



REPORT TO

CORPORATE SERVICES, STRATEGIC
PLANNING AND PROPERTY
COMMITTEE

COOLING STRATEGY STATUS UPDATE 2023

*"I can do all things through HIM who strengthens me."
Philippians 4:13 (NRSVCE)*

Drafted

May 24, 2023

Meeting Date

June 8, 2023

M. Iafrate, Senior Coordinator, Asset Renewal

C. Bologna, Senior Coordinator, Innovation & Service Delivery

M. Zlomislic, Superintendent of Capital Development, Asset Management & Renewal

M. Farrell, Superintendent of Environmental Support Services

INFORMATION REPORT

Vision: *IN GOD'S IMAGE: Growing in
Knowledge, with Justice and Hope.*

Mission: *Nurturing the faith development and academic
excellence of our Catholic learning community through the
love of God, neighbour, and self.*



MULTI-YEAR STRATEGIC PLAN
2022 - 2025

IN GOD'S IMAGE: Growing in Knowledge, with Justice and Hope



Brendan Browne
Director of Education

Adrian Della Mora
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Derek Boyce
Associate Director of Corporate
Services and Chief Commercial Officer

Ryan Putnam
Chief Financial Officer and Treasurer

A. EXECUTIVE SUMMARY

Further to the Cooling Strategy report approved at the May 9, 2019, Corporate Services meeting, this report provides an update on the status of various initiatives undertaken by the facilities departments (Capital, Asset Management & Renewal and Environmental Support Services) to address the comfort of students and staff during hot weather.

The cumulative staff time required to prepare this report was 13 hours.

B. PURPOSE

To update Trustees on the various cooling strategies that are currently under review, implemented, or in the process of implementation in non-air-conditioned schools.

C. BACKGROUND

1. ***Currently, there are 38 schools with full air conditioning, and 134 with partial air conditioning,*** which includes 93 completed cooling centres up to the end of phase 3. The remaining 35 schools with no air conditioning are being addressed using various strategies to address extreme heat during the shoulder season. They will be receiving cooling centres in phase 4 or as part of Capital projects. Refer to Appendices A and B.
2. ***On May 9, 2019, a report on Cooling Strategy Status (All Wards) was presented to Corporate Services, Strategic Planning and Property Committee.*** This strategy recommended the installation of a “cooling centre” in either the gymnasium or the library, subject to the building configuration. This would allow students to be rotated through the cooling centre throughout the school day to mitigate extreme heat and humidity conditions within the school classrooms.
3. ***The recommendation that “the Board of Trustees endorse the cooling strategy outlined...” was approved.*** The 2019-2020 Renewal Plan was presented at Corporate Services, which included the approval of a budget for the Cooling Centre implementation of the remaining Phase 1 and the Phase 2 schools.
4. ***On January 14, 2021, the 2020-2021 Renewal Plan was approved at Corporate Services and included a budget for 23 schools in Phase 3 of cooling centres, valued at \$3.06M.*** An additional 15 cooling centre projects were approved as part of the Capital childcare retrofit projects, for an additional \$1.95M.

5. ***Phases 1, 2 and 3 of the Cooling Centre Program representing a total of 92 school are either now complete or in the final handover stage.*** The final stage, Phase 4, including 23 Schools, is currently in design, with completion anticipated in early 2024.

D. EVIDENCE/RESEARCH/ANALYSIS

1. Ventilation vs. Air Conditioning

There is a distinct difference between “ventilation” and “air conditioning”. Ventilation is the process of removing stale air from a building and replacing it with fresh air from outside and distributing the air within the building or room to provide a healthy and safe environment for occupants. Ventilation can be provided through mechanical (exhaust fans), natural (open windows), or hybrid means. Ventilation on its own does not provide air conditioning.

Air-conditioning (AC) is the process used to cool recirculated air and maintain a certain temperature in indoor spaces typically applied to maintain a level of personal comfort.

Newer buildings can be designed with ventilation systems that can be equipped with an AC function. These systems require additional equipment such as a chiller, which cools warm air passing over its coils for distribution through an insulated ductwork distribution throughout the school. This comes with additional capital costs.

Installing these types of air-conditioning systems in older schools would involve significant retrofitting of air-handling units, ceiling tile removal to insulate the existing ductwork, and would likely require a significant upgrading of the electrical power distribution in the buildings as well as abatement.

2. Initiatives to Provide Cooling in Non-Air-Conditioned Schools

a) Cooling Centres

Phase 1, consisting of 36 cooling centres, began with a pilot program of 9 schools, which was completed in the fall of 2019. The remaining schools were completed in the spring of 2021.

Phase 2, consisting of 30 cooling centres, commenced design in the spring of 2020, but was temporarily put on hold due to the onset of COVID 19. Phase 2 schools were substantially completed in the spring of 2023.

In 2020, the Government of Canada introduced COVID-19 Resilience Infrastructure Stream (CVRIS) Funding. This enabled the Board to receive funding to complete *Phase 3*, consisting of 22 schools. The work in Phase 3 was required to be completed in the summer of 2022 to meet the timelines prescribed by the CVRIS funding, resulting in their completion before Phase 2.

Phase 4, consisting of 23 schools, commenced design in February 2023 and will be fully completed in early 2024.

b) Fans

In 2019, pedestal fans were provided as part of a pilot project to eleven (11) three-storey schools that have no mechanical ventilation. The feedback reported has been varied, with some cooling effectiveness confirmed, but with concerns about noise and the blowing of papers around the classroom. Fans were not permitted during the COVID period due to concerns over virus distribution throughout the classroom.

c) Air Conditioning in Portables

Planning and the Capital Development, Asset Management & Renewal department (CDAMR) are following a plan to reduce the portable classroom inventory in the system over time. As Capital work is completed, staff are selling off older portables without AC, while keeping/purchasing newer portables with AC. For the 2023-2024 academic year, there are currently 287 portables in service, of which 70% are equipped with AC.

Following the completion of St. Leo, Holy Angels, St. Matthias, St. Fidelis, St. John Henry Newman CSS, and Bishop Allen Academy, it is anticipated that the Board's inventory will be reduced to 214 portable classrooms and 100% will be air conditioned.

d) Solar Window Film

Following a successful pilot installation at 2 schools, a budget of \$620,000 for solar reducing film was approved in the 2020-2021 Renewal Plan. Solar reducing film was successfully installed at 16 schools, targeting buildings with

no mechanical ventilation. This film reduced the transmission of solar heat into the classrooms through the windows.

e) Window Standard Changes

Board staff have continued to upgrade the Board's window specifications to include insulated glazing units with improved exterior tint and low E coating. This will dramatically reduce solar heat gain into the building during warm periods, resulting in cooler classrooms.

Furthermore, window units are now specified with an increased number of operable sections in each classroom. The operable sections are configured as either awning or hopper style to allow for maximum ventilation, within code requirements. Cooler air during the shoulder seasons can reduce the classroom temperature through natural ventilation.

f) Misting Stations

On May 4, 2023, the Board of Trustees approved a motion to pilot misting stations at one school in each Ward. Staff are currently researching various technologies and establishing a budget to be included in the upcoming 2023-2024 School Renewal Plan. Implementation of the pilot is anticipated in the spring of 2024.

E. METRICS AND ACCOUNTABILITY

1. Provide an update in Spring 2024, on the completion of Phase 4 Cooling Centre program.
2. Provide a misting station solution in Fall 2023, to pilot in each ward and implement in the Spring of 2024.

F. CONCLUDING STATEMENT

This report is for the information of the Board of Trustees.