EDMONTON PUBLIC SCHOOLS

Recommendation Report

DATE: May 14, 2024

TO: Board of Trustees

FROM: Darrel Robertson, Superintendent of Schools

SUBJECT: Centre for Education Capital Plan

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REFERENCE: Division Energy and Environmental Strategy (2023–2026)

ISSUE

The Centre for Education (CFE) has reached 41 years of age and several key building components and systems have reached end-of-life and require renewal at a cumulative cost of approximately $16–19 million. In order to best address the condition of the facility and systems, a CFE Capital Plan has been created to identify projects that will need to be undertaken over the coming years (Attachment I). These projects include maintenance, technology upgrades, renovations, accessibility improvements, and energy efficiency improvements. This report proposes possible approaches to addressing the near-term and long-term needs of the CFE.

BACKGROUND

Ongoing aging of CFE infrastructure has contributed to a backlog of deferred maintenance while the evolution of technological standards has resulted in obsolescence of some building and IT systems and components. As the wear on the building and its essential systems becomes increasingly apparent, it is prudent to engage in a comprehensive assessment of the capital upgrades necessary to rejuvenate and sustain the structural integrity, functionality and safety of the building. Project engineering assessments, scoping and design work will be required to inform substantive costing; however, rough order costing estimates provide insight into the approximate investment required.

There are three specific project areas to highlight from the Capital Plan, as these projects will need to be addressed in the near term (ideally within four years, if and as Division finances allow), are interconnected, and will require a significant financial investment and public procurement process.

Division Technology

Many of the key infrastructure components of the Division's data centre (located within the CFE) are approaching end-of-life in the next two years and will require replacement or retrofit. These include the emergency battery backups, the cooling systems, the raised flooring and the fire suppression system. Each of these are significant components that require specialized skills to affect the replacements or retrofits, have an impact on the life safety systems within the CFE (e.g., emergency generator) and interface with the building's fire alarm controls. Engineering design, procurement and project planning will take considerable time and external expertise. The Division's data centre is a hub that interconnects all schools and Division sites. In the event one of these systems fails, the resulting impact on the Division

would range from reduced services to a full data centre and network outage for multiple days. In the latter scenario, schools would be without internet access, including a loss of access to Google Workspace, and school phone systems would not work. The rough costing estimate for this project is $4–5 million. The lifespan of structural components within a newly constructed data centre would be approximately 20–30 years, whereas electronic and mechanical components might have a life span of 10–15 years, depending on the system and technology obsolescence patterns.

Centre for Education Physical Plant

Roofing structure:

The majority of the insulated roof membrane assembly at the CFE is from original construction. The expected serviceable life of this style of roof at time of installation was 30 years, almost twice the 16 year life expectancy of conventional roofing systems. To date, with the exception of some repairs to specific areas, it has remained untouched. A visual inspection in 2020 identified that, although the roof appears to be generally in good condition, some areas of the roof are starting to deteriorate and more is likely to occur as we continue to exceed the expected serviceable life. The changes in weather conditions in Edmonton have increased the freeze and thaw cycles that the structure is subjected to and there has been additional impact with increased temperatures in the summer months. These factors, combined with the age of the roof, increase the risk of material damage and leaks (the building has already experienced leaks in certain areas). A rough costing estimate for this project is $1.2–2 million. The anticipated lifecycle of a roofing structure replacement would be 40 years.

Electrical system:

When the CFE was constructed, the use of electronic devices was a fraction of what is used today. The electrical system at the CFE has been modified, expanded and upgraded over the life of the building to address some of the growing needs of the organization. In addition to increasing demand on the system from the use of electronic devices, areas identified as requiring additional attention include:

- Expansion of shared office space power needs (*Edmonton Fire Rescue inspection June 2021*).
- Currently, the data centre is connected to the same emergency power generator as the life safety systems; any future work done to either system would require a division between the two (*2021 Canadian Electrical Code, Part I, Section 46 – Emergency power supply, unit equipment, exit signs, and life safety systems*).
- Anticipated future needs of the building to support green initiatives and the replacement of system components that are approaching their expected serviceable life.

The rough costing estimate for this project is $100,000. Pending no substantial changes to the current electrical or fire codes, the proposed upgrades should provide the necessary requirements for a minimum of 10–15 years.

Water mitigation:

Engineers performed a condition assessment of the CFE exterior plaza deck structure with the intent to review the locations of excessive active water leakage over the past few years in the parkade and sub-level floor of the building, which was constructed in approximately 1982. The assessment included identification of any damage, corrosion-related deterioration and recommendations and probable costs for any structural repairs, waterproofing or protection measures considered necessary throughout the areas of the plaza. An assessment of the drainage system, which is considered to affect the performance and protection of the concrete structure, was also conducted.

The assessment concluded that the plaza deck generally appears to be in good condition; however, concerns with the condition of the membrane below the east staircase due to water staining and leakage suggest that some areas of the membrane are not performing well and will require replacement in the near to mid-term. Test excavations also identified that the assembly did not include a lower level drainage grid, allowing water to pond directly against the membrane and insulation. The waterproofing membrane appears to be from original construction and is, therefore, approximately 41 years old at this time. Removal and replacement of the waterproof membrane assembly, including overburden materials and associated components, are recommended at the concrete staircase topping areas to suitably protect the underlying suspended reinforced concrete structure from further water ingress and concrete delamination. The rough costing estimate for this project is $2.8 million. The water mitigation assessment provided by the engineers was conducted with the objective of providing ongoing protection for the building's foundation and subgrade structure for its remaining operational life.

Division Security Monitoring

Currently, the Division's security monitoring station is located on the fourth floor of the CFE. Division security staff monitor Division buildings for fire, intrusion and mechanical alarms. The current monitoring station does not meet the code requirements outlined in the *Standards Council of Canada – CAN/ULC-S561-03 and -13*. Specific to fire alarm monitoring, electrical code requires that fire alarm monitoring is done by Underwriter Liability Certificated (ULC) compliant companies. As a result, any new school construction or building alarm upgrades can no longer be monitored by Edmonton Public Schools security staff and must be outsourced. Current security staff continue to monitor schools for intrusion and mechanical alarms, which results in duplication of service. This additional service costs the Division on average $100 per month per site. Currently, we have 22 schools using external monitoring, realizing a cost of approximately $2,200 per month or $26,000 per year to the Division. This cost will continue to increase through the addition of new buildings and when new fire alarm systems are installed. The estimated cost to make the security monitoring station ULC compliant would need to be assessed.

Other Projects

Projects identified in the CFE Capital Plan that could be addressed in the longer term (recommended within eight years, if and as Division finances allow) include:

- Building envelope (exterior windows, balcony structure and membranes, architectural panels and insulation) renewal totalling an estimated $2.7 million. The anticipated minimum lifecycle of this work would be 40 years.
- Installation of permanent universal washroom facilities totalling an estimated $2.5 million. This project would have a life cycle until the building's end-of-life assuming there are no significant changes to code or requirements for washroom facilities into the future.
- Interior lighting upgrades (potentially accelerated via energy and environment strategy LED conversion investments) totalling an estimated $625,000. The average expected lifespan for current LED bulb technology is five years.
    - LED conversions represent a potential savings of 30 per cent in energy efficiency, and LED lighting has four times the lifespan (50,000 hours) of conventional fluorescent tubes (12,000 hours) for less than twice the price, with no hazardous material fee at end of life.
- Upgrading to a dedicated, mechanically-ventilated indoor multi-faith prayer, reflection and smudging space, at a rough order cost of $200,000, potentially facilitated by and in conjunction with the move of the data centre and/or security monitoring spaces.

RELATED FACTS

- The CFE remains an ideal, purpose-built, centrally-located headquarters, Board chambers and conference facility and is assumed to remain the Division's preferred administrative headquarters location into the future. Its location on Division-owned land and physical attachment to Victoria School further support this assumption.
- The CFE is now 41 years old and several key building components and systems have reached end of life and require renewal at a cumulative estimated cost of approximately $16 million, inclusive of approximately 15 per cent in contingency. Inflation and cost escalation over a period of several years could bring this total closer to an estimated $19 million.
- Reviewing capital infrastructure and information technology projects together provides opportunities for savings related to the engineering assessments and building modifications required to upgrade mechanical, structural, electrical, fire suppression and security systems.
- Division security monitoring and the Division's data centre are both located in the CFE. The existing spaces within which these units are located do not meet contemporary specifications or business operations requirements and may restrict upgrading options. Administration recommends a comprehensive review leading to the design and construction of a new security monitoring station and a new data centre at the CFE.
- There can be long lead times on the delivery of components required for building and technology upgrades; for example, there is a two-year lead time on some components required for a data centre upgrade.
- The CFE remains in generally good condition and, with proper maintenance and upkeep, is anticipated to last several more decades. As with any aging facility, maintenance and renewal costs will rise in step with facility age and usage.
- Other options may exist if additional investment into the CFE is not attainable. The Division may consider leasing options or the purchase, construction and/or upfit of another suitable facility elsewhere. Exploration and business case development related to these other options would need to be initiated; however, it is not anticipated that a more affordable long-term option will present itself.
- As the CFE is an administrative facility, it remains ineligible for provincial maintenance and renewal (IMR/CMR) funding; however, may be supported by accessing system administration (operational funding) or the accumulated system administration reserve funds within the Division's accumulated operating surplus.
    - Given the ongoing depletion of Division reserve funds due to enrolment growth, the weighted moving average funding formula, and the requirement to absorb recent inflationary pressures without offsetting increases in provincial grant rates, Administration is appealing to the Province to consider the possibility of allowing the use of maintenance and renewal funds.
    - As provincial maintenance and renewal funding remains insufficient to address the Division's growing deferred maintenance liability, which will surpass $1 billion this school year, CFE priorities—were they to become eligible—would need to be carefully weighed against maintenance priorities across all Division facilities.

RECOMMENDATION

That the Board of Trustees grant approval to Division Administration to move forward with addressing the most pressing CFE capital needs (Years 1–4, approximately $8.5 million).

OPTIONS

Based on the information provided in this report, the following options are considered most appropriate:

1. Proceed with the recommendation (above) to address the most pressing CFE capital needs (Years 1–4, approximately $8.5 million) via a phased project supported by an approved funding envelope.

   This option would include only the urgent, near-term projects within the CFE Capital Plan, while deferring the decision to invest in less urgent projects. This option would require confirmation of financial support upfront in order to ensure that multi-year design and procurement efforts can be fully supported over the course of the phased project.

2. Address all identified CFE capital needs (Years 1–8, approximately $16 million) via a phased project supported by an approved funding envelope.

   This option would include all projects amenable to the Board identified within the CFE Capital Plan. Projects would be bundled where feasible, phased appropriately to realize financial and project efficiencies, and staged where appropriate to ensure minimal disruption to staff and visitors. Including all forecasted needs per this option would likely generate additional efficiencies through broader bundling of projects and through cost avoidance related to inflation and cost escalation over a number of years. This option also requires an upfront confirmation of financial support in order to ensure that multi-year design and procurement efforts can proceed.

Once a total phased project funding envelope covering multiple years has been approved, Administration can work to align project timelines and cash flows with annual budget and surplus projections, and bring forward requests to access accumulated surplus if and as necessary. Regardless of the option selected, Administration will provide regular progress reports to the Board, communicate and seek approval on project cash flow projections through the annual budget cycle, and present options for the Board's consideration should it become necessary to make adjustments due to a shift in priorities or financial circumstances.

CONSIDERATIONS and ANALYSIS

Environmental Considerations

Included within the *Division Energy and Environmental Strategy (2023–2026)* is a strategy for reducing the Division's carbon footprint and meeting our greenhouse gas emissions reductions targets of five per cent by 2025 and 45 per cent by 2035. By updating systems within the CFE, there is a potential to reduce the Division's carbon footprint. For example, upon preliminary review, by relocating the data centre to the first floor of the CFE, in addition to precluding structural concerns related to the weight of new uninterrupted power supply (UPS) batteries, there may be an opportunity to review air conditioning requirements and potentially find alternative use for residual warm air to be recycled into the building. Other examples would include the efficiencies gained by improving the insulating properties of the building envelope (roof, cladding, insulation and windows), LED lighting conversions, and potentially additional solar capacity. An ongoing environmental lens will be applied for each project, supported by the Division's EnviroMatters office.

All studies and reports procured to move forward with facility upgrades will provide information on the environmental opportunities and cost savings that can be achieved through undertaking these projects. Though difficult to predict with accuracy prior to commissioning the detailed engineering analyses that will inform designs and material/component selection, the combination of all building envelope and

component/system modernization measures included within the CFE Capital Plan are expected to result in a substantial improvement to building performance and occupancy comfort.

Financial

This recommended approach includes planning to complete all priority projects within the CFE Capital Plan. Projects would be bundled where feasible and phased appropriately to realize financial and project efficiencies. Confirmation of financial support will ensure that design and procurement efforts are fully supported. Administration will work to align project timelines and cash flows with annual budget and surplus projections and bring forward requests to access accumulated surplus if and as necessary.

Out of the annual operating funding received from the Government of Alberta, a portion (3.20 per cent as of 2023–2024) is targeted for board and system administration activities. A division is not allowed to spend more than the allocation on system administration activities; however, if a division spends less than the available funds, the surplus can be directed into an internally restricted reserve within the total accumulated operating reserve for use in future years. The 2022–2023 year-end financial statements reflect a total of $6.1 million in the system administration operating reserve.

Depending on the nature of the work being done, the charge could either be expensed in the current year (general repairs and maintenance), or if the work results in a longer term improvement, the expense might be capitalized and depreciated over the life of the building. Also, depending on the nature of the work (in terms of what the improvement will be supporting), a portion of or all of the work may be considered instructional and not necessarily 100 per cent system administration; this will also impact where the funds can be drawn from.

The integrated project approach presents design, procurement and construction efficiencies and likely represent savings as compared to multiple smaller projects/bundles, particularly where specific building systems are impacted by more than one project (for example—the data centre, security monitoring and facility lighting projects all interface with the building electrical system). Paths that contemplate smaller, discrete projects or project bundles provide additional opportunities to review and approve projects and to consider year-over-year funding opportunities; however, also introduce delays and inefficiencies related to recurring project management/overhead, engineering, design and construction work, and procurement activities.

Even though the recommendation is to proceed with approving an overall funding envelope, Trustees will approve annual allocations and the progression of this work every year through the Division budgeting process. This will allow a staged approach to continuing with work should the fiscal realities of the Division change over the coming years. This approach will also prevent binding future boards to fiscal commitments should a change in approach be required.

Financial Assurance

Consistent with the Division's commitment to responsible fiscal management and long-standing competitive procurement processes that seek best value and lowest costs, Administration will work with project consultants to explore and fully cost all feasible solutions, implementing the most economical solutions that meet the Division's needs while respecting the Division's overall challenging financial circumstances. Where possible, contracts will incorporate project staging and workflow approval measures, effectively "on ramps" and "off ramps," that afford flexibility to accelerate or delay work in response to annual fiscal realities.

Through the annual Division budgeting process, the Board will be presented with opportunities to approve or defer planned project work prior to entering into large value or multi-year financial commitments, and Administration will report annually on project progress through the annual financial audit process.

Bundling of Project Management and Contracts

Project bundling provides a comprehensive delivery solution for addressing the capital needs of the CFE. When projects are bundled there are opportunities to streamline the design process, contracting and construction. It would allow the Division to capitalize on economies of scale to increase efficiency and support greater collaboration during project delivery and construction. Bundling would also provide the opportunity for consistency in the application of an environmental and accessibility lens on all CFE projects.

Accessibility

Building accessibility will be contemplated as part of the larger project design process. Elements that could be included within projects to enhance accessibility with the CFE may include physical modifications such as improved wheelchair accessibility. Technological improvements may also be contemplated, for example, exploring ways to accommodate staff and visitors with hearing impairments (e.g., visual alarms).

Upgrading the existing indoor multi-faith space to a larger, mechanically-ventilated multi-faith prayer, reflection and smudging space would better support Division strategic plan priorities while precluding the potential impacts of scent and smoke that can infiltrate other workspaces.

Alternative Working Arrangements

The Division currently offers a hybrid work option for a number of employees who work out of the CFE. There are currently 552 staff who are assigned to the CFE as their primary work location; the average daily occupancy of the building is 367 people, or 66 per cent of total capacity, which can fluctuate between 81 per cent (Mondays) and 43 per cent (Thursdays). These numbers do not include additional occupancy from the utilization of the conference centre. The hybrid work option has helped to mitigate potential space pressures at the CFE. As enrolment in the Division continues to grow and potential supports for schools increase, the hybrid work model will help enable the Division to manage the demands for space at the CFE.

Potential Disruptions and Impacts on Staff

Projects will be strategically planned and staged to ensure minimal disruption to staff. This may include engaging in projects over time periods where there are minimal staff working in the building. Typically, larger scale projects that have occurred in the CFE in the past have occurred over the summer and during Division operational breaks. An alternative workplace plan will be developed if staff are unable to be on site during construction. This may include relocating staff to other areas of the building, exploring alternate sites if required, or utilizing the hybrid work model.

Communication

Communications will be engaged to build a strategic communications plan to support CFE projects. Information will include any potential displacements, project updates and any other relevant communications. This work will commence when project details and timelines are determined.

NEXT STEPS

Upon Board approval of the above recommendation, Division Administration will proceed with including this initiative in the 2024–2025 Budget, starting with a request to access System Administration surplus funds of $365,000 to enable the proposed 0 to 1 Year project work (Attachment I).

ATTACHMENTS

ATTACHMENT I Centre for Education Capital Plan

LF:jl

CFE Capital Plan				2023–2024 Rankings
Ranking	**Project Name**	**Justification/Risk**	**Cost Source**	**Cost Estimate**
0 to 1 Year – $365,000				
1	Water Infiltration – Phase I	Immediate steps to preclude further damage to foundation.	Engineer Rough Order of Magnitude (ROM)	$115,000
2	Feasibility Study – Relocating Data Centre to First Floor	Supports upgrade of Data Centre infrastructure to avoid end of life (EOL) and risk of service outage. Ground level location advantageous for structural and HVAC requirements. Determine feasibility and costing. Consider options for a dedicated, mechanically-ventilated smudging space.	Market rates	$100,000
3	Data Centre UPS Upgrade – Phase 1 – Electrical Study	Determine if any recabling to the emergency circuit is required with UPS replacement.	Market rates	$50,000
4	Relocate Data Centre Fibre Connection Termination Point	To accommodate renovations and equipment relocation, the fibre termination points will need to be relocated within existing space (regardless of final Data Centre location).	Experience	$100,000

CFE Capital Plan				2023–2024 Rankings
Ranking	**Project Name**	**Justification/Risk**	**Cost Source**	**Cost Estimate**
1 to 3 Years – $5,730,000				
5	Roof Repair and Replacement	Roof design life was 30 years; roof is now 41 years old and has reached end of life.	Previous quotes	$1,200,000
6	Water Infiltration – Phase 2	Near-term remediation to concrete plaza and foundation.	Engineer ROM	$700,000
7	Carpet/Flooring Replacement	Current carpet is no longer available; some areas are extremely worn.	Previous Work Request cost	$1,500,000
8	Data Centre Floor Replacement – Phase 1 – Design/Structural	Structural considerations related to the weight of UPS battery systems and other equipment. Server and network racks, cabling, etc.	Estimates	$450,000
9	Data Centre UPS Upgrade – Phase 2 – Installation/Configuration	Current UPS end of life is Dec 2024. Parts are no longer available. Limited serviceability and higher risk of outage.	Engineering ROM	$600,000
10	Data Centre AC Replacement – Phase 1 – Study and RFP	Due to long lead time on equipment, necessary to run this process to determine schedule and cost.	Engineering ROM	$25,000
11	Data Centre Floor Replacement – Phase 2 – Replace Flooring	The current flooring is becoming unstable, and replacement tiles are no longer available. To support equipment, a suitable floor structure is required. Also ties into structural aspects of UPS and AC projects.	Engineering ROM	$205,000

CFE Capital Plan				2023–2024 Rankings
Ranking	**Project Name**	**Justification/Risk**	**Cost Source**	**Cost Estimate**
12	Data Centre Fire Suppression System – Phase 1 – Study/RFP	Study to identify the most effective solution (gas vs. water, etc.) to meet latest Fire Code requirements.	Market rates	$50,000
13	Data Centre Fire Suppression System – Phase 2 – Replacement	Once flooring is replaced, the fire suppression system project can advance. A study is required to determine scope and size as well as current suppression technology.	Engineering ROM	$400,000
14	Data Centre AC Replacement – Phase 2 – Replace South Unit	Data Centre AC units have a service life of 15-20 years depending on use. Current units are 15 years old as of 2023. Delivery timeframes have been suggested to be upwards of two years.	Engineering ROM	$400,000
15	Multi-faith Space – Mechanical Ventilation	Mechanically-ventilated, purpose-built multi-faith prayer, reflection and smudging space.	Estimate	$200,000
3 to 4 Years – $2,400,000				
16	Parkade Membrane and Joint Replacement	Prevent further damage to concrete and rusting of joints.	Previous quotes	$400,000
17	Water Infiltration – Phase 3	Full remediation of concrete plaza.	Engineer ROM	$1,600,000
18	Electrical System Upgrades	Power availability for expansion.	Previous quotes	$100,000

CFE Capital Plan				2023–2024 Rankings
Ranking	**Project Name**	**Justification/Risk**	**Cost Source**	**Cost Estimate**
19	Data Centre AC Replacement – Phase 3 – Replace North Unit	Data Centre AC units have a service life of 15–20 years depending on use. Current units are 15 years old as of 2023. Delivery timeframes have been suggested to be upwards of two years.	Engineering ROM	$300,000
5 to 8 Years – $5,825,000				
20	Replace all Fluorescent Lights as Wireless Dimmable LEDs	Energy efficiency and longevity. Fluorescent bulbs are being phased out.	Market rates	$625,000
21	Exterior Window Repair/Replacement	Seal failures on windows. No thermal properties. Energy efficiency.	Previous Work Request cost	$500,000
22	Universal Washroom Facilities	Fixtures and fittings are dated. Would provide for a more inclusive building.	Previous quotes	$2,500,000
23	Balcony Repair and Replace	Same reverse roof design as plaza. Concrete is deteriorating.	Previous quotes	$700,000
24	Architectural Panel and Insulation Replacement/Repair	Insulation is deteriorating. No thermal properties. Energy efficiency.	Estimate only	$1,500,000
Sub-total – $14.3 million		**Total (with contingency and potential escalation) – $16–19 million**		