



NANAIMO LADYSMITH
PUBLIC SCHOOLS

**Board Report
March 3, 2021
Rob Lumsden
Energy Manager**

Success For All

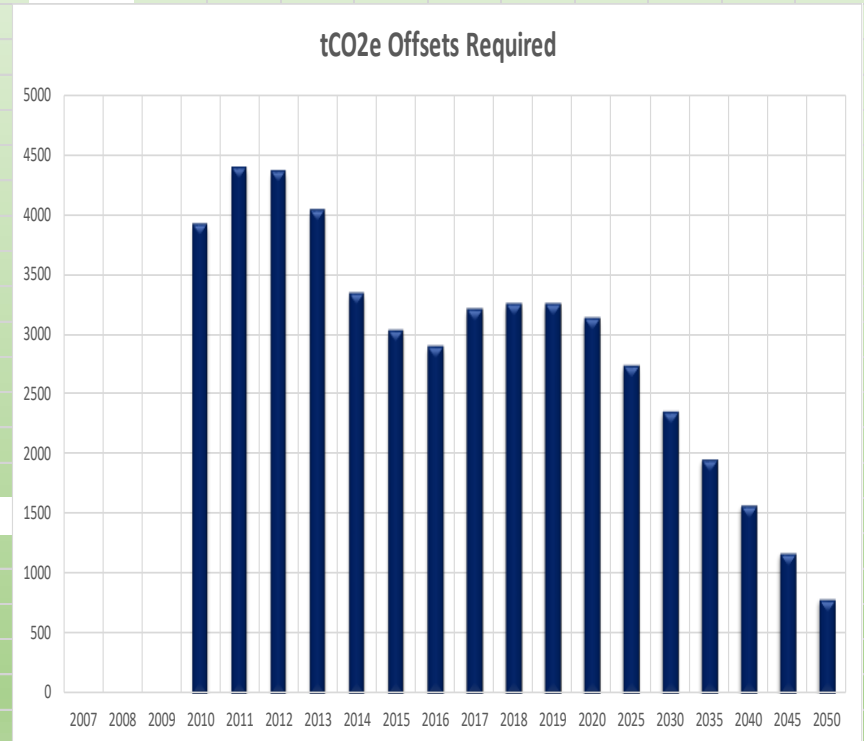
Environmental Upgrade LC#723 Project									
Facility	Description		Notional Budget	Development Budget	Approved Budget	Comment	Scope Status	Design By	TCO2e Reduction
Project Approval									
Maintenance	Carpentry Shop Energy Study		\$ 5,000	\$ 5,000	\$ 5,000	High energy use; dust collector, paint booth, atmospheric boiler, windows, doors	yes	RPE	0
Woodlands	Bandroom gas furnace to heat pump		\$ 20,000	\$ 20,000	\$ 20,000	30 year old furnace, replace with electric heat pump (eliminate GHGs)	yes	NLPS	4.1
Cedar Elementary	Bandroom gas furnace to heat pump		\$ 20,000	\$ 20,000	\$ 20,000	18 year old furnace, replace with electric heat pump (eliminate GHGs)	yes	NLPS	4.1
Rutherford	2 Furnaces past life cycle (37 years), inefficient		\$ 20,000	\$ 25,000	\$ 25,000	Classroom, staffroom front	yes	NLPS	
Rutherford	2 Furnaces past life cycle (29 years), inefficient		\$ 20,000	\$ -	\$ -	Classroom, Library	yes	NLPS	
Maintenance	Carp. Shop Boiler, 6 unit heaters (from Energy Study)		\$ 200,000			Energy study \$200,000 upgrade, small benefit on GHGs (5.9 tons)			
McGirr	Match reheat terminals to boilers		\$ 80,000			Boilers upgraded but main heating coils not matched (10% GHG reduction)			
Rutherford	Past life cycle, inefficient, Rooftop units		\$ 100,000			Aging infrastructure, inefficient, can be replaced with condensing tech or heat pumps			
Harewood	Heat pump to replace furnaces		\$ 40,000			Building will be close to GHG free, may need to upgrade service	Pending		
			\$ -						
Stores/Warehouse	Replace gas unit heater with electric or heat pump		\$ 12,000			In conjunction with office reno (gas meter could be removed)	Pending	NLPS	8
Band Room	Atmospheric furnace to heat pump		\$ 20,000			NDSS,(Mid efficient) Wellington, JBS (Condensing) \$20,000 each-Hybrid			
Cedar High	HWT failure		\$ -			Heat pump HWT,condensing, or electric			
Cedar High	Cooling tower failure					Direct replacement of cooling tower or heat pump			
	Total		\$ 537,000						
Bus shop	Insulate 5 overhead doors		\$ 10,000						
Pauline Haarer	Old section lacks insulation					Consult with contractors, RPE (poor insulation in attic, no insulation in floor			
Various	Additional Energy Studies		\$ 15,000				Pending		
Premium for EVs	Premium to influence purchasing of EV over gas vehicle		\$ 30,000			EV vans more readily available 2022, need to include Charging			
Various	Add charging stations		\$ 30,000						
DAC ductwork	New heat pumps (3) delete hot water in 1 wing		\$ 100,000						
Bayview	Gym rooftop unit-heat pump HW backup		\$ 40,000			End of life 2015, reduce GHGs, use condensing boiler for backup-efficient			
Brechin	Boiler upgrade to condensing		\$ 350,000			Add heat pump - total \$515,000			
Brechin	DDC upgrade		\$ 100,000						
Woodbank	Boiler upgrade to condensing		\$ 300,000			2 boilers end of life expectancy 2011			
Woodbank	DDC upgrade		\$ 100,000			The DDC is out dated, a dial up modem is required to access control system			
Dufferin	Boiler upgrade to condensing					Boilers-9 years past life expectancy			
Dufferin	DDC upgrade		\$ 100,000			Outdated, dial up modem			
Pauline Haarer	Boiler upgrade to condensing, add unit ventilators to classrooms		\$ 1,000,000						
	Total		\$ 2,165,000		\$ 70,000				
	FUNDING					CASH FLOW			
	20/21 Allocation #1		\$ 400,000						
	21/22 Allocation								
	TOTAL FUNDING ALLOCATION		\$ 400,000			TOTAL CF			
Complete									

NLPS – GHG Reduction Progress

Nanaimo Ladysmith Public Schools - GHG Reduction Progress			
Year	tCO ₂ e Offsets Required	% of tCO ₂ e compared to 2010	Actual Reduction % compared to 2010
2007	N/A	No Data Available	N/A
2008	N/A	No Data Available	N/A
2009	N/A	No Data Available	N/A
2010	3,912	100	0.00%
2011	4,391	1.12	-12.24%
2012	4,367	1.12	-11.63%
2013	4,039	1.03	-3.25%
2014	3,339	0.85	14.65%
2015	3,033	0.78	22.47%
2016	2,902	0.74	25.82%
2017	3,205	0.82	18.07%
2018	3,245	0.83	17.05%
2019	3,245	0.83	17.05%
2020	3,130	0.80	20.00%
2025	2,738	0.70	30.00%
2030	2,347	0.60	40.00%
2035	1,956	0.50	50.00%
2040	1,565	0.40	60.00%
2045	1,174	0.30	70.00%
2050	782.4	0.2	80.00%

* tCO₂e Required is based on Emissions and Offsets report - Carbon Neutral Action Report, Climate Action Secretariat

This includes all carbon used by NLPS (paper, vehicles, buildings), excluding emissions from buses (exempt)



Preparation for Two New Zero Emissions Buses

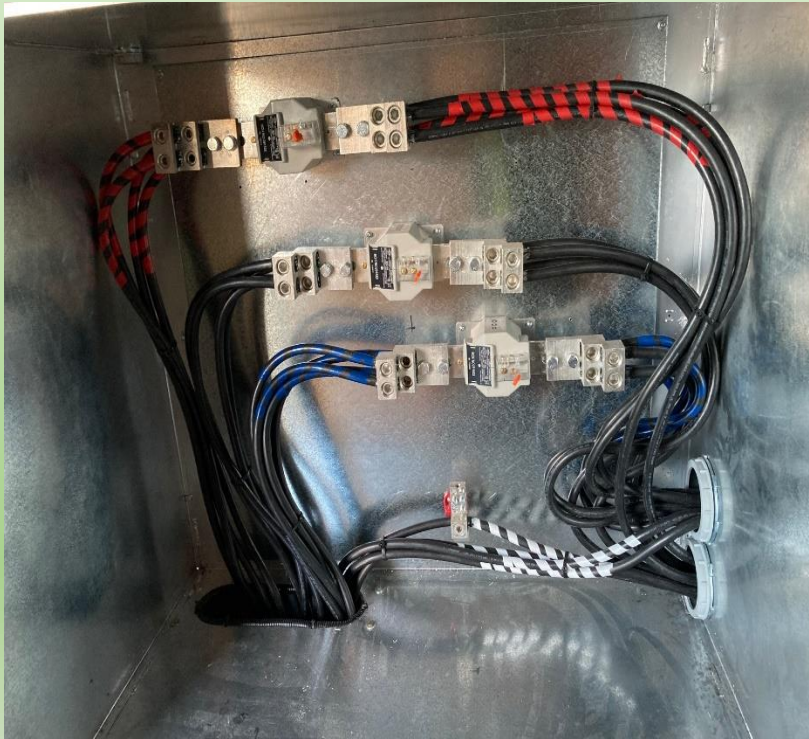


Underground Piping for Expansion

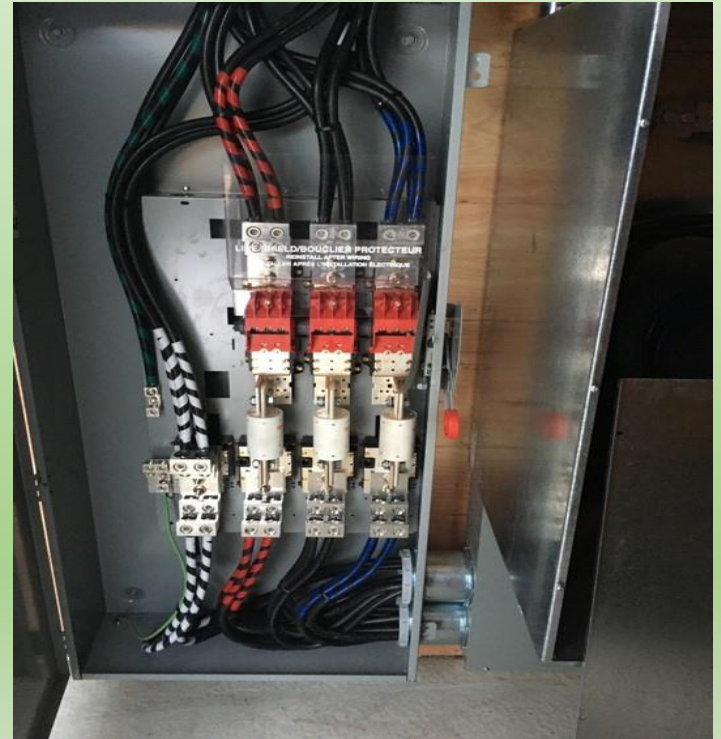


Charging Periods Regulated for Cost Efficiencies

**Metering for BC Hydro DERMS
program (monitor charging, demand
loads, regulate times, quantities)**

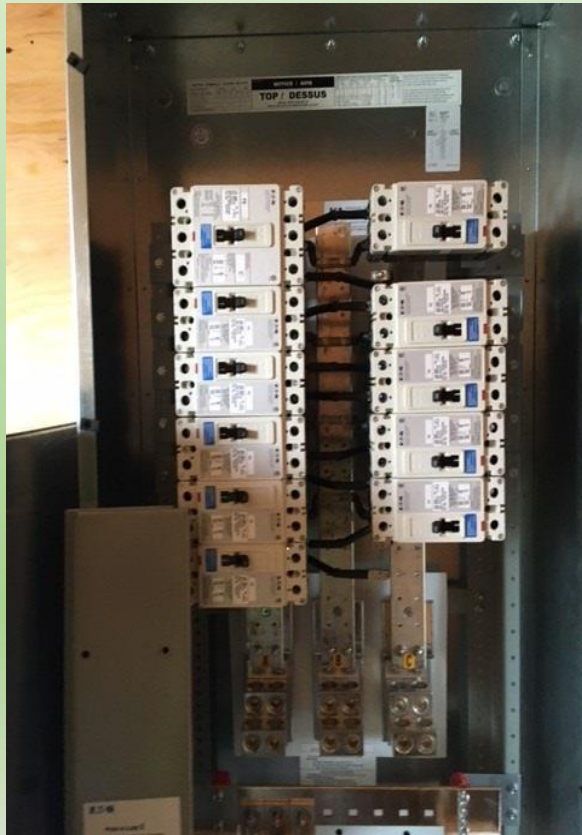


800 Amp Fuses/208 Volt Capacity



Built for a Fleet of Zero Emissions Buses

Capacity for Expansion to 10 ZEBs



Power Shed and Charging Station



Delivery Mid March, Infrastructure Complete





THANK YOU

