



To: Public Works and Transportation Committee

Date: May 24, 2017

From: John Irving, P.Eng. MPA
Director, Engineering

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Re: Ageing Facility Infrastructure - Update

Staff Recommendation

That staff utilize the attached “Ageing Facility Infrastructure – Update” report dated May 24, 2017 from the Director, Engineering, as input in the annual capital and operating budget preparation process.

John Irving, P.Eng. MPA
Director, Engineering
(604-276-4140)

Att. 1

REPORT CONCURRENCE		
ROUTED TO: Finance Division	CONCURRENCE <input checked="" type="checkbox"/>	CONCURRENCE OF GENERAL MANAGER
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: CS	APPROVED BY CAO

Staff Report

Origin

On June 27, 2015 staff submitted an ageing facility infrastructure report to Council for information. The report provided a facility condition summary and options to better maintain the City's buildings inventory, currently comprising approximately 1,617,000 square feet of total building area.

This report provides an update to the overall condition of City facilities and building maintenance and replacement programs currently in place.

This report supports Council's 2014-2018 Term Goal #6 Quality Infrastructure Networks:

Continue diligence towards the development of infrastructure networks that are safe, sustainable, and address the challenges associated with aging systems, population growth, and environmental impact.

6.1. Safe and sustainable infrastructure.

6.2. Infrastructure is reflective of and keeping pace with community need.

Background

The City's general buildings and leased facilities inventory consists of 154 buildings.

City facilities are critical to the delivery of a broad range of services to the public. Several of the facilities are unique to Richmond and establish an important and positive cultural or iconic identity, such as those with heritage status (i.e., Britannia Shipyards National Historic Site, Branscombe House, Seine Net Loft, etc.) and the Richmond Olympic Oval.

Construction of City owned facilities is accomplished through Council approved capital programs and/or agreements with developers. For capital projects, staff define a scope of work in consultation with the user groups and the public leading to construction through the public procurement process. A similar process is followed with developer related facilities, whereby the developer often assumes the role of design/construction lead and City staff assumes a review/approval role.

It is necessary to fund and perform day-to-day operations and maintenance activities at all facilities to enable their intended uses including janitorial services and minor repairs/replacements such as light bulb replacements. It is also necessary to fund and complete preventative maintenance programs which may include items such as roof replacement, boiler replacement, new paint for the building interior/exterior, etc., to ensure continuity of service.

The practical life expectancy of a facility is generally 45 years or more, however, with regular preventive maintenance is the life of a quality building can be extended indefinitely. The City currently has funded operations/maintenance, preventative maintenance and capital replacement

programs in place as approved by Council. The Capital Building and Infrastructure Reserve has been built to fund facility capital repair and replacement.

On an ongoing basis, staff develop and update a comprehensive plan for capital repair and improvements. This plan considers the condition of all current infrastructure assets such as buildings and equipment, and is used to plan infrastructure replacement and repair needs in the future, within available capital and operating funding levels.

Analysis

The City currently has Council approved annual funding of approximately \$3.7M for preventative maintenance programs. For 2017, the City received facility related funding of \$6.9M through the capital program, and \$2.5M as a one-time expenditure, to complete major repair/restorations of buildings such as Minoru Chapel, the Library Cultural Centre, City Hall, Minoru Arenas and South Arm Pool.

The City generally completes annual physical audits of 20% of City facilities through detailed site visits. The findings are used to update past information in the City's facility condition assessment computer model, Vanderwell Facility Advisors (VFA), to develop a Facility Construction Index (FCI) which has become an evaluation tool used by cities internationally.

FCI is an industry standard designation of facility condition where 0.00 to 0.05 is good, 0.06 – 0.10 is fair, and higher than 0.10 is considered poor. While this index is an excellent facility management tool, it is not a direct measure of user experience in the building. For example, a boiler that is old, inefficient and at risk of failure, will generate a poor condition score, but it may still be providing adequate heat in a building, so a building user today would not be impacted by that poor condition.

The current FCI average for all City facilities is 0.05, indicating an overall good condition, in part due to the recent completion of City Centre Community Centre and Fire Hall No. 3. Attachment 1 provides a graphical representation of the City's current building inventory and condition as well as a 2018 projection which considers completion of the remaining Phase I Major Facilities program (Minoru Complex, and Fire Hall No. 1 and demolition of the existing Minor Aquatic Centre). The 2018 projection highlights the effectiveness of Council's proactive approach concerning the City's building infrastructure replacement.

A large portion of City buildings were constructed in the last 35 years and this later building stock is entering a phase of accelerated ageing. This is highlighted in particular in the 1980's and older buildings in Attachment 1. As a result, maintaining the current good condition score will require continued support for Capital and Operations Maintenance funding programs as outlined in the City's 5-Year plan, including possible increases as facilities enter the phase of accelerated ageing.

Consequence of Facility Deterioration

A generally accepted industry observation related to facilities is that it costs five times as much to repair a facility as compared to having a preventative maintenance program, and that it costs five times as much to replace a non-maintained facility than what it would have cost to complete

the maintenance proactively, notwithstanding the impacts related to service disruption. While facility replacement is an excellent solution to address growth needs and implement modern systems and design, those facilities that are intended for long term use greatly benefit from the City's preventative maintenance programs.

Significant deficiencies would be anticipated should City facilities be allowed to deteriorate over the next 20 years. An example that may be typical of non-functional facility infrastructure after 20 years includes failure of roofs, boilers and HVAC systems; similar to the recent chiller failure at the RCMP building. The consequence of these items no longer functioning are significant and could lead to facility closure, service level interruption, loss of City revenue, and incurrence of significant costs to react to emergency conditions.

The current service level can be maintained through preventative maintenance funding and capital funding for building rehabilitation and replacement as follows.

Capital Replacement

The Council approved Major Facilities Phase 1 projects represent over \$129.8M in capital investment for the replacement of Minoru Aquatics, Older Adults Centre, City Centre Community Centre, Fire Hall No. 1 and Fire Hall No. 3. On December 12, 2016, Council also approved Advanced Design and Planning funding to commence the Richmond Major Facilities Phase 2 program. This includes the replacement or expansion of the Richmond Animal Shelter, Richmond Lawn Bowling Club, City Centre Community Centre North, Steveston Community Centre and restoration of the remainder of Britannia Shipyards. The new facilities will provide medium term relief from the increasing cost of maintaining the old facilities and introduce service level improvements. Investing in the capital replacement of buildings is a key strategy for maintaining overall facility condition and addressing growing service level demands.

Capital Repair/Rehabilitation

In 2016, Council approved \$36.5M through the 5-Year capital program to complete major repairs and rehabilitation. The 2017 program for Capital and one-time expenditures includes approximately \$9.3M funding to complete major repairs and upgrades to City facilities. Staff will continue to prepare 5-Year capital programs with required levels of funding for Council consideration and approval.

Operating Maintenance and Minor Capital

Current facility infrastructure replacement, improvement and annual maintenance funding is approximately \$3.7M. Going forward, it is estimated that this level of funding would need to increase by approximately \$1M to keep pace with inflation and to maintain the current facility condition index score.

It is recommended that staff utilize the preceding analysis and information outlined in preparation of future operating and capital budgets with the objective of maintaining the current level of overall facility condition.

Financial Impact

None.

Conclusion

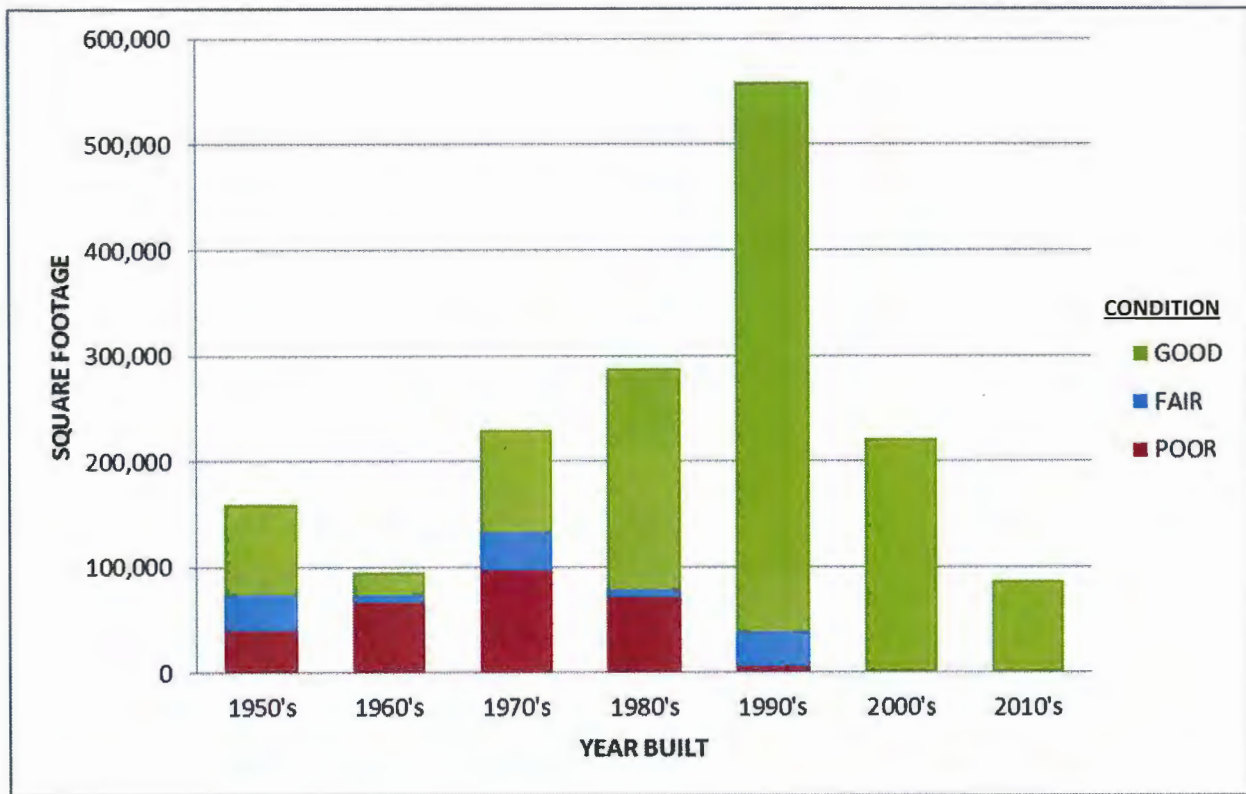
The City's building infrastructure is currently in good condition, however, due to age many buildings are anticipated to deteriorate at an accelerated rate. In order to maintain the current average facility condition and service levels, additional funding will be required through the City's operating and capital budgets.



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Att. 1: Ageing Infrastructure – Facilities

Ageing Infrastructure – Facilities (Current Status)



Ageing Infrastructure – Facilities (2018)

