stressed the engineered reserve fund study, based on their knowledge and training in building sciences.

Judging from the diversity of reserve fund studies by a variety of reserve fund providers, there are no generally accepted reserve fund study standards. It appears that firms and individuals in the reserve fund business have developed their own format, style and methodology of reserve fund studies, most of them claiming that theirs is the best and most reliable reserve fund study.

A thoughtful analysis of the reserve fund study field shows that many reserve fund studies done today may not be adequate. Some are unintelligible and outright preposterous, while others are using concepts, which have no place in effective reserve fund planning, such as the "critical year" concept.

A reserve fund study is a financial plan, which provides reasonable estimates for funding future major repairs and replacement of common element components. It must provide useful information and guidance to property managers and the directors of condominium and non-profit corporations to make prudent provisions for adequate reserve funding.

Since the market has not yet defined reserve fund study standards, and as opinions among reserve fund study providers significantly vary, the time has come to define reserve fund study standards and promote their acceptance in the marketplace. In fact, the New Condominium Act of Ontario demands the implementation of reserve fund study standards.

Having created the new profession of reserve fund planners, *The Real Estate Institute of Canada* will assume the leadership role of defining appropriate reserve fund study standards, embodied by the essential elements of a functional reserve fund study.

## **Essential Elements**

A comprehensive reserve fund study must include all essential elements of functional reserve fund planning to provide the information and guidance to the user of the reserve fund study to make informed decisions.

A reserve fund study must include sufficient data, analyses, estimates and calculations, all of which lead to recommendations, which ensure adequate reserve funding of all major repairs and replacement of common elements.

Therefore, a reserve fund study is a financial document, based on research and analysis, cost estimates and financial projections.

### **Purpose of a Reserve Fund Study**

The purpose of a reserve fund study should clearly state the function for which the reserve fund study is required. In effect, it is the answer to the question "why do a reserve fund study."

It should clearly state that the reserve fund study will provide necessary information and data, analyses, estimates and projections, all of which should lead to a conclusion as to the adequacy of funding of all major repairs and replacement of common elements as well as assets of the corporation.

The statement of purpose should also include the requirements of the Condominium Act for condominium corporations, or policies and/or regulations for non-profit corporations as well as investment companies, REITs and other clients.

There must be a date as of which the reserve fund study applies.

### **Definition of Reserve Fund Study**

It answers the question "what is a reserve fund study." A reserve fund study is a financial document, and it includes the cost estimates of major repairs and replacement of particular common element components. It provides financial information, based on a physical inspection and a life cycle analysis, for the funding of major repairs and replacement of common elements or assets of the corporation.

### **Reserve Methodology and Scope**

A reserve fund planner must briefly describe the methodology used in researching and analyzing physical data, and the scope of work undertaken to perform the reserve fund study, including:

- Building and site inspections;
- Examination of building plans;
- Examination of reports, such as Technical Audits;
- Examination of financial statements;
- Examination of maintenance contracts; and
- Interviews and investigations.

The user of the reserve fund study must have a clear idea of the research, investigation, scope of work performed and the methodology of reserve fund estimating used.

### **Reserve Fund Principles and Concepts**

Reserve fund planning is guided by various principles and concepts, which must be described, explained and defined, so that the reader can understand the context in which reserve fund estimates are made.

It is essential that the terminology of principles and concepts are clearly understood, such as:

- Reserve component or item
- Replacement cost estimates
- Expected or normal life span
- Actual or chronological age
- Effective age or condition analysis
- Remaining life span
- Projected inflation factor
- Projected interest rate
- Quantity survey and unit quantification
- Unit cost estimates
- Current replacement costs
- Future replacement costs
- Current reserve requirements
- Future reserve accumulations
- Future reserve requirements
- Reserve fund assessments

### **Analysis of Inflation Factors and Interest Rates**

It is not enough to state current inflation factors or interest rates. A reserve fund planner must estimate a long-term inflation factor and a long-term interest rate, showing the data and calculation on which any estimates are based. Only then, can the accuracy or reasonableness of the estimates be verified.

### **Underlying Assumptions**

A reserve fund planner must clearly state the underlying assumptions, on which his or her estimates are based, including:

- Quality of construction;
- Quality of ambience and maintenance;
- Demolition and disposal costs;
- Goods and services tax (GST);
- Contingency estimates;
- Structural deficiencies;
- Prior renovation and/or restoration;
- Management policies;
- Maintenance policies and practices;
- Condition analyses; and
- Preventive maintenance.

### **Property Description and Statistical Data**

The reserve fund planner must provide a general description of the property and overall statistical data about the building(s) and site facilities.

All factual information, observed on inspection and taken off the building plans, should be presented, as these data are used in the cost estimates and reserve calculations.

Finally, brief details of the basic construction of the building should be provided together, if possible, with illustration of a site plan, building section or building elevation.

### **Component Description and Quantification**

Every reserve component must be described and quantified. For example, the roofing reserve component must be identified as to composition, quality and replacement, and the area of the roof must be provided.

### **Reserve Component Cost Estimates**

The cost of every reserve component must be provided in terms of unit cost, such as sq.ft., sq.m., lineal ft., or item, such as door or window.

The unit cost estimates are essential for checking the accuracy or reasonableness of the reserve fund estimates.

### **Component Life Cycle or Condition Analysis**

Every reserve component must be analyzed as to its life cycle, which is a condition analysis of each reserve component.

Without a life cycle analysis, reserve fund estimations are not possible, and the validity of an effective life cycle analysis depends of the skill, expertise and experience of the reserve planner.

## **Reserve Fund Benchmark Calculations**

These are the calculations necessary to estimate the replacement costs, current reserve requirements (the amount which should be in the reserve fund) and the necessary reserve fund contributions to ensure adequate reserve funding for major repairs and replacement of the common elements.

These calculations consist of six (6) categories:

### **(1) Current Replacement Costs**

These are the current replacement cost estimates of the various reserve components.

### **(2) Future Replacement Costs**

These are the future replacement cost estimates of the reserve components, based on long-term inflationary trends, and calculated using the future function of \$1.00.

### **(3) Current Reserve Fund Requirements**

These are the reserve fund requirements (or obligations) which consist of the amount of reserve funds required today, based on the effective age (condition) analysis of each reserve component.

### **(4) Future Reserve Accumulation**

These are the estimated future reserves, accumulated in the reserve fund, and invested at a long-term stable interest rate, at the end of the remaining life span of each reserve component.

### **(5) Future Reserve Fund Requirements**

These are the estimated future reserve fund requirements, which must be funded by contributions to the reserve fund. They are the difference between (2) future replacement costs and (4) future reserve accumulation.

### **(6) Reserve Fund Assessment or Contributions**

These are the reserve fund contributions required to fund the future reserve fund requirements, and they are calculated on a sinking fund basis, which assumes that the contributions are continuously invested at the long-term interest rate.

It should be noted that many reserve fund studies use the straight line method of calculating reserve fund contributions on the simple assumption that the interest earned on the reserve fund investments will offset any inflationary increases in the reserve component costs.

This assumption is wrong and leads to erroneous estimates, invariably on the high side, requiring unit owners to pay more into the reserve fund than necessary. Only future replacement cost and sinking fund calculations will produce reliable reserve fund estimates.

## **Deficiency Analysis**

This is a brief description of any observed condition, which requires remedial action or maintenance procedures.

## **Financial Analysis of Reserve Fund Operations**

This is a detailed financial analysis of the reserve fund operations and includes an examination of the audited financial statements as far back as possible, ideally to the beginning of the corporation.

This analysis includes a detailed review of the notes to the financial statements and the cash flow pattern over the years. It provides to the reserve fund planner a historical record of reserve fund inflows and outflows (expenditures).

When detailed enough, the reserve expenditures are invaluable guides to previous problems, physical deficiencies, and future reserve requirements.

## **Analysis and Estimate of Reserve Fund Adequacy**

Based on the research and analysis of the reserve components and the reserve fund calculations, the reserve fund planner can now authoritatively analyze and estimate a reserve fund surplus or deficiency, and thereby comment on the adequacy of the reserve fund.

## **Analysis of Reserve Fund Contributions and Expenditures**

Based on a complete financial analysis of the reserve fund operations, the reserve fund planner can now make judgments on prior year and future contributions.

Similarly, the expenditure patterns will show where reserve funds have been spent, and based on cost estimates and life cycle analyses, the reserve fund planner can then project future expenditures in terms of size and timing.

## **Recommendations**

A reserve fund study should culminate in recommendations as to planning and managing the reserve fund. These recommendations should lead to the full implementation of a reserve plan to guide the board of directors in its deliberations. Currently, few reserve fund studies contain recommendations. Usually, they show various scenarios for boards to choose from.

## **Reserve Fund Management Program**

The reserve planner should briefly outline a management program, including proactive policies, for the administration and control of the reserve fund.

## **Reserve Fund Cash Flow Projection**

This is arguably the most important element or document in a reserve fund study. A reserve fund cash flow projection, usually 20 years, shows the opening balance of the reserve fund, the contributions by the unit owners, and the interest income for each period, representing the total cash available in any given period.

It also shows the reserve fund expenditures on the various reserve components for each period, which are provide a total sum of expenditures.

Deducting the total expenditures from the total cash resources for each period, one obtains a closing balance, which becomes the opening balance in the next period.

The reserve fund cash flow projection is the most referenced page in any reserve fund, and it is used by property managers in their planning and managing reserve funds and reserve expenditures.

## **Reserve Fund Surplus/Shortfall Analysis**

This consists of a formula calculation, which shows whether the reserve fund generates a surplus or a shortfall. This information can then be used to adjust reserve fund contributions to eliminate any reserve fund surplus or shortfall.

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## **CRP Technical Bulletin No. 2**

**Reserve Fund Planning  
Standards:  
The Essential Elements**

**Defining the Scope and Substance  
of a Reserve Fund Plan  
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# **Reserve Fund Planning Standards: The Essential Elements**

**CRP(E) (Certified Reserve Planner – Executive)** is a professional designation initiated and advanced by The Real Estate Institute of Canada (REIC). CRP(E) members are professionals who have the education, expertise and experience of planning and managing reserve funds.

## **Preamble**

Reserve fund planning and management has evolved over the past twenty (20) years in response to the requirements of condominium, non-profit and co-operative housing corporations to establish and maintain reserve funds for financing major repairs and replacements of common elements and assets.

The Condominium Act of Ontario mandates that condominium corporations establish one or more reserve funds and that they collect from the owners reserve fund contributions for funding future major repairs and replacements. While not specifically mandated, non-profit and co-operative housing must also set up reserve funds for financing major repairs and replacements.

In the governmental, institutional and private sectors, the need for reserve fund planning has been recognized, and proactive property administrators are increasingly using reserve funds for financing major repairs rather than funding such repairs out of cash flow.

Effective reserve fund planning and management is a fiduciary responsibility of condominium directors, and they must ensure that the reserve fund of their corporations are adequately funded. This requires that they adhere to acceptable reserve fund planning standards.

So far, reserve fund planning and management has been conducted at an ad hoc basis, and there are no recognized standards of reserve fund planning. Having created the CRP(E) designation, The Real Estate Institute of Canada has now assumed the leadership role of defining appropriate reserve fund planning and management standards.

## **Essential Elements**

Comprehensive reserve fund planning and management must be based on basic principles, accurate information and statistical data, and circumspect analysis. A reserve fund plan must ensure adequate reserve funding for each reserve component.

The following are the essential elements of a sound reserve fund plan.

## **Purpose and Definition**

The purpose of reserve planning and management is to focus on the function of the reserve plan and the significance of reserve fund management. Reference should be made to any legislation, regulations, policies or practices, which require compliance.

Reserve fund planning and management must be clearly defined in terms of objectives and outcomes of the reserve plan. The definition should include a statement as to the adequacy of the reserve fund.

## **Reserve Fund Standards**

Effective planning and management of reserve funds require establishing standards, which define the scope and objectives of the reserve fund plan. Standards are unique benchmarks, against which reserve actions can be measured.

Reserve Fund Standards may be defined in terms of:

- Building ambience and classification
- Status or level of building maintenance
- Management policies and competence
- Consistency of performance

In reserve fund planning and management, standards must be established comprising the following aspects:

- Building or Property Standards
- Reserve Fund Planning Standards
- Reserve Fund Study Standards

## **Objectives and Outcomes**

An effective reserve fund plan must contain clearly stated objectives and the desired outcomes, such as:

- Funding of all major repairs and replacements
- Adequate reserve requirements
- Adequate reserve funding

There are two sources of reserve funding or revenue:

1. Owners' contributions, and
2. Reserve fund investment income.

Every owner must pay his or her fair share toward reserves for repairs and replacements, and boards of directors or management must ensure adequate reserve funding, which is their fiduciary responsibility.

Reserve fund management, having the power of imposing reserve fund assessments, must assess reserve fund contributions in a fair and equitable manner; they must not over-assess nor under-assess.

### **Zero-Based Budgeting Approach**

This requires an investigation and analysis of reserve fund fundamentals and essentials, based on reserve funding principles and priorities. The zero-based budgeting approach involves the following steps:

1. Reserve component requirement (i.e. roof)
2. Prioritization of reserve components
3. Description of reserve components
4. Quantification of reserve components
5. Quality determination of reserve components
6. Repair or replacement of reserve components
7. Estimating unit cost of reserve components
8. Total reserve component cost estimate
9. Observed condition or life cycle analysis
  - Normal life span, based on quality considerations
  - Effective age, based on observed condition
  - Remaining life span
10. Reserve fund requirements, based on life cycle analysis
11. Reserve component deficiency analysis
12. Reserve fund cash flow projections

### **Reserve Component Classification**

A reserve fund component classification system should have two characteristics:

1. It should be uniform and universally accepted by the building and service industry throughout the country, and
2. It should be flexible enough to be expanded without changes to the existing number classification.

The most widely used building component classification is the Uniformat System, developed by the United States Government Services Administration, which has been adopted by the major cost estimating services and is based on the logical construction process:

- 1.0 Foundations
- 2.0 Substructure
- 3.0 Superstructure
- 4.0 Exterior Closure
- 5.0 Roofing
- 6.0 Interior Construction
- 7.0 Conveying
- 8.0 Mechanical
- 9.0 Electrical
- 10.0 Professional Services
- 11.0 Special Construction
- 12.0 Site Work

This classification system can be modified for reserve fund purposes, grouping building components into functional categories, as follows:

- 1. Building Structural and Architectural
- 2. Building Interior Finishes and Decorating
- 3. Building Mechanical Systems
- 4. Building Electrical Systems
- 5. Building Recreation Facilities
- 6. Site Improvement and Facilities

### **Component Cost and Condition Analysis**

Each building component must be inspected, quantified and analyzed in terms of quality of construction and condition. A unit cost must then be estimated, which reasonably reflects the quality of the existing building component.

From the observed condition of each building component, life cycle estimates can be made in terms of normal life, effective age (observed condition) and remaining life.

Given these data observations and unit cost estimates, reserve fund component estimates can be prepared.

### **Economic Analysis**

A reserve fund plan must be prepared in the context of current economic conditions and trends, because reserve fund funding projections and expenditures are predicated on prevailing inflation factors and interest rates.

## **Benchmark Analysis**

A benchmark is a performance measurement, demonstrating what should be, not what really is. In reserve fund planning, it is imperative to know what the reserve fund criteria should be, based on current cost estimates and the current condition of the reserve components (life cycle analysis).

The benchmark analysis consists of the following calculations:

**1. Current Component Replacement Costs**

These are the estimated costs of major repairs and replacing reserve components at current prices.

**2. Future Component Replacement Costs**

These are the estimated costs of major repairs and replacing reserve components at future prices.

**3. Current Reserve Fund Requirements**

These are the reserve funds required today, considering the effective age of the reserve components.

**4. Future Reserve Accumulations**

These are the future reserves, having been invested at the projected interest rate over the relevant remaining life span.

**5. Future Reserve Requirements**

These are the unfunded future reserves, being the difference between future replacement costs and future reserve fund accumulations.

**6. Annual Reserve Assessments (Contributions)**

These are the annual contributions to the reserve fund, required to be paid into the reserve fund and to be invested for funding the future reserve requirements.

## **Financial Review and Analysis**

This is a historic review and analysis of reserve fund operations, and it consists of examination of the financial statements from the beginning. This examination includes the following:

- Accounting principles and policies
- Reserve fund operations
- Review and analysis of reserve expenditures
- Critical analysis of reserve fund cash flows

The historic review will show a pattern of reserve fund cash flows and reserve component expenditures, which can be analyzed, yielding important information about the performance of reserve components. For example, if there have been numerous roof repair expenditures, it may be concluded that the roof should be replaced rather than continuing repairs.

## **Adequacy of Reserve Fund**

The adequacy of a reserve fund can readily be measured by subtracting the benchmark reserve requirements from the actual reserve fund balance or reserve fund balances, as shown on the current financial statements.

There are two reserve fund measurements:

- Adequacy of the reserve fund position (balance), and
- Adequacy of reserve funding (contributions).

## **Reserve Fund Cash Flow Projections**

Reserve fund cash flow projections are the culmination of an effective reserve fund plan, presented in a format consistent with the statement of reserve fund operations in the financial statements. The basic format consists of:

### **Reserve Fund Opening Balance**

Reserve Fund Contributions  
Reserve Fund Investment Income

### **Reserve Fund Cash Resources**

### **Reserve Fund Expenditures**

### **Reserve Fund Closing Balance**