The Board of Education of School District No. 61 (Greater Victoria)

Climate Action Ad Hoc Committee Meeting

Minutes

Wednesday, May 10, 2023, 4:30pm to 6:00 p.m.

In attendance: Trustee Gagnon, Trustee Duncan, Deb, Sean, Brian, Natanis, Marni, Chris

Regrets: Butch, John and Kate

A. COMMENCEMENT OF MEETING

A.1. Acknowledgement of Traditional Territories

The Greater Victoria School District wishes to recognize and acknowledge the Esquimalt and Songhees Nations, on whose traditional territories we live, we learn, and we do our work.

A.2. Approval of the Agenda

That the May 10, 2023 agenda be approved. – Moved by Sean – approved by consensus

A.3. Approval of the Minutes

That the April 19, 2023 meeting minutes be approved. – Moved by Trustee Duncan – approved by consensus.

B. NEW BUSINESS

B.1. Draft *Learning, Engagement and Leadership 'pillar'*

Minor edits provided to the Learning, Engagement and Leadership draft

Next step: Sean Powell will take the committee's work and Brian's work and create the first draft of the Climate Action Plan and then share out for edits and feedback next week. Edits and feedback will be received with the goal of having the first Climate Action Plan ready for the June 19, 2023, Board meeting. The pack up is prepared June 9 so all materials need to be submitted to Kelly by that date. It was discussed that the Climate Action Plan will be a living document and iterative.

B.2. Next Meeting

C. GENERAL ANNOUNCEMENTS

D. ADJOURNMENT 5:03pm.

2022 Climate Change Accountability Report

Greater VICTORIA School District — One Learning Community

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Table of Contents

Declaration Statement:

This Climate Change Accountability Report for the period January 1, 2022 to December 31, 2022 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2022 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2023 and beyond.

By June 30, 2023 the Greater Victoria School District 61 final 2021 Climate Change Accountability Report will be posted to our website at https://www.sd61.bc.ca/news-events/climate-action-initiatives/

Executive Summary

On behalf of the Greater Victoria School District, we are pleased to submit our Carbon Change Accountability Report for 2023.

Our Vision:

This report reflects on our efforts to reduce the district emissions. It looks at our progress as well forecasts where we are headed. It discusses current actions and planned actions in an attempt to create clear and reasonable path for meeting our climate goals

Our Goals:

Our goals as an organization closely align with the goals of the province which are derived for the IPCC recommendations for limiting global warming to 1.5 degrees C.

- 50% Decrease in building emissions from 2010 levels
- 40% Decrease in fleet emissions from 2010 levels

2022 Results and COVID19:

Measured GHG emission levels in 2022 showed a:

- 1.8% increase in emission levels from 2021
- 16.2% increase overall since the start of the pandemic.

In 2023, we witnessed what appears to be a plateau regarding GHG emission levels due to COVID 19 ventilation efforts. Spaces that needed increased ventilation were addressed throughout the district. At the same time, behaviour characteristics such as increased opening doors and windows have begun to visibly subside. Weather corrected natural gas consumption in Q4 showed the first signs of decreasing since the onset of COVID 19.

It is important that we recognize that these increases represent successful efforts to reduce COVID transmission rates, and not a lack of effort to reduce emissions.

Our board remains committed to the reduction of greenhouse gases and has not lost perspective regarding the climate emergency in a year that saw unprecedented weather events both globally and locally.

2022 Highlights:

This year was highlighted by the completion of several highly impactful projects that will continue to positively affect emission levels going forward. The immediate impact of these projects is overshadowed by the results of COVID ventilation, but should become more visible as we return to normal.

2022 GHG saving and energy efficiency projects are highlighted by:

- LED lighting and controls upgrades
  - 9 schools in 2022
  - Now approaching 40 buildings since 2019.
  - Exceeding 2.5 GWh annual savings in electricity
- Advanced DDC Controls upgrades
  - Frank Hobbs Elementary
  - South Park Elementary
  - Rogers Elementary
- Continuous Optimization Program:
  - Sir James Douglas Elementary
  - Central Middle School
  - Torquay Elementary
- Educational Engagement: Light Switch Stickers
- Partial control upgrades and LCE at Facilities building
- Night-time setback of rogue exhaust fans identified through audits
  - Arbutus Middle School
  - Uplands Campus
- All new stand-alone child care studios continue to be built with
  - All electric heating.
  - Meet or exceed 2015 NEBC requirements
- 4 new electric buses and charging infrastructure
- 3 new EV chargers for fleet with 3 new zero emission vehicles on order
- Award winning educational engagement campaign " Light Switch Stickers"

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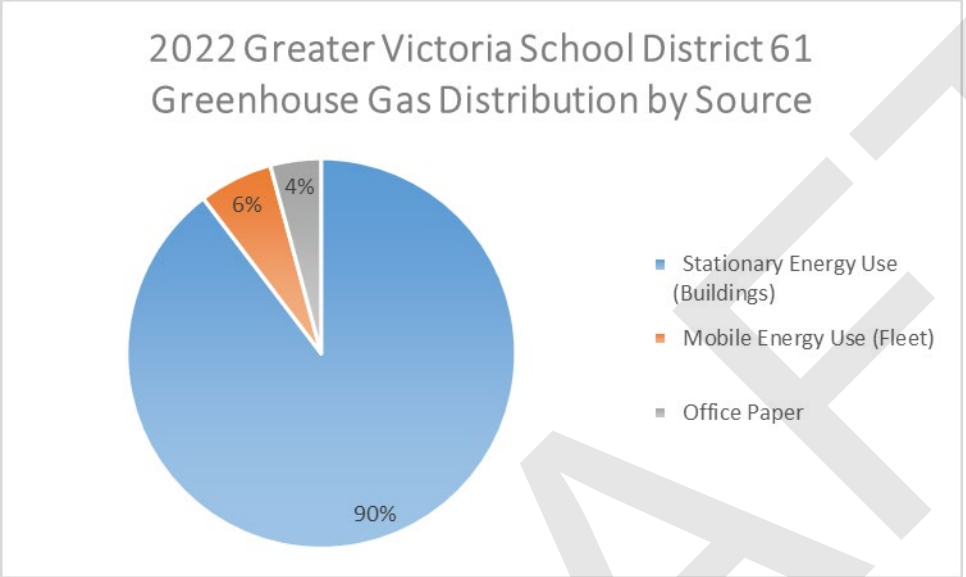
Greenhouse Gas Emissions

Distribution:



The primary source for greenhouse gas emissions within the district has always been from buildings, and continues to be. Within our buildings, heating during the winter season accounts for the vast majority of our total emissions and consequently presents the largest opportunity for conservation as well.

Heating system upgrades, and improvement of building mechanical systems remain at the forefront of our efforts to reduce overall emissions. High initial investment costs are the largest obstacle we face in this area.

While difficult to measure, programs that create behavioral change, awareness, and accountability will also be important as we continue to work towards achieving our goals. Unlike other mechanical improvements to buildings, these approaches can exists with very little capital investment. This is why we are always working to develop policies and programs that will foster participation from all staff and students. In 2022 our participation in the Energy Wise Network resulted in an effective campaign to raise and change habits through student designed light switch stickers. This campaign proudly achieved 1st place provincially at the Energy Wise Summit in 2 of 3 categories. We will once again be participating in 2023.

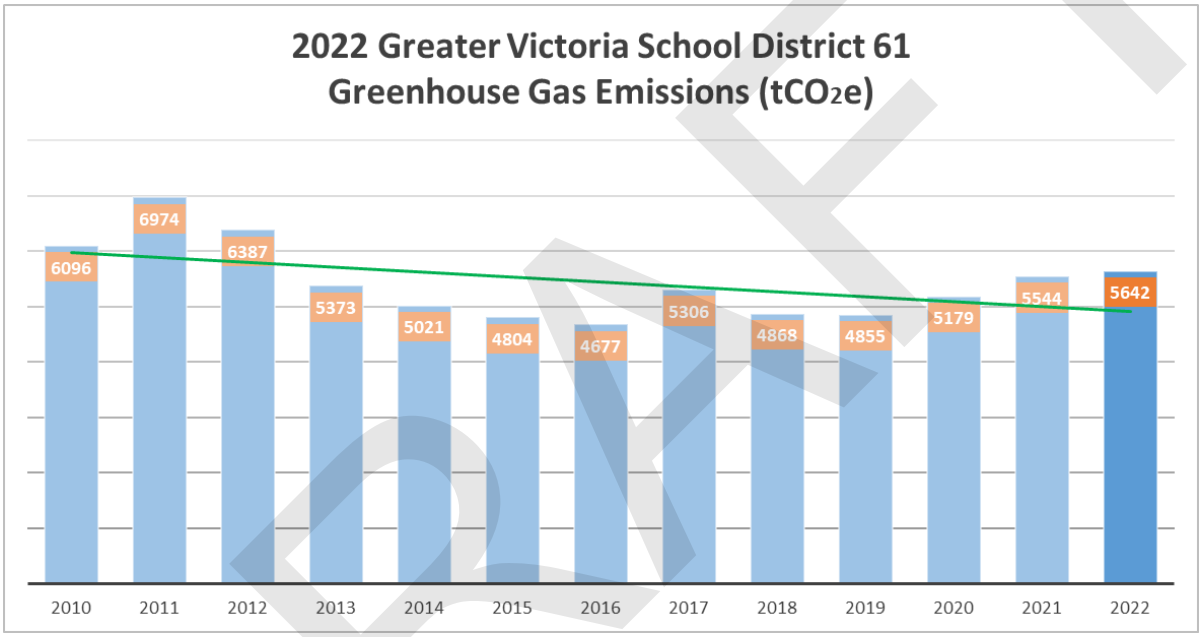
Mobile energy use and paper consumption account for just 10% of our emissions profile, but will not be ignored. 2022 saw continued development towards electrification of our fleet and EV charging infrastructure and more projects are underway for 2023.

Our goals:

At the Greater Victoria School district our goals for reduction of GHG emissions align with the goals of the province:

- 40% by 2030 (fleet)
- 50% by 2030 (buildings)

Current Progress:



The above chart shows combined greenhouse gas emissions generated by our district for each year since 2010.

The trend-line (green) indicates the average trend across 2010 to 2022. The decreasing trend is the product of our efforts and investments since 2010. It represents green choices and an overall effort from everyone at the district.

The uptick in 2017 reflects a year with a relatively high amount of heating degree days, as well as the beginning of adopting smaller class sizes. This uptick is common throughout the province. The rise in emissions from 2020 and 2022 is a reflection of increased ventilation during the heating season in order to ensure a safer workplace during COVID. This rise is also seen across the K-12 sector.

Achieving our goals:

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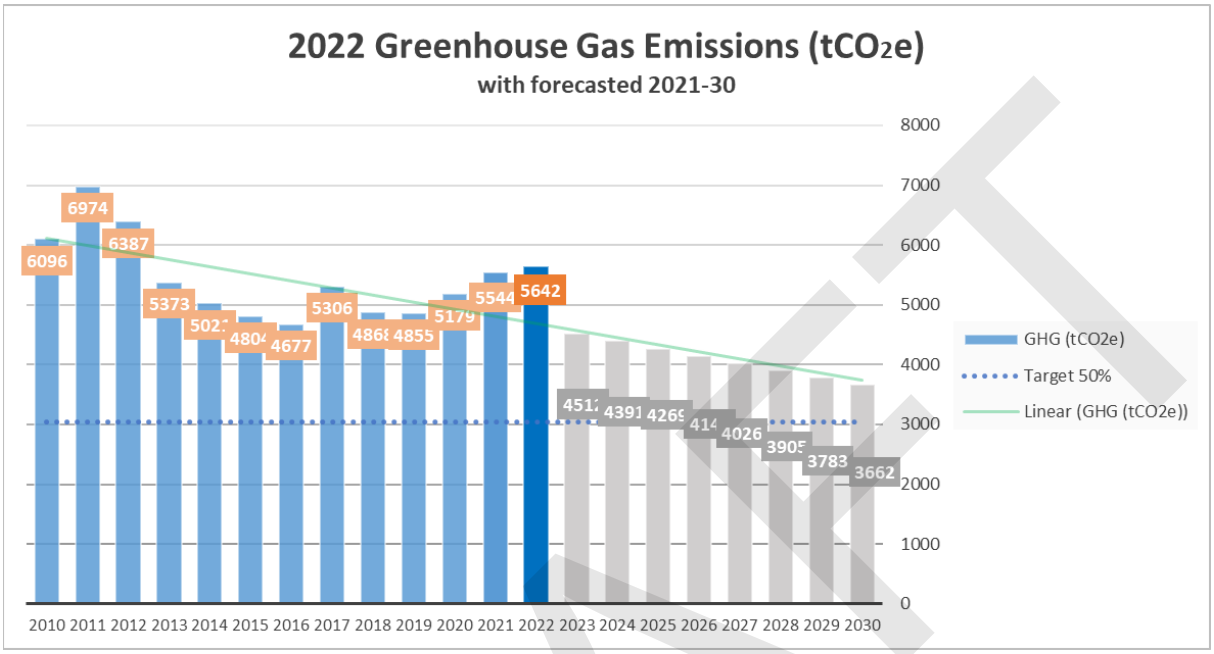
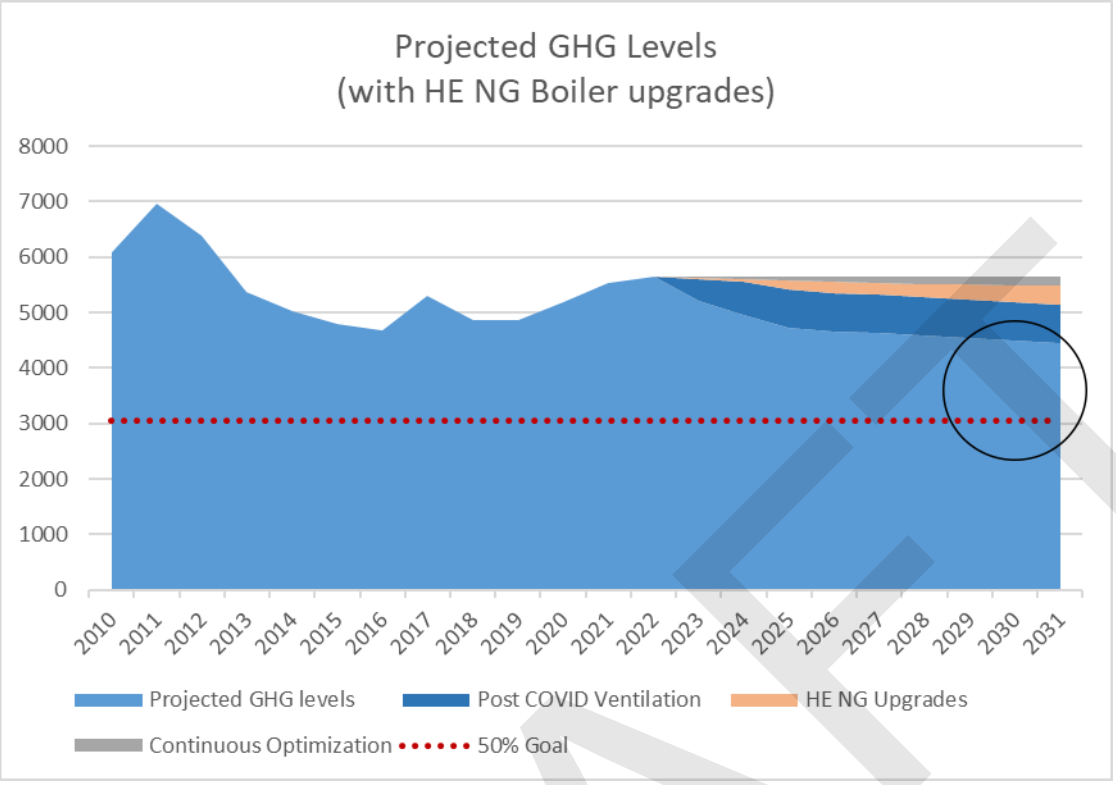


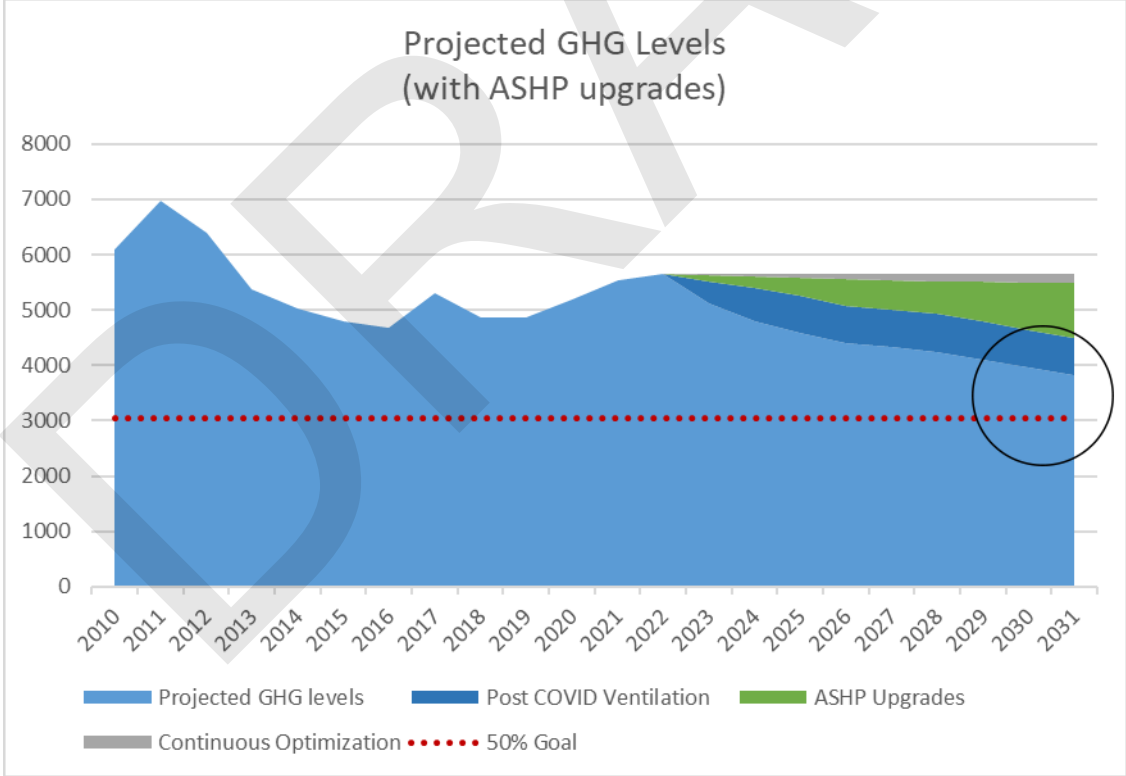
Looking ahead to 2030, we can see that COVID ventilation measures have recently taken us off pace to reach our 2030 goal. Our investments and efforts must now increase to keep up. We will need to embrace new technologies, and move forward with new funding for additional GHG reducing projects. We must continue to hold ourselves accountable for waste and educate each other on best practices in our everyday activities.

This type of chart must also be taken with a grain of salt in that it uses past performance to project future performance, We must consider that past performance will have included low hanging fruit, and relatively higher CNCP funding. The actual pathway to reach 50% reduction, would likely involve investments in LCE (low carbon electrification) of heating plants, and introduction to HRV (heat recovery ventilation) on a large scale.

The following 2 charts take a more realistic view based on planned actions between the present and 2031.

These charts show 2 potential extreme paths regarding replacement of aging out heating plants, The first being all High Efficiency Natural Gas Condensing boilers (HE NG), and the second being 100% Air Source Heat Pumps (ASHP). In both cases we included actions taken through continuous optimization of buildings as well as a gradual, but not complete, return to using building mechanical systems to provide ventilation rather than windows and doors.


Projected GHG Levels
(with HE NG Boiler upgrades)
8000
7000
6000
5000
4000
3000
2000
1000
0
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031
Projected GHG levels
Post COVID Ventilation
HE NG Upgrades
Continuous Optimization
50% Goal


Projected GHG Levels
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8000
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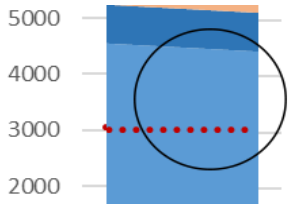
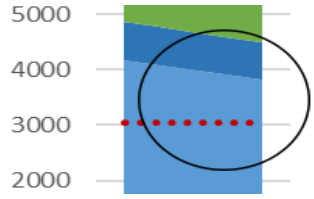
0
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031
Projected GHG levels
Post COVID Ventilation
ASHP Upgrades
Continuous Optimization
50% Goal

HE NG Boilers Pathway



- **1406 tCo2e reduction shortfall**
- **Estimated $6.275 M (present costs)**
- **23% 2030 target shortfall**
- **Obsolete, or backup only by 2050**

ASHP Upgrades Pathway



- **764 tCo2e reduction shortfall**
- **13.5% 2030 target shortfall**
- **Estimated $8.5 M (present costs)**
- **Increased risk of compatibility**
- **Increased maintenance costs**
- **Improved climate change resilience**

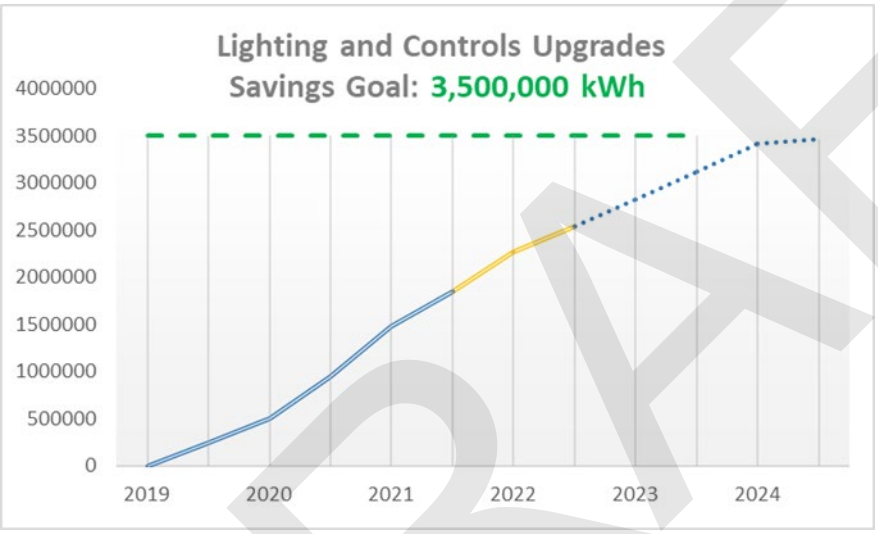
In both cases we find ourselves falling short of 2030 GHG reduction goals. Realistically the path taken will fall somewhere between both of these paths, dependent on available funding, and rebates, while considering the characteristics and timing of the individual buildings. The remaining gap can potentially be addressed through:

- Behaviour changes and education
- Heat recovery ventilation
- Building envelope improvements
- Renewable energy sources
- New potential technologies.

Actions Taken in 2022 to Reduce Emissions

LED Lighting and Controls Upgrade:

In 2022 we furthered our progress towards a complete changeover to LED lighting in the school district, and our goal of creating 3.5 GWh annual savings in electricity. Even though electricity in BC is nearly 100% clean, we must also accept that the North American electrical grid is still close to 60% derived from fossil fuels. Our savings in electricity make available more clean electricity for our neighbors in Alberta, and Washington in the short term. In the longer term, these efforts will help to increase the available electrical capacity of our buildings to facilitate future low carbon electrification and potentially avoid major infrastructure upgrades as a result.



Lighting upgrades are more than just LEDs.

Projects include achieving optimal lighting levels along the way.

We are also always on the lookout for situations where enhanced controls such as occupancy sensors, daylight harvesting, and dimmers can achieve results.

Shown here is a recently successful pilot project to assess our ability to retrofit low efficacy lighting with 0-10v dimmable LED flat panels

Monterey Middle School Dimming Pilot

Advanced DDC Control Upgrades:

The district is always looking to keep its building controls optimized and up to date. Most recently in late 2022, upgrades began at three schools and would be completed in spring 2023:

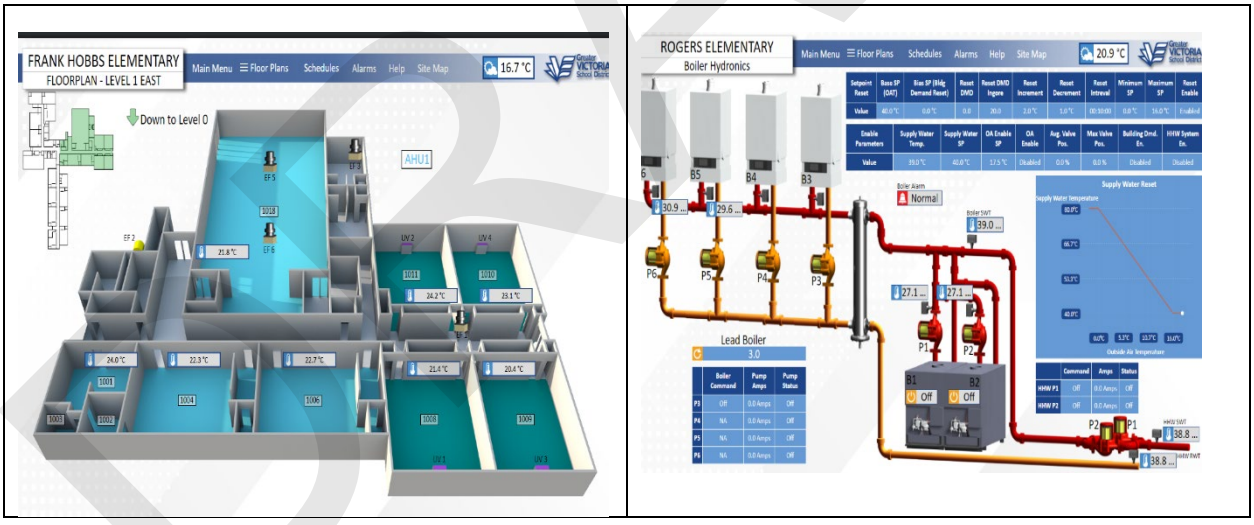
- Rogers Elementary
- Frank Hobbs Elementary
- South Park Elementary

These upgrades primarily create:

- Natural gas savings
- Electricity savings
- Improved comfort
- Improved maintenance response time

They also helped address some ongoing issues that were arising due to aging out systems and compatibility as well. Upgrades include hardware installation as well as programming and user interface.

Early results indicate that this project was successful in all of the above areas, but a full year of operation is necessary to truly understand their benefits. GHG reduction contributions will unfortunately not begin contribute to our goals until 2023.



Updated GUI interface shown for Frank Hobbs and Rogers Elementary Schools

Building Audits, and System Upgrades:

Facilities

In spring 2023, we took a close look at one of our worst performing buildings in terms of energy consumption per unit area. We determined 4 potential saving areas with high impact and low relative costs

1.) Adding a night setback to fan coil units through programmable thermostat and fan control relays
2.) Addition of 2 ductless split ASHP units to reduce overall system demand
3.) Reduced system demand would then facilitate a lowering of the boiler operating range to move into condensing range.
4.) Optimization of existing building thermostat settings

Early results have resulted in a year to year 41% decrease natural gas savings in the first month, and a 7.5 % in electrical consumption.

These results were too late to contribute to savings in 2022, but could approach an annual 40 tCO2e reduction in emissions going forward based on early results.

Arbutus Middle School, and Upland Campus

In the summer of 2022 building audits that included walking of rooftops in search of uncontrolled exhaust fans, revealed several instances in these two buildings.

In November 2022, these units were brought under control using local programmable timers to establish proper schedule that included a night time setback. This is a relatively low cost solution, but results are already indicating potential annual GHG savings of over 10 tCO2e.

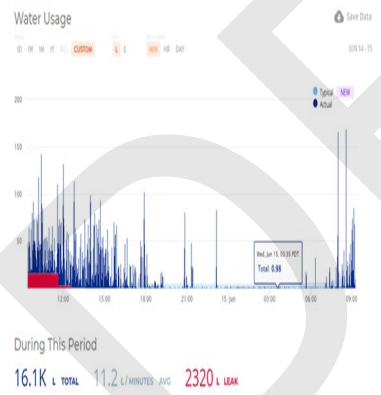
Once again, this project will only impact 2022 for just over one month, We look forwards to the full impact in 2023 and will continue to monitor and assess results.

Water Consumption Analysis and Repairs:

Due to the size and age of our district, water leaks are known to appear regularly. In many cases they are addressed immediately as we have many staff that can spot the issues as they arise. In some cases leaks are not easily detected and without evidence of their existence, they may persist indefinitely.

In June 2022, we put to a predictive equation for water consumption to work to help identify potential locations where undetected leaks might exist. We then used a real-time water monitoring system to check buildings of high potential.

We were able to identify and confirm the repair of leaks at 4 sites and conserve this precious resource and strengthen the resiliency of our community to withstand drought.



A more extensive system of water monitoring is currently in the planning stages. In 2023 we will be looking to implement leakage detection, and monitoring services that will lead to a drastic reduction in waste.

Energy Efficient, and Low Carbon Childcare Studios:

The district is currently engaged creating new child care studios at multiple sites throughout the district. In the case of all of these new standalone structures, we can proudly say that none consume fossil fuels. All of these structures are heated with electricity.

All stand-alone studios will continue to be built this way to ensure that we are no longer adding new sources of building emissions.

New studios will include heat pumps to help further our climate resiliency against extreme heat due to climate change.

New studio designs conform to the NEBC and migration towards the BC Energy Step Code is also under consideration moving forward. New buildings incorporate:

- Heat recovery ventilation
- Daylight harvesting
- LED Dimming
- Advanced controls using occupancy sensors

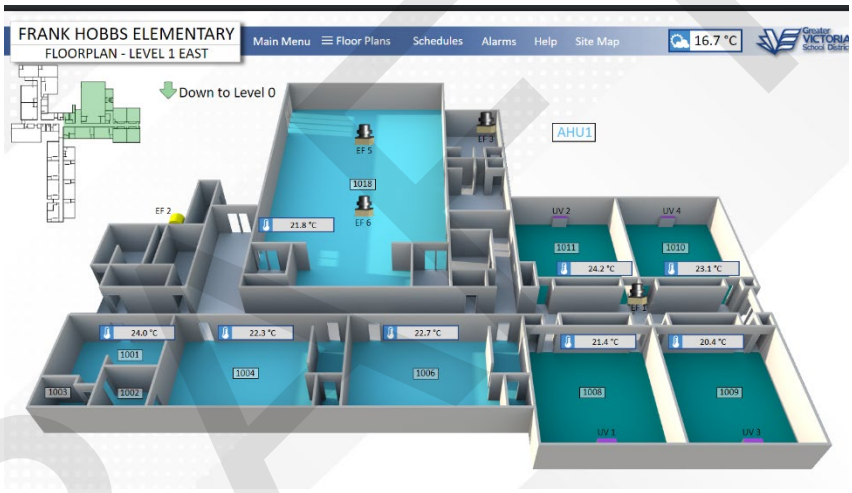
Continuous Optimization:

Plans were put in place in 2022 to enter into the BC Hydro Continuous Optimization program. This is a highly successful program shown to produce results typically in the range of 10% savings in natural gas consumption in commercial buildings.

2023 will see the completion of our first 3 buildings under this program, with plans to continue and hopefully pick up the pace as this program should become a foundation moving forward.

The continuous optimization program or C-OP, investigates buildings through DDC to identify opportunities.

This investigation is heavily incentivized under the agreement that certain low cost recommendations will be followed through with.

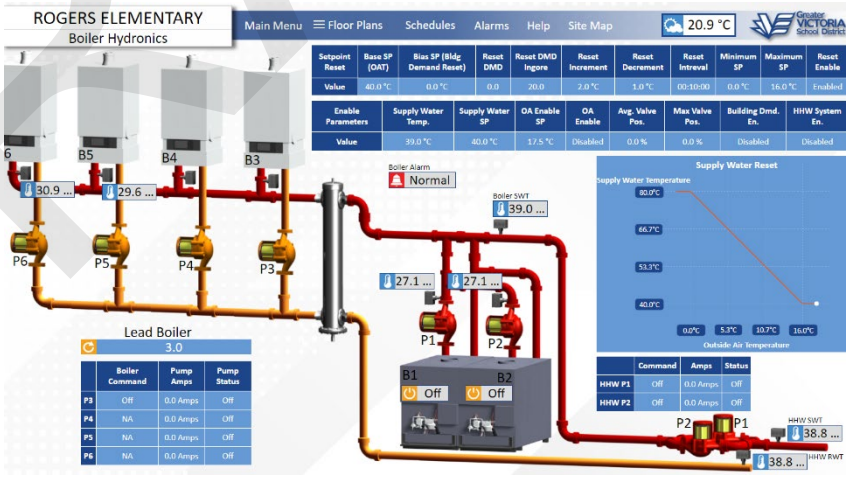


2022/23 Buildings:

Torquay Elementary

Central Middle School

Sir James Douglas Elementary



Electric Buses and Charging Infrastructure:

In the spring/summer of 2022, charging infrastructure was put in place at Colquitz Middle School to accommodate 4 electric buses. These buses arrived in September and were immediately put into service.

These buses now facilitate the majority of fields trips throughout the district. They also generate carbon credits while using clean electricity.

- As of March 2023, the districts electric buses had already driven over 25,000 km
- Avoiding an estimated 25 tCO2e of emissions

EV Chargers and Zero Emissions Fleet:

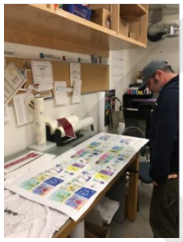
In the summer of 2022 we were able to take advantage of one of Clean BCs most generous EV incentives to date. This rebate provided 75% of all costs, including infrastructure. Three charging stations along with electrical infrastructure were put in place at fleet parking.

These three chargers should easily be able to serve our first ten light duty zero emission vehicles. This is the first step towards our goal of a 40% reduction in vehicle emissions by 2030. These chargers should be able to facilitate an 8% drop in fleet emissions once they are in full use.

Our first three fleet EV's are due to arrive in the summer of 2023.

Learning Engagement: Light switch Stickers:

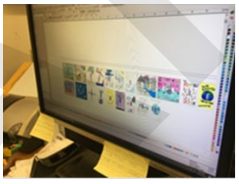
Following up on the success of our 2021 “Space Heater Defeater” campaign, we came up with something truly special in 2022. Thanks to the innovative and creative staff in the facilities sign shop we were able to offer elementary students in grade 2-5 the opportunity to take part in climate action in a fun, engaging and educational way.

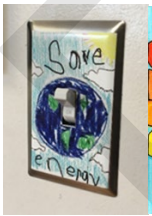


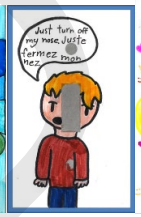
Each student was given a template in which to design their own light switcher sticker. The design was their idea of what would serve as a good reminder of when to turn off the lights, but the message could be anything relating to climate action as well. The templates were digitized and processed into each students very own sticker.

The program started in October 2022 as a small pilot project at Tillicum Elementary. It quickly grew to involve 25 of 27 elementary schools. Participation at these schools surpassed 80% and we were overwhelmed with the positive feedback.

This program will return by popular demand in 2023, and we will now include kindergarten, grade 1, as well as middle and secondary school art and environmental classes.







Planned Actions in 2023 to Reduce Emissions

2023 should see a similar profile to 2022. There will be a continued focus on much of what was successful previously. A stronger emphasis on education and awareness and the beginning s of a shift from lighting upgrades to building controls.

2023 Highlights will include:

- LED Lighting and controls
  - **Targeting 250 - 300 kWh savings**
  - **5 – 6 buildings**
- Continuous Optimization
  - **Completion of first 3 schools**
  - **Addition of next round of schools**
- Reynolds Heating Plant Upgrade
- Behaviour Change Campaigns
  - **2023/24 Light Switch Stickers**
  - **Space Heater Defeater Campaign**
  - **Environmental Pledge Walls**
  - **“Shut out the Cold” Poster info Campaign**
  - **Paper Procurement Awareness Campaign**
- Thermostat controls upgrades
- Building Audits
- Expansion of Fleet EV Charging System
- Real-time Energy Monitoring Solutions
- Building Envelope improvements
  - **Lambrick Park Secondary**

Long-term Plans for Reducing Emissions

Buildings

Heating and Ventilation:

With the vast majority of the district carbon footprint associated with maintaining building temperature and air quality, this will always be a prime focus. Unfortunately major upgrades are expensive and in most cases will only justify their costs when replacing equipment that is at or near end of life. The District is currently preparing for the installation of 3 new high efficiency boilers to quickly replace 50 year old boilers at Reynolds Secondary School that have finally reached end of life.

15 heating plants (including Reynolds), have been identified as near end of life and highest priority for replacement by 2030.

Heat Recovery ventilation is currently under research and review. It will most likely become a major player in greenhouse gas reduction strategy well before 2030.

Building Envelope:

Window and roofing upgrades/repairs are ongoing throughout the district. Mount Douglas Secondary School's upgrade to energy efficient windows is now completed. Envelope upgrades at Lambrick Park Secondary School are in the planning stage.

Boiler Additives:

Pending a review of our existing pilot program, we will look to expand on the use of boiler additives to achieve better efficiency in our heating systems.

Re-commissioning and retro-commissioning of building systems:

Excellent incentive programs exist to investigate and correct issues that prevent buildings from operating the way they were intended. Other findings may bring to light opportunities to incorporate changes in original design that will further enhance performance of older buildings.

The school district is poised to take advantage of opportunities on an annual basis.

Photovoltaic Generation:

The business case for large scale photovoltaic systems on the rooftop of schools is beginning to make economic and environmental sense. As new technologies emerge and demand for clean electricity increases we will begin to take on more projects like the 2021 Torquay Elementary photovoltaic install.

LED Retrofits:

The district has been moving forwards with LED technology since May 2019, and plans to completely retrofit all buildings by the end of 2024. Electricity saved will help decrease infrastructure requirements towards electrification of buildings

Net-Zero Ready Building:

Planning for the new Cedar Hill Middle School is now underway. We are focusing on energy efficiency, conservation, and low carbon mechanical systems in order to produce our first net zero ready building. The new building will have the potential to eventually achieve net zero energy with the future expansion of its 100kW rooftop photo voltaic system. To further this initiative the Board of Education is committing $500K from its reserves to self-fund part of this initiative, and is outside the Ministry funding for a new build

Fleet

Electric Vehicles and Charging Infrastructure:

Projects have already begun in 2022 for the addition of:

- 7 new electric charging stations for fleet vehicles and buses
- 4 new electric buses

In addition plans are in place to begin the electrification of fleet through the purchase of electric vehicles in 2022/23 and as they become readily available.

Supplies:

District policy already calls for the use of 100% recycled material when possible, however we still missed an opportunity with our paper consumption. In 2021 we created over 40 tCO2e from the times we used less than 100% recycled paper in our buildings.

Moving forward we will look to raise awareness of this policy, and help our buildings to make the best choice when ordering supplies. New products that use alternative recycled fibers are being piloted.

Behavior Change:

Programs that create behavioral change, awareness, and accountability transcend all of the above categories. These approaches can exists with very little capital investment. This is why we are always working to develop policies and programs that will foster participation from all staff and students. In 2022 we will again be participating in the Energy Wise Network with a incentivized program to decrease summer electricity usage. We will also be expanding on the our popular “Space Heater Defeater” campaign from 2021.

The board has requested and approved the formation of a Climate Action Committee in order the help promote a positive culture shift towards eco-friendly habits across the district and to help plan for the future.

Behavioral change will be critical towards eliminating the gap between 2030 goals and current projections.

Climate Risk Management

2021 and 2022 gave us some strong examples of what unprecedented climate change events can look like. More work needs to be done to fully understand the risks that these types of events represent to our buildings and occupants.

As a direct result of the record setting events of the 2021 summer “heat dome”, the district has moved to incorporate heat pumps into both existing and new construction child care portables.

These heat pumps will help provide a safe space for occupants during summer while decreasing winter energy demands and costs. They will also serve as a model for future projects.

Climate change is also increasing risk to trees, and associated falling hazards. The district is moving quickly to protect its trees by protecting and reinvigorating root compaction zones.

Climate Action Plan

The district is currently developing a Climate Action Plan which goes beyond carbon accountability and takes a more holistic view of the environment and our role in creating a sustainable future. This plan will address a long term environmental plan for our district through 5 pillars.

Learning, Engagement, and Leadership

Lands and Water Stewardship

Waste Reduction

Sustainable Transportation

Energy Management

Emissions and Offsets Summary Table

***Greater Victoria School District 61* 2021 GHG Emissions and Offsets**	
GHG Emissions created in Calendar Year 2020	
Total Emissions (tCO_2e)	*5654*
Total $BioCO_2$	*12.5*
Total Offsets (tCO_2e)	*5642*
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO_2e)	*0*
Grand Total Offsets for the 2020 Reporting Year	
Grand Total Offsets (tCO_2e) to be Retired for 2020 Reporting Year	*5642*
Offset Investment ($25 per tCO_2e) *[Grand Total Offsets to be Retired x $25/$tCO_2e$]*	*$141,050*

History of Greenhouse Gases and Offsets

Year	Totals	Emissions	Offsets Purchased
2010	6082	6096	$152,050
2011	6950	6974	$173,750
2012	6362 + 22	6387	$159,050
2013	5545 - 172	5373	$134,325
2014	5041-20	5021	$125,525
2015	4823-19	4804	$120,100
2016	4449+228	4677	$116,925
2017	5290+16	5306	$132,250
2018	4849 + 19	4868	$120,566
2019	4856	4856	$120,566*
2020	5178 + 6	5184	$129,600
2021	5544	5558	$138,600
2022	5642	5642	$141,050

* Offsets purchased for 2019 were based on 2018 to allow for COVID disruptions.

Retirement of Offsets:

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, *The Greater Victoria School District 61* **(the Organization)** is responsible for arranging for the retirement of the offsets obligation reported above for the 2020 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (**the Ministry**) ensuring that these offsets are retired on the Organization's behalf, the Organization will pay within 30 days, the associated invoice to be issued by the Ministry in an amount equal to $25 per tonne of offsets retired on its behalf plus GST.

Executive Sign-off:

Signature	Date
Name (please print)	Title
Signature	Date
Name (please print)	Title

Signature	Date
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Building Hope through Action - For Our Kids workshop

when we let the children see our love and commitment to the Earth, this attitude soaks into their being. When they are older this love can be the generator of action. Action that is motivated by love shows up differently in the world than action motivated by anger or fear. Anger and fear, though perfectly understandable and justified, feed into the paradigm of "us and them" Activism motivated by love points toward an entirely new way of being in the world and resolving conflicts. And the seed bed for this begins in the circle of love woven between us, our children and Mother Earth.

Need a boost of hope in your day? If you missed the session with author and climate hope leader Elin Kelsey about **Why Hope Matters: How to Support Kids To Find Meaningful Engagement in the Age of Eco-Anxiety and Climate Doom**, or want to review it or share with your network, you can find the recording here.

The session was filled with practical ideas for nurturing climate hope in our children along with a plethora of examples of positive change in our communities.

Some recommended resources that were discussed in the session include:

- Elin Kelsey's book *Hope Matters: Why Changing The Way We Think is Critical to Solving The Environmental Crisis*
- An Existential Toolkit for Climate Justice Educators: crowdsourced from an international community of scholars, educators, and climate justice leaders focused on addressing the emotional impact of climate disruption.

If you want to pursue Climate Hope topics further, some other resources to consider:

- Activating Hope Summit: free online event offered by Sounds True, November 4-7, 2021
- Active Hope : book and free online course from Joanna Macy and Chris Johnstone
- Jane Goodall's Hopecast
- The Book of Hope: A Survival Guide for Trying Times by Jane Goodall and Douglas Abrams

Articles and resources:

https://gendread.substack.com/p/heres-a-helpful-new-way-to-visualize?utm_source=substack&publication_id=64590&post_id=96348224&utm_medium=email&utm_content=share&triggerShare=true&isFreemail=true
https://www.childrenandnature.org/resources/ecological-grief-and-hope-in-a-changing-world/

https://theecologist.org/2021/sep/14/crisis-youth-climate-anxiety

https://www.latimes.com/opinion/story/2021-09-21/climate-change-ipcc-younger-generation-un-climate-report?fbclid=IwAR1z4cqs8XN_R_B6xumG0av1Dz6PhGrA9kd8TS5i756xGfV_R_F7Api3LxY

https://www.climaterealitycheck.net/faqs

https://davidsuzuki.org/story/rest-is-good-but-resolving-global-crises-means-not-looking-away/?utm_source=mkto-none-smSubscribers-readOnline-body&utm_medium=email&utm_campaign=scienceMatters-restIsGood-en-14jan2022&mkt_tok=MTg4LVZEVS0zNjAAAAGB928N_tOLHwAezu_aC4d2ajjU7nJO2qolTRQNFE_9ccDlps97IrY4jk_zjHxcsxS6p9rBZBF3W9GseNbD8dcbQ4YeFnI5sjtHoZgBmeNIS9W6

https://www.theenergymix.com/2022/01/21/climate-fears-outrank-incomes-pandemic-in-global-survey/

https://thenarwhal.ca/canada-climate-risks-2022-report/?fbclid=IwAR0V0Oa_734LI3pSDKzY30Gh_dYrKiCZy-PKlNOvUSLT3QBpxcZk9IM6kIc

https://www.cbc.ca/news/canada/british-columbia/parenting-parental-guidance-environment-1.6245065

https://www.cbc.ca/kidsnews/post/canadian-kids-react-to-climate-promises-made-at-cop26

https://www.youtube.com/watch?v=Hjpp8rVF5Bc

https://www.drawdown.org/

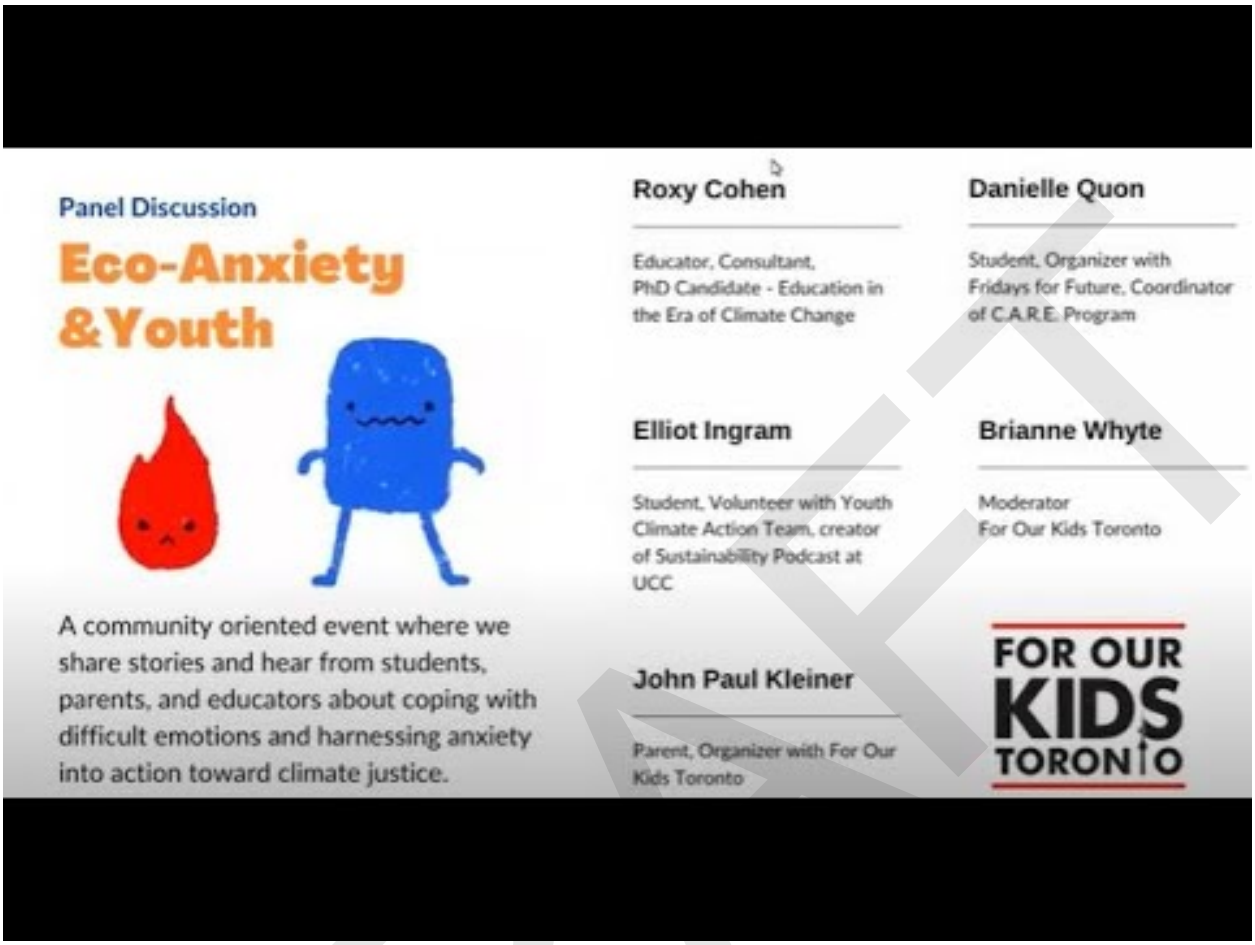
Eco-anxiety and Youth and children

https://time.com/6246933/how-to-nurture-youth-climate-activism/

https://www.theguardian.com/environment/2021/nov/18/ten-ways-confront-climate-crisis-without-losing-hope-rebecca-solnit-reconstruction-after-covid?CMP=Share_iOSApp_Other&fbclid=IwAR0gwfWHT6kROIovlxhX7qAAIRnUyw23DZjXScfI4YgRAh7lCK--DqhLqHQ

https://www.nsnews.com/highlights/childrens-health-cognitive-abilities-depend-on-access-to-nature-metro-vancouver-study-4538344?fbclid=IwAR0zZG1rsdU43wvOsU8HimK1ZP7s2ndbLolFGGTV9lgWeBnCFL78p-XvvOE

https://rewilding.org/hope-in-the-age-of-humans/?eType=EmailBlastContent&eId=b3574f12-4c7d-4975-bc4b-b1974c2381a3



https://www.theenergymix.com/2021/11/23/to-raise-hopeful-kids-in-a-climate-crisis-start-with-the-basics-columnist-advises/

https://www.mic.com/impact/forget-your-carbon-footprint-lets-talk-about-your-climate-shadow?fbclid=IwAR3Zn0hzIv1yWCUNboYGBssBUKnsz09Su7UN4oGrj2s6zXzQRmTKIKldCco

https://www.bccic.ca/climate-action-parenting-skill/

https://www.takingcharge.csh.umn.edu/how-does-nature-impact-our-wellbeing

https://www.dec.ny.gov/lands/90720.html

https://thewalrus.ca/therapy-for-the-end-of-the-world/?fbclid=IwAR2SxMr4Kx1UiPAI1QzYJw2VwvmYs77hcm1iMZ1oiqySv4q9yvesTEz2mxg

https://www.cbc.ca/documentaries/the-nature-of-things/6-young-canadians-inspiring-a-generation-of-climate-activists-1.5789862?fbclid=IwAR07ABYKRDdVI7BO3943-aUZghebyEFKyNLpFbF-6O8A6L8tQ4ycU43uUr8

https://www.theenergymix.com/a-crisis-is-a-scary-time-you-are-not-alone/

https://www.facebook.com/watch/?v=321082759408677&ref=sharing

https://www.cbc.ca/radio/thecurrent/the-current-for-sept-23-2021-1.6186513/talking-about-climate-change-requires-honesty-and-connection-not-just-arguing-says-author-1.6174126?utm_content=buffer86b76&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer&fbclid=IwAR1eCfgqIIbMx66QeVOPzvmLCZR1925hymW58bhj3-gAPUrFINGyYFEf9p4

https://www.cbc.ca/radio/thecurrent/the-current-for-aug-18-2021-1.6144647/eco-anxiety-activists-want-to-shift-the-conversation-from-doom-and-gloom-to-hope-1.6142814

https://www.youtube.com/watch?v=enQT87yKWeM - Our Shared Future: Reflections from Youth - Call to Action

https://parentsforfuture.org/nonewfossilfuels?fbclid=IwAR2fNT2ZDZ6hyoua9o1YCdBlA5vdmuT5lEsp0ZCIg5v9YgQrE0NnPVkV9FY

Nature as therapy - https://www.cbc.ca/radio/thecurrent/the-current-for-sept-6-2021-1.6163980/prescribing-nature-research-suggests-the-outdoors-are-good-for-your-mental-health-1.6163985

For schools/Teachers

Sierra Club BC - https://sierraclub.bc.ca/education/teachers/

Take Me Outside - https://mailchi.mp/takemeoutside/newsletter-feb2023?e=2bd215a319

Child and Nature Network - https://www.childrenandnature.org/resources/self-care-in-nature/?mc_cid=60406e7701&mc_eid=2bd215a319

https://www.cbc.ca/news/canada/montreal/first-person-climate-change-education-support-young-people-1.6186611?utm_content=bufferdf24c&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer&fbclid=IwAR3QdeQGVmeKfSGCZvg3yjMReP01UdRD7k_4TDtLYIFg8w_1m6PLHQrWeq0

https://www.teachsustainability.org/services

https://www.nature.com/articles/d41586-021-02582-8

https://www.weforum.org/agenda/2021/10/climate-crisis-eco-anxiety-is-growing-in-young-people/

https://www.climateeducationreformbc.ca

Toolkit - https://www.climateeducationreformbc.ca/projects

https://vancouverisland.surfrider.org/plastic-free-schools/

https://www.transform-our-world.org/tools/schools-climate-action-planner

Books

https://www.goodreads.com/list/show/28424.Best_Children_s_Books_About_Climate_Change

https://toppsta.com/blog/view/climate-change-books-for-kids

https://yaleclimateconnections.org/2018/08/childrens-books-about-climate-change/

https://www.theguardian.com/books/2019/jul/09/from-greta-thunberg-to-sally-morgan-10-books-to-help-kids-come-to-grips-with-climate-crisis

https://www.earthday.org/12-best-books-on-climate-change-shared-by-climate-activists/

https://www.climaterealityproject.org/blog/just-kids-what-climate-change-and-what-can-i-do

https://sierraclub.bc.ca/favourite-environmental-childrens-books/

https://sierraclub.bc.ca/our-favourite-nature-science-books/

https://sierraclub.bc.ca/our-favourite-nature-science-books-updated/

https://www.strongnations.com/books/

https://www.elinkelsey.org/new-page-1

https://radicalhopesyllabus.com/tag/elin-kelsey/

Hope

https://www.cbc.ca/radio/thecurrent/the-current-for-july-13-2022-1.6519121/a-person-with-hope-has-the-power-to-change-the-world-says-author-1.6519131

There is a teaching in every part of creation. It is our task to find it, learn it and apply it. - late elder Ken Goodwill (First Nations University of Canada, n.n.)

I am, Kate Lawes, owner/operator of Tree of Life Playschool. I am a graduate from the West Coast Institute in Early Childhood Waldorf Education. I also have my BC Early Childhood Education Certificate from Pacific Rim Early Childhood Institute and my Forest Nature School Practitioners Certificate from Child and Nature Alliance of Canada.

My licensed Group Childcare Facility will allow for a total of 18 children at the Silver Bow Studio located in on Lekwungen Territory in Esquimalt, BC.

I choose to take care of children as my job for a myriad of reasons ... foremost, because we believe in the precious and magical time that is childhood and find great joy in being part of nourishing their growth and development through Nature based education. For more information go to Tree of Life Playschool - https://www.treeoflifeplayschool.ca/

The origins of where I learned my outdoor education through Child and Nature Alliance of Canada and Forest School Canada are rooted in white settler thinking and approaches. My program is led by white settlers, and we operate on the unceded traditional territory of the Lekwungen People of the Songhees and Esquimalt Nations. We are working toward including indigenous ways of being and knowing. In doing that, we hope that Indigenous and Western worldviews will have equitable voice and space in our program so that it is safe, meaningful, and culturally relevant for all participants.

When speaking of Childhood Education we must remember play is essential to a child's growth and development and playing OUTSIDE can enrich and enhance this even more!

What are the Obstacles?
Lack of knowledge how valuable play is for children
Confident and knowledgeable Educators
Risk-Averse - Go HERE for a Risk Benefit Assessment Toolkit
Fear of Plants, Animals, Weather, lost child
Vanishing Green spaces
Rise of Indoor Play
Lack of Interest

Increased Screen Time
Difficult to organize
Dirty
Appropriate Clothing - Go HERE for What to wear outside

For Frequently Asked Questions go HERE

With so many obstacles why forest nature school?

Potential Benefits

- Improved confidence, social skills, communication, motivation and concentration (O'Brien & Murray, 2007)
- Improved physical stamina, fine and gross motor skills (O'Brien & Murray, 2007)
- Positive identity formation for individuals and communities (Russell et al., 2013)
- Environmentally sustainable behaviours and ecological literacy
- Increased knowledge of environment, increased of visiting nature within families
- Healthy and safe risk-taking
- Improved creativity and resilience
- Improved academic achievement and self regulation
- Reduced stress and increased patience, self-discipline, capacity for attention, and recovery from mental fatigue (Russell et al., 2013, p.482)
- Improved higher level cognitive skills (Athlete, Strayer & Atchley, 2012)
- Male inclusion in education (Children and Nature Network, 2012)
- Nature may boost learning via direct effects on learners
- Nature has rejuvenating effects on attention
- Nature Relieves stress
- Contact with nature boosts self- discipline
- Student motivation, enjoyment, and engagement are better in Natural settings
- Time out doors is tied to higher levels of activity and fitness (2000 more steps outside than inside)
- Nature may boost learning by providing more supportive context for learning
- Nature settings tend to provide calmer, quieter, safer contexts for learning
- Natural settings seem to foster warmer, more cooperative relations
- Outcomes for learning and development
  - In school settings, incorporating nature in instruction improves academic achievement over traditional instruction.
  - In and outside the context of formal instruction, experiences of nature seem to contribute to additional outcomes.
- spending time in nature appears to grow environmental stewards

Children are Sense Beings
and being in Nature is a way to bath their senses.

Mental - sets children up to learn:
- Science
- Math
- Reading

Physical
- Stronger
- Movement - coordination
- Eye health - https://www.snexplores.org/article/outdoor-time-good-your-eyes
- Movement sets up reading - proprioception - limb intelligence

Emotional
- self regulation
- Play Based builds empathy
- Self determination
- Confidence
- Calmer

Spiritual
- to the land
- In ourselves
- To each other

Find 5 Activities to deepen your connection to nature HERE

15 Reasons to Climb a Tree
https://rhythmsofplay.com/get-outside-connect-climb-a-tree/
Tree climbing is a risky play activity with several benefits for the developing child. We hope you agree that the thrill of climbing trees and the many benefits of a tree climbing experience far outweighs the fear of climbing and its inherent risks. Look at the list below to learn 15 reasons to climb a tree!

1. Climbing trees can help develop physical strength.
2. Tree climbing helps develop focus and concentration.
3. Climbing trees can boost self-confidence and self-esteem.
4. Tree climbing is an excellent gross motor activity for physical development.
5. Climbing trees can help children become more flexible in body and mind.
6. When you climb trees, you form more complex neural networks in the brain.

7. Tree climbing helps develop a resilient “I can do it” attitude.
8. Climbing trees helps children become problem solvers.
9. Tree climbing helps us develop a better connection with ourselves.
10. Climbing trees provides a rich sensory experience for the developing child.
11. Tree climbing helps us learn to think for ourselves and feel confident about our choices.
12. Climbing a tree can help develop strong spatial reasoning skills.
13. Tree climbing is a great way to strengthen the mind and the will.
14. Climbing trees helps us connect with nature.
15. You get a great view!

Nature Connection = Climate Action = Racial Justice

Educator’s Role

Must know the value of free play
Must be someone they can imitate
Extending sense of Mystery, Wonder and Reverence of nature
Spark Engagement
Enabling free play - knows the value of
Learning together
Observing
- to enhance further outdoor learning
- Meet the children where they are at

Know risk benefit
Keeping everyone Safe
Creating Connections
- Community
- Parents
- Place - place based education

Keep a Sense of Rhythm
Fostering Imagination
Artistic - drawing, painting all outside
Oral Story Telling
Bring Joy, Humour, Happiness
Love and Warmth
Gratitude

Start Small and successful

1. Plan an activity that you are familiar with and that you have already done indoors. You will be more comfortable leading this activity outdoors.
2. Make sure to check the weather for the day. Inform parents of your intention to spend a part of the day outside and provide a list of clothes the children should have with them. Children will likely feel more comfortable if they are dressed for the weather and the outing will be more pleasant.
3. Bring a First Aid Kit and establish a way to communicate with the someone in case of an emergency. That way, if an unexpected situation arises, you will be better equipped to manage it.
4. The morning before the outing, make sure to go for a walk on the grounds that you will visit. This way, you can be sure that nothing has changed and you can better manage unexpected situations.
5. Take the time to speak with the children about safety rules and establish them. For example, choosing a gathering signal (such as a wolf howl) and establishing the limits of the area.

Find suggestions for Nature Activities for Kids HERE

Assessing a Space to Play
Who's land are you on?
Hazards - Risk Benefit
Loose Parts - water, sand, sticks stones - what is there to play with?
Natural Boundaries
Risk Assessment
Site Lines
Care of Environment

Tools and "Toys" to take
- Rope
- Silk scarves
- Buckets/spoons
- Hammock
- Wood working tools
- Books
- Toilet
- Water for hand washing
- Wool/sewing/drawing

Safety - What to Take

First Aid Kit
Water and Snack
Dress Appropriately - always look at the weather/tides
Phone - have Tsunami and extreme weather warnings
Bear Spray
Fire Safety - if able to have a fire
Emergency Plan
Do you need separate insurance?

To learn more about Supporting Children with Disabilities and Exceptionalities go HERE

Resources:
Nurturing All Children in Nature - https://trustforlearning.org/wp-content/uploads/2023/04/TFL-IL-Practice-Nurturing-all-Children-in-Nature.pdf
Free Course - Learning Outside Together through ECEBC - https://www.ecebc.ca/professional-development/lot-program
Resources for ECE's - Child and Nature Alliance - https://childnature.ca/ece/
Barriers to Playing Outside - https://www.treehugger.com/barriers-prevent-kids-playing-outside-4857545
Outdoor Education and Child Development - https://www.forestholidays.co.uk/outdoor-education-and-child-development-guide/?mkt_tok=Nzg4LVlCRi0yOTYAAAGJ1zg-wU4yJ1OiEVVzcxi6aDMU_54EKae6BDdfbaYUv6tg5GvYE-UbA286kVh_6cONbImI6Grsu6WsPKJyXutWxzjvV-p0jcPye5vR8gs
BC Aboriginal Childcare Society - https://www.acc-society.bc.ca/
Sierra Club BC - https://sierraclub.bc.ca/education/teachers/
1000 Hours Outside - soooo many podcasts - https://r.mail1.1000hoursoutside.com/mk/mr/tFdNQV3mRw26OK-f-ckuY8YTp7rVAKc2-gqTk4W-L8BtDWGywKh5LcyCPicxt-a35sq1JPuTQdCiDgToAr5KWqdy3NKvSMAuC_KiihgdZFGvwZ97nRj_gasjSLUD741xNocUway2p0pluaU
Take Me Outside - https://mailchi.mp/takemeoutside/newsletter-feb2023?e=2bd215a319
Child and Nature Network - https://www.childrenandnature.org/resources/self-care-in-nature/?mc_cid=60406e7701&mc_eid=2bd215a319
What is in your back pack - https://www.youtube.com/watch?v=fFr9fYfvI8M
What to wear for winter - https://www.youtube.com/watch?v=4TybuFg0vpw

Outdoor Learning Store - https://outdoorlearningstore.com/product/a-peoples-curriculum-for-the-earth/
Indigenous Learning - https://outdoorlearningstore.com/themes/indigenous-learning/
Self Care in Nature - https://www.childrenandnature.org/resources/self-care-in-nature/?mc_cid=60406e7701&mc_eid=2bd215a319
Knowing Nature in Winter - https://www.chrisoutdoors.ca/natureinwinter/?mc_cid=60406e7701&mc_eid=2bd215a319
Do Experiences With Nature Promote Learning? - https://www.frontiersin.org/articles/10.3389/fpsyg.2019.00305/full?fbclid=IwAR3CZI93dlgCPTuotUSOHh3QbSHDK6Vy_imwl6BUJna72G2rRe7T6bk7mXw
Outdoor Play Canada - https://www.outdoorplaycanada.ca/
Outside Play support for parents and educators - https://outsideplay.ca/
Social and Cognitive benefits of outside play - http://parentingscience.com/benefits-of-play/#sthash.hNID0PI1.dpuf
Essentials of Waldorf Early Childhood Education - https://www.waldorfearlychildhood.org/wp-content/uploads/2022/08/Essentials-of-Waldorf-Early-Childhood-Education.pdf
A Developmental Approach Looking at the Relationship of Children's Foundational Neurological Pathways to their Higher Capacities for Learning - find part 1 HERE