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For Information Only

Community Safety Building Condition Assessment Presentation

Resolution

For Information Only

Relationship to the Strategic Plan / Health Impact Assessment

This report supports strategic initiative **1.** *Asset Management and Service Excellence Planning*.

Report Summary

This report is one in a series of reports that will be presented to Finance Committee to assist in understanding the sustainability of the Emergency Services stations including condition, as well as current and future operational impacts. The context of this report is intended to provide the Finance Committee with information regarding the condition of the City of Greater Sudbury's 24 Emergency Services Stations.

Financial Implications

There are no financial implications associated with this report.

Signed By

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1.0 OVERVIEW

The Community Safety Stations (Fire & EMS) portfolio is made up of twenty-four (24) single and two storey buildings with an average age of forty-six (46) years. The majority of the buildings have gross floor areas of less than 9,000 square feet (sf). The 2018 Building Condition Assessments (BCA's) performed by McIntosh Perry Limited (MPL) concluded that the majority of buildings share common conditional and functional deficiencies including:

- Limited site area to allow for expansion;
- Growing back log of required component repairs/replacements;
- Older building envelope components (windows, doors, sealants, roofing) that have surpassed or are approaching the end of their expected life cycle;
- Poor thermal efficiencies (building envelope and HVAC);
- Aging sanitary plumbing systems;
- Lack of direct capture exhaust systems for vehicles;
- Lack of HVAC monitoring/balancing;
- Small apparatus bays and shortage of sufficient storage areas for PPE;
- Little to no compliance to barrier-free regulations (parking, entrances, interior circulation, and washrooms);
- Little to no compliance to separate sex washrooms and locker rooms, etc.;
- Presence of designated substances (hazardous materials) in areas being renovated;
- Aging site and building infrastructure;
- Deteriorated hard landscaping components.

It is estimated at over the next ten years (2018 to 2027) that the anticipated total portfolio expenditures are in the range of $36 million dollars which is equivalent to the 2018 replacement value estimate for these buildings (refer to Section 6.0 Table). The primary reason is that engineered renovation costs to rectify the deficiencies are typically higher than new-builds. Costs will continue to increase as years pass, presuming a status quo position, as other components outside the 10-year window become added into the capital expenditure plan.

The underlying theme of the assessments is that the buildings require substantial renovation for compliance to current standards (*Ontario Building Code, Ontario Fire Code, NFPA 1 Uniform Fire Code, NFPA 1500 Standard on Fire Department Occupational Safety and Health Program and NFPA 1581 Standard on Fire Department Infection Control Program*) as well as bringing them into a state-of-good repair over the short term. This will aid in mitigating or eliminating deterioration of the assets and providing a safe working environment for the men and women who reside at these locations.

2.0 COMPANY PROFILE

McIntosh Perry is a national multi-disciplinary engineering and related professional services firm. We employ over 600 full time professional and technical staff members, operating throughout Ontario, Quebec, Alberta, and British Columbia. Our company assists projects from the conceptual design stage through to administration of construction contracts. Our work in civil engineering, administration and inspection services has earned us a reputation as a company with the ability to get things completed in a cost-effective and timely manner.

In October 2016, McIntosh Perry merged with CCI Group (CCIG, Kleinfeldt Consultants), a consulting engineering firm specializing in building science, structural engineering, and geotechnical engineering. In April 2017, OEL Projects Ltd., an Alberta based engineering firm that primarily provides services to the oil and gas industry, joined McIntosh Perry.

John Kirkpatrick heads the Corporate Projects Department with primary responsibility of leading and conducting building condition assessments and expenditure planning for large portfolio public and private sector clients. He has been in this role for thirty-four (34) years.

3.0 STATE-OF-GOOD REPAIR DEFINITION

State-of-Good Repair is defined as "*A condition in which the existing physical assets, both individually and as a system, are functioning as designed within their useful life's and are sustained through regular maintenance and replacement programs*." (Law Insider). In terms of buildings, this can be expanded to mean all items are in good condition and are compliant with all applicable standards, codes and guidelines and there is minimal backlog of capital repairs or replacements due. Simply stated, state-of-good repair means that the building systems and components are not extended unreasonably beyond the end of their expected life cycle, which may increase the risk of unexpected failure, service disruptions and/or liability.

4.0 COSTING

The 2018 BCA Reports prepared by MPL included a current replacement value (CRV) for each of the buildings. This was derived using the 2018 RS Means costing handbooks for the particular building type, adjusted for the City of Greater Sudbury locale. These are not appraisal values but are considered industry standard for developing replacement values. The cost per square foot ($/sf) ranged from $201/sf to $330/sf. These numbers are considered rudimentary and exclude site costs. The cost of fire stations is really dependent on the space needs of the fire department, the location and condition of the site and also any needed improvements. It is not uncommon to have cost per square feet rise well over the $330/sf threshold.

The anticipated capital expenditure costs are considered the estimated cost of replacing or providing major repairs to a component at current prices including factors such as demolition, disposal, material, labour and contractor's overhead and profit. The item excludes HST. This is the calculated dollar value (2018 dollars) to complete the described work based on quantity measurement and acceptable costs for various replacement, repair and renovation work. It is the single occurrence cost for the item and not the cumulative total over the 10-year period.

The cost basis is that work is being replaced/repaired with similar materials and not upgraded unless stated. The costs developed for this project are for renovation work as opposed to new work. When renovation occurs, additional costs are incurred for demolition and difficulty. Other times, not all components for the assembly would need repair/replacement. In these cases, reductions in cost usually are negated by other factors such as unforeseen conditions.

Costs were developed using 2018 RS Means Repair & Remodelling Cost Data, adjusted to a Sudbury index, with a 10% Design Contingency and a 20% General Contingency. In some cases, unit rates from RS Means cannot be easily applied. In this case, we have either applied allowances to cover for the repair/replacement based on our experience in similar situations or have unit rates that were derived from previous restoration projects of a similar nature, e.g. concrete repairs. Costs have been rounded up to the nearest $1,000. These are standard industry methods for deriving probable costs for replacements or repairs.

Opinions of probable costs are only to be construed as preliminary budgets. As defined in the *ASTM E-2018-01 Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process, "Opinions of probable costs should only be construed as preliminary budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, Quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing of work (if applicable), quality of contractor, quality of project management exercised, market conditions and whether competitive pricing is solicited, etc."*

All probable cost estimates provided are based on the American Society of Testing and Materials (ASTM) Standard E-2516 for Class 5 type and are not to be considered quotations. This is a high level estimate based on a conceptual design or replacing like with like with no upgrades. Designs and specifications are to be prepared prior to obtaining quotations for most work.

Class	Description	Purpose	Method	Level of Project Definition	Expected Estimate Accuracy
5	Indicative/ Conceptual	Screening/ Feasibility	Historical Info/ Judgment	0% - 2%	-30% - +50%
4	Feasibility/ OOM	Concept Study or Feasibility	Parametric Ratios	1% - 15%	-20% - +30%
3	Preliminary	Budget Authorization/ Control -**NB***	Equipment/ Factored/ Semi-detailed	10% - 40%	-15% - +20%
2	Definitive	Control or Bid/ Tender	Detail - Quantity Based	30% - 70%	-10% - +15%
1	Pre-tender	Check Estimate/ Bid - **NB***	Detail - Quantity & Full Spec Based	50% - 100%	-5% - +10%

5.0 BUILDING CONDITION ASSESSMENT PROCESS

The building condition assessment process generally follows *ASTM E-2018-01 Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process.* In summary, this includes:

Review of Historical Documentation – request and review all available documentation including construction, as-built, and renovation drawings, past BCAs, roof reports, designated substance surveys/asbestos surveys, etc.

Questionnaire – requested prior to the site visits for each facility to document past work, current concerns, and upcoming work.

Site Visit – Walk-through of all accessible building and sites areas, look above ceiling tiles and behind access panels and hatched in random locations, assess roofs where accessible by roof hatch or ladder or assess from grade, record measurements of handrails, guards, door widths, washroom accessories, photograph all accessible components, record model and serial numbers of equipment.

Analysis – All data (quantity, year installed, description, etc.) is entered into the spreadsheet template and summarized in the front end report. All components are rated as good, fair, poor or very poor (as defined below) based on their visual condition, observed or reported defects, and estimated life. Estimating the age (in years) of the building element, from date of installation or date of major repair, if it is known from data plates or work orders .In most instances the actual age of a repair or the date of installation is unknown due to the change in process of paper based archived storage versus computerized work tracking methods, and a reasonable age estimate has been provided by MPL.

Good Condition	Minor defects, superficial wear and tear, some deterioration to finishes, major maintenance not required, and not requiring capital expenditure.
Fair Condition	Average condition, significant defects are evident, worn finishes require maintenance, services are functional but need attention, likely to become “poor” within a few years if not addressed.
Poor Condition	Badly deteriorated, potential structural problems, inferior appearance, major defects, components fail frequently, observable deterioration requiring capital repair and the component failing
Very Poor Condition	Building or component has failed, not operational, not viable, and unfit for occupancy or normal use, environmental/contamination/pollution issues exist.

All capital requirements are given Priority Ranking as defined by the City of Greater Sudbury:

Must (10)	Fire Safety, Life, OHS, address dangerous situations.
Critical (9)	Legislated, health and welfare.
Urgent (8)	Items that threaten the operation of the facility/shutdown, loss of service, etc.
Essential (7)	Projects that are not urgent but cannot be postponed due to building integrity.
Necessary (6)	Barrier free access related items and commitments from previous years as warranted as public need.
Highly Desirable (5)	Energy conservation, projects for external funding is available.
Strategic (4)	Items that have worn out, are of high maintenance cost and requires replacement to prevent costly further repair.
Enhancement (3)	Modification, addition, renovation to improve operational needs of facility.
Aesthetic (2)	Items that are an aesthetic nature (painting, landscaping, asphalt).
Deferrable (1)	Items that are in working order but have surpassed their useful life expectancy. Projects that can be postponed with detriment effect to present operation.

6.0 BCA SUMMARY TABLE

BUILDING CONDITION ASSESSMENT SUMMARY					
Location	**Year Constructed**	**Age (Years)**	**Square Feet**	**Estimated Replacement Cost (2018)**	**Estimated 10 Year Capital Requirements**
Capreol EMS Station	1958	62	7,487	$1,978,000	$1,286,574
Van Horne	1975	45	18,000	$4,600,000	$4,755,400
Minnow Lake	1981	39	5,862	$1,610,000	$1,471,990
New Sudbury (Leon Street)	1974	46	5,000	$1,351,250	$1,578,210
Long Lake	1976	44	6,762	$2,029,750	$1,569,750
Copper Cliff	1973	47	3,511	$845,250	$1,346,899
Waters/Black Lake	1969	51	6,970	$1,725,000	$1,560,553
Lively	1953	67	2,065	$506,000	$840,593
Whitefish	1965	55	6,332	$1,512,250	$1,613,950
Beaver Lake	1977	43	2,768	$690,000	$1,376,700
Azilda (LEL)	2006	14	11,486	$2,875,000	$983,870
Chelmsford	1970	50	13,651	$3,243,000	$1,631,890
Dowling	1965	55	4,992	$1,265,000	$1,350,668
Vermillion	1974	46	1,331	$362,250	$819,910
Levack	1971	49	3,740	$951,050	$1,156,691
Val Caron	1985	35	4,092	$1,035,000	$974,805
Val Therese	1993	27	8,480	$1,960,750	$1,439,458
Hanmer	1958	62	3,036	$805,000	$1,511,511
Capreol	1983	37	10,495	$2,426,500	$1,882,920
Garson	1955	65	6,400	$1,776,750	$1,709,923
Falconbridge	1977	43	2,200	$586,500	$1,168,850
Skead	1979	41	2,255	$598,000	$1,150,240
Coniston	1985	35	2,000	$546,250	$1,165,528
Wahnapitae	1974	46	2,008	$546,250	$1,192,126
TOTAL				***$35,824,800***	***$35,539,009***

BACKGROUND

The City of Greater Sudbury has been working diligently towards the development of an asset management plan for its buildings and facilities to meet the requirement of *O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure* which also aligns with Council's strategic priority of Asset Management and Service Excellence.

The Long-Term Financial Plan prepared by KPMG in April 2017, estimates a 10-year building and facility need of $325M. The Asset Management Plan Water and Wastewater prepared by WSP professional services estimates an additional 10-year plant and facility need of $43.6M. These are estimates based on facility age in relation to expected useful life and do not account for the effect of maintenance programs or repairs. Detailed condition assessments, currently planned or underway, will produce updated information to inform adjustments to current estimates and help establish specific asset management plans.

Detailed condition assessments, which are the subject of this report, have now been completed for Emergency Services stations. These follow from a report presented to Emergency Services Committee in the fourth quarter of 2019. Additionally, value for money audits on Fire and Paramedic Services performed by the City's Auditor General and presented to Audit Committee in 2017 included recommendations regarding asset renewal requirements and building condition assessments for existing Emergency Services stations.

ASSET MANAGEMENT – BUILDINGS AND FACILITES ASSET CLASS

Buildings and facilities are utilized to deliver a multitude of services across the city. The municipality owns and operates approximately 550 buildings including 143 water and wastewater plants and facilities. There is an array of uses for municipal buildings including arenas, pools, ski chalets, field houses, libraries, museums, community centers, municipal offices, depots, garages, long-term care facilities, storage buildings, archives, fire and paramedic halls, water and wastewater treatment plants, lift stations and booster stations.

Building maintenance and asset renewal needs vary for each of these building types, but it is generally accepted that, for decades, maintenance programs and timely asset renewal investments have been insufficient to sustain the corporation's portfolio in a state of good repair. Investments are needed to restore building capacity and/or bring them into a state where they can help meet contemporary service levels in an efficient, sustainable manner.

In addition to the City's extensive facility portfolio, Greater Sudbury Housing owns an inventory of 280 facilities that comprise a portfolio of 1,848 social housing units and provide accommodation to approximately 4,300 community members. Condition information for the housing portfolio is documented in asset planning software and is undergoing a detailed review and update of the information to ensure that the timing and extent of asset renewal investments corresponds to the current conditions of the portfolio to make the most efficient use of limited financial resources

As of January 2020, consistent with a multi-year plan, the corporation has completed approximately 20% or 120 Building Condition Assessments. An additional 85 BCAs are anticipated to be completed in

2020 with the remainder to be completed by 2022. All water and wastewater facilities are anticipated to have BCAs completed by 2021. The major facilities will be addressed in 2020 with the remainder of water and wastewater facilities to be completed in 2021.

Committee will be familiar with detailed building condition analysis performed on each of our fifteen municipal arenas in 2018. This data was analyzed and used to provide recommendations to either continue with repair and maintenance to extend arena life cycle or to discontinue use and consider the construction of a new replacement facility.

DETAILED BUILDING CONDITION DATA IS ESSENTIAL

The most critical aspect of any asset management plan is the asset condition data. It is from this information that projections of asset life cycle and investment decisions are made. Commencing in 2018, the corporation issued a Request for Proposal for the provision of Building Condition Assessment (BCA) services for various CGS owned facilities. Building Condition Assessments are conducted by a licensed engineering firm and are used to identify and prioritize the current and future repairs and/or replacements of building components or systems.

Staff use these reports to inform capital budgeting recommendations and to guide maintenance activities. Standard practice for the revision of BCA data is at approximately 5 year intervals. This allows owner/operators to fully understand the effect of their investments over time as well as have a clear picture of the requirement for future investments to assist in ensuring the asset is sustained over time.

ASSET PLANNER – A NEW TOOL FOR STORING AND ANALYZING BUILDINGS AND FACILITES

The need for this data to be housed in a capital planning tool from which staff are able to view, analyze, project and report on investment decisions is of vital importance. Council approved the procurement of a capital planning tool via the 2020 budget that will be the data repository for the City portfolio. This database is scheduled to begin construction in June 2020 and will continue to add data and sophisticated analysis capability as the BCA project and asset management planning progresses. The system is called “Asset Planner” and is the same system used by Housing Operations to store, analyze and report on condition of social housing building and facilities.

BUILDING CONDITION ASSESSMENTS – EMERGENCY SERVICES STATIONS

The City of Greater Sudbury conducts emergency services (Fire and Paramedics) from 24 stations throughout the City. Emergency Services stations are designed to have useful lives of approximately 50 years. However, the useful lives of these stations can be extended with the proper treatments at the proper life-cycle intervals. Emergency Services stations are largely in the latter stages of their anticipated 50 year life cycle. Specifically, 2 are under 30 years, 14 are between 30 and 50 years and 8 stations exceed 50 years of age.

The BCA’s that were procured in 2018 for the data collection project were for the 24 emergency services stations. The successful proponent for the provision of BCA services in 2018 was McIntosh Perry

Consulting Engineers Ltd (MPCE). Prior to 2018, BCAs were completed on these stations in 2014. These facilities were selected for the initial BCA collection due to age, and existing concerns from capital planning and operational staff.

RESULTS OF BUILDING CONDITION ASSESSMENTS – EMERGENCY SERVICES STATIONS

MPCE completed their reviews and prepared BCA reports to provide information on the state of building components of the twenty-four (24) Emergency Service stations. The BCA reports identified repair/replacement requirements by criticality over a 10 year time period. The cost of these identified repairs/replacements have been estimated using an industry standard methodology known as "RS Means". This standard allows for Class 5 engineering estimates that are adjusted for regional pricing across North America. These BCAs anticipate the repair or replacement of existing/similar facilities but they do not anticipate any added functionality or capacity.

BCAs were completed on the emergency services stations in 2014 and in 2018. The 2014 reports identified required expenditures of approximately $17.1 million dollars over 10 years to bring the facilities to a state of good repair. By comparison, the results of the 2018 BCA's for the 24 Emergency Services stations identified 10 year required expenditures have increased to approximately $35.5 million dollars to bring the stations to a state of good repair.

The anticipated 10 year capital investment of $35.5 million for the Emergency Service stations is approximately equivalent to the overall replacement value of these stations which is estimated at $35.8 million. Therefore, when evaluating capital investment decisions for Emergency Services stations, it will be important to consider long-term implications of alternatives. For example, the choice to renew an existing building may have approximately the same cost as a new replacement, but features offered by the new replacement may not be available in a renewed, existing building.

Appendix A to this report is a summary of the BCA's provided by MPCE and include additional data and information on the firm, methodology and results by station.

SUMMARY

Asset management planning for buildings and facilities is progressing at a rate that will allow the City to meet or exceed the provincial deadlines for asset management plans. Condition data has been produced for approximately 20% of the corporation's buildings and facilities. The information included in this report about Emergency Services stations is part of that effort.

Staff are also implementing a digital planning tool that supports a consistent understanding about the overall needs for this asset class. The building condition assessments conducted on the 24 Emergency Services stations in 2018 have yielded a 10 year capital investment requirement of approximately $35 million. This approximates the replacement value of these structures.

Committee can expect further reports that incorporate the insights provided by such condition information to inform future choices about asset renewal or replacement.