

Closing the Gap

Finding Ways to Overcome Capital Shortfalls
in Ontario's Social Housing Portfolio



Closing the Gap: Finding Ways to Overcome Capital Shortfalls in Ontario's Social Housing Portfolio - A report on the Asset Management Group survey results of Ontario Municipal Service Managers including social housing shortfalls, expenditures, capital reserves and annual contributions

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Executive Summary

For many years under-funding and growing capital shortfalls have been identified as the most critical issues threatening the longevity of social housing in Ontario. However, a province-wide estimate of shortfalls has never been available to demonstrate the serious and immediate risk these issues present to housing providers and social housing residents.

In late 2007, a social housing sector-based group, the Asset Management Group (AMG), surveyed housing providers and service managers across the province to assess the extent of capital issues and examine how the sector is coping. The aim of the survey was to provide senior levels of government with an understanding of the capital needed to ensure the future success of social housing and help build asset management best practices.

On behalf of the AMG, the Social Housing Services Corporation analyzed results of the survey and its findings and recommendations are found in this report. The data obtained from the survey will also provide a foundation for future studies on capital shortfalls in Ontario's social housing sector.

This report examines the characteristics of shortfalls, examines proposed solutions and will help focus future research efforts and promote discussion. It has four specific goals:

1. To establish a province-wide estimate of capital shortfalls in Ontario's social housing sector.
2. To provide strategic recommendations to improve current capital and asset management practices.
3. To provide strategic direction that will foster a supportive partnership between senior levels of government and the social housing sector. This partnership will be vital to solving the shortfall issue.
4. Promote a range of solutions, such as a capital financing facility, mortgage refinancing and an emergency pooled capital fund, which will help the sector to shore up and optimize use of its current capital assets.

This paper reports on survey results for three estimates:

- Capital shortfalls and expenditures for those with shortfalls for three time periods, e.g., 1-5 years, 6-10 years, 11-20 years
- Capital reserves
- Annual capital contributions

Two survey sources form the basis for these estimates. The original AMG service manager survey asked respondents for their region's aggregate financial position on each of these three financial indicators. Since it is crucial that we know the number of units covered by their responses, we undertook a follow-on data verification process

and went back to the service managers who responded in the first round to clarify key information such as number of providers and number of units. In addition, the data verification process focused efforts on gathering provider level data on capital deficits and expenditures (for those with deficits) for the 1-5 year estimation period.¹

The results are divided into two parts. The first part reports on the capital shortfalls and expenditures for the 1-5 year period, data for which is available at the disaggregated provider level. The second part reports on capital shortfalls and expenditures for the 6-10 year and 11-20 year periods, the capital reserve position and annual capital contributions, data for which is available only at an aggregate service manager level.

Through the use of standard statistical techniques – stratified sampling, and appropriate sample weighting – the margin of error of key financial indicators, such as average current shortfall, can be substantially reduced. The appendix to this report provides the methodology that was used to develop the financial estimates present in the main report.

Key findings in the report include:

- The role of capital reserves is an essential component of effective program design for social housing in Ontario. However, capital reserves have not kept pace with need.
- As a result of historical funding patterns, housing providers across Ontario -- who collectively manage over 233,000 housing units -- find themselves with aging assets, financial shortfalls due to program constraints, and the inability to ensure the preservation of affordable housing.
- Capital funding shortfalls for the social housing sector will continue to grow as projected expenditures outstrip available resources. As a result, capital reserve shortfalls are projected to grow to more than \$1.2 billion in the next five years alone.
- By 2012, it is projected that 68% of all units will experience capital reserve shortfalls and these shortfalls will on average amount to \$7,684 per unit.
- The average planned capital expenditure is projected to be \$13,000 per unit by 2012².
- Shortfalls will continue to grow over time if no substantive measures are taken to infuse funding and control capital costs. While projections beyond 2012 could have benefited from a larger sample and more rigorous data collection, these projections suggest that:

¹ An exception to this was in the Toronto Region, where a substantial and detailed survey of capital expenditure had been conducted in 2004. We used the data from this survey, appropriately adjusted for inflation, as though it had been provided in response to the AMG survey.

² Note: the survey only captured expenditure information for those units projecting a shortfall.

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- 80% of providers anticipate shortfalls by 2017 - these shortfalls are projected to reach \$9,634 per unit.
- By 2027, the percentage of providers projecting shortfalls is 86%, with average shortfalls climbing to \$20,618 per unit.
- For all programs, total reserves are estimated at \$771M, and total annual contributions into reserves currently average in the order of \$170M.

Solutions to 'Close the Gap'

A two-pronged strategy is recommended:

1. To close the capital shortfall gap, significant capital infusions from senior government are required
2. To minimize the gap going forward, asset management practices within the sector must be improved

Specific areas within asset management where attention needs to be focused include:

- i) Speaking and understanding a common language – through training and education, building a common understanding of issues, common tools and asset management practices
- ii) Establishing base requirements through sector-wide capital planning tools – promoting the use of sector-wide tools with common standards to help support a clear and consistent assessment of needs
- iii) Building a culture of good practice – defining and promoting good practice, particularly in translating needs assessments into asset management strategies through tangible action
- iv) Leveraging energy efficiency opportunities – maximizing the value of capital repairs/replacements by actively targeting and implementing energy conservation measures
- v) Supporting and enhancing technical capacity – building greater technical capacity within the social housing system to address deficiencies and promote long-term sustainability

The sector is prepared to be part of the solution, but its efforts alone will not address the structural under-funding of social housing in Ontario. There is a requirement for funding and financing solutions. The following measures would assist in securing, retaining or accessing necessary funding sources to mitigate growing capital shortfalls:

- i) Capital infusions from senior levels of government.
- ii) Federal re-investment of "step-down" funding.
- iii) Provincial correction of the social assistance funding flaw, which has resulted in significantly increased costs to municipal service managers.

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- iv) Increased access to no- or low-cost financing programs for housing providers.
- v) Availability of emergency capital funds, especially for smaller providers.
- vi) Greater legislative/program flexibilities that enable housing providers to use existing asset equity, especially through mortgage re-financing and capital debt-service strategies.
- vii) Expanding alternative funding sources that further leverage assets (e.g. re-development, intensification).



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1.0 Background

The role of capital reserves in sustaining social housing assets has become increasingly important, particularly as assets developed under many successive government programs continue to age. While the importance of using reserves to address growing needs is recognized, the resources to maintain these public assets have not kept pace with need. In addition to affecting our most vulnerable communities, these shortfalls are putting years of public investment at risk.

At the point of transfer of responsibility for social housing from the provincial government, municipalities raised significant concerns about the condition of the assets to be transferred, particularly given the previous years of capital under-funding and constraint. Subsequently, these concerns have only been compounded by the persistent lack of program flexibilities to address the real and looming issues within their new service manager roles. Successive studies have estimated the magnitude of this problem, examining at a high level the adequacy of existing funding and attempting to identify the gap between today's reserves and tomorrow's realities.

Given the urgency of the shortfalls, activities have been undertaken in the sector to better understand the associated issues, underlying causes and possible solutions. The Social Housing Services Corporation (SHSC) has conducted significant research and surveying to help quantify the scale of the issue and promote discussion on options for addressing funding and other gaps. In addition, an Asset Management Group (AMG) has been established, a multi-stakeholder panel comprised of representatives from the social housing sector and senior government. This panel is seen as a critical part of the shortfall solution as it looks to establish more consistent and effective asset management practices within the sector. With the recent announcement by the Province of funding for a Social Housing Asset Management Centre, there are promising signs that the work initiated by SHSC and AMG will continue to provide a better understanding of asset management and its related issues, and will forge sustainable solutions to the capital reserve shortfall issue.

For housing providers and municipal service managers alike, the severity of capital reserve shortfalls vary depending on the composition of the portfolios for which they have oversight. However the data to understand these nuances has not been available. Under the AMG, a data collection exercise was launched in late 2007 to better understand the finer dimensions of the reserve shortfall problem and how both providers and service managers were coping with current issues. This paper reviews the shortfall issue by summarizing previous findings and discussing AMG survey results within Ontario's unique provincial-municipal context. It also attempts to clarify the finer characteristics of shortfalls by funding program and factors that contribute to these gaps. Asset management, both in theory and as currently practiced, is also examined with reference to results from the AMG survey, highlighting where gaps exist. An examination of proposed solutions is then reviewed in an effort to address data deficiencies, focus research efforts and promote discussions about integrated, go-forward options.

2.0 The Capital Reserve Problem

2.1 The Reserve Fund Concept

Capital reserve funding in social housing, at a conceptual level, follows the notion of setting aside resources today for tomorrow's expected housing repair and refurbishment needs. Typically, the lifecycle of major building components can last many years but costs for refurbishment or replacement when required are also significant. From a cash flow perspective, it is typically easier to accumulate resources early and regularly over time than to directly fund major capital items as needed (i.e. instalments versus the whole payment). Setting aside dedicated financial resources and allowing these to accumulate to meet future lifecycle needs helps ensure that an asset does not hit a financial wall at exactly the time when re-investment is needed to help maintain the condition of the asset. This approach also recognizes the very real cost of replacing these assets – it's more cost effective to extend the useful life of the asset through timely and appropriate maintenance than to simply build new.

2.2 The Scope of the Problem

In general terms, the magnitude of reserve shortfalls has been examined at a high level. In a study undertaken for the Province in 2002³, the following findings were made regarding the non-profit side of the portfolio (i.e. not including public housing) and they are telling:

- Federal/Provincial and Provincial annual contributions would need to increase by 115% to meet capital needs
- The situation for Federal programs was worse, with annual contributions needing to increase by 223% to meet capital needs
- Overall annual shortfalls were estimated to be at least \$23M and were projected to accumulate to \$207M by 2007

The recent AMG survey provides an opportunity to examine projected shortfalls with a finer grain of detail, helping to illustrate issues at a programmatic level.

2.2.1 The AMG Survey

In late 2007, the Asset Management Group commissioned a survey of service managers and housing providers across the province. One of the primary goals of the survey was to support the estimation of capital reserve shortfalls in social housing over the next 20 years. Respondents were asked in the survey to identify in today's dollars what their capital expenditures and anticipated reserve shortfalls would be over the next five, ten and twenty year horizons. Given the more complete coverage of survey responses and overall higher response rate, the service manager data set was identified as the primary basis for analysis on projected reserve shortfalls.

³ IBI Group report "Replacement Reserves in the Non-Profit Housing Portfolio." As cited in SHSC's "Capital Ideas" report.

The original AMG surveys attempted to get a 100% response rate. While there were many responses, a 100% target was not reached (34% responded to the question on deficits and 74% to the questions on capital reserves).

The survey also only asked for aggregated figures (e.g., deficits, expenditures, capital reserves, and annual contributions) at the service manager level. For statistical estimation purposes, the resulting “convenience” sample could not automatically be treated as representative. A sampling scheme had to be designed post-hoc, the responses retrofitted into the design, and requirements for additional data identified.

SHSC was also concerned about the level of aggregation. Deficits and reserves data are sensitive to extreme data variation which would not have been captured by aggregated figures. To address the two issues of sample representation and lack of data granularity, SHSC went back to the service managers who responded to the critical questions to clarify their responses and address certain information gaps.

SHSC also asked the service managers to provide disaggregated figures, e.g., deficits and expenditures, for the 1-5 year forecast (the most critical of the projections) at the provider level. All these steps were taken to allow for some level of statistically-valid analysis⁴. However, reliability of the forecasts vary with the greatest confidence going to the 1-5 year forecast where discrete provider data was available. Deficit data for the ten and twenty year horizons and data on reserves were based on aggregate service manager figures and the projections should be treated more cautiously.

For the initial five year period, updated survey results demonstrated that the survey sample was reasonably representative of the entire unit population. However, to provide a more representative program cluster, data from programs other than Public Housing⁵ and Provincial Reform were clustered into a single ‘Other’ category (see Appendix 1 for further details). By then extrapolating results from the sample to the total universe within these program clusters, a weighted average of shortfalls was developed, based on responses from service managers.

⁴ A more complete discussion of data sampling and weighting of results can be found in Appendix 1

⁵ **Public housing** has normally been used to define 100% RGI units built in the 1970's that were (until 2000) owned by Ontario Housing Corporation and (until municipal billing kicked in around 1998) 50/50 by Ontario and CMHC. (There was even a factor of 7.5% municipal funding until early 1980's). All public housing units were managed by Crown agencies called “local housing authorities” (LHAs), which became local housing corporations (LHCs) in 2000 and since then have been organized by the municipalities in different ways. But the housing program is still basically the same (100% RGI, no reserves, financed by debentures with CMHC rather than mortgages, and under public ownership being the main features). There were 84,000 units owned by OHC.

Table 1 – Shortfalls reported in AMG Survey over next five years

Program cluster	Public housing	Provincial Reformed	Other*	Weighted Average/Total
Shortfall per unit by 2012	\$5,912	\$8,718	\$9,504	\$7,684
Projected Shortfall by 2012	\$468,621,186	\$476,344,476	\$230,383,858	\$1,215,161,766
% of units with shortfalls	79.9%	61.6%	52.5%	67.6%
Total shortfall units in sample	75,402	52,755	25,326	153,483
Total units in pop'n	99,172 ⁶	88,632	46,170	233,974

Source: Appendix 1 - 'Estimating the capital financial position of social housing providers'

* 'Other' includes Limited dividend, Section 95, Sec. 26/27 and Urban Native programs

These findings provide a tangible sense of the reserve shortfall issue and its urgency. Based on reported data, there is an identified and growing gap in the ability to meet planned needs and results indicate that a projected reserve shortfall of more than \$1.2 billion will occur provincially by 2012 if no infusion of additional funding or financing is made (average projected shortfall per unit in 2012 will be \$7,684). It is worth noting that in terms of program clusters, shortfalls were highest on a per unit basis in the 'Other' component of the portfolio, while those in the 'Public Housing' category were lowest. Based on reported figures, shortfalls are expected to continue growing, with four out of

⁶ The total # of public housing units (i.e. 100% RGI, owned by government, annual capital budget rather than a funded capital reserve, and built primarily in 1970's) is about 99,500 due to the following: A separate but very similar program was funded by OHC and the Ministry in the same way (50/50 by CMHC and Ontario until 1998) for seniors housing units (called the **Assisted Housing Program**) in then Metropolitan Toronto. It was 15,500 units. The units were owned by Metro Toronto through its then agency The Metropolitan Toronto Housing Company Limited or "MTHCL". MTHCL also operated projects for singles and families and was allowed to build under new programs but the 15.5 K seniors units were the biggest part. (The separate agency MTHA or Metropolitan Toronto Housing Authority managed family housing for its owner OHC until ownership changed under the SHRA. MTHCL and MTHA joined in 2 steps with the then City of Toronto Housing Company to form the present TCHC.). The MTHCL seniors housing had its own line item in the OHC budget but most of the rules were similar. Ontario Ministry staff negotiated operating and capital budget each year.

every five providers experiencing capital shortfalls within ten years and more than 86% having shortfalls within twenty years. Data suggest that within this ten to twenty year horizon, shortfalls will be most prevalent among providers in the Provincial Reformed program.

In the 2008-2012 period service managers planned expenditures of \$13,000 per unit, resulting in a cumulative estimated total of over \$2 billion in expenditures across all units reporting shortfalls. This could be considered a conservative estimate because it does not include units where a shortfall was not projected but where capital expenditures would obviously be incurred. However, given the high standard margin of error reported for the data, great caution should be used regarding expenditure estimates. More accurate estimates would require data from providers not reporting a deficit in order to secure a more credible estimate for the whole population.

Likewise, survey results for both shortfalls and expenditures beyond the initial five year period are aggregated at the service manager level and could not adequately be corrected for variability at the discrete provider level (see Appendix 1 for a more complete discussion). As a result, while projections by unit and program beyond year five suggest continued expenditure and growing shortfalls, results are considered less reliable. Capital reserve balances and annual reserve contributions were also surveyed and as with expenditure data, reliability at the unit and program level is a concern.

However, all this data results reported are the best available to the sector today. In most cases, service managers used deficit and expenditure data from past BCAs inflated to 2008 dollars. However, moving forward there is a need for greater control, rigour, and standardization of the data collection process and BCAs to ensure accuracy and comparability of estimates. As well, a sampling methodology to surveying is recommended. For estimation purposes, valid and reliable results can be achieved using a stratified random sampling approach which, depending on the sampling design, will require anywhere from 10% to 25% coverage of the population. While data results thus far have assisted in better quantifying reserve shortfalls in the short term, more rigorous data collection, data sampling, and analysis are required in order to establish meaningful longer-term projections.

2.3 Implications for social housing program viability in Ontario

Capital shortfalls present a compounding problem in social housing today. From the initial development of the asset, decisions made (or not made) influence the lifecycle of that asset, whether in terms of capital reserves, maintenance planning or preventative maintenance. Where assets are not adequately maintained, the actual cost to resolve capital problems accumulates over time and can ultimately threaten operating viability. The consequences can be serious for a single facility; when there is a structural funding gap across the entire social housing portfolio, these consequences can be far reaching. Housing projects developed under some programs are already experiencing significant challenges and these problems will

only grow over time as assets age and major replacement lifecycles are encountered in programs of more recent vintage.

When not adequately maintained over time, compounding capital problems make it increasingly difficult to sustain the useful life of the asset. For instance, where necessary capital spending is consistently deferred, this decision can actually accelerate depletion of the housing asset⁷. When constraints exist on capital funding, there is increased pressure on housing providers to use limited operating funds to cope, supplementing only the most basic capital work. This limits both the capital work that gets done and the operational resources available for day-to-day management. If providers are unable to balance capital and operating demands, they become high risk candidates for default. As a result, service managers spend more time managing this risk to avoid mortgage default, detracting from other prescribed duties or precipitating the need for additional resources. In severe instances, loss of the public asset could occur without municipal infusions, despite the fact that municipal fiscal pressures and limited financial capacity for smaller service managers make this challenging.

These impacts are not solely felt in the domain of the housing provider or service manager. Where asset management issues progress, these impacts become increasingly felt by tenants, the primary recipients of landlord services. Apart from creating tenant relations issues, a building in need of repair also impacts the ability to market units, raising the spectre of compounding operating issues due to vacancy loss. In the extreme, where operational viability is continually challenged, the risk to tenant populations increases, in spite of the fact that these are the very constituents whom social housing programs were intended to support. There is a further ripple effect in the broader community when this happens. Where assets are depleted and maintenance not sustained, the public image of social housing projects in the community becomes increasingly tarnished. In isolation, this is a neighbourhood problem but when factored across an entire portfolio, capital shortfalls can erode support for the social housing sector specifically and for affordable housing generally.

3.0 Analysis

3.1 Context for the Analysis

Central to the concept of capital reserves are a number of important going-in assumptions:

- *There is a clear understanding of the asset and its needs* – Landlords understand major building components, their lifecycles and associated replacement costs. Further, a long term capital plan and associated financial plan are in-place to help guide decision making. Where necessary, technical resources (i.e. consultants) are retained to provide their considerable experience in portfolio component replacement.

⁷ Deferring maintenance that is required perpetuates the 'capital shortfall' by increasing the eventual cost to repair; in contrast, where a preventative maintenance plan has enabled the delay of planned repairs or maintenance, the opposite effect can occur and maintenance savings can actually be realized.

- *Resources are available when needed* – This means that regardless of the manner in which resources are provided, they are sufficient to adequately cover lifecycle costs and are available as needed to ensure that the asset is maintained. Further, they are retained and used only for specified purposes.
- *Reserves are managed effectively* – While a resource accumulation approach is supported, that approach requires an on-going commitment to regularly set aside adequate resources before they are required and to ensure that growth of these reserves is maximized through prudent investment.
- *Assets are adequately maintained* – Reserves focus on major capital items and, as such, it is implicitly assumed that minor items and routine maintenance are undertaken at necessary intervals. Where this is not the case, lifecycles for major items can be diminished, accelerating the replacement horizon for major items and creating ancillary needs which might not have otherwise been required due to deferral, both of which generate financial impacts. Ideally, preventative maintenance is performed as part of routine upkeep to help extend the typical lifecycle of major components.

It is also worth considering the obligations for maintaining the capital asset. During the term of the mortgage, there is a clear requirement to maintain the asset in sound working order, not only to meet obligations of financing but also to effectively manage operational risks. Fundamentally, the core obligation of a social housing provider (like any landlord) is to provide adequate and safe housing, so maintaining the asset in good order is not just good business, it is an obligation. This obligation extends beyond the term of the mortgage (or upon capital debt retirement, as the case may be) since under current legislation service managers must maintain service levels in their area. Existing social assets are pivotal to helping meet these levels, notwithstanding the expiry of provider operating agreements/obligations. There also remains a broader interest to the public in the maintenance of these assets, given the years of public investment and the social benefits they provide to the community. For providers reaching these milestones, the issue of reserves takes on a new meaning with the step-off of subsidy, depending on their financial position at this junction.

3.2 The Structural Under-funding Issue

3.2.1 Background

With the evolution of social housing programs over the last 60 plus years, the role of capital reserves has been increasingly recognized as an essential component of prudent program design. From a purely functional perspective, this need is directly linked with maintaining the substantive public investment that has been made in housing. The current portfolio is estimated to have a replacement value of \$40 billion⁸. Equally important in program design however, is project sustainability which is directly influenced by the on-going condition of the asset. With continued reliance on community-oriented models of

⁸ "Capital Ideas: How the Extend the Health and Safety of Social Housing". SHSC, August 2007

project delivery, non-profit sponsors have become increasingly responsible for the maintenance of major community assets despite the fact that tools to support them are limited. The devolution of social housing responsibilities to municipalities has only served to exacerbate this issue, with declining federal funding and ever increasing resource demands on the local property tax base.

To be clear, the use of capital reserves to support longer-term project needs has certainly evolved. Early social housing programs like Public Housing had direct government involvement and adopted a pay-as-you-go approach for capital requirements. As such, these programs did not include a formal reserve component. Other programs of the day like the Limited Dividend program were more market-oriented and while they acknowledged capital reserves as good practice, the use of reserves was not mandated.

Subsequent programs like those under the National Housing Act (NHA) Sections 26 and 27 took a stronger stance regarding the need for reserves, but obligations to maintain and annually fund reserves were not prevalent until the advent of the Federal/Provincial suite of programs. Under these programs (including NHA section 95 programs), sponsors were required to establish and annually fund reserves from the outset, based on estimated project needs. While this provided a more prudent approach to funding longer term capital repairs, experience has shown that required contributions have generally been insufficient over time to address actual costs.

More recently, the suite of programs delivered unilaterally by the Province provided similar annual funding requirements and included an enriched annual contribution level to address longer term needs. However, constraint policies of the day meant that on occasion, funding fell below required annual contribution rates and that despite top-ups, cumulative funding targets for reserves were not met. Post of devolution and with the emergence of the Canada-Ontario Affordable Housing Program (AHP), most recent program initiatives do promote capital reserves, but as these programs are capital-based and do not provide operational funding, the adequacy of reserve practices to cover long term capital requirements is untested.

As a result of historical funding patterns, housing providers find themselves with aging assets, limited resources to address increasing capital requirements and finite ability to address shortfalls because of program constraints. Service managers are directly affected by this issue, with the dual pressure of financial risk arising from providers not able to sustain themselves as well as the need to preserve affordable housing for those most vulnerable in their communities. Like providers, service managers face very real resource constraints in the form of a finite property tax base and program restrictions that limit flexibilities to address the issue. The overarching issue of all of this however is the neglect of senior governments to meaningfully redress the capital liability they have downloaded while maintaining rigid program requirements that limit the local ability to create workable solutions. This neglect puts years of sound public investment at risk at the very time when these assets can pay social dividends to the community. Failure to adequately address

this matter will have profound impacts on the very members of our communities for whom social housing programs were designed to assist.

3.2.2 Funding Challenges

Despite the increasing attention given to the importance of including reserve requirements within social housing programs, and the need for a more prudent approach to managing the financial resources to meet major downstream capital issues, there is a gap between theory and practice. On the cost side, projected needs continue to grow as portfolios age and deferred maintenance due to operational pressures have only served to amplify this problem. In some instances, premature building failures are forcing capital repairs earlier in the replacement cycle than planned, adding additional financial pressures in the shorter term. On the funding side, resistance to resolving capital funding issues in older programs persists and significant fiscal impediments remain in newer programs that do not bring existing reserve funding in-line with projected requirements. Even with occasional cash infusions, contribution amounts are fairly static while costs continue to accumulate.

This leaves a looming capital shortfall in the portfolio at a time when assets should be starting to pay back social dividends after years of public investment. This is especially true where equity has accumulated and re-financing could free-up fiscal resources to address capital issues. Left as is, costs would outstrip funding over time, and providers could see reserve funds exhausted, turning then to service managers for assistance to avoid putting the asset and occupants at risk. Service managers, already faced with finite resources, would not be able to fund these requirements, regardless of their on-going need to maintain service levels, leaving them in an untenable position. All the while, the architects of this gap – those most capable of bringing about sizable solutions - remain distanced from the problem, relegating themselves to managing contingent liability on mortgage default.

Because of the construct of the various programs under which the social housing portfolio continues to operate, the impacts of the shortfall will be felt differently, both by providers and by service managers. To better understand these impacts and ultimately devise solutions, one must understand the dynamics of these programs and how in practice, the very assumptions upon which the reserve concept was based have been eroded by operational and economic realities. Following is a brief review of these issues and impacts.

a) Public Housing

Developed through the 1960s to the 1970's by the Ontario Housing Corporation (OHC), public housing constitutes about 99,000 units currently and is distinguished from other housing programs in two key ways: there is no obligation for capital reserves and, with a handful of exceptions, no formal mortgages exist. In the first instance, capital funding was provided annually to be used for in-year capital issues, essentially a pay-as-you-go approach. Annual funding was allocated provincially by OHC based on submissions of the 54 various Local Housing Authorities (LHAs) across the province. Overall funding was

subject to available provincial monies, and distribution among former LHAs was linked to demonstrable need, priority and capacity to complete repairs, leaving fluctuations from year to year in allocations.

At point of transfer, service managers inherited a distribution model similar to that in place for the last year of LHA operations despite the fact that this model did not necessarily reflect local LHA needs⁹. A study by KPMG for the Province recommended this model, based on a review of options, and the study maintained that the quantum funding of \$100M was adequate to keep public housing stock in good order¹⁰. The capital funding split for this program at that time was roughly 52% federal and 48% provincial. With municipalities assuming responsibility for funding under the transfer from the province, municipalities were obliged to directly fund \$48M and to flow the remaining \$52M in federal funding based on the original funding allocation model.

No indexing for cost increases was reflected in the model nor were changes in building requirements, despite the fact that operating funding constraints under the LHA structure may have eroded the asset beyond the assumed baseline. Furthermore, federal dollars are slated to step down in the funding framework over time as debentures for portfolios mature. This has left service managers to grapple with increasing capital costs despite a static or diminishing flow of funding from senior levels of government. For many service managers, this issue was further compounded by the structure of the distribution model which may have not accurately accounted for the capital needs of their portfolio¹¹. Municipalities have attempted to revisit the distribution model with the province after the first 5 year federal funding block but the issue remains.

b) Federal (Section 26 and 27) Programs

Like Public Housing, these programs were of early vintage by today's standard. They were primarily delivered by the Federal government through Canada Mortgage and Housing Corporation (CMHC) and included Limited Dividend as well as NHA Section 26 and Section 27 streams. These programs were a mix of market and municipal-based efforts designed to increase the supply of affordable housing. While not always geared to income, they typically provided preferred long term financing and left considerable latitude to the housing provider in terms of its operations. Affordability of units in some projects was enhanced using stacking of Rent Supplement programs which were typically cost-shared with the province.

Capital reserves were not mandated under these programs but were promoted as good practice and supported as an option for targeting surplus dollars. Given the opportunity to pay out mortgages which was introduced in the 1990's by CMHC, many program

⁹ "Capital Ideas: How to Extend the Health and Safety of Social Housing". SHSC, August 2007

¹⁰ Despite this KPMG conclusion, there continue to be consistent concerns among service managers that the diminishing \$100 million dollar envelope is inadequate to meet real portfolio needs.

¹¹ While a straight line average would suggest \$1200/unit/year, the funding allocation actually ranged between \$800/unit and \$1580/unit by service manager, as discussed in "Local Housing Corporations (Province of Ontario) Capital Allocation Review". SHSC

participants took advantage of this opportunity and, as a result, much of the original stock has 'migrated' out of the affordable housing portfolio. That which remains is under long-term mortgage provisions. As decisions regarding capital repairs were vested with the owner and there were no on-going operating subsidies per se, the upkeep and condition of the asset has typically mirrored the owner's efforts and approach to fiscal management. Because of the structure of these programs, assets have typically been found to be in better shape comparatively than their public housing counterparts. This status and the accumulated equity position of these projects tend to make them the most sustainable post mortgage retirement and also the most vulnerable to being pulled out of the social housing portfolio. Those that have remained may not be in as favourable a position. Previous studies have found that units still under federal programs are expected to be among the first to experience shortfalls, some of which will experience these shortfalls within the next 5 years¹².

c) Federal/Provincial Programs

Developed from the 1970s through the 1980s, these programs fall predominantly under NHA Section 95 and include municipal, private and urban native components. Cost sharing between federal and provincial governments was a key element of this suite of programs, as was the introduction of mandatory capital reserves funded annually from operating budgets. Funded through conventional mortgages that were insured by CMHC, these projects included targets to deliver rent-geared-to-income and low end of market (LEM) rents. While nuances exist between program streams, mandatory reserve contributions were set for each project and enshrined in operating agreements. Providers were expected to achieve reasonable returns on reserve monies and make prudent capital spending decisions using available resources. Experience has shown that established contribution rates have generally been insufficient to meet capital needs over time.

d) Provincial Programs

Developed in the mid-80s and into the early 1990s, these programs were largely funded and delivered by the Provincial governments of the day. Like their Federal/Provincial predecessors, these programs were funded through conventional mortgages that were insured by CMHC, although projects included subsidy to deliver rent-geared-to-income rents. Mandatory reserve contributions were set for each project and enshrined in operating agreements. Unlike their predecessors, mandated contributions under this suite of programs were typically higher on a per-unit basis. Contributions were also annually indexed within operating budgets. Providers were expected to achieve reasonable returns on reserve monies and make prudent capital spending decisions using available resources.

As these projects are more recent additions to the social housing portfolio, most are only beginning to reach milestones for major capital repairs and as such, reserves are typically in better shape due to a higher in-flow at this time (i.e. accumulated contributions exceed

¹² This issue is discussed in more detail in "Reserve Fund Review and Capital Contribution Benchmarking for Social Housing in Ontario". SHSC, 2005 update.

expenditures)¹³. However, a moratorium on reserve contributions from 1992 to 1997 had a significant impact on accumulations. Even with one-time infusions of capital funding in 1997 and again in 1998 (\$201M in total), the net effect was a lower-than projected contribution to reserves¹⁴. In addition, experience to date has shown that some building system failures are occurring earlier than expected due to design/construction issues. When coupled with lower than expected reserve earnings, varying expenditure choices and differing management practices, the projected shortfall is of increasing concern.

3.2.3. Funding: Coping in the Past

Where shortfalls have already occurred or threatened, action has been required by both service managers and providers to avoid dire consequences. In some instances, service managers have had to provide capital infusions into public housing stock to offset major capital expenses that could not be otherwise addressed in annual budgets. Likewise, some service managers have had to make emergency grants/loans to providers in other programs where reserves are depleted to the point where critical needs cannot be addressed. This funding has typically been made available through managed program savings, largely realized through mortgage renewals at lower rates but as renewal rates flatten out, so too do savings. Those who established these funding tools have already depleted them or are in the process of depleting them and for all service managers, rising future interest rates will add pressure to already tight budgets, making funding for capital repairs in this manner unlikely.

On the provider side, the deferral of capital spending is a wide-spread phenomenon which may have met fiscal restraints of the day but ultimately defers the true costs of maintenance. This actually compounds the capital problem by accelerating depletion of the asset. In the most extreme situations, this can trigger a project into difficulty and threaten the mortgage, raising the spectre of financial restructuring measures to remedy the problem.

These measures are clearly not sustainable. By not addressing the issue substantially, significant deterioration of the assets will continue, adding to the growing fiscal 'wall' that the social housing portfolio will hit and, in the process, putting the residents who live in these communities at greater risk. Even more sobering is the fact that what we have seen to date is the tip of the iceberg – with significant aging components, the accumulating capital problem will increasingly tax what resources are available to address the issue, hastened by deferrals in planned maintenance and delays in moving meaningful solutions forward.

Within the system, sector organizations and SHSC have mobilized to try and support both providers and service managers to cope with these issues. Supporting tools, information on capital planning and reserve fund management, and sound property management

¹³ "Reserve Fund Review and Capital Contribution Benchmarking for Social Housing in Ontario". SHSC, 2005 update.

¹⁴ "Capital Ideas: How to Extend the Health and Safety of Social Housing". SHSC, August 2007

practices have all been promoted. One particular focus has been maximizing available resources through capital reserve investment pooling¹⁵. The obligation of prescribed providers to pool reserves under the Social Housing Reform Act (SHRA), 2000 has created a large block of capital in the order of \$400M that can garner better collective results and access higher yield investments. Since creation, the pooled funds have had average returns of 7%. While cultivating higher yields is an essential component of a whole solution, they can only assist so far as a measure to hedge against future cost escalations and, in quantum, can do little to resolve the existing backlog of capital needs.

This measure has assisted on the supply side and helped offset what would otherwise be added costs within the system. However, as existing reserves are depleted through draw downs, the ability to generate meaningful returns will also diminish unless additional resources are injected into the pool to replenish funds. Implementation of standard and regular building condition audits, capital-financial planning, preventative maintenance and repairs, and new approaches to lifecycle management can also help offset costs to the system. The work initiated by the Asset Management Group (AMG) in this regard is a helpful start and using the newly formed Asset Management Centre as a vehicle to carry this work forward would be a logical next step. Efforts continue within the sector to maximize existing resources but given the sheer magnitude of the existing gap, there is simply not enough money to leverage in the system to cover the gap. While efforts need to continue on all fronts, the most significant necessary ingredient is more money flowing into the system to address capital issues.

3.3 Capital Asset Management Practices in Social Housing

Funding to address capital shortfalls is of primary concern, given the sheer magnitude of needs in the social housing sector. However, asset management practices within the sector are also relevant to this discussion, since they speak directly to the effectiveness with which finite resources are applied to mitigate capital shortfalls. This section discusses asset management in social housing from the perspective of both theory and practice, identifying initiatives which have helped support the sector but also identifying gaps where further consideration is required.

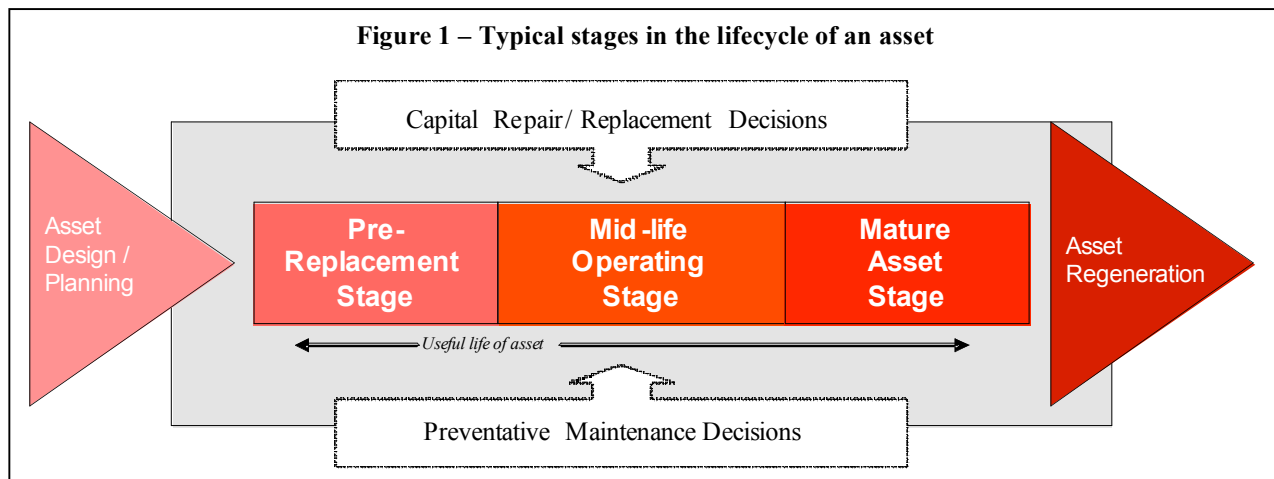
Understanding the principles of asset management and having a sound plan in place is vital throughout the lifecycle of a building, as laid out in Figure 1¹⁶. The fundamental idea of asset management is maximizing sustainability, including timely repair or replacement of system components to meet the designed service life, thereby avoiding untimely or excessive recapitalization costs. Asset management combines engineering principles with sound business practices and economic theory. It also provides tools to facilitate a more organized, logical approach to decision-making, whether at a program level (i.e. portfolio management) or at a project level (i.e. facility management).

¹⁵ Noted in "Capital Ideas: How to Extend the Health and Safety of Social Housing". SHSC, August 2007

¹⁶ Figure 1 is based in part on a diagram developed by York Region entitled "Capital Asset Management – Social Housing"

The importance of a facilities asset management approach is that it allows organizations to integrate facilities considerations into corporate decision-making and strategic planning processes. This is a significant shift from past practice, whereby facilities-related decisions were often made after the organization's strategic direction had been set. Using a facilities asset management approach allows organizations to forge a direct link between organizational goals, facilities investment decisions, and day-to-day operations.

The notion of cumulative impact also comes into play when considering these asset management decisions. Prior to construction, the decisions made regarding materiality, durability, costs and construction techniques establish the base from which the facility will be managed once constructed. Regular and lifecycle maintenance requirements are significantly influenced by these initial decisions. Likewise, maintenance decisions made through the operational stages also impact on asset durability. Eventually, as the facility matures and its useful life horizon diminishes, decisions about extending the life of the asset versus redevelopment or renewal become more prevalent. Again, the cumulative decisions regarding asset maintenance made up to this point will significantly influence what options are available regarding the asset. Put bluntly, poor design and maintenance issues lead to the diminishing of assets earlier, leading to higher costs to mitigate or resolve capital issues. Alternately, sound asset management decisions made along the way can help extend the asset life and better leverage the finite resources that support it – being strategic matters.



3.3.1 Background

Making timely and strategic asset management decisions is important both in terms of the operational and financial health of an organization. It is critical then to have the right information and tools to help make these decisions.

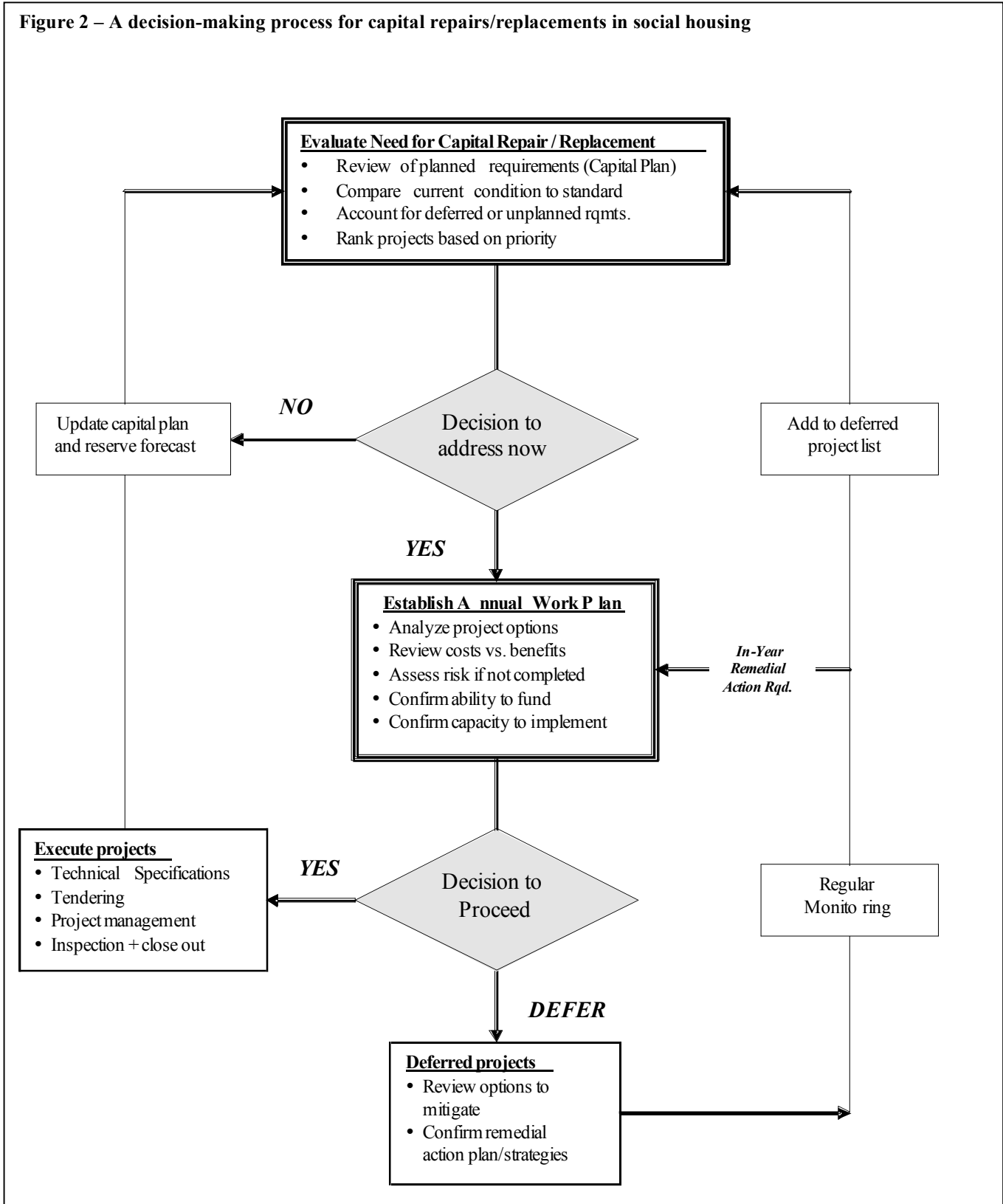
As an owner of an existing asset, some basic questions one would typically ask are:

- What are the capital repairs/replacements I should plan to undertake to keep the asset in good working order over the course of its useful life?

Closing the Gap: Finding Ways to Overcome Capital Shortfalls in Ontario's Social Housing Portfolio

- What are the associated capital reserve requirements necessary to meet these needs, now and over time? What kind of investment strategy do I need to achieve these goals?
- What is the current condition of the asset - are there capital needs that have arisen that were not planned for but still need to be addressed?
- How can energy conservation efforts be addressed in capital repairs/replacements to capture operational cost savings?
- When I compare the various needs, which ones should get priority – what needs to be done first?
- For each priority need, what are my best options for addressing these now in terms of value (cost vs. benefit)?
- Do I have sufficient financial resources and capacity to address these needs now?
- If I have to defer addressing any of these needs, how can I mitigate the risks that come with that?

Figure 2 – A decision-making process for capital repairs/replacements in social housing



While the answers to these questions can vary depending on size and complexity of the portfolio, they tend to follow a similar process; identifying need, developing a work plan, evaluating options regarding the work plan and making informed decisions on how/when to proceed with capital repairs or replacements. A typical process flow for decision-making is shown in Figure 2.

Throughout the decision-making process, tools and analysis are required to help support informed decisions. Historically in social housing, these tools have included capital plans, associated reserve plans or capital budgets and technical specifications. However, with the oversight and financial responsibilities transferred by way of the Social Housing Reform Act, 2000 (SHRA), providers and service managers alike now have to be more vigilant and strategic in asset management decisions. With this responsibility has come the need for more tools and supports, some of which have been developed at the sector level, others which have evolved individually.

The Building Condition Assessment (BCA) is a key capital planning tool that provides a forecast of long term capital funding requirements based on an assessment of the condition of the housing stock. The BCA 'tools' include building standards, life expectancy guidelines and a set of priorities. The BCA report typically includes a comprehensive inventory of facilities within the portfolio, comparing the current conditions of building elements to typical system lifecycles. The resulting report provides a prioritized set of planned capital requirements over a set period of time and should be updated at least every 5 years. When the building condition assessments are understood and applied by building owners from the point of initial occupancy, the building's useful service life can be extended. Having a standardized suite of BCA tools can help ensure a consistent approach to projecting capital needs. Recent discussions have pointed to the need for more standardization of these tools within the social housing sector. In addition, concerns for the environment have pointed to the need for an "energized" BCA. A standardized tool is currently being developed through the Asset Management Group in consultation with SHSC and GLOBE (Green Light on a Better Environment), a SHSC subsidiary that is committed to promoting energy efficient property management. In addition to environmental benefits, this move to address energy conservation in the BCA process can result in long-term financial savings.

In many cases however, housing providers developed their initial capital plans well after buildings were occupied. In addition, most providers do not have the technical resources in-house to complete BCAs. Instead, consultants are regularly hired to complete these assessments due to the specialized technical knowledge involved. While this helps ensure the completion of comprehensive capital plans, housing providers can find these reports challenging to interpret and put into practice. Further, the assessment practices that these consultants employ can vary, especially in the area of life expectancy

guidelines¹⁷. When coupled with limited capital dollars to fund repairs or technical capacity to implement the plans, there can be clear gaps in addressing BCA findings. Some service managers have been able to help address the gap through education and training sessions for housing providers in their area but, like providers, service managers can find themselves constrained by resource and capacity issues.

The other essential and complementary part of capital planning is the reserve fund forecast, a component of the BCA that is used to project the financial resources needed to execute the capital plan. Maintaining a capital reserve fund and making annual reserve contributions to it are important required practices in most social housing programs. The notable exception is public housing where an annual capital funding envelope is provided for in-year repairs/replacements each year. In both instances however, a capital funding forecast is necessary to ensure that financial resource requirements are identified to meet on-going capital requirements. Updating and reviewing this forecast regularly helps determine if there is sufficient funding to carry out required capital work as it comes due or if capital work can be deferred. By prioritizing capital works, housing providers can ensure the most important jobs are completed first, especially in a situation where the potential for deferral exists.

Within capital planning, there is an implicit assumption that major building components will be regularly maintained to ensure they perform for a defined service life. Preventative maintenance, as part of prudent operational planning, helps ensure service life expectations are met and in cases where it is used effectively, may actually extend service life beyond these expectations. Preventative maintenance planning is therefore an important operational tool that supports sound asset management. Typically, preventative maintenance plans examine each element of a building and determine daily, weekly, monthly and yearly maintenance requirements. Using this maintenance schedule, annual work plans can be developed and executed with funding largely drawn from maintenance lines in the operating budget. Where in-year savings can be realized through these practices, some providers have the ability to retain savings in an operating reserve or direct them to capital reserves, ultimately using them to support maintenance of the asset. While this practice is considered progressive, it can be hampered by program requirements, service manager policies or competing housing provider needs.

By contrast, where resources or capacity limitations constrain or defer planned maintenance, this can have a direct effect on the operating budget, turning a proactive maintenance program into one that is ad hoc. This form of 'demand maintenance' is reactionary, dealing with day-to-day problems as they arise. When a housing provider digresses into a 'demand maintenance' mode, strategic efficiencies can be sacrificed in order to meet immediate demands, sometimes on a 'fix-at-all-costs' basis. This challenges the ability to glean any operational savings for the benefit of reserves and can in fact add back operating or capital costs. Studies have estimated that the compounding

¹⁷ This issue is discussed in detail in SHSC's paper entitled "Analysis of Building Condition Audits and a Comparison of Ontario's Non-Profit Housing Portfolio with the Local Housing Corporation Portfolio."

effect of deferred maintenance can actual increase costs by as much as five times the original repair amount¹⁸. This seemingly endless cycle causes frustration for both service managers and housing providers alike, enlarging the gap between capital needs and resources. To help break this cycle, housing providers need to have a sound preventative maintenance program as well as the capacity and resources to implement it. The Asset Management Centre can play a significant role in supporting preventative maintenance through development of work tools and sharing of good practice.

3.3.2 Supporting Good Practice

While the challenges of capital asset management are not new, the tools and supports to help inform strategic decision-making continue to evolve, especially in the municipal sector. Even in some levels of senior government, the notion of aligning asset management strategies among public sector agencies is being actively promoted on the basis of a best value proposition for taxpayers¹⁹. These strategies tend to look beyond traditional asset acquisition and management models and consider decision-making in a more complete, rigorous and integrated way. In addition to supporting broader cooperation, these models promote performance measures and the sharing of good practice as important elements of a complete asset management strategy. As more and more tools are established and integrated systems developed at the municipal level, social housing has much to draw on to support a more unified direction for asset management within the sector.

From these examples, common elements and tools that support a complete asset management model include:

- A complete inventory of assets and their value, as well as an accurate snapshot of current asset condition, usually maintained in a database
- Consistent standards by which to measure the condition of the asset
- Computerized planning, ranking, forecasting and budgeting tools, standardized to promote consistency
- Tools for assessing/demonstrating best value options with regards to costs, expected lifecycle and benefits
- Risk analysis tools to identify and mitigate risks
- Funding strategies, including options for securing alternate resources, that ensure sufficient financial resources exist to address needs as they arise
- Maintenance strategies that ensure baseline asset conditions are maintained
- Sufficient resources and technical expertise to undertake the work
- An established way to measure/report on performance and share good practice

¹⁸ A discussion of this effect and general asset management issues facing the municipal sector is found in "Asset Management 101: A Primer", presented by D.J. Vanier of the National Research Council of Canada in 2000 at the APWA International Public Works Congress. This paper can be found at www.nrc.ca/irc/uir/apwa.

¹⁹ For example, the Province of British Columbia, through its Ministry of Finance, has developed a far-ranging and comprehensive Capital Asset Management Framework to guide the management of all its public capital assets within the province. This framework and associated guidelines can be found at www.fin.gov.bc.ca/tbs.

- On-going education and training in order to keep pace with technical advancements and changes in legislation or the regulatory environment

This is not to say that some in-roads have not already been established in social housing. By standardizing BCA templates and tools, SHSC has helped service managers and providers alike in establishing a level of consistency in capital plans and reserve fund forecasts. Procurement tools have also been developed to assist in hiring technical experts to complete BCA reports. Recent additions to these tools serve to highlight energy saving opportunities within capital repair and replacement programs, supporting win-win strategies which promote capital renewal while helping to reduce energy costs on the operating side of the ledger. Linking these strategies to energy conservation funding initiatives like those under the Green Light Initiative²⁰ has had the added benefit of leveraging external funding while not otherwise diminishing existing reserve fund levels. These efforts have been instrumental in starting to address very real capital issues. The recently announced Asset Management Centre offers a dedicated vehicle to now move this work forward and expand efforts on a sector-wide basis.

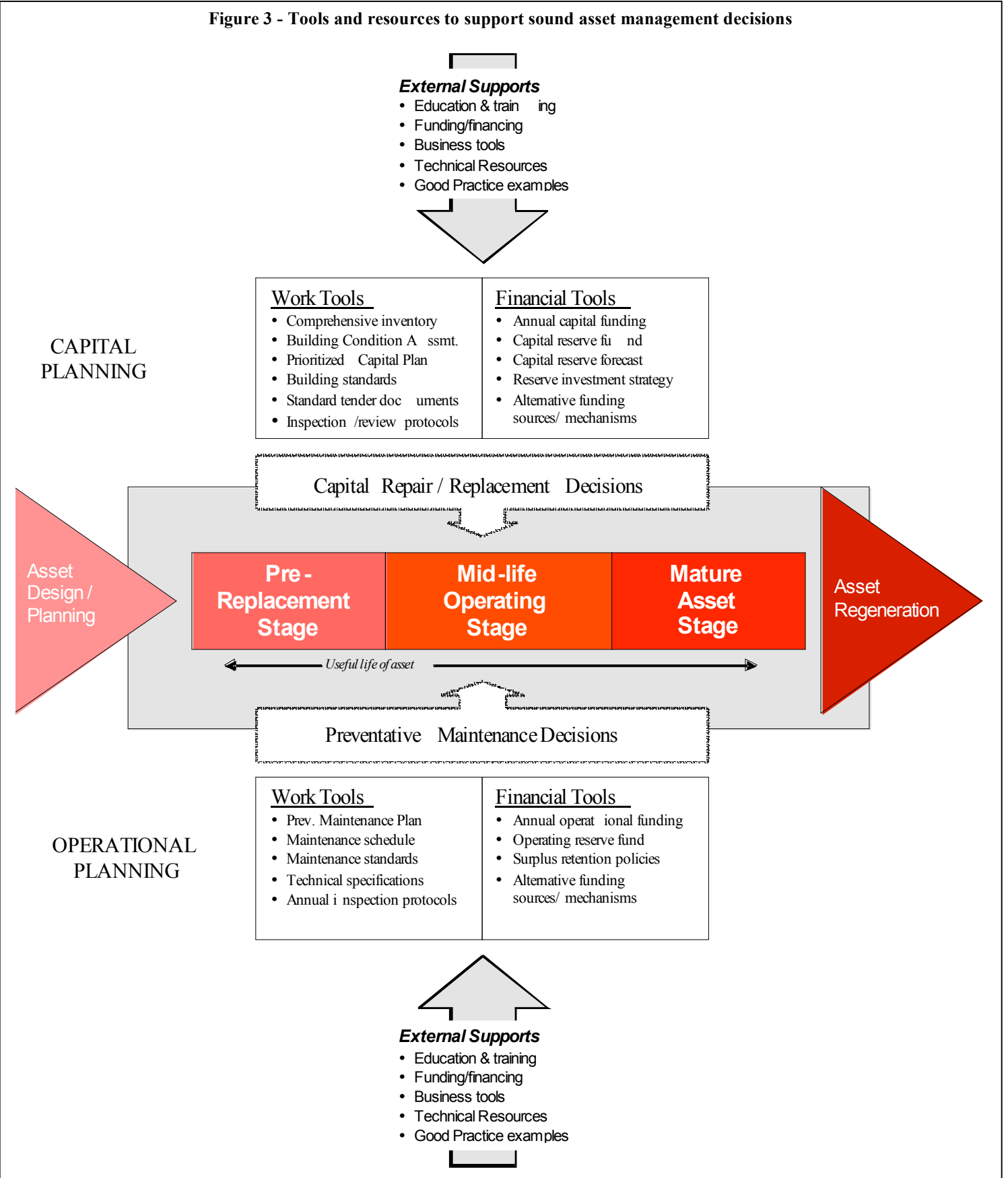
It is clear that a more refined and complete system of asset management is required in social housing. Using the BCA example above, while some standardized templates have been established, there are areas where variability in supporting tools still exists. The size of providers and level of service manager capacity in many instances can also dictate the degree to which these templates are used. Building standards and life expectancy guidelines are two such examples. Building standards outline the minimum acceptable level of performance for elements in any building. However, these performance standards are typically set locally by each service manager. Life expectancy guidelines have been established by a number of sources including Ministry of Municipal Affairs and Housing (MMAH), Canada Mortgage and Housing Corporation (CMHC) and American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE). However, the actual life span of any building element may vary considerably depending on many factors including things such as service conditions, design and quality of installation. It is not surprising that consultant estimates for the remaining life of any building element tends to be somewhat subjective. Having practical guidelines to help classify life span remaining and setting common building standards could help improve BCA accuracy and consistency.

While a complete and strategic asset management system remains to be established for social housing, Figure 3 helps to illustrate the connection between the asset lifecycle and decisions required to keep the asset in good order, both in the capital planning and operational planning realm. The connection is also drawn between the tools used to support these decisions (both work and financial) and the external supports which could

²⁰ This SHSC energy conservation pilot program leveraged and supported the infusion of approximately \$16 million into the housing sector to support 96 housing providers representing 189 buildings in various aspects of energy conservation initiatives. The program saved consumers (housing providers and residents) \$2.1M in utility costs and reduced total greenhouse gas emissions by 6,220.77 tonnes or 0.48 tonnes per household.

be more readily provided to assist housing providers in making strategic asset management decisions. This diagram is not intended to be a blueprint but it does help identify links towards good practice in terms of asset management within the sector.

Figure 3 - Tools and resources to support sound asset management decisions



3.3.3 Asset Management: Coping in the Past

Service managers (SMs) and housing providers alike have had to forge ahead to address capital issues despite the many difficulties they encounter with regards to planned and preventative maintenance. In the absence of adequate funding, standard tools/practices and other resources, the ability to address capital needs has been hampered. Even with the advent of new tools and resources, the ability of providers to use and apply these resources has been impeded by limits in both capacity and technical knowledge.

Results from the recent AMG survey have captured and confirmed the essence of certain of these issues:

- SMs indicated that BCAs have been completed for a number of properties, supported either directly or indirectly by SMs – some SMs have even helped fund completion of priority projects identified in provider BCAs
- However, SMs also indicated that many providers are not integrating BCA findings into their capital budgets, most commonly because they are at odds with BCA findings, they lack reserve funds to initiate the work, or have insufficient technical expertise or resources to undertake required work
- SMs have also promoted the use of energy audits among providers, as well as SHSC energy initiatives and integrated BCA templates, although take-up of these programs has been slow
- In addition, while most SMs requested that providers review reserve forecasts at least annually, it appears that not all providers in their area had up-to-date reserve fund forecasts for all properties
- The majority of SM respondents reported providing technical assistance to providers in a number of areas related to BCAs, and many support the use of SHSC tools
- Advice on technical issues is sought out by providers from a number of sources, both professionally and within the sector

These results suggest that service managers and housing providers have had to take the initiative in managing short term impacts of the reserve shortfalls, but these remedial approaches are not sustainable. The utilization of more standardized BCA tools has helped build awareness in the social housing system about the condition of assets and the measure of resources needed to address this shortfall. While gains have been made in broadening understanding, the necessary BCA baselines may not be completed in all service areas and where they are, applying the knowledge to current capital needs has proven challenging, there also seems to be hesitation in following through with spending decisions that address BCA issues. Likewise, leveraging energy efficiency incentives to reap win/win benefits has remained largely untapped among many providers. Technical knowledge continues to be in high demand and is typically sought out individually by providers, but it not as readily available or of a consistent standard within the sector. In each of these areas, the Asset Management Centre can play a significant role in supporting both housing providers and service managers, whether providing technical support, establishing more robust BCA tools or putting BCAs into practice.

4.0 Closing the Gap – Towards Meaningful Solutions

While some progress has been made at better addressing issues that arise from capital shortfalls, there is a clear gap between what is needed and what exists today. Initiatives by SHSC and the sector have helped better equip service managers and providers to cope with these issues but the sheer size of the gap cannot be solved locally. Two conclusions are inescapable: to close the capital shortfall gap, significant capital infusions are required; and, to minimize the gap going forward, asset management practices within the sector must be improved. While there are clearly roles for all stakeholders in developing and implementing solutions for these two themes, capacity and resources dictate in large measure who can do what. By working collaboratively with senior levels of government, stakeholders have the opportunity to close these gaps.

4.1 Capital funding & financing

In terms of funding and financing, the following measures could help secure, retain or access funding sources that help mitigate capital shortfalls:

- *Capital infusions from senior government* - Ad hoc infusions or capital fund top-ups, like the March 17, 2008 announcement of \$100M funding “to assist with repairs to about 4,000 affordable housing units”, assist in defraying the capital shortfall for providers. Unfortunately, such ad hoc funding is sporadic and not always targeted strategically or where demand is highest. While these infusions are helpful short term remedies, they are not sufficient to close the gap. Distribution and targeting of funds to address gaps not otherwise served by remedial measures should be considered to make this funding vehicle more effective.
- *Federal re-investment of funding step down* – Over the course of time as debenture obligations mature and federal agreements are poised to expire, federal funding is scheduled to be reduced. This at the very time when resources to shore up aging assets are essential. By retaining these monies within the social housing system, the shortfall created by years of under-funding could be more appropriately addressed. Targeting monies to federal stock and public housing would be consistent with the intent of initial investment.
- *Provincial ‘fix’ on Ontario Works (OW) subsidy shortfall* – At point of transfer, the subsidy differential between housing assistance recipients and those in social housing became enshrined in legislation instead of being corrected. This has created a substantial shortfall for service managers who fund social housing subsidy on 100¢ municipal dollars while OW is funded on 20¢ municipal dollars. This disparity has resulted in staggering added costs to service managers, money which could otherwise be directed to maintaining existing community assets. The beneficiary of this inequity - the Province - should immediately correct the problem, enabling service managers to use proceeds to help address capital deficiencies.
- *No/low cost financing facilities* – In SHSC’s “Capital Ideas” discussion paper, the concept of cash flow trade was identified. This concept was developed into a formal proposal for a sector-led capital financing facility which could raise capital for a range

of purposes including capital repairs. Cash flow trade essentially creates a no-cost borrowing vehicle on the basis of predictable and steady subsidy flow. For projects that are highly mortgaged and have less equity (i.e. provincial unilateral projects) this option may offer promising opportunities. A vehicle already in use but not well subscribed is the Ontario Strategic Infrastructure Financing Authority (OSIFA), the Province's public infrastructure financing vehicle targeted to municipalities. The large pooling of financing under the program provides better-than-market rates in terms of infrastructure lending. Recent announcements have now identified specified monies within this financing envelope for social housing purposes and have extended a commitment to broaden access for social housing financing beyond just municipalities. Large service managers may already have access to low cost direct market borrowing as a result of their size but may also be limited by other municipal financing pressures.

- *Emergency pooled capital fund* – Smaller service managers and housing providers are among those least able to manage the capital impacts associated with capital shortfalls. Larger service managers tend to have access to a broader suite of resources to better cope with these situations on an interim basis. A pooled emergency fund administered within the sector could assist as a temporary measure to support smaller SMS/providers who are most vulnerable to capital shortfalls. Funding could come from one or multiple sources (one-time infusion, federal step-down monies, capital financing facility, etc.) and ideally would be sector administered by a body such as SHSC.
- *Mortgage re-financing & flexibilities* - Enabling broader permissions and flexibilities around mortgage refinancing could help some parts of the social housing portfolio where longer term rates are locked in at above-current rates. For other projects where mortgage renewal rates are at or below current 5 year rates, this option may prove less fruitful. This idea has been broached under previous mortgage administration proposals where SHSC could expand mortgage flexibilities across the social housing portfolio. Broadening authorities around the use of existing reserve funds may also prove helpful – for instance, recognizing debt service for capital repair loans as an eligible reserve cost could leverage additional resources. As there are risks associated with this approach, more investigation would be required to determine in what situations this flexibility could/should be exercised.
- *Alternative opportunities* – While more scoped in their application, accessing funds generated through redevelopment and intensification opportunities also present some promise for addressing capital shortfalls, albeit in limited situations. Similar opportunities to access funds may also lie in tax increment financing (TIF) initiatives like those used in Brownfield redevelopment. Land transfer tax (LTT) revenues also offer an even larger potential revenue source, although competition to access this revenue would be equally substantial.

The varying composition of local social housing portfolios in terms of age, health of stock and program make-up all influence the manner in which capital shortfalls impact providers and service managers. It is clear that no one solution will fit all circumstances and that a suite of flexible options are necessary in order to meet the broadest range of needs. It is also clear

that given the size and magnitude of the financial shortfall, senior levels of government need to contribute their fair share to close the gap, a gap which they created. While certain funding and financing mechanisms are within their domain (e.g., capital infusions, federal reinvestment), other options should be more fully explored within the sector (e.g. cash flow trade, capital financing facility). There are also other opportunities where collaboration between senior levels of government and the sector could yield more meaningful outcomes in terms of addressing capital shortfalls (e.g. program flexibilities, mortgage re-financing, alternative options). A closer look at these options and the context in which they would be most effective is warranted.

4.2 Asset management

While funding and financing are essential to closing the gap, asset management is critical to minimizing the gap on an on-going basis. There have been clear in-roads made by the sector into better managing today's social housing assets in the past few years but it is equally clear that a more complete, integrated asset management framework is required. Building the capacity, knowledge and tools to better manage assets in the sector is essential to leveraging funds and financing which could be secured to close the gap. The sector has a responsibility here to take the lead, demonstrating its initiative to continuously improve social housing services.

In terms of asset management, this points to a need for:

- *Speaking and understanding a common language* – A common and consistent approach to defining capital needs and standards is essential among stakeholders. Understanding the impact of capital needs and the practice tools/resources available to address them is even more important. This level of understanding is not consistent throughout the sector and more training and education are critical to support this.
- *Establishing base requirements through sector-wide tools* – Efforts have continued to ensure providers have BCAs and associated reserve studies completed to minimum standards. Use of standard tools and templates like those generated by SHSC has greatly assisted in a more common approach, although again this is not consistent throughout the sector. The use of common tools is effective at establishing a sector baseline on which more accurate capital estimates can be established, eventually leading to commonly accepted standards.
- *Building a culture of good practice* - Defining good practice in asset management and identifying more innovative approaches are both key aspects to raising the bar on sector performance. Helping providers translate capital plans into action and promoting the use of preventative maintenance plans to help extend asset lifecycles are two prime examples of good practice that could be further pursued.
- *Leveraging energy efficiency opportunities* - Recognizing the dual benefits of reduced energy consumption and related opportunities to capture savings on operating expenses, targeted replacement strategies within capital plans are essential. Expanding tools, marshalling incentives and focusing on older buildings/portfolios for

maximum savings will continue to help counter escalating energy costs while refurbishing current assets.

- *Supporting and enhancing technical capacity* – The access that service managers have to technical skills in support of asset management is quite varied. Building greater technical capacity in the system through knowledge transfer and skills development is important to longer term asset sustainability. Establishing common technical resources within the sector, accessible to both providers and service managers, would also assist in creating a more level playing field, especially for smaller providers and service managers already faced with capacity issues.

Much of the activity coordinated by the Asset Management Group (AMG) to date has promoted better asset management practices within the sector, whether through research, development of tools or identification of good practice. The collaborative approach and wide cross-section of the group have helped ensure a more integrated way of addressing current issues. The recently announced Social Housing Asset Management Centre will build on this approach, establishing a formal structure within which to focus efforts and resources. By better coordinating asset management initiatives, common sector priorities can be addressed in a more timely and focused way. However, while this approach can clearly advance the effectiveness of current asset management practices, significant financial solutions are still necessary to close the gap. The engagement of senior government is critical in order to ensure efforts to date are not lost moving forward.

5.0 Conclusion

Managing public assets more effectively has become increasingly important, especially in the municipal domain where cost containment pressures and deferred maintenance are all too common. These issues are no less significant in social housing where capital shortfalls grow despite the more recent development of tools to assist in identifying and addressing needs. These tools, while helpful, need to be expanded within a comprehensive asset management framework in order to ensure consistency in approach while promoting good practice. The Social Housing Asset Management Centre provides a key vehicle for advancing solutions to asset management issues in a collaborative and coordinated way. The Centre can also act as a catalyst for the creation of sector-led financing mechanisms that support asset management objectives.

However, given the sheer size and scale of the capital shortfall, flexible funding and reinvestments from senior government to close the gap are essential. Failure of senior governments to engage in this manner will put years of public investment in jeopardy and put those vulnerable households who rely on social housing at risk. The sector has demonstrated initiative to do its part by supporting improvements to asset management practices over the last few years – its now time for senior governments to come back to the table in a meaningful way to help sustain the affordable housing assets they helped create.

Appendix I: Estimating the financial position of social housing providers

Summary

One of the critical issues for the social housing program in Ontario is the increasing size of capital shortfalls. In response to this concern, the Asset Management Group (AMG) undertook a survey of housing service managers and housing providers across Ontario in late 2007 and early 2008. The study had a number of objectives. The most significant of these objectives was to estimate as closely as possible any projected shortfall in capital reserves over the next 20 years. This appendix outlines the analytical work that was undertaken to estimate the capital shortfall problem.

This paper reports on survey results for three estimates:

- Capital shortfalls and expenditures for those with shortfalls for three time periods, e.g., 1-5 years, 6-10 years, 11-20 years
- Capital reserves
- Annual capital contributions

Two survey sources form the basis for these estimates. The original AMG service manager survey asked respondents for their region's aggregate financial position on each of these three financial indicators. Since it is crucial that we know the number of units covered by their responses, we undertook a follow-on data verification process and went back to the service managers who responded in the first round to clarify key information such as number of providers and number of units. In addition, the data verification process focused efforts on gathering provider level data on capital deficits and expenditures (for those with deficits) for the 1-5 year estimation period.²¹

The results are divided into two parts. The first part reports on the capital shortfalls and expenditures for the 1-5 year period, data for which is available at the disaggregated provider level. The second part reports on capital shortfalls and expenditures for the 6-10 year and 11-20 year periods, the capital reserve position and annual capital contributions, data for which is available only at an aggregate service manager level.

Through the use of standard statistical techniques – stratified sampling, and appropriate sample weighting – the margin of error of key financial indicators, such as average current shortfall, can be substantially reduced. This appendix provides the methodology that was used to develop the financial estimates present in the main report (Section 2.2.1)

²¹ An exception to this was in the Toronto Region, where a substantial and detailed survey of capital expenditure had been conducted in 2004. We used the data from this survey, appropriately adjusted for inflation, as though it had been provided in response to the AMG survey.

Analysis of capital shortfalls and expenditures, Years 1 to 5

Financial data on the period Years 1 to 5 was collected through the follow-on data verification process of service managers who were asked to provide provider-level shortfall figures for the 1-5 year period.

Population of housing providers

There are approximately 1,421 providers of social housing in Ontario.²² They receive funding from a variety of federal and provincial programs, which break down as follows:

Program		
Limited Dividend	Providers	20
	Units	1,791
Provincial Reform	Providers	893
	Units	88,632
Public Housing	Providers	47
	Units	99,172
Section 95 Municipal non-profit	Providers	73
	Units	10,395
Section 95 Private non-profit	Providers	250
	Units	18,781
Section 26/27	Providers	101
	Units	13,232
Urban Native	Providers	37
	Units	1,971
All Programs	Providers	1,421
	Units	233,974

Distribution of housing units and providers by program

Several of these programs have a limited number of providers, or units, or both. The Public Housing program is identifiably different from the others based on the average number of units per provider.²³ Bearing such differences in mind we combined the smaller programs into a single “program” for analysis purposes, as shown below:

²² The uncertainty in this number is related to some double counting of providers with projects across multiple programs.

²³ The total # of public housing units (i.e. 100% RGI, owned by government, annual capital budget rather than a funded capital reserve, and built primarily in 1970’s) is about 99,500 due to the following: A separate but very similar program was funded by OHC and the Ministry in the same way (50/50 by CMHC and Ontario until 1998) for seniors housing units (called the **Assisted Housing Program**) in

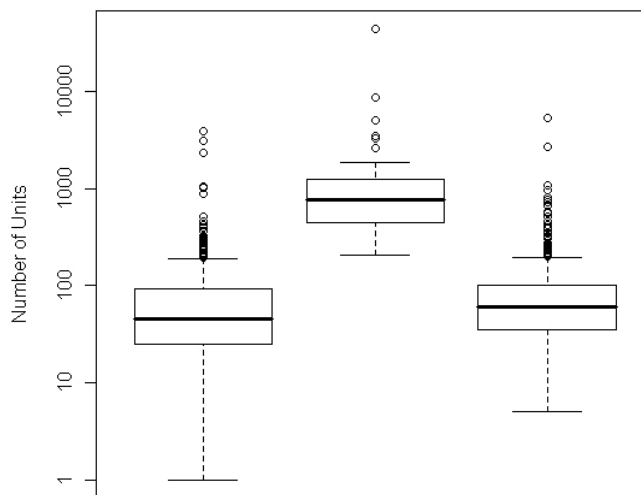
Program		
Other	Providers	481
	Units	46,170
Provincial Reform	Providers	893
	Units	88,632
Public Housing	Providers	47
	Units	99,172
Total providers		1,421
Total units		233,974

Distribution of housing units and providers by aggregated program

Stratification

One of the concerns about the original survey was that it might have under-represented larger providers, hence biasing results and reducing confidence in the estimates. The standard procedure for sampling when faced with significant variation in some target population is to divide the population up into a set of more homogeneous “strata,” for which estimation proceeds independently. This process is called stratification. In this case we expect that providers would certainly vary by program, and certainly vary by size, so if the population is divided up along these lines one would expect less variation within each stratum. The data show that there are indeed significant differences in size by program, as shown in the figure below. For example, the range of size in the lowest quartile of the “Other” program is from 1 to about 20, whereas the lowest quartile in the Public Housing program ranges from about 200 to about 700.

Variation in number of units by program



then Metropolitan Toronto. It was 15,500 units. The units were owned by Metro Toronto through its then agency The Metropolitan Toronto Housing Company Limited or “MTHCL”. MTHCL also operated projects for singles and families and was allowed to build under new programs but the 15.5 K seniors units were the biggest part. (The separate agency MTHA or Metropolitan Toronto Housing Authority managed family housing for its owner OHC until ownership changed under the SHRA. MTHCL and MTHA joined in 2 steps with the then City of Toronto Housing Company to form the present TCHC.). The MTHCL seniors housing had its own line item in the OHC budget but most of the rules were similar. Ontario Ministry staff negotiated operating and capital budget each year.

There is a standard heuristic for deciding on where to draw the sample boundaries in an optimal fashion²⁴. In this case we decided on four strata per program and the standard heuristic yielded the stratification of providers, by program and size shown in the table below.

		Stratum				
Program		1	2	3	4	Totals
Other	Limits	0-75	76-150	150-1000	>1000	
	Providers	335	86	55	5	481
	Units	11,730	9,540	13,509	11,391	46,170
Public Housing	Limits	0-450	451-900	901-2000	>2000	
	Providers	12	16	12	7	47
	Units	3,736	10,593	14,839	70,004	99,172
Provincial Reform	Limits	0-75	76-150	151-1000	>1000	
	Providers	553	247	89	4	883
	Units	23,049	25,957	25,032	14,594	88,632
Total providers		900	349	156	16	1,421
Total units		38,515	46,090	53,380	95,989	233,974

Stratification scheme

Having chosen the strata, the next process in survey design is to decide how big the sample should be in each stratum, allocating the sample members among the strata in the most efficient manner. (It is more efficient, in terms of reducing the variation in estimates, to skew the sample towards the strata with the highest variability – i.e., the large-size providers.) Since the AMG sample was an existing “convenience sample” of some 667 providers, our process was to understand what proportion of such a sample would apply to each stratum if an optimal allocation process were to be followed, and to re-balance the sample through additional data collection. This led to a decision to ensure that all very large providers in the population (i.e., those in the fourth stratum of each program) were included in the sample. The sample that resulted is described below.

Data collection

The original AMG survey was in fact not based on a sample of service managers, but on the universe of service managers, not all of whom responded. The survey also only asked for shortfall and expenditure figures aggregated at a service manager level, and failed to inquire as to the unit coverage of those figures. To fill in the missing information, the second round survey went back to those service managers who responded to the original survey and asked for more information on the numbers they reported.²⁵ In addition to clarifications on reported

²⁴ The so-called “cumulative square root frequency” heuristic is described in most auditing texts, e.g., http://www.taxadmin.org/fta/meet/07_ca/ca_pres/attach4.pdf

²⁵ Exceptions to this were the City of Toronto and York Region. The City of Toronto had a substantial and detailed survey of capital expenditure which had been conducted in 2004. We used the data from this survey,

numbers, the service managers were also asked to provide the actual deficit and expenditure figures for every provider in their area for the 1-5 year forecast period.

Results

The sample

The table below shows how the distribution of providers in the adjusted sample was spread across programs, and size stratum, and how this compares with the total population of providers:

Sample Population							
		Stratum					
Program		1	2	3	4	Sample Totals	Total Pop
Other	Providers	167	37	15	5	224	481
	Units	6,120	3,908	3,907	11,391	25,326	46,170
Public Housing	Providers	2	6	4	6	18	47
	Units	584	3,448	4,901	66,469	75,402	99,172
Provincial Reform	Providers	233	148	40	4	425	893
	Units	10,250	15,527	12,384	14,594	52,755	88,632
All programs- providers		402	191	59	15	667	1,421
All programs- units		16,954	22,883	21,192	92,454	153,483	233,974

Sample characteristics

We see from this table that the sample includes (667/1421) or 47% of the providers, but these providers include (153,483/233,974) or 66% of the total units.

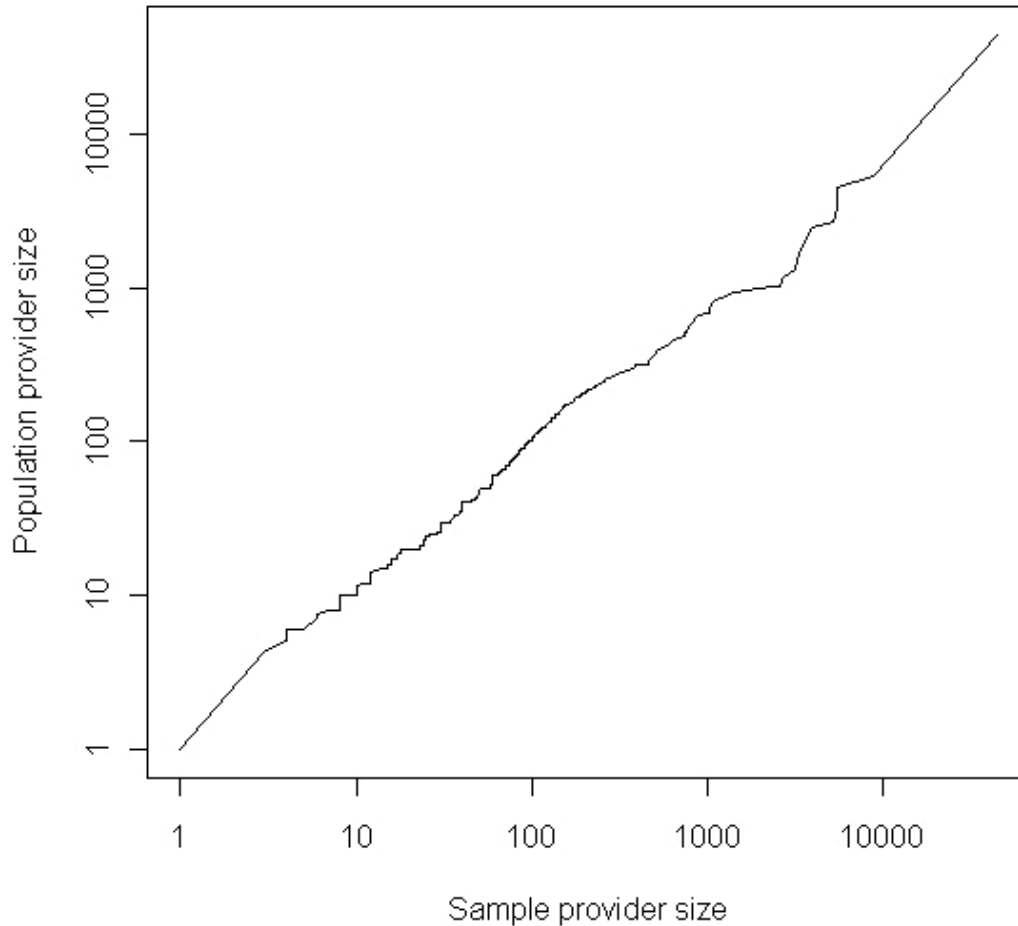
Response bias

The analysis first addressed the issue of whether the sample data could reasonably be considered representative of the whole population, that is, whether there was any apparent bias in the nature of the respondents. The best way to assess this is to see if the distribution of provider size in the sample differs in any substantial way from the distribution of provider size in the population. This comparison for the whole sample is shown below (a straight line indicating a completely representative sample). A similar analysis was conducted for each stratum and program.

We concluded from this that the sample was likely to be representative of the population, within each stratum and program.

appropriately adjusted for inflation, as though it had been provided in response to the AMG survey. The data from York Region came from the AMG provider data verification survey which the Region responded to on behalf of all their providers.

Comparison of population and sample size distributions



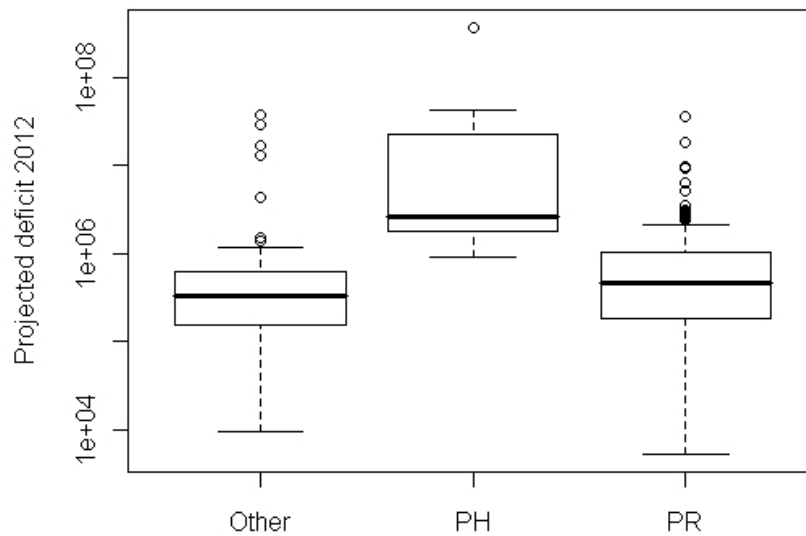
Data Variation

Data analysis dealt with Questions 22, 23, and 25 of the survey. Questions 22 and 23 addressed Capital Reserves. Question 25 addressed the projected shortfalls among providers, and projected capital expenditures in the event that a provider was projecting a shortfall. Although Question 25 attempted to collect data for three future time periods, namely 2008 to 2012, 2013 to 2017, and 2018 to 2039, provider-level financial data was only collected for the first of these periods. The summary numbers for shortfall and planned expenditures for Years 1-5 are shown here (by program):

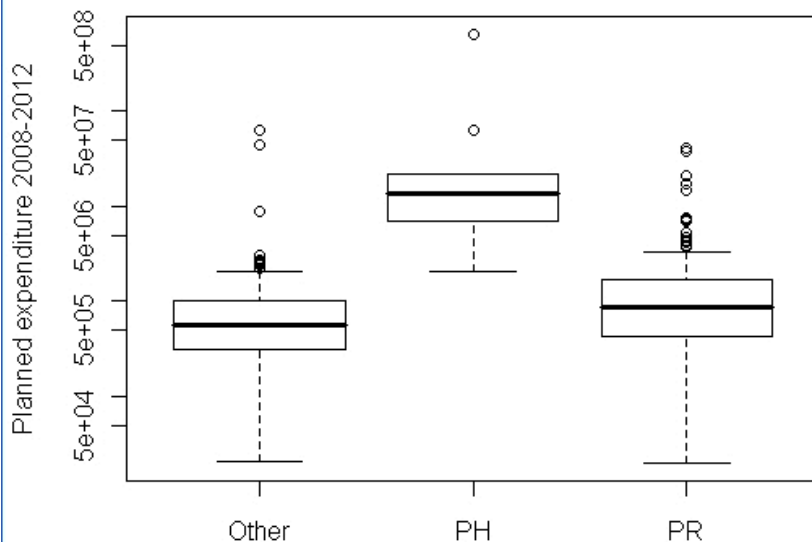
Program	Shortfall		Expenditure	
	Mean	Median	Mean	Median
Other	\$1,478,000	\$339,000	\$614,000	\$592,000
Public Housing	\$45,400,000	\$2,595,000	\$80,913,000	\$13,470,000
Provincial Reform	\$1,021,000	\$449,000	\$1,728,000	\$869,000

These show the variation among the programs, and within each program, further illustrated in the following box-plots. (The interpretation of a box plot is as follows. The ends of the box show the upper and lower quartiles; the line through the box shows the median; the dotted lines above and below the box extend a distance 1.5 times the inter-quartile range beyond the box – any items beyond these limits can reasonably be regarded as “outliers.”):

Projected deficit by program



Planned expenditure by program



All three programs show a number of outliers on the high side of the distribution. However, this is typical of socioeconomic data which often exhibit long-tailed distributions. We have allowed for this characteristic in the data analysis.

Estimation

Given the extreme variation in the raw data it is more useful to make per unit estimates of shortfall and planned expenditures, which will exhibit less variation. In estimating weighted averages we use appropriate stratum weights (i.e., weights proportional to the number of units in the stratum for the population). This computation is shown in the tables below.

First we show the proportion of units in providers in the sample who projected shortfalls in 2012, extrapolated to the population of all units²⁶:

Proportion of units in providers projecting shortfalls for 2012					
Stratum					
	1	2	3	4	Total
Other	42.8%	51.5%	36.9%	81.9%	52.5%
PH	35.5%	35.7%	46.8%	96.0%	79.9%
PR	52.0%	61.2%	59.3%	81.5%	61.6%
All units					67.6%

The significance of this table is that the financial data presented in the next section applies only (except where indicated) to that proportion of units in providers projecting a shortfall. The following table shows the complete computation of the weighted average shortfall and expenditure for years 1-5 for such units. The significant figures are in the rightmost column – the weighted averages at the program level, and for the whole sector. The average projected shortfall per unit in 2012 is \$7,684. During the 2008-2012 period these same providers are planning expenditures of \$13,000 per unit.

Other	Shortfall per unit	\$8,356	\$7,677	\$12,366	\$8,822	\$9,504
Program	Expenditure per	\$14,895	\$12,127	\$8,408	\$16,236	\$12,756

²⁶ In order to keep all computations on the same basis all numbers will be in terms of units, not forgetting that the sample was of *providers*, not properties, or the units in those properties.

	Expenditure per unit	\$14,895	\$12,127	\$8,408	\$16,236	\$12,756
	Units in population	11,730	9,540	13,509	11,391	46,170
Public Housing	Shortfall per unit	\$8,634	\$4,219	\$1,542	\$6,949	\$5,912
	Expenditure per unit	\$9,772	\$20,871	\$11,756	\$11,822	\$12,702
	Units in population	3,736	10,593	14,839	70,004	99,117
Provincial Reform	Shortfall per unit	\$10,011	\$7,799	\$11,894	\$2,867	\$8,718
	Expenditure per unit	\$15,706	\$13,283	\$14,690	\$8,131	\$13,462
	Units in population	23,049	25,957	25,032	14,594	88,632
All	Shortfall per unit					\$7,684
	Expenditure per unit					\$13,000

Per unit deficit and expenditure (for providers with deficits only) estimates by 2012

These numbers can be grossed up to provide an estimate of the total projected shortfall for the sector as a whole, since we know from the above table that the number of units in providers with projected shortfalls is 67.6% of the total. Hence an estimate of the total sector shortfall is \$1,215 million (0.676 x 233,974 X \$7,684). The extrapolated figures are shown in the following table²⁷:

	Units in population	11,730	9,540	13,509	11,391	46,170
Public Housing	Shortfall per unit	\$8,634	\$4,219	\$1,542	\$6,949	\$5,912
	Expenditure per unit	\$9,772	\$20,871	\$11,756	\$11,822	\$12,702
	Units in population	3,736	10,593	14,839	70,004	99,117
Provincial Reform	Shortfall per unit	\$10,011	\$7,799	\$11,894	\$2,867	\$8,718
	Expenditure per unit	\$15,706	\$13,283	\$14,690	\$8,131	\$13,462
	Units in population	23,049	25,957	25,032	14,594	88,632
All	Shortfall per unit					\$7,684
	Expenditure per unit					\$13,000
	Units is population					233,974

Per unit deficit and expenditure (for providers with deficits only) estimates by 2012

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Program	Shortfall per unit	Units in Population	% with shortfalls	Number with shortfalls	Total shortfall
Other	\$9,504	46,170	52.5%	24,241	\$230,388,858
Provincial Reform	\$8,718	88,632	61.6%	54,636	\$476,344,476
Public Housing	\$5,912	99,172	79.9%	79,267	\$468,621,186
All	\$7,684	233,974	67.6%	158,145	\$1,215,161,766

Total projected shortfall by 2012

Unfortunately the same procedure cannot be followed for the planned expenditures. We do not know the planned expenditures of providers not projecting a shortfall, but what we know for sure is that they will be different – it may be, for example that it is the planned expenditures of providers projecting a shortfall that is driving them to a shortfall position.

The questionnaire also provided information about projected shortfalls by the end of 2017 and 2027. The proportion of providers projecting such shortfalls is shown in the table below²⁸:

		Stratum				
		1	2	3	4	
Total						
Other	Shortfall 2017	75%	84%	63%	50%	67%
	Shortfall 2027	92%	81%	75%	100%	87%
Public Housing	Shortfall 2017	50%	83%	100%	75%	75%
	Shortfall 2027	50%	83%	75%	75%	79%
Provincial Reform	Shortfall 2017	81%	93%	100%	100%	93%
	Shortfall 2027	90%	98%	86%	100%	93%
All: Shortfall 2017						80%
All: Shortfall 2027						86%

Proportion of providers forecasting capital shortfalls at 10 years and 20 years

27 The totals do not add due to slight differences in the method of computation.

28 As in the other tables, the proper stratum and program weights are applied in computing the totals.

Margin of error

For a true random sampling survey it is possible to calculate a margin of error of the kind frequently reported, e.g., the margin of error for this type of survey is within x% 19 times out of 20. In the case of this survey there was no random sampling, and the distributional assumption of classical methods (i.e., the sample mean is normally distributed) is not strictly met. However, following the standard calculations gives us the 95% confidence intervals for the two variables for which this is possible – projected shortfall and planned expenditures per unit shown in this table.²⁹

The numbers for Public Housing are the most likely to be vulnerable to the weaknesses in the estimation model. Only 18 providers out of 47 responded to the survey and the variability of their expenditures is extreme.

Expenditures		Shortfall	
		Other	
Mean		\$4,691	\$7,083
Standard error		\$335	\$268
95% Margin of error	+ -	\$657	\$525
		Public Housing	
Mean		\$5,095	\$9,762
Standard error		\$146	\$4,259
95% Margin of error	+ -	\$286	\$8,348
		Provincial Reform	
Mean		\$5,411	\$8,466
Standard error		\$159	\$239
95% Margin of error	+ -	\$312	\$468
		All	
Mean		\$5,135	\$8,742
Standard error		\$155	\$266
95% Margin of error	+ -	\$304	\$521

Analysis of capital shortfalls and expenditures, Years 6 to 20

²⁹ The very large standard error for Public Housing Expenditures reflects the huge range of size among the providers in this program.

Financial data for Years 6-20 – estimates of capital reserves, annual contributions, shortfalls, and expenditures, were obtained from the Service Managers, aggregated for their respective regions. The following tables present the results of this survey.

	Program			
	Other	Provincial Reform	Public Housing	All
Capital Replacement Reserves 12/31/06	163,997,665	353,414,823	29,470,644	
Sample Size	36,978	78,994	17,148	
Capital Replacement Reserves per unit	\$4,435	\$4,474	\$1,719	
Number of units in program	46,170	88,632	99,172	
Total extrapolated Reserves	\$204,764,243	\$396,534,707	\$170,437,527	\$771,746,477
Annual Contribution Capital Reserves	\$21,007,635	\$51,239,207	\$25,109,524	
Sample Size	34,434	79,169	29,222	
Annual Contribution per unit	\$610	\$647	\$859	
Number of units in program	46,170	88,632	99,172	
Total extrapolated Annual Contribution	\$28,167,582	\$57,363,783	\$85,215,307	\$170,746,672

Total projections by program of capital reserves and annual contributions

The table above summarizes the data on Capital Reserves and Annual Contribution. The interpretation is as follows. The first line shows the total Reserves for all the units which formed the basis for this table, the "Sample size" shown on the next line. Not all providers were included in the Service Managers' figures. This is especially marked in the case of Public Housing which traditionally had no capital reserves but was funded annually on an as-needed basis for its capital repair needs. Since the transfer, however, some public housing providers have adopted the concept of capital reserves for their public housing portfolio and reported those numbers in this survey. This practice is by no means universal – thus no information was available on Public Housing in London, Ottawa, Toronto, and Windsor, among others. Hence the extrapolated figures shown for Public Housing on Capital Reserves and Annual Contribution may be quite inaccurate and should be treated with caution. The amount reported in the Asset Management Survey of \$170,437,527 represents the total reported reserves extrapolated from the sample size of 29,222 and represents the capital funding envelope plus any voluntary contributions to a notional "reserve fund" for those Local Housing Corporations who reported reserve and contribution figures.

The same Service Managers' responses contained information on the likelihood of future shortfalls. The results for years 6 to 10, and years 11 to 20 are shown below. As in previous tables, the extrapolation to the whole sector is based on weighting the numbers by unit

populations. The data should be treated cautiously for a number of reasons. In many instances Service Managers reported shortfalls and expenditures to be zero for some category of providers in their region, and the decision was taken to consider such instances as No Information rather than zero resulting in significantly lower unit coverage. Thus for Years 6 to 10, the results are based on a unit total of 104,452; for Years 11 to 20, the results are based on a unit total of 56,159. As well, estimates were built on aggregate figures reported by the service managers for their regions.

Estimates from aggregated (service manager level) data				
	Other	Provincial Reform	PH	All
Years 6 to 10				
Shortfall per unit (all providers)	\$9,336	\$10,299	\$9,179	\$9,634
Shortfall per unit (providers with shortfalls)	\$10,751	\$11,559	\$9,386	\$10,478
Expenses per unit (provider with shortfalls)	\$10,551	\$13,411	\$12,093	\$12,288
Years 10 to 20				
Shortfall per unit (all providers)	\$22,870	\$21,249	\$19,006	\$20,618
Shortfall per unit (providers with shortfalls)	\$23,260	\$22,238	\$19,006	\$21,069
Expenses per unit (provider with shortfalls)	\$21,386	\$20,349	\$15,954	\$18,691
Number of units in the program	46,170	88,632	99,172	233,974

Estimate of shortfall and expenses for two time periods

These numbers can be grossed up to provide an estimate of the total projected shortfall for the sector as a whole. The following table shows the extrapolated sector shortfall for the 6 to year period which comes to \$1.9 billion. As pointed out above, however, this figure should be treated with caution since it was based on aggregated totals at the service manager level and represent a unit coverage of 104,452 units, or 45% of the total population.

Program	Shortfall per unit	Units in Population	% with shortfalls	Number with shortfalls	Total shortfall
Other	\$10,751	46,170	67%	30,933	\$332,570,358.90
Provincial Reform	\$11,559	88,632	93%	82,427	\$952,782,477.84
Public Housing	\$9,386	99,172	75%	74,379	\$698,121,294.00
All	\$10,478	233,974	80%	187,179	\$1,961,263,657.60

Total projected shortfall by 2017