



REGIONAL
DISTRICT
OF NANAIMO

Zero Waste Education Program Year 1 of 3

2022/2023

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1. Introduction

With great honour and humility, we acknowledge that Nanaimo-Ladysmith Public Schools (NLPS) is situated on the traditional and unceded territory of the snaw naw as, snuneymuxw, and stz'uminus First Nations. The local First Nations have maintained a profound connection to the land and have protected the water, plants, and animals of this region since time immemorial. Environmental stewardship has deep roots in the local First Nations communities who have continued to respect and care for the land we have the privilege to live, learn and play on. As we engage in the work towards zero waste, sustainability, and climate justice, we recognize the vital role of Indigenous perspectives and worldviews in moving forward. It was evident in year 1 of 3 of the Regional District of Nanaimo (RDN) Zero Waste Education Project that educators across NLPS have made efforts to embed Indigenous knowledge systems into their projects and we hope to continue to foster this need and interest in the future.

In 2020, the RDN partnered with NLPS and the Qualicum School District 69 (SD 69) to support schools with the development and delivery of an innovative approach to addressing climate change, sustainability, and environmental stewardship through the Zero Waste Education Pilot Project. The pilot provided schools with opportunities to explore the concepts around zero waste that has been filled with creativity, outdoor learning opportunities, and learning about how to be stewards of the land.

With the success of the pilot project, the RDN made a commitment to expand the pilot into a 3-year agreement, now called the Zero Waste Education Project, in September 2022 to provide \$70,000 to support zero waste education in both NLPS and SD 69. This year, there were 10 schools in NLPS and 7 in SD 69 that participated in the program. This report will provide details of the project, how participating schools were selected, and highlights of the inquiry projects from across NLPS and SD 69.

2. Background

The strategic plans of the RDN, NLPS, and SD 69 align in both goals and objectives related to environmental stewardship and climate change mitigation efforts. For example, one of the four goals of the NLPS Strategic Plan is to be a leader in environmental stewardship and sustainability which includes increasing learning opportunities for students and staff on climate change and sustainability, implementing food security initiatives that include community partners, and supporting infrastructure for sorting, composting, and recycling. This goal directly aligns with the 2019-2022 RDN Strategic Plan that includes becoming leaders in climate change adaptation and mitigation efforts and enhance efforts to protect the natural environment. Because of this, the Zero Waste Education Pilot Project in 2020 was a natural fit and created an opportunity for the RDN to capitalize on the network of dedicated educators looking for opportunities to address important environmental issues within the classroom, while simultaneously providing these same educators with the time, skills, and resources necessary to make lasting changes in practice.

The Zero Waste Education Pilot Project began in 2020 and started with 6 NLPS and 3 SD 69 schools. Despite the challenges with COVID-19 restrictions, the funds received from the RDN was distributed across the schools to support learning opportunities for staff and students around zero waste including inter-district collaboration with teachers, resources for the library, materials and resources for sorting waste and composting, and equipment for school gardens. The pilot continued for another two years and expanded into new schools each year to provide opportunities for schools who were interested in zero waste education.

Following the pilot, in September 2022 the RDN, NLPS, and SD 69 entered a three year partnership to expand the pilot into the Zero Waste Education Project where \$70,000 was provided to NLPS and SD 69. For the 2022-2023 school year, the project included 10 schools in NLPS and 5 schools in SD 69 participating in zero waste education, several of which have been a part of the project since 2020. Each participating school used the funds to support various teaching and learning opportunities throughout the school year. Following a review of how the funds were used, it was evident that teachers used a cross curricular approach to teaching students about zero waste education with the inclusion of science, social studies, outdoor education, and First Peoples Principles of Learning. With all the great learning opportunities provided across both districts, the themes that emerged from this years' projects were:

1. School gardening and food programs as a way to address findings from previous waste audits that highlighted how much waste was created by single use plastics from snacks and food waste when much of that can be addressed with locally grown fresh foods and composting.
2. Place based learning as a pedagogical approach to engage students in their community, including their physical environment, local culture and history, as a way to help foster a

sense of place and encourage students to care for their community.

3. Climate change and sustainability as key concepts in understanding why moving towards zero waste is vital to the health of the planet and is an actionable measure individuals can take in protecting the planet.

3. Project Objectives

The objectives for all schools participating in the Zero Waste Education Program includes:

- Provide environmental education for students to enable them to understand the importance of environmental stewardship and active engagement in solution-based activities to reduce their ecological footprint.
- Provide interactive learning activities to address and prompt discussion for a wide range of environmental issues including consumerism, conservation, eco-systems, resource management, green business practices, composting, personal and environmental health, alternative earth friendly products, marine/water systems degradation, waste use and conservation, recreational activities, and climate change.
- Provide resources and learning opportunities for students and teachers to embed Indigenous perspectives, ways of being and knowing, and histories as a part of the Zero Waste Education Program. This includes learning from elders and knowledge keepers about the history and culture of the local territory, and providing place based learning opportunities.
- Provide teacher in-service to facilitate all the above which includes a networking session with teachers across both districts to collaborate.

Schools were instructed that they must have:

- An administrator to support of the initiative
- 2-3 interested and involved teaching staff
- An intention to participate in the inquiry process to change behavior

4. School Selection

School selection was given a great deal of thought before program implementation, as we wanted to select as many schools as possible while ensuring that:

1. Schools who participated in the Zero Waste Pilot Project continued to receive funds in some capacity to honour and support the program that they were building.
2. Schools that have a high percentage of vulnerable learners were represented as the funds could be used to support inclusive teaching and learning practices such as collaborative learning, outdoor learning, and hands-on experiences.
3. Schools that received updated infrastructure from the school district to sort waste were included to ensure that students received the learning to support composting and recycling practices.

After observing the success of schools who received ongoing support to build zero waste educational programs, the team at NLPS Learning Services decided to divide the grant across past participating schools and invite new schools to participate in the Zero Waste Education Program. This meant that schools in their 3rd year of receiving funds would be provided with \$1,000; schools in their 2nd year with \$3,000; and schools in their first year with \$6,000. Once a school completed their 3-year term, they would have received \$10,000 to support zero waste initiatives in their schools. We believe that the consistent and sustained support was necessary for long term planning and growth of programs in schools.

Alongside the RDN Zero Waste Education Project, schools across NLPS have been receiving sorting stations from the district to support zero waste as a part of the district strategic plan. New schools selected to participate in this year's project were based on which schools received new sorting stations to support them with educational opportunities in learning about zero waste. In SD 69, all SD 69 schools have a recycling and composting program in place because of the support from the RDN. Schools selected to participate in this year's project were based on continuing their support, specifically to the secondary schools and student lead eco clubs. Two new schools were added this year to support staff that were keen to expand the zero waste programs.

The schools selected in NLPS included 8 elementary schools, 1 secondary school, and John Barsby’s Learning Alternatives Program. In SD 69, there were 2 elementary schools, 2 secondary schools, and 1 Alternatives Secondary School.

NLPS	Participating School
New Schools (1st year)	Cilaire Elementary Quarterway Elementary Departure Bay Elementary
Returning Schools (2nd year)	Nanaimo District Secondary School Georgia Ave Elementary Pleasant Valley Elementary Rock City Elementary
Returning Schools (3rd year)	John Barsby Learning Alternatives Forest Park Elementary Mountain View Elementary Seaview Elementary

SD 69	Participating Schools
New Schools	Springwood Elementary Parksville Alternative Secondary School
Returning Schools	Ballenas Secondary Errington Elementary Kwalikum Secondary

5. Inquiry Project Highlights

The themes that emerged from this year’s Zero Waste Education Project were school gardening and food programs, place-based learning, and climate change and sustainability. In this section, we will highlight each of these themes and outline some of the school projects that took place this year.

A. School Gardening and Food Programs

For schools that used the RDN funds to support school gardening and food programs it was most commonly a response to school waste audits, providing hands-on experiences for students by composting and gardening, and learning about the benefits of buying locally grown food.

At Georgia Elementary in NLPS, the school shifted to sorting stations in the hallways and have been focusing their lessons on reducing waste within the school community. For example, each student in Ms. Kiatipis's (Ms. K) Grade 3 class recorded their waste for one week on a waste audit tracking sheet. The findings from the audit indicated that the majority of waste created in schools continues to end up in the landfill. The students found that most of this waste came from school snacks that were wrapped in soft plastics such as yogurt tubes, granola bars, cheese strings, etc. and unable to be recycled at the school level. To address the findings from the

Waste Audit: Tracking Sheet

Garbage collected by: Div. 7
 The week of: Nov. 21-25





Materials	Monday	Tuesday	Wednesday	Thursday	Friday	Total
Reusable 	### 	### # 	### ##	### # #	### # ###	65
Recyclables 	### 		### 	###	###	36
Compostable 	### # ##	### # 	### ##	### ###	### # 	69
Landfill 	### # ###	### # ###	### # ###	### # ###	### # ###	115
Total:	58	54	64	54	54	284

Image 1: Waste Audit Tracking Sheet submitted by a Division 7 student at Georgia Elementary.

waste audit, Ms. K decided to focus on the importance of eating healthy, buying local, and purchasing items with less packaging. After lessons around food production and sustainability, the students learned how to prepare healthy school snacks with fresh foods as one way to address the kinds of snacks brought to school. Ms. K used the funds to purchase materials to



Image 2: Students learning how to prepare their own waste free, healthy snacks.

teach students how to prepare snacks on their own at school or at home. These lessons connected well with work the students had already been doing in the school garden where the students were learning how to plant potatoes and greens. To further support student understanding of the environmental benefits of gardening, Ms. K arranged to have a presentation by the Compost Education in Victoria and went on field trips to the Beaufort Food Forest and 5 Acre Farm.

Similar projects were introduced in other schools such as Errington Elementary in SD 69 where students recognized plastic waste created by current food programs in the school and started a challenge called, "Naked Lunches" where students were tasked with bringing lunches that did not include any packaging. At Quarterway Elementary in NLPS, their goal was to reduce waste from the school meal program by moving towards growing their own food. They recognize the importance of food security for their school community and have put together a project to install indoor vertical gardening towers

from Zip Grow to grow salads. Their goal is to provide sustainable, healthy meals for students, and create a seed library for the community. The vertical garden towers also introduce innovative and climate resilient solutions for food security as it uses less water than outdoor garden beds, it does not require land, and uses LED lighting.



Image 3: Vertical garden tower by Zip Grow (Zip Grow, 2023).

B. Place-based Learning

Place-based learning is a method of practice that emphasizes a place’s culture, history and natural environment with the goal of fostering an awareness and appreciation for their community. It includes a cross curricular approach to teaching and learning, prioritizes hands-on learning, and uses the local environment as a context for learning. Several of the projects across NLPS and SD 69, it was evident that teachers used a place-based approach to teaching and learning about zero waste. The Climate Club at Rock City Elementary has been learning, teaching, and leading their classmates in climate concerns and strategies to help their local environment. The club lead a hike down to stiiinup, Departure Bay Beach, as a part of the Great Shoreline Clean-up. Similarly, in SD 69 at Ballenas Secondary the Eco Club organized a Grade 8 neighborhood clean-up and sorted the waste back at school to analyze. The students organized the waste collected to discuss where the waste was coming from, the kinds of waste, the threats to the environment, and outlined prevention strategies.

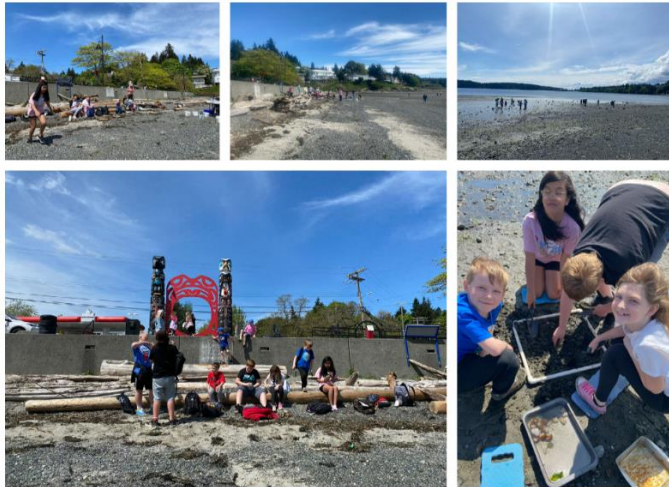


Image 4: Rock City Elementary students participating in the Great Shoreline Clean-up at stiiinup.



Image 5: Students at Ballenas Secondary sorting their data from the neighborhood clean-up.

Another example of approaching zero waste education with a place-based approach were schools adopting local parks to assist the community with litter pick up, invasive plant removal, and tree planting and watering. At Ballenas Secondary in SD 69, the school partnered with the City of Parksville to plant trees in the wetlands as part of a larger project to restore and maintain the health of this ecosystem. The Eco Club and Science French Immersion class at Nanaimo District Secondary School adopted Cat Stream to address the stream bank erosion and water quality. Students tested the water for pollutants and have been tracking their progress over the last few years. After years of clean up, removal of invasive species, and planting native species to the region, they have observed a light improvement in the water quality. They plan to continue this work next year.



Image 6: On the left, a section along the Cat Stream where students have removed a number of invasive species. On the right, an appendix that was used to collect water quality data. Original is from Pacific Streamkeeper's Handbook.



Image 7: Students from Pleasant Valley with presenters from the VIU Deep Bay Marine Station.

At Pleasant Valley Elementary, Ms. MacGregor's (Ms. M) Grade 4/5 and Ms. Scott's (Ms. S) Grade 3/4 class spent their first year participating in the grant focusing on how to address waste in their schools. Classes have begun to sort their waste to transition to recycling and composting. They have also started to learn about how to compost and use the soil in their own school garden. This year, Ms. M and Ms. S were excited to incorporate outdoor learning experiences to their work around zero waste education to build and foster connections with the land. Every Tuesday they arranged for their classes to meet outside for outdoor learning opportunities. With the support of the grant, they were able to take these classes to VIU for fish printing, Neck Point, Westwood Lake, and Deep Bay Marine station. Being able to take their classes out to these locations provided students with the opportunity to learn about their local environment around them, threats to the physical environment, and ways to protect it.

C. Climate Change and Sustainability

For most schools, a starting point to bring zero waste education into classrooms was to connect the curricular competencies of subjects such as Social Studies and Science with their projects. The curricular competencies addressed in some of the projects includes learning standards such as considering the consequences of climate change, exploring the relationships between humans and their environments, and examining the sustainability of ecosystems.

An example of a cross curricular approach to teaching about zero waste that includes the learning standards outlined above was at Mountain View Elementary in NLPS, a school that has been involved in the project for three years. Following a unit on matter and energy cycles and learning about climate change and sustainability in Ms Keenleyside's (Ms. K) and Ms. Spence's Grade 5/6 classes, the students created an action plan to reduce the school's greenhouse gas emissions by installing solar panels. To purchase the panels, the students have been fundraising through various activities. For example, the class held an upcycling fair where students sold items made of upcycled material to sell. Some of the items sold at the fair included a rug made from donated jeans and propagated plants potted in recycled tin cans. For next year's upcycling fair, the students have already started to collect donated items such as old floor tiles and dishes for future art projects.



Image 8: Students showcasing their artwork to be sold at the Upcycling Fair at Mountain View Elementary.

This year, we also there was an increasing number of teachers requesting that the Energy Department in NLPS offer a presentation on Climate Change and the school districts response to climate action. Presentations were offered across the district that occurred alongside the 8th Annual Energy Cup Challenge. The challenge was for schools to reduce their energy consumption through various initiatives including lights out lunch, unplugging devices over the weekend, and biking to school. This year's first place winner was Seaview, a school that has participated in the Zero Waste Education Project for



Image 9: Energy Cup winners at Seaview Elementary.

three years that has centered several of their school projects around zero waste.

Lastly, a successful event that Kwalikum Secondary in SD 69 hosted was the Mid-Island Climate Action Symposium for students in Comox, NLPS and SD 69. The symposium brought together young leaders and climate activists interested in addressing climate change in their communities. The event included a full day of climate action speakers including keynote speaker, Canadian author and researcher Seth Klein, and information sessions from the RDN's waste management program. Because of the success of the symposium, the goal is to offer a similar event next year.



Image 10: Students at the Mid-Island Climate Action Symposium at Kwalikum Secondary.

6. Budget

As outlined in year 1 of 3 of the Zero Waste Education Project, NLPS and SD 69 were granted \$70,000 to support zero waste education in schools. SD 69 received \$25,000 and spent approximately \$13,000 for this year, and NLPS received \$45,000 and spent approximately \$17,000. An outline of expenditures can be found in the appendices.

7. Future Considerations

The following are considerations for year 2 of 3 of the Zero Waste Education Project:



- The 2023/2024 school year marks the first year of schools functioning as they were pre COVID-19. We found that this had an effect teacher workload and capacity for new projects, as a result, there was a significant amount of funds remaining for the school year. A goal for next year is to work towards providing supports and build capacity for teachers to engage in zero waste education.
- We recognize that teachers have spent a great deal of time in completing waste audits in their schools and have moved towards sorting waste in schools, we would like to continue to focus on how to make the transition smoother by offering more learning opportunities around the benefits of recycling and composting.
- Teachers have done incredible work with place-based learning, we want to offer more learning opportunities to move towards land-based learning to ensure the inclusion of local Indigenous knowledge and histories.
- While the Mid-Island Climate Action Symposium was a successful event, we would like to expand this event to capture more secondary students from NLPS to attend, and potentially expand it to Grade 7 students.
- To continue with the school selection model outlined in the report.
- To continue to allow flexibility in how the funds are spent. Schools have different needs and different areas of strength. The data collected from this year's report is clear, teachers are using a cross curricular approach to zero waste education and including this work in all areas of learning.
- There are several great projects around the district, we would like to provide more opportunities for teachers to network and collaborate to share resources and ideas.

8. Appendices

Appendix 1.1

48-01-02-510-904-452	Resources								Balance	
	2022-23	Release	Supplies	Books	Food	Travel	Field	Other	Spent	Unused
Events										
Introductory Session	6,000.00	1,397.77	-	-	204.71	-	-	-	1,602.48	4,397.52
Mid-year Planning Session	6,000.00	1,980.00	-	-	-	-	-	-	1,980.00	4,020.00
Events TOTALS	12,000.00	3,377.77	-	-	204.71	-	-	-	3,582.48	8,417.52
New School Grants (1st year)										
Cilaire	6,000.00	-	-	-	-	-	-	-	-	6,000.00
Quarterway	6,000.00	-	5,938.76	208.59	-	-	-	-	6,147.35	- 147.35
Departure Bay	6,000.00	-	-	-	-	-	-	-	-	6,000.00
New Schools TOTALS	12,000.00	-	5,938.76	208.59	-	-	-	-	6,147.35	5,852.65
Returning School Grants (2nd year)										
NDSS	3,000.00	-	999.94	-	-	-	-	-	999.94	2,000.06
Georgia Ave	3,000.00	1.00	1,779.53	-	282.67	-	-	22.50	2,085.70	914.30
Pleasant Valley	3,000.00	-	-	-	-	286.50	210.00	-	496.50	2,503.50
Rock City	3,000.00	-	200.00	-	80.00	-	182.70	-	462.70	2,537.30
New Schools TOTALS	12,000.00	1.00	2,979.47	-	362.67	286.50	392.70	22.50	4,044.84	7,955.16
Returning School Grants (3rd year)										
John Barsby/Learning Alt	1,000.00	-	-	-	385.29	323.00	230.00	-	938.29	61.71
Forest Park	1,000.00	-	-	987.29	-	-	-	-	987.29	12.71
Mountain View	1,000.00	-	188.01	-	-	-	1,274.00	-	1,462.01	- 462.01
Seaview	1,000.00	-	-	84.39	250.88	-	-	-	335.27	664.73
Returning Schools TOTALS	4,000.00	-	188.01	1,071.68	636.17	323.00	1,504.00	-	3,722.86	277.14
SD69 - \$25,000										
Errington Elementary	-	-	-	-	58.87	-	-	-	1,422.32	- 1,422.32
Ballenas Secondary	-	-	2,001.60	-	1,140.27	93.09	-	-	5,372.03	- 5,372.03
Kwalikum Secondary	-	-	24.83	-	31.35	-	-	1,330.56	661.46	- 661.46
Parksville Alternative	-	-	-	-	-	-	-	-	2,474.00	-
Springwood Elementary	-	-	-	-	-	-	-	-	3,160.64	-
SD69 TOTALS	25,000.00	-	2,026.43	-	1,230.49	93.09	-	1,330.56	13,090.45	11,909.55
RDN PROJECT TOTALS										
	65,000.00	3,378.77	11,132.67	1,280.27	2,434.04	702.59	1,896.70	1,353.06	30,587.98	34,412.02



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