School District 42
Maple Ridge & Pitt Meadows
Learning Today, Leading Tomorrow

STRATEGIC ENERGY MANAGEMENT PLAN

2025 UPDATE

(Prepared March 2026)

In Partnership With:

BC Hydro
Power smart

SENIOR MANAGEMENT SUPPORT AND APPROVAL:

Richard Rennie

Digitally signed by Richard Rennie
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Richard Rennie, Secretary Treasurer

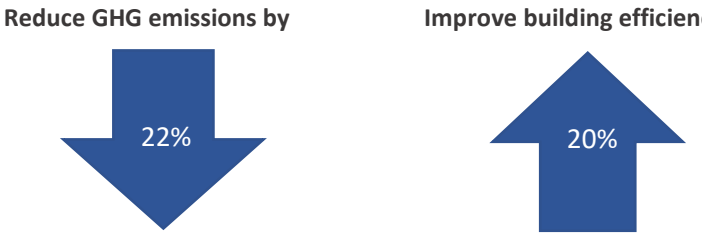
1 EXECUTIVE SUMMARY

The Maple Ridge – Pitt Meadows School District respectfully acknowledges that the district operates on the traditional and unceded territories of the Katzie First Nation and Kwantlen First Nation. The District is committed to climate action and energy conservation that honours these lands and the Indigenous Peoples who have cared for them since time immemorial.

School District No. 42 Maple Ridge-Pitt Meadows (SD42), legally known as *The Board of Education of School District No. 42 (Maple Ridge-Pitt Meadows)*, supports the BC Climate Action Legislation and the targets set by the Climate Change Accountability Act, contingent upon sufficient funding support. SD42 has been undertaking energy management projects since 2008.

To align with the provincial greenhouse gas (GHG) emissions reduction target of 40% below 2007 levels by 2030, the first Energy Management Plan was developed and approved by the Board of Education in 2015 and implemented that same year in collaboration with BC Hydro. The projects identified in that plan were completed in 2021. Through the first plan, SD42 carried out lighting and heating, ventilation, and air-conditioning (HVAC) upgrades, representing one-time capital investment of $5.7 million. These projects resulted in estimated energy savings of 5.6 million kWh (electricity) and 9,823 GJ (fuel), totalling 8.33 million ekWh, with an estimated avoided annual operating cost of $0.61 million.

An updated Environmental Sustainability Plan for 2021-2026 was developed and supports the school district's Strategic Facilities Plan approved by the Board of Education in 2022. This Environmental Sustainability Plan outlines capital investments intended to reduce GHG emissions by 22% by 2026 compared to 2010 while improving building performance by 20%.



SD42's Strategic Energy Management Plan for 2025 covers the reporting period from January 1 to October 31, 2025, which is shorter than prior reporting years, and provides a roadmap for current and future actions to reduce energy consumption and GHG emissions. Beginning in 2025, the reporting period was revised from a calendar year-end to October 31 to align with BC Hydro program requirements and utility billing cycles.

Key Updates Since the 2024 Strategic Energy Management Plan

Reporting Period

- Shift from calendar year to October 31 year-end to align with BC Hydro programs and utility billing cycles.

Scope and Scale

- Expansion of the multi-year project pipeline, including integrated energy audits, boiler replacements, and unit ventilator (UV) upgrades.

New Focus Areas

- Fleet electrification (vehicles, chargers, Low Carbon Fuel Standard credits).
- Paper emissions reduction through district-wide adoption of sugar-sheet paper.

Data and Analysis

- Continued use of the November 2024 Energy Management Assessment (EMA) results due to BC Hydro's review of the EMA process.

What Did Not Change

- Long-term GHG reduction targets and alignment with provincial climate legislation.

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2 COMMITMENT

A key strategic direction of SD42's Strategic Plan is to be a forward-thinking, research-informed, effective, efficient, sustainable, value-based and connected school district. The Environmental Sustainability Plan provides a framework to enhance energy performance and realize energy and cost savings across school district facilities, enabling the effective stewardship of resources in support of student learning. These savings contribute to the effective use of resources in support of student learning.

3 SITUATIONAL ANALYSIS

3.1 ORGANIZATIONAL PROFILE

NUMBER OF STUDENTS	Approximately 17,000
NUMBER OF STAFF	Approximately 2,500
ENERGY MANAGEMENT TEAM	**Richard Rennie**, Secretary-Treasurer **Louie Girotto**, Director of Facilities **Wesley Fan**, Senior Manager, Facilities **Ashish Dev,** Manager, Energy and Environmental Sustainability **Aron Garrecht**, BC Hydro Key Account Manager
NUMBER OF SITES	35
KEY PERFORMANCE INDICATORS	**Total GHG Emissions** tCO2e **Total EUI** ekWh/m² **Natural Gas EUI** ekWh/m² **Cost of Energy** $
UTILITIES PRELIMINARY BUDGET	**Electricity**: $1,030,000 **Natural gas**: $670,000 **Propane**: $17,000 **Water and sewer**: $540,373 **Waste streams**: $269,956 **Carbon offsets**: $98,375

Table 1: Organization Profile

3.2 STAKEHOLDER ENGAGEMENT PLAN

SD42 developed a comprehensive "Facilities of the Future" stakeholder engagement framework the 2021/22 engagement on its current Strategic Facilities Plan to guide its facilities planning and management. SD42's strategic energy management plan aligns with the following key engagement principles and objectives:

Key Engagement Principles:

- **Transparent and Accountable**: Proactively communicate accurate and consistent information about processes, issues, and constraints while conveying how input will be considered in Board of Education decisions.
- **Accessible**: Ensure communications are clear and provide information about learning trends, facility trends, issues, and constraints to support meaningful input.
- **Future-Oriented**: Commit to working collaboratively and innovatively with all stakeholders to identify opportunities that will support learners into the future.
- **Sustainable**: Engage with stakeholders using the foundation provided by the Strategic Plan, the Strategic Facilities Review, and a vision for environmentally and socially sustainable facilities.

Engagement Objectives:

- Communicate information clearly and effectively, including what was heard and how it informed decision-making and the plan for future facilities.
- Encourage meaningful input by providing information that builds awareness and understanding about current and future trends in school district facilities, planning, and financial constraints.
- Understand the needs of all stakeholders to ensure these are reflected in plans for future facilities and programs.
- Generate input through a process that is easy, accessible, and minimizes barriers to participation.

This engagement framework ensures that SD42's facilities planning is inclusive, transparent, and aligned with the diverse needs of its community.

3.3 DRIVERS FOR ENERGY MANAGEMENT

3.3.1 INTERNAL DRIVERS

The key drivers for energy management in SD42, as outlined in SD42 Policy 6530 Environmental Sustainability, include environmental responsibility, operational commitment, strategic resource management, and educational integration. By reducing energy consumption and optimizing resource use, the district supports sound financial management and an effective use of resources for student learning. These efforts align with the district's commitment to reducing its carbon footprint, promoting responsible stewardship of natural resources, and fostering a culture of sustainability among students and staff.

3.3.2 EXTERNAL DRIVERS

The BC Climate Action Legislation and the targets (40% below 2007 levels by 2030) established by the Climate Change Accountability Act.

3.4 CUMULATIVE ENERGY SAVINGS

SD42 has undertaken projects that improve occupant comfort, reduce maintenance costs, and enhance infrastructure reliability. These initiatives include upgrading lighting systems to LED fixtures with low-voltage controls, upgrading boilers and unit ventilators, and adding heat pumps to the heating loops to reduce reliance on natural gas and associated GHG emissions. From April 2013 (baseline) to October 2025, SD42 achieved cumulative energy savings of 37,550 GJ of fuel (including propane), equivalent to 10,430,737 ekWh and 34,457,066 kWh of electricity, resulting in total energy savings of 44,887,803 ekWh.

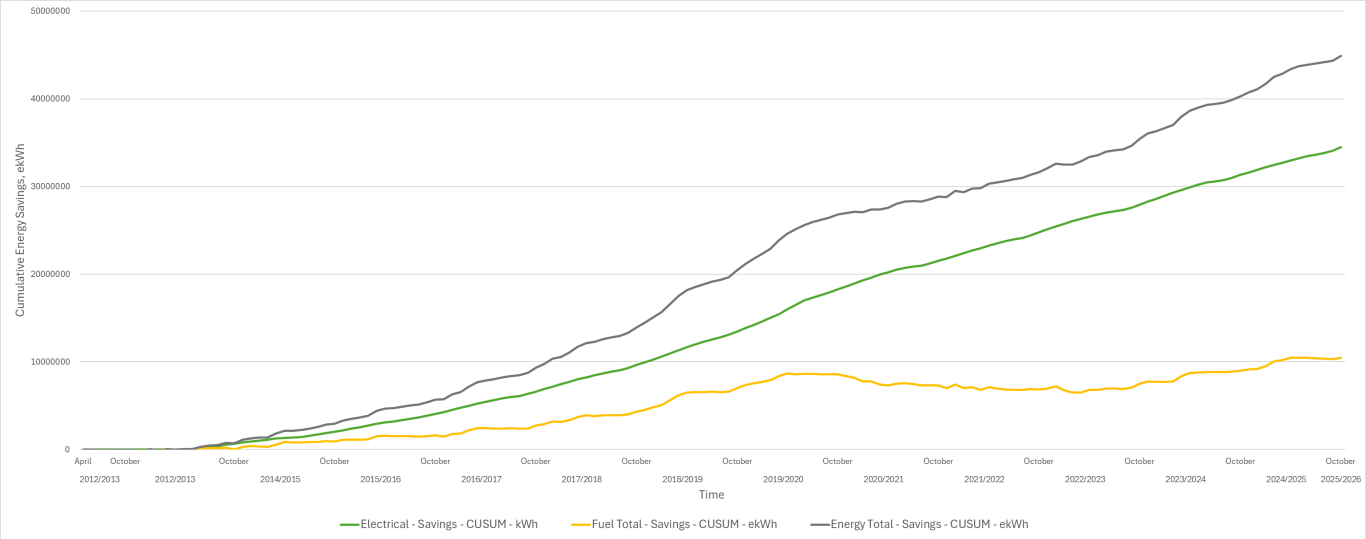

Figure 1: CUSUM of Energy Savings since 2014

ENERGY MANAGEMENT ASSESSMENT OUTCOMES

To assist SD42 in optimizing energy management, BC Hydro sponsored SD42's participation in an annual Energy Management Assessment (EMA) to continuously improve the strategic energy management plan. CLEAResult, in partnership with BC Hydro, facilitated the EMA workshop on November 4, 2024. For the 2025 reporting year, SD42 is using EMA workshop data completed in November 2024, while BC Hydro reviews its current EMA process.

CLEAResult uses the ISO 50001 Deming Cycle of Plan-Do-Check-Act (PDCA) to gauge the overall effectiveness of SD42's energy management program. Under each action item, there are selected management areas that define our progress on the identified improvement goals. This report outlines the improvements in energy management practices to be incorporated into a long-term strategic energy management plan (SEMP) for SD42. According to the CLEAResult report published on November 4, 2024, SD42 is on the path to implementing a well-structured, energy-conservation-oriented culture. The diagram below, taken from their report, displays our strengths and areas for improvement.

The initial Energy Management Assessment (EMA 1) established a baseline for SD42's energy management practices, while the most recent assessment (EMA 2), conducted on November 4, 2024, measures progress against that baseline.

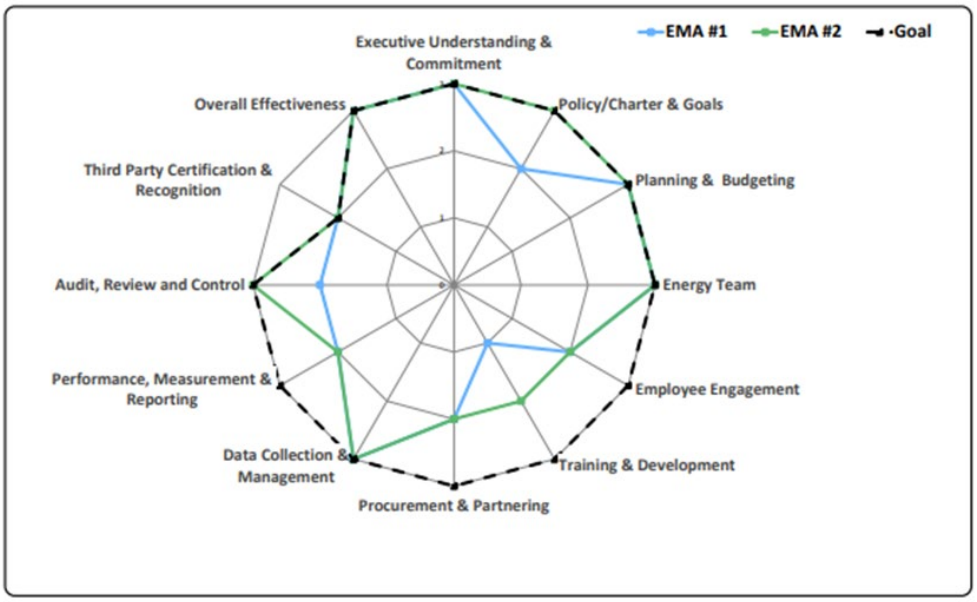

Figure 2: Energy Management Assessment for SD42 (November 2024)

	Management Area	EMA #1	EMA #2	Goal
Plan	Executive Understanding & Commitment	3	3	3
	Policy/Charter & Goals	2	3	3
	Planning & Budgeting	3	3	3
Do	Energy Team	3	3	3
	Employee Engagement	2	2	3
	Training & Development	1	2	3
	Procurement & Partnering	2	2	3
Check	Data Collection & Management	3	3	3
	Performance, Measurement & Reporting	2	2	3
Act	Audit, Review and Control	2	3	3
	Third Party Certification & Recognition	2	2	2
	Overall Effectiveness	3	3	3
	TOTALS	**28**	**31**	**35**
	% Actual versus Goal	**80%**	**89%**	

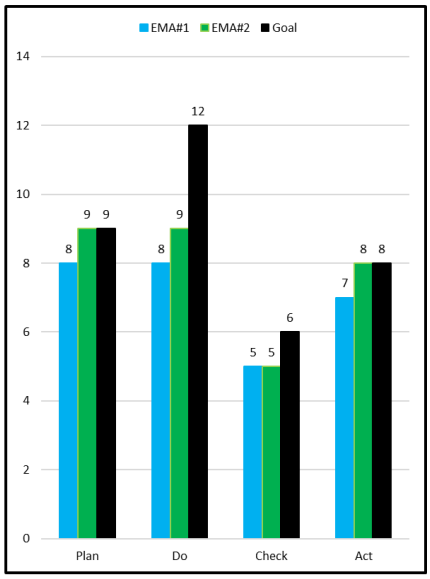

Figure 3 : Energy Management Assessment (EMA) Compared to Goals

As reflected in the November 2024 Energy Management Assessment (EMA), SD42 has taken proactive steps in training and development to strengthen the energy management culture. The EMA score was 89%. Key findings in the EMA include:

- SD42's energy team underwent operational changes in 2023/24. It is still pursuing a solid inclination towards Energy Management, supported by a strong energy manager with well-planned actions for continuing energy efficiency.
- SD42 is advanced in data collection and performance measurement. This strength could be used to share consumption profiles and energy trends with staff across SD42's schools to encourage employee engagement in sustainability initiatives.
- The executive level is highly engaged and supportive of energy conservation in SD42, with regular meetings and updates.
- SD42 has significantly progressed across multiple categories, achieving "fully implemented" status. SD42 has built on previous EMA actions with effective initiatives and remains committed to awareness programs and training.

In their analysis, CLEAResult compiled several recommendations and suggestions to assist SD42 with developing an action plan to improve the District's strategic energy management plan. A compiled list of recommendations and SD42's response is tabulated below. SD42 continued to advance these recommendations and build on previous successes:

Action Plan

Topic	**Action**	**SD42's Response**
		Do
Employee Engagement	Consider establishing a dedicated email address to receive and manage ideas related to sustainability initiatives. This will help streamline communication and ensure valuable suggestions are not overlooked.	In 2025, SD42 launched *energymanagerlistens@sd42.ca* to encourage staff engagement and feedback on sustainability initiatives. As part of a broader engagement strategy, the District now plans to establish a Student Sustainability Council to foster dialogue between teachers and students and to promote student leadership in sustainability.
	Begin recruiting individuals to act as sustainability contacts and create a strategic plan to engage students actively. Involving students early can inspire long-term commitment to sustainability practices.	In 2025, SD42 engaged students in various sustainability initiatives, including tree planting and energy and sustainability talks. A survey was also distributed to gather information on sustainability contacts at each school. Although the initial outreach did not lead to the establishment of formal committees, SD42 strengthened engagement through a workshop centred on energy management and sustainability, laying the groundwork for future collaboration and student leadership.
	Engage tradespeople by organizing informative sessions such as lunch-and-learn events or morning briefings.	SD42 continues to engage trades staff by developing training programs for district maintenance staff to reduce GHG emissions. In 2025, two HVAC controls training sessions focused on energy conservation were delivered to the trades team.
Training and Development	Maintain and refine the current system that identifies training needs, ensuring opportunities are consistently offered to schools, faculty, and technical staff. This approach promotes continuous learning and skill development across the organization.	On January 8th, 2025, SD42 conducted a District-wide sustainability workshop for teachers and administrators focused on bringing sustainability to the classroom. The workshop was followed by a survey with a call to action to initiate further dialogues. In the upcoming year, a similar training will be given to the custodial staff.

Topic	Action	SD42's Response
		Action Plan
Procurement & Partnering	Develop a detailed, formal specification sheet outlining general guidelines for commonly purchased items, such as Energy Star ratings or other sustainability standards.	SD42 has updated Procedure 4600.2 to incorporate energy efficiency into purchasing decisions.
	Notify the procurement team about any policy updates after revising the standards. Timely communication will ensure alignment with new expectations and guidelines.	
		Check
Performance, Measurement & Reporting	Explore the possibility of using PUMA software to create alerts that monitor building energy usage against predefined thresholds. This proactive approach can help detect inefficiencies and prompt timely interventions.	In 2025, the trackers were set up by SD42 in PUMA. PUMA software also delivers monthly alerts through insight reports that monitor building energy usage against predefined thresholds. These thresholds are even adjusted for actual weather in that reporting period where weather has impacted the energy usage. The thresholds are prioritized for action based on significance (energy and cost), compared to a linear regression baseline. This proactive approach helps detect inefficiencies and prompts timely interventions by initiating continuous optimization studies targeted investigations, DDC schedule changes and setpoint corrections.
	Share energy savings data with schools by presenting their previous year's baseline and current savings trend. Providing this comparison can motivate schools to sustain or improve their conservation efforts.	A Virtual Submetering pilot proposed in 2024 did not proceed due to funding limitations. However, building on this learning, SD42 procured a subscription to RETScreen Expert software in 2025. This platform will enable the creation of an energy bulletin to share clear, accessible energy-use insights with staff, students, and the broader community. Design of the bulletin is currently underway to support effective communication and engagement.
		Suggestions for future improvements and sustainability
		Plan
Executive Involvement	Consider encouraging the executive team to increase communication about energy achievements by sharing rewards and success stories.	SD42 continues to use several communication channels to share updates on energy management and sustainability, including the Energy Management team's **Energy Catalyst** newsletter and **The Weekly**, a newsletter for the District Leadership Team initiated by the Superintendent. Five issues of the Energy Catalyst newsletter have been published, and SD42 will continue to use both newsletters to communicate in the coming year.
		Do
Energy Team	Consider setting up regular communication to discuss energy initiatives during district leadership meetings.	There are existing communication channels, including a wide variety of recurring management meetings, that can be utilized to discuss energy initiatives. The district also has an annual Board of Education review in May of initiatives focused on energy and sustainability.

Table 2: Actions and SD42's Response

The components of this EMA serve as a framework within which an Energy Management System can be improved.

3.5 KEY PERFORMANCE INDICATORS

Three Key Performance Indicators (KPIs) measure SD42's energy performance: Total Greenhouse Gas Emissions Intensity (Total GHG emissions in tCO2e), Total Energy Use Intensity (Total EUI in ekWh/m²), Natural Gas Energy Use Intensity (ekWh/m²), and Cost of Energy. The following table summarizes the current benchmark metrics for 2025 (ending October 31, 2025).

Building Type	Total GHG emissions (tCO2e)	Total EUI (ekWh/m²)	Natural Gas EUI (ekWh/m²)	Cost of Energy ($)
Elementary School	1,545	145	103	$755,579
Secondary School	1,608	180	111	$908,633
Other Building	177	223	148	$109,935

Table 3: Key Performance Indicators (KPIs)

3.6 TOTAL GREENHOUSE GAS EMISSIONS

When emissions are disaggregated by source, natural gas and propane are the most significant contributors, accounting for 3,130 tCO2e (87%) of total emissions. Vehicle-related emissions contributed 173 tCO_2e (5%), while office paper accounted for 194 tCO_2e (5%). Purchased electricity represented 89.6 tCO_2e (3%) of overall emissions, as illustrated in the following chart.

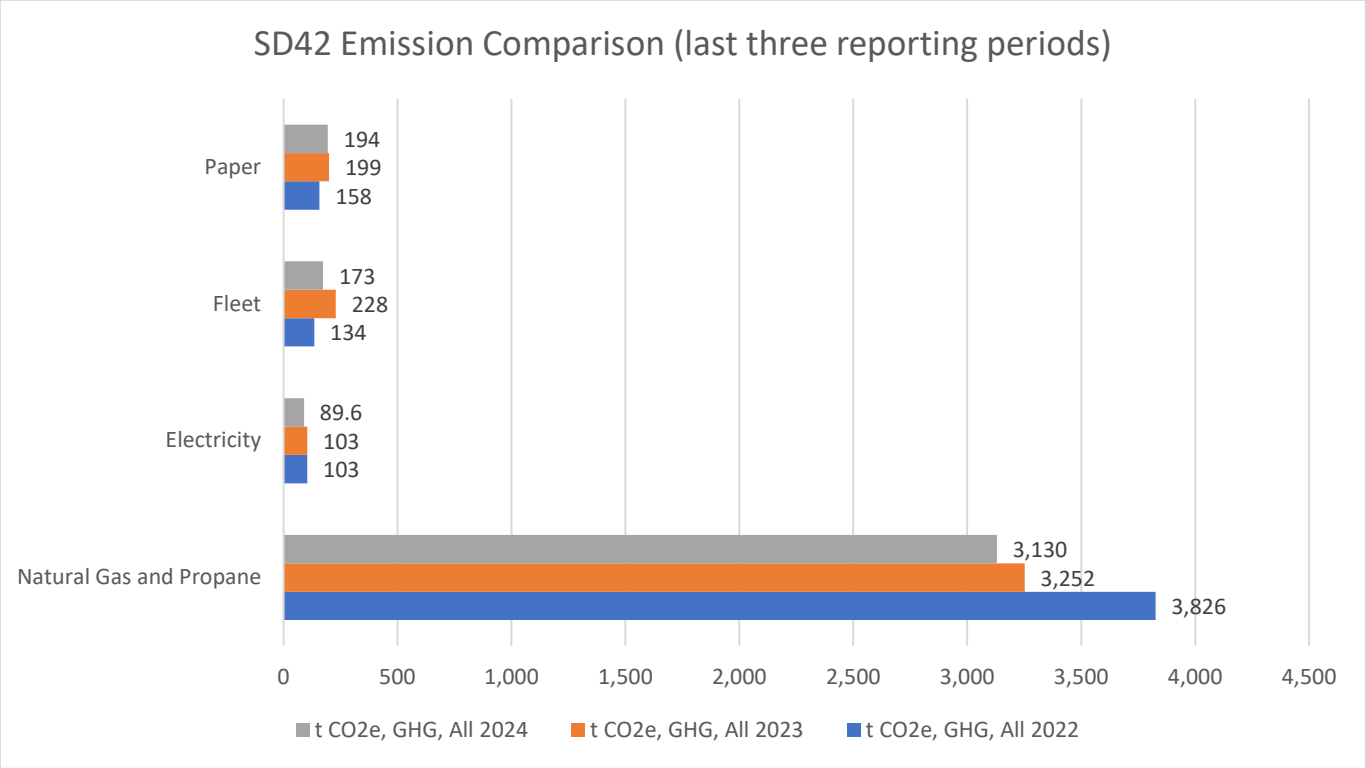

Figure 4: % Total Emissions comparison for the last three reporting periods (2022 to 2024)

To support progress toward the 2030 provincial emission reduction targets, the Environmental Sustainability Plan prioritizes implementing natural gas conservation measures. Following an increase in paper-related emissions in 2023 and 2024 compared to 2022, SD42 implemented a district-wide use of sugar sheet paper, starting in the 2025/26 school year, to reduce emissions associated with paper consumption. Emission reductions are reported on a calendar year basis. The data resulting from this initiative for the year ended December 31, 2025 will be reported in the Climate Change Accountability Report for 2025, scheduled for publication in May 2026, as well as next year's Strategic Energy Management Plan report.

Gasoline accounts for 94% of vehicle-related emissions, while diesel accounts for 6%. To reduce these emissions, SD42 added its first electric vehicle in 2024 and plans to replace aging fleet vehicles with lower-emission models, including EVs where feasible. Variability in fleet emissions is due to inconsistent supplier billing cycles, which produced a low total in 2022 and a high total in 2023. Building emissions will continue to fluctuate with weather patterns.

3.7 TOTAL ENERGY USE INTENSITY

Total Energy Use Intensity (EUI), for the 10-month period ending October 31, 2025, is used to assess the overall energy efficiency of district facilities by building archetype (elementary, secondary, and other). EUI reflects total energy consumption, including electricity, natural gas, and propane.

Beginning in the 2025 reporting year, the EUI reporting period was revised from a calendar year-end (December 31 (December 31) to October 31 to align with BC Hydro program requirements and utility billing practices. Some sites are billed on a bi-monthly basis, and December energy bills are often not received until late February of the following year. An October year-end reporting period ensures the availability of complete and verified billing data while maintaining a consistent analytical approach.

As a result, the differences observed between the 2024 and 2025 EUI values are primarily attributable to a change in the reporting period rather than a significant structural change in energy performance.

Weather-adjusted EUI normalizes total energy consumption to floor area, enabling a more meaningful comparison of building energy performance across the district. EUI metrics reflect the combined use of electricity, natural gas, and propane for each building type. Results are summarized with graphs and key findings below.

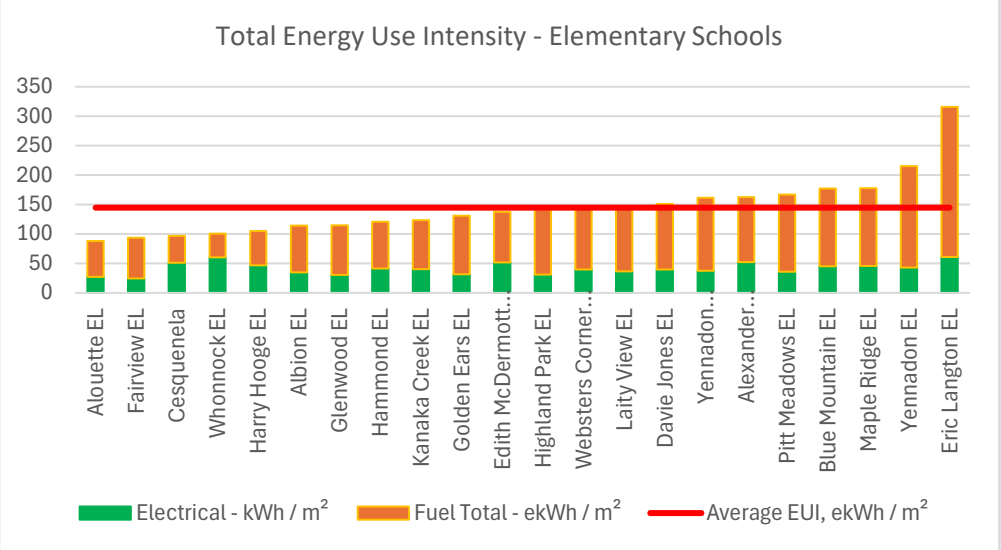

Figure 5: Total EUI-Elementary Schools

Average EUI:
145 ekWh/m²

Eric Langton, Yennadon, Maple Ridge, and Blue Mountain elementary schools have energy use intensity values above the elementary school average.

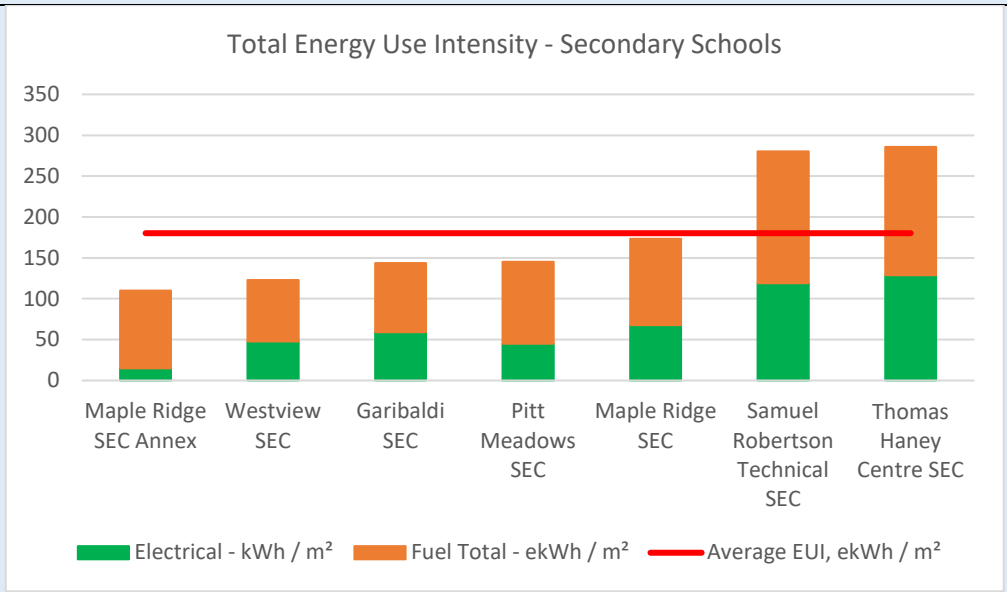

Figure 6: Total EUI-Secondary Schools

Average EUI:
180 ekWh/m²

Samuel Robertson Technical and Thomas Haney secondary schools have energy use intensity values above the secondary average.

Maple Ridge Secondary Annex also shows a higher proportion of natural gas use relative to electricity compared to other facilities.

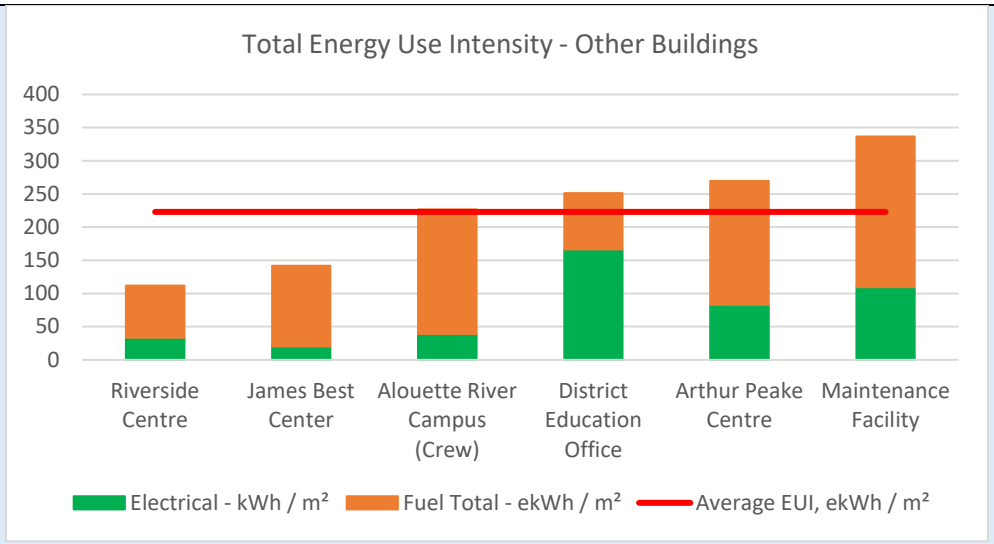

Figure 7: Total EUI-Other Buildings

Average EUI:
223 ekWh/m²

Arthur Peake Centre, the Maintenance facility and the District Education Office have energy use intensity values above the average for the "other buildings" category.

4 ACTIONS IN THIS REPORTING PERIOD

4.1 INCENTIVE SUPPORT

For the 10 months ended October 31, 2025, SD42 received $171,278 in energy efficiency incentives, including $168,279 from BC Hydro and $3,000 from FortisBC. These incentives are separate from and in addition to, the ongoing annual savings in energy costs and GHG emissions achieved through the associated projects.

4.2 PROJECT LIST

The table below summarizes the energy efficiency measures for heating, ventilation, and air conditioning (HVAC) currently planned for implementation in the upcoming years, as well as projects completed as of October 31, 2025. Energy conservation and low-carbon measures have been incorporated into minor capital projects eligible for funding under various programs.

SCHOOL	PROJECT SCOPE	STATUS	FUNDING SOURCE	COST	ENERGY CONSERVATION SAVINGS **(GJ/kWh)
Multiple Schools[1]	Integrated Energy Audit (BCH-12930)	Study Phase	Local Capital Reserve	$35,850	TBD*
Multiple Schools[2]	Integrated Energy Audit (BCH-12624)	Study Phase	Local Capital Reserve	$32,000	TBD*
Davie Jones Elementary	HVAC Continuous Optimization	Study Phase	Local Capital Reserve	$24,000	TBD*
Kanaka Creek Elementary	HVAC Continuous Optimization	Study Phase	Local Capital Reserve	$24,000	TBD*
Pitt Meadows Elementary	HVAC Continuous Optimization	Study Phase	Local Capital Reserve	$24,000	TBD*
Multiple Schools[3]	Continuous Optimization Lite	Implementation	Local Capital Reserve	$50,769	33,377 kWh 481 GJ
Yennadon Elementary	HVAC Continuous Optimization	Completed	Local Capital Reserve	$20,000	2,300 kWh 90 GJ
Maple Ridge Elementary	HVAC Continuous Optimization	Completed	Local Capital Reserve	$20,000	33,400 kWh 568 GJ

[1] Schools are Albion Elementary, Golden Ears Elementary, Harry Hooge Elementary, Maple Ridge Elementary
[2] Schools are Garibaldi Secondary, District Education Office, Thomas Haney Secondary, Whonnock Elementary, and Samuel Robertson Technical
[3] Schools are Alouette Elementary, C'esquenela Elementary, Fairview Elementary, Golden Ears Elementary, Highland Park Elementary, Whonnock Elementary

SCHOOL	PROJECT SCOPE	STATUS	FUNDING SOURCE	COST	ENERGY CONSERVATION SAVINGS **(GJ/kWh)
Westview Secondary	HVAC Continuous Optimization	Completed	Local Capital Reserve	$44,293	14660 kWh 208 GJ
Edith McDermott Elementary	Boiler Upgrade	Completed	Minor Capital Plan 2024-25	$1,450,000	338 GJ
Golden Ears Elementary	Boiler Upgrade	Implementation	Minor Capital Plan 2025-26	$550,000	302 GJ
Maple Ridge Elementary	Boiler Upgrade	Proposed	Minor Capital Plan Submission 2026-27	$520,500	220 GJ
Maple Ridge Secondary	Boiler Upgrade	Proposed	Minor Capital Plan Submission 2026-27	$850,000	440 GJ
Blue Mountain Elementary	Boiler Upgrade	Proposed	Minor Capital Plan Submission 2026-27	$675,000	130 GJ
Highland Park Elementary	Boiler Upgrade	Proposed	Minor Capital Plan Submission 2026-27	$675,000	280 GJ
Garibaldi Secondary	Boiler Upgrade	Proposed	Minor Capital Plan Submission 2026-27	$800,000	480 GJ
Samuel Robertson Technical	HVAC Control Upgrade	Completed	Annual Facilities Grant 2024-25	$133,308	536 GJ
Alexander Robinson Elementary	HVAC Control Upgrade	Completed	Annual Facilities Grant 2024-25	$92,380	173 GJ
Thomas Haney Secondary	HVAC Control Upgrade	Implementation	Minor Capital Plan 2025-26	$563,750	982 GJ
Highland Park Elementary	UV Replacement-Phase 1	Implementation	Minor Capital Plan Submission 2025-26	$650,000	110 GJ
Highland Park Elementary	UV Replacement-Phase 2	Proposed	Minor Capital Plan Submission 2026-27	$1,400,000	110 GJ
Davie Jones Elementary	UV Replacement	Proposed	Minor Capital Plan Submission 2026-27	$1,000,000	54 GJ
Harry Hooge Elementary	UV Replacement-Phase 1	Proposed	Minor Capital Plan Submission 2026-27	$1,200,000	120 GJ
Harry Hooge Elementary	UV Replacement-Phase 2	Proposed	Minor Capital Plan Submission 2026-27	$1,200,000	120 GJ
Harry Hooge Elementary	UV Replacement-Phase 3	Proposed	Minor Capital Plan Submission 2026-27	$1,200,000	120 GJ
TOTAL				**$13,234,850**	**83,737 kWh** **5862 GJ**

Table 4: List of Projects Identified and Status

* *Estimated energy conservation savings for projects in the study phase are to be determined (TBD).*

** *Estimated energy conservation savings based on the level 1 energy study. Note: There are 3 levels of energy studies that energy auditors follow: Level 1 is a walk-through survey for quick identification of inefficiencies; Level 2 is a detailed analysis of energy use and systems, including financial breakdowns; Level 3 is a comprehensive, investment-grade audit, often involving computer modelling for major capital projects. In this case, all studies are level 1 audits except Continuous optimization, which is focused on improving the way buildings are controlled, ensuring that the payback of implemented measures is less than 2 years.*

4.2.1 HVAC CONTINUOUS OPTIMIZATION

SD42 has applied for the BC Hydro HVAC Continuous Optimization (C.Op.) program. The cost-effectiveness of a continuous optimization depends in part on the age and condition of building equipment, systems, and controls. This approach is generally most suitable for facilities with equipment less than 12 years old or with several years of their useful life remaining. BC Hydro also offers a Continuous Optimization (C-Op) Refresh, which includes a limited-time repeat funding bonus of $0.04 per kWh, up to a maximum of $25,000, for buildings that have undergone recommissioning at least 4 years after their initial project. This incentive, combined with up to $0.15 per square foot in investigation funding, is intended to mitigate performance drift and achieve an average of approximately 5% in additional electrical savings. BC Hydro has also introduced the C.Op. Lite program, which allows participants to proceed directly to implementing energy conservation measures without completing full optimization studies, thereby reducing overall project costs.

4.2.2 BOILER UPGRADE

SD42 has applied for several projects through the Ministry of Infrastructure's Minor Capital Plan program. These projects focus on upgrading existing boilers, pumps, valves, and controls, and adding variable-frequency drives and carbon dioxide (CO_2) sensors in gymnasium spaces. Where appropriate, applications also include low-carbon upgrades, such as installing air-source heat pumps to provide low-temperature heating water and support low-emission operation. In some cases, heat pumps may also provide partial mechanical cooling, contributing to improved building resiliency in response to future climate conditions.

4.2.3 INTEGRATED ENERGY AUDITS

Through the integrated energy audit program, BC Hydro offers up to 100% funding for a detailed assessment of a facility's energy use by a qualified energy expert. The audits identify key areas of energy consumption and opportunities for efficiency improvements, demand reduction, and potential electrification. This data-driven approach supports the District's long-term planning and ensures the effective prioritization of future energy conservation measures.

4.3 OTHER PROJECTS

4.3.1 LOW CARBON ELECTRIFICATION

SD42 has been undertaking fuel-switching projects to convert existing natural gas-heated systems to electricity by replacing newer models of unit ventilators with heat pump capability. In 2025, the district implemented unit ventilator upgrades at Highland Park Elementary, supported by the School Enhancement Program (SEP). The district also completed a low-carbon electrification upgrade at Edith McDermott Elementary with funding support from SEP and CNCP programs. These upgrades improve occupant comfort and enhance terminal unit performance.

SCHOOL	PROJECT SCOPE	STATUS
Highland Park Elementary	10 Unit Ventilators replacement with heat pump capability (phase 1)	Implementation

Table 5: Low Carbon Electrification (LCE) Project Status

Edith McDermott Elementary

With funding support from the School Enhancement Program (SEP), SD42 undertook a comprehensive modernization of the school's heating plant and building automation systems to improve energy efficiency, reliability, occupant comfort, and operational control. The project included the replacement of end-of-life natural-draft boilers with three high-efficiency condensing boilers, along with associated upgrades to piping, variable-speed heating water pumps, a low-loss header, an upgraded expansion tank, a pot feeder, and a side-stream filtration system. The domestic hot water system was also upgraded with new high-efficiency heaters and recirculation controls.

The building's direct digital control (DDC) system was fully modernized, including the addition of a heating coil and variable speed drive at the central air-handling unit, replacement of all VAV box controllers and hydronic control valves, and installation of new room sensors with integrated occupancy and CO_2 sensing for demand-controlled ventilation. Additional upgrades included replacing the existing DX unit with an air-source heat pump to support electric heating and provide partial cooling during shoulder seasons. The project is expected to deliver total energy savings of 76,916 ekWh.

Program Reference 1: Edith McDermott Elementary - SEP and CNCP Program Upgrades

4.3.2 LIGHTING UPGRADES

Lighting upgrades implemented from 2015 to 2019 were undertaken across nearly all SD42 facilities as part of the district's energy management initiatives. SD42 continues to implement lighting and controls upgrades annually, supported by the Annual Facilities Grant (AFG) and BC Hydro incentives, to reduce energy consumption and enhance learning environments. These projects typically involve replacing existing High-Intensity Discharge (HID), incandescent, and fluorescent lights with high-efficiency LED lighting and incorporating classroom dimming controls.

In 2025, SD42, completed lighting and controls upgrades at Glenwood Elementary with AFG funding, resulting in an estimated electrical energy saving of ~30,000 kWh. Before-and-after images illustrate the improvements achieved at this school.

Before

After

Figure 8: Lighting and Controls Upgrade at Glenwood Elementary

4.4 FLEET ELECTRIFICATION PLAN

The CleanBC Roadmap to 2030 establishes zero-emission vehicle (ZEV) targets and signals the introduction of additional standards for medium- and heavy-duty vehicles. By 2030, ZEVs are targeted to account for 90% of all new light-duty vehicle sales in the province, with interim targets of 26% by 2026 and 100% by 2035.

In response, SD42 has completed a comprehensive analysis of potential ZEV transition pathways for the district fleet. The analysis is detailed in a report that outlines the methodology, assumptions, and results, and covers potential financial, environmental, electrical and infrastructure implications. The report considers three transition scenarios: a

"business as usual" approach in which all fleet vehicles are replaced with comparable internal combustion engine (ICE) models; an aggressive electrification scenario in which all vehicles are replaced with electric alternatives at the end of their useful life; and a conservative electrification scenario that balances electric and ICE replacements within budgetary constraints.

In 2025, SD42 continued expanding its charging network by adding two EV chargers at Edith McDermott Elementary. SD42 added a Ford F-150 Lightning for Grounds operations and an E-Transit van to support the Food Infrastructure Program (FIP). These vehicles demonstrate operational feasibility while reducing emissions and fuel costs. The F-150 Lightning is expected to generate approximately $2,400 in annual fuel savings, while the E-Transit van will save approximately $2,500 per year, with lower maintenance needs and zero emissions. To support the food program vehicle, an EV charger is being installed at Riverside Centre (for completion in early 2026).

Figure 9: Fleet Electrification (Ford F-150 Lightning)

As of 2025, SD42 operates 11 EV chargers. SD42 also participates in the Low Carbon Fuel Standard (LCFS) as a Part-3 fuel supplier by offering EV charging to employees. To support the sale of these credits, SD42 signed an agreement with the Association of School Transportation Services of BC (ASTSBC) in 2024 to act as the aggregator. To date, SD42 has accumulated 42 credits, which are saleable in the provincial credit market.

4.5 NEW CONSTRUCTION

SD42 received funding approval in November 2022 for the seismic replacement and expansion of Eric Langton Elementary School. Construction began in May 2024, with the existing school and the three portable classrooms continuing to accommodate students during the build. The new school building is expected to be completed and occupied in spring 2026, after which the existing school will be decommissioned and demolished. The replacement school will also include dedicated and expanded childcare space. For more details, please follow the link.

SD42 received funding approval in August 2024 for the seismic replacement of Pitt Meadows Secondary School, which will include a neighbourhood learning centre. This project is now in the design and development phase, with construction anticipated to start in 2026. For more details, please follow the link.

4.6 STUDENT AND STAFF ENGAGEMENT

4.6.1 ENERGY WISE NETWORK

SD42 has participated in the Energy Wise Network program since 2016. In 2025, SD42 delivered a training program to teachers focused on sustainability, climate change and waste management through BC Hydro's Energy Wise Network Campaign.

Teachers training on sustainability, climate change and waste management

The agenda featured presentations on climate change, BC Hydro PowerSmart and Eco-Schools lesson plans, and sustainable waste management. Innovative solutions for reducing single-use plastics were also presented by Friendlier Plastics. The workshop concluded with a formal commitment from participants to implement at least one sustainability initiative at their respective schools during the current academic year.

Figure 10: Energy Wise Network Campaign Program

4.6.2 OTHER BEHAVIORAL PROGRAMS

Sustainability and behavioural programs implemented by SD42 in 2025 are as follows:

1. **District-wide implementation of Alternate Paper (Sugar Sheets)**

   Paper is the second-most-significant contributor to SD42's emissions profile.

   Purchasing sugar sheets can help control and reduce these emissions. Climate Action Secretariat's recent research on sustainable paper selection for B.C. Public Sector Organizations confirmed that sugarcane bagasse paper and 100% recycled wood pulp paper have the lowest carbon footprint (see table below). After successful implementation of Sugar sheets at the maintenance office in 2024, SD42 made a district-wide transition, which is expected to reduce annual greenhouse gas (GHG) emissions by up to 65 tonnes and achieve an estimated yearly net saving of $26,000 (including reduced paper costs and reduced carbon-neutral offset payments to the Ministry of Finance for GHG emissions). Emission reductions resulting from this initiative will be reported in the Climate Change Accountability Report for 2025, scheduled for publication in May 2026.

Carbon Footprints of Common Paper Types

Type of Paper	Carbon Footprint
• 100% recycled • Sugarcane bagasse	Lowest
• Wood fibre with 30 - 70% recycled	Medium
• Wood fibre with 0% recycled (virgin paper)	Highest

Table 6: Carbon Footprints of Common Paper Types

2. **Joint Tree Planting Drive**

   With funding support from Growing Canada's Community Canopies Program, the City of Maple Ridge partnered with School District 42 to celebrate Tree Planting Day through a series of student-led planting events across the community and jointly planted 116 trees across multiple locations.

   Students from the ci:təxʷ Environmental Community School planted trees at Allco Park; Alouette Elementary at Alouette Park. SD42 students also planted trees at Telosky Park and Chilcotin Park.

   The tree-planting activities provided hands-on learning opportunities for students, highlighting the important role trees play in mitigating climate change, enhancing biodiversity, and improving community well-being. The events were marked by strong enthusiasm and collaboration, with students proudly contributing to a greener local environment.

Figure 11: Joint Tree Planting Drive

3. **HVAC Controls training for trades team**

   In 2025, SD42 partnered with Webir Automation to deliver training sessions on the basics of HVAC controls and to identify energy savings and optimization opportunities. The training was organized on July 10, 2025, followed by an in-person session on July 14 at Garibaldi Secondary. FortisBC funded these training sessions.

   Ainsworth delivered a similar session in November 2025, focused on HVAC controls basics, followed by advanced topics such as alarm management, report creation, and system review through the energy conservation lens. This program was delivered using the unused Preventive Maintenance hours that were due to expire in December 2025.

Figure 12: HVAC controls training for trades team

5 PLANS FOR THE FUTURE

SD42 has prioritized energy management and environmental sustainability as part of its overall strategy to reduce GHG emissions. SD42 will continue with HVAC and lighting upgrades to contribute to more energy-efficient buildings and better learning and working environments for students and staff. As part of the design process for new schools, SD42 will also continue to consult with energy modellers to ensure that all new buildings achieve at optimal performance.

SD42 intends to create a Low-Carbon Strategic Action Plan (LCSAP) to prepare for 2027 and beyond. The plan aims to develop pillars and action items promoting energy management, sustainability, and climate change. The new plan will also include a cost-based scenario analysis of SD42's emissions trajectory, along with a comprehensive list of projects to support these action items to help SD42 reach the provincial emission reduction goals. SD42 envisions undertaking the projects and initiatives outlined below.

5.1 MECHANICAL UPGRADES

The detailed list of mechanical upgrades planned for the upcoming year is currently under development and has not been finalized as of this reporting date.

5.2 LIGHTING UPGRADES

Based on a BC Hydro-funded feasibility study on lighting upgrades completed at six schools, SD42 completed a lighting and controls upgrade at Glenwood Elementary in the summer of 2025. SD42 plans to undertake lighting and controls upgrades at Webster's Corners Elementary and Yennadon Elementary in the summer of 2026 depending on financial feasibility.

School	Energy Savings (kWh/year)	Estimated Material & Labour Cost ($)
Webster's Corners Elementary	19,728	$89,515
Maple Ridge Secondary Annex	24,551	$81,963
Yennadon Elementary	23,032	$133,697
Samuel Robertson Technical	81,751	$352,800
Thomas Haney Secondary	117,896	$794,442

Table 7: Lighting Project Expected Savings and Costs

5.3 HVAC CONTINUOUS OPTIMIZATION

SD42 continues to undertake continuous optimization (C.Op.) studies to review its facilities to improve overall building performance and reduce GHG emissions. In 2026-27, SD42 will review the following schools:

- Webster's Corners Elementary
- Maple Ridge Secondary
- Blue Mountain Elementary

Based on Energy Use Intensity, SD42 plans to include Glenwood Elementary, Laity View Elementary and Garibaldi Secondary in 2027-28. SD42 plans to expand participation more sites in the C.Op. refresh and C.Op. Lite programs to improve overall building performance. The District also plans to enroll sites in BC Hydro's Demand Response program.

5.4 EV CHARGING INFRASTRUCTURE

In 2026, SD42 will continue its fleet electrification efforts by replacing four older, end-of-life gasoline vehicles with electric vehicles (EVs) and installing two additional EV chargers at the Maintenance Office to support fleet operations, reduce greenhouse gas emissions, and achieve long-term operational savings. The new Eric Langton Elementary school will have four additional EV chargers installed, as required by the building code. By the end of 2026, SD42 will own and operate 17 EV chargers for fleet, staff, students, and the public at large.

5.5 BUILDING ADDITIONS

In September 2024, the Ministry of Education and Child Care (MECC) announced funding for:

- A five-classroom prefabricated addition at Blue Mountain Elementary, and
- An eight-classroom prefabricated addition at Golden Ears Elementary.

The use of prefabricated construction means students will soon be learning in modern classrooms that look just like regular schools. With sustainable and energy-efficient designs, the additions align with the Province's CleanBC targets and meet B.C.'s enhanced energy requirements. Construction is underway and these additions are scheduled to be open for classes in September 2026.

5.6 STUDENT AND STAFF ENGAGEMENT

SD42 will continue to sensitize students and staff to sustainability and climate change and launch several promotional campaigns. The campaigns planned for the year 2026 are as follows:

- **Eco-challenge week -** SD42 will organize an Eco-Challenge week in February of 2026 under BC Hydro's Energy Wise Network campaign. It will be a fun-filled, engaging 5-day event for students and teachers, focused on promoting energy conservation and sustainability, with Day-1: Reduce Electricity, Day-2: Reduce Natural Gas, Day-3: Reduce Waste, Day-4: PowerSmart for schools, and Day-5: Climate Action Commitment.
- **Sustainability training for custodial staff -** In 2026, SD42 plans to undertake sustainability training for custodial staff to promote sustainability behaviour throughout SD42. The objective is to share lessons learned and highlight successful initiatives implemented across the District.
- **Waste management program in schools -** A Waste Management Assessment was initiated in fall 2025 to assess and document existing waste management practices and identify key observations across the district.

  As part of an ongoing effort to improve waste diversion rates and reduce contamination, a district-wide waste management survey will be conducted in early 2026 to better understand current practices and challenges. The survey will focus on identifying issues related to waste sorting, contamination, and staff awareness, and will gather input to inform practical and operationally feasible solutions. It will also collect additional data to validate and strengthen the findings identified through the initial assessment.

  The results of the assessment, including survey findings, will be documented in a Waste Management Assessment Report to be completed in 2026. This report will outline key findings and provide actionable recommendations to guide improvements in waste collection systems, signage, education, and overall waste management practices. These outcomes will support the development of a data-driven Waste Management Plan for 2026/27 and beyond.

6 APPENDIX

6.1 BCH SEMP REQUIREMENT FORM

Key Requirements	SEMP page number(s) where this is included	BC Hydro to Complete
1. EXECUTIVE SUMMARY 1-2 page summary that includes		
a) Energy Targets	3	
b) kWh target for the current year	3	
c) Budget approval for a current year plan	11	
d) Progress to date on the long-term goal	5	
e) Benefits of energy savings (i.e. avoided costs, payback, improved comfort)	1-2,4	
2. OUR COMMITMENT		
a) Alignment with the organization's goals	4	
b) Stakeholder engagement plan	4-5	
3. UNDERSTANDING THE SITUATION		
a) Organizational Profile	4	
b) EMA Outcome	5-7	
c) BEPI/EUI of buildings in the portfolio	8-10	
d) Explanation of strategy for prioritizing projects (such as target sites with the highest energy consumption, highest BEPI, the highest number of occupants)	11-13	
e) Opportunities / Challenges to be taken into account for the energy management plan	3-4, 13-17	
4. OUR ACTIONS		
a) Current year project list that outlines kWh saved and cost per project and total for the year (including stakeholder engagement plan)	11-14	
b) Budget approval for the plan (or explanation of how/when funding will be in place)	11	
c) Potential projects outlined for the following 1-2 years	17-19	
d) Show how projects contribute to the achievement of energy target	5, 11-13	
e) Progress on 5 EMA critical items	6-8	

6.2 ACRONYMS AND ABBREVIATIONS

AFG	"Annual Facilities Grant". A fund allocated to each district for annual facility projects is required to maintain facility assets through anticipated economic life and prevent premature deterioration.
BAS	Building Automation System is an overarching software that manages the school's environment.
BCH	BC Hydro
CAS	Climate Action Secretariat under BC Ministry of Energy and Climate Solutions
CCAR	Climate Change Accountability Report
CNCP	Carbon Neutral Capital Program. A grant fund is available to school districts.
CO_2	Carbon Dioxide
C.Op.	"Continuous Optimization" - a program of BC Hydro to improve the energy efficiency of existing buildings through a review of operating issues. It is commonly thought of as a 'tune-up' for buildings. BC Hydro provides 50% cost-share funding for many of the program's activities.
DDC	Direct Digital Control: A computerized control system for a building.
DX Unit	Direct Expansion (Cooling Unit)
EMA	Energy Management Assessment
EUI	"Energy Use Intensity". A measure of the energy a building uses - on a "per floor area" basis (typically kWh/M^2). EUI is a common energy metric used in building operations. It can include all energy use – heating, lighting, systems, and plug loads- or can be analyzed for one component or fuel only.
EV/ZEV	Electric Vehicle/Zero Emission Vehicle
eKWh	equivalent kWh. The energy use is converted into kWh for a common presentation as in an EUI value. One GJ of natural gas consumption converts to 277.8 ekWh.
FIP	Food Infrastructure Program
GHG	Greenhouse Gas
GJ	"Giga Joule" – literally, a billion joules. A measure of energy – most often used with natural gas, propane, or other heating fuels.
HFCs	Hydroflourocarbons
HID	High-Intensity Discharge (lighting)
HVAC	Heating, Ventilation and Air Conditioning
ICE	Internal Combustion Engine
ISO	International Organization for Standardization (specifically referencing ISO 50001)
KW	kilowatt (thousands of Watts), a measure of how fast energy is consumed
KWh	kilowatt-hour. "thousands" of watt-hours. A measure of energy consumed - but not how fast it is consumed. A kWh is equivalent to 100 Watt light bulbs turned on for one hour.
Lb	Pounds for Paper
LCE	Low Carbon Electrification
LED	Light-Emitting Diode. LED lighting and fixtures.
PDCA	Plan-Do-Check-Act
Power Smart	A program of BC Hydro to encourage energy conservation through education and incentives.
PUMA	An energy tracking software platform used by the district

Ministry	Ministry of Energy and Climate Solutions, Government of British Columbia
SEP	"School Enhancement Program". A provincial funding program to help school districts extend the life of their facilities through a wide range of improvement projects, including: Roofing upgrades (i.e., replacement, repair), Exterior Wall System upgrades (i.e., cladding, insulation, windows, building envelope), Interior Construction upgrades (i.e., interior accessibility, flooring, wall partitions), HVAC upgrades (i.e., heating, ventilation, air conditioning), Electrical upgrades (i.e., power supply, distribution systems, fire protection systems), Plumbing upgrades (i.e., washrooms, water fountains, re-piping).
SEMP	Strategic Energy Management Plan. This document.
SD42	The Board of Education of School District No. 42 (Maple Ridge-Pitt Meadows). This District.
tCO_2e	tonnes of CO_2 equivalent
UV	Unit Ventilator
VAV	Variable Air Volume
VFD	Variable Frequency Drive
W	Watt(W) - a measure of how fast energy is consumed.