Prepared by:

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Best Practices Guide
Planning Re-investment
in Real Property
CONTRIBUTION RATE STUDY

CRG File 02-165

Prepared for:

The City of Ottawa
October 2002

October 31, 2002.

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Mr. Jolicoeur:

Re: Contribution Rate Study
CRG File: 02-165

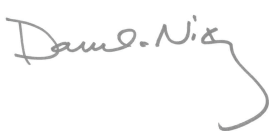
I am pleased to present our report concerning a recommended contribution rate for life cycle renewal of the City of Ottawa real property asset base.

Our research builds upon the work undertaken by CAM and leverages the work we have recently undertaken for several federal departments, agencies, and for the federal Treasury Board Secretariat.

The report presents the findings of an interview process that included discussions with thirty-one organizations, including six municipalities, Public Works and Government Service Canada, the Ontario Realty Corporation, the Ottawa-Carleton District School Board, The Council of Ontario Universities, The Ontario Parks Association, the National Research Council, The International Facilities Management Association and over a dozen professional organizations.

The report provides a framework for the discussion of a real property investment theory, where the concept of a "contribution rate" fits into life cycle renewal and investment planning, introduces a standard set of concepts and vocabulary, and reflects on CAM's approach in comparison to current practice.

It should be noted that RPAM's Real Property Asset Management practices are well advanced in terms of the municipalities canvassed. The RPAM standard of 1.5% of replacement cost is generally in keeping with the planned direction of life cycle renewal in public agencies but at the low end of the ideal target of 2% for major capital repairs and replacements. RPAM's approach of using 80% of the replacement cost as the basis of its calculation is also a pragmatic approach, somewhat more sophisticated than current practice. However, these conservative approaches may not provide adequate funding and the suggestion of directing a portion of asset sales to top up the reserve fund is a sound one.



Daniel C. Nixey M.A., CRE
Senior Vice President

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1.0 Introduction

Objectives of this Report

To assist the City of Ottawa manage real property in its ownership, Real Property Assessment Management (RPAM) has been developing a comprehensive real property management framework supported by appropriate policies, procedures, practices and information systems.

All departments of the City are expected to use their real property information to determine when and how to acquire, maintain, preserve, replace and dispose of real property, consistent with program needs, in conjunction with the Comprehensive Asset Management Division in RPAM.

Determining an appropriate level of re-investment in real property can be a major challenge. Getting this wrong can compromise program integrity, expose the City to upwardly spiralling repair expenditures, and result in premature rust out.

This Report provides information to assist in the planning and management of *the ongoing re-investments required for the maintenance and preservation of the real property assets* in RPAM's custody and reflects on RPAM's current practices.

Organization of this Report

This Report introduces a theoretical model to guide Real Property Investments over their life cycle. The discussion presents a framework to tie these concepts together and then an examination of an appropriate "contribution rate" i.e.-how much money should be set aside in a reserve fund to support life cycle asset preservation. The Report then reviews RPAM's proposed implementations mapped back to practices found in other municipalities and other real property organizations. This is supported by an extensive set of interviews with other municipalities and professional organizations (a summary of which is presented in Annex A). The Report also provides a glossary of terms to assist in standardizing the re-investment vocabulary and a list of useful references.

Life Cycle of Real Property Assets

Capital assets generate their benefits over many years. Since the cost of operating and the benefits derived from real property are spread over time, this underscores the need to plan over long time horizons and project the investments required over the complete "life cycle" of the asset.

Although this Report is concerned with re-investment in real property during the period of its ongoing use, decisions affecting the type of properties acquired and decisions affecting the timing of their disposal should likewise consider the level of re-investment that will be required during the period of active use.

2.0 Real Property Capital Investment Guidelines

Based on extensive research and review for a variety of clients, CRG has distilled five high-level guidelines from current theory and practice*:

1. investment in real property should be planned over its full life cycle, including careful consideration of which assets are acquired, how they are to be maintained and repaired during their period of active use, how their ultimate obsolescence is to be managed, and when the assets are to be disposed of.
2. the vocation of each asset should be established within the framework of a long-term capital plan so that the alignment of program direction with the investment plan for each asset is readily transparent.
3. departmental budgeting should recognize the long-term nature of real property and ensure that assets critical to program delivery maintain the capacity to provide an adequate level of asset performance, and are not allowed to prematurely degrade ("rust out"). This, in turn, requires that preventive maintenance and planned repairs receive appropriate recognition in departmental budgets, and that capital repairs are not habitually postponed behind acquisitions and betterments. It also requires a management framework with the capacity to sort-out competing priorities within a department.
4. good investment management requires sound information on asset condition and expense history so that, over time, an appropriate re-investment schedule may be established (and adjusted as required). This information may be developed on a single asset or asset class basis.
5. although not a substitute for a portfolio specific re-investment rate developed from the department's expenditure data, until such time as these data are available, managers should budget on the basis of the "2+2" formula wherein 2% of the replacement cost is budgeted for routine maintenance and repair and another 2% budgeted for major capital repairs and replacement. Consideration of investments in appropriate "betterment" of assets expected to be retained over the long term (including the replacement of obsolete assets) is in addition to this "2+2".

   [Note: It is the second 2% for major repair and replacement that is the main subject of this report].

*The Comprehensive Asset Management Group (CAM) of RPAM is well advanced in its knowledge of both life cycle investment theory and life cycle management practices (Section 6.0 refers).

3.0 Real Property Investment Planning Theory

The theoretical concepts and principles supporting these guidelines are presented below, followed by a canvas of current practice, and a discussion of where RPAM falls within this practice.

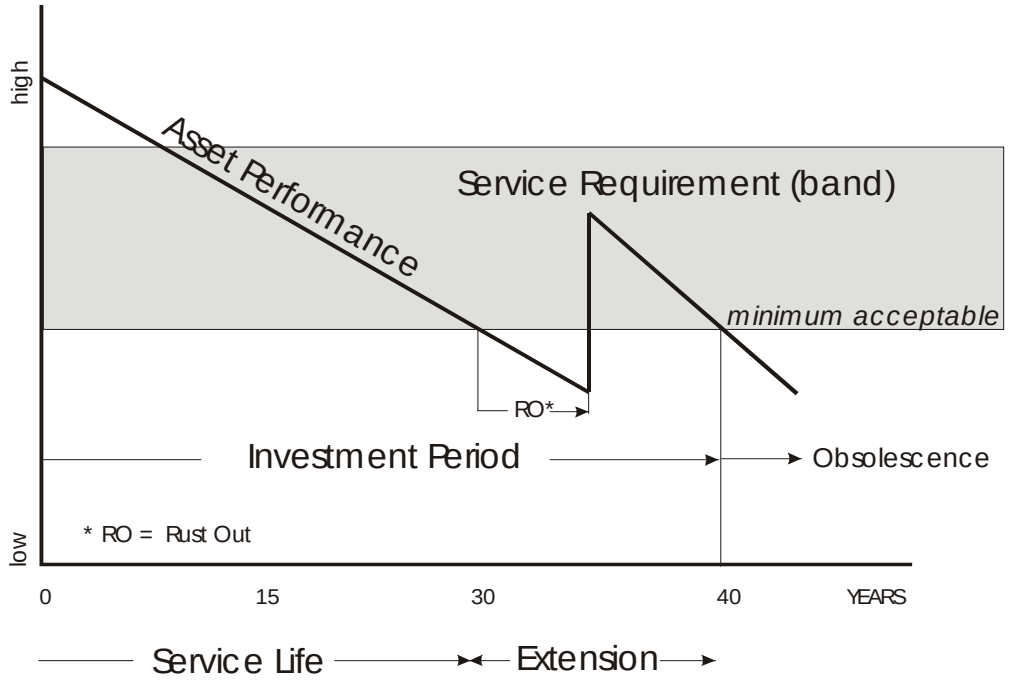
Concepts

Achieving consistency in the approach to planning for capital investments is assisted by a conceptual framework. Set out below are a set of "key concepts" that are used as the building blocks for this framework.

Real Property is a Platform for Program Service Delivery. In public sector agencies, assets are acquired and retained to deliver a real property service in support of program requirements. These assets are acquired and retained only as a "platform" for service delivery.

Real Property Has a Design Service Life. With the exception of vacant lands, all real property has a design "service life". Generally, the quality of service delivery provided by real property (i.e. "asset performance") deteriorates as a property ages over its service life due to "wear and tear". This deterioration can, in part, be arrested or slowed (and the service life extended) by appropriate infusions of repair, maintenance and replacement investment. However, at some point, the ability of the real property to deliver the program will become so compromised that the property will reach obsolescence (i.e. the asset performance can no longer meet the service requirements of the departmental program). The entire period of time from acquisition to recognition of obsolescence is considered the investment period. Figure 2 refers.

Figure 2: ASSET PERFORMANCE VS. SERVICE REQUIREMENT



Asset Performance and Service Delivery are Linked. Although not yet quantified by reliable measurement, it is generally understood that the quality of program service delivery declines once asset performance falls below a certain threshold. Below this threshold, program integrity may be compromised.

Further, there is a tendency for service requirements to increase with time. This introduces the possibility of an accelerated functional obsolescence notwithstanding good attention to upkeep and repair.

In essence, there are two causes of obsolescence. There is structural obsolescence (resulting from a natural diminishment in asset capability over time) and functional obsolescence, which refers to an assets' inability to meet a changed service requirement.

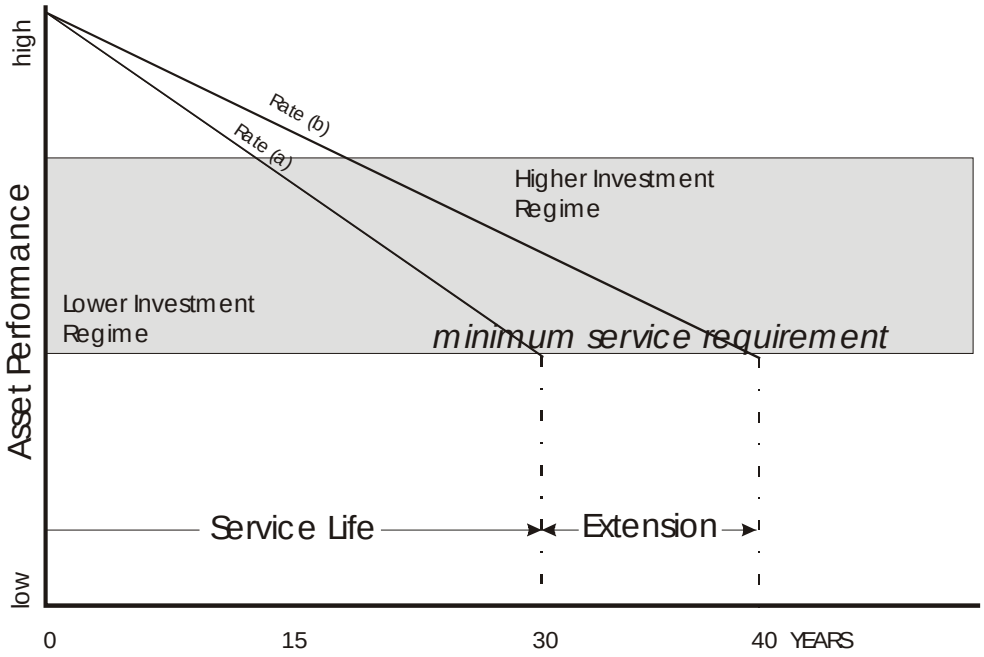
"Rust-Out" Impacts Asset Performance. Buildings and structures are expected to perform over their design life but begin to degrade the moment they are constructed. Maintaining acceptable asset performance over the design life requires periodic re-investment in repairs and maintenance. Lack of adequate re-investment can prematurely degrade asset performance to below an acceptable level – (rust out) requiring significant capital infusion to correct.

Selecting a Re-Investment Rate Requires Good Information: A central real property management objective is to optimise service delivery and reduce total costs over the expected service life for all assets in a department's portfolio. The amount and timing of re-investment influences the optimization result. Conceptually, a higher rate of routine re-investment (including sustaining capital) will slow the decline in service delivery and extend the asset's service life (Figure 3 refers). At this time, most organizations do not have sufficient information to assist in the determination of an optimal re-investment rate. As a first step, adoption of a common terminology can assist in the development of corporate information systems that will report results on a consistent basis relating to the maintenance, repair and re-capitalization of real property. With consistent approaches to information gathering and coding, benchmarking of re-investment rates across a portfolio becomes feasible and this information can be shared between departments. [Note: this discussion addresses maintenance of the asset, not its betterment which expands service capability].

Obsolescence Triggers a Major Investment Transaction. Regardless of the cause of obsolescence, whenever asset capability drops below minimum service requirement, it enters obsolescence, which triggers the need for a "transaction", which could be major investment in renovation, upgrading or disposal.

[Note: The timing of a "transaction" that deals with obsolescence may be considerably delayed from the point at which obsolescence is first recognized. The implications of the delay are increased risks of service disruption and escalating repair costs for "band-aid" solutions.]

Figure 3: INVESTMENT RATE IN RELATION TO SERVICE LIFE



Investment Framework

Conceptually, a higher level of reinvestment is expected to reduce the rate at which asset performance degrades. A key question facing capital managers is: "What degree of service life protection is provided for every incremental increase in reinvestment rate ... what is the "right amount" or reinvestment?

One view is that managers should focus their real property reinvestment first on high return activities, such as preventative and scheduled maintenance. Managers should minimize their reliance on incrementally more costly unscheduled or breakdown-based, repairs and replacement.

Under this view, budgeting would be addressed in this order of priority:

- Preventative Maintenance (O&M)
- Routine Planned Maintenance and Repairs (O&M)
- Capital Repair and Replacement (Capital)
- Betterments (Capital)

Typically, however, management focus is the reverse. New assets or major expansions and upgrades to existing assets (betterments) are given much of management's attention and budget provision. Major capital repair and replacement items come next in priority since they are visible and may have an immediate effect on program delivery.

Some small recognition is given to the need to repair and maintain the asset base that is in place, on a routine and planned basis. Virtually no funding is directed to preventative maintenance.

Principles

There are three central principles that should guide the development of a framework for real property investment.

Before investing, consider the life cycle costs. Optimizing a re-investment program begins with a good initial decision on the choice of assets. When acquiring a new asset or bettering one already in the portfolio, it is important to consider the service life of the asset and project the asset's ability to meet program requirements over the full investment period. What will be the full life-cycle cost of keeping the asset performing at an acceptable level? What will be the cost of altering the asset to meet any projected change in program direction? Will the program become prematurely stranded in obsolete facilities? Will the asset be easy to dispose of when no longer required? An asset-based long-term capital plan is the vehicle to ensure good alignment between programs and facilities and to ensure consideration of capital requirements throughout the life cycle of each asset.

Budget appropriately for asset maintenance and repair. It is important to develop and then implement programs of preventative maintenance and planned repair for each real property asset that forms part of the long-term capital plan. The budget for maintenance and repair will need to be increased as new assets are added to the portfolio; *each addition comes with an ongoing cost*. It is necessary to track expenditure history in a level of detail that allows the development of an appropriate re-investment schedule for each class of assets.

Plan dispositions well in advance. To optimize the reinvestment strategy that forms part of the long-term capital plan, asset disposition should be well planned. Obsolescence is an acceptable asset strategy if it is planned and the risks are appropriately managed. With careful planning, managers can avoid the situation where scarce repair and maintenance dollars are diverted to assets that have exceeded their design service life or no longer meet the needs of a changing program direction.

Information Requirements

Development of an effective re-investment plan for a portfolio requires information about each real property asset. The categories of information, and some of the sources for his information, include:

Asset Inventory. A comprehensive listing of all real property assets is required, providing key tombstone data such as: asset name (if appropriate); asset location; departmental reference numbers (to provide links to other corporate databases); date of acquisition; date of any major upgrade or expansion; and relevant size metrics.

Ownership. For each asset, is it owned or leased? The pattern and extent of investment in owned assets will likely be quite different than for leased assets.

Asset Value. There are several methods for establishing asset value.

Asset value can be established through reference to "market value" or "replacement value".
Market value is often used to support investment decisions for those assets which operate in a market environment (such as office buildings) or for individual assets subject to market value analysis (e.g. divestiture).

Replacement value, representing the cost today of replacing an asset with something of equivalent functionality, is often used to support investment decisions for assets subject to transaction analyses (e.g. investment and re-investment). For certain classes of assets, there are standard methodologies (and commercially available data) for the calculation of replacement value, often calibrated to local conditions of labour and material supply.

Asset Condition. Fundamental to the task of projecting re-investment requirements is a solid understanding of the condition of each asset in the portfolio. At its most basic level, asset condition can be periodically assessed by departmental staff and recorded on a standardized condition "checklist", with each major element or component of the asset assessed separately. The key is to ensure that condition assessment is done consistently by each person reporting the results. For larger, more complex assets it is typical for an asset condition report to be prepared by specialists with appropriate professional experience. It is not essential that each asset be subject to condition assessment on an annual basis, but asset assessment should occur on a regular cycle, the length of which is consistent with the nature of the asset. Regardless of how extensive the asset condition assessment is (either checklist or report), ideally, an overall asset performance indicator is then distilled from the information collected and this indicator, along with the date of the assessment, is logged into the department's property database.

Facility Condition Index. Adopting a standardized method for rating asset performance assists managers in comparing asset performance (the supply side) to service requirements (the demand side). Measuring the gap between performance and requirements on a standardized basis provides the baseline data for investment planning. The State Government of Victoria, Australia has developed a "relative condition" index that rates the measured condition of each asset to its required condition. There are, however, no commercially available systems which implement this technique and many agencies are adopting a "deficiency" based approach to recording asset condition – using some variant of the general formula described below.

The facilities industry is moving towards adopting a standard mathematical expression for a "facility condition index" - the sum of the identified deficiencies (in dollars) divided by the estimated current replacement cost. The facility condition is rated "good" if the condition index is 0.05 or lower. The concept was pioneered by Applied Management Engineering of Virginia Beach and has been endorsed by the American Public Works Association (APWA) and the Association of Physical Plant Administrators (APPA).

The FCI is used in two principal ways. First, to establish priorities for project funding based on the index value for each facility. Second, to project the amount of re-investment that will be required to either maintain the FCI at its measured level or to reach a target index (of say 0.05) over a prescribed investment period.

Planned Maintenance Standards and Practices. Preventive maintenance plans should be identified for each major asset or for asset classes. Often, maintenance scheduling information is supplied by the manufacturers of each component. A formalized preventive maintenance system may be warranted which automatically generates a work plan and schedule for regular maintenance items for each asset. Major repairs and renovations are typically identified as a result of asset condition assessments and if these assessments are completed on a regular cycle, it is usually possible to plan major repairs rather than simply reacting on a breakdown basis when they happen. The maintenance and repair plans should be tailored to the life cycle of the asset and take into account the indicated future of the asset in the long-term capital plan (e.g. the department may plan on reducing maintenance and repairs on the basis of obsolescence and disposition).

Expenditure Data. Good expenditure data is essential to projecting future maintenance and repair costs. Key to this is an accounting system that accurately records real property expenditures by asset and/or asset class. To facilitate analysis and planning, the system should be tied to the regular departmental accounting system and not stand alone as an offline database. Consistent coding of financial information is as important as the system itself. Poor coding or confusion of real property and program delivery expenditures can severely distort understanding of how the money is being spent and this problem can compound in highly decentralized operations.

Asset Vocation. The role and future of each asset in relation to the department's program direction should be identified in the long-term capital plan. The future direction of each asset is a key ingredient in determining the best approach to maintenance and repair plans. For large assets it may be necessary to develop individual asset management plans to ensure co-ordination of the overall maintenance, repair and reinvestment program for the asset.

In summary, to conduct proper investment planning, it is important to know for each asset:

- what it is, where it is located, what it comprises;
- why it is needed;
- how long it might be needed for;
- what value it has;
- what condition it is in; and
- how much to budget to keep the asset maintained and repaired during its planned investment period.

The information on capital repairs is required for the preparation of the long-term capital plan and the maintenance plan is required for operational planning and budgeting.

4.0 Capital Re-Investment Formula

The total capital re-investment requirement has three principal components:

(1) "rust out" + (2) major repair and replacement + (3) betterments

All three components should be addressed in the capital investment planning framework.

"Rust Out". There is no "formula" rate of re-investment that ensures an effective solution to "rust out". It depends on how big the departments backlog of deferred maintenance and repair items is, i.e. how much previous investment has been forgone and which aspects of asset performance fall below service requirements. Coming to terms with rust out requires an asset-by-asset assessment.

Once identified, priorities will need to be established for dealing with service deficiencies. The first priority would be items that require correction to safeguard health and safety. The next priority would be repair items that if not attended to could result in a significant, immediate wasting of the asset that would directly impinge on the delivery of programs. The third would be items that if not dealt with in the near term would require a much higher cost to deal with in the future.

Major Repair and Replacements. There is the possibility of developing a formulaic approach to the amount that should be invested on an ongoing basis to ensure that the capital base (once the rust out backlog is dealt with) can be maintained. One example of a generally accepted formula (for office buildings) is 2% + 2%, where:

- 2% represents the amount required for routine repair and maintenance and
- 2% represents the reinvestment in major capital repairs and maintenance

The first 2% would typically be covered by an organization's operating budget and the second 2% by the capital budget. The base for the 2+2% calculation is the "replacement cost" of the asset, i.e. the cost today of replacing the asset or something of equivalent design functionality.

The 2 + 2, however, ***is*** only a rule of thumb and it was developed ***for one specific*** class of assets – a portfolio of office buildings assuming a non-skewed age profile (i.e. a portfolio of buildings with an average age of 30 years would require a higher rate of reinvestment than a portfolio of 10 year old buildings). The 2+2 formula ***is not a universal formula to be applied to all portfolios, and does*** provide for the "catch–up" of a backlog of deferred maintenance or repair.

Betterments. There are no formulae for "betterments" (including the replacement of obsolete assets). These are driven by changes in program direction. Expanded or new programs will require an adjustment to the asset platform from which these new or expanded programs are delivered.

[Note: It is the second 2%, (for major repair and replacement component of total capital requirement) that the "contribution rate" discussion presented below is applicable to.]

5.0 Contribution Rate (Current Industry Practice)

As part of the process for determining an appropriate "contribution rate" for a reserve that might be established to fund, on an ongoing basis, the recapitalization of the City of Ottawa building assets (i.e. major repairs and replacement), the following organizations were canvassed to determine current and best practices:

- American Institute of Architects
- Association of Municipalities of Ontario
- Association of Consulting Engineers of Canada
- BOMA International
- Canadian Council of Professional Engineers
- Canadian Institute of Quantity Surveyors
- Canadian Recreation Facilities Association
- Canadian Society of Landscape Architects
- City of Calgary
- City of Edmonton
- City of Mississauga
- City of Windsor Parks and Recreation
- City of Winnipeg
- Civil Engineering Research Foundation
- Council of Ontario Universities
- Federation of Canadian Municipalities
- Halifax Regional Municipality
- International Facilities Management Association (IFMA)
- National Research Council of Canada
- Ottawa-Carleton District School Board
- Ontario Association of Architects
- Ontario Association of Landscape Architects
- Ontario Hospital Association
- Ontario Ministry of Education
- Ontario Parks Association
- Ontario Recreation Facilities Association Inc.
- Ontario Realty Corporation
- Professional Engineers of Ontario
- Public Works & Government Services Canada
- Royal Architectural Institute of Canada
- VFA (formerly Vanderweil Facility Advisors) Cambridge, Massachusetts

The primary focus of these interviews was to determine the approaches being used to ensure the adequate recapitalization of the civic building stock, a secondary focus was to collect similar information on park infrastructure (play structures, sports fields etc.).

A guide was prepared to frame the interviews and to ensure that information was collected on a consistent basis. A compilation of responses, following the structure of the interview guide, is presented as Annex A. A copy of the individual interview results was prepared separately as part of the study documentation.

The main findings from the interviews are presented below.

The first observation is that there is a widely held recognition that public building portfolios are currently under capitalized.

The second observation is that there is also a common understanding that a structured approach to meeting future funding requirements is imperative, *most typically expressed in the form of a reserve fund with a prescribed annual contribution rate so as to stabilize the impact on the realty tax regime.* In other words, although the annual needs for project funding will fluctuate, determined by the age and condition of the individual assets and the scheduling of repair and replacement work, it is desirable to structure a normalized annual contribution to a portfolio reserve that is adequate to accommodate these fluctuations.

The third observation is that although there is reasonable convergence in thinking concerning the appropriate contribution rate for buildings (2% of replacement value for major repairs and replacements), none of the organizations canvassed have been successful in establishing a rate at this level.

The fourth observation is that the contribution rate is typically pegged to the replacement cost of the asset (net of land and movable contents) with the caveat that a “replacement” for current functionality may require new standards and technologies at a higher price. The basis of the reserve is the "replacement cost". Typically, the replacement cost is determined using costing manuals and asset condition reports, or where such information is available, the most recent cost for replacing a similar facility.

There are some small differences in practice (and in the theoretical literature) between using the current replacement value (CRV) vs. “replacement cost new”.

The fifth observation is the importance placed on determining the typical service life of the asset – with some consensus that the service life of most buildings (i.e. before comprehensive renovation) is 35 to 50 years. [The consultant’s view is that this time frame is optimistic. Although certain aspects of a building can survive 35+ years, most major building elements cannot, if for no other reason that as they become obsolete, parts and service companies are no longer available].

The sixth observation is that the interviewees stress the need for establishing a reserve fund for repairs and replacements that is not tied to “new project” funding and that there be a mechanism in place to consistently rank priorities among all repair and replacement projects.

The seventh observation is that the thinking about an appropriate recapitalization formula for buildings is more advanced than that of park infrastructure (such as lighting, play structures, irrigation systems). Landscaping and field maintenance typically is included in the parks’ operations, rather than the capital, budget process.

6.0 RPAM Real Property Asset Management Practices

Having looked at the “theory”, how do the real property investment management practices of the City of Ottawa stack up?

The short answer is that RPAM (and CAM) is managing the City's real property assets very much in line with the "theory" and in many ways at the leading edge of municipal practice.

A summary of RPAM's current practice follows:

Under the leadership of RPMA, the City of Ottawa manages a variety of real property assets, made up of office buildings, works yards and maintenance garages, storage buildings, community centres, arenas etc., with a total replacement value of approximately $1.7B.

CAM maintains an excellent database (a practical spreadsheet format) including dates of construction, and has implemented a fully defined suite of condition audits - Type 1, 2, and 3. CAM is currently working on a methodology for achieving a consistent reporting of asset condition to assist in project prioritization. CAM has tied its property information to the City's financial reporting system (SAP), all of which is in-line with the best practices framework presented earlier in this report.

To assist management in its priority setting for real property investments, CAM highlights in its strategic asset rationalization reports, the linkages between structural obsolescence and functional obsolescence and the linkages between asset performance and the quality of program service delivery. CAM has advanced its management advice through the development of a sustainability threshold to underscore the proportional relationship between asset condition and service delivery. The advice provided by CAM is very well aligned with real property investment theory and is at the leading edge of municipal best practices.

CAM has established facility condition indices for each of the 56 different asset classes recognized in their database, providing a very fined-tuned set of targets for analytical purposes. This also is at the leading edge of municipal practice.

RPAM frames it approach to long term real property investment under the rubric of "Life Cycle Renewal Management" which captures all of the work interventions and expenditures required to maximize the useful life of an asset. Under the City's definition, the life cycle funding components include operating dollars for preventative maintenance, routine maintenance, minor repairs, and capital dollars for major repairs and replacements - in other words, all ongoing operating and capital dollars required to maintain asset integrity and to ensure ongoing asset performance relative to program service delivery requirements.

Excluded under the City's definition of life cycle management are asset "improvements" or "modifications" (referred to as "betterments" in the preceding sections on investment theory). The City's definition is consistent with the theory and current best practice.

RPAM's current thinking on asset service life is that in many cases the City's assets will be in service well beyond the 30 year illustrated the theoretical graph presented earlier as Figure 3 (see page 5). The main point being illustrated in Figure 3 is that service life extension is an important objective but, by the same token, to achieve it will require a higher re-investment regime. RPAM’s objective will be to secure a level of funding in both the operating budget (for routine repairs and maintenance) and in the capital budget (for major repairs and replacements) that will provide a sound basis for service life extension.

RPAM has set its capital standard as a contribution rate of 1.5% (i.e. for major repairs and replacements).

The 1.5% equates to the second 2% in the often cited 2+2 life cycle funding formula. While below the 2% supported by the theoretical literature, it represents a pragmatic approach.

It will establish within senior management and Council the importance of setting aside, on a sustained program basis, funding for asset life cycle renewal.

As experience builds with the level of funding, the rate can be tweaked up or down. The primary consideration is to establish a mechanism for tending to asset renewal on a programmed basis, and to peg a level of contribution that is within a range that can be supported by best practices.

In arriving at the 1.5%, CAM tested several optional funding requests. CAM's submission is included in the reports as Annex “B”, for reference.

The most aggressive option was CAM's original submission of $23 Million annually for 2002 through 2007, with a reduced amount after 2007 (once the backlog of deferred items had been addressed) as contribution to a life cycle reserve fund.

The least aggressive option tested was a contribution level of $14 Million annually for the years 2002 through 2015. At this level, the backlog of deferred items would never be completely addressed and there would be insufficient funds to establish a life cycle reserve.

The 1.5% (approximately $20.4 Million annually) based on 80% of the full replacement cost of the asset base can be considered a conservative, but pragmatic approach. However, if not augmented, it may prove to be inadequate, an issue discussed below.

Using a 1.5% rate and taking 80% of the replacement value as the base represents a conservative approach that will not fully deal with the backlog of items nor establish a fully adequate reserve fund balance. To backstop this conservatism, to provide some "seed" funding until the reserve builds up, and to create a reserve of sufficient size to deal with renewal, CAM has suggested diverting a portion of the proceeds of asset disposition to the reserve fund. This is judged to be a sound approach, one that has been adapted by several federal crown agencies.

The concept of striking an annual "contribution rate" to a reserve fund, as opposed to an annual budget amount for repairs and replacements based on specific work to be performed, arises from a practical consideration. An annual flat contribution rate smoothes out the impact on the tax base (since the program of improvements will likely be highly variable). The reserve fund can be drawn down as repair and replacement projects are implemented. The fund can be topped up trough asset sales. This provides a very flexible and practical approach to financial management.

Contribution Rate for Park Facilities

The bulk of the literature on life cycle approaches to real property is focussed on buildings and certain classes of municipal infrastructure (roads and buried services in particular). Although a significant attempt was made to identify best practice as it relates to recreation and park facilities, no sources of information were uncovered that assist with specifying an accepted approach to determining the appropriate contribution rate or the replacement value for these specialized asset classes.

However, parks infrastructure is widespread and requires re-investment for life cycle renewal. It is in the City's best interests to apply life cycle concepts in establishing a dedicated park life cycle reserve fund. The City will need several years experience with various park asset types to establish an appropriate rate of contribution and draw down.

It may, therefore, be premature to finesse the primary objective of establishing a contribution rate and reserve mechanism as a matter of corporate policy by introducing specialized contribution rates at a time that the industry has very little to contribute by way of benchmarks.

DEFINITIONS

Asset Capability: the theoretical service potential of an asset.

Asset Performance: the level of functionality at which service is actually delivered by an asset. Asset Performance can vary from Asset Capability. For example an asset may have HVAC system capable of delivering two full air changes per hour (Capability) but is operated at a lower rate to reduce heating/cooling energy costs (Performance). In other words, asset performance is asset capability as modified by actual operational parameters.

Standardized Asset Performance Ratings: adopting a standardized method for rating asset performance, such as that commonly used by the Building Owners and Managers Association (BOMA) to rate office buildings (Class "A", "B", and "C") would assist managers in comparing Asset Performance to Service Requirements.

Service Requirement: the range of functionality over which a capital asset provides service that meets the requirement of the program(s) dependant on the asset.

Service Life: The length of time an asset performs at or above the service requirement. [This may be calculated on the basis of an entire asset or its major systems].

Capital "Rust Out": the physical deterioration of a real property asset, causing degradation in the asset's performance below service requirements, which in turn may cause increased operating and maintenance costs, and a negative impact upon service delivery. Rust out can be distinguished from "obsolescence" in that asset performance can be restored through re-investment within acceptable investment criteria.

[Note: the difference between rust out and obsolescence is an economic one. Both occur when asset performance falls below service requirements – requiring a "transaction". Rust out, however, can be economically corrected (renovation transaction) while obsolescence cannot be addressed economically (it typically triggers a disposal transaction)].

Premature Rust Out: occurs as a result of the deferral of routine maintenance or inadequate funding of capital repairs and replacement during the period of the asset's designed service life.

Obsolescence: a loss in value due to reduced desirability and usefulness of an asset because its design and construction has become out-dated. It is different from rust out in that it is no longer correctable within acceptable investment parameters. *[Typically, as obsolescence is approached in an asset, it becomes increasingly difficult to justify incremental capital re-investment. A time is reached eventually when it is not practicable to continue investing capital in the asset; that is, there is no reasonable expectation of return from incremental investment. Increased maintenance and repair (patching) is typically then implemented to keep the facility operational over the short term.*

With the onset of obsolescence, no further investments should be made pending disposal, and the programs attached to or making use of those assets should be relocated].

Obsolescence can be subdivided into two main components: structural and functional. Structural obsolescence refers to diminishment of asset performance below a level to which it was designed to deliver, and reflects deterioration with age. Functional obsolescence refers to inability of an asset to meet a (changed) service requirement, as typically happens also over time with changes of program requirements, with ongoing development of workplace technology demands and with changed workplace standards.

Routine Repair and Maintenance: periodic (usually annual) expenditures on routine maintenance and repair normally included in operation and maintenance (O&M) budgets. This would also include moneys spent on "programmed maintenance". These expenditures are required to achieve, or extend, an asset's designed service life.

[Note: costs escalate from the lower cost regime of preventative and scheduled maintenance, to repair and unscheduled replacement and on to more costly premature capital re-investment. Deferral costs money; or according to the adage: "a stitch in time, saves nine"].

Deferred Maintenance: The degree to which spending on routine repair and maintenance falls below what is required to achieve the assets' designed service life.

Capital Repair and Replacement: periodic expenditures, which correct defects or replace elements degraded by wear and tear. Capital repair and replacements may be used to bring an asset performance level (back from a "rusted out" condition) to within the acceptable range of service requirement. While these investments can help achieve or extend the asset's expected service life, *they do not expand the asset's capabilities (see: betterment).*

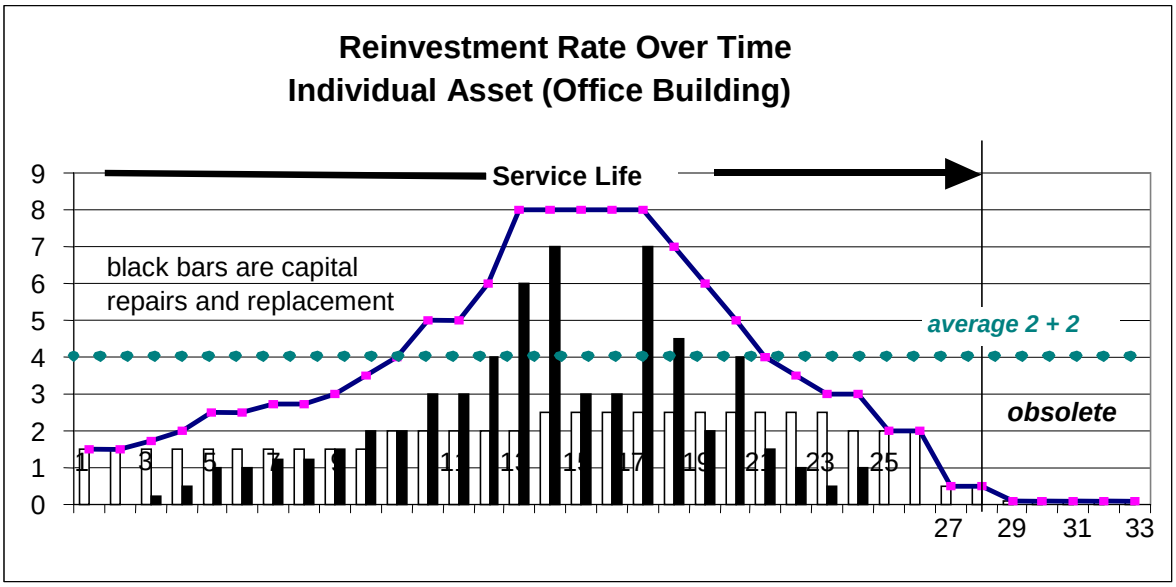
Betterment: An enduring increase to the service potential of an asset, resulting from an investment which extends an asset's life or capability.

Program Integrity: While maintaining the investment value of real property assets is a useful benchmark in determining the effectiveness of the investment program, the fundamental objective of re-investment is to ensure program delivery – i.e. maintain the integrity of program service delivery.

Investment Period: the period of time through which investments (initial investment and periodic re-investment) are made to ensure asset performance meets the service requirement.

Facility Condition Index (FCI) : this index is a ratio of the sum of the cost of correcting identified deficiencies (in $) divided by the estimated current replacement cost of the facility (in $).

Reinvestment Rate: the normalized rate (i.e. adjusted for cyclical ups and downs) of reinvestment in an asset (maintenance, repairs and replacements), often expressed as a percentage of replacement cost, on an annualized basis, that ensures an asset will meet the service requirement during its target service life.



A model re-investment program for a single asset is illustrated. Note: t*he Reinvestment Rate is not constant*. It is cyclic; lower when the asset is new, climbing during mid-life (when rates of repairs increase and the need for replacements becomes apparent) and tapering off as the asset nears obsolescence and high reinvestment can no longer be justified. In the illustration, the black bars are the capital repairs and replacements which tend to be periodic (lumpy). The white bars are the more routine repairs and maintenance (while the expenditures required for these routine items also rise at mid-life, overall the expenditure curve is smoother).

Reinvestment Funding Formula*:* the required reinvestment rate applied on a single asset basis or more typically across a portfolio of similar assets. For instance, it is generally represented that an industry standard formula for office buildings is 2%+ 2%, with the first 2% representing the rate of routine repair and maintenance and the second 2% the rate of reinvestment in capital repairs and replacement. The formula does not include an amount for betterments.

On an individual asset basis, reinvestment requirements are not uniform over the life of the asset, they vary with the stage in the life cycle. The desired reinvestment rate for a portfolio, therefore, is dependent on the age profile of the portfolio (i.e. the average effective age of individual assets making up the portfolio). Each group of assets will be different and capital asset managers should develop an appropriate reinvestment rate using verified data from their own portfolio.

Industry practice is now moving in the direction of establishing a Facility Condition Index rating for each asset, selecting a target FSI (of say 0.05), and then programming the investment rate to achieve this targeted FCI.

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ANNEX "A"
CITY OF OTTAWA CONTRIBUTION RATE STUDY
SUMMARY OF INTERVIEW RESULTS

Introduction

I work with the Corporate Research Group, a consulting firm in Ottawa. We have been hired by the City of Ottawa to interview other municipalities and public sector organizations in regard to their experience in setting up life cycle renewal reserve funds, to ensure that publicly owned facilities are maintained in good condition and useful asset life maximized. The interview should take approximately 10 minutes. Would you be willing to take part?

Interviewee Profile

- ***Organization Name:*** SUMMARY OF ALL INTERVIEWS (see list below)
- ***Representative:*** _____
- ***Title:*** _____
- ***Telephone:*** _____
- ***Date of Interview:*** _____

- ***To date, has your organization established a reserve fund to undertake a life cycle renewal program for building assets & components?***

  → ***If*** *"Yes", proceed to Section A;*

  → *If "No", proceed to Section B.*

❖ Organizations Interviewed:

- American Institute of Architects
- Association of Municipalities of Ontario
- Association of Consulting Engineers of Canada
- BOMA International
- Canadian Council of Professional Engineers
- Canadian Institute of Quantity Surveyors
- Canadian Recreation Facilities Association
- Canadian Society of Landscape Architects
- City of Calgary
- City of Edmonton
- City of Mississauga
- City of Windsor Parks & Recreation Department
- City of Winnipeg
- Civil Engineering Research Foundation
- Council of Ontario Universities
- Federation of Canadian Municipalities
- Halifax Regional Municipality
- IFMA (International Facilities Management Association)
- National Research Council of Canada
- Ontario Association of Architects
- Ontario Association of Landscape Architects
- Ontario Hospital Association
- Ontario Ministry of Education
- Ontario Parks Association
- Ontario Recreation Facilities Association Inc.
- Ontario Realty Corporation
- Ottawa-Carleton District School Board
- Professional Engineers of Ontario
- Public Works & Government Services Canada
- Royal Architectural Institute of Canada
- VFA (formerly Vanderweil Facility Advisors), Cambridge, Massachusetts

Part A. Organizations with a Reserve Fund in Place

❖ When was the life cycle renewal reserve fund established?

Five municipalities were interviewed (Calgary, Edmonton, Winnipeg, Mississauga and Halifax) and only Mississauga had established an LC renewal fund, in 2000; they are a relatively 'wealthy' municipality and their building portfolio is also relatively young. Calgary, Edmonton & Halifax are in the process of 'actively' working towards setting up LC renewal funds, although at this point in time it is difficult to say how successful they will be. As per Winnipeg's Manager of Civic Accommodations, his department attempted to initiate an LC renewal fund 2-3 years ago, out of the sale proceeds of surplus municipal assets; the request 'died on the table' due to political objectives of freezing taxes and maintaining/ increasing program delivery (i.e. the sale proceeds went elsewhere).

Most of the public sector agencies and professional associations contacted do not have an LC renewal fund in place, primarily due to a lack of ownership of real estate. In fact, the ORC is the only non-municipal public sector organization contacted that has established a formal LC renewal fund. Some public sector organizations with real estate holdings, or as overseers of real estate holdings, have established annual funding mechanisms to address LC renewal. In the case of the Ont. Min. of Education, the portfolios of the various local school boards throughout the province receive an annual grant based on an occupied square footage formula (only schools proper are eligible, not school board administrative offices or works facilities).

In PWGSC's case, there is a legislative requirement whereby PWGSC cannot set up a reserve fund, they must make a case to Treasury Board each year for LC renewal funding.

The Ont. Hospital Assoc. reports that there is a minimal annual grant to hospitals for 'bricks & mortar' work, but that it is a 'drop in the bucket' and most local hospitals are essentially broke.

The ORC established its reserve fund some 4-5 years ago. The ORC uses a charge-back system to occupying ministries; occupants are charged Base Rent + O&M (including repairs) + Taxes. Since the Province does not have any mortgages on its properties, surplus cash flow is typically generated (in periods when major repair work is not being carried out); these surpluses are put in a reserve fund. Any unspent funds at fiscal year-end are allowed to remain in the reserve, rather than having to be turned back to general government coffers. The resulting general-purpose reserve fund is gradually growing.

- How was the reserve initially funded (i.e. a large up-front amount placed in the fund, or reliance was placed on more or less equal annual contributions in subsequent years)?
  In Mississauga's case, the LC renewal reserve is funded via annual contributions. In addition, a one-time catch-up Redevelopment fund was set up to look after any outstanding redevelopment requirements; it received one-time up-front capital funding.

  In the case of PWGSC and the Ont. Min. of Education, annual funding allocations are secured.

  For ORC, surplus operating cash flows are placed in the fund.

  - If an up-front, lump-sum payment was made, then

    - How was the amount determined?
      In Mississauga, there was no 'hard & fast' rule applied. City staff applied costing manual estimates to come up with Replacement Values (RVs). Reference was made to guidelines published by the (U.S.) National Research Council, suggesting 2%-4% of R.V. should be set aside annually for ongoing maintenance as well as LC renewal. A calculation was then made to come up with a funding envelope on a yearly basis. An average facility LC of around 50 years was assumed (although it was also recognized that service life can be prolonged through effective maintenance).

      For Mississauga's Redevelopment Plan fund, the $30M amount was determined based on all known requirements for facility redevelopment at the time (i.e. 3-5 years ago).

    - Was any 'catch-up' for deferred maintenance or rust-out required? N.A.
      See above.

    - Where did the initial funds come from?
      Mississauga's LC renewal reserve is funded out of the broader municipal capital budget, with most of the revenue base coming from development charges and taxes in lieu payments.

- What types of expenses are eligible to be covered by the reserve fund?
  In Mississauga:

  - In particular, are the following items eligible?

    - General maintenance NO. same at PWGSC.
    - Preventive Maintenance NO. same at PWGSC.

- Repair Work (minimum $ level?) In Mississauga, only repairs exceeding $50K are eligible for reserve funding. Halifax Regional Muncip. also uses $5OK as a cut-off between repairs and capital work, but they do not have a reserve fund. PWGSC uses a cut-off of $25K before an item could be considered capital in nature. ORC use a cut-off of $10,000 (they are looking at raising this to $25,000); work items costing less than $10,000 are considered to be O&M items, regardless of whether they are capital in nature, and so they are not eligible for reserve funding but rather are included in the charge-back to occupying departments.

- Replacement Work YES same at PWGSC & ORC.

- Improvement (i.e. projects to enhance operation or reduce operating costs; for example, energy conservation initiatives or equipment modifications) Depends on $ amount; could also be funded out of operational budget. Same at PWGSC and ORC.

- Modifications (i.e. change of use, changes to accommodate a new function such as renovating an arena to support indoor soccer) YES. Some modifications may fall under the one-time catch-up Redevelopment Plan fund. For PWGSC, as part of major renovations. At ORC, there is a separate 'Portfolio Restructuring Program' and associated expenses are eligible for reserve funding.

- Code and standard related changes YES at Mississauga, PWGSC and ORC.

- Do you have <u>one</u> reserve fund in place, or <u>several</u> dedicated funds for different asset types (eg. IT infrastructure, fleet maintenance, buildings, parks, etc.)?
  In Mississauga, there is one LC renewal fund and a separate Redevelopment Plan fund for one-time catch-up replacement of worn-out facilities. New facilities are funded out of yet another pool.

  At the ORC, there is just the one fund for building reinvestment, although two programs are funded out of it: 1) Annual Repair Program and 2) Portfolio Restructuring Program.

- Would you know the current funding level of the building reserve, approximately?
  In Mississauga, $4.244 M for 2003 in the LC renewal reserve.
  At the ORC, around $90M.

  - And what about the amount of square feet of buildings in the portfolio to which the reserve applies? _____ sq. ft. Varies; see individual interview response sheets.

- ❖ Has this level of funding been sufficient to meet requirements to date?
  In ALL cases, including Mississauga, ORC and PWGSC , the level of RC renewal funding provided is insufficient; in most cases, woefully inadequate.

  Under-funding of buildings and other public infrastructure was a common theme to come out of the interviews, whether it be municipal buildings and infrastructure, hospitals, universities, parks, and so on, both in Canada and in the U.S. and Australia.

- ❖ What about for the foreseeable future?
  Across the board, the expectation is that LC renewal funding will continue to be vastly inadequate over the near-term at least. The main factors are insufficient capital funding available and political desire to keep tax levels frozen and program funding up.

- ❖ Are annual funding levels for the building reserve fund set as a % of portfolio Replacement Value or some portion of Replacement Value, or are they based on some other method (please describe)?
  In Mississauga, the only municipality with a formal LC renewal fund having been set up, funding is based on a % of Current R.V. in combination with an assessment of remaining life.

  Edmonton is leaning toward a '% of R.V.' formula as well; however, their thinking will continue to evolve over the next few years.

  PWGSC also take a '% of R.V.' approach as well, although they receive annual capital budget funds as opposed to being allowed to establish a reserve.

  The ORC's reserve funding depends on the level of operating surplus in any given year.

  - ❖ If as a % of RV:

    - Do you use different Contribution Rates for different asset classes?
      In Mississauga, the same rate is applied to 10 different classes of building facilities. At PWGSC, there is only one rate applied to buildings. Edmonton has 12 categories for infrastructure facilities; they are not sure at this point whether the same or different rates will be used, but their current thinking is that they might go for a uniform blended rate; typical asset life will be the greatest influencing factor in their decision.

    - What asset classes are used? These vary from municipality to municipality; refer to various interview response sheets. Mississauga does not apply a different contribution rate to different building asset classes. The much shorter service life of vehicle fleets is recognized by all municipalities interviewed, and the shorter service life associated with a fleet has necessitated the setting up of dedicated reserve funds for vehicle replacements; in the case of buildings, the problems are only now beginning to show up in a significant way.

    - What is/are the Contribution Rates used? __%

The consensus is that the rate should be somewhere in the 2% - 4% range annually, depending on whether simple LC renewal funding is being considered (then around 2%), or if operational/routine maintenance is also included (more like 4%). However, financial constraints have resulted in lower funding levels. The specific responses were:

- Mississauga: 0.7% LC renewal (actual) plus a separate redevelopment fund
- Halifax: N.A.
- Calgary: N.A.
- Winnipeg: N.A.
- Edmonton: 2% - 4% (target)
- PWGSC: 3.25% (actual) vs. target of 4%.
- Ont. Hospital Assoc.: they cite a 1997 guideline from a Quebec Hospitals study which states a target of 5% (2% for routine operational maintenance including major repairs, 1% for functional adaptation needs including improvements & changes, and 2% for rehabilitation and replacement).
- Ont. Min. of Education & OCDSB: N.A.
- FCM: N.A.
- AMO: N.A. (in process of determining rate)
- ORC: N.A. (although the V.P. Financial Planning referred to a research article that cited 2%-4% as an appropriate level)
- IFMA: they endorse the 2% - 4% range cited by the Building Research Board of the U.S. National Research Council.
- Ontario Parks Association: No recommended guideline
- City of Windsor Parks & Rec. Department: No benchmarks/guidelines for LCC funding.
- NRC of Canada: They have no particular recommended benchmarks/guidelines of their own for establishing an appropriate amount of LCC funding. Rather, the NRCC has tended to cite U.S. agencies (particularly the Federal Facilities Council and Building Research Board of the U.S. National Research Council) which typically state that somewhere between 2% and 4% of Current Replacement Value (CRV) should be spent annually for inspections, ongoing/routine maintenance, preventive maintenance, and repairs (to original component state only). LCC funding would be on top of the recommended base of 2%-4%. The NRCC are presently conducting research into LCC funding; one initiative is the Municipal Infrastructure Investment Planning (MIIP) project, which is aimed at agencies responsible for maintaining infrastructure assets and which are also interested in the life-cycle economics of these long-term investments; the City of Ottawa is a member. As part of the MIIP project, next year there will be a major survey of Canadian municipalities to see what levels of spending have occurred to date on LCC funding, and also to see what guidelines/benchmarks re: funding levels are being employed. Finally, the NRC noted that Statistics Canada have produced some rough ballpark #s and have stated that somewhere around 2% of capital replacement value is required annually in order to renew existing public infrastructure (not just buildings).
- CERF (Civil Engineering Research Foundation in Washington D.C.): Their prior research has been cited by the NRCC; CERF suggest that the 2% - 4% of Current Replacement Value guideline put forth by the Federal Facilities Council "would probably not be adequate for facility upkeep if a substantial amount of deferred maintenance existed."
- VFA (a consulting firm out of the Boston area) note that historically, many institutions have used the '2% of Current Replacement Value annually' rule-of-thumb for deferred maintenance and capital renewal requirements - and have

found out the hard way that simply does not work. This approach has resulted in the decay of facility capital assets and is well documented by industry consultants, institutions of higher education, etc.

- As a result, many institutions (E.g. the Ontario Universities and Colleges, etc.) have adopted a process of visual inspection/facility condition analysis to determine true facility conditions, establish credible and accurate cost estimates for remedial actions as well as determine the remaining life-cycle and replacement costs of buildings and building systems. All of which can be supported by decision support software that can analyze/present resultant conditions as determined by varying funding strategies. There are certain industry accepted benchmarks and indices that are used in this process.

❖ What are the factors that go into setting the rate(s) (e.g. whether starting from scratch or an existing reserve fund; age/condition of portfolio and amount of deferred maintenance & ongoing maintenance; frequency of the replacement standard; type of properties in portfolio; extent of prior re-capitalization work)?
The main factor appears to be typical service life and remaining asset life expectancy. For example, if the building infrastructure is expected to serve for an average of 50 years without major recapitalization, then the rate is 2% (i.e. 100%/50 = 2%; this rate can be 'tweaked' to account for insufficient maintenance and upkeep). In Mississauga, the City took a snapshot of its LC renewal requirements and set the level of funding of its LC renewal fund and Redevelopment Plan funds accordingly; this snapshot took into account current condition and upcoming requirements for repairs and capital works, as well as functional performance.

❖ How was this contribution rate determined/calculated?
Typically it is based on % of Current Replacement Value (CRV), with the rate based on typical service life and anticipated remaining life (as noted above). CRV. is typically based on full replacement cost excluding contents and land costs. However, a couple of municipalities view 'true R.V.' as the cost of a newer, more modern and functional facility with a typically higher cost than simply replicating an outdated facility (sometimes a larger facility may be warranted, for e.g. a 3-bay fire hall vs. an existing 2-bay one).

❖ Is the Contribution Rate applied to the full (100%) Replacement Value, or on some other amount (e.g., in Ottawa, the value of the renewable building life-cycle infrastructure is considered to be 80% of the Total Replacement Value of the building portfolio – excluding land value)?
In all cases where this approach is used (or where the municipality / organization is leaning toward such an approach), Replacement Value is based on full replacement cost of the building/facility excluding contents and land.

❖ How is Replacement Value determined/defined?
Combination of detailed studies using outside experts/consultants such as quantity surveyors and appraisers, or in-house staff. The most prevalent approach at the

municipal level is to rely on in-house staff using cost manuals; in some cases R.V. estimates for main civic facilities are prepared by outside consultants while smaller facilities are costed with manual benchmarks. At the ORC, a unit cost approach is applied using 4 major benchmarks (one for each major building category into which the portfolio has been divided).

- Have you determined these values for your whole portfolio?

  - If Yes, what is the aggregate Replacement Value of your portfolio? $_____
    Varies; see individual interview response sheets. Determining R.V.s for the entire building portfolio is viewed as a necessary prerequisite step by those municipalities and agencies and organizations that want to move toward a formalized LC renewal budget process.

  - If No, do you plan to get them?

- Have Condition Audits been completed in order to obtain reliable data on the condition of individual facilities, in order to determine the extent of major repair and replacement work needed?
  Municipalities, agencies and organizations that are serious about moving toward a formalized LC renewal budget process see Condition Audits as a necessary prerequisite step. As for R.V. estimates, the quality / depth / technical detail of condition reports can vary widely from jurisdiction to jurisdiction as well as between facilities within the same jurisdiction (e.g. 'run of the mill' smaller facilities may have a simplified assessment performed by in-house staff whereas more complex facilities may have a more rigorous analysis performed by outside specialists).

  Another important point is that building/facility Condition Assessments are not always performed on a uniform basis, and whereas one jurisdiction may consider a building to be in Fair condition, another may consider it to be in Poor or Good condition.

  The Ont. Min. of Education is embarking on a major RECAPP project, in which all schools throughout the province will be entered into a database, in order to ensure they are evaluated on a equal basis, and to refine cost projections.

  Finally, in Mississauga's case, they have used a combination of building-specific audits and multi-facility functional audits (e.g. electrical systems are inspected at several buildings at the same time, permitting bulk tendering or analysis of a particular code requirement).

- Does your organization use any benchmarks for typical asset service lives?
  Most organizations/municipalities use some assumptions re: typical asset service lives, with 50 years emerging as a general consensus if no major recapitalization takes place. Some more specialized facilities may have a service life of 30 – 35 years. To date the ORC has only used a typical service life assumption in its accounting practices and not in its LC renewal funding processes.
- From what source(s) are the funds taken to make the annual contributions to the reserve fund?
  In Mississauga, funds are taken from the 10-Year Capital Budget; the funding for this budget arises mainly through development charges and tax-in-lieu payments.

ORC's reserve funding arises from operating surpluses generated in any given year.

- Do you have any formal mechanism in place to assess the reserve funding levels over time, in comparison to asset condition/requirements as well as portfolio changes?
  Mississauga conducts yearly reviews to re: sufficiency of funding; they are still under-funded and are in the process of preparing a Council submission to seek increased funding.

  Most other municipalities are in the process of setting up LC renewal funds, so this issue is premature at the present time.

- Are annual contributions to the reserve fund kept up?
  Yes in Mississauga and at the ORC. Other municipalities have not set funds up yet. Other agencies/organizations receive annual funding, although the funding levels are too low across the board.

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- In particular, how do you handle life cycle renewal funding for park facilities?
  In Mississauga, facility-based capital expenditures for parks compete with all other facilities for a share of the LC renewal fund as well as for the Citywide capital budget. In other municipalities (which do not have an LC renewal fund), park facilities must compete with all other demands come time of the yearly capital budget allocation process; some of the more major projects may be contained in multi-year capital plans.

  Park facilities are handled in the same manner at the ORC as for all other buildings in their portfolio. However, ORC is typically responsible for only administrative office buildings within parks; other park facilities are the responsibility of other operating ministries.

  In the City of Windsor, the Parks and Recreation Department has taken an approach of focusing on maintaining the roofs of their 87 facilities in good condition; the roof is viewed as the key component to a facility's overall condition; if the roof is not well maintained, then the ensuing water penetration can cause all sorts of problems in other building components. As a result, priority for capital funding has been placed on ensuring the roofs are in good condition; they are inspected twice a year and minor repairs are identified through this process. Also, a 5-year capital funding timeframe is employed, with cyclical roof replacements built into the capital budget. Approximately 30% of the Parks & Rec capital budget funding has been allocated to upgrades of major components such as boilers, chillers, condensers, roofs, floors, arena boards, windows, etc. However, as everywhere else, available funding is not sufficient. There is no formal LCC process / reserve in place.

- What elements of parks are covered by reserve funding, if any?
  In Mississauga: clubhouses, sports lighting, washrooms, fencing, irrigation; the Parks & Recreation Dept. operational budget looks after landscaping and field maintenance.

  Edmonton notes the following items as being covered in the capital budget: buildings, play structures, trails, pavement and others.

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- Are there any 'Best Practices' that you could recommend to the City of Ottawa?
  Mississauga: Use a multi-year capital budget timeframe so you can look out into the future during the budget allocation process; this enables a better grasp of the big picture to be gained, as well as more effective LC modelling.

  The capital budget requirements put forward by departments are verified by an inspection prior to final approval.

  PWGSC: Utilize a portfolio approach to prioritization.

  Ont. Hospital Ass: It is important to have a good handle on Replacement Values, present condition status and typical building service life, in order to conduct any meaningful LC renewal funding analysis.

  Windsor Parks & Rec: Focus on the roofs!

- How about 'Pitfalls to Avoid', 'Lessons Learned' or suggestions for improvement?
  Mississauga/Halifax: There must be a certain level of predictability in annual funding levels to allow meaningful LC renewal planning to be implemented.

  PWGSC: There is a need to establish the appropriate balance between annual expenditures on repairs & maintenance, and capital reinvestment.

  Avoid linking capital requirements for renovation/replacement with other government priorities

  Ont. Min of Educ/OCDSB: As per the Min. of Education, there must be a uniform method applied in determining asset condition, or else all buildings will not be evaluation on an equal footing. The OCDSB echo this sentiment, noting that there needs to be a decision-making model in place that is objective and can rank priorities. An objective, standardized system of evaluating different assets will also be less prone to political intervention.

- Would you have any written policies, policy papers, guidelines or similar written references that you could pass along to the City of Ottawa?

- Do you have any other comments you would like to pass along?

Part B. Organizations with no Reserve Fund in Place

- If you have not established a life cycle renewal reserve fund,

  - Is there any particular reason why your organization has not set up such a fund?
    Insufficient capital budget available and political desire to keep tax increases low or nil. In the case of some of the professional organizations, they do not own a portfolio of real estate. In the case of PWGSC, legislatively they are not allowed to set up a reserve fund, but rather must rely on annual allocations from Treasury Board.

  - Are you planning to establish a fund?
    Calgary, Edmonton and Halifax are each proceeding with various steps along the way in order to set up LC renewal funds. An attempt to do so in Winnipeg about 2-3 years ago was shot down as Council placed greater priority on a tax freeze; they are not currently contemplating another try.

- If you are planning to establish a reserve fund:

  - Have you contemplated how would you establish the start-up funding for the reserve?
    Halifax, Edmonton & Calgary have not as yet determined a source of funds, but will 'cross that bridge when they get there'. As for the non-municipal agencies/organizations contacted, new or increased funding from senior governments is being contemplated.

  - Has a specific Contribution Rate been discussed at this point?
    Refer to parallel question in Part A; most municipalities and organizations contacted that are contemplating setting up an LC renewal fund believe a rate in the 2%-4% of Replacement Value range would be appropriate, based on their own research or canvassing other municipalities and public sector organizations.

- How do you fund capital works and replacements now?

  Recapitalization and replacements of buildings generally must compete with all other budget requests during the annual capital budget allocation process.

ANNEX "B"
LONG-RANGE FINANCIAL PLAN (CAM)

M E M O / N O T E D E S E R V I C E

To / Destinataire — File/N° de fichier:

To

From / Expéditeur

From

Subject / Objet — Date: July 13th, 2002

Subject

John and Rose,

As part of the long range financial plan exercise, it was agreed that the respective operating units would submit at this time a single standard that was representative of the capital program undertaken by the operating unit. In light of the fact that the largest component of RPAM's capital budget concerns life cycle renewal, a contribution rate for life cycle renewal was chosen as RPAM's LRFP standard. Below is the text and rationale supporting this particular standard.

RPAM Capital Standard
A contribution rate of 1.5% of the replacement value of the City's building portfolio is the RPAM capital standard.

A number of guidelines for facility renewal funding have been established by reputable professional organizations. The American Public Works Association (APWA) has published guidelines that identify a minimum of 2% to 4% of the current facility replacement value should be allocated annually to provide for the life cycle renewal needs of facilities. The Society of College and University Planning, The National Association of College and University Business Officers and The Association of Physical Plant Administrators of Universities and Colleges recommend that 1.5% to 2.5% of the replacement value is required for sufficient renewal on an on-going basis to keep facilities in good condition for their present use.

RPAM Replacement Work Definition
RPAM's capital life cycle renewal program is based on planned replacement of building assets. This planned replacement is performed when the asset or asset component has reached the end of its useful life, when it can no longer perform due to degradation of its internal or external components and repair is no longer cost effective or due to obsolescence and a shortage of performance that meets minimum standards. Included in the

replacement category is the major re-building of an asset component, since re-building restores performance.

Policy Guideline

It is recommended that one half of the sales proceeds from property disposition be deposited into a dedicated reserve for building and park life cycle renewal. This assignment will ensure that the 1.5% standard is properly supplemented during the initial stages of the reserve fund. A 2% contribution rate is normally applied if there has been no reserve fund in place and the value of deferred replacement work or impending replacement work will trigger a shortfall in funding or a mill rate increase to support the high priority projects over an extended period. The current status of the City's building and park life cycle renewal program is in need of a greater contribution rate; thus, the need for a portion of asset disposal proceeds.

I trust that this information meets your requirements; however, please feel free to raise any questions to my attention.

Pierre Jolicoeur

c.c. J. Barrett
S. Finnamore
B. McCuan
K. Tippett
R. Barton

Author

/

Attach.

cc: