

JANUARY 22, 2024

**WATERLOO REGION DISTRICT SCHOOL BOARD  
NOTICE AND AGENDA**

A Committee of the Whole meeting of the Waterloo Region District School Board will be held in the Boardroom, Building 2, 51 Ardelt Avenue, Kitchener, Ontario, on **Monday, January 22, 2024, at 7:00 p.m.**

**AGENDA**

**Call to Order**

**O Canada**

**Approval of Agenda**

**Celebrating Board Activities/Announcements**

**Declarations of Pecuniary Interest**

**Delegations**

Elaine Scharlach - Regulations for Attendees and Responses to Delegates  
David Todor - Transparency, Responsibility and Accountability at WRDSB  
Amanda Abdo - Carbon Dioxide (CO<sub>2</sub>) Monitoring  
Ryan Tennant - Carbon Dioxide (CO<sub>2</sub>) Monitoring Pilot  
Carolyn Bowman - Carbon Dioxide (CO<sub>2</sub>) Monitoring Pilot

**Staff Follow Up**

**Policy and Governance**

**Reports**

|    |   |                                 |
|----|---|---------------------------------|
| 01 | Development Area Annual Report 2023-2024        | L. Agar                         |
| 03 | Major Capital Projects Quarterly Update         | R. Dallan                       |
| 06 | 2023-2024 Interim Financial Report and Forecast | N. Landry                       |
| 19 | COVID Ventilation Measures at the WRDSB         | G. Shantz / R. Dallan / L. Lima |
| 23 | CO <sub>2</sub> Sensor Feasibility Study Update | G. Shantz / R. Dallan / L. Lima |

**Board Reports**

**Question Period** (*10 minutes*)

**Future Agenda Items** (*Notices of Motion to be referred to Agenda Development Committee*)

**Adjournment**

Questions relating to this agenda should be directed to  
Stephanie Reidel, Manager of Corporate Services  
519-570-0003, ext. 4336, or [Stephanie\\_Reidel@wrdsb.ca](mailto:Stephanie_Reidel@wrdsb.ca)



# Report to Committee of the Whole

January 22, 2024

## **Subject: Development Area Annual Report 2023-2024**

### **Recommendation**

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

*There are no proposed changes to Development Areas (DAs) assignments for the 2024-2025 school year.*

### **Status**

[Administrative Procedure 4992 - Temporary Student Accommodation for Development Areas \(AP 4992\)](#) directs establishing, assigning, reassigning and dissolving Development Areas within the Waterloo Region District School Board (WRDSB). A Development Area (DA) is a geographically defined area, typically inclusive of future or proposed growth and development, removed from an existing school boundary and assigned to a holding school as an interim measure for student accommodation. The WRDSB uses this process where enrolment pressures currently exist or may be exacerbated as a result of an increased student enrolment within a specific school boundary.

The 2023-2024 Annual Development Areas Report advises no changes to DA assignments for the 2024-2023 school year.

### **Background**

The WRDSB receives development applications and pre-submissions from municipalities across the Region of Waterloo. WRDSB Planning Staff review, offer comments and may request conditions of approval on certain *Planning Act* applications. Information contained within these circulations is recorded and modelled to analyze and forecast potential student yields, school-level enrolment implications, and accommodation needs.

Development Areas are a tool used in student accommodation planning to assist with enrolment management at the school level in areas where growth and development are occurring or imminent or where a future school is planned. DAs are temporary accommodation measures intended to provide interim student accommodation until permanent accommodation solutions can be implemented.

The following Board Policy and Administrative Procedure outline the process and life cycle of a DA:

- [Board Policy 4012 – School Attendance Areas](#), and
- [Administrative Procedure 4992 – Temporary Student Accommodation for Development Areas](#).

Development Area assignments are staff-driven in consultation with school administrators and Student Transportation Services of Waterloo Region (STSWR). Schedule B of *Administrative Procedure 4992 – Temporary Student Accommodation for Development Areas* outlines considerations in identifying holding schools.

### **Financial Implications**

Student transportation and temporary accommodation costs and/or savings are captured within the respective operating budgets.

### **Communications**

Information about DA assignments is available on the [Planning Department](#) website.

Further, the “School Finder” application on the WRDSB’s website is updated regularly to display the school assignments and transportation eligibility based on up-to-date municipal addressing.

Letters are sent to the local real estate boards and new home sales centres, where possible, to advise them of the Development Area holding school assignments. An [interactive map](#) is accessible from the WRDSB’s website for the public to view.

The WRDSB requests conditions of approval imposed on new developments that meet the DA criteria. These conditions require the developer to post signage and include clauses in Agreements of Purchase and Sale indicating that students from the development may need to be accommodated at schools outside the area. Home pre-sales have become increasingly popular and have resulted in challenges to the notification process (e.g., there might not be a development sign or formal agreement of purchase and sale available when the buyer is making their decision). Planning staff liaise with developers, realtors, and municipal planning staff to identify additional opportunities to communicate directly with new home buyers.

Before assigning development areas to Holding Schools, school administrators, Superintendents of Student Achievement & Well-Being, Facilities Services and Student Transportation Services of Waterloo Region are consulted.

Prepared by:           Emily Bumbaco, Senior Planner  
                              Sarah Galliher, Senior Planner  
                              Lauren Agar, Senior Manager of Planning  
                              Nick Landry, Superintendent of Business Services and Treasurer,  
                              in consultation with Leadership Council



# Report to Committee of the Whole

January 22, 2024

## **Subject: Major Capital Projects Quarterly Update Report**

### **Recommendation**

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

### **Status**

Current capital projects with budgets greater than \$2.5M are outlined in Appendix A and are presented with dashboard symbols to indicate the project status relative to the schedule, budget, and scope. Significant milestones, along with basic project statistics, are also presented. All projects are proceeding through their stages with the following comments.

As mentioned in previous reports we continue to see construction cost estimates exceeding benchmark funding provided by the Ministry of Education. Once we reach 80 percent design for each project, we finalize third-party Cost Consultant Reports and submit an approval to proceed (ATP) to the Ministry. We will tender the project once the Ministry approves the additional funding allocations.

These cost escalations are attributable to global commodity price increases for fuel and construction materials used to build our schools.

### **South Kitchener**

For the new school in South Kitchener, we are currently awaiting Site Plan Approval and Building Permit from the City of Kitchener. Once we receive these approvals, we will be able to tender the project and secure a contractor.

### **Background**

The major capital projects listed in Appendix A have been funded by the Ministry and approved by the Board of Trustees.

### **Financial implications**


The major capital projects listed in Appendix A have all received Ministry funding approval. As we progress through the design and construction phases of each project, additional funding may be required due to price escalations for both supplies and services; staff will continue to submit requests to the Ministry for additional funding as required.

**Communications**

Facility Services staff have consulted with the Ministry of Education, administration, contractors, architects, Financial Services, municipalities, various internal committees and the Board of Trustees regarding the stages of approval, design, construction and budget approvals.




Prepared by: Graham Shantz, Associate Director  
Nick Landry, Superintendent Business Services and Treasurer of the Board  
Ron Dallan, Manager of Capital Projects  
Fabiana Frasher, Budget Officer, Financial Services  
in consultation with Leadership Council

**Major Capital Projects  
Quarterly Update Report  
January 22 2024**

| Project                              | Stage                     |   | Scope      | Board Approval | Ministry Approval | Site Acquisition Complete | Site Encumbrances | Architect               | Site Plan Approval | Bldg Permit | Tender Awarded | Project Budget | Classes Begin |
|--------------------------------------|---------------------------|---|------------|----------------|-------------------|---------------------------|-------------------|-------------------------|--------------------|-------------|----------------|----------------|---------------|
| P.S. Breslau-Hopewell Crossing (new) | Design                    |  | New School | 16-Sep-19      | 23-Nov-21         | Yes                       | No                | K+ Architects           | No                 | No          | No             | \$16,552,917   | TBA           |
| P.S. in South Kitchener (new)        | ATP Approved by Ministry  |  | New School | 16-Sep-19      | 31-Mar-20         | Yes                       | No                | Walter Fedy Partnership | No                 | No          | No             | \$25,092,850   | TBA           |
| P.S. in South East Cambridge (new)   | ATP Submitted to Ministry |  | New School | 9-May-16       | 21-Nov-16         | Yes                       | No                | JP Thomson Architects   | No                 | No          | No             | \$13,503,269   | TBA           |
| Laurelwood P.S. (additon)            | In Construction           |  | Addition   | 16-Sep-19      | 20-Oct-20         | NA                        | No                | Hossack and Assoc.      | Yes                | Yes         | Yes            | \$6,421,759    | TBA           |

Major Capital Projects are those greater than \$2.5M total project cost.

**Dashboard Definitions**

|   |   |
|---|---|
| On schedule, on budget, within scope.               |  |
| Schedule, budget or scope concerns.                 |  |
| Schedule delays, budget creep, or quality concerns. |  |



# Report to Committee of the Whole

January 22, 2024

## Subject: 2023-2024 Interim Financial Report and Forecast

### Recommendation

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

### Status

The Board of Trustees (Board) approved the 2023-24 operating budget on [June 19, 2023](#), and at that time the expected in-year deficit was \$6.32M, or 0.75% of operating revenues. This planned deficit is less than 1% of the board's operating revenues and therefore, the board is compliant with ministry requirements.

The development of the Waterloo Region District School Board's (WRDSB) operating budget includes many underlying assumptions which, over the course of a school year, can change. The process used in the development of the annual operating budget for the board has evolved over the years but the underlying factors that influence its development continue to be:

- Ministry funding (Grants for Student Needs) and Initiatives
- Compliance with the Education Act and Public Sector Accounting Board Standards (PSAB)
- The board's underlying financial position (accumulated surplus/ deficit); and,
- The board's [strategic plan and operational goals](#).

All budgets include inherent challenges and risks. The objective of staff is to implement measures to mitigate the risk to the board and the impact on staff and students. The following are a list of risks and challenges that staff will closely monitor.

- Staff replacement costs (short-term sick leave)
- Enrolment fluctuations
- Forecasting utility fluctuations
- Ministry announcements

The information contained in this report is based on financial results up to November 30, 2023 (Q1). The ability of staff to convey a high degree of confidence in our forecast of the year-end financial position based on three months of operations is limited as is our ability to fundamentally alter the assumptions used in the development of the budget.

Consistent with the approved budget for 2023-24, we expect the WRDSB to finish the year in a deficit position; this was confirmed through the submission of our revised estimates to the Ministry of Education on December 15, 2023, which showed an in-year deficit forecast of \$6.2M, or 0.72% of operating revenues. The 2023-2024 Q1 Interim Financial Report, comparing the budget to the forecasted year-end position, is attached as [Appendix A](#).

## Key Budget Risks

As noted in the presentation to Trustees on [June 19, 2023](#), the 2023-24 budget was developed using the most current information available at that time. In terms of key assumptions and risk areas, the following represent factors which may impact the year-end results.

### Revenues

- Student Enrolment
  - In-year change: Total enrolment is projected to be 361 full-time equivalent (FTE) lower than the budget forecast; a decrease of 0.6% compared to the enrolment forecast used for budget.
  - Impact: Student enrolment is the primary driver of funding through the Grants for Student Needs (GSN). Staff estimate the financial impact of the above noted decrease to be \$2.8M, or 0.36% of provincial grant (GSN) revenues.
  - Strategy: Staff are actively monitoring student enrollment trends. The Region of Waterloo is currently witnessing net-positive migration, and staff are optimistic that this trend will translate into an increase in our enrollment at the March count date and future years.
- Extended Day Program
  - In-year change: For the period September 1, 2023 to November 30, 2023, average enrolment in the board's extended day program was 2,265 full-time equivalent (FTE) students; this is slightly higher than our budget forecast for the year, and exceeds our pre-pandemic average of 1,996 full-time equivalent (FTE) students. As a result of the increase in enrolment, we are forecasting extended day revenues to increase by approximately \$531 thousand compared to budget, an increase of 3.9%.
  - Impact: The Extended Day Program (EDP) fee regulations ([O. Reg. 221/11](#)) require boards to establish fees that bear a reasonable relationship to operating costs; the EDP rate for 2023-24 was approved by the Board on [May 8, 2023](#). The announcement of the [Canada-Ontario Early Years and Child Care Agreement](#) in April 2022, along with the efforts of staff to make WRDSB programs eligible for this funding, is having an overall positive impact on program accessibility and enrolment. However, with continued growth in the extended day program, staffing is becoming a more pressing issue both locally and provincially.
  - Strategy: Staff continue to monitor registrations and adjust staffing levels where possible. In some cases (Winter Break and March Break Programs), we have had to implement reduced operating hours to help ensure we remain compliant with our licensing requirements amidst the staffing shortage. We will also continue to work with our Regional and Provincial counterparts to identify opportunities to address the staffing challenges that have been identified.



## Expenditures

- Classroom Teachers
  - In-year change: Total expenditures on classroom teachers is projected to be \$4.8M lower than the budget forecast, a decrease of 1.1%.
  - Impact: The noted decrease is the net impact of lower enrollment and adjustments for unallocated positions which were budgeted for but will not be deployed in 2023-24.
  - Strategy: While the staff continue to keep a close eye on expenditures in this area, the only adjustments we anticipate are related to potential vacancies.
- Supply Staff
  - In-year change: As of November 30th, there was insufficient evidence to make significant adjustments to the short-term supply costs forecast for Teachers, DECEs, and Educational Assistants. However, expenditures are showing an increase compared to the same period last year. Should this trend persist, there is a potential financial pressure of approximately \$2.8M associated with supply costs.
  - Impact: The financial pressure from short-term supply costs will have a negative impact on the boards overall financial position for the 2023-2024 school year, and may increase the in-year deficit.
  - Strategy: Staff closely monitor sick-time utilization, and expenditures, throughout the year and will provide further updates should the trend noted above continue. As noted in the [2023-24 budget report \(P18\)](#), staff are also implementing measures to better support employee wellness; this includes enhanced efforts to monitor and support staff in areas where short-term sick leave utilization exceed board and industry averages. These resources will also help to support a culture of well-being that promotes regular attendance at work by developing innovative strategies to address absenteeism and impact positive attendance. Some of these resources, approximately 4.0 FTE, have been approved by Leadership Council and are in the process of being brought on.
- School Operations
  - In-year change: Total expenditures on School Operations (Custodial & Maintenance staff, utilities and cleaning supplies) are projected to be largely unchanged at this point in the year.
  - Impact: While the in-year forecast for school operations has not changed at this point in the year, inflation risk has a significant impact on this area of the board's budget. As highlighted in the budget report presented to Trustees on [June 14, 2023](#), certain contractual obligations, such as those with school bus operators, are linked to the rate of inflation. Other agreements like construction tenders or contracts subject to annual renewal (e.g., technology licenses) reflect the anticipation of sustained inflation, thereby exerting upward pressure on prices. Additionally, inflation may lead to an increase on commodity prices, including natural gas, as heightened delivery costs are incurred by wholesalers. Since the

current report only encompasses expenses incurred up to November 30th, it is premature to assess the impact of inflation on this budget area.

Strategy: Staff are continuing to monitor expenditures in this area and will provide further updates throughout the year should our forecast materially change.

- Other Non-Operating Expenses
  - In-year change: Total expenditures are expected to remain largely unchanged.
  - Impact: In accounting terms, other non-operating expenses describe expenses that occur outside of an organization's day-to-day activities and may include one-time or unusual costs. The Ministry Code of Accounts indicates that non-operating expenses may include expenses for material claims or settlements, as well as programs that are non-educational; one example being the board's Extended Day program.
  - Strategy: Staff are continuing to monitor expenditures in this area and will provide further updates throughout the year should our forecast materially change.

Overall, staff continue to identify, assess, and mitigate against financial risks to help ensure the fiscal well-being of the organization. As noted above we have changed our forecast of the year-end financial position to reflect an in in-year deficit of \$6.2M.

## Background

It is the sole responsibility of the Board to approve the annual operating budget and it is the responsibility of staff to oversee and monitor day-to-day spending within the budget framework. The Board plays a key role in the budget process, ensuring that funding is aligned with the WRDSB's strategic priorities and legislative requirements.

In an effort to support the Board in fulfilling their fiduciary duties, staff provide quarterly financial updates on in-year spending forecasts relative to the budget. These updates identify potential risks and opportunities that may be on the horizon, as well as the strategies staff have in place to address the identified items. These actions are intended to support the Board in making evidence-based decisions and fulfilling their governance responsibilities.

Under the [Education Act, R.S.O. 1990, s.230](#), school boards are required to submit a balanced budget ensuring that total expenditures are equal to, or less than, total revenue. However, there are circumstances where an in-year deficit is permissible if there were prior surpluses available (referenced as accumulated surplus).

The use of accumulated surplus is limited to ensure that this action does not place the board at undue financial risk. The use of accumulated surplus is limited to the lessor of:

- the board's accumulated surplus for the preceding year, and;
- one per cent of the board's operating revenue

## Financial Implications

No Financial implications.

## Communications

Financial Services will work with our communications department to ensure that financial information is readily available to the public via our corporate website.

Prepared by: Wenqi Zhou, Manager, Budget Services  
Nicole Litt, Manager, Accounting Services  
Miruna Armellini, Controller of Financial Services  
Nick Landry, Superintendent of Business Services & Treasurer  
in consultation with Leadership Council

## APPENDIX A

**2023-2024 Interim Financial Report (First Quarter- Sept 1, 2023 to November 30, 2023)**

| SUMMARY OF FINANCIAL RESULTS              | (000's)          |                  |                |               |
|---|------------------|------------------|----------------|---------------|
|   | Budget           | Forecast         | In-Year Change |               |
|   |                  |                  | \$             | %             |
| <b>Revenue</b>                            |                  |                  |                |               |
| Provincial Grants-GSN                     | \$774,698        | \$771,897        | (\$2,801)      | (0.4%)        |
| Revenue transferred from/(to) deferred re | (1,974)          | (916)            | 1,059          | (53.6%)       |
| Other Grants                              | 9,393            | 10,700           | 1,307          | 13.9%         |
| Other Revenue                             | 38,355           | 39,654           | 1,300          | 3.4%          |
| School Generated Funds                    | 8,780            | 8,972            | 192            | 2.2%          |
| Transferred from DCC**                    | 42,994           | 42,999           | 5              | 0.0%          |
| Transferred to DCC**                      | (16,409)         | (16,409)         | -              | 0.0%          |
| <b>Total Revenue</b>                      | <b>\$855,837</b> | <b>\$856,898</b> | <b>\$1,061</b> | <b>0.1%</b>   |
| <b>Expenses</b>                           |                  |                  |                |               |
| Instruction                               | \$651,005        | \$644,347        | (\$6,657)      | (1.0%)        |
| Administration                            | 18,122           | 18,745           | 623            | 3.4%          |
| Transportation                            | 23,326           | 23,272           | (54)           | (0.2%)        |
| School Operations & Maintenance           | 69,100           | 69,305           | 205            | 0.3%          |
| Pupil Accom/Renewal/Debt/Non-operating    | 59,780           | 59,646           | (134)          | (0.2%)        |
| Amortization                              | 806              | 806              | -              | 0.0%          |
| ARO                                       | 3,111            | 3,454            | 343            | 11.0%         |
| School Generated Funds                    | 8,780            | 8,972            | 192            | 2.2%          |
| Provision for Contingency                 | 14,334           | 21,079           | 6,745          | 47.1%         |
| <b>Total Expenses</b>                     | <b>\$848,364</b> | <b>\$849,627</b> | <b>\$1,263</b> | <b>0.1%</b>   |
| <b>Surplus/(Deficit)</b>                  | <b>\$7,473</b>   | <b>\$7,271</b>   | <b>(\$202)</b> | <b>(2.7%)</b> |

**2023-2024 Interim Financial Report (First Quarter- Sept 1, 2023 to November 30, 2023)**

| DETERMINATION OF ANNUAL OPERATING :             | (000s)           |                   |
|---|------------------|-------------------|
|   | Budget           | Forecast          |
| <b>PSAB Surplus/(Deficit) (from above)</b>      | \$7,473          | \$7,271           |
| <b>LESS: Internally Appropriated</b>            |                  |                   |
| Committed Capital Projects                      |                  |                   |
| <b>Sub-Total: In-Year Appropriations</b>        | -                | -                 |
| Committed capital projects                      | 114              | 109               |
| <b>Total: Internally Appropriated</b>           | <b>114</b>       | <b>109</b>        |
| <b>Less: Unavailable for Compliance</b>         |                  |                   |
| PSAB Adjustments                                | (17,586)         | (17,595)          |
| <b>Total Adjustments</b>                        | <b>(17,473)</b>  | <b>(\$17,486)</b> |
| Surplus/(Deficit)                               | (\$9,999)        | (\$10,214)        |
| Committed capital projects annual amortiz       | 536              | 536               |
| Asset Retirement Obligations                    | 3,111            | 3,454             |
| Committed sinking fund interest                 | 24               | 24                |
| <b>Annual Unappropriated Operating Surplus,</b> | <b>(\$6,328)</b> | <b>(\$6,200)</b>  |

**2023-2024 Interim Financial Report (First Quarter- Sept 1, 2023 to November 30, 2023)****SUMMARY OF CAPITAL TO BE FINANCED****(000's)**

|  | <b>Budget</b>   | <b>Forecast</b> |
|--|-----------------|-----------------|
| <b>Funding</b>                                   |                 |                 |
| New Building and Additions                       | \$25,358        | \$25,358        |
| Child Care Capital                               | 2,528           | 2,528           |
| School Condition Improvement                     | 31,500          | 31,500          |
| Full Day Kindergarten                            | 836             | 836             |
| Renewal  | 8,500           | 8,500           |
| Education Development Charge (EDC)               | 17,475          | 17,475          |
| Proceeds of Disposition                          | 400             | 400             |
| Minor Tangible Capital Assets                    | 7,842           | 7,842           |
| Rural and Norther Education                      | 67              | 67              |
| COVID-19 Resilience Infrastructure Steam (CVRIS) | 900             | 638             |
| Other  | 210             | 210             |
| <b>Total Capital by Funding Source</b>           | <b>\$95,615</b> | <b>\$95,353</b> |
| <b>Expenditure</b>                               |                 |                 |
| Buildings (new, additions & renewal)             | \$64,942        | \$64,679        |
| Land   | 17,475          | 17,475          |
| Land Improvements                                | 4,200           | 4,200           |
| Leasehold Improvements                           | 0               | 0               |
| Moveable Assets                                  | 8,999           | 8,999           |
| <b>Total Capital Expenditure</b>                 | <b>\$95,615</b> | <b>\$95,353</b> |

**2023-2024 Interim Financial Report (First Quarter- Sept 1, 2023 to November 30, 2023)**

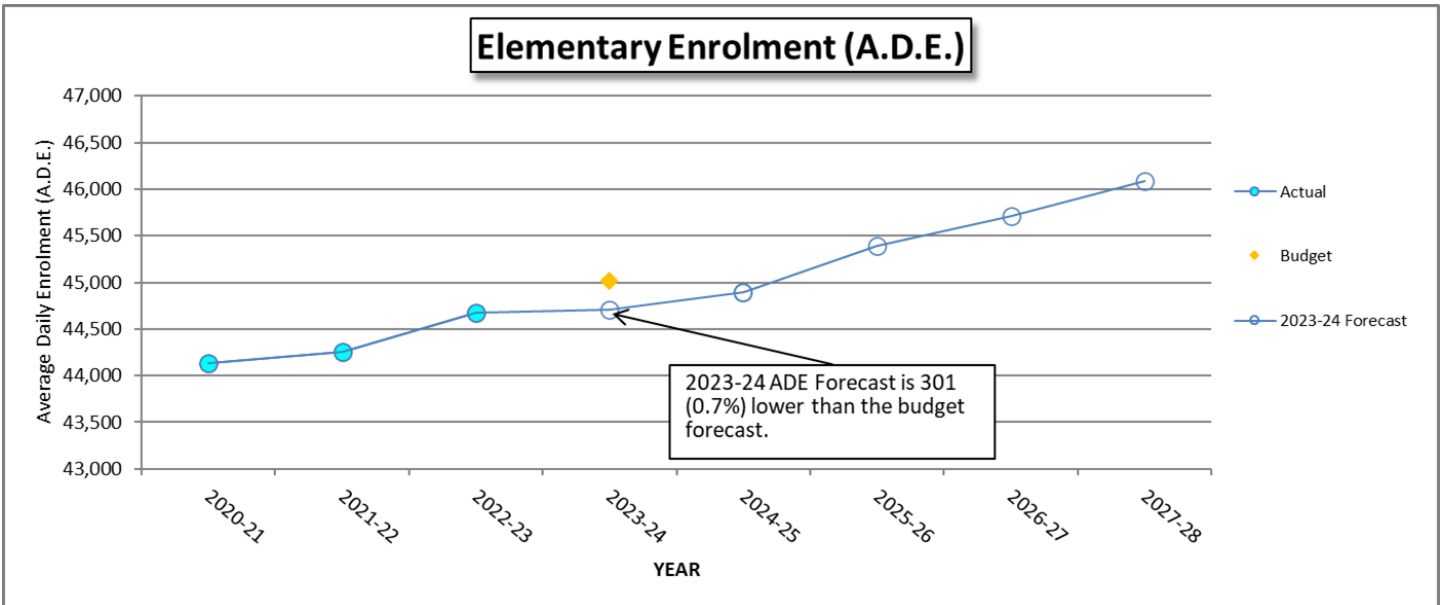
**SUMMARY OF ENROLMENT**

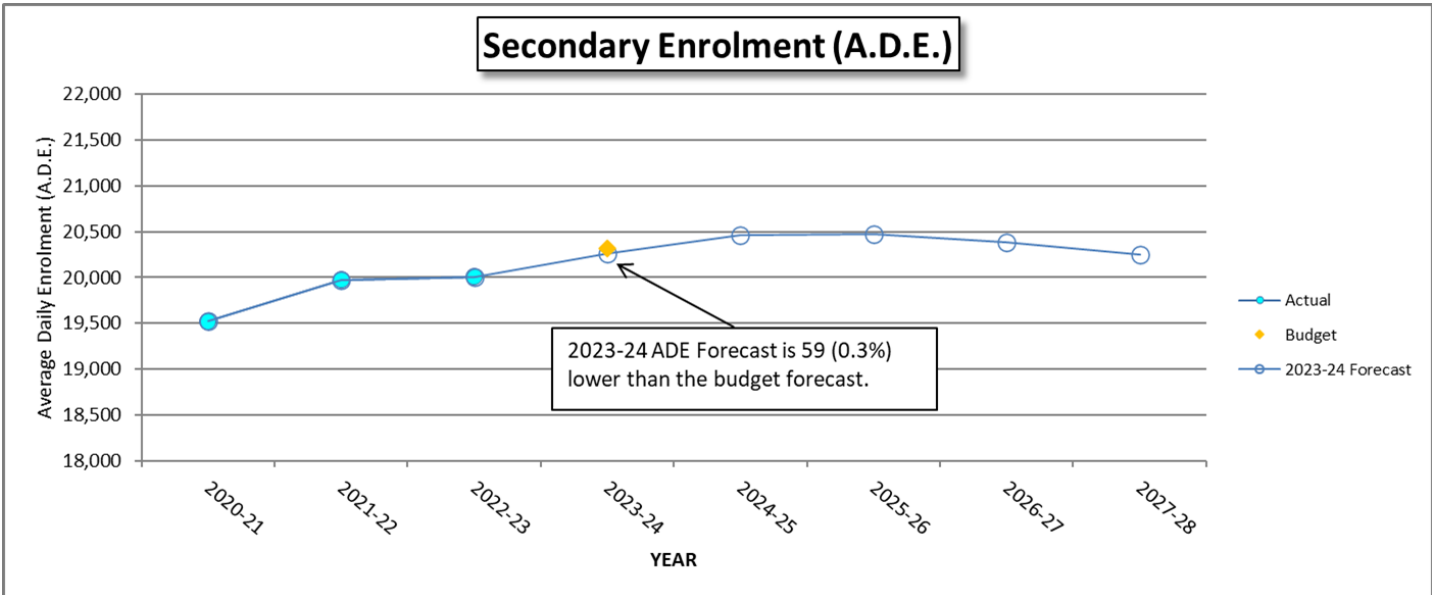
| ADE                          | Budget        | Forecast      | In-Year Change |              |
|------------------------------|---------------|---------------|----------------|--------------|
|                              |               |               | #              | %            |
| <b>Elementary</b>            |               |               |                |              |
| JK                           | 4,196         | 4,014         | (182)          | -4.3%        |
| SK                           | 4,515         | 4,519         | 4              | 0.1%         |
| Grade 1-3                    | 13,502        | 13,375        | (127)          | -0.9%        |
| Grade 4-8                    | 22,788        | 22,793        | 5              | 0.0%         |
| Other Pupils (International) | 12            | 12            | -              |              |
| <b>Total Elementary</b>      | <b>45,014</b> | <b>44,713</b> | <b>(301)</b>   | <b>-0.7%</b> |
| <b>Secondary</b>             |               |               |                |              |
| Pupils of the Board <21      | 20,238        | 20,178        | (60)           | -0.3%        |
| High Credit Pupils           | 19            | 20            | 1              | 4.8%         |
| Pupils of the Board >21      | 9             | 9             | (0)            | -2.9%        |
| Other Pupils (International) | 50            | 50            | -              | 0.0%         |
| <b>Total Secondary</b>       | <b>20,316</b> | <b>20,257</b> | <b>(59)</b>    | <b>-0.3%</b> |
| <b>Total</b>                 | <b>65,330</b> | <b>64,969</b> | <b>(361)</b>   | <b>-0.6%</b> |

Note: Forecast based on October 31st count date

**Highlights of Changes in Enrolment:**

- Decrease in the elementary panel is concentrated in JK and grades 1-3;
- Actual enrolment for October 31st has not yet been confirmed through OnSIS; the enrolment forecast should be considered volatile until Oct 31st enrolment is confirmed.





**SUMMARY OF STAFFING**

| FTE                      | Budget          | Actual<br>October<br>31st | In-Year Change  |              |
|--------------------------|-----------------|---------------------------|-----------------|--------------|
|                          |                 |                           | #               | %            |
| <b>Instruction</b>       |                 |                           | -               |              |
| Classroom Teachers       | 3,968.59        | 3,928.96                  | (39.63)         | -1.0%        |
| Non-Classroom            | 2,130.02        | 2,044.30                  | (85.72)         | -4.0%        |
| <b>Total Instruction</b> | <b>6,098.61</b> | <b>5,973.26</b>           | <b>(125.35)</b> | <b>-2.1%</b> |
| <b>Non-Instruction</b>   | <b>867.34</b>   | <b>848.90</b>             | <b>(18.44)</b>  | <b>-2.1%</b> |
| <b>Total</b>             | <b>6,965.95</b> | <b>6,822.16</b>           | <b>(143.79)</b> | <b>-2.1%</b> |

**Highlights of Changes in Staffing:**

- Decrease is the net impact fo lower enrolment and adjustments for unallocated positions which were budgeted for but will not be deployed.
- Variance for non-instructional due to vacancies

**2023-2024 Interim Financial Report (First Quarter- Sept 1, 2023 to November 30, 2023)**
**OTHER GRANT REVENUE- INCLUDING PROGRAM AND PARTNERSHIPS FUNDING (PPF)**

|  | Budget             | Forecast            | Variance           |
|--|--------------------|---------------------|--------------------|
| De-streaming Implementation Supports                           | 90,400             | 90,400              | 0                  |
| Digital Math Tools   | 474,800            | 474,800             | 0                  |
| Early Reading Enhancements: Reading Screening Tools            | 410,000            | 410,000             | 0                  |
| Education Staff to Support Reading Interventions               | 1,969,700          | 1,969,700           | 0                  |
| Entrepreneurship Education Pilot Projects                      | 30,000             | 30,000              | 0                  |
| Experiential Learning-Guidance Teacher Counsellors             | 78,600             | 78,600              | 0                  |
| Graduation Coach for Black Students                            | 114,257            | 114,257             | 0                  |
| Health Resources, Training and Supports                        | 34,600             | 34,600              | 0                  |
| Human Rights and Equity Advisors                               | 170,400            | 170,400             | 0                  |
| Learn and Work Bursary   | 22,000             | 22,000              | 0                  |
| Licenses for Reading Intervention                              | 266,600            | 266,600             | 0                  |
| Math Facilitators  | 714,000            | 714,000             | 0                  |
| Math Leads   | 166,600            | 166,600             | 0                  |
| Professional Assessments & Evidence Based Reading              | 234,600            | 234,600             | 0                  |
| Skills Trade Bursary   | 19,000             | 19,000              | 0                  |
| Special Education Educator Additional Qualification Subsidy    | 23,400             | 23,400              | 0                  |
| Staffing to Support De-Streaming and Transition to High School | 3,196,103          | 3,196,103           | 0                  |
| <b>Total PPF Grants</b>  | <b>\$8,015,060</b> | <b>\$8,015,060</b>  | <b>\$0</b>         |
| <b>Other Grants</b>  |                    |                     |                    |
| Literacy & Basic Skills (LBS)                                  | 370,900            | 370,900             | 0                  |
| Ontario Youth Apprenticeship Program (OYAP)                    | 395,023            | 395,023             | 0                  |
| Other EDU Grants- Amounts from Deferred Revenue                | 115,235            | 1,422,235           | 1,307,000          |
| <b>Total Other Grants</b>                                      | <b>\$8,896,218</b> | <b>\$10,203,218</b> | <b>\$1,307,000</b> |



**2023-2024 Interim Financial Report (First Quarter- Sept 1, 2023 to November 30, 2023)**
**PUBLIC SECTOR ACCOUNTING BOARD (PSAB) REVENUES**

|  | Budget               | Forecast             | \$ Increase<br>(Decrease) | % Increase<br>(Decrease) | Material<br>Variance Note |
|--|----------------------|----------------------|---------------------------|--------------------------|---------------------------|
| <b>Provincial Grants for Student Needs</b>                       |                      |                      |                           |                          |                           |
| Pupil Foundation-Elementary                                      | \$380,278,304        | \$377,958,197        | (\$2,320,107)             | (0.61%)                  | 1                         |
| School Foundation  | \$48,039,151         | \$47,831,014         | (208,137)                 | (0.43%)                  | 1                         |
| Special Education  | \$97,795,752         | \$97,414,282         | (381,470)                 | (0.39%)                  | 1                         |
| Language Allocation  | \$22,408,053         | \$23,451,815         | 1,043,762                 | 4.66%                    | 1                         |
| Rural and Northern Education Allocation                          | 66,555               | \$66,555             | -                         | 0.00%                    |                           |
| Learning Opportunities   | 9,580,109            | \$9,612,106          | 31,997                    | 0.33%                    |                           |
| Continuing Education   | 1,640,337            | \$1,522,523          | (117,814)                 | (7.18%)                  |                           |
| Teacher Q&E  | 73,041,801           | \$72,771,225         | (270,576)                 | (0.37%)                  | 2                         |
| New Teacher Induction Program (NTIP)                             | 294,737              | \$231,096            | (63,641)                  | (21.59%)                 |                           |
| ECE Q&E  | 4,431,859            | \$4,341,221          | (90,638)                  | (2.05%)                  | 2                         |
| Transportation   | 20,171,085           | \$20,246,741         | 75,656                    | 0.38%                    | 1                         |
| Admin and Governance   | 18,085,444           | \$18,018,414         | (67,030)                  | (0.37%)                  | 1                         |
| Trustees' Association Fee  | 58,745               | \$58,745             | -                         | 0.00%                    |                           |
| School Operations  | 67,899,673           | \$67,539,023         | (360,650)                 | (0.53%)                  | 1                         |
| Community Use of Schools   | 854,429              | \$854,429            | -                         | 0.00%                    |                           |
| Declining Enrolment  | -                    | \$0                  | -                         | 0.00%                    |                           |
| Temporary accommodation - relocation and leasing                 | 1,513,233            | \$1,513,233          | -                         | 0.00%                    |                           |
| Indigenous Education   | 3,306,589            | \$3,288,697          | (17,892)                  | (0.54%)                  | 1                         |
| Mental Health and Well-Being                                     | 3,141,362            | \$3,130,450          | (10,912)                  | (0.35%)                  | 1                         |
| School Renewal   | 10,415,839           | \$10,375,538         | (40,301)                  | (0.39%)                  | 1                         |
| Approved Debt  | 104,872              | \$104,872            | -                         | 0.00%                    |                           |
| Debt Charges-Interest Portion                                    | 4,280,163            | \$4,280,163          | -                         | 0.00%                    |                           |
| Supports for Students Fund                                       | 6,410,813            | \$6,410,813          | -                         | 0.00%                    |                           |
| Program Leadership Grant   | 1,008,213            | \$1,004,963          | (3,250)                   | (0.32%)                  |                           |
| Restraint Savings  | (129,030)            | (\$129,030)          | -                         | 0.00%                    |                           |
| <b>Total Provincial Grants for Student Needs (GSN)</b>           | <b>\$774,698,088</b> | <b>\$771,897,085</b> | <b>(\$2,801,003)</b>      | <b>(0.36%)</b>           |                           |
| <b>Amortization of Deferred Capital Contributions</b>            | <b>\$42,993,831</b>  | <b>\$42,998,503</b>  | <b>\$4,672</b>            | <b>0.01%</b>             |                           |
| <b>Legislative Grants transferred from/(to) Deferred Revenue</b> | <b>(\$1,974,158)</b> | <b>(\$915,575)</b>   | <b>\$1,058,583</b>        | <b>(53.62%)</b>          |                           |
| <b>Other Grants</b>  | <b>\$8,896,218</b>   | <b>\$10,203,218</b>  | <b>\$1,307,000</b>        | <b>14.69%</b>            |                           |
| <b>Non Grant Revenue</b>   |                      |                      |                           |                          |                           |
| Fees   | \$1,128,000          | \$1,128,000          | \$0                       | 0.00%                    |                           |
| Transportation Recoveries  | 125,500              | 125,500              | \$0                       | 0.00%                    |                           |
| Rental Revenue   | 2,107,300            | 2,107,300            | \$0                       | 0.00%                    |                           |
| Education Development Charge                                     | 17,475,000           | 17,475,000           | \$0                       | 0.00%                    |                           |
| Extended Day Program   | 13,553,900           | 14,085,000           | \$531,100                 |                          | 4                         |
| Interest Revenues  | 660,500              | 1,100,000            | \$439,500                 |                          | 5                         |
| Other Revenue  | 3,304,540            | 3,633,540            | 329,000                   | 9.96%                    | 6                         |
| <b>Non Grant Revenue</b>   | <b>\$38,354,740</b>  | <b>\$39,654,340</b>  | <b>\$1,299,600</b>        | <b>3.39%</b>             |                           |
| <b>School Generated Funds Revenue</b>                            | <b>\$8,780,000</b>   | <b>\$8,972,105</b>   | <b>\$192,105</b>          | <b>2.19%</b>             |                           |
| <b>Grants Transferred to Deferred Capital Contributions</b>      | <b>(16,408,555)</b>  | <b>(16,408,555)</b>  | <b>\$0</b>                | <b>0.00%</b>             |                           |
| <b>Total PSAB Revenues</b>                                       | <b>\$855,340,164</b> | <b>\$856,401,121</b> | <b>\$1,060,957</b>        | <b>0.12%</b>             |                           |

**EXPLANATIONS OF MATERIAL GRANT VARIANCES**

- 1 Projected enrolment variance compared to budget
- 2 Placement on grid of Teachers/DECEs is different than the budget forecast based on actual years of experience and qualifications
- 4 Net impact of projected changes in other revenue streams (extended day)
- 5 Increase in Interest revenue as a result of higher interest rates
- 6 Insurance proceeds received for claim

## 2023-2024 Interim Financial Report (First Quarter- Sept 1, 2023 to November 30, 2023)

| 2023-2024 Interim Financial Report (First Quarter- Sept 1, 2023 to November 30, 2023)   |                      |                      |                      |               |   |
|---|----------------------|----------------------|----------------------|---------------|---|
| PUBLIC SECTOR ACCOUNTING BOARD (PSAB) EXPENSES  |                      | Budget Assessment    |                      |               |   |
|   | Budget               | Forecast             | In-Year Change       |               |   |
|   |                      |                      | #                    | %             |   |
| <b>OPERATING</b>  |                      |                      |                      |               |   |
| <b>Classroom</b>  |                      |                      |                      |               |   |
| Classroom Teachers  | \$431,748,654        | \$426,923,683        | (\$4,824,971)        | (1.1%)        | 1 |
| Supply Staff  | \$23,225,050         | \$23,225,765         | 715                  | 0.0%          | 2 |
| Teacher Assistants  | \$36,783,377         | \$36,900,704         | 117,327              | 0.3%          |   |
| Early Childhood Educator  | \$21,635,980         | \$19,061,030         | (2,574,950)          | (11.9%)       | 3 |
| Textbooks and Classroom Supplies  | \$14,069,892         | 13,603,477           | (466,415)            | (3.3%)        |   |
| Computers   | \$3,070,300          | 3,070,300            | -                    | 0.0%          |   |
| Professionals & Paraprofessionals   | \$34,006,965         | \$33,776,427         | (230,538)            | (0.7%)        |   |
| Library & Guidance  | \$14,209,910         | \$14,252,854         | 42,944               | 0.3%          |   |
| Staff Development   | \$3,154,717          | \$3,091,076          | (63,641)             | (2.0%)        |   |
| Department Heads  | \$1,504,000          | \$1,504,000          | -                    | 0.0%          |   |
| Principal and Vice-Principals   | \$30,244,559         | \$31,526,259         | 1,281,700            | 4.2%          | 4 |
| School Secretaries & Office Supplies  | \$16,812,871         | \$16,744,647         | (68,224)             | (0.4%)        |   |
| Teacher Consultants   | \$11,728,034         | \$11,721,775         | (6,259)              | (0.1%)        |   |
| Continuing Education  | \$2,786,050          | \$2,921,119          | 135,069              | 4.8%          |   |
| Instruction-Amortization  | \$6,024,375          | 6,024,375            | -                    | 0.0%          |   |
| <b>Sub-Total Instruction Expenses</b>   | <b>\$651,004,734</b> | <b>\$644,347,491</b> | <b>(\$6,657,243)</b> | <b>(1.0%)</b> |   |
| <b>Other Expenses</b>   |                      |                      |                      |               |   |
| Board Administration  | \$18,121,742         | \$18,745,116         | \$623,374            | 3.4%          | 5 |
| School Operations   | \$69,100,027         | \$69,304,779         | 204,752              | 0.3%          |   |
| Transportation  | \$23,325,700         | \$23,271,556         | (54,144)             | (0.2%)        |   |
| Amortization  | \$806,196            | 806,196              | -                    | 0.0%          |   |
| <b>Sub-Total Other Expenses</b>   | <b>\$111,353,665</b> | <b>\$112,127,647</b> | <b>\$773,982</b>     | <b>0.7%</b>   |   |
| <b>TOTAL OPERATING EXPENSE</b>  | <b>\$762,358,399</b> | <b>\$756,475,138</b> | <b>(\$5,883,261)</b> | <b>(0.8%)</b> |   |
| <b>NON-OPERATING</b>  |                      |                      |                      |               |   |
| <b>Pupil Accommodation/Renewal/Debt</b>   |                      |                      |                      |               |   |
| School Renewal  | \$1,915,839          | \$1,915,839          | -                    | 0.0%          |   |
| Debt Charges  | \$3,800,649          | 3,800,649            | -                    | 0.0%          |   |
| Other Pupil Accommodation   | \$1,509,900          | 1,509,900            | -                    | 0.0%          |   |
| Other Non-Operating Expenses  | \$15,683,772         | 15,549,923           | (133,849)            | (0.9%)        |   |
| Amortization  | \$36,870,108         | 36,870,108           | -                    | 0.0%          |   |
| <b>Total Pupil Accommodation Expense</b>  | <b>\$59,780,268</b>  | <b>\$59,646,419</b>  | <b>(\$133,849)</b>   | <b>(0.2%)</b> |   |
| <b>School Generated Funds</b>   | <b>\$8,780,000</b>   | <b>\$8,972,105</b>   | <b>\$192,105</b>     | <b>2.2%</b>   |   |
| <b>ARO</b>  | <b>\$3,111,258</b>   | <b>\$3,454,315</b>   | <b>\$343,057</b>     | <b>11.0%</b>  |   |
| <b>Provision for Contingencies</b>  | <b>\$14,333,720</b>  | <b>\$21,078,711</b>  | <b>\$6,744,991</b>   | <b>47.1%</b>  |   |
| <b>TOTAL EXPENSES</b>   | <b>\$848,363,645</b> | <b>\$849,626,688</b> | <b>(\$5,825,005)</b> | <b>(0.7%)</b> |   |
| <b>EXPLANATIONS OF VARIANCES</b>  |                      |                      |                      |               |   |
| 1. Decrease teachers 43.5 FTE due to lower than budget enrolment  |                      |                      |                      |               |   |
| 2. Supply Costs are showing an increase compared to the same period last year. Staff will closely monitor the sick-time utilization   |                      |                      |                      |               |   |
| 3. Decrease DECEs 44.0 FTE due to lower than budget enrolment.  |                      |                      |                      |               |   |
| 4. Updated costing to reflect actual salaries   |                      |                      |                      |               |   |
| 5. The Regional Internal Audit team relocated to Hamilton Wentworth DSB all deferred revenue needs be transferred to HWDSB. The expenditures have been aligned with the deferred revenue that was brought into revenue. |                      |                      |                      |               |   |

## 2023-2024 Interim Financial Report (First Quarter- Sept 1, 2023 to November 30, 2023)

| PUBLIC SECTOR ACCOUNTING BOARD (PSAB) EXPENSES   | Risk Assessment           |                        |                           |                      |  |
|--|---------------------------|------------------------|---------------------------|----------------------|--|
|  | Actual to Nov 30,<br>2023 | % of Forecast<br>Spent | Actual to Nov 30,<br>2022 | % of Actual<br>Spent | Year-to year<br>Increase<br>(Decrease) |
| <b>OPERATING</b>   |                           |                        |                           |                      |  |
| <b>Classroom</b>   |                           |                        |                           |                      |  |
| Classroom Teachers   | 110,184,005               | 25.8%                  | \$108,502,130             | 25.7%                | 0.1%                                   |
| Supply Staff   | 4,639,133                 | 19.97%                 | 4,683,590                 | 18.54%               | 1.4%                                   |
| Teacher Assistants   | 9,461,180                 | 25.64%                 | 9,958,117                 | 26.83%               | (1.2%)                                 |
| Early Childhood Educator   | 4,933,374                 | 25.88%                 | 4,874,679                 | 26.77%               | (0.9%)                                 |
| Textbooks and Classroom Supplies   | 4,103,222                 | 30.16%                 | 4,554,589                 | 31.29%               | (1.1%)                                 |
| Computers  | 1,267,898                 | 41.30%                 | 918,212                   | 27.13%               | 14.2%                                  |
| Professionals & Paraprofessionals  | 8,211,170                 | 24.31%                 | 8,350,178                 | 24.37%               | (0.1%)                                 |
| Library & Guidance   | 3,535,990                 | 24.81%                 | 3,329,237                 | 23.26%               | 1.5%                                   |
| Staff Development  | 950,598                   | 30.75%                 | 927,687                   | 24.29%               | 6.5%                                   |
| Department Heads   | 398,532                   | 26.50%                 | 372,435                   | 24.44%               | 2.1%                                   |
| Principal and Vice-Principals  | 8,102,138                 | 25.70%                 | 8,053,497                 | 25.09%               | 0.6%                                   |
| School Secretaries & Office Supplies   | 3,986,835                 | 23.81%                 | 4,137,435                 | 24.43%               | (0.6%)                                 |
| Teacher Consultants  | 2,981,103                 | 25.43%                 | 3,067,021                 | 23.60%               | 1.8%                                   |
| Continuing Education   | 248,015                   | 8.49%                  | 374,688                   | 13.41%               | (4.9%)                                 |
| Instruction-Amortization   | -                         | 0.00%                  | -                         | 0.00%                | 0.0%                                   |
| <b>Sub-Total Instruction Expenses</b>  | <b>\$163,003,192</b>      | <b>25.30%</b>          | <b>\$162,103,495</b>      | <b>25.04%</b>        | <b>0.3%</b>                            |
| <b>Other Expenses</b>  |                           |                        |                           |                      |  |
| Board Administration   | 4,280,480                 | 22.8%                  | 5,676,701                 | 27.0%                | (4.2%)                                 |
| School Operations  | 14,580,192                | 21.04%                 | 15,291,326                | 21.38%               | (0.3%)                                 |
| Transportation   | 6,943,787                 | 29.84%                 | 6,506,674                 | 29.69%               | 0.2%                                   |
| Amortization   | -                         | 0.00%                  | -                         | 0.00%                | 0.0%                                   |
| <b>Sub-Total Other Expenses</b>  | <b>\$25,804,459</b>       | <b>23.01%</b>          | <b>\$ 27,474,701</b>      | <b>23.75%</b>        | <b>(0.7%)</b>                          |
| <b>TOTAL OPERATING EXPENSE</b>   | <b>\$188,807,651</b>      | <b>24.96%</b>          | <b>\$ 189,578,196</b>     | <b>24.85%</b>        | <b>0.1%</b>                            |
| <b>NON-OPERATING</b>   |                           |                        |                           |                      |  |
| <b>Pupil Accommodation/Renewal/Debt</b>  |                           |                        |                           |                      |  |
| School Renewal   | 325,264                   | 17.0%                  | 738,441                   | 30.7%                | (13.7%)                                |
| Debt Charges   | 2,007,228                 | 52.81%                 | 2,285,490                 | 54.09%               | (1.3%)                                 |
| Other Pupil Accommodation  | 368,524                   | 24.41%                 | 447,251                   | 28.48%               | (4.1%)                                 |
| Other Non-Operating Expenses   | 3,620,981                 | 23.29%                 | 4,548,347                 | 21.98%               | 1.3%                                   |
| Amortization   | -                         | 0.00%                  | -                         | 0.00%                | 0.0%                                   |
| <b>Total Pupil Accommodation Expense</b>   | <b>\$6,321,997</b>        | <b>10.60%</b>          | <b>\$ 8,019,530</b>       | <b>11.96%</b>        | <b>(1.4%)</b>                          |
| <b>School Generated Funds</b>  | <b>\$0</b>                |                        | <b>\$0</b>                |                      |  |
| <b>ARO</b>   | <b>\$0</b>                |                        | <b>\$0</b>                |                      |  |
| <b>Provision for Contingencies</b>   | <b>\$0</b>                | 0.00%                  | <b>\$0</b>                | 0.00%                |  |
| <b>TOTAL EXPENSES</b>  | <b>\$195,129,647</b>      | <b>22.97%</b>          | <b>\$ 197,597,726</b>     | <b>23.16%</b>        | <b>(0.2%)</b>                          |
| <b>EXPLANATIONS OF SPENDING RISK ASSESSMENT</b>  |                           |                        |                           |                      |  |
| Variations between the year-to-date spending this year and the % spent at this time last year is due to the timing of expenditures only. |                           |                        |                           |                      |  |



# Report to Committee of the Whole

January 22, 2024

## Subject: Covid Ventilation Measures at the WRDSB

### Recommendation

This report is provided for information of the Board.

### Status

In August 2020, Facility Services carried out a survey of all teaching spaces as well as other regularly occupied spaces in each school. This was based on the preliminary direction from Public Health and the Province at the time that included;

- Determining if the space was ventilated with mechanical fresh air during school hours.
- Determining if the space had operable windows if safety stops were in place and if repairs were needed.
- Determine if window screens were in place and if these were tightly fitted.

This information was completed and tabulated at the same time as initial sources and types of HEPA filter units were evaluated. HEPA associated technologies such as ultraviolet disinfection, ionization and ductwork mounted HEPA filtration being promoted at the time by some (and apparently initially adopted by a small number of Boards) were reviewed by facility Services with the support of our Environmental Professionals as well as others in the Health and Safety Department and deemed unsuitable. Some of these technologies have since been debunked by the Ministry among others.

Ministry of Education, School Ventilation 2023-24 memo, 2023:B11 September 5, 2023:

*... Avoid use of technology or devices that may pose safety or health risks, e.g., commercially available ionizing air cleaners and other unproven technologies...*

A small number of HEPA units first became available in September of 2020 and were placed in non-ventilated spaces at schools after a brief evaluation. This was followed by larger orders arranged by both Procurement and by Facility Services as more HEPA units became available from July of 2021 and onwards.

At the same time, Facilities sourced best practices related to ventilation and Covid mitigation for public spaces as these became available through Federal and Provincial Agencies, the World Health Organization (WHO) as well as the American Society of Heating Ventilation and Air Conditioning Engineers (ASHRAE), and further updated our ventilation practices as directives from the Ministry of Education were passed on to Boards.

These directives continue to be updated by the ministry including the latest Ministry of Education, School Ventilation 2023-24 memo, 2023:B11 September 5, 2023 and the WRDSB continued to adjust our approach in step with those directives.

## **Background**

Ventilation measures carried out since the Autumn of 2020 have included the commissioning, verification, and where required, repairs and adjustments of the fresh air systems at every air handling unit throughout the Board including approximately 900+ roof top Heating Ventilation and Air Conditioning (HVAC) and similar units, 900+ classrooms unit ventilators and 200+ indoor fan coil air handling units of various sizes and arrangements. Older Hydronic units were at the same time upgraded with additional freeze protection to enable proper winter operation without freezing of coils and the resulting damage to schools. Controls on newer units with CO2 demand control ventilation were bypassed to enable the maximizing of the ventilation as CO2 Demand Control Ventilation limits the outside air as part of the energy conservation strategy.

Both newer and older units were adjusted to minimize recirculation of air / maximize fresh air and field verified to confirm proper operation. This involved 750+ Work Orders issued to both outside mechanical contractors as well as Board technicians and carried out in the Autumn of 2020, Spring+Autumn of 2021 and again in the Autumn of 2022, and maintained to this day.

Ministry of Education, School Ventilation 2023-24 memo, 2023:B11 September 5, 2023:

*... The guidance for the 2023-24 school year builds on the best practice/checklist document released by the Ministry of Education in August 2021 (2021: B14 School Ventilation) and, where applicable, has been augmented to reflect the latest information from ASHRAE...*

*School boards are expected to:*

*Ensure ventilation systems in all schools are inspected and in good working order for the new school year.*

*Continue inspection and maintenance of ventilation systems throughout the year.*

*Calibrate HVAC systems for maximum air flow and increased fresh air intake, while recognizing specification and limits of existing systems.*

*Use highest rated Minimum Efficiency Reporting Value (MERV) filter that can be accommodated by the system (MERV-13 if possible) and regularly:*

*Inspect filters to make sure they are installed and fit correctly.*

*Replace filters and consider increasing frequency of filter changes to maintain overall performance.*

*Check that sufficient airflow can be maintained based on HVAC design criteria.*

*Keep ventilations systems running when buildings are occupied, including by support staff and vendors.*

Ministry of Education, School Ventilation memo, 2021: B14 August 4, 2021:

*... The guidance for the 2021-22 school year builds on the best practice/checklist document released by the Ministry of Education in August 2020 through 2020: B12 Optimizing Air Quality in Schools and has been augmented to reflect latest information from Ontario's COVID-19 Science Advisory Table and Public Health Ontario*

*School boards are required to ensure ventilation systems in all schools are inspected and in good working order prior to the start of the school year and continue inspection and maintenance throughout the year. Inspections can be done internally by school board staff or by third parties. School boards are expected to continue using and/or adopt ventilation improvement measures that are applicable to schools' existing ventilation systems.*

*For schools with full mechanical ventilation, school boards are expected to:*

- use the highest-grade filters possible, preferably MERV 13;*
- undertake frequent filter changes through the school year;*
- operate ventilation systems 2 hours or more before and after school occupancy;*
- and*
- calibrate HVAC systems for maximum air flow and increased fresh air intake.*

*This guidance also applies to schools with mechanical ventilation for parts schools, such as additions.*

*For schools or parts of schools without mechanical ventilation, school boards are required to place standalone HEPA filter units in all occupied learning environments...*

*...school boards are expected to place a standalone HEPA filter unit in every occupied Full-Day Kindergarten (FDK) classroom as an additional health and safety measure to recognize that JK-SK students are not masked in the classroom...*

3 areas where the 2021 and 2023 guidance was adjusted in the context of our school facilities after consultation with building engineers, occupational hygienists and other environmental professionals is as follows.

- The operation of ventilation systems 2 hours or more before and after school occupancy was curtailed at some schools depending on the bell times so that all ventilation systems ran constantly from 6am to 6pm M+F. After hours and weekend operation for support staff and vendors was disabled due to the significant impact to utility costs. Custodial staff supporting rental programs and similar larger after hours and weekend groups were encouraged to bring systems online via the temporarily override button available at most thermostats.
- Maximum air flow for a large number of our schools is variable in functionality, day to day hour to hour, in line with the proper operation of those systems to ensure adequate temperature and humidity can be maintained and student/staff discomfort is minimized while ventilation is maximized.
- Where equipment breakdowns occurred affecting ventilation in occupied spaces, best efforts were made to put in place temporary HEPA units in occupied spaces

with some delays occurring from time to time when new service contractors are involved or when building automation systems are offline due to web security.

With funding from the Ministry including School Renewal / School Condition Improvement as well as other Board Funding, approximately 302 teaching and similar spaces were upgraded since 2020/21 with mechanical ventilated fresh air or are currently under design ahead of summer construction.

WRDSB is slated to have approx. 99% of all teaching and similar spaces mechanically ventilated at completion of construction, with outdoor centers and some tech classrooms remaining for future consideration.

### **Financial Implications**

Estimates for the added utility costs for the maximizing of ventilation in 2021/22 and 2022/23 are \$432,000.00 and \$439,000.00 respectively, projected at \$492,000.00 for 2023/24.

The upgrade of filters at each air handling unit to MERV-13 or highest possible MERV filters, as well as increasing the frequency of filter changes from 3 to 5 times per year, is estimated to have cost the Board over \$660,000.00 to date.

Costs for the additional commissioning, verification, adjustments, as well as associated repairs and freeze protection in order to maximize the ventilation, are estimated at \$500,000.00 to date. This is in addition to staff salaries and other costs and resources leveraged so that ventilation measures continue to be maintained in compliance with the Ministry of Education.

### **Communications**

Facility Services staff have consulted with the service providers including service contractors and mechanical and occupational consultants and internal subject matter experts to prepare this report.

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# Report to Committee of the Whole

January 22, 2024

## Subject: CO<sub>2</sub> Sensor Feasibility Study Update Report

### Recommendation

This report is provided for information of the Board.

### Background

The following Motion was adopted at the March 21, 2022 Committee of the Whole meeting:

*“That Trustees direct staff to investigate the feasibility and effectiveness of placing CO<sub>2</sub> monitors in a minimum of three schools, as a pilot project, to determine their usefulness at measuring and logging air quality, including CO<sub>2</sub> and clean air delivery rate (CADR) in occupied rooms; and That the report includes a full costing of implementing this pilot; and that staff report back to Trustees in April 2022.”*

Board of Trustees subsequently adopted the following motion at the April 11, 2022 Committee of the Whole meeting:

*“That the Waterloo Region District School Board Trustees direct staff to proceed with the CO<sub>2</sub> monitoring pilot project, as laid out in the motion as presented at the March 21, 2022, Committee of the Whole meeting, scheduled to begin when the building automation system (BAS) returns to pre-COVID levels and to run for a minimum of 3 months, with a report brought to Trustees within two months of the pilot concluding.”*

This motion was further amended on May 8, 2023 Committee of the Whole meeting:

*“and; That a process be developed that would share CO<sub>2</sub> levels of classrooms participating in the pilot with parents upon their request.”*

*“That the Board of Trustees direct staff to proceed with the CO<sub>2</sub> monitoring pilot project, as previously approved, for the months of September, October and November 2023, rather than waiting until the building automation system (BAS) returns to pre-COVID levels, as previously decided; and*

*That a process be developed that would share CO<sub>2</sub> levels of classrooms participating in the pilot with parents upon their request; and*

*That Trustees ask for a report on the results of this initiative at a Committee of the Whole meeting in January 2024.”*



## Status

The following directives and guides have been provided by the Ministry to Boards, related to CO<sub>2</sub> monitoring in schools:

Ministry of Education, School Ventilation directive, 2021:B14: August 4, 2021:

*“Carbon dioxide (CO<sub>2</sub>) levels can serve as a proxy measure for overall ventilation but is not a measure of COVID-19 transmission risk. To be done properly, CO<sub>2</sub> monitoring requires expertise and communication. School boards can choose to use CO<sub>2</sub> sensors, such as CO<sub>2</sub> monitors integrated with building automation systems or standalone sensors, to help identify less well-ventilated areas to prioritize for mitigation measures, but reading interpretation and mitigation decisions should be made with consideration of issues identified in Public Health Ontario’s guidance: Heating, Ventilation and Air Conditioning (HVAC) Systems in Buildings and COVID-19.*

Public Health Ontario, Heating, Ventilation and Air Conditioning (HVAC) Systems in Buildings and COVID-19 guide, 2nd ed., 1st Revision: April 2023:

*“Indoor CO<sub>2</sub> levels may be used as an indicator of ventilation as part of a professional assessment and are typically evaluated based on time-averaged readings. High indoor CO<sub>2</sub> levels can potentially identify spaces with poor outdoor air supply but CO<sub>2</sub> is not a direct indicator of SARS-CoV-2 transmission risk. If CO<sub>2</sub> monitors are being considered for people with no background on their use, advice on interpretation of levels and corresponding actions should be clear.”*

*“There are limitations to using CO<sub>2</sub> monitoring as an indicator of transmission risk, because it does not account for filtration or the activities taking place within an indoor space. For example, CO<sub>2</sub> levels are not affected by mitigation measures such as the use of masks or HVAC system filters or isolating someone who is highly infectious, while combustion devices and pets will increase CO<sub>2</sub>.*

*Because of this, rather than being used as a direct measure of transmission risk, many guidelines suggest the use of CO<sub>2</sub> as a tool to prioritize improvements in ventilation or other mitigation strategies.*

*Guidelines for indoor CO<sub>2</sub> levels have been proposed by the U.K. Scientific Advisory Group for Emergencies Environmental Modelling Group (SAGE-EMG) and ASHRAE (for schools and universities) to inform ventilation adjustments.”*

Health Canada in a recent publication (March 2021):

*“The recommended long term exposure limit for CO<sub>2</sub> is 1000 ppm (based on a 24 hour average) The guidelines are based on effects observed in epidemiological studies in schools or offices and controlled exposure studies.”*

At the WRDSB, approximately 98% of our teaching spaces have been outfitted with mechanical ventilation. Of these spaces, approximately 60% are designed to utilize CO<sub>2</sub> sensors to control ventilation. WRDSB schools have approximately 945 CO<sub>2</sub> sensors, directly mounted in the classrooms and similar spaces or integrated within return ductwork and approximately another 308 within dedicated unit ventilators serving portable classrooms.

The motion indicated the pilot should “determine their usefulness at measuring and logging air quality, including CO<sub>2</sub>, and clean air delivery rate (CADR) in occupied rooms”. It is therefore important to firstly understand what these measurables are intended to illustrate when applied technically.

1. CO<sub>2</sub> is a metric that is used to determine the effectiveness of the mechanical ventilation system in a building. Lower CO<sub>2</sub> levels indicates that the ventilation system is better able to replace stale indoor air with new outdoor air. By injecting more outdoor air into a building through the use of ventilation systems, buildings are able to lower measured CO<sub>2</sub> levels.
2. Clean Air Delivery Rate (CADR) is a metric that indicates how much air an air-filtration system can filter and deliver per minute. CADR rating is communicated as the volume of air in CFM (cubic feet per minute) that is cleaned of particles of small sizes.

Based on these two definitions, it should be understood that the use of CO<sub>2</sub> monitoring will not provide any data on Clean Air Delivery Rate (CADR).

Due to the fact that outdoor air is clean of respiratory particles (and associated viruses such as COVID-19), the use of additional ventilation (outdoor air) provides a means to improve indoor air quality. During the COVID-19 pandemic, both ventilation and filtration were used as mitigation measures, i.e. extra ventilation and air purifiers.

In response to the board motion, Facility Services have consulted with existing building automation service providers, including Professional Engineers specialized in building controls and HVAC systems. The following methodology for collecting CO<sub>2</sub> data from classrooms was considered:

- Placing a single measuring device (sensor) for each classroom selected;
- Sensors were located where they could not be reached to prevent tampering;
- Sensors did not provide a real time visual readout display; and
- data points were collected at 10 minute intervals.

Although CO<sub>2</sub> levels can be measured several different ways, the following approaches best aligned with the WRDSB’s existing resources and infrastructure to collect the data:

- **Utilizing existing CO<sub>2</sub> sensors** - Data was readily accessed from our existing CO<sub>2</sub> sensors integrated within the demand control ventilation systems, which are connected to the Building Automation System (BAS).

- **Augmenting existing CO<sub>2</sub> sensors with additional sensors** - Additional wall mounted sensors were installed in classrooms and the sensors were integrated into the BAS.
- **New CO<sub>2</sub> sensors** - New wall mounted sensors were installed in classrooms and the sensors were integrated into the BAS.

School boards have been directed by the Ministry to maximize the amount of fresh air provided to classroom spaces. As such, demand control ventilation systems are disabled to provide the maximum amount of fresh air into mechanically ventilated classrooms. If the pilot is intended to capture CO<sub>2</sub> levels during normal operations, BAS will need to be set to pre-COVID-19 operations which is contrary to the current direction provided to school boards.

Data on classroom CO<sub>2</sub> levels can be most effectively collected by using sensors integrated into the existing building automation systems where data can be logged and basic graphical analysis can be performed.

3 elementary schools were selected based on following criteria to attempt to obtain across the Board representation with these 3 ventilation types typical of our ventilation infrastructure;

- School with rooftop HVAC units controlled by the BAS which utilize CO<sub>2</sub> sensors to provide demand ventilation above minimum outdoor air setpoints and based on CO<sub>2</sub> levels measured in the return air ductwork.
- School with rooftop HVAC units that are controlled by BAS without CO<sub>2</sub> sensors which maintains ventilation levels based on a minimum outdoor air setpoint and mixed air temperatures.
- School with individual classroom ventilation units that are not controlled by the BAS and do not have existing CO<sub>2</sub> sensors. Ventilation is controlled by a minimum outdoor air opening position and a low temperature device. Low temperature devices regulate outside air flow to maintain comfortable temperatures and provide equipment protection from freezing damage.

The following schools and spaces were selected;

- Chicopee Hills PS - 27 classroom and similar teaching spaces
- Abraham Erb PS - 26 classrooms and similar teaching spaces
- Laurentian Senior PS - 22 classrooms and similar teaching spaces

Secondary schools, due to the large number of classroom spaces as well as variations in some classroom use due to program enrollment, as well as portable classrooms requiring physical data retrieval by external service providers when service takes place on the unit ventilators, were not considered at this time.

## **Financial Implications**

The cost to purchase, install and integrate classroom mounted CO<sub>2</sub> sensors at the 3 schools was approximately \$90,000. This included the provision and calibration of the CO<sub>2</sub> sensors, update of building automation programmable controllers, control wiring, raceways and related infrastructure for the new CO<sub>2</sub> devices, as well as programming,

graphics and integration with the school building controls and central building automation servers at the Education Centre.

Projected costs to implement this pilot across all classrooms Board wide is anticipated to cost upwards of \$6.0 million in capital with another \$100,000.00 in annual maintenance. CO<sub>2</sub> sensors and related hardware is understood to require replacement on a 5 to 10 year interval, adding to current maintenance budget needs.

### **Communications**

Facility Services worked with Communications and School Administration to develop a communication plan for school communities. School principals informed School Council Chairs of the pilot project. Communication was developed and shared directly with families and caregivers. Information, including school specific data, was shared on each respective school website.

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## **Appendix A – CO2 at 3 Schools**

Chicopee Hills PS CO<sub>2</sub> Average of All Room Averages per Study Day (Sep 2023)

