



2024/25 Climate Action Report

To: Planning and Priorities Committee

Date: 9 April, 2025

Report No.: 04-25-4865

Strategic Directions

- Commit to the implementation of the Truth and Reconciliation Commission of Canada: Calls to Action.
- Belong All students belong, are engaged, and valued in an inclusive environment.
- Achieve All students reach high levels of achievement, success, and personal development.
- Thrive All students graduate with the confidence, skills, and knowledge to thrive.
- Revitalize All students and staff learn and work in inclusive, safe, and modern environments.

Equity as a guiding principle: Equity is foundational to all TDSB work and will be embedded throughout the strategic directions.

Recommendation

It is recommended that the 2024/25 Climate Action Plan be received.

Context

Since the Board of Trustees endorsed the City of Toronto's climate emergency declaration in December 2019, the Board has:

- established net-zero greenhouse gas (GHG) emissions by 2050 as an aspirational goal for the TDSB, and more recently,
- asked the Director to include a plan for reducing the TDSB's building-related energy consumption by 20%, with timelines and resources, in the 2024 annual climate action report.

This report builds upon the last three annual reports to the Board, outlining actions planned across seven areas of focus.

Both the TDSB's Environmental Sustainability Community Advisory Committee and the Joint Management–Labour Environment Committee have been provided with an overview of this report.

The components of this report that contribute to facility renewal will support and align with the TDSB's Capital Revitalization Strategy.

An important note on resources to support this plan

Two important components of the following climate action plan are particularly dependent on support from the Ministry of Education:

- 1. The plan to reduce energy intensity in buildings by 20%, which will reduce GHG emissions and operating costs, will depend in part on the TDSB continuing to receive sustained School Condition Improvement (SCI) funding from the Ministry over the seven-year timeframe needed to achieve this target.
- 2. The plan to make our school buildings more resilient by adding mechanical ventilation and cooling to schools that do not have either is a very long-term plan, and will require the availability of funding, such as Proceeds of Disposition and Ministry approval to use them. The pace at which this work occurs will depend on available funding and approvals from the Ministry of Education.

The TDSB welcomes collaboration with the Ministry of Education to achieve major energy and utility savings, and to make our school buildings more resilient over the many years it will take to achieve significant progress.

Recent highlights

The TDSB is implementing changes in response to the climate crisis and is making progress in multiple areas, including the following seven examples:

- Energy pilot in 25% of TDSB schools saved \$1.35 million in utility costs. By optimizing Building Automation Systems (BAS) to operate mechanical equipment and control indoor air temperatures when the building is occupied, \$1.35 million was saved and 2.35 2,351 tonnes of GHG emissions were reduced across 139 pilot schools, in less than one year. For more information, see Appendix A.
- 2. A new low-carbon mass timber school is in design. The TDSB's first mass timber school is currently being designed to replace Poplar Road Junior Public School. Mass timber constructions enhance thermal performance and reduce carbon emissions.
- 3. **Transition to battery-operated lawn and garden tools is underway.** After extensive testing and evaluation, gas-powered lawn and garden tools will no longer be supplied. Instead, all new lawn mowers, string trimmers, leaf blowers, and hedge trimmers will be battery-operated.
- 4. **TDSB's electric vehicles are saving money on fuel and lowering GHG emissions.** TDSB trades currently operate eight fully electric cargo vans. An

electric van that averages 6,750 km in a 12-month period saves an estimated 3,131 kg of CO₂ and \$1,209 in fuel charges annually.¹

- 5. **New electric school buses are in service.** Five fully electric school buses have started serving TDSB schools. They will be used exclusively on the Toronto Islands once charging infrastructure has been installed, which is expected by September 2025.
- 6. **1,494 trees were planted last year.** A record number of trees for a single year were planted at 86 schools across the TDSB in 2024. This number exceeds last year's record of 1,262 trees planted at 90 schools. To better protect the health and safety of students and staff, planting trees at high-needs schools in areas where the tree canopy is smaller and extreme heat events have greater impact continues to be a priority. Appendix B maps where trees were planted at the TDSB in 2023 and 2024.
- 7. **First annual Climate Camp for educators.** Over four days in August, teachers and Early Childhood Educators engaged in professional learning activities (keynotes, workshops, and indoor and outdoor activities) to help them address the realities of teaching in the face of climate change. For more information, see Appendix C.

A climate out of control

The need to address climate change remains urgent. In his 2024 message for the new year, UN Secretary-General António Guterres reported that "we have endured a decade of deadly heat. The top ten hottest years on record have happened in the last ten years, including 2024."²

The irreparable damage that GHG emissions, primarily from burning fossil fuels, have inflicted on the planet has ensured that global temperatures will continue to rise upwards for decades, further destabilizing the earth's climate systems.³

While the climate crisis is already severely impacting populations across the globe, and most acutely in the Global South, Canadian communities are increasingly affected.

2024 was the costliest year in Canadian history for weather-related insurable losses: \$8.5 billion. An additional \$24 billion in uninsurable damages have been borne by governments, businesses, and individuals.⁴

In the summer of 2024 alone, four events linked to extreme weather resulted in an estimated \$7.79 billion in insurable damage:

¹ When compared to a conventional van with an internal combustion engine, an electric van is estimated to save 46.39 kg of CO₂/100 km in emissions and \$17.91/100 km in fuel charges.

² "2024 to become the hottest year on record", *UN News*, December 31, 2024, https://news.un.org/en/story/2024/12/1158621

³ Dickie, G., and Withers, A., "Explainer: How climate change fuels extreme heat worldwide, *Reuters*, June 20, 2024, <u>https://www.reuters.com/business/environment/how-climate-change-fuels-extreme-heat-worldwide-2024-06-20/</u>

⁴ O'Hara, C., "Damage from natural disasters in Canada hit record \$8.5-billion in 2024, as industry group warns some regions may become uninsurable", *The Globe and Mail*, January 13, 2025, <u>https://www.theglobeandmail.com/business/article-insured-damage-from-natural-disasters-in-canada-hit-85-billion-in-2024/</u>

- July 16, 2024: close to 100 mm of rainfall in Toronto resulted in flash flooding and left an estimated 170,000 residents without power.⁵ Just over a month later, on August 17, the city was once again hit with a deluge of rain. 128.3 mm was reported at Toronto Pearson International Airport, 64% more than the airport usually reports on average for the entire month of August.⁶ The combined estimate of insured damage from these two storms was \$990 million.⁷
- July 22, 2024: after a week-long stretch of sustained high temperatures, a wildfire ripped through Jasper, leaving mass destruction in its path. By the time the fire had been contained, an estimated 30% of the mountain town's building structures, including homes and businesses, had been destroyed.⁸ An estimated \$1.1 billion in insurable damage had resulted from the Jasper wildfire.⁹
- August 5, 2024: Calgary was hit with a severe hailstorm. At \$3 billion in insurable damage, this storm was reported to be one of the costliest weather events in Canada's history, second only to the Fort McMurray Wildfire of 2016.¹⁰
- August 9–10, 2024: 35 municipalities across southern Quebec experienced significant flooding due to the remnants of Hurricane Debby,¹¹ resulting in an estimated \$2.7 billion in insurable damage.¹²

The increasing frequency of extreme weather events are damaging the economy. Productivity is lost and communities require significant capital resources to recover. By the end of this century, the value of the global economy could be reduced by almost one-third due to climate change.¹³

The climate crisis is also triggering an insurance crisis for homeowners across the United States (U.S.). As the warming planet experiences wildfires, hurricanes, and flooding, more and more homeowners cannot access home insurance. Since 2018, insurance companies have dropped more than 1.9 million home insurance contracts

⁵ Lang, E., "Toronto power grid unprepared for extreme weather: researchers", *CBC*, July 25, 2024, <u>https://www.cbc.ca/news/canada/toronto/toronto-grid-flooding-resilience-1.7271387</u>

⁶ D'Andrea, A., "Toronto seeing wettest summer ever as rainfall grips Eastern Canada", *Global News*, August 20, 2024, <u>https://globalnews.ca/news/10705294/toronto-montreal-rainfall-records/</u>

⁷ "2024 shatters record for costliest year for severe weather-related losses in Canadian history at \$8.5 billion", *Insurance Bureau of Canada (IBC)*, January 13, 2025, <u>https://www.ibc.ca/news-insights/news/2024-shatters-record-for-costliest-year-for-severe-weather-related-losses-in-canadian-history-at-8-5-billion</u>

⁸ Rana, U., "Why Jasper wildfire shows it's a 'gamble' being in Canada's tourism industry", *Global News*, July 27, 2024, <u>https://globalnews.ca/news/10646017/jasper-wildfire-tourism-industry-impact</u>

⁹ "2024 shatters record for costliest year for severe weather-related losses in Canadian history at \$8.5 billion", *IBC*, January 13, 2025.

¹⁰ "2024 shatters record for costliest year for severe weather-related losses in Canadian history at \$8.5 billion", *IBC*, January 13, 2025.

¹¹ O'Malley, O., and Rowe, D.J., "Storm Debby: 35 Quebec municipalities affected by rainstorm as clean up begins", *CTV News*, August 11, 2024, <u>https://montreal.ctvnews.ca/storm-debby-35-quebec-municipalities-affected-by-rainstorm-as-clean-up-begins-1.6996580</u>

¹² "2024 shatters record for costliest year for severe weather-related losses in Canadian history at \$8.5 billion", *IBC*, January 13, 2025.

¹³ Rapley, J., "Climate change will knock one-third off world economy, study shows", *The Globe and Mail*, May 18, 2024, <u>https://www.theglobeandmail.com/business/commentary/article-climate-change-will-knock-one-third-off-world-economy-study-shows/</u>

across the U.S. Without insurance, most people cannot get a mortgage, and without a mortgage, they cannot buy a home. Communities deemed too risky to insure face the risk of falling property values and loss of municipal tax revenues to support schools, police, and other basic services.¹⁴

As we emphasized in the 2023 Climate Action Report, the climate crisis is having a profoundly negative impact on the well-being of young people. In a national survey that asked 1,000 Canadian youth aged 16 to 25 about their emotions related to the climate, nearly half indicated that they feel humanity is doomed.¹⁵ Children are also more vulnerable to some of the physical effects of climate change, such as extreme heat¹⁶, while experiences of flooding can also negatively impact their mental health and well-being¹⁷.

The degree to which generations of young people will experience a hotter and harsher world depends on the choices we make now and in the near term to reduce planet-warming emissions.¹⁸

Solutions to help mitigate the effects of climate change, such as those outlined in the City of Toronto's TransformTO Net-Zero Strategy, do exist. But the fate of our planet, and most importantly, the quality of life for the youth of today and tomorrow, depends on the will of governments (including school boards) and others with influence to fast-track these solutions.

2024/25 Climate Action Plans: Mitigation and Adaptation

The 2024/25 climate action plan continues to emphasize mitigation by reducing the TDSB's carbon footprint, which is the second largest in Ontario's broader public sector, compared to all cities, hospitals, universities, and colleges.

This year's report also puts much more emphasis on climate adaptation, a necessary step given the future impact of more frequent extreme heat and precipitation on our schools and students.

A recent report prepared for the City of Toronto by the Toronto and Region Conservation Authority found that Toronto used to get an annual average of 9.7 very hot days when the temperature rose above 30 degrees Celsius. Between 1991 and 2020,

¹⁴ Flavelle, C. and Rojanasakul, M., "Insurers Are Deserting Homeowners and Climate Shocks Worsen", *New York Times*, December 18, 2024, <u>https://www.nytimes.com/interactive/2024/12/18/climate/insurance-non-renewal-climate-crisis.html</u>

¹⁵ Field, E., and Galway, "Climate emotions and anxiety among young people in Canada: A national survey and call to action", *The Journal of Climate Change and Health*, Volume 9 (2023).

¹⁶ "Extreme heat affects early childhood development and health (Working Paper 1)", *Harvard University*, 2023, <u>https://developingchild.harvard.edu/wp-content/uploads/2024/10/ECSCEE-Heat-Paper.pdf</u>

¹⁷ Glen, N. and Myre, M., "Post-flooding community-level psychosocial impacts and priorities in Canada: a preliminary report", *National Collaborating Centre for Environmental Health*, November 22, 2022, <u>https://ncceh.ca/resources/evidence-reviews/post-flooding-community-level-psychosocial-impacts-and-priorities-canada</u>

¹⁸ "Climate change 2023 synthesis report: Summary for policy makers", *Intergovernmental Panel on Climate Change*, 2023. <u>https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf</u>

there were an average 14 such days a year.¹⁹ By 2100, with very high GHG emissions, Toronto could see 68 extra very hot days per year, more than two extra months worth, compared to 1980.²⁰

In addition, by the end of the century, annual total precipitation in Toronto could increase by approximately 11-16% compared to the 1980s.²¹

Now that we have a clear idea of what is coming, we must be prepared. This year's report is a start.

The following climate action plan presents seven areas of focus:

- 1. Buildings
 - a. Climate Mitigation
 - b. Climate Adaptation and Resilient School Buildings
- 2. Grounds and Green Roofs
- 3. Transportation
- 4. Waste Diversion, Recycling, and Organics
- 5. Education and Engagement
- 6. Urban Indigenous Education
- 7. Outdoor Education

The report also details the resources that will be required to implement the plan and communication considerations.

FOCUS AREA #1: BUILDINGS

Part A: Climate Mitigation

Renewable energy is a strength

The TDSB is a leader among school districts for the scale of its rooftop solar photovoltaic (PV) installations, with 38 megawatts (MW) of capacity or 148,000 solar panels on 358 buildings. Annually, these panels:

- generate about 40.6 million kWh of electricity, which is enough to supply 4,274 average Ontario homes, and
- offset about 114 tonnes of CO₂, equivalent to consuming 48,565 litres of gasoline.

GHG emissions and utility costs are too high

¹⁹ "Toronto's current and future climate", *Toronto and Region Conservation Authority*, 2024, <u>https://www.toronto.ca/wp-content/uploads/2024/12/949f-TorontosCurrentandFutureClimate-REPORT-</u> <u>Final.pdf</u>

²⁰ "Can Toronto meet its climate change-fighting goals? The latest numbers show a snapshot - and a setback", *Toronto Star*, December 16, 2024, <u>https://www.thestar.com/news/gta/can-toronto-meet-its-climate-change-fighting-goals-the-latest-numbers-show-a-snapshot-and/article_743e54a8-b973-11ef-b7dc-8b5753ab26b6.html</u>

²¹ "Toronto's current and future climate", *Toronto and Region Conservation Authority*, 2024,

Despite our renewable energy strength, the TDSB consumes too much non-renewable energy in its buildings per square foot.

Compared to other Ontario school boards, the TDSB ranks 61st out of 72 districts for energy intensity per square foot, which is a combined measure of electricity and natural gas.²²

The TDSB's energy intensity is more than 20% higher than the Ontario school board average and its GHG emissions are 50% higher.²³

The TDSB's energy intensity is higher than its peers in part because the sheer size of its building portfolio is much larger and more complex to manage and the average age of its buildings is also older than other school districts.

Also, since maintenance funding from the Ministry is based on student enrollment, not the size of the building portfolio, TDSB is at a disadvantage because it has so many empty pupil places, which means that maintenance has been underfunded for almost 30 years, which has taken a big toll on the energy efficiency of buildings.

Having said that, there is significant room for improvement, which is important because consuming an abundance of energy has both an environmental and a financial cost.

In terms of environmental impacts, the energy used in TDSB buildings added 119,617 tonnes of CO_2 to the atmosphere in 2022/23, equivalent to burning 51 million litres of gasoline. To put this number in perspective, the 148,000 solar panels on 358 TDSB schools offset 114 tonnes.

On the financial side, electricity and natural gas cost the TDSB \$70.8 million in 2023/24 Electricity and natural gas rates are projected to continue to rise to \$88.6 million by 2029/30 if consumption remains the same.

The Opportunities

TDSB's large building portfolio and its higher energy intensity per square foot presents an opportunity to significantly reduce GHG emissions and operating costs.

The following energy reduction scenarios are possible:

10% reduction: readily achievable

In the short term, based on the success of the pilot featured above, a 10% reduction in energy intensity is readily achievable and would result in an estimated annual:

- GHG reduction of 13,296 tonnes CO₂; equivalent to consuming 5,664,177 litres of gasoline
- savings of \$5,115,029

²² "2024 Top Energy Performing School Boards Report", Sustainable Schools, Climate Challenge Network.

²³ The TDSB's 2023 Climate Action Plan provided more detailed information about TDSB's higher energy intensity and GHG emissions compared to peer school boards.

Moving from 10% to 20%: more challenging but doable

A 20% reduction in energy intensity will be more challenging but doable with sufficient commitment, discipline, and resources. A 20% reduction would bring the TDSB closer to the provincial school board average and result in an estimated annual:

- GHG reduction of 25,898 tonnes CO₂; equivalent to consuming 11,032,706 litres of gasoline
- savings of \$10,083,154

45% reduction: an aspirational goal to place the TDSB in the top-performing school boards in Ontario

This long-term target would bring the average energy intensity of all TDSB buildings in line with the top quartile²⁴ of all schools in Ontario, placing the TDSB among the best performing school districts in the province.

Achieving a 45% reduction would result in an estimated annual:

- GHG reduction of 58,819 tonnes; equivalent to consuming 25,057,253 litres of gasoline
- savings of \$24,139,019

While achieving 45% savings is our aspirational goal, our interim target is to achieve 20% savings.

As indicated above, the Board of Trustees has directed staff to develop a plan to achieve a 20% reduction in energy use, including timelines and resources. The following is our plan.

THE 20% REDUCTION PLAN

Seven goals and 17 objectives

The plan is to achieve a 20% reduction in energy intensity per square foot (expressed as ekWh/sq. ft.) over the next seven years, beginning in 2025/26 and reaching the target by the end of the 2031/32 school year. The baseline is the 2022/23 school year.

Leveraging the full potential of Building Automation Systems (BAS), the first goal, will help us reach the first 10% in savings. To get from 10% to 20% will require significant progress in all of the other goals.

The seven goals and 17 objectives are:

- 1. **Building Automation Systems (BAS)** Leverage the full potential of BAS to save energy.
 - 1.1. Increase the capacity to centrally monitor BAS, improve scheduling, identify problems, and address concerns as they arise, particularly issues raised by caretakers

²⁴ The top quartile means in this case that TDSB buildings would perform at the level of the top 25% of schools in Ontario.

- 1.2. Phase in the central control over BAS schedules (except for buildings with guarded steam plants)
- 1.3. Minimize the frequency and duration of manual equipment overrides
- 1.4. Prohibit unauthorized tampering with building controls (e.g., occupancy sensors and lockable thermostats) at the local level
- 2. **State of good repair** Continue to invest strategically in state-of-good-repair projects that meet Ministry of Education selection criteria, but that also have high savings potential.
 - 2.1. Continue to Identify, prioritize, and repair or replace components of building systems that are wasting energy
 - 2.2. Continue to budget for, plan, and implement state-of-good-repair projects that meet Ministry criteria and achieve significant energy savings
 - 2.3. Reinvest a portion of energy savings into additional staffing to coordinate initiatives designed to save energy and improve ventilation
 - 2.4. Replace rooftop air-handling units at the end of their life with highperformance hybrid heat-pump systems
 - 2.5. Develop and implement a multi-year program to retrofit lighting systems with LED technology in order to achieve energy savings and plan for the impacts of regulations that will phase out fluorescent lighting by 2030
 - 2.6. Continue to convert steam boiler plants to hot water boilers
- 3. **Maintenance -** Create a predictable, long-term funding source to improve the maintenance of building systems to lower energy costs.
 - 3.1. Establish a stable, long-term funding source for the maintenance of building systems to reduce energy use and utility costs
- 4. **External funding** Leverage external funding opportunities to implement projects that will reduce energy use.
 - 4.1. Participate in the Independent Electricity System Operator (IESO) Program for retrofitting Variable Frequency Drives to existing fan motors
- 5. **Utility incentives** Maximize income from utility incentives and rebates for energy saving projects and direct it into the Environmental Legacy Fund to support future investments.
 - 5.1. Streamline the process for applying for utility incentives and rebates
- 6. **New school energy performance** Build new schools that consistently achieve top energy performance.
 - 6.1. Make improvements to the project development and handover process
- 7. **School staff and student engagement** Improve school staff and student engagement in energy conservation in their schools.
 - 7.1. Support caretakers in understanding their role in energy management
 - 7.2. Increase the awareness of the TDSB's goal to reduce energy intensity among school staff

Cumulative Savings

Reducing energy intensity by 20% over seven years will decrease operating costs by \$36 million and lower GHG emissions by 88,478 tonnes, equivalent to consuming 37.7 million litres of gasoline:

Year 1 (2025-26): \$941,225 Year 2 (2026-27): \$2,000,110 Year 3 (2027-28): \$3,294,317 Year 4 (2028-29): \$4,706,186 Year 5 (2029-30): \$6,431,795 Year 6 (2030-31): \$8,314,269 Year 7 (2031-32): \$10,400,685

Total Cumulative Savings: \$36,088,58725

Cumulative GHG Reductions

Year 1 (2025-26): 1,787 tonnes Year 2 (2026-27): 4,132 tonnes Year 3 (2027-28): 7,590 tonnes Year 4 (2028-29): 11,605 tonnes Year 5 (2029-30): 16,216 tonnes Year 6 (2030-31): 20,858 tonnes Year 7 (2031-32): 26,287 tonnes

Total Cumulative GHG Reduction: 88,478 tonnes

Part B: Climate Adaptation and Resilient School Buildings

As noted above, this year's report focuses more explicitly on adaptation because we need to prepare our buildings for more extreme heat and precipitation.

According to the *Ontario Provincial Climate Impact Assessment Report*, released by the Ministry of the Environment in 2023, best practices for preparing the public sector for the impacts of climate change include:

- fast-tracking the deployment of green infrastructure into designs,
- developing technical design guidelines to improve resilience,
- increasing funding to support infrastructure upgrades that enhance climate adaptation,
- undertaking risk assessments for new infrastructure and the renewal of infrastructure, and
- developing policies that support the inclusion of resilience principles into projects.²⁶

²⁵ The estimated savings are based on reductions in energy intensity per sq. foot and assume weathernormalized natural gas consumption and no increase in utility rates.

²⁶ Ontario Ministry of the Environment, Conservation and Parks, "*Ontario Provincial Climate Change Impact Assessment: Technical Report*", Prepared by the Climate Risk Institute in collaboration with Dillon Consulting Limited, January 2023, <u>https://www.ontario.ca/files/2023-08/mecp-ontario-provincial-climate-change-impact-assessment-en-2023-08-17.pdf</u>

This section of the report attempts to apply the Ontario Provincial Climate Impact Assessment to school buildings.

We need to continue to focus on making school buildings more resilient to extreme heat and on equipping schools for the potential of a future pandemic. Continuing to invest in resilient school buildings will help ensure that students can continue to learn and thrive in schools in the face of these scenarios.

See also the Grounds and Green Roofs section below, which includes adaptation measures, such as tree planting and stormwater management.

Prolonged periods of extreme heat can make learning difficult, and pandemics can contribute to school closures. How can we prepare our schools so that students can attend and learn despite these threats?

Adding cooling to schools

In the face of extreme heat, schools need to be cooled.

Major investments have already been made to add cooling to TDSB schools. In 2018, portable air conditioning units were added to libraries in 230 schools at a cost of \$3M. Between 2017 and 2022, air conditioning was added to gymnasiums in 267 schools at a cost of \$80M.

At the same time, there are many schools that do not have air conditioning in their classrooms, which will need more attention in the years to come.

Reducing the transmission of respiratory infections

The TDSB has high quality, institutional-grade high efficiency particulate air (HEPA) filters in all of its classrooms. It has also been replacing and upgrading existing mechanical ventilation systems.

And yet, some schools do not have mechanical ventilation systems in their classrooms.

Ideally, the ultimate goal will be to have both HEPA filters in all classrooms (which currently exists) and have mechanical ventilation in all classrooms, thereby providing the ultimate protection should there be another pandemic at some point in the future.

While this undertaking will take many years, we are working on it now, as outlined below.

RESILIENT SCHOOL BUILDINGS PLAN

For creating more resilient school buildings, this report focuses on the two dimensions discussed above: the ability to cool classrooms during extreme heat and mechanically ventilating classrooms.

The following six goals and eight objectives aim to provide cooling to combat heat and mechanical ventilation systems to help reduce the spread of respiratory viruses:

1. Gradually add high-quality mechanical ventilation and cooling to schools that do not have any mechanically ventilated classrooms.*

1.1. In the initial phase of the program, add mechanical ventilation to a small number of pilot single-story schools that do not have mechanically ventilated classrooms

*As noted in the introduction to this report, adding mechanical ventilation and cooling to schools will require the availability of Proceeds of Disposition, and approval from the Ministry of Education to use them.

- 2. Increase internal capacity for troubleshooting and improving the performance of existing mechanical ventilation systems.
 - 2.1. Include responsibility for monitoring and assessing the performance of ventilation systems in the duties of some of the professional engineers in the Energy and Climate Action team
- 3. Proactively identify broken mechanical ventilation systems and/or cooling equipment and either fix or replace it.
 - 3.1. Develop a process for identifying, prioritizing, and either repairing or replacing components of existing ventilation systems that are not working
 - 3.2. Systematically budget for, plan, and implement state-of-good-repair projects that meet Ministry criteria and improve ventilation
 - 3.3. Replace rooftop air-handling units at the end of their life with highperformance hybrid heat-pump systems
- 4. Create an adequate funding source for the maintenance of mechanical ventilation systems and/or cooling equipment.
 - 4.1. Establish a stable, long-term funding source for the maintenance of building systems to improve ventilation and reduce energy consumption
- 5. Revise the TDSB's Environment Policy (PO28) to include references to climate resilient schools.
 - 5.1. The reference to climate resilient schools will be made when the Environment Policy is next updated, which is expected in the next couple of years.
- 6. Prepare and implement an annual plan to improve the resilience of school buildings and report to the Board every year.
 - 6.1. A resilient school buildings plan will be combined with the climate action plan into one annual report to the Board of Trustees starting in the 2025/26 school year

FOCUS AREA #2: GROUNDS AND GREEN ROOFS

Like the resilient school buildings plan outlined above, this section also focuses on adaptation measures, specifically:

- 1. tree planting and canopy coverage
- 2. stormwater management
- 3. green roofs

How extreme heat impacts people and communities differently

Though heat waves are becoming more frequent and severe, not everyone is equally affected. For example, young children, elderly people, people with chronic illnesses, and

those who cannot cool their living spaces or who have to work in the heat are simply more vulnerable.

Not all areas are affected equally either. Variations in the composition and distribution of the built environment can either increase or moderate surface temperatures during heat waves. Parts of the city that have vast expanses of dark surfaces (rooftops, roadways, parking lots) become much hotter because those surfaces amplify heat, a phenomenon known as the urban heat island effect. In other areas of the city where the tree canopy is extensive, such as High Park, heat is absorbed by the trees, which has a cooling effect. In addition to cooling surfaces, trees offer a variety of other benefits that relate to human well-being and also contribute to ecosystem services, such as carbon sequestration.²⁷

To better understand how people at the neighbourhood level are impacted by extreme heat, researchers at the University of Toronto's School of Cities have developed a Heat Vulnerability Index²⁸ for Toronto, represented as a map (see Appendix D). The Index helps us understand how extreme heat affects school communities differently, which in turn can help guide our investments into resilient school facilities.

Tree planting and canopy coverage

The TDSB has had a large tree planting program since 2006, which, in recent years, has accelerated.

A cornerstone of the program is the TDSB's collaboration with the City of Toronto, who not only supply us with hundreds of free trees every year, but who also provide grants to help us cover our costs.

In recent years, we have been focusing on planting trees on school grounds with few trees, which are often also in parts of the city with little tree canopy and therefore more vulnerable to extreme heat.

TREE PLANTING AND CANOPY COVERAGE PLAN

Our focus this year will be to continue to plant large numbers of trees at schools that really need them and to invest in the maintenance of trees.

The two goals and six objectives of the plan are to:

- 1. Increase the tree canopy coverage, particularly at high-needs schools in parts of the city that have low tree canopy coverage.
 - 1.1. Include tree planting in all site improvement projects
 - 1.2. Incorporate extensive tree planting into all comprehensive site improvement projects
 - 1.3. Use the Heat Vulnerability Index to help guide investments into tree planting

²⁷ "More evidence of the benefits of trees in urban areas", *American Psychiatric Association*, September 20, 2019, <u>https://www.psychiatry.org/news-room/apa-blogs/evidence-of-the-benefits-of-trees-in-urban-areas</u>

²⁸ "Mapping heat vulnerability in Toronto", *University of Toronto, School of Cities*, 2024, <u>https://schoolofcities.github.io/heat-vulnerability-toronto/</u>

- 1.4. Provide structure, support, and space for developing root systems
- 2. Invest in the maintenance of trees during the first five years after planting.
 - 2.1. Water newly planted trees for the first two years
 - 2.2. Structurally prune trees within the first five years of being planted

Increasing frequency and intensity of extreme precipitation

As noted above, last year alone, extreme precipitation in Toronto and in 35 municipalities in southern Quebec resulted in an estimated \$3.4 billion in insured damages.

As the atmosphere warms, it is able to hold more moisture, at a rate of 7% more for every degree of warming.²⁹ In large cities with vast areas of paved surfaces, current stormwater infrastructure cannot handle the extreme volumes of rainwater that are falling in short periods of time. The result is extensive flooding.

As Toronto's second-largest property owner with lots of impervious surfaces (playgrounds and parking lots), the TDSB must look for opportunities to reduce the amount of stormwater that makes its way into the system. The stormwater management plan outlined below is a start.

STORMWATER MANAGEMENT PLAN

The two goals and four objectives of the plan are to:

- 1. Retain as much stormwater on site as possible and divert less into storm sewers.
 - 1.1. When artificial turf projects are designed, they will include measures to retain as much stormwater as possible on the site and minimize the amount of water directed to storm sewers
 - 1.2. When older artificial turf projects are being replaced, modifications will be made as needed to ensure as much stormwater as possible is retained on site
 - 1.3. School ground revitalization projects will identify and implement opportunities to improve the permeability of the site
- 2. Look for and take advantage of opportunities to store and then make productive use of rainwater for irrigation.
 - 2.1. During the design process for site projects, explore opportunities for storing and harvesting rainwater

GREEN ROOFS PLAN

Green roofs were identified in the Toronto Green Standards for new buildings, including schools to help reduce the heat island effect and site water run off. As part of the Site Plan Approvals process, the TDSB's newly built schools include an area of green roof, as shown in Appendix E. As new replacement schools are designed and built, this number will likely increase steadily in the coming years.

²⁹ Met Office. (2023, March 7). *New research shows increasing frequency of extreme rain*. <u>https://www.metoffice.gov.uk/about-us/news-and-media/media-centre/weather-and-climate-news/2023/new-research-shows-increasing-frequency-of-extreme-rainfall-events</u>

For the purposes of this report, our focus is on ensuring that green roofs receive the maintenance they require to endure over time.

The goal and objectives included in the green roof plan include the following:

- 1. Ensure green roofs are well maintained.
 - 1.1. Inspect each green roof twice a year
 - 1.2. Ensure remedial actions are identified and addressed (e.g., drains cleared, woody invasive plant material removed, bare spots reseeded, soil topped-up as needed)
 - 1.3. Identify green roofs that need more attention and develop a program to deliver the extra support

FOCUS AREA #3: TRANSPORTATION

In Toronto, the transportation sector is responsible for 35% of the city's overall greenhouse gas emissions.³⁰ Reducing the TDSB's contribution to this figure will require a transition away from the use of fossil-fueled vehicles.

TRANSPORTATION PLAN

The following two goals and four objectives comprise the transportation plan:

- 1. Continue the transition of TDSB fleet of vehicles to electric.
 - 1.1. Subsidize the cost of purchasing electric vehicles (EV) for TDSB fleet using the Environmental Legacy Fund
- 2. Expand the TDSB's electric vehicle charging network.
 - 2.1. Explore options and understand the implications of installing EV charging infrastructure at TDSB sites
 - 2.2. Clearly identify the planning, design, procurement, installation, maintenance, and operation considerations for EV charging infrastructure within the context of the TDSB
 - 2.3. Invest in electric vehicle charging infrastructure at select TDSB sites

FOCUS AREA #4: WASTE DIVERSION, RECYCLING, AND ORGANICS

In 2022, emissions from the waste sector were the third-largest source of GHG emissions for the City of Toronto, comprising 9% of the city's GHG emissions by sector.³¹

WASTE DIVERSION, RECYCLING, AND ORGANICS PLAN

The goal and objectives of the waste diversion, recycling, and organics plan is to:

1. Improve TDSB's waste diversion rates.

³⁰ "Sector-based emissions inventory", *City of Toronto*, February 7, 2024, <u>https://www.toronto.ca/services-payments/water-environment/environmentally-friendly-city-initiatives/transformto/sector-based-emissions-inventory</u>

³¹ "Sector-based emissions inventory", *City of Toronto*, February 7, 2024.

- 1.1. Provide support to schools to increase the TDSB's overall capacity to divert waste
- 1.2. Improve waste diversion at all administrative sites

FOCUS AREA #5: EDUCATION AND ENGAGEMENT

The TDSB's mission is to enable all students to reach high levels of achievement and well-being and to acquire the knowledge, skills, and values they need to become responsible, contributing members of a democratic and sustainable society. Climate change education and engagement helps to support this mission.

EDUCATION AND ENGAGMENT PLAN

The two goals and five objectives of the education and engagement plan are:

- 1. Increase the capacity of school teams to take climate action in their communities.
 - 1.1. Provide opportunities for students and staff to take climate action through the EcoSchools Canada Certification Program
 - 1.2. Enhance climate change education learning opportunities and encourage the development of global competencies
- 2. Increase the capacity of TDSB staff to address climate action through their work.
 - 2.1. Continue to offer professional learning opportunities in climate change education for educators in collaboration with the Ontario Institute for Studies in Education at the University of Toronto (OISE/UT)
 - 2.2. Enhance curriculum supports for educators to strengthen climate change education in classrooms
 - 2.3. Continue to invest in professional development for staff who are leading the effort to reduce TDSB GHG emissions

FOCUS AREA #6: URBAN INDIGENOUS EDUCATION

The Urban Indigenous Education Centre is committed to upholding the value of Indigenous knowledges and experiences as they relate to climate change impacts, mitigation, adaptation, and education. Beyond this, we also remain committed to the implementation of the Truth and Reconciliation Commission of Canada's 94 Calls To Action (TRC), and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). We recognize the inherent connection between the health of the Land and the holistic health of all peoples and strive to act in ways that reflect the values of reciprocity, relationship, and respect for Earth.

As per the Truth and Reconciliation report, *"Indigenous conceptions of reconciliation extend beyond peoples to [include] the natural world and are informed by direct relationships to the land. We must, the Elders say, reconcile with the Earth itself (<u>TRC</u> <u>2015a</u>, 123)."*

URBAN INDIGENOUS EDUCATION PLAN

The goals and objectives of the Urban Indigenous Education plan are:

1. Identify Indigenous Land-Based Education as a fundamental priority

- 1.1. Continue to advocate for the opening of the Boyne Natural Science School as an Indigenous Land-Based Learning Site, as it speaks to the importance of Indigenous education across TDSB schools and Indigenous approaches to the issues of climate change
- 2. Remain committed to honouring the TRC Calls to Action and the UNDRIP as Guiding Principles of the TDSB's Multi-Year Strategic Plan
 - 2.1. Create additional opportunities for all students to learn from Indigenous knowledges and perspectives
 - 2.2. Continue to engage teachers in professional learning about the UNDRIP and the TRC Calls to Action 62 and 63, along with connections to curriculum, developing resources to support K–12 student and teacher learning, and UIEC support of Indigenous students and their families
- Support the Ontario Institute for Studies in Education at the University of Toronto (OISE/UT) in the delivery of professional learning with respect to Indigenous knowledges and perspectives about climate change and climate change education
 - 3.1. Reflect Indigenous knowledges and perspectives about climate change and climate change education in the professional learning opportunities offered at the TDSB's summer Climate Camp
- 4. Reduce and minimize waste at the UIEC
 - 4.1. Continue ongoing efforts to reduce and minimize waste at the UIEC, particularly in the context of hosting events
- 5. Include TRC Calls to Action and UNDRIP throughout the TDSB
 - 5.1. Continue to advocate for the inclusion of TRC Calls To Action and UNDRIP throughout TDSB policies, bylaws and Board governance structures, including this report

FOCUS AREA #7: OUTDOOR EDUCATION

The Toronto Outdoor Education Schools (TOES) provides meaningful curriculumconnected outdoor experiential learning opportunities to students across the TDSB at nine sites. These include four day centres (Forest Valley Outdoor Education Centre, Hillside Outdoor Education School, Toronto Urban Studies Centre, and Warren Park Outdoor Education Centre) and five overnight centres (Etobicoke Outdoor Education Centre at Albion Hills, Island Natural Science School, Mono Cliffs Outdoor Education Centre, Sheldon Centre for Outdoor Education, and the Scarborough Outdoor Education School).

It is the TDSB's mandate to provide every elementary student with an overnight opportunity in Grade 6 and two visits to a day centre throughout their elementary career. Schools are allocated day trips based on enrollment. The TDSB recommends that these day visits are offered to students in grade 2 and 4; however, local decision-making determines which classes attend.

A program dedicated to secondary students is offered at Forest Valley Outdoor Education Centre. When possible, additional trips are distributed to classes through a waitlist process, prioritized by the Learning Opportunity Index (LOI). In addition to the programming offered at TDSB outdoor education sites, two K–8 Learning Coaches support teachers across the system in taking students outside during instructional time, through the TDSB's Outdoor Learning Support to Schools Initiative. This year (2024/25) marks the fourth year of the initiative and the findings are captured in <u>A Collaborative Approach to Outdoor Learning Support in Schools</u>.

Action Plan and Associated Timeline

20% Energy Reduction Plan

- The goal is to achieve 20% reduction in energy intensity over seven years, starting in 2025/26.
- Continue to identify strategic state-of-good repair projects that meet Ministry funding eligibility criteria, with the goal of increasing energy savings starting in 2025-26 and over the next seven years. This will include seeking EDU approval to utilize Proceeds of Disposition (POD) to augment or add new energy savings systems or components.
- Allocating a percentage of energy savings towards a maintenance fund to support and augment both repairs and preventive maintenance work, starting in 2026/27, based on the savings achieved in 2025/26.

Resilient School Buildings Plan

- Submit a business case in 2025/26 to the Ministry to use POD to undertake several pilot projects that add mechanical ventilation to schools.
- Increasing internal capacity for troubleshooting and improving existing mechanical and Building Automation systems will begin in 2025/26.

Tree Planting and Canopy Coverage Plan

• Ongoing

Stormwater Management Plan

• Ongoing

Green Roofs Maintenance Plan

- Ongoing
- Identify opportunities to increase the number of green roofs, or alternative measures, to address the urban heat island effect and improve site water management

Transportation Plan

• The action plan outlined above will occur in 2025/26.

Waste Diversion, Recycling, and Organics Plan

• The action plan outlined above will occur in 2025/26.

Education and Engagement Plan

• The action plan outlined above will occur in 2025/26.

Urban Indigenous Education

• Ongoing

Outdoor Education

• Ongoing

Resource Implications

As stated above, the Board of Trustees instructed staff to report on a plan to reduce TDSB's energy consumption by 20% and to detail the resources that would be required to implement the plan.

The resource implications for the entire climate action plan outlined in this report are divided into two sections: the required funding sources and the organization of staffing resources.

A. Funding Sources

The following five funding sources support the climate action plan outlined in this report.

- Environmental Legacy Fund (ELF) This fund was established by the Board in 2010. Revenue comes from selling electricity from solar PV projects, the sale of carbon credits, and utility rebates and incentives. For the forecast of revenue and expenditures, see Appendix F, and for the terms of reference see Appendix G.
- Playing Field Reserve This fund was created by the Board in 2013. Revenue comes from permits of artificial turf fields. For the forecast of revenue and expenditures, see Appendix H, and for the terms of reference see Appendix I.
- 3. Energy Savings A 20% reduction in energy intensity over seven years is forecast to result in an estimated \$36 million in operational savings. As noted above, it is recommended that a portion of the savings be reinvested into maintenance. Less than 10% of the savings will be invested in a small number of additional staff that will be required to support the implementation of the plan.
- 4. School Condition Improvement (SCI) Funding A cornerstone of the plan to reduce energy by 20% and create more resilient school buildings is investing a small portion of SCI strategically into projects that meet Ministry criteria but also reduce energy consumption and improve ventilation. Details are outlined in Appendix J.
- 5. Proceeds of Disposition (POD) Approval will be sought from the Ministry of Education to use POD for the installation of mechanical ventilation and cooling at schools that do not have mechanical ventilation in any of their classrooms.

B. Organization of Staffing Resources

Successfully implementing this year's plan not only requires funding, as outlined above, but also that staff who are leading the effort are organized effectively to achieve the desired results.

To support the successful implementation of this plan, formal changes to the organizational structure within the Sustainability department will be made.

Communications Considerations

Staff will leverage the TDSB's existing communication channels to provide regular updates, including the EcoSchools newsletter, System Leaders Bulletin, Trustees' Weekly, TDSB Connects, TDSBWeb and the TDSB public website. Staff from the Sustainability department will present the annual climate action report to the Student Senate.

Board Policy and Procedure Reference(s)

Policy P028 – The Environment

Appendices

- Appendix A: Energy Pilot Savings for Learning Centre 1
- Appendix B: 2023 and 2024 Tree Planting at the TDSB
- Appendix C: Climate Camp for TDSB Teachers
- Appendix D: Heat Vulnerability Index
- Appendix E: Schools with Green Roofs
- Appendix F: Environmental Legacy Fund Revenue and Expenditures Forecast
- Appendix G: Environmental Legacy Fund Terms of Reference
- Appendix H: Playing Field Reserve Revenue and Expenditures Forecast
- Appendix I: Playing Field Reserve Revenue Terms of Reference
- Appendix J: SCI Forecasted Expenditures

From

Maia Puccetti, Executive Officer, Facility Services and Planning at Maia.Puccetti@tdsb.on.ca or at 416-393-8780.

Richard Christie, Senior Manager, Sustainability at Richard.Christie@tdsb.on.ca or at 416-396-8554.

Appendix A – Energy Pilot Savings for Learning Centre 1

The TDSB's 2023 Climate Action plan committed to undertaking a pilot in one of four of its Learning Centres to reduce building-related energy consumption by 10% over two years.

In the first year of the pilot, as shown below, total energy consumption (electricity and natural gas) was reduced by 7%, even though this group of schools had 20 extra portables compared to the baseline year. It was also a leap year, which means there was an extra day of consumption compared to the baseline.

Total Energy Savings										
FG	Savings(ekWh)	Cost Avoidance	GHG Avoidance kg CO2	% of Savings						
LN01	2,320,235	\$180,465	319,444	6%						
LN02	3,145,835	\$224,806	457,930	8%						
LN03	1,790,935	\$202,619	167,492	6%						
LN04	984,111	\$137,377	59,518	6%						
LN05	6,047,821	\$425,891	888,225	12%						
LN06	2,934,914	\$184,952	458,175	6%						
Total	17,223,850	\$1,356,110	2,350,784	7%						

Notes:

- The data source is invoice data for 139 sites.
- Natural gas data is weather normalized.
- The cost avoidance savings are based on 2023/24 utility rates.
- 2,350,748 kg CO₂ is equivalent to 1 million litres of gasoline consumed.

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Appendix B: 2023 and 2024 Tree Planting at the TDSB

			# of	# of				# of	# of				# of	# of
LOI	School	Panel	Planted	Planted	LOI	School	Panel	Planted	Planted	LOI	School	Panel	Planted	Planted
	Obersheer Dublis Orests and Wellsons Are down		in 2023	in 2024		Testus Meeduur th Dublis Onkerd		in 2023	in 2024	000	Alvia Oralian Dahia Orbert		in 2023	in 2024
1	Shorenam Public Sports and Wellness Academy	Elem.	14		92	Tredway woodsworth Public School	Elem.	13		292	Aivin Curring Public School	Elem.	-	4
2	Yorkwoods Public School	Elem.	35	47	93	Etobicoke Collegiate Institute	Sec.	1		298	Finch Public School	Elem.	3	
4	Fiemington Public School	Elem.		1/	83	Waiter Perry Junior Public School	Elem.	1		302	Liebland Middle Cabael	Elem.		2
12	Firgrove Fublic School	Elem.	47	00	05	Caneton Village Junior and Senior Sports and Weilness Academy Decedate Heights School of the Arts	Elem.	2		200	Fightand Middle School Gladbill, Junier Public School	Elem.	24	8
12	West Hill Public School	Elem	27		80	Forest Hill Collegiste Institute	Sec.	22		320	Den Valley Middle School	Elem.	01	14
14	Proskujew Middle School	Elem	21	55	101	Northern Secondary School	Sec.	20		322	Mill Valley, Junior School	Elem.	24	14
20	Keelesdale, Junier Public School	Elem	6		105	Noman Cook, Junier Public School	Elom		0	227	Dallington Public School	Elem.	27	28
20	Gosford Public School	Elem	72		111	Gateway Public School	Elem		26	320	Wilkinson Junior Public School	Elem.	27	20
24	Charles E Webster Public School	Elem	9	4	112	Highfield Junior School	Elem	1	4	332	Huran Street Junior Public School	Elem		-
25	Sanara School	Elem		25	122	Raverest Public School	Elem		08	334	Seventh Street, Junior School	Elem.	3	-
28	Greenholme Junior Middle School	Flem	5	20	123	Cliffside Public School	Elem	11	00	338	Dublin Heights Elementary and Middle School	Flem	11	-
27	Brashum Junior School	Flom	24		124	Lamberton Public School	Flom	82		337	Nonway Junior Public School	Flom	1	
30	Runnymede Collegiate Institute	Sec.	1		128	Westmount Junior School	Elem	14		346	Bawiew Middle School	Flem		20
32	Dennis Avenue Community School	Flom		40	134	George Webster Elementary School	Flom	14	1	350	Winona Drive Senior Public School	Flom	<u> </u>	14
34	Ameshury Middle School	Flem	12	1	137	Smithfield Middle School	Elem		4	351	Duke of Connaught Junior and Senior Public School	Flem	10	14
35	Tumpana Public School	Flom	42		140	John D Parker, Junior School	Flom		0	352	Lord Lansdowne, Junior Public School	Flom	12	
41	Tecumseh Senior Public School	Flem	51		142	Geome Peck Public School	Elem		1	356	Josenh Howe Senior Public School	Flem	14	3
42	George Syme Community School	Flem		14	148	Westway Junior School	Flem	28		361	Harrison Public School	Flem	3	3
42	West Humber Collegiate Institute	Sec		54	149	Sunny View Junior and Senior Public School	Flem	1		362	Fad Hain Public School	Elem.		Ť
44	Elmbank Junior Middle Academy	Flem	41		151	Buchanan Public School	Flem	· ·	43	363	Arbor Glen Public School	Flem		1
45	West Glen Junior School	Elem		51	157	Second Elementary School	Flem		3	365	Churchill Public School	Elem.	12	<u> </u>
50	Lamhton Park Community School	Flem	8		167	Guildwood Junior Public School	Flem	1	-	369	Eairmount Public School	Flem	15	-
52	Stephen Learnek Collegiate Institute	Sec	5		169	George Anderson Public School	Flem		1	375	Lanor Junior Middle School	Elem		3
53	Blaydon Public School	Flem	51		172	Parkdale Junior and Senior Public School	Flem	6		377	Avondale Public School	Flem	3	<u> </u>
57	Highview Public School	Flem	46		173	Port Royal Public School	Flem	1		378	Hollywood Public School	Flem	-	32
58	George B Little Public School	Elem.		10	180	Rawlinson Community School	Elem.	11	15	382	Chine Drive Public School	Elem.	<u> </u>	1
58	Sir Wilfrid Laurier Collegiate Institute	Sec	8	8	191	Warren Park Outdoor Education Centre	OEC		21	384	Ossington/Old Orchard Junior Public School	Elem	19	-
59	Harwood Public School	Elem.	59	-	192	Islington Junior Middle School	Elem.		57	390	Annette Street Junior and Senior Public School	Elem.	6	
59	Wexford Collegiate School for the Arts	Sec.	1		193	Gordon A Brown Middle School	Elem.		6	397	Avondale Elementary Alternative School	Elem.		2
62	Stilecroft Public School	Elem.	27		199	Berner Trail Junior Public School	Elem.		42	404	Castlebar Junior School	Elem.	1	
63	Cedar Drive Junior Public School	Elem.		1	204	Dr. Rita Cox - Kina Minogok Public School	Elem.	3		406	Karen Kain School of the Arts	Elem.	2	
63	SATEC @ WA Porter Collegiate Institute	Sec.		5	208	Tom Longboat Junior Public School	Elem.	12		417	Charlottetown Junior Public School	Elem.	2	
64	Delphi Secondary Alternative School	Sec.		14	211	Agincourt Junior Public School	Elem.	16		419	R H McGregor Elementary School	Elem.		10
65	Corvette Junior Public School	Elem.		16	212	Ranchdale Public School	Elem.		8	422	Earl Beatty Junior and Senior Public School	Elem.		2
67	Dixon Grove Junior Middle School	Elem.		114	220	Terry Fox Public School	Elem.		42	423	Hillcrest Community School	Elem.		7
68	Scarborough Village Public School	Elem.	2		221	General Brock Public School	Elem.		40	424	Palmerston Avenue Junior Public School	Elem.	1	
69	Park Lane Public School	Elem.		5	223	Blake Street Junior Public School	Elem.		4	425	St Andrew's Middle School	Elem.		3
72	Grenoble Public School	Elem.	8		227	J R Wilcox Community School	Elem.		13	433	Garden Avenue Junior Public School	Elem.		13
73	Valleyfield Junior School	Elem.	2		229	Westwood Middle School	Elem.	4		440	Rosethorn Junior School	Elem.		4
75	Lester B Pearson Collegiate Institute	Sec.	39		232	Bendale Junior Public School	Elem.	24		446	Frankland Community School	Elem.	4	
76	Daystrom Public School	Elem.	18		239	North Agincourt Junior Public School	Elem.		6	447	Adam Beck Junior Public School	Elem.		1
78	Melody Village Junior School	Elem.		4	241	Parkside Elementary School	Elem.		3	448	Glenview Senior Public School	Elem.	5	
79	Elia Middle School	Elem.		50	242	William Burgess Elementary School	Elem.	8		451	Denlow Public School	Elem.		14
80	Sir John A Macdonald Collegiate Institute	Sec.		1	245	Cassandra Public School	Elem.		4	452	Jackman Avenue Junior Public School	Elem.	1	
82	Derrydown Public School	Elem.	5		248	North Bendale Junior Public School	Elem.		66	453	Williamson Road Junior Public School	Elem.		5
83	Bloor Collegiate Institute	Sec.		50	260	David Hornell Junior School	Elem.	1		455	Oriole Park Junior Public School	Elem.	1	
83	Claireville Junior School	Elem.	2		261	Three Valleys Public School	Elem.		2	457	Allenby Junior Public School	Elem.	5	3
84	William J McCordic School	Elem.	4		266	Churchill Heights Public School	Elem.	31		460	Rosedale Junior Public School	Elem.	6	
86	Western Technical-Commercial School	Sec.		1	267	Bloorlea Middle School	Elem.		10	461	Bedford Park Public School	Elem.	3	1
86	General Crerar Public School	Elem.		29	270	Ogden Junior Public School	Elem.		3	462	John Wanless Junior Public School	Elem.		4
87	Monarch Park Collegiate Institute	Sec.	1		272	Shaughnessy Public School	Elem.		3	465	John Ross Robertson Junior Public School	Elem.	3	
88	Gracefield Public School	Elem.		44	280	Ernest Public School	Elem.		2	468	Lambton-Kingsway Junior Middle School	Elem.		4
89	A Y Jackson Secondary School	Sec.	5		284	Brookmill Boulevard Junior Public School	Elem.		27					
91	William Lyon Mackenzie Collegiate Institute	Sec.	1		286	Cherokee Public School	Elem.	6						

Appendix C – Climate Camp for TDSB Teachers

How can teachers shape a better future for their students, schools, and communities? The TDSB's first Climate Camp ran in August 2024 to engage TDSB teachers in professional learning that addresses the realities of teaching in the face of climate change.

Offered over four days by the TDSB's Sustainability Office in partnership with its Urban Indigenous Education Centre (UIEC), this camp offered K–12 teachers rich, collaborative inquiry focused on climate change education at the TDSB's Mono Cliffs Outdoor Education Centre Caledon, Ontario, a generative setting of natural and purpose-built spaces that encourage reflection, growth, and rejuvenation.

A variety of keynotes, workshops, and indoor and outdoor activities offered opportunities for experiential learning, holistic experiences, and curricular planning to prepare for transformative teaching that centres equity, inclusion, justice, and reconciliation.

This climate camp offered K–12 teachers a wide range of learning opportunities to support their professional learning in Climate Change Education (CCE). Building community guides our learning by initiating and strengthening relationships to support the development of new futures together. Diverse perspectives, innovative approaches, and compelling ideas were introduced as teachers interacted with CCE experts, Indigenous knowledge-keepers, leaders from EcoSchools and the UIEC, and most importantly, with each other.

Each day began with learning from the natural world, drawing on the inspired teachings of the earth. Talks offered common provocations and led to a choice of workshops and activities that support learning that leads to agency, reconciliation, climate action, and activism. As an integral part of this, teachers were invited to share their expertise via lightning talks and learning circles and work collaboratively to deepen knowledge and refine their practice in CCE for the coming school year. Meals, breaks, and evening social activities provided time for nourishment, self-care, reflection, and fostering relationships.

The Climate Camp will be offered again in the summer of 2025.

Climate Camp Feedback:

For this first iteration of Climate Camp, feedback from participants was collected anecdotally over the four days of camp and through a feedback survey sent a few days after the final day. The feedback survey revealed the following:

• 75% of respondents rated the overall quality of their professional learning experiences at the camp as very high and another 17% rated it as high. This

suggests that the Camp met their expectations and needs for professional learning in CCE.

- 100% of respondents agreed or strongly agreed that their knowledge of climate issues improved, as did their understanding of Indigenous Education.
- 92% of respondents agreed or strongly agreed that they improved their understanding about teaching strategies related to CCE and the types of climate action that can be taken with students.

Appendix D: Heat Vulnerability Index

The map shown below was developed by researchers at the University of Toronto's School of Cities.

Communities are either more or less vulnerable depending on differences in land use and greenspace and on demographic and socio-economic factors.

To create the index, the researchers combined data related to:

- Heat exposure: a measure of satellite-derived surface-temperature data from 2010 to 2019
- Heat sensitivity: a combination of tree canopy cover, impervious surface coverage, and population age in a neighbourhood
- Adaptive capacity: a measure that includes access to air conditioning, and factors related to income, education, employment, language, visual minority status, Indigenous population, age, etc.

The Heat Vulnerability Index has informed the goals outlined in the Tree Planting and Canopy Coverage Plan outlined in the report.



For more information, visit https://schoolofcities.github.io/heat-vulnerability-toronto/.

Appendix E: Schools with Green Roofs



LOI	School	Panel
37	David and Mary Thomson Collegiate Institute	Secondary
80	Joseph Brant Public School	Elementary
99	Fraser Mustard Early Learning Academy	Elementary
105	North Toronto Collegiate Institute	Secondary
134	George Webster Elementary School	Elementary
292	Alvin Curling Public School	Elementary
307	Thomas L Wells Public School	Elementary
318	Brookside Public School	Elementary
342	Davisville Junior Public School	Elementary
377	Avondale Public School	Elementary
452	Jackman Avenue Junior Public School	Elementary

Appendix F: Environmental Legacy Fund Revenue and Expenditures Forecast

The TDSB's Environmental Legacy Fund was approved by the Board of Trustees in 2010. Revenue from the sale of carbon credits, the sale of electricity generated by 11 TDSB-owned solar PV projects, the sale of TDSB e-waste, and utility incentives from state-of-good-repair projects that reduce energy consumption are directed into this fund.

The Environmental Legacy Fund's ending balance as of August 31, 2024 was \$2,418,168.

The table below captures the projected revenue and expenditures for the Environmental Legacy Fund up to 2027/28.

2024-25 Opening balance	\$ 2,418,168				
	2024/25	2025/26	2026/27	2027/28	
Revenue Source	Revenue	Revenue	Revenue	Revenue	
Solar Installations	\$95,000	\$145,000	\$225,000	\$225,000	
Utility incentives	\$425,000	\$425,000	\$575,000	\$575,000	
Total Forecasted Revenue	\$520,000	\$570,000	\$800,000	\$800,000	
Funding Priority	2024/25	2025/26	2026/27	2027/28	
	Expenditures	Expenditures	Expenditures	Expenditures	
I. Building-related GHG reduction	\$379,325	\$945,030	\$625,400	\$648,680	
a. Building Systems Help Desk Team Leader	\$159,615	\$163,605	\$167,700	\$171,890	
b. Permanent AutoCAD Specialist	\$0	\$93,910	\$105,000	\$112,450	
c. BAS Energy Coordinator	\$119,710	\$163,605	\$167,700	\$171,890	
d. Waste Coordinator	\$0	\$93,910	\$105,000	\$112,450	
e. Energy-related professional fees	\$100,000	\$80,000	\$80,000	\$80,000	
f. Air source heat pumps for Poplar Road Replacement School	\$0	\$350,000	\$0	\$0	
II. Sustainable transportation	\$377,000	\$60,000	\$50,000	\$40,000	
a. Premiums for electric vehicle (EV) fleet	\$90,000	\$50,000	\$40,000	\$30,000	
b. EV charging infrastructure	\$262,000	\$10,000	\$10,000	\$10,000	
c. EV charging consulting*	\$25,000	\$0	\$0	\$0	
III. Building climate resilient school grounds	\$30,000	\$5,000	\$5,000	\$5,000	
a. Battery-operated outdoor lawn and garden tool subsidy	\$30,000	\$5,000	\$5,000	\$5,000	
IV. Climate change education and engagement	\$213,060	\$162,110	\$162,110	\$162,110	
a. OISE Environmental Education PD collaboration	\$115,110	\$115,110	\$115,110	\$115,110	
b. Teacher release	\$37,000	\$37,000	\$37,000	\$37,000	
c. Connecting schools to trees through educational workshops†	\$25,950	\$0	\$0	\$0	
d. Climate change innovation projects	\$25,000	\$0	\$0	\$0	
e. Professional development for staff leading efforts to reduce GHG emissions	\$10,000	\$10,000	\$10,000	\$10,000	
Total Forecasted Expenditures	\$999,385	\$1,172,140	\$842,510	\$855,790	
Net decrease	-\$ 479,385	-\$ 602,140	-\$ 42,510	-\$ 55,790	
Forecasted end of vear balance	\$ 1.938.783	\$ 1.336.643	\$ 1.294.133	\$ 1.238.343	

* An additional \$40,000 in grant funding from The Atmospheric Fund (TAF) will be directed to the Environmental Legacy Fund for this initative. The forecasted amount displayed in the above table reflects the Environmental Legacy Fund's planned contribution to this initative.

† An additional \$51,010 in grant funding from the City of Toronto will be directed to the Environmental Legacy Fund for this initative. The forecasted amount displayed in the above table reflects the Environmental Legacy Fund's planned contribution to this initative.

Appendix G: Environmental Legacy Fund Terms of Reference

The TDSB's 2021 Climate Action report included an update to the Environmental Legacy Fund's Terms of Reference to ensure money is invested into high-priority initiatives directly related to responding to the climate crisis. In addition to the funding priorities established in the 2021 Climate Action Report, waste diversion and minimization have been added as an additional priority. The funding priorities of the Environmental Legacy Fund include the following:

- 1. **Building-related GHG reduction** (e.g., staffing positions that contribute to efforts to reduce the TDSB's greenhouse gas [GHG] emissions, professional fees for projects aimed at energy conservation and reduction)
- 2. **Sustainable transportation** (e.g., subsidizing electric vehicles and charging infrastructure, active transportation investments, professional fees)
- 3. **Building climate resilient school grounds** (e.g., professional fees related to school ground enhancement programs, subsidizing battery-operated lawn tools)
- 4. **Climate change education and engagement** (e.g., professional development for staff, initiatives that engage students in climate change education)
- 5. **Minimizing waste and improving diversion** (e.g., staffing positions focused on waste minimization and diversion, initiatives that engage students and staff in waste reduction)

There is no set annual spending limit for the Environmental Legacy Fund, or its individual priority areas.

Appendix H - Playing Field Reserve Revenue and Expenditures Forecast

The Playing Field Reserve was first approved by the TDSB's Board of Trustees in 2013 and its terms of reference were expanded in 2016. The reserve currently funds a full-time management-level position that oversees the renovation of grass fields, the maintenance of artificial turf fields and green roofs, and tree planting.

Permit revenue from the TDSB's artificial turf fields is directed into the reserve.

The Playing Field Reserve's ending balance as of August 31, 2024 was \$989,724.

The table below captures the projected revenue and expenditures for the Playing Field Reserve up to 2027/28.

2024-25 starting balanc	e \$98	9,724				
Revenue Source	2024/2 Reven	25 ue	2025/26 Revenue	2026/27 Revenue	2027/28 Revenue	
Artifical Turf Revenue	\$58	5,000	\$650,000	\$750,000	\$850,000	
Total Forecasted Revenue	\$58	5,000	\$650,000	\$750,000	\$850,000	
Funding Drievity	2024/2	25	2025/26	2026/27	2027/28	
Funding Priority	Expendit	ures	Expenditures	Expenditures	Expenditures	
I. Staffing expenses	\$15	9,615	\$163,605	\$167,700	\$171,890	
a. Assistant Project Supervisor	\$15	9,615	\$163,605	\$167,700	\$171,890	
II. Program expenses	\$65	0,000	\$650,000	\$650,000	\$650,000	
a. Tree plainting, tree maintenance and green roof maintenance	\$45	0,000	\$450,000	\$450,000	\$450,000	
b. Line painting	\$20	0,000	\$200,000	\$200,000	\$200,000	
Total Forecasted Expenditures	\$80	9,615	\$813,605	\$817,700	\$821,890	
Net increase/decrease	-\$ 224	,615	-\$ 163,605	-\$ 67,700	\$ 28,110	
Forecasted end of year balance	\$ 765	.109	\$ 601,504	\$ 533,804	\$ 561,914	

Appendix I - Playing Field Reserve Terms of Reference

The Terms of Reference for the Playing Field Reserve were last updated in 2016, as part of the *Improving Playing Field Report*. To ensure funds from the Playing Field Reserve continue to be directed into initiatives that further improve the condition of TDSB's playing fields and other green infrastructure, the Terms of Reference for this reserve fund will be updated to include the following funding priorities:

- 1. Maintenance of natural and artificial turf playing fields: supporting a staffing position to oversee the grass and artificial turf maintenance program to help improve the quality and useability of TDSB sports fields, including line painting.
- 2. Investments into future artificial turf fields: supplementing design and construction costs as additional artificial turf fields are added to the TDSB's sports field portfolio
- 3. Building climate resilient school grounds: making school grounds more resilient to the threats of climate change, such as extreme heat and increased precipitation, by investing in tree planting and tree maintenance as well as the maintenance of existing green roofs

Appendix J – SCI Forecasted Expenditures

School Condition Improvement (SCI) is the primary funding source for facility improvements, provided to Ontario school boards by the Ministry of Education.

Subject to annual review and adequate funding from the Ministry of Education, consistent SCI funding will be used annually over the next seven years to sustain investment in climate action projects that reduce the TDSB's energy consumption and improve ventilation, as outlined in the tables below.

	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32
Energy and Ventilation Projects	\$4M	\$6M	\$10M	\$10M	\$10M	\$10M	\$10M
		_	_		_		
	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32
LED Retrofits	\$2M	\$2M	\$5M	\$5M	\$5M	\$5M	\$5M