



The CLIC Society

Canadians Locally Improving Communities

A non-profit organization dedicated to the restoration of damaged land,
supporting sustainability, and empowering Canadians to connect
with and improve their communities.

www.theCLIC.ca

Contents

Our Team	3
Our Mission	4
Waste(lawn) into Wonderland	5
Waste into Wonder - Upcycling	6
Waste into Wonder - R&D	7
Upcycling Workshops	8
Textiles and Eco-bricks	9
Teaching the Next Generation	10
Teaching at the Nanaimo Art Gallery	11
Art in the Park & Community clean up	12
Regeneration and Non-Extraction	13
RDN Parks & Rec Electoral Area A Grant	14
Zero Waste Grant - 2023 Goals	15
Zero-Waste Grant - Summary	16

Our team



Laura Vero-Augustine
President/Chair
Arch. Tech. Dipl.

Graduate Researcher
for University of
Athabasca Faculty of
Architecture.

6+ years experience
designing and building
household projects with
reclaimed materials.

Kara Rafuse
Secretary

At home daycare
provider, craft
enthusiast and
experienced
creating
household
projects with
reclaimed
materials.

Lea Barton
Treasurer

Bookkeeper at local
group daycare
company, scout
leader with
construction
experience and
formerly a crane
operator.

Shari Johnson
**Volunteer
Coordinator**

Formerly an
employee of Pacific
Child Care,
bookkeeper, and
executive
administrator.

What we do

We're a team of women who are wives and mothers with diverse professional experiences. We've come together as a team because we want to do good things for our community, our environment and the next generation. We believe that our environment, through resource extraction, climate change and the wasteful supply chain that underpins our daily lives, needs to be seen, understood and changed.

Our society sees the connection between environmental destruction and the excessive creation of waste filling up our landfills and causing dangerous levels of carbon in our atmosphere.

Together, we find numerous ways to solve the needs of the household, both home and garden based, with a wide variety of cast-off materials, and we teach the community and our children every step of the way.

Our Mission

In the CLIC Society's all volunteer group had a great first year of operation. We held free activities in the community, working hard to establish new programs, while doing our own research, design and testing, and began our impactful efforts to turn waste into wonder, and wasteland into wonderland, while teaching the community the value and power of the circular economy in their own lives.

Replanting and the Diversity Nursery

The logging of the 100 acres beside Cable Bay Trail inspired the creation of this non-profit. In response to this environmental damage and with the permission of our neighbours, we planted trees along property lines so that when new trees grow, neither neighbour can cut them down without the permission of the other.

Tree donors from the neighbourhood graciously gave over 150 indigenous tree saplings. We also joined the city of Nanaimo during planting parties to repopulate areas within the 15m trail set back where trees were lost.

While these trees will take time to grow, we will see this "wasted" land begin to regrow, and one day be a wonderland once again.

This year we planted over 140 saplings, and we're gathering more for next year.



Trees logged right beside Cable Bay Trail

Food bearing & indigenous plant sales

Volunteers in our group have harvested food bearing plants from their gardens for donation. The more food that is produced in people's gardens, the less food waste and packaging enters the landfill.

We are currently in the process of setting up an online store to sell seedlings, saplings and seeds for next spring.



Waste(lawn) into Wonderland

Human extractive practices is more than just logging a beautiful forest. When land is cleared to create homes and large lawns, like the one the CLIC now calls home, it destroys an ecosystem to create a monoculture. As a result, the soil suffers, animals suffer, and people instead of harvesting food, are mowing lawns with gas powered machines. Permaculture is an important component of our mission to turn unproductive mono-cultures like lawns into productive and bio diverse ecosystems that draw in pollinators and offset our need to feed ourselves from wasteful big-agriculture, and every step along the way we look for methods to reduce landfill waste, with techniques such a hugelkulture and more.

From Lawn to Food forest

Just 6 years ago, on the property that the CLIC now calls home, there was nearly 2 acres of just bare lawn with only a, apple and a pear tree on such a large footprint with so much potential. Before founding the CLIC, we, the president and her family and friends, worked tirelessly to first remediate the soil, which was was extremely thin, and poor in nutrients.

Employing techniques such as hugelkulture, which involves burying yard waste, rotting logs and sticks, and allowing them to compost in place, these materials retain water and nourish the soil as they decompose. We contacted tree topping companies who needed to dispose of their chips, and we directly buried food waste from multiple households.

Now, just 6 years later, trees and bushes are beginning to produce bounties. The orchard is home to dozens of different species, and the soil is now rich and well over 12" deep. Now as the CLIC, we are using this garden to give rise to other gardens, as each tree and bush gives many suckers and new plants that we now donate to the CLIC nursery, with the goal of helping others turn their lawns into food forests as well.

**SPREADING MULCH
AND PLANTING NEW
SAPLINGS ON A LAWN**

2016



**1 ACRE ORGANIC PERMA-
CULTURE FOOD FOREST**

2022



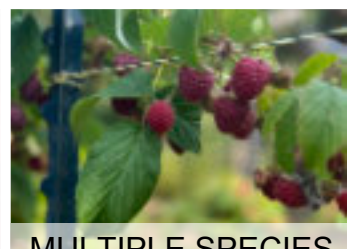
KIWI ARBOR



STRAWBERRIES



MIXED BERRIES



**MULTIPLE SPECIES
OF RASPBERRIES**

Waste into Wonder - Upcycling

Our thoughts are that it's not enough just to divert items that would have been sent to the landfill into something that clutters up a home for a time. These materials need to be transformed into items that also offset the need to extract new materials from the environment. This is how we not only reduce waste, but we reduce the need to create "wastelands" that occur from extractive industries.

Reclamation and storage challenges

A critical component of the circular economy is reclamation. We've found that high quality and highly useable waste materials aren't hard to find; it's the dry, organized storage necessary to preserve materials until they can be used, and enough manpower to process, that are the limiting factors.

We try to work with materials that are light and small where possible, but where there's value and weight to offset, there's also size and volume. So far we have collected easily **over 35000 lbs** of tile alone.

We have plenty of square footage to work with, the CLIC makes use of our president and chair's 5 acre property, but we've run out of

covered storage space and have had to turn away more material for the time being.

We need help to buy shipping containers to store materials in a safe and clean manner, and help to be able to hire strategic labour to process materials and get them back into a cycle of use in the community, and not collecting on a lawn!

CLIC TILE PILE



CLIC TILE PILE



Currently, this tile has to be stored outside because we've run out of covered storage. These tiles are in danger of becoming damaged, as the tarps we've placed them on, degrade, grass comes through and as freeze/thaw occurs, we not only have had to stop gathering more tile, but we're in danger of losing what we already have.



There are many uses for broken tiles, from tiling floors and table tops, to making coasters.

Tile in particular comes with a high carbon cost, yet they are durable, heat resistant and water resistant. We reclaim as much of this material as we can, because with a large collection, comes the option to organize a colour palette, and make visually pleasing mosaics that look intentional and attractive.



Waste into Wonder - R&D

As our society grows, the scope and scale of our projects do too. We're currently executing small scale projects, crafts and r&d, but our end goals are build a little bigger every year with reclaimed materials to reduce the ever growing cost to build and renovate homes, as well as making use of readily available cast-off materials at a time when supply chains are strained and the environment needs us to leave resources in the ground and ecosystems intact.

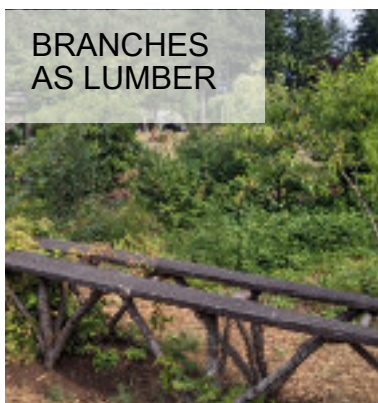
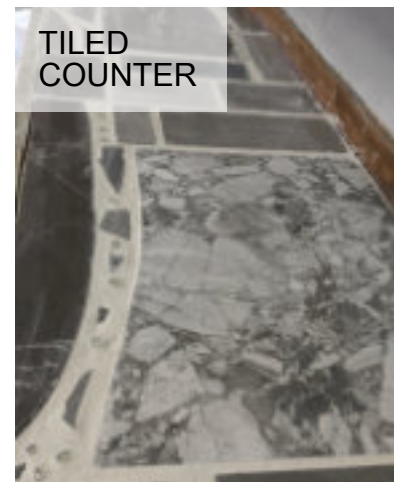
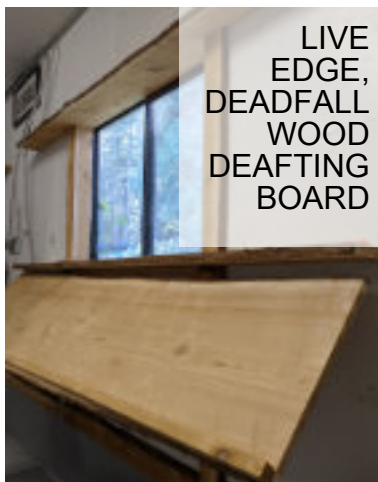
Countertops, floors and more.

The CLIC Society's members and volunteers see clearly how much of the material that is necessary to improve our homes and lives, is all around us, and currently being seen as waste, merely because it's out of place, or doesn't have a Buy Now button. It's built into our culture to go shopping before we even begin a task or project.

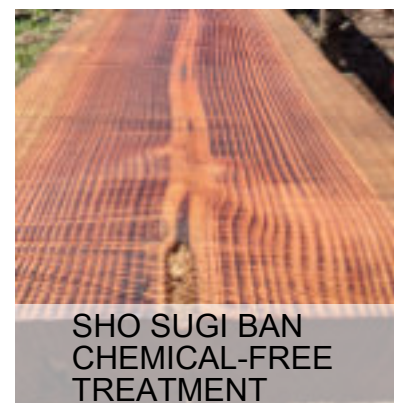
Our method is to see what is to salvage first, create a design, and fill in the blanks afterwards.

With our collective backgrounds and professional experiences in construction, engineering and architectural design, we've been testing how to replace traditionally used materials with easy to find cast offs.

We've used yoga mats instead of plastic sheeting for tile underlay. We've used wood that came from fallen trees that fell during storms, keeping their live edges to maximize usable material. We aim to build durable items and spaces, and use techniques that limit contamination of materials so that as much as possible, materials are compostable at their end of life.



Not only do we design to save materials from the landfill, but we plan for what happens after we're done with our own creations as well, composting is ideal, so we teach, design and build without coats of paint, glues or other materials that result in items reaching the landfill in the future.



Upcycling Workshops in Cedar

Our founder and directors have been working with cast off materials to create many innovative home solutions for years, but now with the formation of the Canadians Locally Improving Communities Society, our individual efforts are now combined and magnified.

Beyond our own research and development (R&D) efforts, post secondary educational pursuits and learning in our own lives and homes, we're sharing with the community.

This summer we have held 4 workshops teaching the public at no cost, a multitude of methods of upcycling materials to create items that not only offset waste, but help people make their own household items at a time when inflation has created more financial strain than ever.



Garden paving slabs from broken tile



Textiles and Eco-bricks

We've received donations of fabrics of all kinds, along with many partially finished projects. While a thrift store, if they received this material donation, might have re-sold many of the fabrics, they would have undoubtedly thrown away the half-created projects we were gifted.

In our free workshops, hosted at our home base in Cedar, our group saw these projects as an opportunity to help kids learn to sew, without the daunting task of beginning from scratch.

Kids learned how to hand stitch, how sewing machines work and the value of repairing and completing a project, and each took home, a purse, bag or pencil case of their choosing, along with whatever decorations they chose to make the project their own creation.

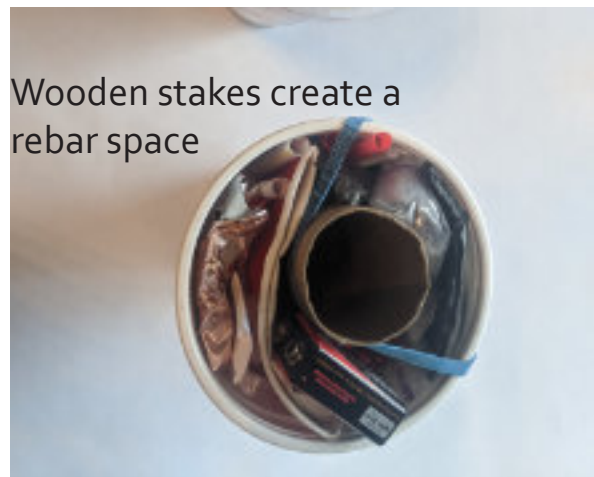
Kids sewing projects with scrap fabric



Eco bricks - R&D Trial projects



Compact plastic waste inside of a used plastic jar.



Wooden stakes create a rebar space

Eco-bricks are an idea that has already been used around the world to create structures from waste plastic. Whenever we generate waste in our own projects, we add as much as we can to an eco-brick, with the goal of utilizing these in a future R&D project.

We would like to be able to strength test these units in several permutations. This would involve sending sample bricks to UBC's engineering physics lab or other testing facility, in order to understand the strength, heat, fire resistance and even

insulation properties of these units, in order to be able to design using these units. After gaining more material information, we would also like to be able to work with design students to create structures from these bricks.

Teaching the Next Generation

With the varied experiences of our volunteers and directors, from childcare to construction to scout leadership and architectural design, new and innovative ideas continue to be introduced and then shared in workshops that are always free, open to the public and inclusive of all ages, skill levels and interests.

Making every event family friendly is key to ensuring our programs are open and welcoming to everyone, which we believe strongly is the only way to create real benefit in the community.



Child friendly crafts are selected to show children that we don't need new plastic store bought toys to be entertained, and that the things we make for ourselves are the most special.



We start by teaching that nature provides opportunities for fun and creativity, by painting wooden coasters and rocks, and teach them simple sewing techniques.



We are currently working with donated and used sewing machines, 3 of which are in need of repair or they will likely become waste themselves. When repair costs are unpredictable, it is difficult to prioritize fixing something old over buying something new. This is something where grant support would be helpful, it would empower us to create more useful items, continue to teach these workshops, and keep these tools out of the landfill.

Zero-waste Crafts at the Nanaimo Art Gallery

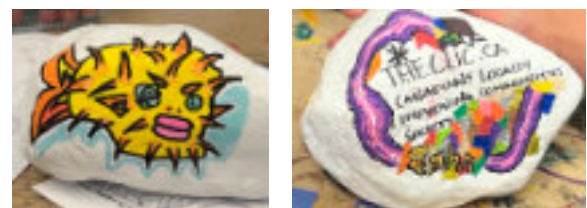
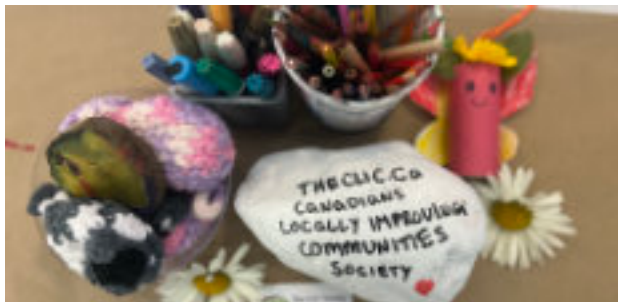
Our president was invited to be a guest artist at the Nanaimo Art Gallery this summer, and taught a group of 16 children about zero waste building models. Using no glue or plastic in the final model and using recycled or found materials, kids learned about clay as mortar, using natural and decomposable materials, and they created structures that could be eventually composted at home, leaving behind only rocks and smooth glass stones that could be later removed.

Children learned about the value of avoiding the use of plastics and other non bio-degradable products, about building elements like bricks and mortar, lintels and rooves, and artistic concepts such as symmetry and repetition.



Thursday Night Market

The Nanaimo Art Gallery invited the CLIC to host a free craft for the public in their Art Lab on a Thursday Night Market in August of this year. We brought rocks primed with leftover house paint and a number of sample projects to show and inspire the public to do their own zero-waste projects, and to invite new attendees to our instructional, free workshops.



Jean fabric

We've been reclaiming fabrics from so many diverse places, such as worn out jeans that wouldn't have been able to be donated. We use the pockets for tool belts, and the pant legs become draw string bags. Thighs from several pairs of jeans were useful as binding material for the kids building craft.

Reclaimed tent canvas

When friends of the CLIC shared that a single industrial tent of theirs had torn and was about to be sent to the landfill in nearly a dozen garbage bags, we intervened! After multiple washes and bleach cycles, we cut around the damaged areas to create square, paintable canvases that we then primed using donated leftover white primer housepaint. We will be tracing designs on to these canvases to create paint by numbers projects for all ages.

Art in the Park & Community clean up

While we invite the public to join us at our home base here in Cedar, we've also gone out into the community to share our mission.

We visited Cedar Elementary School for an art in the park afternoon, where we began with a garbage clean up, brought art supplies to share, and enjoyed colouring rocks and wooden coasters. We encouraged artistic parents to join in, getting in some sketching time while children were occupied between their own art projects and the nearby playground.



We are creative with our rigorous focus on waste reduction and non-extraction, as we empower kids to take part in all we do. Instead of printing posters and banner, our eco-calling cards are painted rocks decorated by kids, and we created a banner one afternoon with recycled brown packing paper adorned by kids colouring.

We're working on making a more durable sign, using an oversized hammock made of parachute material, that ripped earlier this year.

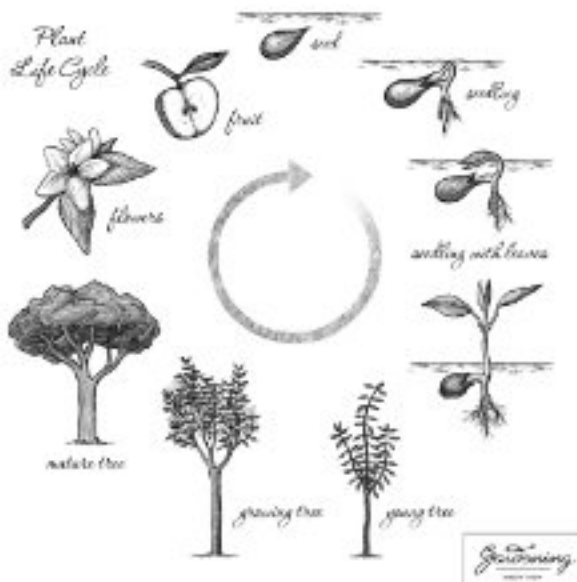
We intend to use every opportunity to fulfill as many needs as possible with upcycled materials including in our own marketing, and operational efforts, and show the community how to do the same.



Regeneration and Non-Extraction

Regenerative design is a concept in architecture that goes beyond sustainability, and aims to restore environments through their creation and operation. Being regenerative on the scale of art, is to create functional projects that people might otherwise buy, but to make those objects from items that would have been thrown away. To be regenerative at the scale of architecture, is to introduce these concepts to home building and beyond.

Nanaimo has a great opportunity through the adoption of the donut economic model, to be in support of regenerative design, healing our environment and supporting our economy by learning the lessons of nature.



Cycle of Nature



Nanaimo Donut
Economic Model

Growing Sustainably

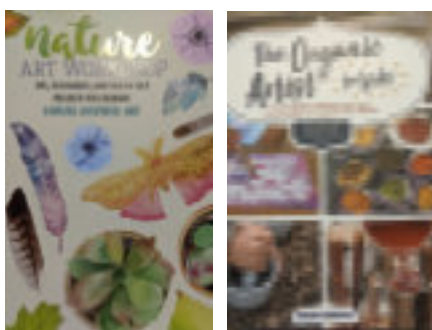
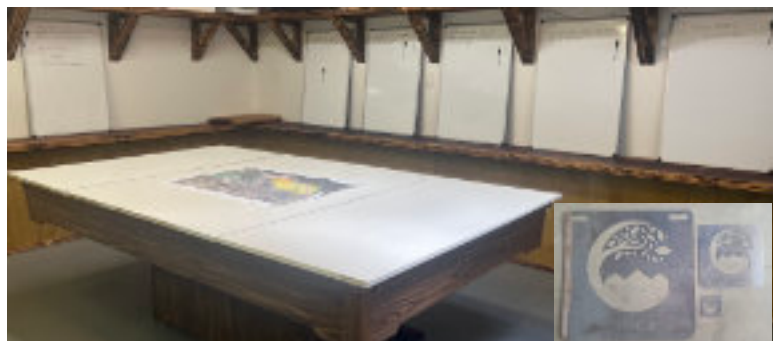
Regenerative design, which follows the lessons of nature, also needs to grow step by step. The first is intervening in the carbon cycle at the critical point where useable items become waste. In order for our non-profit to thrive in this mission, we need support with our reach, to find the materials at a point where they are about to be disposed, we need dry storage to preserve materials, and we need some funds to create meaningful, creative jobs for workers who will help us to transform and upcycle these materials into items that can be sold, so that we can become self-sustaining economically as well as environmentally.

Our society, in its first year, is like a seedling that is just beginning to put down some roots. With your support, we will grow strong and bear fruit to give back much, much more than the resources it took to help us grow.

RDN Parks & Rec Electoral Area A Grant

On February of this year our group was elated to find out that we had received \$2500 from RDN Parks and Rec to help with our workshops. The grant stipulated that it can't be used for consumable items, fees or payments for labour or subscription costs. We readjusted some of our spending plans to closely adhere to these constraints, and with it we have strategically purchased tools that will help us in our workshops and R&D for years to come.

1. 120" Projector Screen	\$127.49
2. Projector - ONOAYO LED WiFi HD	\$299.98
3. 6 - 36"x48" Whiteboards	\$214.98
4. Books (Nature Art Workshop and Organic Artist for Kids)	\$20.01
5. Tile Saw with stand and blade	\$1229.95
6. Painting Easel	\$185.57
7. Metal Stencils	\$120.00
	<hr/>
	\$2589.97



Zero-Waste Grant - 2023 Goals

The grant we received last year from RDN Parks and Recreation, was the reason we were able to begin teaching the public about upcycling, regeneration, the circular economy, and simultaneously use those same resources for advancing our R&D.

Our hope is that next year, with the support of the Zero Waste Grant, we will be able to do much more. In addition to our weekend workshops, with no two alike, so a person could learn something new with every session, this year we want to maximize the material we divert from the landfill, and more importantly put it back into use for the benefit of the public.

#1 Storage

To move towards our goal of being a hub for upcycling household goods, we need better storage facilities. One shipping container will allow us to preserve what we have. Two containers will allow us to contain and store new materials (each container 30,000+ lbs in tile alone), as well as better organize the material for it be returned to function and not just stored for the long term.

1 x 40' Shipping Container Cost (shipped, delivered and landed)	\$10,000
2x 40' Shipping Containers (shipped, delivered and landed)	\$19,000

#3 Repairs & Cleaning

We've found that textiles are challenging to recycle if they are damaged, but with the proper tools, like sewing machines and an industrial washing machine, we can divert large volumes of this abundant material that most people don't think twice about throwing away. We need help fixing our sewing machines, and to acquire an industrial washing machine so that heavy duty fabrics can be properly cleaned so volunteers aren't exposed to unsanitary materials.

Sewing machine repairs (parts, labour and maintenance)	\$2,000
Industrial washing machine (delivered and installed)	\$2,500

#2 Labour & Delivery

Some strategic investment in labour would allow us to process tile and other building materials into useful objects, and sell those products. This would help our society to become more sustainable, as well as ensure that we continue offset material. If we have labour support we can likely double the material we divert from the landfill.

We are also currently limited by our ability to acquire items. Being able to call a delivery driver to pick up strategic items would make it possible for us to gather harder to recycle items from individuals and stores.

Delivery Budget	\$4,000
Labour (storage organization, building shelves and tile cutting)	\$15,000

#4 R & D

Our group would like to be able to work with universities to help support the continued research around using reclaimed material in construction. Our society's members have strong personal connections to UBC Engineering Physics program who has the ability to material test eco bricks and other innovative reused materials, and our President is both employed by and attends the University of Athabasca University School of Architecture, whose faculty actively participates in grants and projects in regenerative design. A contribution in this area would engage these institutions, and allow us to begin to apply for more grants to continue research.

University project initiation (UBC & AU) Project definition, grant writing, team assembly	\$20,000
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Zero-Waste Grant - Summary

If we were to receive full funding we would be in a position to offset an estimate of \$1 per lb of invested funds. We are seeking a total of \$62,500, which would result in the purchase of two shipping containers, to contain and organize the materials we collect, we would have created work and a learning opportunity for some young and aspiring for workers in the trades. We would acquire machinery that would allow us to upcycle material that would have been considered too difficult to reclaim, and most people would have thrown away with their garbage collection, and receive deliveries of materials we have previously had to reject, with our regrets. Further, this funding would allow us to conduct research towards our major goal of partnering with non-profits who build socially supportive housing, with our contribution being the use of alternative and reclaimed materials and improved designs, making possible lower cost of such housing while diverting waste from the landfill.

If partial funding is being considered, please see our list of 4 areas of need as somewhat sequential. Without more storage, we don't have as much ability to gather more materials, although we could still use support to process the materials we have, although we would likely not accept as many new materials for delivery. In every case, the need for fixing our sewing machines and an industrial washing machine for large and commercially used fabrics is ever present, although the offset of material per dollar invested drops without a maximum ability to store and organize materials.

Supporting Sustainable Growth

Please feel free to reach out and discuss any of our projects or plans. This support would elevate our efforts dramatically and allow us to scale up our operations. It would enable us to kick off efforts to sell projects from recycled materials and become more self-funded. Obtaining the permanent storage facilities and tools would allow us to increase our waste offsetting for years, and the ability to start to an R&D collaboration with academia would allow us to seek larger and federally funded grants with the support of experienced PhDs and the backing of post secondary institutions.

Thank you and please come visit

Please come visit us, since we are all volunteers, do drop us a line ahead of time so we can organize a tour, and answer questions.

We would be so happy to show you the gardens, our on-site trial projects, current storage and diversion efforts and of course please consider attending our free workshops.

We would be happy to supply any additional information about our Society upon request.

Sincerely,

Laura Vere-Augustine

President, Chair
Canadians Locally Improving Communities Society

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RDN Zero Waste Recycling Funding (ZWRF) for 2023

Application for:



**700 Tin Can Alley
Gabriola Island, BC**

Prepared by: **Michelle Kresnyak**
General Manager, *Gabriola Island Recycling Organization*

THE PROJECT	3
OVERVIEW	3
PROJECT OBJECTIVES (NEAR TERM)	3
FUNDING.....	4
FUNDING OBJECTIVES	4
FUNDING HISTORY	4
IMPLICATIONS OF PARTIAL FUNDING	4
PAYMENT OF FUNDING.....	5
APPLICANT INFORMATION.....	6
THE C2C BUILDING	7
ADDITIONAL CONSTRUCTION & EQUIPMENT COSTS	7
OPERATING COSTS FOR MAKERSPACE	11
C2C PRODUCT LINES	12
ACTION PLAN FOR PRODUCT LINES AND SERVICES AUGUST 2021 – ONGOING	12
PROJECT ACHIEVEMENTS TO DATE	13
MARKETING AND SALES FOR C2C PRODUCTS	13
ACOUSTIC PANEL DEVELOPMENT	14
PARTNERSHIPS.....	15
C2C THREADS TEAM BIOGRAPHIES	16
APPENDICES – TABLE OF CONTENTS	17

The Project

Overview

C2C Threads is an innovative circular economy social enterprise, created by the Gabriola Island Recycling Organization (GIRO), which will reduce the amount of waste textiles going to the landfill through repurposing them into construction products, stuffed applications, and other useable products that replace single-use items for environmentally conscious consumers throughout Western Canada. Our goal is to divert the 52,000 lbs./year of waste textile GIRO receives for use in creation of these products. C2C Threads includes a maker/entrepreneur component, a workshop component, and a production component focused on repurposed textile products marketed through our C2C *ReLove Local* product line. We are constructing a building provisioned with a solar array that will house these various components, supporting makers and entrepreneurs through providing equipment, waste textiles for use in product creation, and business development support. In addition, we will be providing an online platform for entrepreneurs to market their upcycled products. A textile shredder will produce fill for stuffed products as well as for constructed products such as acoustic sound panels and insulation. We will also be offering a shredding service for other organizations/businesses that are looking for environmentally responsible methods for recycling textiles (e.g., employee uniforms). We will reduce GHG emissions by over 32.5 tonnes CO₂e annually through these actions.

Project Objectives (near term)

- Complete construction of the C2C Building
- Continue product line research and development for acoustic panels, finalize prototypes, complete testing and accreditation, acoustic panels market ready by August 2023
- Increase production and marketing for C2C ReLove Local products – expand audience and increase sales for ReLove Local product line through new vendors, pop-up stores and seasonal markets on Vancouver Island
- Grow C2C makers apprenticeship program for training skilled makers thereby supporting the local economy and real living wages
- Establishing membership system for use of the Makerspace, access to textiles and workshops
- Continue outreach workshops to other communities in BC interested in learning our process and initiating their own cradle to cradle textile initiative.

Funding

Funding objectives

We are seeking a grand total of **\$61,545** of funding via the RDN's Zero Waste Recycling Funding (ZWRF) program, specifically:

- **\$30,000** to address additional and unforeseen building construction costs & essential equipment related costs. The bulk of these additional costs are due to permitting process related issues, increased material costs and unforeseen issues related to the building site location on the GIRO property.
- **\$31,545** to cover a portion of the first year of the Makerspace operational costs to address expected shortfalls due to the time required to develop footholds into the various markets for the C2C products and services in this first year.

Funding history

In January 2021 we received \$103,000 from the *Regional District of Nanaimo* (RDN) for this initiative - \$31,000 for Phase 1 and \$72,000 for Phase 2. Phase 1 funds were used to 1) purchase a washer and dryer to divert a portion of the textile waste and 2) a feasibility study involving community that identified marketable repurposed items produced from the textile waste, together with the corresponding infrastructure and equipment required. Community members indicated interest in a maker/entrepreneur space during this phase. As a result, we applied for and have received \$50,000 from the *Island Coastal Economic Trust* (ICET) to help fund the maker space.

In November 2021 we were awarded \$92K from the RDN. The \$92K along with the \$50K from ICET enabled us to research the type of building that would best suit the project uses, have building plans designed and engineered, contract with a builder and purchase over half of the building materials. We currently have \$64K remaining of RDN funds and \$19K of ICET funds which will go toward construction costs.

In November 2021 we also applied for Federal dollars through *Pacifican* (formally *Western Diversification*) for a total of \$98K. These dollars are supporting community outreach, developing video and print media to facilitate other communities to replicate our process. These dollars are designated specifically to fund the above-mentioned community outreach as well as acoustic panel research and development, testing and accreditation, sound absorbency testing, prototyping, market research and business planning. We were awarded the funding in March 2022 and have \$45,754 remaining.

Please refer to the attached *C2C Phase 3 Funding and Outstanding Building Costs* spreadsheet located in the appendix for more details.

Implications of partial funding

If partial funding is received this will impact the ability to complete construction on the building and become operational in the space. The acoustic panels, stuffed applications, revenue from the sale of raw shred and the ability to offer a shredding service all depend on the ability to operate the shredding machine. The shredding machine, due to heavy amperage requirements, can only be used once it is hardwired into the panel in the new building (the existing GIRO building cannot accommodate the extra power required).

In addition, the acoustic panel prototypes, testing and accreditation cannot be completed until BCIT professor Maureen Connelly has unrestricted access to the shredded fiber from the shredding machine to complete the required sound absorbency tests.

If the funding we receive only covers the additional building costs and does not cover the operational cost shortfall then this could create a challenging cashflow situation in the first year of operation.

Payment of Funding

Upfront funding preferred.

Reporting

C2C Threads will provide a report by July 2023 that will outline activities to the end of June and a full accounting of costs incurred.

A second report will be submitted by January 31st, 2024.

Applicant Information

Gabriola Island Recycling Organization (Charitable # 0887448) was created in 1991 after Gabriolans identified a need for the island to provide a facility where people could recycle and divert waste from going to the landfill. GIRO is a self-funded social enterprise offering a restore, a gently used clothing department, construction materials, and recycling services together with educational programs on rethink, reduce, reuse, and repurpose. Since GIRO's inception it has continued to expand its range of services to meet the growing needs of the Gabriola population. As a Gulf Island recycling facility, GIRO prioritizes education to raise awareness around responsible end of life practices for materials and rethinking consumption habits to look at ways to reduce, reuse and repurpose. This education is carried out through regular articles in the media, GIRO website (www.girodepot.com), GIRO Facebook, through an Environmental Stewardship Program at the Gabriola Elementary School and workshops on rethinking consumption habits. GIRO is currently a social enterprise with an annual revenue stream of approximately \$330,000. The C2C initiative will provide an additional revenue stream, with the profits going to support multiple living wage employment opportunities, and environmentally responsible processes for the proposed products. The plan is to market our products throughout British Columbia.

Mailing Address and Contact person:

Michelle Kresnyak
700 Tin Can Alley
Gabriola, B.C. V0R 1X3
250 – 714 – 9763
michellekresnyak@icloud.com

The C2C Building

The C2C building will serve as the project home for our maker/entrepreneur activities, educational workshops, the production of raw shredded textiles and acoustic sound panels.

We applied for the building permit in November 2021 and were approved in March 2022. Excavation began in early March but due to a very wet spring we could not begin construction until mid-May. Footings were laid and we had our first inspection in early June. Unfortunately, we failed this inspection due to a code rating that was overlooked at the permitting stage by the RDN Building department. It took an extra 14 weeks and many resources to find a solution that could move us forward. In mid-September, the RDN approved our re-worked plans permitting us to recommence construction.

This extended delay has consequently pushed our original timeline to complete the building into the fall/winter and has impacted the various streams of revenue that we had anticipated had the building been completed within the original timeline enabling the project to be fully operational.

The following chart outlines the revised action plan for the construction of the C2C building.

Action item	Key milestone	Person responsible
Submit Permit Application	November 2021	Fay Weller on behalf of GIRO
Site preparation (Excavation and Foundation prep)	March 2022	Michelle Kresnyak (Construction Mgr.) Compass Excavation
Begin Construction on building	June 2022 and recommenced October 2022	Michelle Kresnyak (Construction Mgr.) Backwood Timberworks
New 200AMP electrical service to new building	Phase one: bring new service to the site, completed March 2022 Final electrical rough in to be completed by November 2022	Michelle Kresnyak, Avalon Energy Corp
Finish building to lock up stage	December 2022	Michelle Kresnyak (Construction Mgr.)
Solar System installation	December 2022	Fay Weller, Funded by SECOG*

* Sustainable Energy Co-op of Gabriola (SECOG)

Additional construction & equipment costs

Listed below are additional hard costs that we did not anticipate:

- Shredder Table - \$3,000
- Industrial furniture - \$2,200
- Two x 2,500-gallon cisterns - \$9,200
- Water pump - \$600.00
- Fire doors - \$5,500
- Interior finishing – \$7,000
- Exterior finishing – metal cladding \$3,500
- Exterior finishing – (ramp, steps, railings, and gravel) \$5,000
- Windows - \$3,000
- Excavation - \$5,000

- Commercial dryer - \$2,000
- Heat pump - \$1000
- Letter of Assurance from Herold Engineering – \$1000
- Electrical - \$5000
- Sewing Machines – refurbishment \$2000

Shredder table

The shredder was purchased and shipped to us in March 2022. Only after assessing the size, and weight of the machine on-site were we able to determine that we would need a custom-built steel fabricated table for the machine. When the shredder is operating the shredded fiber will fall out of the bottom of the machine into totes and the table needs to be constructed to a specific height with safety hoppers attached that is ergonomically comfortable and safe for assistants to operate.

K Young Contracting in Nanaimo are constructing the table.

- **Total cost for table \$3,000**

Industrial furniture

We anticipate that we will need two 4' by 8' tables for cutting and measuring fabric and 10 folding tables that will accommodate two sewing stations each. This will allow us to teach workshops up to 20 participants per session.

- Two 4' by 8' tables for cutting and measuring fabrics \$1,200
- 10 x 6' long folding tables - \$900.00
- **Total costs for furniture \$2,200**

Cisterns

A washer and dryer were purchased in Phase one with the initial dollars that were awarded to us by the RDN. These machines have been an integral part of the C2C operation thus far in that we are now able to clean and either sell or upcycle 30% of the fabric/clothing waste stream that was previously being discarded due to being dirty, stained or wrinkled. The other main use of the washer and dryer is to clean the textiles that are being repurposed by makers into our ReLove Local product line.

We had not anticipated the volume of water required which is far above the current rainwater catchment capacity of our existing GIRO cisterns. We therefore will need to purchase two additional 2,500-gallon cisterns. These cisterns will capture water from the new building roofline and be pumped from the new building (C2C) location to the washing machine located in the clothing department of the GIRO building.

- Cost for two 2,500-gallon cisterns, trenching and piping \$9,200
- Water pump to pump water to washing machine \$600.00
- **Total water collection and pumping costs \$9,800**

Interior finishing and exterior finishing

After the last round of funding with the RDN, we identified some shortfalls in the building expenses. Building materials have gone up in price due to supply chain issues. Below are the additional finishing costs:

- Interior plywood for walls and ceiling \$4,000

- Interior framing for walls to create an enclosed room for the shredder to contain any dust released through shredding \$3,000
- Exterior finishing – metal cladding \$3,500
- Exterior finishing – ramp, steps, railings, gravel \$5,000
- **Total interior and exterior finishing costs \$15,500**

Fire doors

One of the outcomes of our code review with the RDN building department was the requirement to install heavy duty fire doors. These are significantly more expensive than our original quotes for doors.

- Fire doors - (one double and one single) \$5,500
- **Total cost \$5,500**

Windows

In our initial building plan budget, we were anticipating using second-hand windows (that were donated to GIRO) for the building, however the RDN building department would not allow us to use any second-hand windows as they do not meet the NAFS (North American Fenestration Standard) requirements. This has increased our budget for those items.

- **Total cost \$3,000**

Excavation

The original quote for the excavation fell short due to the volume of unexpected organic material removal and subsequent backfill required.

- Initial quote \$5K
- Final expense \$10,000
- **Shortfall \$5,000**

Commercial Dryer

A commercial dryer with a 7 cubic foot capacity will be required to hygienically heat treat the large volume of textiles anticipated being used in the project and ReLove Local product lines. Textiles must be sterilized before being shredded to enable hygienic use as bulk shred, in stuffed applications or in acoustic sound panels. We also have a backlog of stored textiles that require sanitizing before shredding (approx. 24,000lbs). Our current dryer in the GIRO clothing department is already at capacity. A commercial dryer with a 7 cubic foot capacity can sanitize up to 30lbs of textiles in 30 minutes.

Total cost \$2,000

Heat pump

Due to supply chain issues, heat pump costs have increased.

- Original quote \$3000
- Current cost \$4000
- **Shortfall \$1000**

Letter of Assurance from Herold Engineering

To satisfy RDN Building Department requirements for building code reclassification, a stamped Letter of Assurance was required from a certified engineer.

- **Total cost \$1000**

Electrical

A new 200AMP service is required to accommodate the additional electrical needs of the C2C project (namely the shredder machine) and the original quote to bring power to the new building location was \$10k. GIRO approved that they would fund up to \$10K of these costs. However, during the permitting process, we discovered that we would have to move the location of the building 100 feet further from the originally planned site. The new location requires additional trenching and cable costs.

- **Additional costs \$5,000**

Sewing machine refurbishment

We have been collecting used sewing machines for the Makerspace since the C2C project began. For these machines to be functional they will require some reconditioning. Cost to recondition 12 sewing machines \$2,000.

- **Costs \$2,000**

In summary, the total costs remaining to complete the Makerspace \$136,000. Some of these dollars will be covered with community donations and volunteer labor:

- The solar panels will be funded by the Sustainable Gabriola Energy Coop - \$5,000
- The interior and exterior finishing will be completed with volunteer labor. - \$17,000

The remaining costs \$114,000 will be further reduced by the grant dollars we have remaining:

The remaining RDN dollars from the \$92K grant received in November 2021 = **\$64,354**

The remaining dollars from the ICET grant received in July 2021 = **\$19,000**

This will leave a shortfall for hard costs to complete the building of \$30,000

Operating costs for Makerspace

Our revised timeline to be operational in the Makerspace is January 2023. Our existing GIRO clothing manager Yarrow Koontz will transition over to become the Manager/Coordinator for the Makerspace. Yarrow has a wealth of textile experience and has been a valuable employee in her role as clothing manager. Since she joined the GIRO team in December 2020 her skill and knowledge of clothing, curation and merchandising has increased sales in the clothing department at GIRO by 30%.

The attached forecasted operating budget shows expenses and revenue for 2023. We believe it will take one to two years to establish the Makerspace as a rich hub for learning and rethinking textiles. It will also take time to develop sufficient contracts with manufacturing businesses for the sale of raw shredded fibre and clients for our shredding service. Another key revenue stream will be the acoustic sound panels and we anticipate that we will have a market ready product by August 2023. It will also take time to establish a foothold in the acoustic panel market. For these reasons we have been conservative with the revenue forecast for 2023 and anticipate a shortfall of **\$31,545.00**.

By 2024 it is our aim that we will be generating sufficient sales from the unstuffed and stuffed products, raw shredded fibre, the shredding service, acoustic sound panels and workshop attendance to cover all our expenses and be financially sustainable.

Please refer to the attached *C2C & ReLove Local Operating Budget - January 2023 to December 2023* spreadsheet located in the appendix for more details.

The table below shows the key areas where Makerspace & ReLove local revenue will be generated in 2023:

Revenue source	Description	Anticipated
Membership fees	\$50/year - 50 members in year one.	\$2,500
Sewing space rental fee	\$10 per/hour - 4 hours a week	\$2,000
Co-lab membership	\$20/year - 20 members	\$400
Skill building: Sewing 101	4x/year - \$200 per person - 12 people max	\$9,600
One on one sewing project mentoring	\$20 per/hour – 4x/year	\$3,800
Meet, mend, make	Once every two weeks – 2 hour drop in \$5 suggested donation – 12 people max	\$1,440
Shredded fibre sales	\$4/lb – 10lbs per week (50 wks.)	\$2,000
Tailoring services	\$22/hr – 2hrs per week (50 wks.)	\$2,200
Waste textile	\$4/bag – 6 bags per month	\$288
Shredding service	\$25 per/hour – 2 hours per/week (50 wks.)	\$2,500
ReLove Local Stuffed products – pet beds, yoga cushions, floor cushions	10 items per month- av price \$80 each, 12 months	\$9,600
ReLove Local Unstuffed products – tote bags, everything cloths, bowl covers, scrubbies	\$1,500 per month, 12 months	\$18,000
Acoustic sound panels	\$2,340 per month, 5 months, sales begin Aug 2023	\$11,700
TOTAL		\$66,028

Shortfall to first year C2C expenses: \$31,545

C2C Product Lines

Action plan for Product Lines and services August 2021 – ongoing

Action	Key milestones	Person responsible
ACOUSTIC PANELS		
Research Sound Absorbency Capacity of different textiles and different shredder configurations	August 2021 - ongoing	Maureen Connelly
Research shredder options then order shredder (4-month turnaround time)	Completed	Michelle Kresnyak, Fay Weller
Further research and certification of products related to sound capacity, insulating qualities, fire-safety, rodent proof. Create prototypes, produce marketing strategy, and initiate market outreach	Ongoing	Maureen Connelly
	March 2021 – ongoing	Maureen Connelly, Yarrow Koontz, Paula Brent, Chris Hutchins
Start producing acoustic panels	August 2023	Yarrow Koontz, M. Connelly, employees
SHREDDED TEXTILE		
Marketing strategy – identify customers for January start and system for selling product (shipping, pick-up etc.).	January 2023	Paul Brent
Start producing shredded textile for customers	January 2023	Yarrow Koontz /assistant
QUALITY REPURPOSED PRODUCTS		
Entrepreneurs use waste textiles to produce prototypes for local sale at GIRO and online platform	2023	Yarrow Koontz and entrepreneurs
Launch the shredding service	2023	Yarrow Koontz and assistant

Project achievements to date

Marketing and Sales for C2C products

Phase 3 focused on strategic and values-aligned expansion for the ReLove Local products. We continued to work with a local contractor, Paula Brent, to oversee all aspects of marketing for C2C. These are some of our accomplishments from **December 2021 to September 2022:**

- We developed and distributed a comprehensive sales package to prospective vendors, including [price sheets](#), [digital media gallery](#), and [print assets](#). We received this feedback from one of our vendors: *"I have to tell you, I deal with small vendors all day long and you have got this nailed!"*
- We created four new vendor partnerships with like-minded retailers on Vancouver Island: [PlentiFILL](#) in Duncan, [Local Refillery](#) in Courtenay, [Nova Gallery](#) on Gabriola, and [Copper & Kelp Market](#) in Port Hardy.
- We established a new partnership with local Gulf Island Food Transport (GIFT) to deliver orders to VI vendors. This partnership allows us to save on shipping costs and reduce our carbon footprint by aligning our shipments with existing GIFT delivery routes (essentially carpooling!)
- We leveraged our Square POS software to create branded invoices for efficient and paperless vendor orders and payment.
- We expanded and refined our Apprenticeship program, creating [systems](#) for outlining and tracking skills and goals and welcoming new trainees.
- We continued to collaborate with local photographers to showcase the breadth of ReLove Local product uses as well as behind-the-scenes storytelling. These assets are shared with vendors and used in newsletter, social media, website, print ads, and print materials.
- We reached over 205,391 strategically targeted people and celebrated over 300 followers on Facebook and Instagram.
- We engaged with new communities and sold products at [Island Roots Market](#) at Beban Park in Nanaimo and at the [Gabriola Growers & Makers Market](#).
- We furthered partnership conversations with Nester's COO. We currently divert some of the store's waste and plan to sell related upcycled scrubbies in the Gabriola Nesters. This will allow us to access and influence a more mainstream audience with potential to stock other stores in [Pattison Food Group](#).
- We partnered with [Gallery Press & Printing](#) on Gabriola to produce popular informational postcards about C2C that serve as a business card and low-cost community-driven marketing tool.
- We collaborated with our Lead Designers to create what is becoming one of our most popular and profitable products – diverted denim totes. These repurpose hard-to-use and excessively abundant stretch denim.
- We added OEKO-TEX® recycled fibre ReLove Local labels that not only uplevel our brand recognition, but also serve as value-add features to the products, making them easy to hang, store, and identify.
- We developed engaging textile and waste-related educational games and activities for use at community events like Earth Day.
- We sent monthly newsletters to over 500 subscribers, highlighting product features, celebrating developments, and welcoming engagement. Here is [an example](#). We continue to build our email list with a lead-magnet on the [relovelocal.ca](#) site inviting new subscribers.
- We continued to find and leverage opportunities for interviews, like [CBC's 'All Points West](#).
- ReLove Local sales have exceeded \$8,500 with over 2,000 upcycled products created to date.

In addition, in 2022 we began supporting other communities throughout BC who expressed an interest in replicating our initiative. Four community outreach workshops have been facilitated to date with organizations in BC. This outreach work will continue into 2023.

In 2024/2025 we aim to expand into the Nanaimo region with a focus on capturing a larger textile waste stream within the district through the scaling up of our project template and thereby increasing landfill diversion rates.

Acoustic Panel Development

A summary report on progress made on acoustic panel development, prototyping and R&D was completed in August. For details, please consult the *Summary of Acoustic Panel Prototypes* report located in the appendix.

In 2022, we contracted a Market Research consultant to complete a market research report on the demand for Acoustic Paneling and Shredded Textiles. This report is included as an appendix, please see *Market Research – Acoustic Paneling and Shredded Textiles*.

Partnerships

- **BCIT**

Partnership with Professor Maureen Connelly to develop a sound absorbency panel using 100% recycled content.

- **Sustainable Energy Co-op of Gabriola (SECOG)**

C2C Threads has partnered with the SECOG who will provide up to \$5K for a solar system for the new C2C building– off-grid with two panels and Yeti battery plus grid tied with three panels and all hardware required.

- **GIFT (Gulf Island Food Transport)**

In partnership with proprietor Dan Backe, his GIFT service allows us to save on shipping costs and reduce our carbon footprint by aligning our shipments with existing GIFT delivery routes.

- **Nesters**

One of our ReLove Local products (*Un sponge scrubby*) is made with waste textile and filled with onion bags that we have captured from the produce department at Nesters. These onion bags were previously being landfilled as they are not recyclable. Our scrubby gives them a new life. This product will be on shelves at Nesters soon with infographic displays to raise awareness on the sustainability and landfill diversion aspects of the C2C initiative.

- **Gabriola Elementary School (Grades 4 – 7)**

Through the *Environmental Stewardship Program* facilitated by Michelle Kresnyak, the Makerspace will be a center for students to explore a wide variety of textile activities via Makerspace specific lesson plans. Funding to facilitate this program will be explored through the BC Gaming Grant. Lesson plans to include:

- Ongoing textile teaching
- Hand sewing
- Knitting/crochet
- Wet felt slippers
- Make a drop spindle – learn to drop spin
- How to weave a placemat/rug
- Tie-dye for fun
- How to mend clothing with visible mending
- Cedar bark weaving with Indigenous elders
- Lesson activities exploring rethinking textile consumption

C2C Threads Team Biographies

We have a highly qualified and motivated group working on this project.

- **Michelle Kresnyak (GIRO General Manager)**

Michelle is responsible for GIRO's Restore and Recycling operations and educational program. She is responsible for 10 employees and over 20 volunteers. In the past 5 years she spearheaded and managed the following projects: Solar Panel project (57 panels installed on south facing roof), New addition to GIRO building (2200 square feet), new roof added to the original GIRO building, Pathways, and disability access project, 700 square feet outbuilding to house reusable construction materials. She also created and facilitates lesson plans, activities, and workshops on rethinking, reducing and zero waste strategies with K-12 students in District 68.

- **Fay Weller (PhD – UVic)**

Fay is the Board lead for C2C Threads. She has initiated and implemented numerous financially sustainable enterprises: Gabriola Community Bus (first community bus system in BC), Gabriola Island Community Investment Co-operative (providing small loans to community members), and Island Futures (heat pump & biodiesel social enterprises). She is the co-author of Changemakers (New Society Press), which explores successful system changing initiatives.

- **Paula Brent (BA, Media & Public Interest – Western University)**

Paula provides the marketing expertise. She was a Digital Marketing Specialist at Mountain Equipment Co-op then moved to The Haven on Gabriola as Marketing Director and now runs her own Marketing & Communications business, specializing in local engagement, circular economy, nature connection & community wellbeing.

- **Maureen Connelly (PhD, Director of BC Centre for Architectural Ecology at BCIT)**

Maureen is responsible for all R & D related to our acoustic sound panel product. She specializes in acoustic capacity and properties; her initial research focused on the quantification of the acoustical capacity for green roofs and walls to reduce sound transmission through buildings. Maureen has won numerous awards for her innovative work on Green Roofs.

- **Yarrow Koontz (BFA-ECUAD, Diploma in Fashion Arts – Vancouver Community College)**

Yarrow currently studies natural dyes and textile techniques through the Maiwa school of Textiles. She has been teaching natural indigo dye workshops since 2019.

Appendices – Table of Contents

Please find attached the following accompanying documents.

- **Budget:** *C2C Phase 3 Funding and Outstanding Building Costs*
- **Budget:** *C2C & ReLove Local Operating Budget - January 2023 to December 2023*
- **Historical:** Phase 1 report
- **Historical:** Phase 2 report
- **Marketing:** C2C ReLove Local Marketing Images
- **C2C Building:** Makerspace Vision and Objectives Planning Document
- **C2C Building:** Building plan photo/plans
- **Acoustic panels:** Market Research – Acoustic Paneling and Shredded Textiles
- **Acoustic panels:** Summary of Acoustic Panel Prototype Development
- **Non-profit society documentation:** GIRO Financial Information for 2021
- **Non-profit society documentation:** GIRO Board of Directors



**700 Tin Can Alley
Gabriola Island, BC**

Appendices Index

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C2C Phase 3 Funding and Outstanding Building Costs

Phase 3 Funding

	2021	2022		RDN	ICET	Pacifican	Total
Expenses	28488.62	42099.82		103000.00			
Assets	12477.52	113825.08		92000.00			
	<u>40966.14</u>	<u>155924.90</u>					
Wages	12000.00	5000.00					
	<u>52966.14</u>	<u>160924.90</u>	213891.04	195000.00	31000.00	52246.00	278246.00
							<u>213891.04</u>
			<i>These are the remaining dollars of previous RDN funding</i>			RDN	64354.96
			<i>These dollars restricted to building and solar costs</i>			ICET	19000.00
			<i>These dollars restricted to community outreach, acoustic panel R&D</i>			Pacifican	45754.00
							129108.96

Building costs outstanding

Building Contractor	55000.00
Cisterns	9200.00
Commercial dryer	2000.00
Doors - fire doors	5500.00
Electrical	5000.00
Engineer - Letter of Assurance	1000.00
Excavation	5000.00
Furniture	2200.00
Heat Pump	4000.00
Interior & Exterior Finishing	15500.00
Sewing Machine - Refurbishment	2000.00
Shredder Table	3000.00
Water Pump	600.00
Windows	3000.00
	<u>113000.00</u>
	<i>Remaining RDN funding (approx)</i>
	-64000.00
	<i>Remaining ICET funding</i>
	-19000.00
	30000.00



C2C & ReLove Local Operating Budget - January 2023 to December 2023

Expenses

	Monthly		
Manager/Educator	\$1,940.83		23290.00
Tailor/Assistant/Educator	\$1,300.00		15600.00
Benefits	7% of Manager & Tailer wages		2722.00
Advertising			1000.00
Bookkeeper	200	12	2400.00
Electrical			1200.00
Maintenance			1200.00
Supplies			1200.00
Online store			2000.00
Marketing	1000	12	12000.00
Makers Products - unstuffed			10000.00
Makers Products - stuffed			6000.00
Acoustic panels- includes consultant fee			7800.00
Packaging			1000.00
All Insurance			2000.00
Shipping/Freight			1000.00
Contingency	10% of Total Expenses		<u>7161.00</u>
Total Expenses			\$ 97,573



Revenue

Grant request

RDN	\$37,545.00
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Maker/Entrepreneur

	<i>Annual Fee</i>	<i>No. of Memberships</i>			
Maker Space membership	\$50.00	50.00			2500.00
	<i>Hourly Fee</i>	<i>hrs/week</i>	<i>weeks</i>		
Maker Space Rental	\$10.00	4	50		2000.00
		<i># of people</i>			
Skill building Sewing 101	\$200.00	Four times a year	12		9600.00
	Hourly fee				
One on one mentorship	\$20.00	Four times a year			3800.00
Meet, mend, make gatherings	\$5.00	24 per year	12		1440.00
	<i>Annual Fee</i>				
Co-Lab membership	\$20.00		20		400.00

Sales

	<i>Monthly Sales</i>	<i>Average Price</i>	<i>Months</i>		
ReLove Local - stuffed product line	10	\$80.00	12		9600.00
ReLove Local - unstuffed product line	\$1,000.00		12		12000.00
	<i>\$/pound</i>	<i>Pounds per week</i>	<i>Weeks</i>		
Shredded Fibre	\$4	10 Lbs	50		2000.00
	<i>Hourly Rate</i>	<i>Hours per week</i>	<i>Weeks</i>		
Tailor - repairs for customers	\$22.00	2	50		2200.00
	<i>\$/bag</i>	<i>No. bags per month</i>	<i>Months</i>		
Waste Textile	\$4	6	12		288.00
	<i>Hourly Rate</i>	<i>Hours per week</i>	<i>Weeks</i>		
Shredding service	\$25	2	50		2500.00
	<i>Monthly Sales</i>	<i>Average Price/Panel</i>	<i>Months</i>		
Acoustic sound panels	8	\$292.50	5		11700.00

Total Revenue

\$97,573.00

Net

ZERO



GIRO Textile Initiative (C2C Threads) report for Phase 1 activities

Phase one C2C activities included establishing governance, business planning, community engagement and product selection, documenting process through video, purchasing equipment, and research regarding the proposed building and equipment. Since the RDN funding (\$31 K for Phase 1, \$72 K for Phase 2) was awarded in January 2021 the following actions have been taken:

Governance and Business Planning

- ✓ GIRO C2C Threads (C2C = cradle to cradle) established as the name we will use that encompasses the philosophy for the circular model of transforming discarded textiles into reusable products.
- ✓ C2C Threads advisory panel created consisting of two GIRO Board members, C2C coordinator, a director from the Economic Community Development and a marketing executive who has expertise in business start-ups. This panel meet every two weeks to review actions and challenges and strategize next steps.
- ✓ Created an online platform through the GIRO website to channel community members who wanted to be involved in volunteering, creating a potential product-line from the textile waste stream, and/or receive a C2C Threads newsletter.
- ✓ GIRO textile Initiative proposal was awarded a position with Vancity sponsored Project Zero Incubator. This is an 8-month mentorship for circular economy enterprises. The sessions address all areas of business: assessing the external market, finance and funding, networking, operations, and legalities. The final session with Project Zero will be an opportunity to pitch the C2C project to BC stakeholders and industry leaders in sustainable circular models.
- ✓ Completed C2C Threads Business Plan outlining proposed products and services, marketing, funding, budget projections and project plan.

Community Engagement and Product Selection

- ✓ A community textile pick-up event was held in which 13 designers selected fabric material from the GIRO waste stream. The designers then spent a month creating a potential product that they entered into the C2C design contest.
- ✓ Products for the contest were dropped off at the local community hall and ranked by an assessment panel. The 6 assessors were hand selected by C2C Threads and have skills in business, design, marketing, and textiles.
- ✓ The assessors scored the products on the following criteria: marketability, design, functionality, and construction. The highest-ranking products were evaluated by the C2C Threads advisory panel to determine the top three winners, which were awarded \$500 each.
- ✓ The three winning products are: Acoustic sound panels, Dog beds (stuffed applications) and UnPaper towels.



- ✓ All the designs were highlighted on the GIRO website and through an article in the local Sounder newspaper.
- ✓ Intellectual property rights contracts for the three winning designs have been signed over to GIRO. (One is pending due to BCIT research with the professor who is designing the panels with her grad student – more information about the product below).
- ✓ Market feasibility of the three winning products is currently underway.
- ✓ Soft launch of UnPaper towels occurred August 22nd at the C2C Threads Fashion show and fundraiser event. The UnPaper towels sold out.

C2C Threads Fashion Show and Fundraising Event August 22

- ✓ C2C Threads held a community event, which used some of the textile waste. Community designers created outfits for a fashion show as well as items for a silent auction. Food, drinks, an information table and a children's tent were also part of the event.
- ✓ The event was sold out (150 tickets) and designers took home 50% of the profit on their items. C2C Threads received the other 50%.
- ✓ Vanessa Craig and Ben Geselbracht attended the event as well as Paul Manley and Sheila Malcolmson.
- ✓ There was a lot of interest expressed in the C2C initiative and donations were sent to GIRO for the C2C project.
- ✓ Money raised at the event, plus subsequent donations, will fund the equipment within the Maker Space.

Marketing and Media

- ✓ The project has received substantial media attention: C2C Threads was also the featured presentation at the June 2021 Coast Waste Management Association roundtable on textile waste.
 - CBC. (2021, January 14). *On The Island with Gregor Craigie: Recycling clothes on Gabriola Island*. <https://www.cbc.ca/listen/live-radio/1-48/clip/15818716>
 - CBC. (2021, January 16). *Gulf Island recycling organization seeking funds to turn garbage garments into textile treasures*. <https://www.cbc.ca/news/canada/british-columbia/gabriola-textile-recycling-1.5874879>
 - CHEK News. (2021a, January 14). *Recycling organization on Gabriola Island plans to repurpose tossed clothes*. <https://www.cheknews.ca/recycling-organization-on-gabriola-island-plans-to-repurpose-tossed-clothes-734297/>
 - CHEK News. (2021b, July 26). *Road to Recovery: Exploring solutions to combat clothing waste*. <https://www.cheknews.ca/road-to-recovery-exploring-solutions-to-combat-clothing-waste-850325/>
 - Island Coastal Economic Trust. (2021, July 19). *Textile Incubator On Gabriola Island To Turn Clothing Waste Into Economic Opportunity*. <https://islandcoastaltrust.ca/news/textile-incubator-gabriola-island-turn-clothing-waste-economic-opportunity>
 - Nanaimo News Bulletin. (2021, January 9). *RDN looks at providing \$103,000 for clothing recycling on Gabriola Island*. <https://www.nanaimobulletin.com/news/rdn-looks-at-providing-103000-for-clothing-recycling-on-gabriola-island/>



- Nanaimo News NOW. (2021, January 30). *Gabriola Island non-profit breathing new life into old clothes*. <https://nanaimonewsnow.com/2021/01/30/gabriola-island-non-profit-breathing-new-life-into-old-clothes/>
 - Oceanside News. (2021, January 28). *RDN approves \$300,000 in grants to help keep materials out of landfills*. <https://www.oceansidenews.ca/2021/01/28/rdn-approves-300000-in-grants-to-help-keep-materials-out-of-landfills/>
 - Coast Waste Management Association. (2021, June 25). *Textile Recycling Roundtable – CWMA*. <https://cwma.ca/events/textile-recycling-roundtable-june-25-2021/>
 - Toronto Star. (2021, January 14). *GIRO forging ahead with textile recovery social enterprise*. The Toronto Star. <https://www.thestar.com/news/canada/2021/01/14/giro-forging-ahead-with-textile-recovery-social-enterprise.html>
 - *Watershed Sentinel* (in press, September 2021).
- ✓ A Marketing expert was hired on contract to review the proposed products and identify a marketing strategy that included branding, packaging/presentation options, price points, buyers, and messaging.
 - ✓ The initial branding and tags (with information about the designer and about the recycled product) were used at the soft launch of the unpaper towels on August 22nd and there was a positive reaction.
 - ✓ The messaging provided was used in several media interviews for TV, a magazine and in the information shared at the Fashion Show event.

Video Documentation

- ✓ A videographer filmed the textile pick up event and the design assessment event, where the assessors ranked the contest entries.
- ✓ The top three designers were interviewed by the filmmaker to document their process.
- ✓ The filmmaker interviewed board member Fay Weller and coordinator Michelle Kresnyak to document the issue of textile waste, its environmental impact, new industry regulations and solutions for communities.
- ✓ A videographer filmed the Fashion Show and Silent Auction event was filmed.

Equipment purchased

- ✓ Energy efficient washer and dryer purchased and installed at GIRO to increase the diversion of clothing from discard to reuse. This is one of the “quick fixes” that we were excited to do to allow clothing to be resold as is after cleaning/stain removal. (Purchase and installation invoices attached). Tracking of laundered and sold items will highlight % of diversion from previous data collected in November 2020.
- ✓ Serger machine purchased to provide community designers with a more professional finishing option for their products.



Building

- ✓ Buildings needs and corresponding floor plan established based on projected activities. We hired someone with experience in the construction field to analyze different building options, including conventional build, sea containers, barged house, timber frame building and log building.
- ✓ Due to input from the community it became apparent that many people would like to have access to a “makers space”, to establish themselves as a textile entrepreneur as well as to have access to equipment and to the GIRO textile waste stream. This added another element to the space creation on the GIRO property site which we believe will help support the use of the textile waste stream as well as create jobs, offer supports to help facilitate entrepreneurs, boost island economy and resiliency and open other funding streams under social innovation and infrastructure models.
- ✓ We received a \$50,000 grant from the Island Coastal Economic Trust (ICET) which will be used to add a maker space to the planned building.
- ✓ To add the maker space component to C2C threads we applied to Island Coastal Economic Trust (ICET) for \$50 K. We were successful and will be receiving the \$50 K from ICET for the Maker Space.
- ✓ Building uses were submitted to Islands Trust for local zoning purposes. Islands Trust initiated a by-law amendment to support the actions of the C2C initiative. The Local Trust Committee projects approval of the proposed amendment by November 2021.
- ✓ We have a firm quote from a builder and are in the process of getting the technical drawings drafted and plan to submit a building permit application to the RDN.

Shredder and corresponding Electrical needs

- ✓ As 40% of the GIRO waste stream would need to be shredded first before it can be used in other stuffed applications (due to it being worn-out poly or poly-blend material), we have been researching shredding equipment since January. Multiple shred tests have been done by two different companies for us to ascertain which piece of equipment will be required to shred the poly to the desired size. The acoustic sound panels will require a very specific shred size to ensure maximum sound absorbency.
- ✓ Successful purchase of a potential shredding machine will require GIRO to bring in new 200amp service onto the property, which will require a new pole. The estimated cost for this upgrade is \$10,000. The GIRO Board will fund this upgrade to support the project moving forward. We are also researching the option of a hydraulic energy source to power the shredder and a solar system for some of the electrical needs.
- ✓ An electrical engineer was contracted to carry out an analysis of the best shredder available that would meet our needs. The analysis is completed with the recommendation that we proceed with Mequipco and their \$66,000 shredder.
- ✓ We are researching a solar system for some of the electrical needs.



Phase One Funding (\$31,000)

\$9,400	Coordination & Business Planning
\$6,100	Equipment Purchase and installation
\$3,500	Community Engagement and Event Costs
\$3,500	Products and Marketing
\$4,000	Videographer
\$1,150	Shredder analysis
\$3,200	Building options analysis & drawings

Phase Two Funding (\$72,000) will be spent on construction of building. Island Community Economic Trust funds (\$50,000) will also be used to construct the building, along with GIRO's contribution of land, and volunteer hours and electrical upgrades to support shredding machine.

Summary

The project has accomplished all the projected activities for Phase I as outlined in the proposal presented to the RDN in November of 2021. The project has evolved based on community input and has now includes the construction of a maker/entrepreneur space, which will be funded by the ICET grant we have received. The funding from RDN has been key in undertaking the feasibility and business planning necessary to get this project off the ground. We had expected federal funding from Western Diversification Canada for the shredder and components of the building, but they announced in July that that funding was on hold.

We are looking forward to working with the RDN to implement Phase 2 of this project.



GIRO Textile Initiative (C2C Threads) report for Phase 2 activities

Phase two activities included marketing, establishing contracts with makers, developing systems, product design and prototyping, product launch, shredder purchase, continuing R&D for sound panels, building plans, zoning amendment and permit application.

Marketing and Sales for C2C products

Phase 2 focused on marketing, branding and logo designing for the upcycled products. We have contracted with Paula Brent to oversee all aspects of marketing for C2C Products. From September to December the following actions were completed:

- Established contracts with makers and apprentices. Makers are paid to develop prototypes for products and produce inventory for each new design. Apprentices are compensated for training time to learn skills and steps to create products. Each product created is tested with a focus group to gather feedback and adjust designs as needed.
- Systems developed to support each stage from discard to upcycle to sales: fiber selection, sorting and washing discarded textiles to be picked up by makers, product quality control, pricing, tagging new product, inventory management and on-site product marketing/story telling.
- Promotional - Photo shoots carried out creating “lifestyle” images. These images are shared on C2C website, social media platforms, digital ads and as posters on our display of products at GIRO and off-site events.
- Social media ads for ReLove Local reaching over 140,000 strategically targeted people, over 170 Facebook page likes and 55 followers on Instagram. Check out our ReLove Local collection on our new websites: relovelocal.ca (home of the collection) or cradletocradle.ca (home of the initiative) for more information.
- Researched comparable products online to establish price points. Our aim is to make the products affordable, promote consumer behaviour change to replace single-use products whilst also paying a living wage to the makers.
- Researched environmental impact and costs for distribution: shipping and packaging
- Researched all potential avenues for distribution and associated costs: retail outlets with similar values, local markets in central Vancouver Island, Ecommerce, on-site at GIRO.
- Set up Square POS for offsite sales and attended first pop-up market reaching new audiences.
- Engaged existing supporters with enewsletter updates and hosted special launch party to kick off ReLove Local sales
- Off site events and on-site GIRO sales for ReLove Local products from September to December \$4,539.65
- Total \$\$ from donations (Canada Helps and in person at GIRO) to C2C initiative from September to December \$2,710



Equipment purchase

Research for various shredder machines was completed and the shredder was ordered from a Canadian company Mequipco who partner with JWCE in California to manufacture the equipment. The shredder was selected based on tooth size and configuration which will determine the size of shred that will be produced. The shred size is one necessary component which will determine sound absorbency potential in the acoustic panels. The shred will also be used as fiber in our stuffed products (pet beds, yoga cushions and floor pillows) and sold as bags of raw shredded fiber to anyone making stuffed applications. The first installment for the shredder was made in Phase two (November 15th \$12,762.40 incl GST).

Building

- Building design plans were confirmed. The most suitable option for the site at GIRO that aligned with our budget is a hybrid post and beam/stick build. Site plans were completed, and permit application submitted in November 2021. To help with some of the expenses associated with the build, part of the finishing work for the building will be done with volunteer labour (approx. \$17K).
- The amendment to the GIRO bylaw to support the new activities for the C2C textile project was submitted to the Islands Trust in September and approved in November 2021.
- Building permit application submitted in November. Timeline for permit approval 16 weeks. The building site plans had to be revised to a different location on the property due to proximity to the existing GIRO building. The new site plan location is further away from the HYDRO pole and therefore will incur some additional electrical costs due to increased trenching and cable.

Video Documentation

The videographer filmed the product launch at a special member only event at GIRO on November 26th and interviewed community members to find out their reactions to the new ReLove Local collection. Very positive response with \$489.50 in sales.

Acoustic Sound Panel R&D

BCIT professor Maureen Connelly continued R&D on the acoustic panels completing sound absorbency tests using various densities of fiber and shred size. She is conducting market research for the panels to assess where our niche in the market will be and whether we will sell the panels online as standard sized panels or with a consultancy to assess client needs based on room size, existing reverberation challenges and aesthetics. Maureen is also partnering with a local carpenter to create a prototype frame for the acoustic panel using construction wood waste. She aims to have a prototype ready to undergo testing accreditation by June 2022.

Milestones since January 2022

As there have been some significant milestones since January 2022 I have highlighted some big expenses that have now been incurred:



Shredder

All three payments have now been made on the shredder and the shredder has been delivered. Items below show date of expense and amount.

November 2021 \$12,762.40

January 2022 \$12,762.40

March 2022 \$38,287.20

Total shredder cost \$63,812.00 (incl GST)

We have just learned that we were successful in receiving the funding from Western Diversification (Pacifcan) and so \$22K of the shredder costs will be covered by the Pacifcan grant.

Building

The building permit was approved in March 2022. Excavation for the build commenced March 8th.

Due to increasing prices for building materials the building contractor recommended that we purchase all the materials as soon as possible. The first payment for materials has been made:

February 26th \$35,000.00

Building costs to date \$35,000.00

Summary

The project has accomplished many of the projected activities for Phase 2 as outlined in the initial proposal to the RDN in November 2021. The project was stalled on the building timeline primarily due to permit delays and site plan building design constraints. We anticipate that the build will move along quite quickly now that we have the permit approved.

We look forward to sharing our next report with you in a few months.

Kind regards,

Michelle Kresnyak



C2C ReLove Local Marketing Images



Locally
upcycled
& handmade
zero waste
gifts and
goods!



Find **ReLove Local** at **Nova** for the
Thanksgiving Studio Tour, October
8-10, and beyond!

Visit **GIRO's ReStore** on Saturday to learn more
about our textile rescue initiative.





Makerspace Vision and Objectives Planning Document

Vision Statement

Leading and inspiring system change in the Textile industry.

Objectives

- To create a local financially sustainable cradle to cradle (C2C) textile enterprise
- To produce durable useful goods using techniques that will eliminate the textile waste stream
- To support textile entrepreneurs in all aspects of C2C, sustainable textile businesses
- To create learning opportunities that inspires a rethinking of textile consumption and waste patterns
- To scale up C2C Threads into Nanaimo and inspire other communities and organizations to initiate C2C approaches for their textile waste stream.

Makerspace Marketing strategy

- Be the solution not the pollution! Clothes not fashion. Learn how to make clothes that tell a new story cut from old cloth.
- Join a collaborative workspace, where individuals come together to solve problems around waste and creativity! A place where we actively collaborate on solutions to questions of our throw away culture; develop new ways of working; help create a local supply chain and a circular, hand-made economy!

Naut'sa mawt – Hul'qumi'num Coast Salish

Living by the legal principle of Naut'sa mawt means moving through the world with mutual respect, and building trusting relationships based on open and honest communication, transparency, sharing, and inclusiveness. By keeping an eye on the common good shared by humans and non-human relatives, abiding by Naut'sa mawt is key to developing a vision for a sustainable future.

- **Open loop** – shredded natural fibres like silk, wool, linen, and hemp to add to wool carding to spin into yarn for sale.
- **Downcycling** - Everything cloths, napkins, wipes – pet beds – shredded fabric
- **Upcycling** – using the textile waste stream to make new clothing. Waste stream textiles can be cut into strips and woven to make 'fabric' and constructed into garments for sale. Yarn woven from C2C textiles and waste wool, can also be woven into fabric, and made into garments using open sourced, zero waste patterns.

Revenue Goals for Makerspace

Create a sustainable business with a diverse income with staff and volunteers.

Potential Makerspace partnerships

Gabriola Arts Council (GAC) Artist in Residence partnership - An artist residency is usually an opportunity to stay in a specific place and create and develop work without the distractions of daily life. Artist-in-residence programs invite artists and other creative professionals to a temporary workspace away from their usual environment and everyday life, to reflect, research, present and create. The residency opportunity encourages and enables artists to explore new materials, connect with new people, experience life in a new location and integrate that experience into their art. Artists pay for their accommodation, travel, food, and supplies. Artist in Residence could teach a workshop and hold an exhibition of works for sale. Grants are available.

Vancouver Island Fibre Shed – join their community and directory as a source for materials and share knowledge. Their mission is to link farmers, processors, makers, and consumers in creating a local textile economy based on renewable resources and climate beneficial farming methods.



Snuneymuxw First Nation – “imagining the potential of Makerspaces inspired by Indigenous worldviews and cultural practices: that blends the past and the future, knowledge transmission between Elders and youth; a space that promotes deeper awareness of Indigenous culture through collaborative “making” projects” – Tania Larsson Indigenous artist

The Gabriola Commons – a partnership to share space and ideas around common knowledge and open source; plant a ‘sewing seeds’ garden to share natural dye plants; create ‘Dinners to Dye for’ and other “Perma couture” events .

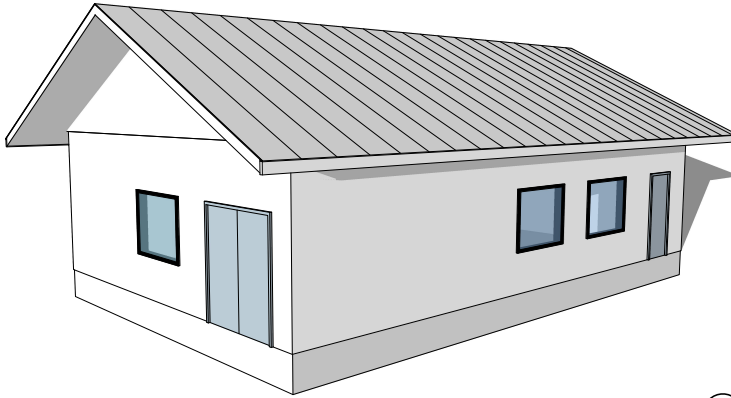
People for a Healthy Community (PHC) – partner with PHC to create a Social Enterprise to re-skill folks who need change in their life.

Gabriola Spinners and Weavers – amazing source of skilled Makers who have been living the talk most of their lives.

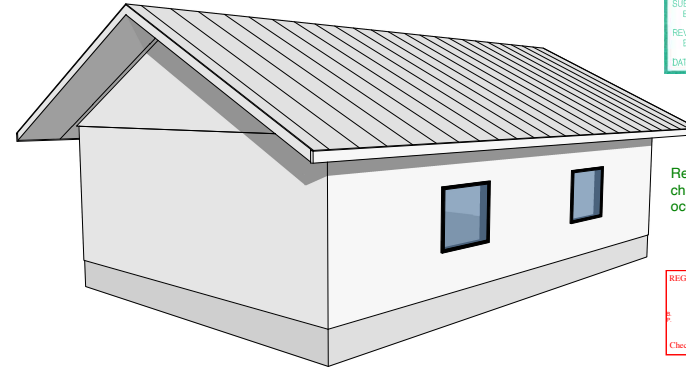
Gabriola Quilt-makers Guild – quilters are notorious for community-making and building. Quilting bees have been agents for change for women and people of colour for generations.

City of Nanaimo - work with Nanaimo City Council with their Donut Economic strategies; partner with training, education and funding through grants and other opportunities such as workshops and events.

Maiwa School of Textiles - collaborate with this leading, progressive, and innovative company to bring their workshop instructors over to Gabriola; create a ‘mentoring’ relationship to learn valuable skills from marketing to making; support their ethos by purchasing natural dyes, tannins and mordants.



1 SW Perspective View
A1.1 NTS



2 NE Perspective View
A1.1 NTS

REVISION		
SUBMITTED BY	Owner/Agent	
REVIEWED BY	dsaby	
DATE	09/13/2022	



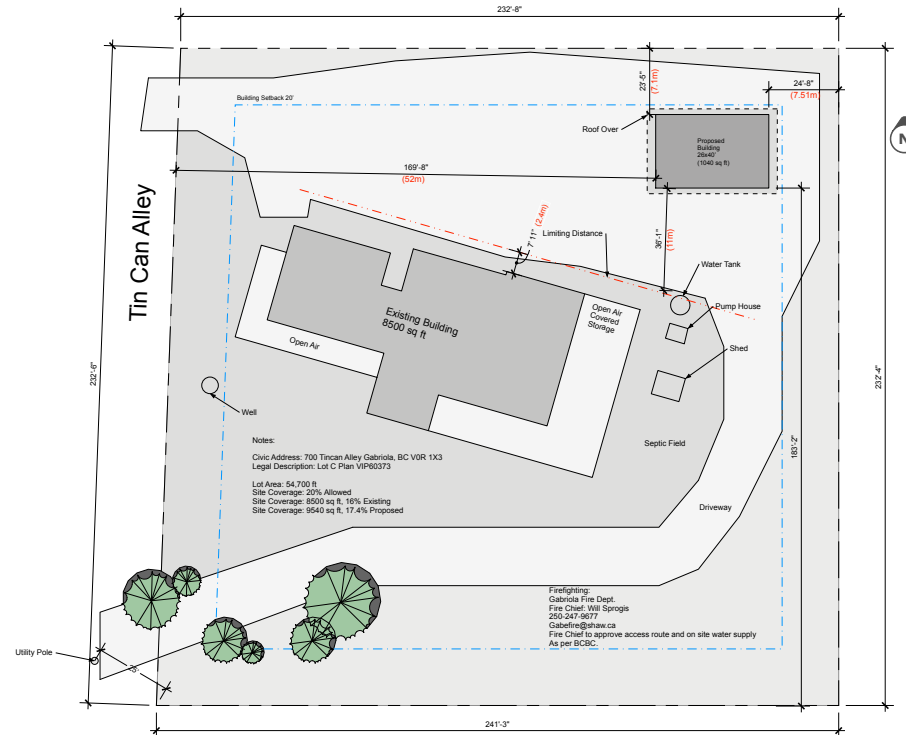
HUTCHINS DESIGN BUILD
250-325-1615
C.HUTCHINS@SHAW.CA

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change from F2 to F3
occupancy

REGIONAL DISTRICT OF NANAIMO
BUILDING INSPECTION SERVICE
21 - 00680
Checked by dsaby

#PR20210000680

- A1.1 PERSPECTIVE VIEWS, SITE PLAN
- A1.2 ELEVATIONS
- A1.3 FLOOR PLAN/ SECTIONS
- A1.4 FOUNDATION/ ROOF PLAN/ EXISTING BLDG. ELEV.



3 Site Plan
A1.1 1"=20'

Notes:
Contractor/ Owner Builder to verify all dimensions of Consultants drawings prior to work commencement.
All references to the "British Columbia Building Code" (B.C.B.C.) must be current edition.
All work shall comply with the current edition of the "British Columbia Building Code".
In the event that the proposed new or existing structure does not conform to the requirements of the B.C. Building Code an engineer may be necessary.

The use of these plans and specifications is restricted to the original site for which they were prepared. No use, reproduction or publication by any method in whole or in part is prohibited, unless authorized by GIBCO. Ownership of the design, plans and specifications is hereby with GIBCO.

**GIRO Fabric
Shredder Outbuilding**
700 Tin Can Alley, Gabriola BC
Contact: Fay Weller 616-9824

Document Date:
Sept. 2 2022

Document Phase:
PERMIT PHASE

rev.	date	remark
1	09/27/21	plan revision 1
2	10/13/21	Ver. 2.0
3	10/19/21	Ver. 3.0
4	02/03/22	Ver. 4.0
5	02/10/22	Ver. 5.0
5	09/02/22	Ver. 6.0 Update

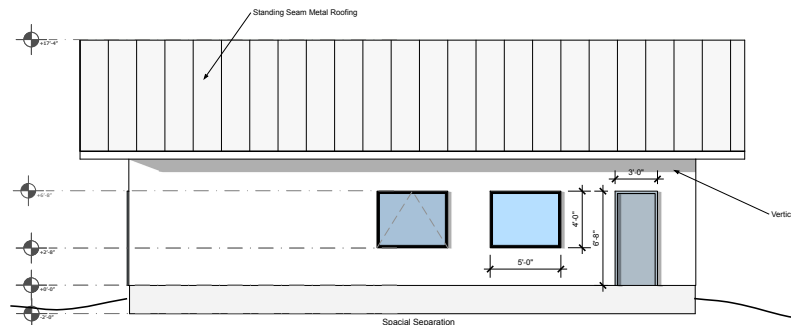
Page 1

A1.1



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1 South Elevation
A1.2 1/4" = 1'-0"

Notes:

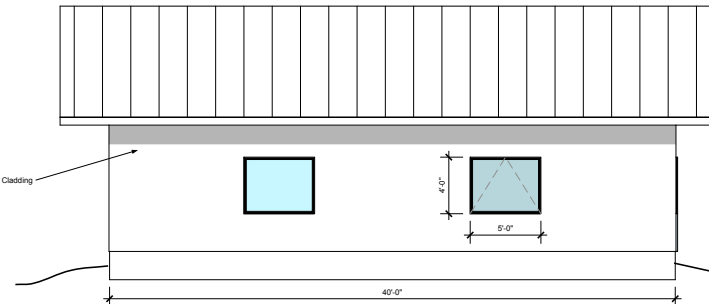
Building Un-Sprinklered
Timber frame / Light Wood-frame Construction
Low Hazard Industrial F3 - See Herold Engineering
Ref. Letter 6003-001

Special Separation
Limiting Distance = 36'-1" (11m)
Exposing Building Face = 400 Sq. Ft. (37.1 Sq.m2)
Unprotected Openings = 61 Sq. Ft. (24%)

Table 9.10.14.4
Halved Limiting Distance = 5.5m. (as per 9.10.14.3)
Low Hazard Industrial
Exposing Building Face = 40 m2
Allowable Unprotected Openings = 32%

1 Hour FRR for Exposing Face/ Non-Combustible Cladding

See A1.4.3 for Existing Building Separation Details

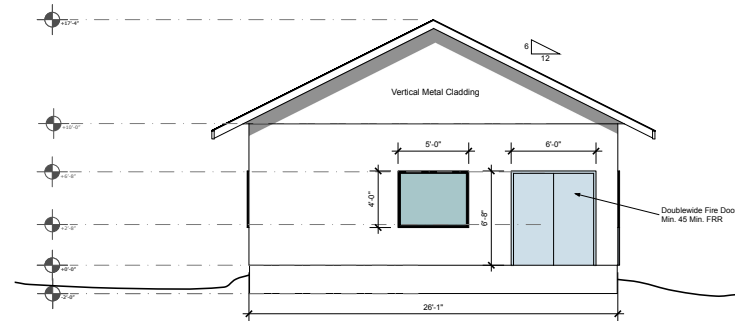


2 North Elevation
A1.2 1/4" = 1'-0"

Special Separation

Limiting Distance = 23'-5" (7.1m)
Exposing Building Face = 400 Sq. Ft. (37.1 Sq.m2)
Unprotected Openings = 40 Sq. Ft. (10%)

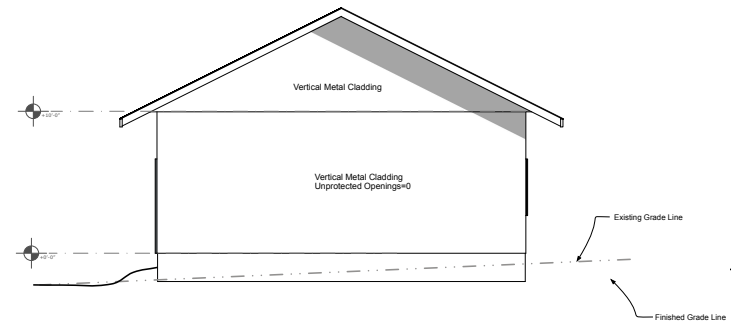
Table 9.10.14.4
Halved Limiting Distance = 3.5m. (as per 9.10.14.3)
Low Hazard Industrial
Exposing Building Face = 40 m2
Allowable Unprotected Openings = 11%



3 West Elevation
A1.2 1/4" = 1'-0"

Special Separation
Limiting Distance = 170' (52m)
Exposing Building Face = 425 Sq. Ft. (42m2)
Unprotected Openings = 20 Sq. Ft. (4.3%)

Table 9.10.14.4
Halved Limiting Distance = 25m. (as per 9.10.14.3)
Low Hazard Industrial
Exposing Building Face = 50 m2
Allowable Unprotected Openings = 100%



4 East Elevation
A1.2 1/4" = 1'-0"

GIRO Fabric
Shredder Outbuilding
700 Tincan Alley, Gabriola BC
Contact: Fay Weller 616-9824

Document Date:
Sept. 2 2022

Document Phase:
PERMIT PHASE

rev.	date	remark
1	09/27/21	plan revision 1
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3	10/19/21	Ver. 3.0
4	02/03/22	Ver. 4.0
5	02/10/22	Ver. 5.0
5	09/02/22	Ver. 6.0 Update

Page 2

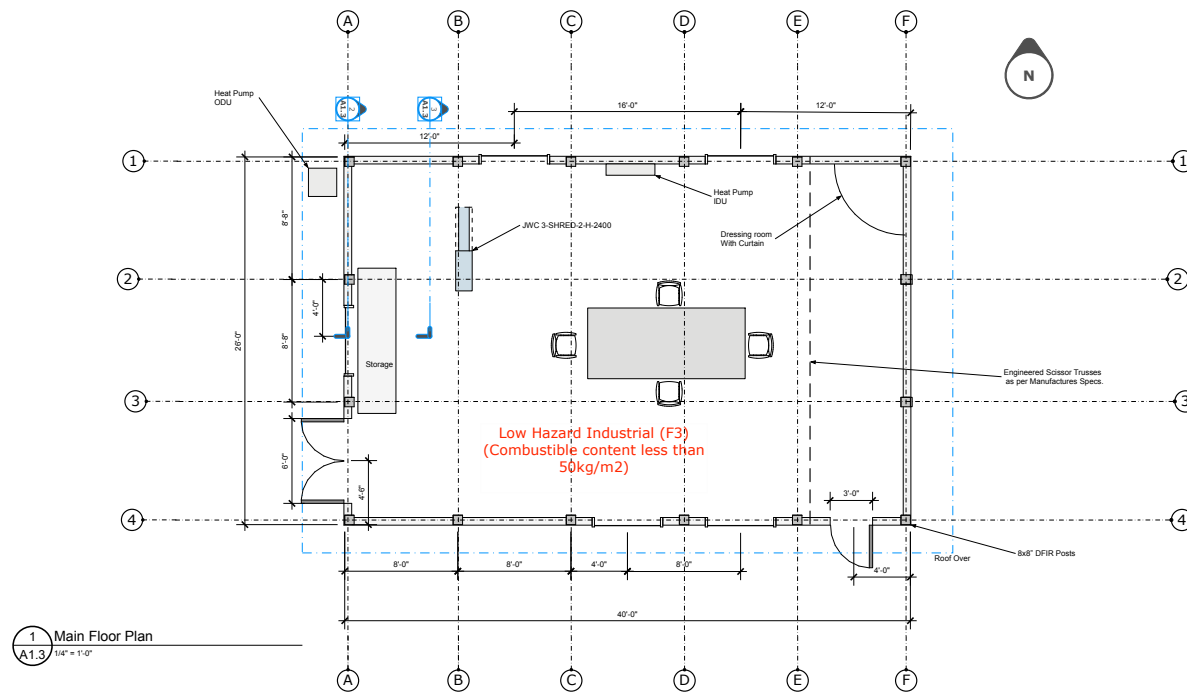
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SUBMITTED BY	Owner/Agent	
REVIEWED BY	dsaby	
DATE	09/13/2022	

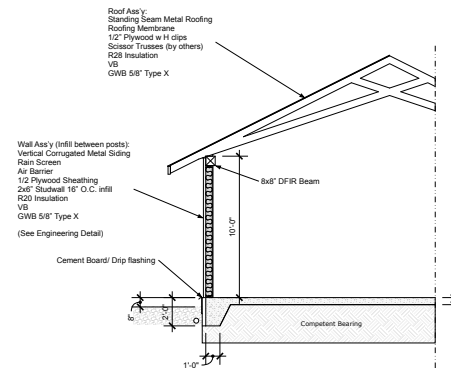
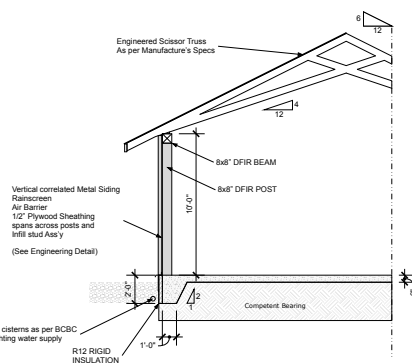


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HUTCHINS DESIGN BUILD
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GIRO Fabric Shredder Outbuilding
 700 Tincan Alley, Gabriola BC
 Contact: Fay Weller 616-9824

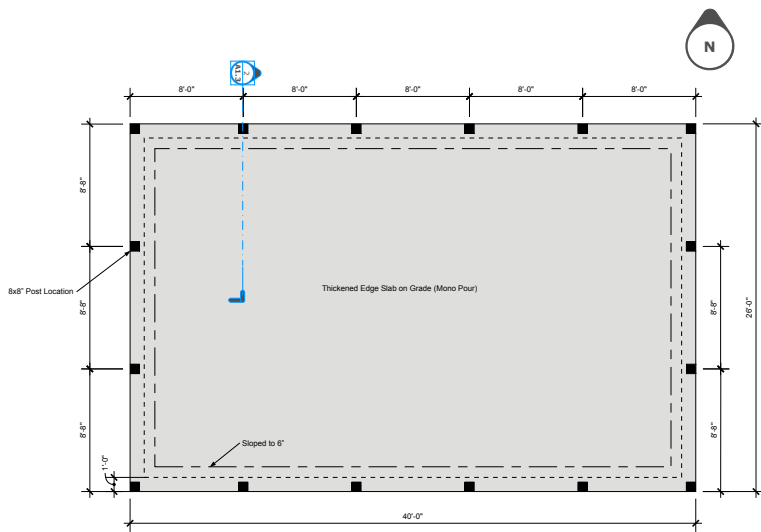
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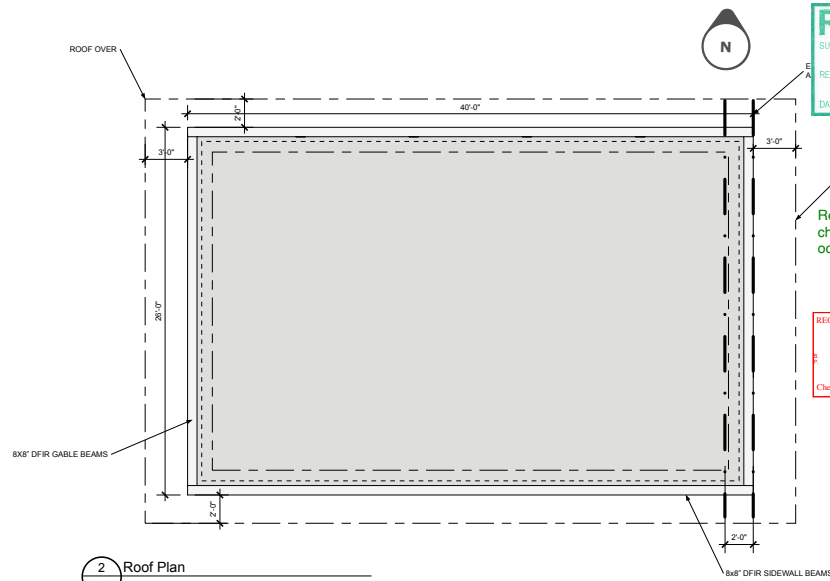
rev.	date	remark
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Page 3

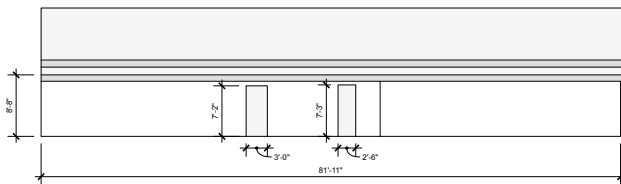
A1.3



1 Foundation Plan
1/8" = 1'-0"



2 Roof Plan
1/8" = 1'-0"



3 Existing Exposing Building Face
1/8" = 1'-0"

Special Separation

Limiting Distance = 7'-11" (2.4m)
Exposing Building Face = 738 Sq. Ft. (69 m²)
Unprotected Openings=50 Sq. Ft. (6.7%)

Table 9.10.14.4.
Halved Limiting Distance = 1.2m (as per 9.10.14.3)
Low Hazard Industrial
Exposing Building Face = 100 m²
Allowable Unprotected Openings = 7%

REVISION		
SUBMITTED BY	Owner/Agent	
REVIEWED BY	dsaby	
DATE	09/13/2022	



HUTCHINS DESIGN BUILD
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LOOKOUTS STICK FRAMED
ONSITE
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5	09/02/22	Ver. 6.0 Update

Page 4

A1.4



Market Research – Acoustic Paneling and Shredded Textiles

Gabriola Island Recycling Organization

700 Tin Can Alley
Gabriola, BC V0R 1X7
T: 250-247-9257

March 31, 2022

Market Research – Acoustic Paneling and Shredded Textiles

Over the course of 48 hours, we reached out to over 100 organizations on Vancouver Island and the Gulf Islands in the following sectors:

- Architecture
- Interior design
- Upholstery and furniture repairs and manufacturing
- Construction and contracting
- Realty
- Property management
- Travel, tourism, and accommodation
- Engineering and mechanics
- Manufacturing
- Food processing
- Radio
- Libraries
- Psychology and counselling
- Arts, crafts, and recreation



Our primary goal has been to determine if contacts saw a use for either acoustic panels or shredded textile stuffing in their business, and if yes, in what dimensions/volumes.

Acoustic Panels:

Of twelve responses to our inquiries, nine contacts confirmed that they were already using acoustic tiles or could see a future in which they might use them:

- From a commercial realtor: “Many tenants are requesting soundproofing between offices and rooms. However, I am told the main issue is the gap between the roof and drop-down ceiling. Saywell is used by many Landlords to come up with low-cost methods to reduce noise.”
- From a builder: “The conversation around acoustic panels is growing in my industry. More important than size though is aesthetic. My clients want them to mimic art so there has to be a variety of sizes and templates.”
- In property management: “We do use acoustic paneling from time to time, it depends on the space. We generally need them for ceiling sounds baffling.”
- From a mechanic: “My building actually has acoustic panels installed in our showroom.”
- In food processing: “It is not something we have considered yet. Production can be noisy but we also have a complicated ceiling and walls with lots of connections. For a facility such as ours, it would need to be durable, waterproof, and most likely approved by CFIA for use in food facilities.”
- From a builder: “We do use acoustic panelling on some of our projects. Size, colour and performance vary depending on what type of sound we are trying to mitigate. Sizing is often multiples of 24. Aesthetics do play a role, but often we use black or white panels due to cost point”
- From an architect: “We do use acoustic panelling. This website will give you a sense of what the competitor products offer in terms of sizes and applications. We have regularly specified acoustic products through sound-rite in Vancouver. They rep a number of manufacturers. They might be a good distributor for your product: <https://www.sound-rite.com/>”
- From the Comox Airport: “We make use of acoustic tiles on the majority of our high ceilings. Presently we have no plans to add to these areas but we are contemplating an expansion within the next five to ten years and that may create an opportunity to utilize your products.”
- From Campbell & Fairweather Psychology Group: “We would definitely have a use for acoustic panels! Especially those made from sustainable materials. Large panels that would blend in would probably make the most sense but looking at pictures of other acoustic panels online, the smaller sizes might be good for art detail and since the therapists design their own offices that could be a really nice option for them. Large panels would make the most sense on the ceiling, especially since the office spaces are fairly small. Please let us know when these become



available, we are very interested in purchasing some” [C&F has several offices across the Island & want to support local, sustainable initiatives. It would be worthwhile to contact them to let them know when the panels will go to market. Contact Leanne Campbell at info@cfpsych.ca]

Shredded textiles:

Of five responses, two could see a use for a filling made of recycled textiles:

- From an interior designer: “Yes I could see a use for this”
- From a sewing instructor: “I can't really imagine using this stuffing on a regular basis, but if I set up a class to make a pouf it could be useful.”
- From a sewing store: “most of our customers are quilters, recycled textiles would be too heavy.”
- From an upholsterer: “I wouldn’t have much use for that product. I could see it being best for furniture type cushions and I do mostly marine. I would contact a supplier like J.Ennis [located in Alberta].”

It is the researcher’s belief that local craft/fabric stores (not national or multi-national because they buy elsewhere in large volumes) see demand for recycled poly-filler (which is difficult to source) in relatively low volume packages from small scale crafters and artisans.

George Hanson, Managing Partner
Clayton Consulting
george@clayton-consulting.com



Summary of Acoustic Panel Prototype Development

Prepared for Fay Weller by Maureen Connelly - Aug 1, 2022

The stock panels have been designed for both inventory and quick turnaround production. Three prototypes are being developed; the *Basic panel*, the *Inclined panel*, and the *Low frequency panel*, each with optional facing. The internal fill, 97% polyester shred, provides the acoustical function of sound absorption. The face materials are either prequalified in terms of sound absorption or are acoustical transparent, that is, does not decrease the amount of sound energy absorption. Collectively the panel types and facing materials generates 9+ products options. In addition, custom product as a response to consultant specification (in house consultant package) will allow for alternates in panel sizes.

The determination of shred consistency, shred density and depth has been determined by ASTM E1050-19 Standard Test Method for Impedance and Absorption of Acoustical Materials Using a Tube, Two Microphones and a Digital Frequency Analysis System (See Figure 1). The overall Noise Reduction Coefficient the finished panel is expected to be greater than 0.70 and will be commercially competitive (See Figure 2) .

The panel frames are constructed from reclaim construction off-cuts. The standard unit size is 2' x 2' basic panel are constructed with standard rectangular section. The Inclined panel frame, illustrated in Figure 1 (dimensions are approximated), facilitates a delta depth of the shredded textile fibre. This improved the band widths of acoustic performance. The low frequency panel used an air-back spacer and has a greater depth from wall to face. Collectively the three panel can be used in combination to optimize sound control in a room and to create a dynamic wall composition which together with the aesthetic of recycle textile creates a unique solution for sound control and interior design.

The amount and composition of panels on the room walls will be determined by acoustically calculations or measured room constant and the objective of meeting a reverberation time criteria for a specific activity(s). Once the shredder is in place and sufficient volume of shred is available the overall panel depths will be verified by ASTM C423-22 Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

The facing aesthetic will be determined based on the interior design goals. The facing can express the ethos of C2C Threads with a recycled mesh which exposes the shred and provides a high-tech recycled aesthetic (see Figure 2a); painted artwork on T-covers (see Figure 2b); recycled sterilized fabrics printed (see Figure 2c and d) or an alternative customer ordered textile face may be considered.

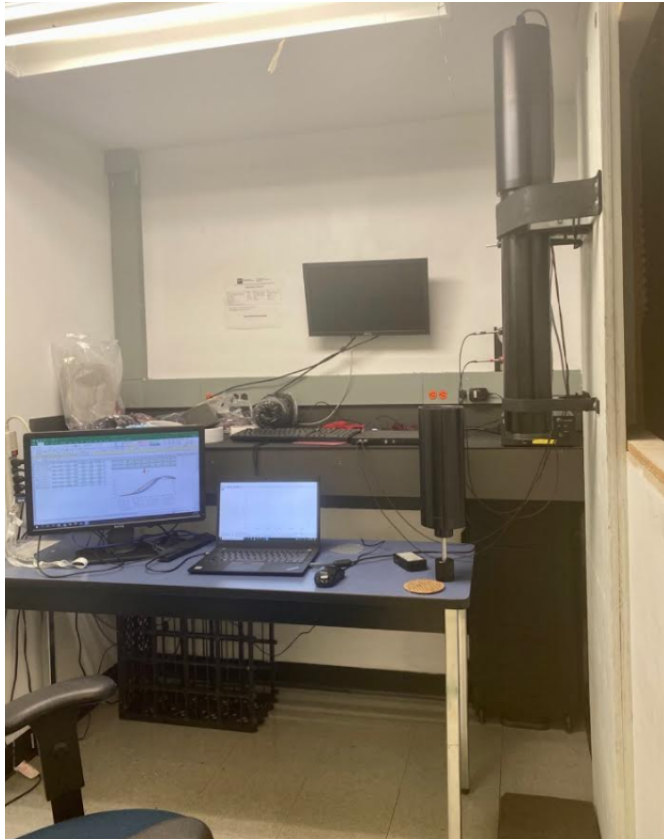


Figure 1 Impedance Set-up to determine absorption of shreds

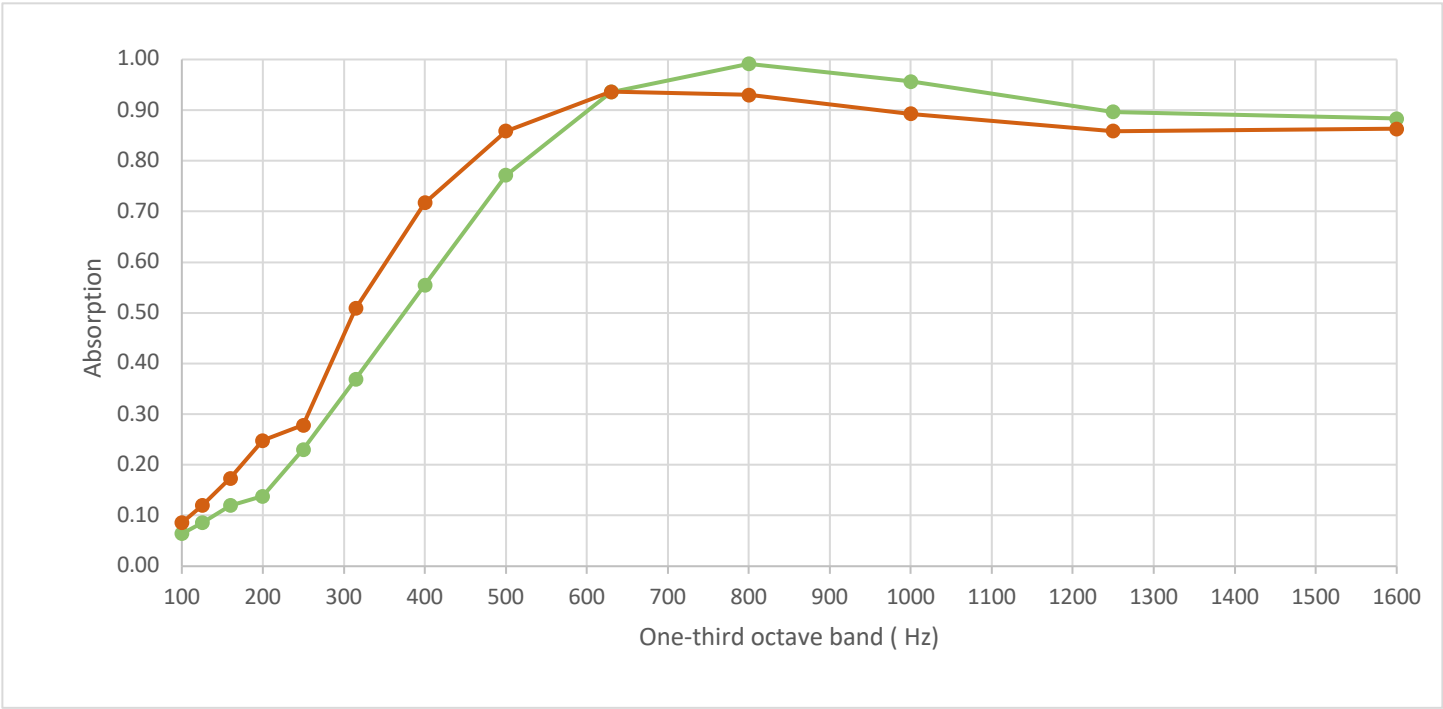


Figure 2 Data results of absorption of shreds

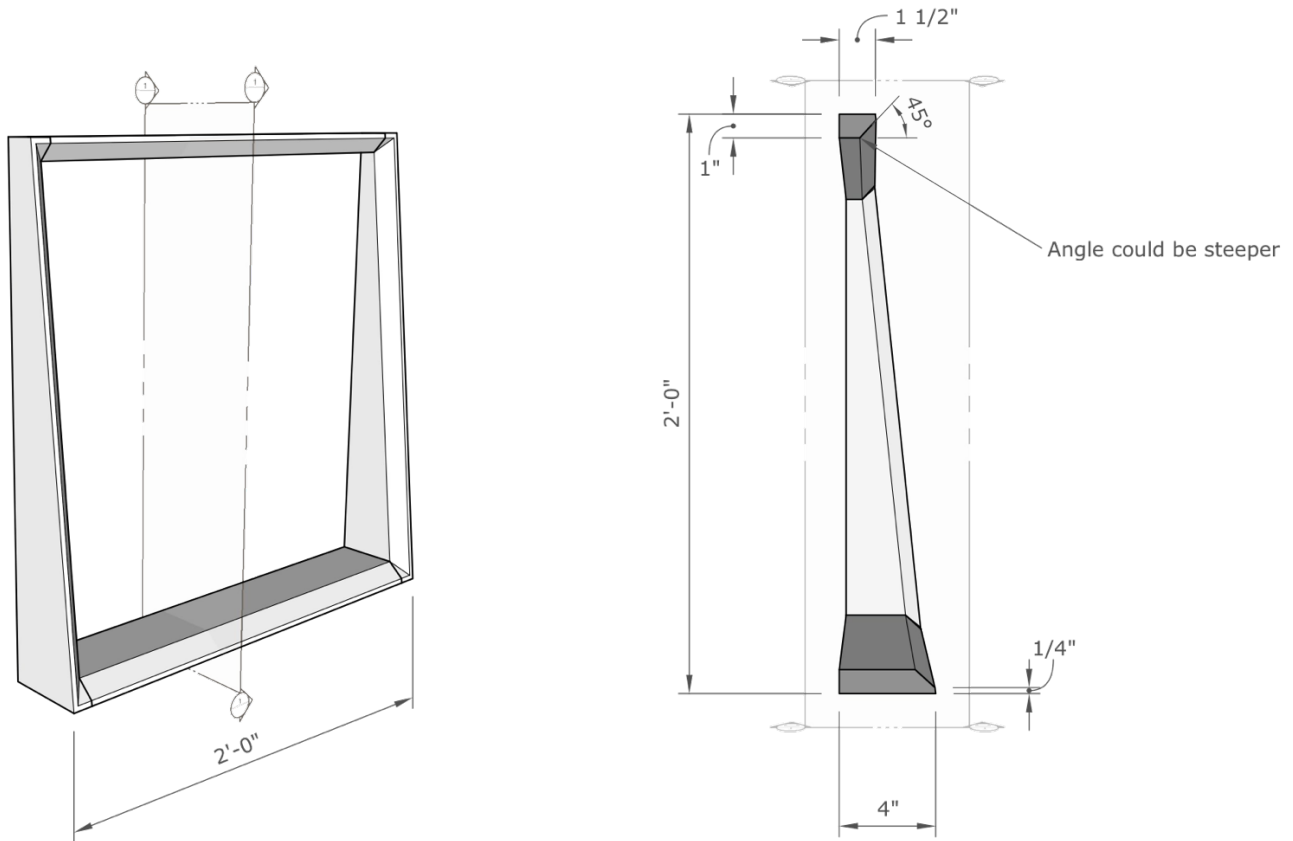


Figure 3 Sketch of Inclined panel

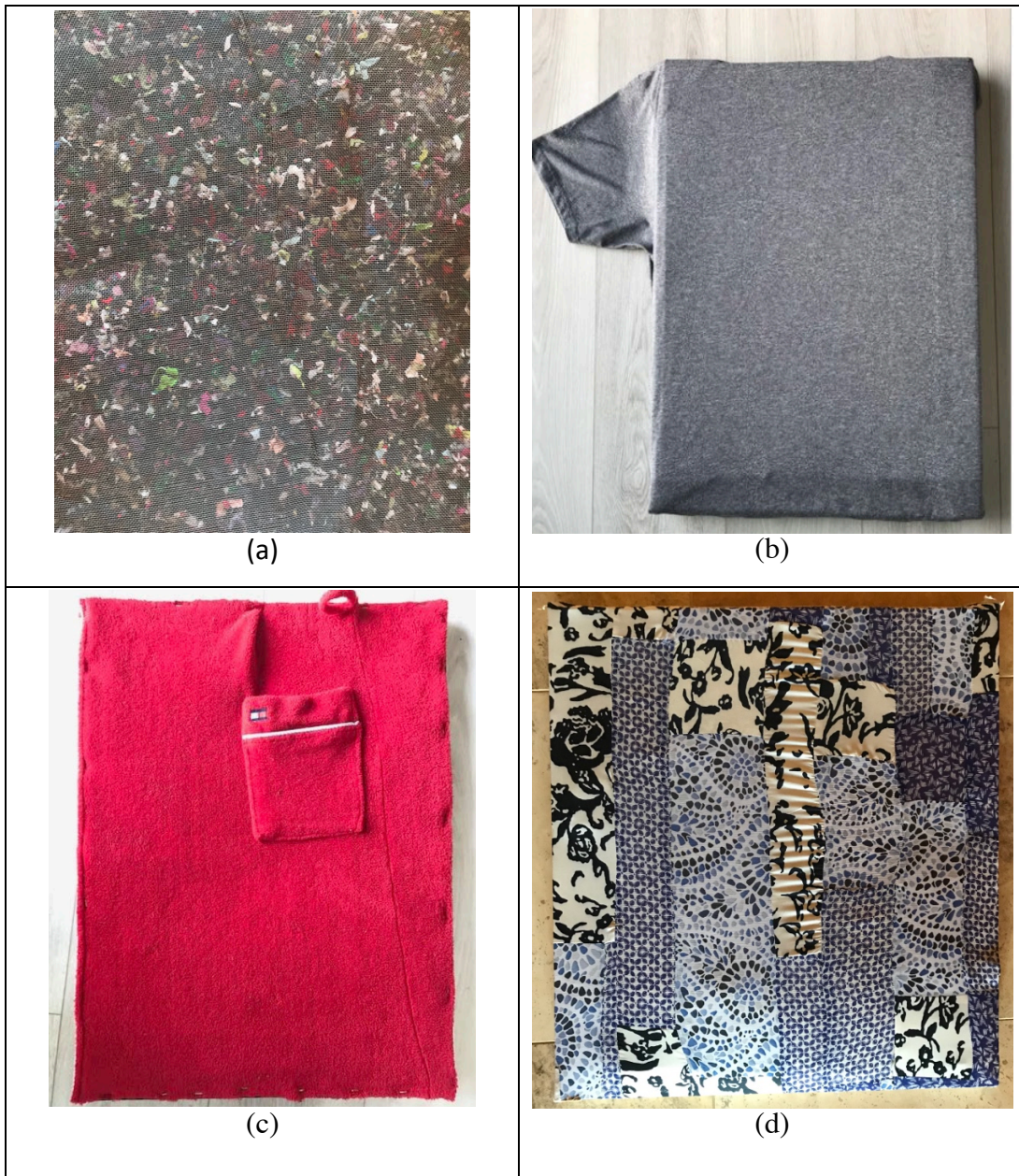


Figure 4 Facing Options

GABRIOLA ISLAND RECYCLING ORGANIZATION

FINANCIAL INFORMATION

December 31, 2021

Partners

Grant McDonald, CPA, CA*

Lee-Anne Harrison, CPA, CA*

Arina Jones, CPA, CA*

Joanne Novak, CPA, CA*

*Incorporated



COMPILATION ENGAGEMENT REPORT

On the basis of information provided by management, we have compiled the balance sheet of **Gabriola Island Recycling Organization** as at **December 31, 2021** and the statements of income and net assets for the year then ended, and Note 1, which describes the basis of accounting applied in the preparation of the compiled financial information.

Management is responsible for the accompanying financial information, including the accuracy and completeness of the underlying information used to compile it and the selection of the basis of accounting.

We performed this engagement in accordance with Canadian Standard on Related Services (CSRS) 4200, Compilation Engagements, which requires us to comply with relevant ethical requirements. Our responsibility is to assist management in the preparation of the financial information.

We did not perform an audit engagement or a review engagement, nor were we required to perform procedures to verify the accuracy or completeness of the information provided by management. Accordingly, we do not express an audit opinion or a review conclusion, or provide any form of assurance on the financial information.

Church Pickard

CHURCH PICKARD

Chartered Professional Accountants

Nanaimo, B.C.

May 26, 2022

GABRIOLA ISLAND RECYCLING ORGANIZATION

BALANCE SHEET as at **December 31, 2021**

	2021	2020
Assets		
Current		
Cash	\$ 194,588	\$ 85,949
Guaranteed Investment Certificates	26,508	78,662
Accounts receivable	15,912	22,077
Prepaid expenses	<u>6,073</u>	<u>6,328</u>
	243,081	193,016
Investments-(market value: \$48,384)	49,953	-
Property and equipment - Note 2	<u>255,818</u>	<u>259,492</u>
	<u><u>\$ 548,852</u></u>	<u><u>\$ 452,508</u></u>

Liabilities and Shareholders' Equity

Current		
Accounts payable and accrued liabilities	\$ 5,063	\$ 3,637
Wages payable	953	126
Due to government agencies	7,610	3,498
Deferred contributions - Note 3	90,572	33,402
Deferred revenue	<u>7,200</u>	<u>7,200</u>
	111,398	47,863
Long-term debt - Note 4	<u>40,000</u>	<u>40,000</u>
	<u>151,398</u>	<u>87,863</u>

Net Assets

Net assets	<u>397,454</u>	<u>364,645</u>
	<u><u>\$ 548,852</u></u>	<u><u>\$ 452,508</u></u>

Approved:

Barry Loescher

GABRIOLA ISLAND RECYCLING ORGANIZATION

STATEMENT OF INCOME AND NET ASSETS

For the year ended **December 31, 2021**

	2021	2020
Sales	\$ 310,131	\$ 205,656
C2C Threads Project		
Revenue	\$ 52,964	\$ -
Expenses	<u>(28,489)</u>	<u>-</u>
	<u>24,475</u>	<u>-</u>
Other income		
Miscellaneous	1,796	492
Interest	1,195	1,868
Dividends	82	1
Loan forgiveness - Note 4	<u>-</u>	<u>10,000</u>
	<u>3,073</u>	<u>12,361</u>
	<u>337,679</u>	<u>218,017</u>
Expenses		
Wages and benefits	217,298	130,654
Repairs and maintenance	24,868	32,383
Amortization	20,022	17,730
Scrap metal expense	11,414	-
Insurance	9,632	8,994
Bookkeeping	7,410	6,600
Vehicle operation	4,298	3,148
Professional fees	2,450	1,743
Travel	1,700	1,000
Interest and bank charges	1,341	551
Telephone and internet	1,285	1,398
Volunteer and staff appreciation	1,216	-
Utilities	1,134	2,190
Office supplies	802	787
Donations	-	15
Workshops	<u>-</u>	<u>226</u>
	<u>304,870</u>	<u>207,419</u>
Excess of revenue over expenses	32,809	10,598
Net asset beginning of the year	<u>364,645</u>	<u>354,047</u>
Net assets end of the year	<u>\$ 397,454</u>	<u>\$ 364,645</u>

GABRIOLA ISLAND RECYCLING ORGANIZATION

NOTES TO THE FINANCIAL STATEMENTS

For the year ended **December 31, 2021**

Nature of operations

Gabriola Island Recycling Organization is incorporated under the laws of the Province of British Columbia Societies Act and is exempt from income tax as a non-profit organization. The organization is also a registered charity under the income Tax Act. Its purpose is to provide a comprehensive recycling service for individuals and businesses, sell a range of materials for reuse, provide education programs to the local school, encourage environmentally responsible community practices, and support local community organizations.

1. Basis of accounting

The basis of accounting applied in the preparation of the balance sheet of **Gabriola Island Recycling Organization** as at December 31, 2021, and the income statement for the year then ended, is on the historical cost basis, reflecting cash transactions with the addition of the following:

- Revenue producing property is amortized in accordance with amounts allowable for income tax purposes.
- Accounts payable and accrued liabilities.
- Current income taxes payable as at the reporting date.
- Deferred Grant revenue is recognized based on the project term and based on the expense for the project
- Amounts receivable
- Investments recorded at cost

GABRIOLA ISLAND RECYCLING ORGANIZATION

NOTES TO THE FINANCIAL STATEMENTS

For the year ended **December 31, 2021**

2. Property and equipment

	Cost	Accumulated Amortization	Net 2021	Net 2020
Building and improvements	\$ 332,933	\$ 90,190	\$ 242,743	\$ 257,225
Furniture and equipment	<u>21,968</u>	<u>8,893</u>	<u>13,075</u>	<u>2,267</u>
	<u>\$ 354,901</u>	<u>\$ 99,083</u>	<u>\$ 255,818</u>	<u>\$ 259,492</u>

Amortization is recorded on a straight line basis over the estimated useful life of the assets as follows:

Building and improvements	20 years
Furniture and equipment	5 years

3. Deferred contributions

The organization received grants from government agencies for specific capital projects. These grants are recognized in revenue on the same basis as the amortization of the capital assets, based on their estimated useful lives.

	2021	2020
New roofing grant	\$ 18,750	\$ 20,000
Accessibility grant	7,851	8,342
Oil tank grant	4,744	5,060
C2C Textile Grant	<u>59,227</u>	<u>-</u>
	<u>\$ 90,572</u>	<u>\$ 33,402</u>

GABRIOLA ISLAND RECYCLING ORGANIZATION

NOTES TO THE FINANCIAL STATEMENTS

For the year ended **December 31, 2021**

4. Long-term debt

2021 2020

Coastal Community Credit Union Canadian Emergency Business Account (CEBA) - interest free loan, repayable by December 31, 2023. If the loan is repaid by December 31, 2023 then \$10,000 of the loan will be forgiven. The amount expected to be forgiven has been included in income during the year

\$ 40,000 \$ 40,000



Registered Charity Information Return

Protected B when completed

Section A: Identification

- To help you fill out this form, refer to Guide T4033, Completing the Registered Charity Information Return. It can be found at canada.ca/cra-forms.

Note: Even if a charity is inactive, an information return must be filed to maintain its registered status.

Complete the following:

1. Charity name:

Gabriola Island Recycling Organization

2. Return for fiscal period ending:

Year	Month	Day
2 0 2	1 1 2	3 1

3. BN/registration number:

13181 6282 RR 0001

4. Web address (if applicable):

<https://www.girodepot.com>

A1 Was the charity in a subordinate position to a head body? **1510** ☐ Yes ☒ No
If **yes**, give the name and BN/registration number of the organization.

Name

BN (9 digits, 2 letters, 4 digits. Example: 123456789RR0001)

A2 Has the charity wound-up, dissolved, or terminated operations? **1570** ☐ Yes ☒ No

A3 Is the charity designated as a public foundation or private foundation? **1600** ☐ Yes ☒ No

If **yes**, you **must** complete Schedule 1, Foundations. To confirm the charity's designation, go to canada.ca/charities-list and refer to the charity's detail page.

Section B: Directors/trustees and like officials

B1 All charities must complete Form T1235, Directors/Trustees and Like Officials Worksheet. Only the **public** information section of the worksheet is available to the public.

For charities subject to the Ontario Corporations Act.

As of May 15, 2021, the Canada Revenue Agency no longer collects this information on behalf of the Ontario Ministry of Government and Consumer Services. For more information on filing an Ontario annual information return, visit ontario.ca/businessregistry.

Note: If you would like these individuals to have the authority to communicate with the CRA on behalf of your charity, their name must also appear as an owner for your Business Number (BN). For more information, go to canada.ca/charities-giving, select "Operating a registered charity," then "Making a change to your organization" and see "Change director."

Section C: Programs and general information

C1 Was the charity active during the fiscal period? **1800** ☒ Yes ☐ No
If **no**, explain why in the "Ongoing programs" space below at C2.

C2 Describe all **ongoing** and **new** charitable programs the charity carried on during this fiscal period to further its purpose(s) (as defined in its governing documents). "Programs" includes all of the charitable activities that the charity carries out on its own through employees or volunteers as well as through qualified donees and intermediaries. The charity may also use this space to describe the contributions of its volunteers in carrying out its activities, for example, number of volunteers and/or hours. **Do not** include the names of employees or volunteers. Grant-making charities should describe the types of organizations they support. **Do not** describe fundraising activities in this space.

Do not attach additional sheets of paper or annual reports.

Ongoing programs

GIRO provides a comprehensive recycling service for both individuals and businesses on Gabriola Island. GIRO also provides local newspaper articles on recycling, educational materials, and tours of the recycling depot for residents and students.

New programs

Registered charities may make gifts to qualified donees. Qualified donees are other registered Canadian charities, as well as certain other organizations described in the Income Tax Act.

C3 Did the charity make gifts or transfer funds to qualified donees or other organizations? **2000** ☐ Yes ☒ No

Important: If **yes**, you **must** complete Form T1236, Qualified donees worksheet/Amounts provided to other organizations.

C4 Did the charity carry on, fund, or provide any resources through employees, volunteers, agents, joint ventures, contractors, or any other individuals, intermediaries, entities, or means (other than qualified donees) for any activity/program/project outside Canada? **2100** ☐ Yes ☒ No

Important: If **yes**, you **must** complete Schedule 2, Activities outside Canada.

C5 Public policy dialogue and development activities

This question has been removed.

C6 If the charity carried on fundraising activities or engaged third parties to carry on fundraising activities on its behalf, select all fundraising methods that it used during the fiscal period:

2500 <input type="checkbox"/> Advertisements/print/radio/TV commercials	2570 <input type="checkbox"/> Sales	2620 <input type="checkbox"/> Telephone/TV solicitations
2510 <input type="checkbox"/> Auctions	2575 <input type="checkbox"/> Internet	2630 <input type="checkbox"/> Tournament/sporting events
2530 <input type="checkbox"/> Collection plate/boxes	2580 <input type="checkbox"/> Mail campaigns	2640 <input type="checkbox"/> Cause-related marketing
2540 <input type="checkbox"/> Door-to-door solicitation	2590 <input type="checkbox"/> Planned-giving programs	2650 <input checked="" type="checkbox"/> Other
2550 <input type="checkbox"/> Draws/lotteries	2600 <input type="checkbox"/> Targeted corporate donations/sponsorships	2660 Specify: <u>Recycling Depot</u>
2560 <input type="checkbox"/> Fundraising dinners/galas/concerts	2610 <input type="checkbox"/> Targeted contacts	

C7 Did the charity pay external fundraisers? **2700** ☐ Yes ☒ No

If yes, you **must** complete the following lines, and complete Schedule 4, Confidential data, Table 1.

(a) Enter the gross revenue collected by the fundraisers on behalf of the charity.	5450 \$	0
(b) Enter the amounts paid to and/or retained by the fundraisers.	5460 \$	0

(c) Select the method of payment to the fundraiser:

2730 <input type="checkbox"/> Commissions	2750 <input type="checkbox"/> Finder's fee	2770 <input type="checkbox"/> Honoraria
2740 <input type="checkbox"/> Bonuses	2760 <input type="checkbox"/> Set fee for services	2780 <input type="checkbox"/> Other
2790 Specify: _____		

(d) Did the fundraiser issue tax receipts on behalf of the charity? **2800** ☐ Yes ☒ No

C8 Did the charity compensate any of its directors/trustees or like officials or persons not at arm's length from the charity for services provided during the fiscal period (other than reimbursement for expenses)? **3200** ☐ Yes ☒ No

C9 Did the charity incur any expenses for compensation of employees during the fiscal period? **3400** ☒ Yes ☐ No

Important: If **yes**, you **must** complete Schedule 3, Compensation.

C10 Did the charity receive any donations or gifts of any kind valued at \$10,000 or more from any donor that was **not** resident in Canada and was **not** any of the following: **3900** ☐ Yes ☒ No

- a Canadian citizen, nor
- employed in Canada, nor
- carrying on a business in Canada, nor
- a person having disposed of taxable Canadian property?

Important: If **yes**, you **must** complete Schedule 4, Confidential data, Table 2, for each donation of \$10,000 or more.

C11	Did the charity receive any non-cash gifts for which it issued tax receipts?	4000	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Important: If yes , you must complete Schedule 5, Non-cash gifts.				
C12	Did the charity acquire a non-qualifying security?	5800	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
C13	Did the charity allow any of its donors to use any of its property? (except for permissible uses)	5810	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
C14	Did the charity issue any of its tax receipts for donations on behalf of another organization?	5820	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
C15	Did the charity have direct partnership holdings at any time during the fiscal period?	5830	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Section D: Financial information

Fill out either Section D or Schedule 6, Detailed financial information.

If **any** of the following applies to the charity, complete Schedule 6 instead of Section D:

- (a) The charity's revenue exceeds \$100,000.
- (b) The amount of all property (for example, investments, rental properties) not used in charitable activities was more than \$25,000.
- (c) The charity had permission to accumulate funds during this fiscal period.

Show all amounts to the nearest single Canadian dollar. Do not enter "See attached financial statements." All relevant fields must be filled out.

D1	Was the financial information reported below prepared on an accrual or cash basis?	4020	<input type="checkbox"/> Accrual	<input type="checkbox"/> Cash
D2	Summary of financial position:			
	Using the charity's own financial statements, enter the following:			
	Did the charity own land and/or buildings?	4050	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	Total assets (including land and buildings)	4200	\$ 0	
	Total liabilities	4350	\$ 0	
	Did the charity borrow from, loan to, or invest assets with any non-arm's length persons?	4400	<input type="checkbox"/> Yes	<input type="checkbox"/> No
D3	Revenue:			
	Did the charity issue tax receipts for gifts?	4490	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	If yes , enter the total eligible amount of all gifts for which the charity has issued or will issue tax receipts	4500	\$ 0	
	Total amount of 10 year gifts received	4505	\$ 0	
	Total amount received from other registered charities	4510	\$ 0	
	Total other gifts received for which a tax receipt was not issued by the charity (excluding amounts at lines 4575 and 4630)	4530	\$ 0	
	Did the charity receive any revenue from any level of government in Canada?	4565	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	If yes , total amount received	4570	\$ 0	
	Total tax-receipted revenue from all sources outside of Canada (government and non-government)	4571	\$ 0	
	Total non tax-receipted revenue from all sources outside of Canada (government and non-government)	4575	\$ 0	
	Total non tax-receipted revenue from fundraising	4630	\$ 0	
	Total revenue from sale of goods and services (except to any level of government in Canada)	4640	\$ 0	
	Other revenue not already included in the amounts above	4650	\$ 0	
	Total revenue (add lines 4500, 4510 to 4570, and 4575 to 4650)	4700	\$ 0	
D4	Expenditures:			
	Professional and consulting fees	4860	\$ 0	
	Travel and vehicle expenses	4810	\$ 0	
	All other expenditures not already included in the amounts above (excluding gifts to qualified donees)	4920	\$ 0	
	Total expenditures (excluding gifts to qualified donees) (add lines 4860, 4810, and 4920)	4950	\$ 0	
	Of the amount at line 4950:			
	(a) Total expenditures on charitable activities	5000	\$ 0	
	(b) Total expenditures on management and administration	5010	\$ 0	
	Total amount of gifts made to all qualified donees	5050	\$ 0	
	Total expenditures (add lines 4950 and 5050)	5100	\$ 0	

Section E: Certification

This return **must** be signed by a person who has authority to sign on behalf of the charity. **It is a serious offence under the Income Tax Act to provide false or deceptive information.**

I certify that the information given on this annual return and any attachment is, to the best of my knowledge, correct, complete, and current.

Name (print) Barry Loescher	Signature <i>Barry Loescher</i>	
Position in charity Treasurer	Date 2022/05/26	Phone number 250 325-8887

Section F: Confidential data

F1 Enter the physical address of the charity and the address in Canada for the charity's books and records. Post office box numbers and rural routes are not sufficient.

	Physical address of the charity	Address for the charity's books and records
Complete street address	700 Tin Can Alley	700 Tin Can Alley
City	Gabriola	Gabriola
Province or territory and postal code	BC V0R 1X3	BC V0R 1X3

F2 Name and address of individual who completed this return.

Name Lee-Anne Harrison	
Company name (if applicable) Church Pickard, Chartered Professional Accountants	
Complete street address 25 Cavan Street	
City, province or territory, and postal code Nanaimo BC V9R 2T9	
Phone number 250 754-6396	Is this the same individual who certified in Section E above? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Privacy statement

Personal information is collected under the authority of the Income Tax Act and is used to establish and validate the identity and contact information of directors, trustees, officers, like officials, and authorized representatives of the organization. This information will also be used as a basis for the indirect collection of additional personal information from other internal and external sources, which includes personal tax information, and relevant financial and biographical information. Personal information will be used to assess the risk of registration with respect to the obligations and requirements as outlined in the Act and the common law. The social insurance number (SIN) is collected under subsection 237 of the Act and is used for identification purposes.

The Canada Revenue Agency (CRA) will make the information on this annual information return available to the public on the Charities Directorate website, except for information identified as confidential. Personal information may also be disclosed under information-sharing agreements and in accordance with section 241 of the Act. Incomplete or inaccurate information may result in compliance measures including revocation of registered status.

Personal information is described in personal information bank CRA PPU 200 and is protected under the Privacy Act. Individuals have a right of protection, access to and correction or notation of their personal information. You are entitled to complain to the Privacy Commissioner of Canada regarding our handling of your information.

Notification to directors and like officials: The CRA strongly encourages the organization to voluntarily inform its directors and like officials that it has collected and disclosed their personal information to the CRA.

☒ I confirm that I have read the Privacy statement above.

Checklist

A charity's complete annual information return includes:

- Form T3010, Registered Charity Information Return, and all applicable schedules
- a copy of the charity's financial statements
- Form T1235, Directors/Trustees and Like Officials Worksheet
- Form T1236, Qualified donees worksheet/Amounts provided to other organizations (if applicable)
- Form T2081, Excess Corporate Holdings Worksheet for Private Foundations (if applicable)

If financial statements are not included, the charity's **registration may be revoked**.

Foundations

Schedule 1

- 1

Did the foundation acquire control of a corporation?.....

100

☐ Yes

☐ No
- 2

Did the foundation incur any debts other than for current operating expenses, purchasing or selling investments, or in administering charitable activities?.....

110

☐ Yes

☐ No
- For private foundations only:
- 3

Did the foundation hold any shares, rights to acquire shares, or debts owing to it that meet the definition of a non-qualified investment?.....

120

☐ Yes

☐ No
- 4

Did the foundation own more than 2% of any class of shares of a corporation at any time during the fiscal period?

130

☐ Yes

☐ No
- If yes, you must complete and attach Form T2081, Excess Corporate Holdings Worksheet for Private Foundations.

Activities outside Canada

Schedule 2

Important: If you complete this section, you must answer yes to question C4.

For more information, go to canada.ca/charities-giving and see Guidance CG-002, Canadian registered charities carrying on activities outside Canada.

- 1

Total expenditures on activities/programs/projects carried on outside Canada, excluding gifts to qualified donees

200

\$

0
- 2

Were any of the charity's financial resources spent on programs outside of Canada under any kind of an arrangement including a contract, agency agreement, or joint venture to any other individual or organization (excluding gifts to qualified donees)?

210

☐ Yes

☐ No
- If yes, provide details of the amount reported in question 1 on line 200, that the charity transferred to these individuals or organizations in the following table:

Name of individual/organization	Country code where the activities were carried out (see list at the end of Schedule 2)	Amount (\$) Show amounts to the nearest Canadian dollar

Important: If you entered information in the table above, you must answer yes in line 210.

- 3

Using the table below, enter the countries outside Canada where the charity itself carried on programs or devoted any of its resources.

- 4

Were any projects undertaken outside Canada funded by Global Affairs Canada?.....

220

☐ Yes

☐ No
- If yes, what was the total amount the charity spent under this arrangement?
- 230

\$

0
- 5

Were any of the charity's activities outside of Canada carried out by employees of the charity?.....

240

☐ Yes

☐ No
- 6

Were any of the charity's activities outside of Canada carried out by volunteers of the charity?

250

☐ Yes

☐ No
- 7

Did the charity export goods as part of its charitable activities?

260

☐ Yes

☐ No
- If yes, list the items exported, their destination, the country code, and their value.

Item exported	Destination (city/region)	Country code	Value (CAN \$)

Country codes

AF-Afghanistan	CU-Cuba	KP-North Korea	RO-Romania
AL-Albania	CY-Cyprus	KR-South Korea	RU-Russia
DZ-Algeria	DK-Denmark	KW-Kuwait	RW-Rwanda
AO-Angola	DO-Dominican Republic	KG-Kyrgyzstan	SA-Saudi Arabia
AR-Argentina	EC-Ecuador	LA-Laos	RS-Serbia
AM-Armenia	EG-Egypt	LB-Lebanon	SL-Sierra Leone
AZ-Azerbaijan	SV-El Salvador	LR-Liberia	SG-Singapore
BD-Bangladesh	ET-Ethiopia	MK-Macedonia	SO-Somalia
BY-Belarus	FR-France	MG-Madagascar	ES-Spain
BT-Bhutan	GA-Gabon	MY-Malaysia	LK-Sri Lanka
BO-Bolivia	GM-Gambia	ML-Mali	SD-Sudan
BA-Bosnia and Herzegovina	GE-Georgia	MU-Mauritius	SY-Syrian Arab Republic
BW-Botswana	DE-Germany	MX-Mexico	TJ-Tajikistan
BR-Brazil	GH-Ghana	MN-Mongolia	TZ-United Republic of Tanzania
BN-Brunei Darussalam	GT-Guatemala	ME-Montenegro	TH-Thailand
BG-Bulgaria	GY-Guyana	MZ-Mozambique	TL-Timor-Leste
BI-Burundi	HT-Haiti	MM-Myanmar (Burma)	TR-Turkey
KH-Cambodia	HN-Honduras	NA-Namibia	UG-Uganda
CM-Cameroon	IN-India	NL-Netherlands	UA-Ukraine
CF-Central African Republic	ID-Indonesia	NI-Nicaragua	GB-United Kingdom
TD-Chad	IR-Iran	NE-Niger	US-United States of America
CL-Chile	IQ-Iraq	NG-Nigeria	UY-Uruguay
CN-China	IL-Israel	OM-Oman	UZ-Uzbekistan
CO-Colombia	PS-Israeli Occupied Territories	PK-Pakistan	VE-Venezuela
KM-Comoros	IT-Italy	PA-Panama	VN-Vietnam
CD-Democratic Republic of Congo	JM-Jamaica	PE-Peru	YE-Yemen
CG-Republic of Congo	JP-Japan	PH-Philippines	ZM-Zambia
CR-Costa Rica	JO-Jordan	PL-Poland	ZW-Zimbabwe
CI-Côte d'Ivoire	KZ-Kazakhstan	QA-Qatar	
HR-Croatia	KE-Kenya	RE-Réunion	

Use the following codes for countries not listed above:

- QS-Other countries in Africa
- QR-Other countries in Asia and Oceania
- QM-Other countries in Central and South America
- QP-Other countries in Europe
- QO-Other countries in the Middle East
- QN-Other countries in North America

Compensation

Schedule 3

Important: If you complete this section, you must answer yes to question C9.

1

(a) Enter the **number** of permanent, full-time, compensated positions in the fiscal period. This number should represent the number of positions the charity had including both managerial positions and others, and should not include independent contractors. **Do not** enter a dollar amount.

300

2

(b) For the **ten (10)** highest compensated, permanent, full-time positions enter the **number of positions** that are within each of the following annual compensation categories. **Do not** tick the boxes; use numbers.

305

0

\$1 – \$39,999

310

2

\$40,000 – \$79,999

315

0

\$80,000 – \$119,999

320

0

\$120,000 – \$159,999

325

0

\$160,000 – \$199,999

330

0

\$200,000 – \$249,999

335

0

\$250,000 – \$299,999

340

0

\$300,000 – \$349,999

345

0

\$350,000 and over

2

(a) Enter the **number** of part-time or part-year (for example, seasonal) employees the charity employed during the fiscal period.

370

16

(b) Total expenditure on compensation for part-time or part-year employees in the fiscal period.

380

\$

153,437

3

Total expenditure on all compensation in the fiscal period.

390

\$

279,179

Confidential data

Schedule 4

Important: If you complete this section, you must answer yes to question C10.

The information in this schedule is for the CRA's use and may be shared as permitted by law (for example, with certain other government departments and agencies).

1. Information about external fundraisers

Enter the name(s) and arm's length status of each external fundraiser.

Name (confidential)	At arm's length? Yes/No (confidential)

2. Information about donors not resident in Canada

Complete this schedule to report any gift of any kind valued at \$10,000 or more received from any donor that was **not** resident in Canada and was **not** any of the following:

a Canadian citizen, nor

employed in Canada, nor

carrying on business in Canada, nor

a person having disposed of taxable Canadian property.

Enter the name of each donor and the value of the gift in the table below. Select whether the donor was an organization (for example a business, corporate entity, charity, non-profit organization), a government or an individual.

Name (confidential)	Type of donor (confidential)			Value (CAN \$)
	Organization	Government	Individual	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Non-cash gifts

Schedule 5

Important: If you complete this section, you must answer yes to question C11.

1

Select all types of non-cash gifts received for which a tax receipt was issued:

500

☐

Artwork/wine/jewellery

525

☐

Ecological properties

550

☐

Publicly traded securities/ commodities/mutual funds

505

☐

Building materials

530

☐

Life insurance policies

555

☐

Books

510

☐

Clothing/furniture/food

535

☐

Medical equipment/supplies

560

☐

Other

515

☐

Vehicles

540

☐

Privately-held securities

565

Specify:

520

☐

Cultural properties

545

☐

Machinery/equipment/ computers/software

2

Enter the total amount of tax-receipted non-cash gifts

580

\$

0

Detailed financial information

Schedule 6

Fill out this schedule if **any** of the following applies to the charity:

- (a) The charity's revenue exceeded \$100,000.
(b) The amount of all property (for example, investments, rental properties) not used in charitable activities was more than \$25,000.
(c) The charity had permission to accumulate funds during this fiscal period.

Was the financial information reported below prepared on an accrual or cash basis? 4020 ☒ Accrual ☐ Cash

Statement of financial position

Show all amounts to the nearest single Canadian dollar. Do not enter "see attached financial statements." All relevant fields must be filled out.

Assets:			Liabilities:		
Cash, bank accounts, and short-term investments	4100	\$ 221,096	Accounts payable and accrued liabilities	4300	\$ 13,626
Amounts receivable from non-arm's length persons	4110	\$ 0	Deferred revenue	4310	\$ 97,772
Amounts receivable from all others	4120	\$ 15,912	Amounts owing to non-arm's length persons	4320	\$ 0
Investments in non-arm's length persons	4130	\$ 0	Other liabilities	4330	\$ 40,000
Long-term investments	4140	\$ 49,953	Total liabilities (add lines 4300 to 4330)...	4350	\$ 151,398
Inventories	4150	\$ 0			
Land and buildings in Canada	4155	\$ 481,087			
Other capital assets in Canada	4160	\$ 75,776			
Capital assets outside Canada	4165	\$ 0			
Accumulated amortization of capital assets	4166	\$ (301,045)	Amount included in lines 4150, 4155,		
Other assets	4170	\$ 6,073	4160, 4165 and 4170 not used in		
10 year gifts	4180	\$ 0	charitable activities	4250	\$ 0
Total assets (add lines 4100 to 4170)	4200	\$ 548,852			

Statement of operations

Revenue:					
Total eligible amount of all gifts for which the charity has issued or will issue tax receipts	4500	\$ 2,375			
Total eligible amount of tax-receipted tuition fees	5610	\$ 0			
Total amount of 10 year gifts received	4505	\$ 0			
Total amount received from other registered charities	4510	\$ 1,750			
Total other gifts received for which a tax receipt was not issued by the charity (excluding amounts at lines 4575 and 4630)	4530	\$ 0			
Total revenue received from federal government	4540	\$ 0			
Total revenue received from provincial/territorial governments	4550	\$ 61,882			
Total revenue received from municipal/regional governments	4560	\$ 45,874			
Total tax-receipted revenue from all sources outside of Canada (government and non-government)	4571	\$ 0			
Total non tax-receipted revenue from all sources outside Canada (government and non-government)	4575	\$ 0			
Total interest and investment income received or earned	4580	\$ 1,277			
Gross proceeds from disposition of assets	4590	\$ 0			
Net proceeds from disposition of assets (show a negative amount with brackets)	4600	\$ 0			
Gross income received from rental of land and/or buildings	4610	\$ 0			
Total non tax-receipted revenues received for memberships, dues and association fees	4620	\$ 640			
Total non tax-receipted revenue from fundraising	4630	\$ 0			
Total revenue from sale of goods and services (except to any level of government in Canada)	4640	\$ 314,250			
Other revenue not already included in the amounts above	4650	\$ 0			
Specify type(s) of revenue included in the amount reported at 4650	4655				
Total revenue (add lines 4500, 4510 to 4560, 4575, 4580, and 4600 to 4650)	4700	\$ 428,048			

Expenditures:

Advertising and promotion	4800	\$	1,216
Travel and vehicle expenses.....	4810	\$	5,998
Interest and bank charges.....	4820	\$	1,341
Licences, memberships, and dues	4830	\$	9,632
Office supplies and expenses.....	4840	\$	2,085
Occupancy costs	4850	\$	1,134
Professional and consulting fees	4860	\$	9,860
Education and training for staff and volunteers	4870	\$	0
Total expenditure on all compensation (enter the amount reported at line 390 in Schedule 3, if applicable)	4880	\$	279,179
Fair market value of all donated goods used in charitable activities	4890	\$	0
Purchased supplies and assets	4891	\$	39,903
Amortization of capitalized assets	4900	\$	20,022
Research grants and scholarships as part of charitable activities	4910	\$	0
All other expenditures not included in the amounts above (excluding gifts to qualified donees).....	4920	\$	24,868
Specify type(s) of expenditures included in the amount reported at 4920.....	4930	R&M	
Total expenditures before gifts to qualified donees (add lines 4800 to 4920).....	4950	\$	395,238

Of the amounts at lines 4950:

(a) Total expenditures on charitable activities.....	5000	\$	385,378
(b) Total expenditures on management and administration	5010	\$	9,860
(c) Total expenditures on fundraising	5020	\$	0
(d) Total other expenditures included in line 4950.....	5040	\$	0
Total amount of gifts made to all qualified donees	5050	\$	0
Total expenditures (add lines 4950 and 5050)	5100	\$	395,238

Other financial information

Permission to accumulate property:

Only registered charities that have written permission to accumulate should complete this section.

• Enter the amount accumulated for the fiscal period, including income earned on accumulated funds.....	5500	\$	0
• Enter the amount disbursed for the fiscal period for the specified purpose.....	5510	\$	0

Permission to reduce disbursement quota:

If the charity has received approval to make a reduction to its disbursement quota, enter the amount for the fiscal period	5750	\$	0
--	------	----	---

Property not used in charitable activities:

Enter the average value of property not used for charitable activities or administration during:

• The 24 months before the beginning of the fiscal period	5900	\$	149,315
• The 24 months before the end of the fiscal period	5910	\$	217,830



Directors/Trustees and Like Officials Worksheet

Protected B when completed

You must give us complete information for each director/trustee and like official who, at any time during the fiscal period of this return, was a member of the charity's board of directors/trustees. Directors/trustees and like officials are persons who govern a registered charity. See the reverse for information on filling out this form.

Total number of directors/trustees and like officials: Charity name: Gabriola Island Recycling Organization Business number: 13181 6282 RR 0001 Return for fiscal period ending (YYYY/MM/DD): 2 0 2 1 1 2 3 1

5 Gabriola Island Recycling Organization Note: If you would like these individuals to have the authority to communicate with the CRA on behalf of your charity, their name must also appear as an owner for your Business Number (BN). For more information, go to canada.ca/charities-giving. select "Operating a registered charity," then "Making a change to your organization" and see "Change director."

Public information		Confidential data																	
Last name: Loescher		First name: Barry				Initial:		Residential address – Street number and name: 2218 Windecker Drive											
Term ►	Start date (Y/M/D): 2 0 1 5 0 5 2 4	End date (Y/M/D): 2 0 2 2 0 5 3 1				Initial:		City: Gabriola		Prov/Terr: BC		Postal code: V 0 R 1 X 7							
Position:	President	At arm's length with other Directors? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						Phone number 2 5 0 – 3 2 5 – 18 8 8 7		Date of birth (Y/M/D): 1 9 4 0 3 2 0									
Last name: Houle																			
First name: Howard																			
Initial:																			
Term ►	Start date (Y/M/D): 2 0 1 9 0 5 2 8	End date (Y/M/D): 2 0 2 1 0 5 3 1				Initial:		City: Gabriola		Prov/Terr: BC		Postal code: V 0 R 1 X 3							
Position:	Vice President	At arm's length with other Directors? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						Phone number 2 5 0 – 2 4 7 – 18 12 5 0		Date of birth (Y/M/D): 1 9 5 2 1 0 2 9									
Last name: Campbell																			
First name: Suzanne																			
Initial:																			
Term ►	Start date (Y/M/D): 2 0 1 9 1 1 0 1	End date (Y/M/D):						City: Gabriola		Prov/Terr: BC		Postal code: V 0 R 1 X 2							
Position:	Director	At arm's length with other Directors? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						Phone number 2 5 0 – 2 12 2 – 7 7 7 9		Date of birth (Y/M/D): 1 9 5 6 0 9 0 1									
Last name: Claxton																			
First name: Phillip																			
Initial:																			
Term ►	Start date (Y/M/D): 2 0 1 9 0 7 0 1	End date (Y/M/D): 2 0 2 2 0 5 0 1				Initial:		City: Gabriola		Prov/Terr: BC		Postal code: V 0 R 1 X 7							
Position:	Director	At arm's length with other Directors? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						Phone number 2 5 0 – 2 4 7 – 18 1 8 7		Date of birth (Y/M/D): 1 9 5 4 0 1 0 5									
Last name: Weller																			
First name: Fay																			
Initial:																			
Term ►	Start date (Y/M/D): 2 0 2 1 0 9 3 0	End date (Y/M/D):						City: Gabriola		Prov/Terr: BC		Postal code: V 0 R 1 X 1							
Position:	Director	At arm's length with other Directors? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						Phone number 2 5 0 – 6 1 6 – 19 18 2 4		Date of birth (Y/M/D): 1 9 5 8 1 0 0 6									
Last name:																			
First name:																			
Term ►	Start date (Y/M/D):	End date (Y/M/D):				Initial:		City:		Prov/Terr:		Postal code:							
Position:		At arm's length with other Directors? <input type="checkbox"/> Yes <input type="checkbox"/> No						Phone number		Date of birth (Y/M/D):									
Last name:																			
First name:																			
Initial:																			
Term ►	Start date (Y/M/D):	End date (Y/M/D):						City:		Prov/Terr:		Postal code:							
Position:		At arm's length with other Directors? <input type="checkbox"/> Yes <input type="checkbox"/> No						Phone number		Date of birth (Y/M/D):									
Last name:																			
First name:																			
Initial:																			
Term ►	Start date (Y/M/D):	End date (Y/M/D):						City:		Prov/Terr:		Postal code:							
Position:		At arm's length with other Directors? <input type="checkbox"/> Yes <input type="checkbox"/> No						Phone number		Date of birth (Y/M/D):									
Last name:																			
First name:																			
Initial:																			
Term ►	Start date (Y/M/D):	End date (Y/M/D):						City:		Prov/Terr:		Postal code:							
Position:		At arm's length with other Directors? <input type="checkbox"/> Yes <input type="checkbox"/> No						Phone number		Date of birth (Y/M/D):									
Last name:																			
First name:																			
Initial:																			
Term ►	Start date (Y/M/D):	End date (Y/M/D):						City:		Prov/Terr:		Postal code:							
Position:		At arm's length with other Directors? <input type="checkbox"/> Yes <input type="checkbox"/> No						Phone number		Date of birth (Y/M/D):									
Last name:																			
First name:																			
Initial:																			
Term ►	Start date (Y/M/D):	End date (Y/M/D):						City:		Prov/Terr:		Postal code:							
Position:		At arm's length with other Directors? <input type="checkbox"/> Yes <input type="checkbox"/> No						Phone number		Date of birth (Y/M/D):									



Completing the Directors/Trustees and Like Officials Worksheet

Public information

Information from this column is available to the public.

Enter the last name, first name, and initial of the director/trustee or like official.

Term:

Start date: Enter the date the person started in the position.

End date: Enter the date the person left the position. If the person has not left the position, leave this field blank.

Position: Enter the title of the position being held. Each position is generally identified in an organization's governing documents (for example, president, treasurer, secretary). A registered charity may have other officials that have governing powers similar to those of a director or trustee. For example, a religious leader with some governing authority would be considered a like official.

At arm's length with other directors: Tick **Yes** if the person is at arm's length with all other directors/trustees or like officials.

At arm's length is a concept that describes a relationship in which two persons act independently of each other and are not related. Related persons are individuals who are related to each other by blood, marriage or common-law partnership, or adoption. It is also possible that individuals not related by a family connection, but by close business relations, may still be considered not at arm's length. For more information on arm's length, go to **canada.ca/charities-giving**, select "A to Z index of topics for charities," search for "Charities and giving glossary" and see "arm's length."

Confidential data

Information from this column will stay confidential and will not be made available to the public except in circumstances in which the release of any or all of the information is required by law or, in certain circumstances, permitted by law.

According to the Income Tax Act, circumstances in which the law requires or permits such information to be disclosed include a court order, warrant, or subpoena issued for a criminal proceeding under an act of Parliament or a legal proceeding relating to the administration or enforcement of the Income Tax Act, the Canada Pension Plan, the Unemployment Insurance Act, or the Employment Insurance Act, or any other act of Parliament or law of a province that allows a tax or duty to be imposed or collected.

Other circumstances in which we are required or permitted by law to disclose certain records include a request made under the authority of the Auditor General Act, a warrant issued by the Canadian Security Intelligence Service Act, and enquiries from the Department of Finance Canada for information to form or evaluate fiscal policy.

Residential address: In the proper spaces, enter the full home address, including the street number, street name, city (which could be a town, village, or other municipality), province or territory, and postal code of each director/trustee or like official.

Phone number: Enter the telephone number at which the person can be reached during the day.

Date of birth: Enter the person's date of birth so that the CRA is better able to identify the individuals who are responsible for managing the charity.

If the director/trustee or like official lives outside the country, enter the person's full mailing address, including the country.

CN: T3010202

Name: Gasford Island Recycling
Organization

Date: 2022/05/26

Preparer sign-off	T3010	Name
Preparer sign-off	T3010	Line 4550: Total revenue received from provincial/territorial governments: "CEWS subsidy [5/17/2022 2:51:23 PM]"
Preparer sign-off	T3010	Line 5010: Total expenditures on management and administration: "Professional fees from Line 4860 [5/17/2022 2:39:35 PM]"
Override	T3010	Name (ProFile:)
Memo	T3010	Line 4550: Total revenue received from provincial/territorial governments: "CEWS subsidy [5/17/2022 2:51:23 PM]"
Memo	T3010	Line 5010: Total expenditures on management and administration: "Professional fees from Line 4860 [5/17/2022 2:39:35 PM]"

CIN: 191616282

Name: **Saboneta Island Recycling
Organization**

Date: 2022/05/26

T3010:4550: Total revenue received from provincial/territorial governments

CEWS subsidy

[5/17/2022 2:51:23 PM]

T3010:5010: Total expenditures on management and administration

Professional fees from Line 4860

[5/17/2022 2:39:35 PM]

Agence du revenu
du Canada

Protected B
when completed

Application for GST/HST Public Service Bodies' Rebate and GST Self-Government Refund

Public service bodies' rebate

Use this form to claim a rebate if you are a municipality, hospital authority, external supplier, facility operator, charity, public institution, or qualifying non-profit organization, or if you are a university, school authority, or public college that is established and operated otherwise than for profit.

Do not use this area.

Self-government refund

Use this form if you are eligible to claim a self-government refund of the GST or the federal part of the HST under a self-government agreement.

For more information, see "General information" at the end of this form.

Part A – Identification

Legal name:

Gabriola Island Recycling Organization

Trade name (if different from legal name):

Business number (if applicable):

_____ | **R T** | _____

Charity registration number (if you are a registered charity):

1 3 1 8 1 6 2 8 2 | R R | 0 0 0 1

Month Day

What is your fiscal year-end?

1 2 3 1

Mailing address

Unit No. – Street No. Street name, PO Box, RR:

700 Tin Can Alley

City:

Gabriola

Province or territory:

British Columbia

Postal code:

V 0 R 1 X 3

FOR INTERNAL USE ONLY

IC					NC					
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Part A – Identification (continued)

Physical location (if different from mailing address)

Unit No. – Street No. Street name, RR:

City:

Province or territory:

Postal code:

Contact person (see page 4)

Name:Barry Loescher

Title:Treasurer

Telephone number:250-325-8887Extension:

Part B – Claim period

Claim period covered by this application: From

YearMonthDay20210101

to

YearMonthDay20210630

Part C – Offset on GST/HST return (This part applies to GST/HST registrants only.)

Is the amount on line 409 of this form being included on line 111 of your GST/HST return?

☐ Yes☒ No

If yes, enter the reporting period end date of your GST/HST return.

YearMonthDay

Part D – Details of claim

Enter on the appropriate line the amount of rebate that you are claiming for each activity that you perform. If you engage in various activity types, see Guide RC4034, GST/HST Public Service Bodies' Rebate, for more information.

If you are claiming a rebate of the provincial part of the HST, fill out Form RC7066 SCH, Provincial Schedule – GST/HST Public Service Bodies' Rebate, and enter the total provincial amount in Line B below.

Line #	Activity type	Rebate factor	Federal	
300	Municipality	100%		
301	University (or affiliated college or research body) established and operated on a non-profit basis	67%	+	
302	School authority established and operated on a non-profit basis	68%	+	
303	Public college established and operated on a non-profit basis	67%	+	
304	Hospital authority (only on activities of operating a public hospital)	83%	+	
305	Charity or public institution on non-selected public service body activities (defined on page 4 of this form)	50%	+	451.54
306	Qualifying non-profit organization on non-selected public service body activities (see "Line 306 – Qualifying non-profit organizations" on page 4 of this form)	50%	+	
307	Printed books (do not include in other activity types)	100%	+	
308	Charity or public institution on the export of property or services	100%	+	
309	Self-government refund	100%	+	
310	Hospital authority (for eligible activities other than the operation of a public hospital) – See "Lines 310, 311, and 312" on page 4 of this form	83%	+	
311	Facility operator (on eligible activities) – See "Lines 310, 311, and 312" on page 4 of this form	83%	+	
312	External supplier (on eligible activities) – See "Lines 310, 311, and 312" on page 4 of this form	83%	+	
Total federal amount claimed (add lines 300 to 312)		A	=	451.54
Total provincial amount claimed (from Form RC7066 SCH)		B	+	
Total amount claimed (line A plus line B)		409	=	451.54

Part E – Certification

I certify that the information given on this form and in any documents attached is correct, and complete. The amount on line 409 on this form or any part of it has not previously been claimed; books, records, and invoices are available for inspection. I am authorized to sign for the organization.

Barry Loescher

Treasurer

Name (print)

Title

250-325-8887

Telephone number

Extension

Barry Loescher

Signature

2 | 0 | 2 | 1 | 0 | 5 | 0 | 9

Year

Month Day

Personal information is collected for purposes of the administration or enforcement of the Excise Tax Act, Part IX, and related programs and activities including administering tax, rebates, elections, audit, compliance, and collection. The information collected may be used or disclosed for the purposes of other federal acts that provide for the imposition and collection of a tax or duty. It may also be disclosed to other federal, provincial, territorial, or foreign government institutions to the extent authorized by law. Failure to provide this information may result in interest payable, penalties, or other actions. Under the Privacy Act, individuals have a right of protection, access to and correction of their personal information, or to file a complaint with the Privacy Commissioner of Canada regarding the handling of their personal information. Refer to Personal Information Bank CRA PPU 241 on Info Source at canada.ca/cra-info-source.

General information

Contact person

The person indicated here must be listed as authorized in our system in order for us to call them. Filling out this section does not add this person's name to your account as an authorized representative. For information on how to authorize a representative on your account, go to canada.ca/taxes-authorize-representative.

Line 306 – Qualifying non-profit organizations

If you are a qualifying non-profit organization, you must send us a filled out Form GST523-1, Non-Profit Organizations – Government Funding, each year. Do **not** send us your annual reports or financial statements.

Line 308 – Charity or public institution on the export of property or services

Charities and public institutions can claim a rebate of the GST or federal part of the HST paid on property or services exported outside Canada on line 308 on this form. Charities and public institutions resident in a participating province can claim a rebate of the provincial part of the HST paid on property or services exported outside Canada on Form RC7066 SCH (lines 308-ON, 308-BC, 308-NS, 308-NB, 308-NL and 308-PE).

Note

Charities and public institutions that are **not** resident in a participating province can also claim a rebate of the provincial part of the HST paid on property or services exported outside Canada on line 308 on this form.

Lines 310, 311, and 312

"Eligible activities" for hospital authorities and for charities, public institutions, and qualifying non-profit organizations that are also a facility operator or an external supplier refers to the making of facility supplies, ancillary supplies, or home medical supplies, or operating a qualifying facility for use in making facility supplies.

Definition

Non-selected public service body activities are activities other than:

- **in the case** of a person designated to be a municipality, those activities for which a person was designated as a municipality
- activities carried out in the course of:
 - in the case of a person determined to be a municipality, fulfilling responsibilities as a local authority
 - in the case of a person acting in its capacity as a hospital authority, operating a public hospital, making facility supplies, ancillary supplies, or home medical supplies or operating a qualifying facility for use in making facility supplies

- in the case of a person acting in its capacity as a facility operator or external supplier, making facility supplies, ancillary supplies, or home medical supplies or operating a qualifying facility for use in making facility supplies
- in the case of a person acting in its capacity as a school authority, public college, or university, operating an elementary or secondary school, a post-secondary college or technical institute, a recognized degree-granting institution or a college affiliated with or a research body of such a degree-granting institution

What is your application claim period?

If you are a **GST/HST registrant**, your claim period is your reporting period. If you are a branch or division of an organization, you and your parent or primary organization have to use the same claim period and filing frequency.

Note

If you want to use the rebate from a claim period to reduce an amount payable on your GST/HST return, fill out Part C in addition to the other parts.

If you are a **non-registrant**, your claim period is either the first six months of your fiscal year, or the last six months of your fiscal year. A non-registrant has a total of two claim periods in a fiscal year. You cannot combine multiple claim periods on one rebate application.

How do you file this application electronically?

GST/HST registrants – You can file this application electronically with your GST/HST return using:

- GST/HST NETFILE at canada.ca/gst-hst-netfile
- "File a return" at canada.ca/my-cra-business-account if you are a business owner
- "File a return" at canada.ca/taxes-representatives if you are a representative (including employees)

Non-registrants – You can file your rebate application electronically using one of the following options:

- "Electronic rebate forms" at canada.ca/gst-hst-netfile
- "File a rebate" at canada.ca/my-cra-business-account if you are a business owner
- "File a rebate" at canada.ca/taxes-representatives if you are a representative (including employees)

If you are filing this rebate application electronically, you must also file any associated provincial rebate application electronically.

Where to send this form if you choose to file your application by paper?

If you are resident in Sudbury/Nickel Belt, Toronto Centre, Toronto East, Toronto West, Toronto North, or Barrie, send this filled out form to:

**Canada Revenue Agency
Sudbury Tax Centre
1050 Notre Dame Avenue
Sudbury ON P3A 5C1**

If you are resident anywhere else in Canada, send this filled out form to:

**Canada Revenue Agency
Prince Edward Island Tax Centre
275 Pope Road
Summerside PE C1N 6A2**

For more information

For more information, go to canada.ca/gst-hst, see Guide RC4034, GST/HST Public Service Bodies' Rebate, or GST/HST Info Sheet GI-121, Determining Whether a Public Service Body is Resident in a Province for Purposes of the Public Service Bodies' Rebate, or call **1-800-959-5525**.

To get our forms and publications, go to canada.ca/gst-hst-pub.

Part A – Identification (continued)

Physical location (if different from mailing address)

Unit No. – Street No. Street name, RR: _____

City: _____

Province or territory: _____

Postal code:

--	--	--	--	--	--	--

Contact person (see page 4)

Name: Barry Loescher

Title: Treasurer

Telephone number: 250-325-8887 Extension: _____

Part B – Claim period

Claim period covered by this application: From

Year	Month	Day
2	0	2
1	0	7
0	0	1

 to

Year	Month	Day
2	0	2
1	1	2
3	1	

Part C – Offset on GST/HST return (This part applies to GST/HST registrants only.)

Is the amount on line 409 of this form being included on line 111 of your GST/HST return? ☐ Yes ☒ No

If **yes**, enter the reporting period end date of your GST/HST return.

Year	Month	Day

Part D – Details of claim

Enter on the appropriate line the amount of rebate that you are claiming for each activity that you perform. If you engage in various activity types, see Guide RC4034, GST/HST Public Service Bodies' Rebate, for more information.

If you are claiming a rebate of the provincial part of the HST, fill out Form RC7066 SCH, Provincial Schedule – GST/HST Public Service Bodies' Rebate, and enter the total provincial amount in Line B below.

Line #	Activity type	Rebate factor	Federal	
300	Municipality	100%		
301	University (or affiliated college or research body) established and operated on a non-profit basis	67%	+	
302	School authority established and operated on a non-profit basis	68%	+	
303	Public college established and operated on a non-profit basis	67%	+	
304	Hospital authority (only on activities of operating a public hospital)	83%	+	
305	Charity or public institution on non-selected public service body activities (defined on page 4 of this form)	50%	+	991.77
306	Qualifying non-profit organization on non-selected public service body activities (see "Line 306 – Qualifying non-profit organizations" on page 4 of this form)	50%	+	
307	Printed books (do not include in other activity types)	100%	+	
308	Charity or public institution on the export of property or services	100%	+	
309	Self-government refund	100%	+	
310	Hospital authority (for eligible activities other than the operation of a public hospital) – See "Lines 310, 311, and 312" on page 4 of this form	83%	+	
311	Facility operator (on eligible activities) – See "Lines 310, 311, and 312" on page 4 of this form	83%	+	
312	External supplier (on eligible activities) – See "Lines 310, 311, and 312" on page 4 of this form	83%	+	
Total federal amount claimed (add lines 300 to 312)		A	=	991.77
Total provincial amount claimed (from Form RC7066 SCH)		B	+	
Total amount claimed (line A plus line B)		409	=	991.77

Part E – Certification

I certify that the information given on this form and in any documents attached is correct, and complete. The amount on line 409 on this form or any part of it has not previously been claimed; books, records, and invoices are available for inspection. I am authorized to sign for the organization.

Barry Loescher

Treasurer

Name (print)

Title

250-325-8887

Telephone number

Extension

Barry Loescher

Signature

2 | 0 | 2 | 1 | 0 | 5 | 0 | 9

Year

Month Day

Personal information is collected for purposes of the administration or enforcement of the Excise Tax Act, Part IX, and related programs and activities including administering tax, rebates, elections, audit, compliance, and collection. The information collected may be used or disclosed for the purposes of other federal acts that provide for the imposition and collection of a tax or duty. It may also be disclosed to other federal, provincial, territorial, or foreign government institutions to the extent authorized by law. Failure to provide this information may result in interest payable, penalties, or other actions. Under the Privacy Act, individuals have a right of protection, access to and correction of their personal information, or to file a complaint with the Privacy Commissioner of Canada regarding the handling of their personal information. Refer to Personal Information Bank CRA PPU 241 on Info Source at canada.ca/cra-info-source.

General information

Contact person

The person indicated here must be listed as authorized in our system in order for us to call them. Filling out this section does not add this person's name to your account as an authorized representative. For information on how to authorize a representative on your account, go to canada.ca/taxes-authorize-representative.

Line 306 – Qualifying non-profit organizations

If you are a qualifying non-profit organization, you must send us a filled out Form GST523-1, Non-Profit Organizations – Government Funding, each year. Do **not** send us your annual reports or financial statements.

Line 308 – Charity or public institution on the export of property or services

Charities and public institutions can claim a rebate of the GST or federal part of the HST paid on property or services exported outside Canada on line 308 on this form. Charities and public institutions resident in a participating province can claim a rebate of the provincial part of the HST paid on property or services exported outside Canada on Form RC7066 SCH (lines 308-ON, 308-BC, 308-NS, 308-NB, 308-NL and 308-PE).

Note

Charities and public institutions that are **not** resident in a participating province can also claim a rebate of the provincial part of the HST paid on property or services exported outside Canada on line 308 on this form.

Lines 310, 311, and 312

"Eligible activities" for hospital authorities and for charities, public institutions, and qualifying non-profit organizations that are also a facility operator or an external supplier refers to the making of facility supplies, ancillary supplies, or home medical supplies, or operating a qualifying facility for use in making facility supplies.

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- in the case of a person acting in its capacity as a facility operator or external supplier, making facility supplies, ancillary supplies, or home medical supplies or operating a qualifying facility for use in making facility supplies
- in the case of a person acting in its capacity as a school authority, public college, or university, operating an elementary or secondary school, a post-secondary college or technical institute, a recognized degree-granting institution or a college affiliated with or a research body of such a degree-granting institution

What is your application claim period?

If you are a **GST/HST registrant**, your claim period is your reporting period. If you are a branch or division of an organization, you and your parent or primary organization have to use the same claim period and filing frequency.

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Where to send this form if you choose to file your application by paper?

If you are resident in Sudbury/Nickel Belt, Toronto Centre, Toronto East, Toronto West, Toronto North, or Barrie, send this filled out form to:

**Canada Revenue Agency
Sudbury Tax Centre
1050 Notre Dame Avenue
Sudbury ON P3A 5C1**

If you are resident anywhere else in Canada, send this filled out form to:

**Canada Revenue Agency
Prince Edward Island Tax Centre
275 Pope Road
Summerside PE C1N 6A2**

For more information

For more information, go to canada.ca/gst-hst, see Guide RC4034, GST/HST Public Service Bodies' Rebate, or GST/HST Info Sheet GI-121, Determining Whether a Public Service Body is Resident in a Province for Purposes of the Public Service Bodies' Rebate, or call **1-800-959-5525**.

To get our forms and publications, go to canada.ca/gst-hst-pub.

Partners

Grant McDonald, CPA, CA*

Lee-Anne Harrison, CPA, CA*

Anna Jones, CPA, CA*

Joanne Novak, CPA, CA*

*incorporated



May 26, 2022

Barry Loescher
Gabriola Island Recycling Organization
700 Tin Can Alley
Gabriola, BC V0R 1X3

Dear Mr. Loescher:

Re: Year ended December 31, 2021

We enclose a copy of your charity information return together with the financial statements. Also enclosed is the trial balance, grouped as per the financial statements, as well as adjusting journal entries. We have prepared this return based on the information provided to us.

During the course of our engagement the following item was identified for your consideration:

GST

- We have prepared the GST Public Service Bodies rebate forms for January 1, 2021 to June 30, 2021 and from July 1, 2021 to December 31, 2021. The total rebate amount expected to be refunded is \$1,443.31

Please note that we do not keep a copy of all your records on file; therefore it is the company's responsibility to keep its daily business records for a minimum of six years from the end of the latest year to which they relate, or six years from the filing date of the tax return. Certain documents must be kept in perpetuity. All records, including electronic records, must be maintained in Canada and made available to CRA officials upon request.

It is important to note that for any records that we do keep our retention policy is ten years, after which they will be destroyed. At this time, we are returning your books and records used in preparing your financial statements. Please contact us if you have any questions.

Yours truly,

CHURCH PICKARD

Lee-Anne Harrison, CPA, CA

LH/ejc

Enclosure



25 Cavan Street, Nanaimo, BC V9R 2T9
Tel (250) 754-6396 Toll Free 1-866-754-6396
Fax (250) 754-8177 mail@churchpickard.com
www.churchpickard.com

Partners

Grant McDonald, CPA, CA*

Lee-Anne Harrison, CPA, CA*

Arina Jones, CPA, CA*

Joanne Novak, CPA, CA*

*Incorporated



April 26, 2022

Mr. Barry Loescher,
Gabriola Island Recycling Organization
700 Tin Can Alley

Gabriola, BC V0R 1X3

Dear Mr. Loescher:

You have requested that, on the basis of information that you will provide, we assist you in the preparation of the compiled financial information of Gabriola Island Recycling Organization, which comprise the balance sheet as at December 31, 2021, and the statement of income and retained earnings for the year then ended, and Note 1, which describes the basis of accounting to be applied in the preparation of the compiled financial information.

Intended Use of the Compiled Financial Information

The compiled financial information is intended to be used by management of Gabriola Island Recycling Organization and third parties, being the Regional District of Nanaimo, the Government of Canada, the donors and members of the organization. Those parties are in a position to request and obtain further information from the entity.

We are pleased to confirm our acceptance and our understanding of this compilation engagement by means of this letter.

Our Responsibilities

We will perform the compilation engagement in accordance with the Canadian Standard on Related Services (CSRS) 4200, Compilation Engagements, which requires us to comply with relevant ethical requirements.

A compilation engagement involves us assisting you in the preparation of compiled financial information. Since a compilation engagement is not an assurance engagement, we are not required to perform procedures to verify the accuracy or completeness of the information you provide to us for the compilation engagement. Accordingly, we will not express an audit opinion or a review conclusion, or provide any form of assurance on the compiled financial information.

.../2

Gabriola Island Recycling Organization

April 26, 2022

Management's Responsibilities

The compilation engagement is performed on the basis that you acknowledge that:

- The third party that intends to use the compiled financial information is in a position to request and obtain further information from the entity;
- A compilation engagement is appropriate for the intended use;
- You understand that a compilation engagement will not fulfill the entity's legal, regulatory or contractual provisions, if any, for an audit engagement or a review engagement; and
- You understand that the compiled financial information should not be used by third parties other than those who are in a position to request or obtain further information from the entity or have agreed with you the basis of accounting applied in the preparation of the compiled financial information.

Further, you acknowledge that you are responsible for:

- The compiled financial information;
- Selecting the basis of accounting to be applied in the preparation of the compiled financial information that is appropriate for the intended use;
- The accuracy and completeness of the information provided to us; and
- Attaching the compilation engagement report when distributing or reproducing the compiled financial information.

Reporting

Unless unanticipated difficulties are encountered, our report will be substantially in the following form:

COMPILATION ENGAGEMENT REPORT

On the basis of information provided by management, we have compiled the balance sheet of **Gabriola Island Recycling Organization** as at **December 31, 2021** and the statements of income and surplus and cash flows for the year then ended, and Note 1, which describes the basis of accounting applied in the preparation of the compiled financial information.

Management is responsible for the accompanying financial information, including the accuracy and completeness of the underlying information used to compile it and the selection of the basis of accounting.

We performed this engagement in accordance with Canadian Standard on Related Services (CSRS) 4200, Compilation Engagements, which requires us to comply with relevant ethical requirements. Our responsibility is to assist management in the preparation of the financial information.

Gabriola Island Recycling Organization

April 26, 2022

We did not perform an audit engagement or a review engagement, nor were we required to perform procedures to verify the accuracy or completeness of the information provided by management. Accordingly, we do not express an audit opinion or a review conclusion, or provide any form of assurance on the financial information.

Use of Information

It is acknowledged that we will have access to all information about identified individuals ("personal information") in your custody that we require to complete our Engagement. Our services are provided on the basis that:

- a. You represent to us that management has obtained any required consents for our collection, use, disclosure, storage, transfer and process of personal information required under applicable privacy legislation and professional regulation; and
- b. We will hold all personal information in compliance with our Privacy Statement.

File Inspections

In accordance with professional regulations (and by firm policy), our client files must periodically be reviewed by practice inspectors and by other firm personnel to ensure that we are adhering to professional and firm standards. File reviewers are required to maintain confidentiality of client information.

Confidentiality

One of the underlying principles of the profession is a duty of confidentiality with respect to client affairs. Each professional accountant must preserve the secrecy of all confidential information that becomes known during the practice of the profession. Accordingly, we will not provide any third party with confidential information concerning the affairs of Gabriola Island Recycling Organization unless:

- a. We have been specifically authorized with prior consent;
- b. We have been ordered or expressly required by law or by the provincial *Code of Professional Conduct/Code of Ethics*; or
- c. The information requested is (or enters into) public domain.

Communications

In performing our services, we will send messages and documents electronically. As such communications can be intercepted, misdirected, infected by a virus, or otherwise used or communicated by an unintended third party, we cannot guarantee or warrant that communications from us will be properly delivered only to the addressee. Therefore, we specifically disclaim, and you release us from, any liability or responsibility whatsoever for interception or unintentional disclosure of communications transmitted by us in connection with the performance of this Engagement.

Gabriola Island Recycling Organization

April 26, 2022

In that regard, you agree that we shall have no liability for any loss or damage to any person or entity resulting from such communications, including any that are consequential, incidental, direct, indirect, punitive, exemplary or special damages (such as loss of data, revenues or anticipated profits).

If you do not consent to our use of electronic communications, please notify us in writing.

Ownership

The working papers, files, other materials, reports and work created, developed or performed by us during the course of the Engagement are the property of our firm, constitute our confidential information and will be retained by us in accordance with our firm's policies and procedures.

During the course of our work, we may provide, for your own use, certain software, spreadsheets and other intellectual property to assist with the provision of our services. Such software, spreadsheets and other intellectual property must not be copied, distributed or used for any other purpose. We also do not provide any warranties in relation to these items and will not be liable for any lost or corrupted data or other damage or loss suffered or incurred by you in connection with your use of them.

We retain the copyright and all intellectual property rights in any original materials provided to you.

Accounting Advice

Except as outlined in this letter, the Engagement does not contemplate the provision of specific accounting advice or opinions or the issuance of a written report on the application of accounting standards to specific transactions and to the facts and circumstances of the entity. Such services, if requested, would be provided under a separate engagement letter.

Dispute Resolution

You agree that any dispute that may arise regarding the meaning, performance or enforcement of this Engagement will, prior to resorting to litigation, be submitted to mediation.

Indemnity

Gabriola Island Recycling Organization hereby agrees to indemnify, defend (by counsel retained and instructed by us) and hold harmless our firm (and its partners, agents and employees) from and against any and all losses, costs (including solicitors' fees), damages, expenses, claims, demands and liabilities arising out of (or in consequence of):

Gabriola Island Recycling Organization

April 26, 2022

- a. The breach by Gabriola Island Recycling Organization, or its directors, officers, agents, or employees, of any of the covenants or obligations of Gabriola Island Recycling Organization herein, including, without restricting the generality of the foregoing, the misuse of, or the unauthorized dissemination of, our engagement report or the financial information in reference to which the engagement report is issued, or any other work product made available to you by our firm.
- b. A misrepresentation by a member of your management or those charged with governance.

Limitation of Liability

The total liability of Church Pickard and any of its partners and employees for any errors, omissions or negligent acts, whether they are in contract or in tort or in breach of fiduciary duty or otherwise, arising from any professional services performed or not performed by Church Pickard or by any of its partners or employees for the client shall be limited to the sum available in respect of the liability of Church Pickard, under the policy or policies of professional liability insurance obtained by Church Pickard, at the time that the client makes a claim against Church Pickard.

You agree that our liability for all claims you may have or bring in connection with the professional services rendered arising out of or ancillary to this agreement shall absolutely cease to exist after a period of four years from the date of:

- (a) performance of this engagement;
- (b) delivery to you of our Compilation Engagement Report, your financial statements, or the completion of the preparation of any tax filing with any government authority;
- (c) suspension or abandonment of this engagement; or
- (d) termination of our services pursuant to this agreement,

whichever shall occur first, regardless of whether you were aware of the potential for making a claim against us within that period. Following the expiration of the aforesaid period, you agree that neither you, your agents, or assigns shall make any claim or bring any proceeding against us.

Time Frames

We will use all reasonable efforts to complete the Engagement as described in this letter within the agreed-upon time frames.

However, we shall not be liable for failures or delays in performance that arise from causes beyond our reasonable control, including any delays in the performance by Gabriola Island Recycling Organization of its obligations.

Gabriola Island Recycling Organization

April 26, 2022

Fees at Regular Billing Rates

Our professional fees will be based on our regular billing rates, plus direct out-of-pocket expenses and applicable GST, and are due when rendered. Fees for additional services will be established separately.

If significant additional time is likely to be incurred, we will discuss the reasons with you and agree on a revised fee estimate before we incur the additional costs.

Fees will be rendered as work progresses and are payable on presentation.

Personal Fee Guarantee

In consideration for the services rendered by this accountant to the company, the undersigned personally guarantees payment of all invoices rendered in connection with terms of this engagement.

Billing

Our fees and costs will be billed monthly and are payable upon receipt. Invoices unpaid 30 days past the billing date may be deemed delinquent and are subject to an interest charge of 1.5% per month. We reserve the right to suspend our services or to withdraw from this Engagement in the event that any of our invoices are deemed delinquent. In the event that any collection action is required to collect unpaid balances due to us, you agree to reimburse us for our costs of collection, including lawyers' fees.

Costs of Responding to Government or Legal Processes

In the event we are required to respond to a subpoena, court order, government agency or other legal process for the production of documents and/or testimony relative to information we obtained and/or prepared during the course of this Engagement, you agree to compensate us, at our normal hourly rates, for the time we expend in connection with such response and to reimburse us for all of our out-of-pocket costs (including applicable GST/HST) incurred.

Termination

Management acknowledges and understands that failure to fulfill its obligations as set out in this engagement letter will result, upon written notice, in the termination of the Engagement.

Either party may terminate this agreement for any reason upon providing written notice to the other party not less than 30 calendar days before the effective date of termination. If early termination takes place, Gabriola Island Recycling Organization shall be responsible for all time and expenses incurred up to the termination date and all costs in terminating any agreement with any specialist or other third party retained by us in connection with this Engagement.

Gabriola Island Recycling Organization

April 26, 2022

If we are unable to complete the Engagement, we may withdraw from the Engagement before issuing our Compilation Engagement Report or compiling the financial information. If this occurs, we will communicate the reasons and provide details.

Survival of Terms

This engagement letter will continue in force for subsequent Engagements unless terminated by either party by written notice prior to the commencement of the subsequent Engagement.

Conclusion

This engagement letter includes the relevant terms that will govern the Engagement for which it has been prepared. The terms of this letter supersede any prior oral or written representations or commitments by or between the parties. Any material changes or additions to the terms set forth in this letter will only become effective if evidenced by a written amendment to this letter, signed by all of the parties.

If you have any questions about the contents of this letter, please raise them with us. Please sign and return the attached copy of this letter to indicate your acknowledgment of, and agreement with, the arrangements for the compilation engagement.

We appreciate the opportunity of continuing to be of service to your company.

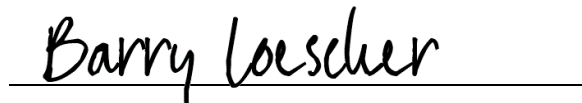
Yours truly,

CHURCH PICKARD

Lee-Anne Harrison, CPA, CA

LH/ejc

Acknowledged and agreed on behalf of the management of Gabriola Island Recycling Organization by:



Mr. Barry Loescher

5/27/2022

Date

Gabriola Island Recycling Organization**Year End: December 31, 2021****Trial Balance**

Account	Rep 21	Rep 20	%Chg	Rep 19	%Chg	Rep 18	%Chg	Rep 17	%Chg
1050 Float	590.00	390.00	51	390.00	0	290.00	34	290.00	0
1060 Cash for Deposit	105.65	312.00	(66)	0.00	0	2,511.77	(100)	0.00	0
1080 Petty Cash	117.29	269.50	(56)	185.00	46	353.46	(48)	117.79	200
1082 C2C Chequing Account	52,448.71	0.00	0	0.00	0	0.00	0	0.00	0
1085 Gaming Account	7,468.53	7,468.53	0	0.00	0	0.00	0	0.00	0
1090 CCCU Chequing General 959	112,746.36	58,333.14	93	37,371.29	56	31,465.21	19	43,612.36	(28)
1099 CCCU Reserve Savings 2015	21,053.89	19,119.02	10	19,088.30	0	16,291.17	17	16,229.69	0
1102 CCCU Equity Shares - 10088	57.10	56.75	1	56.20	1	55.65	1	55.22	1
A. 1 Cash	194,587.53	85,948.94	126	57,090.79	51	50,967.26	12	60,305.06	(15)
1240 Accounts Receivable	4,160.77	2,385.00	74	1,800.00	33	2,092.10	(14)	3,417.50	(39)
1241 Accounts Receivables other	10,000.00	16,943.30	(41)	0.00	0	0.00	0	0.00	0
1243 GIC Accrued Interest	308.30	1,157.73	(73)	1,058.72	9	807.42	31	284.50	184
2115 Gst Paid	1,443.31	1,590.54	(9)	1,575.55	1	1,509.12	4	1,611.28	(6)
B Accts Receivable trade & othe	15,912.38	22,076.57	(28)	4,434.27	398	4,408.64	1	5,313.28	(17)
1300 Prepaid Expenses	6,073.32	6,328.32	(4)	6,082.32	4	6,042.55	1	6,342.27	(5)
D Prepaid expenses	6,073.32	6,328.32	(4)	6,082.32	4	6,042.55	1	6,342.27	(5)
1091 GIC 23720400	0.00	26,403.69	(100)	25,821.53	2	25,313.70	2	25,000.00	1
1093 GIC 23184821	26,508.46	26,180.82	1	25,605.06	2	25,250.96	1	25,000.00	1
1094 GIC 23561986	0.00	26,077.23	(100)	25,501.54	2	25,000.00	2	0.00	0
E. 1 Short-term investments	26,508.46	78,661.74	(66)	76,928.13	2	75,564.66	2	50,000.00	51
1153 Leede Jones Gable Account-0	49,953.02	0.00	0	0.00	0	0.00	0	0.00	0
E. 5 Long term investments	49,953.02	0.00	0	0.00	0	0.00	0	0.00	0
1520 Vehicles	28,353.52	28,353.52	0	28,353.52	0	28,353.52	0	28,353.52	0
1540 New Bailer	1,725.83	1,725.83	0	1,725.83	0	1,725.83	0	1,725.83	0
1580 Computer	689.82	689.82	0	689.82	0	689.82	0	689.82	0
1590 Pallet Jack	440.90	440.90	0	440.90	0	440.90	0	440.90	0
1625 Trailer	7,498.64	7,498.64	0	7,498.64	0	7,498.64	0	7,498.64	0
1630 Depot Improvements	102,140.22	102,140.22	0	102,140.22	0	102,140.22	0	102,140.22	0
1640 Depot Fence	17,292.90	17,292.90	0	17,292.90	0	17,292.90	0	17,292.90	0
1650 Toxic Materials Cage	2,619.47	2,619.47	0	2,619.47	0	2,619.47	0	2,619.47	0
1710 Land	41,200.00	41,200.00	0	41,200.00	0	41,200.00	0	41,200.00	0
1880 Write off Carried from Prev. Y	(201,961.30)	(201,961.30)	0	(201,961.30)	0	(201,961.30)	0	(201,961.30)	0
G Capital assets	0.00	0.00	0	0.00	0	0.00	0	0.00	0
1635 Access Path	15,209.70	15,209.70	0	15,209.70	0	15,209.70	0	0.00	0
1636 AA Access Path	(3,040.45)	(2,280.49)	33	(1,520.49)	50	(760.49)	100	0.00	0
1810 2015 New Building Project	139,368.63	139,368.63	0	139,368.63	0	139,368.63	0	139,368.63	0
1811 AA 2015 New Building	(48,781.88)	(41,811.92)	17	(34,841.92)	20	(27,871.92)	25	(20,904.00)	33
1815 Current Restore Upgrade	13,864.03	13,864.03	0	13,864.03	0	13,864.03	0	13,864.03	0
1816 AA Current Restore Upgrade	(4,842.20)	(4,152.20)	17	(3,462.20)	20	(2,772.00)	25	(2,079.00)	33
1820 Improvements - Recycle Depo	141,067.37	141,067.37	0	141,067.37	0	100,661.08	40	88,649.41	14
1821 AA Improvements Depot	(32,979.16)	(25,929.16)	27	(18,879.16)	37	(11,829.56)	60	(6,795.53)	74
1830 Equipment & Furniture	3,598.34	3,598.34	0	2,032.50	77	2,032.50	0	2,032.50	0

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1B

Gabriola Island Recycling Organization**Year End: December 31, 2021****Trial Balance**

Account	Rep 21	Rep 20	%Chg	Rep 19	%Chg	Rep 18	%Chg	Rep 17	%Chg
1831 AA Equipment & Furniture	(2,516.15)	(1,792.94)	40	(1,222.94)	47	(812.94)	50	(406.50)	100
1840 Equipment - Pallet Jack	2,336.73	2,336.73	0	2,336.73	0	2,336.73	0	2,336.73	0
1841 AA Equipment - Pallet Jack	(2,336.73)	(1,874.70)	25	(1,404.70)	33	(934.70)	50	(467.35)	100
1844 Outdoor Security System	3,870.45	0.00	0	0.00	0	0.00	0	0.00	0
1845 AA Outdoor Security System	(387.05)	0.00	0	0.00	0	0.00	0	0.00	0
1850 Harmony Baler	12,164.25	12,164.25	0	0.00	0	0.00	0	0.00	0
1851 AA Harmony Baler	(3,652.85)	(1,220.00)	199	0.00	0	0.00	0	0.00	0
1860 New Depot Outbuilding	10,944.57	10,944.57	0	0.00	0	0.00	0	0.00	0
1861 AA New Depot Outbuilding	(547.32)	0.00	0	0.00	0	0.00	0	0.00	0
1870 C2C Threads Textile Program	12,477.52	0.00	0	0.00	0	0.00	0	0.00	0
G. 3 Building and Equipment	255,817.80	259,492.21	(1)	252,547.55	3	228,491.06	11	215,598.92	6
2100 Accrued Accounting	(2,100.00)	(1,700.00)	24	(1,700.00)	0	(1,700.00)	0	(1,700.00)	0
2114 PST	0.00	1.00	(100)	(799.62)	(100)	(726.72)	10	(740.19)	(2)
2151 Accounts Payable	(2,483.06)	(1,944.86)	28	(610.54)	219	(0.10)	*****	(3,447.90)	(100)
2154 Credit Union Collabria MasterC	(487.42)	0.00	0	16.66	(100)	(400.00)	(104)	0.00	0
2155 Payroll Taxes Payable	(6,986.63)	(2,772.10)	152	(3,901.26)	(29)	(1,449.41)	169	0.00	0
2156 CPP Payable	0.00	0.00	0	0.00	0	(1,076.40)	(100)	0.00	0
2157 EI Payable	0.00	0.00	0	0.00	0	(657.61)	(100)	0.00	0
2160 Accrued Vacation	(953.10)	(124.72)	664	(150.76)	(17)	(486.46)	(69)	(670.68)	(27)
2166 MBNA Mastercard	6.70	6.70	0	0.00	0	0.00	0	0.00	0
2430 WCB Payable	(623.11)	(727.34)	(14)	(431.40)	69	(2,123.25)	(80)	(2,338.56)	(9)
J. 1 Accounts payable/accrued li	(13,626.62)	(7,261.32)	88	(7,576.92)	(4)	(8,619.95)	(12)	(8,897.33)	(3)
2442 Deferred contribution - oil ta	(4,743.68)	(5,060.00)	(6)	(5,376.25)	(6)	(5,692.55)	(6)	(6,008.75)	(5)
2443 Deferred contribution - New R	(18,749.96)	(20,000.00)	(6)	(21,250.00)	(6)	(22,500.08)	(6)	(23,750.00)	(5)
2444 Deferred Contribution Access	(7,851.22)	(8,341.90)	(6)	(8,832.60)	(6)	(9,323.30)	(5)	0.00	0
2470 Deferred Contribution - C2C T	(59,226.82)	0.00	0	0.00	0	0.00	0	0.00	0
L. 1 Deferred contributions	(90,571.68)	(33,401.90)	171	(35,458.85)	(6)	(37,515.93)	(5)	(29,758.75)	26
2460 Deferred Contribution School I	(7,200.00)	(7,200.00)	0	0.00	0	0.00	0	0.00	0
L. 2 Defered Revenue	(7,200.00)	(7,200.00)	0	0.00	0	0.00	0	0.00	0
2110 Bank Loan - Coastal Commun	(40,000.00)	(40,000.00)	0	0.00	0	0.00	0	0.00	0
M. 2 Long-term debt	(40,000.00)	(40,000.00)	0	0.00	0	0.00	0	0.00	0
3560 Retained Earnings	(364,644.56)	(354,047.29)	3	(319,338.39)	11	(298,903.45)	7	(271,097.15)	10
O. 2 Net assets	(364,644.56)	(354,047.29)	3	(319,338.39)	11	(298,903.45)	7	(271,097.15)	10
4014 Miscellaneous Income	(1,795.54)	(492.01)	265	(883.11)	(44)	(743.09)	19	(308.59)	141
10. 2 Commissions	(1,795.54)	(492.01)	265	(883.11)	(44)	(743.09)	19	(308.59)	141
4010 Interest Income	(1,194.57)	(1,867.93)	(36)	(1,693.36)	10	(1,153.22)	47	(392.19)	194
10. 4 Interest	(1,194.57)	(1,867.93)	(36)	(1,693.36)	10	(1,153.22)	47	(392.19)	194
4007 Dividends	(82.14)	(0.36)	835	0.00	0	0.00	0	(0.36)	(100)
10. 5 Dividends	(82.14)	(0.36)	835	0.00	0	0.00	0	(0.36)	(100)

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1B-1

Gabriola Island Recycling Organization**Year End: December 31, 2021****Trial Balance**

Account	Rep 21	Rep 20	%Chg	Rep 19	%Chg	Rep 18	%Chg	Rep 17	%Chg
4001 Donations (restore)	(106,657.89)	(92,338.37)	16	(161,650.60)	(43)	(154,039.79)	5	(148,255.66)	4
4002 Donations (clothing)	(78,360.96)	(34,533.81)	127	(74,776.31)	(54)	(58,194.00)	28	(56,808.50)	2
4003 Donations (recycling)	(28,853.72)	(16,355.00)	76	(29,765.99)	(45)	(29,151.03)	2	(27,646.01)	5
4004 Materials	(2,896.10)	(67.04)	220	0.00	0	(251.13)	(100)	(4,276.06)	(94)
4005 Returnables	(21,206.02)	(25,140.77)	(16)	(16,055.60)	57	(14,895.60)	8	(13,388.25)	11
4006 Membership Dues	(640.00)	(984.00)	(35)	(174.00)	466	(30.00)	480	(92.00)	(67)
4008 Product Care	(2,029.39)	(2,105.00)	(4)	(3,663.47)	(43)	(2,407.92)	52	(2,289.80)	5
4009 Business Recycling	(16,757.37)	(11,236.00)	49	(14,260.45)	(21)	(10,214.00)	40	(9,567.08)	7
4011 Hallowe'en	0.00	0.00	0	0.00	0	0.00	0	(548.67)	(100)
4012 Books	0.00	0.00	0	0.00	0	0.00	0	(4,192.00)	(100)
4016 Depot Metal Bin (Scrap Metal)	(21,090.07)	(65.00)	32,346	(2,193.81)	(97)	(3,072.08)	(29)	(299.50)	926
4017 Metal Bin (copper brass silver)	(8,172.37)	(826.28)	889	(9,011.68)	(91)	(4,096.78)	120	(10,621.96)	(61)
4018 Diabetes Association	0.00	(194.70)	(100)	(2,228.85)	(91)	(1,335.00)	67	(1,550.00)	(14)
4020 Donations - Tax Receipt	(2,375.00)	(5,800.00)	(59)	(2,000.00)	190	(2,500.00)	(20)	0.00	0
4021 Canada Helps Donations	(1,750.00)	(677.00)	158	(384.00)	76	0.00	0	0.00	0
4022 BCUOMA - used oil	(846.69)	(1,401.75)	(40)	0.00	0	0.00	0	0.00	0
4023 Donations - no receipt	(5.00)	0.00	0	0.00	0	0.00	0	0.00	0
4060 Canada Summer Jobs Grant	(16,433.00)	0.00	0	0.00	0	0.00	0	0.00	0
4100 Grants & Deferred Revenue	(2,057.04)	(13,930.95)	(85)	(19,358.34)	(28)	(11,932.87)	62	(7,214.25)	65
5064 PST	0.00	0.00	0	0.00	0	0.00	0	2,161.23	(100)
20 Sales or gross income	(310,130.62)	(205,655.67)	51	(335,523.10)	(39)	(292,120.20)	15	(284,588.51)	3
4150 CEBA Loan Grant Portion	0.00	(10,000.00)	(100)	0.00	0	0.00	0	0.00	0
20.1 Other income	0.00	(10,000.00)	(100)	0.00	0	0.00	0	0.00	0
4110 C2C - Threads Textile Program	(43,817.18)	0.00	0	0.00	0	0.00	0	0.00	0
4111 C2C-Threads Textile Sales	(9,146.59)	0.00	0	0.00	0	0.00	0	0.00	0
20.2 C2C Threads Project	(52,963.77)	0.00	0	0.00	0	0.00	0	0.00	0
5009 Advertising	0.00	15.17	(100)	0.00	0	0.00	0	107.12	(100)
5027 Charitable donations	0.00	0.00	0	1,133.70	(100)	847.75	34	873.55	(3)
40.1 Advertising and promotion	0.00	15.17	(100)	1,133.70	(99)	847.75	34	980.67	(14)
5610 Amortization/Depreciation	20,022.38	17,730.00	13	16,349.80	8	14,329.23	14	12,751.80	12
40.2 Amortization	20,022.38	17,730.00	13	16,349.80	8	14,329.23	14	12,751.80	12
5075 Truck - Gas	1,656.48	1,010.68	64	1,524.59	(34)	1,334.13	14	1,346.00	(1)
5085 Truck Maintenance	531.30	0.00	0	452.32	(100)	0.00	0	2,312.93	(100)
5090 Truck Insurance	2,110.00	2,137.00	(1)	2,336.23	(9)	2,218.77	5	2,058.05	8
40.4 Vehicle	4,297.78	3,147.68	37	4,313.14	(27)	3,552.90	21	5,716.98	(38)
5035 Insurance	9,632.00	8,994.00	7	8,410.00	7	8,558.95	(2)	7,059.37	21
40.21 Insurance	9,632.00	8,994.00	7	8,410.00	7	8,558.95	(2)	7,059.37	21
5016 Canada Helps Fee	69.35	14.60	375	0.00	0	0.00	0	0.00	0
5019 Royal Bank Central - Debit Fee	777.25	468.94	66	0.00	0	0.00	0	0.00	0
5040 Interest & Bank Charges	303.00	67.52	349	60.50	12	47.50	27	7.50	533
5061 Penalties & interest	162.09	0.00	0	206.60	(100)	157.20	31	0.00	0

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1B-2

Gabriola Island Recycling Organization**Year End: December 31, 2021****Trial Balance**

Account	Rep 21	Rep 20	%Chg	Rep 19	%Chg	Rep 18	%Chg	Rep 17	%Chg
5074 Stripe Fee	<u>29.13</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>
40.22 Interest and bank charges	1,340.82	551.06	143	267.10	106	204.70	30	7.50	629
5022 Dues & Fees	<u>150.00</u>	<u>150.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>180.00</u>	<u>(100)</u>
5073 Software - Accounting Packag	<u>650.00</u>	<u>637.29</u>	<u>2</u>	<u>620.86</u>	<u>3</u>	<u>600.00</u>	<u>3</u>	<u>585.71</u>	<u>2</u>
40.32 Office supplies	800.00	787.29	2	620.86	27	600.00	3	765.71	(22)
5010 Accounting & Legal	<u>2,450.00</u>	<u>1,742.50</u>	<u>41</u>	<u>1,742.50</u>	<u>0</u>	<u>1,771.70</u>	<u>(2)</u>	<u>2,249.88</u>	<u>(21)</u>
40.35 Professional fees	2,450.00	1,742.50	41	1,742.50	0	1,771.70	(2)	2,249.88	(21)
5020 Recycle Expense	<u>5,929.10</u>	<u>6,215.45</u>	<u>(5)</u>	<u>1,512.08</u>	<u>311</u>	<u>4,902.20</u>	<u>(69)</u>	<u>3,217.93</u>	<u>52</u>
5021 Restore Expense	<u>372.08</u>	<u>1,136.56</u>	<u>(67)</u>	<u>184.24</u>	<u>517</u>	<u>137.73</u>	<u>34</u>	<u>129.24</u>	<u>7</u>
5025 Clothing Expense	<u>2,872.55</u>	<u>842.27</u>	<u>241</u>	<u>523.04</u>	<u>61</u>	<u>809.14</u>	<u>(35)</u>	<u>451.10</u>	<u>79</u>
5028 Compost Green Bins - RDN	<u>0.00</u>	<u>0.00</u>	<u>0</u>	<u>201.31</u>	<u>(100)</u>	<u>402.62</u>	<u>(50)</u>	<u>805.24</u>	<u>(50)</u>
5053 Materials Expense - Cascades	<u>29.40</u>	<u>2,086.94</u>	<u>(99)</u>	<u>5,876.60</u>	<u>(64)</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>
5060 General Expense	<u>15,665.12</u>	<u>19,101.58</u>	<u>(18)</u>	<u>9,639.06</u>	<u>98</u>	<u>10,428.54</u>	<u>(8)</u>	<u>9,707.68</u>	<u>7</u>
5086 Building Repair & Maintenance	<u>0.00</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>1,034.96</u>	<u>(100)</u>	<u>2,000.21</u>	<u>(48)</u>
5096 Safety Compliance	<u>0.00</u>	<u>3,000.00</u>	<u>(100)</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>
40.39 Repairs and maintenance	24,868.25	32,382.80	(23)	17,936.33	81	17,715.19	1	16,311.40	9
5100 C2C - Threads Textile Program	<u>28,488.62</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>
40.42 Supplies	28,488.62	0.00	0	0.00	0	0.00	0	0.00	0
5066 Shaw Cable	<u>1,285.18</u>	<u>1,398.43</u>	<u>(8)</u>	<u>1,406.20</u>	<u>(1)</u>	<u>1,397.95</u>	<u>1</u>	<u>1,323.80</u>	<u>6</u>
40.44 Telephone	1,285.18	1,398.43	(8)	1,406.20	(1)	1,397.95	1	1,323.80	6
5070 Ferry & Overheight Charges	<u>1,700.00</u>	<u>1,000.00</u>	<u>70</u>	<u>2,000.00</u>	<u>(50)</u>	<u>2,000.00</u>	<u>0</u>	<u>1,900.00</u>	<u>5</u>
40.45 Travel	1,700.00	1,000.00	70	2,000.00	(50)	2,000.00	0	1,900.00	5
5030 BC Hydro	<u>1,134.23</u>	<u>2,189.72</u>	<u>(48)</u>	<u>3,041.86</u>	<u>(28)</u>	<u>4,692.36</u>	<u>(35)</u>	<u>5,160.80</u>	<u>(9)</u>
40.46 Utilities	1,134.23	2,189.72	(48)	3,041.86	(28)	4,692.36	(35)	5,160.80	(9)
4050 CEWS Wage Subsidy	<u>(61,881.69)</u>	<u>(76,473.11)</u>	<u>(19)</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>
5340 Wages & Commissions	<u>258,423.60</u>	<u>192,523.62</u>	<u>34</u>	<u>215,932.70</u>	<u>(11)</u>	<u>193,399.00</u>	<u>12</u>	<u>182,676.57</u>	<u>6</u>
5341 CPP Expense	<u>10,511.52</u>	<u>7,026.78</u>	<u>50</u>	<u>7,619.38</u>	<u>(8)</u>	<u>6,360.38</u>	<u>20</u>	<u>6,592.30</u>	<u>(4)</u>
5342 EI Expense	<u>5,507.01</u>	<u>4,255.21</u>	<u>29</u>	<u>4,903.63</u>	<u>(13)</u>	<u>4,498.79</u>	<u>9</u>	<u>4,216.12</u>	<u>7</u>
5344 Payroll Remittance Penalty	<u>0.00</u>	<u>0.00</u>	<u>0</u>	<u>430.28</u>	<u>(100)</u>	<u>69.27</u>	<u>521</u>	<u>0.00</u>	<u>0</u>
5350 Blue Cross	<u>2,020.20</u>	<u>1,248.00</u>	<u>62</u>	<u>738.00</u>	<u>69</u>	<u>627.00</u>	<u>18</u>	<u>615.00</u>	<u>2</u>
5400 WCB Expense	<u>2,717.12</u>	<u>2,073.44</u>	<u>31</u>	<u>1,867.31</u>	<u>11</u>	<u>2,123.25</u>	<u>(12)</u>	<u>2,338.56</u>	<u>(9)</u>
40.47 Wages and benefits	217,297.76	130,653.94	66	231,491.30	(44)	207,077.69	12	196,438.55	5
5095 Volunteer/Staff Appreciation	<u>1,215.97</u>	<u>0.00</u>	<u>0</u>	<u>1,200.00</u>	<u>(100)</u>	<u>1,214.41</u>	<u>(1)</u>	<u>1,291.89</u>	<u>(6)</u>
40.51 Volunteer & staff appreciat	1,215.97	0.00	0	1,200.00	(100)	1,214.41	(1)	1,291.89	(6)
5057 Scrap Metal Expense	<u>11,414.00</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>
40.56 Scrap metal expense	11,414.00	0.00	0	0.00	0	0.00	0	0.00	0
5011 Bookkeeping	<u>7,410.00</u>	<u>6,600.00</u>	<u>12</u>	<u>7,320.00</u>	<u>(10)</u>	<u>6,862.13</u>	<u>7</u>	<u>5,525.00</u>	<u>24</u>

Unaudited - See Notice to Reader

5/26/2022
3:41 PM

Prepared by	Reviewed by	Reviewed by
CE 5/18/2022	LH 5/20/2022	

1B-3

Gabriola Island Recycling Organization

Year End: December 31, 2021

Trial Balance

Account	Rep 21	Rep 20	%Chg	Rep 19	%Chg	Rep 18	%Chg	Rep 17	%Chg
40.57 Bookkeeping	7,410.00	6,600.00	12	7,320.00	(10)	6,862.13	7	5,525.00	24
5097 Workshops - Recycling Educa	0.00	0.00	0	6,157.88	(100)	2,756.71	123	0.00	0
5200 School Program Expenses	0.00	<u>226.30</u>	(100)	<u>0.00</u>	0	<u>0.00</u>	0	<u>0.00</u>	0
40.58 Training	0.00	226.30	(100)	6,157.88	(96)	2,756.71	123	0.00	0
	<u>0.00</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>
Net Income (Loss)	32,809.65	10,597.27	210	34,708.90	(69)	20,434.84	70	27,806.30	(27)

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1B-4

Gabriola Island Recycling Organization

Year End: December 31, 2021

Adjusting Journal Entries

Date: 1/1/2021 To 12/31/2021

Number	Date	Name	Account No	Reference	Debit	Credit	Recurrence	Misstatement
1	12/31/2021	GIC Accrued Interest	1243			1,157.73		
1	12/31/2021	Interest Income	4010		1,157.73			
		To reverse prior year accrued interest						
2	12/31/2021	Prepaid Expenses	1300			304.08		
2	12/31/2021	Insurance	5035		447.08			
2	12/31/2021	Truck Insurance	5090			143.00		
		To adjust prepaid expense						
3	12/31/2021	Accrued Accounting	2100	40		400.00		
3	12/31/2021	Accounting & Legal	5010	40	400.00			
		To update accounting accrual						
4	12/31/2021	AA Equipment & Furniture	1831			313.17		
4	12/31/2021	AA Equipment - Pallet Jack	1841		8.01			
4	12/31/2021	AA Outdoor Security System	1845			387.05		
4	12/31/2021	AA Harmony Baler	1851			2,432.85		
4	12/31/2021	Amortization/Depreciation	5610		2,740.69			
4	12/31/2021	Amortization/Depreciation	5610		384.37			
		To update amortization expense to agree to recalculated schedule						
5	12/31/2021	GIC Accrued Interest	1243		308.30			
5	12/31/2021	Interest Income	4010			308.30		
		To accrue GIC interest						
6	12/31/2021	Leede Jones Gable Account-0648624A	1153			46.98		
6	12/31/2021	Dividends	4007			81.79		
6	12/31/2021	Interest & Bank Charges	5040		128.77			
		To record income from investment						
7	12/31/2021	Retained Earnings	3560			360.00		
7	12/31/2021	General Expense	5060		360.00			
		To adjust current year retained earnings to agree to prior year closing						
					5,934.95	5,934.95		
		Net Income (Loss)	32,809.65					

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Prepared by	Reviewed by	Reviewed by
CE 5/13/2022	LH 5/20/2022	

Certificate Of Completion

Envelope Id: 5FBB18D439B349098C99FCC6C403C031

Status: Completed

Subject: Church Pickard - Gabriola Island Recycling Organization 2021 - Signatures Required / requises

Source Envelope:

Document Pages: 44

Signatures: 5

Envelope Originator:

Certificate Pages: 1

Initials: 0

Church Pickard

AutoNav: Enabled

office@churchpickard.com

Enveloped Stamping: Enabled

IP Address: 40.82.191.228

Time Zone: (UTC-08:00) Pacific Time (US & Canada)

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Status: Original

Holder: Church Pickard

Location: DocuSign

5/27/2022 10:13:22 AM

office@churchpickard.com

Signer Events**Signature****Timestamp**

Barry Loescher

bloescher@shaw.ca

Security Level:

.Email

ID: 9996619b-7132-4765-8bb6-fd1623f335ec

5/27/2022 11:38:29 AM

Barry Loescher

Signature Adoption: Pre-selected Style

Signed by link sent to bloescher@shaw.ca

Using IP Address: 184.75.215.98

Sent: 5/27/2022 10:16:06 AM

Viewed: 5/27/2022 11:38:35 AM

Signed: 5/27/2022 11:49:57 AM

Electronic Record and Signature Disclosure:

Not Offered via DocuSign

In Person Signer Events**Signature****Timestamp****Editor Delivery Events****Status****Timestamp****Agent Delivery Events****Status****Timestamp****Intermediary Delivery Events****Status****Timestamp****Certified Delivery Events****Status****Timestamp****Carbon Copy Events****Status****Timestamp****Witness Events****Signature****Timestamp****Notary Events****Signature****Timestamp****Envelope Summary Events****Status****Timestamps**

Envelope Sent

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Payment Events**Status****Timestamps**



GIRO Board of Directors

Barry Loescher

President/ Treasurer

David Swanson

Secretary

Howard Houle

Director

Fay Weller

Director

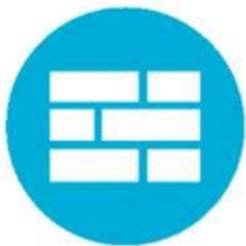


Regional District of Nanaimo 2022- 2023 Zero Waste Program Grant Application



Table of Contents

Project Description	3
About Habitat for Humanity Mid-Vancouver Island	6
Project Viability	8
Project Reporting	10
Budget and Payment of Funding	10
Partnerships	12
APPENDIX A	14
APPENDIX B	16



Project Description

ReStore – ReFresh – ReCycle

Habitat for Humanity Mid Vancouver Island (HFHMVI) is currently in the Zero Waste Program having been accepted to participate in 2021, and renewed again for 2022. In addition to our recycling/upcycling projects, the revenues we receive from our efforts go directly back into the community by helping to build affordable housing. As a result, we have invested this funding in strategies that are critical in taking HFHMVI to the next level of contribution in a circular economy, and we have begun to be successful in community recognition as a “one stop” center for recyclable items. The continuation of this grant can help develop our current programs. The additional focus in 2023 of addressing and reducing the waste created by book waste is something HFHMVI can help address.

- Zero Waste Program grant funding will be used to continue our existing program of upcycling and redesigning used furniture as part of our green initiative in our ReFresh store. This has provided numerous benefits on a variety of different levels. For example, this innovative initiative helps to raise funds for HFHMVI operational costs and our home building program which provides safe and affordable housing for families in our community. In addition, we have also found significant success in the community with providing monthly upcycling workshops that promote the practice of renewal. Other non-profit groups such as the Nanaimo Brain Injury Society have been able to bring their patrons to workshops at our Refresh store, and the results have been very promising both for community collaboration, and positive responses from their members. With a new focus on a Book Recycling Program, we look forward to solidifying new partnerships with other community organizations such as Rotary. As an added benefit of these workshops, we have also gained volunteers who have helped implement this new way of business to transform and breathe new life into our donated products. Many of these products would otherwise be sent to the local landfill. Participants of these workshops also have the opportunity to learn valuable new skills and interact in a safe and social capacity. Our focus in late 2022 and into 2023 will be to prioritize seniors, who often fall by the wayside in social interaction and community involvement. Giving seniors an opportunity to interact with others, learn new skills, or download their expertise onto others is a critical part of a vibrant community. We are at the organizational and planning stages of having local senior centers bring able bodied seniors into our Refresh store to work on projects, utilize their skills, take part in social activities, and download their knowledge onto others.
- In addition, warehouse also houses workspace memberships where individuals can come in and work on their own upcycling projects. We have seen a slower uptake of this program due to some logistical reasons such as the continued COVID fears in early 2022. As COVID restrictions have eased, we were able to gain some traction on this in late 2022. Our users are able to use

our tools and then able to leave their furniture projects here when space may be limited at their home. This gives them the opportunity to learn new skills and gives them the satisfaction of creating something new on their own.

- As part of our continued efforts to promote responsible waste management, we will continue to accept metal, bottles, books in our new program and furniture that can be dismantled, allowing the hardware to be salvaged for our upcycling program. Without the warehouse space, we would not be able to accommodate these large items and those same items would typically end up in the local landfill.
- We also utilize this warehouse space in order to continue to accept wire products for our wire stripping services. We do free pickups of these and other large items from homes in our surrounding community. Our wire stripping program generates upwards of \$500 per month in revenue for our organization.
- We have expanded our scope with junk removal services, estate liquidations, and retirement homes to help promote sustainability for our local circular economy. There continues to be tremendous potential here and we foresee a large capability to create more impact in this area in the future. We have also acquired an industrial sewing machine and have begun upholstery repairs on furniture, as well as holding workshops on how to re-upholster items. All of this takes place hand in hand with our upcycling workshops. There is tremendous impact in seeing one's own tired furniture get a new lease on life. Once again, this is saving products from ending up in the landfill.
- We continue to develop our recycling and upcycling initiatives. We are particularly interested in the 2023 focus on book recycling. Our team has many upcycling and unique furniture ideas that could be made from books-hardcover books in particular. These items will include standing lamps, chair backs, shelving units, security boxes, and even doors! This will come to be known as the "Books and Beyond Initiative". With our volunteer resources, we can make viable these projects that would otherwise not be sustainable with paid employees. Timeline for this project would be approximately 60 days from planning to implementation. Some parts of this project will be immediate. Others, such as drying time for the plan for paperback books below, will take a few weeks to get off the ground.



- In addition to the use of hard-cover books, we have a plan to capitalize on the soft-cover and paperback books and the wastepaper created. These books are often left out in a recycling plan as they don't really fit into a particular category, and their uses are limited. To this, HFHMVI plans to create and market our "Fuel for Families" Initiative. This campaign will use the wastepaper created from books and transform it into paper logs that can be burned in any wood-burning fireplace or used when camping. These logs can be composed of paper alone, or paper and sawdust. Used cooking oil can even be added for extra combustibility. HFHMVI will be able to sell these fire logs to our customers, generating a new revenue source to help put families into affordable housing. To help understand the direction of this initiative by "fire-logs" please look at the video link provided.

https://www.youtube.com/watch?v=-jyV5sLJa_I

While this video is rather simplified, it outlines a use for soft cover and paperback books and the wastepaper they create. We have the space to undertake this project, and we also have the volunteer support to make this project viable and sustainable. This project will take some time to perfect, however the source material for the project is readily available and starting this project will have an immediate impact on the reduction of wastepaper from unused books. Being the first year of implementation and a new project, it is difficult to assess the overall impact in waste reduction on this. By our calculations, it will take the paper from anywhere between 6-10 books per fire log. If we can create 1000 logs over the course of 2023, it would remove between 6000 and 10000 books from

the landfill annually. If- through development of the program- we can increase the production by automation and efficiency, the amount of paper recycled from used books could substantially increase.

There are immediate collaboration opportunities within the community also. This includes partnership potential with the local Rotary Book Sale. This sale occurs twice a year and generates a tremendous number of donated books. The amount of unwanted paperback books has become a storage issue for the Rotary. Additionally, there is potential for a drop-off program for unwanted books creating a further “one stop” for the recycling needs of the local community.



About Habitat for Humanity Mid-Vancouver Island

Habitat for Humanity Mid-Vancouver Island (HFHMI) brings communities together to help families build strength, stability, and independence through affordable home ownership. HFHMI has built relationships in the Nanaimo community since 1994 when it was first incorporated as a non-profit charitable organization. Our Nanaimo ReStore started in 2001 and was the first in British Columbia and 19th in North America. We serve the mid-island area from Duncan to Bowser and west to Ucluelet. Much of our success has been due to our working relationship with local business, non-profits, volunteers, and all levels of government. To date we have built 28 homes, of which 3 were renovated homes, and served 34 families in total. 2022 was a preparation and organization year. We are preparing to break ground on a new 10-unit project in Nanaimo in 2023. A new project gives way to new and renewed community collaborations, and ultimately fulfills our mandate of providing clean, safe, affordable housing for those

within our community. HFHMMVI is supported by 53 other Habitat affiliates in Canada and supports communities in approximately 70 countries around the world. Habitat's vision is of a world where everyone has a decent place to live.

HFHMMVI recognizes that by supporting local businesses we are contributing to lower carbon emission levels and saving resources by reducing the carbon miles involved in transporting goods. By choosing to buy local construction materials, we will strengthen our local economy by keeping funds in our community as well as helping to create new employment opportunities.

Habitat for Humanity Registered Charity Information

Registered in 1994 as a non-profit charitable organization in good-standing.

Corporate registration number:

881 877 781 RR0001

Mailing Address and Contact person:

Jeff Krafta-Executive Director
Habitat for Humanity Mid-Vancouver Island
#1- 4128 Mostar Rd, Nanaimo, BC V9T 6C9
250 758 8078x107
executivedirector@habitatmvi.org

Project Viability

While we have shown that the Refresh business plan is becoming viable as the public becomes accustomed to an outlook of upcycling and waste management, the viability of the Book Recycling Program will depend entirely on our ability to procure product, our ability to generate new uses, and the continued support of the Regional District of Nanaimo and our local partners until this project can stand on its own. Some of the key points in overall project viability are:

- Continually acting as a recycling hub for hard to recycle, and “out of scope” items.
- Be a change-leader in new ways and ideas on how to keep products from the landfill.
- Further community engagement and education on recycling/upcycling by offering additional programs including reduction and redesign of materials.
- Re-using, repairing, and reprocessing of materials.
- Supplying space to educate and help the community regarding the benefits of repurposing used items, while providing knowledge workshops on same.
- Supplying space and proper tools in a safe environment for individuals to gain valuable “hands-on” experience when they work on their own project.
- Increased revenue to support additional housing for lower income families by encouraging the public to reuse products, promoting the donation of products, and redesigning items for eventual sale that would otherwise end up in a landfill.



Over the past 30 years, Habitat ReStores have diverted over a half a million tonnes of waste from landfills. We recognize this success and that we have been a natural hub for waste diversion with select items. Through the Refresh project, we will continue to diversify our acceptance of donated goods and materials and seek to be more of a waste management hub for our community. This one-stop hub has significant impact on convenience and removes the need to make several stops, thereby reducing

carbon footprint. In addition, through our ReFresh Centre, we will continue to support the capacity to upcycle and sell items that might otherwise end up in a landfill.

These initiatives fit well into the RDN's approach to "Highest and Best Use" hierarchy, as below.



In all our continued efforts, HFHMVI is highly focused on keeping products and materials in use. This project greatly enhances our continued capacity to:

- Recycle
- Refurbish/remanufacture/repairing and the reprocessing of materials
- Reuse/redistribute and
- Maintain and sustain our efforts to upcycle

What are the innovations?

- Increased capacity to store and manage hard to recycle items facilitated innovations that are as multiple as the items donated. Volunteers consistently create and rethink items that come into our ReStore.
- ReFresh Centre for upcycling that teaches volunteers, groups, and youth how to restore furniture for further sale or for personal use.
- Continued sustainability of our one-stop hub that combines waste management with upcycling, reuse, and recycling.
- Funding model that builds revenues from a circular economy solution that will benefit low-income families.
- A project represents grassroots, non-profit organization working collaboratively to contribute to the circular economy and reducing poverty.

Reporting

QUARTERLY reporting will include:

- Title and structure of program
- Program directors and participants
- Budget of allocated funds
- Program/initiative progress

Budget and Payment of Funding

Budget:

ITEM	REQUESTED	USE OF FUNDS
Lease Costs (12month)	\$100,000	Annual leasing costs for the existing footprint. This has risen dramatically YoY
Warehouse Operations Manager	\$50,000	Salary for the full time Refresh Store/ Workshop Program Manager
Upcycling/Book Recycling Coordinator	\$38,000	Salary for the full time Refresh Upcycling/ Book Recycling Program Coordinator
Program Materials	\$14,000	Annual cost of Refresh marketing as well as startup public relations for the Book Recycling Program
Utilities/Waste	\$9000	Facility running costs and waste fees for leftover product that cannot be recycled
Book recycling program startup costs	\$8,000	Purchase of material and fabrication of press, training of staff and volunteers, appropriate safety wear
Admin (8%)	\$15,000	Facilitation costs, admin cost recovery for additional costs of new Book Recycling Program
Total	\$234,000	

In-Kind donations are difficult to factor an ongoing value for as the “value” of a crate of used paperback books may have an In-Kind value of 0 but obtain some value once through our Book Recycling Program. Additionally, there may be tremendous value to this same crate of paperback books to our local Rotary partner as they would no longer have to pay to store them or dispose of them. This same outlook goes for used furniture. While there may be some intrinsic In-Kind value to these items, much of the value is begotten from the added work put into these pieces by Refresh.

Payment of Funding:

Upfront	40% for successful application
6-month of signing	40% for successful milestone
Project completion	20% successful project

Implication of Partial Funding: describe the implication to the project if only partial funding is awarded

The implication of receiving only partial funding is that we will not be able to move our part time Upcycling Coordinator into a full-time role that will also specialize in overseeing the Book Recycling Program. This would have a significant impact on the expansion of our upcycling education program and would severely restrict our ability to start up and promote the Book Recycling Program in the community. Our Fuel for Families and Books and Beyond initiatives will only work in conjunction with one another. Singularly, these plans will not be sustainable. It may also impact our joint commitment with other community organizations. In addition, without additional and complete funding, startup of these initiatives without the ability to put the appropriate staffing behind it would ultimately put unnecessary strain on our current small number of employees.



Partnerships

There are a number of key partners that contribute to the success of HFHMMVI in our community. Some examples of community partners with HFHMMVI include the following:

- **DBL (Disposal Services Ltd.)**
DBL has also supported us with our Habitat builds accepting a range of our building materials such as drywall, roofing, and insulation. They also give us discounted rates on their garbage bins.
- **Milner Group** – As with DBL, both of these partnerships have offered reduced prices and have supported HFHMMVI with new builds, recycling efforts, demolition, and hazardous waste. We currently offer a free metal recycling program for our customers. Milner provides us with the necessary metal bins which are then transported to their facility where it is weighed and brings an additional revenue stream.
- **Junk In Our Trunk** – Shawn Jensen has been supporting HFHMMVI with a similar priority of keeping waste out of our landfill. This local family-owned business has been recycling and re-purposing almost everything they pick up and they have supported HFHMMVI for many years by delivering unwanted items. He consistently drops off donations that he has picked up from customers and donates to us instead of taking directly to landfill.
- **Trash 2 Go** – has solid relationships with multiple community partners including HFHMMVI. They help by liquidating, donating, recycling and otherwise disposing of contents and property from estate clean outs, relocations, residential and commercial downsizing. We are a major recipient of these donated items and value the work that Curtis and Todd do for our community.
- **Maynard's Liquidators**- This is a company that works closely with the thriving movie and TV industry in Vancouver. The movie and TV industry is incredibly wasteful and creates hundreds of tonnes of product destined for landfills each year. Whenever there is product that can be recycled, upcycled, or sold, Maynard's will inform HFHMMVI directly and we can attain product that would normally be disposed of. Much of this product we can sell, upcycle, or recycle and this creates a tremendous diversion of waste to the landfill. In 2022, HFHMMVI was able to recover 12 truck loads of product that would have ended up in a landfill.
- **Schnitzer Steel** – with over 100 years of experience, Schnitzer Steel has a team that has positioned itself as a global leader in the metals recycling, recycled auto parts and steel manufacturing industries. Our relationship with Schnitzer has allowed us to collect and recycle copper wire bringing an average of \$500 per month revenue to HFHMMVI. They also collect donations from residential drop offs to their facility when people elect to donate the funds they receive for recycling.
- **Coast Environmental**- HFHMMVI has partnered up with Coast Environmental on a few of our projects wherein there might be a need for demolition. Coast Environmental has been extremely helpful in determining costs for these types of projects as we are

interested in recovery of product from the demolitions rather than sending everything to the landfill. Housing construction and demolition is a major contributor to landfill waste. Part of our mandate is to recycle items, so it only stands to reason to have a product recovery program in any demolition project. Timber, windows, wiring, and insulation are just some of the items that are recoverable in demolition that can be repurposed.

- **Rotary Club of Nanaimo-** This would be a new partnership based on our new Book Recycling Program. The semi-annual Rotary Book sale creates a large amount of unwanted, or unsellable books. This is further confirmed by the accompanied letter of Recommendation. In 2021, Rotary was forced to send 5 container loads of paperback books to the landfill. This new program may be able to significantly reduce the number of books sent to the landfill as mentioned above.



APPENDIX A: Habitat for Humanity impact

2021 Our impact



We bring communities together to help families build strength, stability and independence through affordable homeownership.

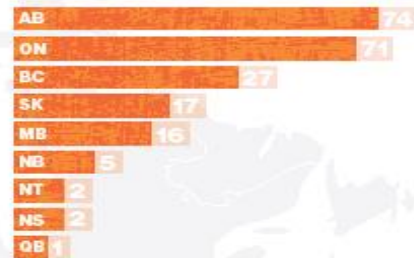


215

families living with low income (857 people) became **new homeowners in 2021** by partnering with Habitat for Humanity in Canada.

Through ongoing partnership with Habitat, approximately 2100 Canadian families continue to transform their futures and communities. Affordable housing serves as the catalyst for a better life, providing improved social and financial stability for families living from coast-to-coast-to-coast.

215 new Habitat households by province and territory



Of the 215 families that moved into a Habitat home in 2021

43% were single parents

57% were two-parent families

22% had at least one person who is Indigenous

10% were new Canadians

20% moved into accessible homes

65% came from market rental housing

24% came from social or subsidized housing

9% had other living arrangements

Over **\$42 million** in social benefits returned to the community.



Research shows that for every \$1 donated, there are \$4 in social benefits returned to the community.

New Habitat homes built in 2021 represent an investment of almost

\$65 million in affordable housing in Canada.



In 2021, there were 111 Habitat ReStores across Canada.

Through other Habitat for Humanity initiatives in 2021



Over **3,400** youth volunteered.

14,442 volunteers helped local Habitats build homes, operate Habitat ReStores and engage their communities in the work of Habitat for Humanity.

Since 1985

4,309 families in Canada have partnered with Habitat to buy their own home. Globally, Habitat for Humanity International has helped more than 39 million people build or improve the place they call home.

Learn more at [habitat.ca](https://www.habitat.ca)

Habitat for Humanity Canada

GLOBAL VISION:

A WORLD WHERE **EVERYONE** HAS A DECENT PLACE TO LIVE.

Habitat for Humanity Canada

Founded in 1985, Habitat for Humanity Canada is a national charitable organization working toward a world where everyone has a decent and affordable place to call home. We bring communities together to help families build strength, stability and independence through affordable homeownership. Habitat for Humanity Canada is a member of Habitat for Humanity International, which was established in 1976 and has grown to become a leading global non-profit working in more than 70 countries.

There are 50 local Habitats across Canada, serving almost 400 communities in every province and territory. To find out more about your local Habitat for Humanity organization and how to get involved, visit habitat.ca.

Affordable homeownership program

With the help of volunteers and generous donors, **we build decent and affordable homes** that provide a solid foundation for people to build better, healthier lives in Canada and around the world. Habitat homeowners volunteer 500 hours and pay an affordable mortgage – geared to their income – to buy their home. Our model of affordable homeownership bridges a gap for people who face barriers to homeownership. We provide working families on low incomes with the opportunity to purchase their own Habitat home.



Qualified Habitat homebuyers are:

- In need of better housing
- Willing to partner with Habitat
- Able to make affordable mortgage payments



Habitat for Humanity Canada's Indigenous Housing Partnership

Indigenous families and communities partner with local Habitats across Canada to help create safe and decent places to live through both affordable homeownership and other housing solutions developed by and for Indigenous communities.

An important part of this initiative involves providing skills and training opportunities to Indigenous youth and women to equip them with the trade skills they need to maintain and/or build new homes in their communities.

Habitat for Humanity ReStore

Habitat for Humanity ReStores are home and building supply stores that accept and resell quality new and used building materials as well as furniture, appliances, home accessories, and much more, to the public. Shopping at a Habitat ReStore is a socially-conscious decision, as the money generated is used to fund local Habitat for Humanity homebuilding projects and operations. It's also an environmentally-friendly decision, as much of what is sold is product that is new, gently used or customer returns that might otherwise end up in a landfill.



Global engagement

Our global engagement work is designed to empower families to build strength, stability and self-reliance through shelter solutions. We work in partnership with communities and local Habitat for Humanity organizations in the following regions: Africa and the Middle East, Asia Pacific, Latin America, the Caribbean and Europe.

As a result of COVID-19 a number of our global projects were paused and delayed in order to ensure the safety and wellbeing of the staff and community members we work with. While many projects started construction, the completion of the work has carried over to 2021.

We believe everyone **deserves a safe and decent place to live**, both locally and globally.

APPENDIX B: Letter of Support



September 21, 2022

Regional District of Nanaimo
6300 Hammond Bay Road
Nanaimo, BC V9T 6N2

Re: Letter of Support for the Habitat for Humanity Mid-Vancouver Island RDN Zero Waste Recycling Funding Grant Application.

On behalf of the Rotary Club of Nanaimo, it is my pleasure to provide this letter of support for Habitat for Humanity Mid-Vancouver Island's proposed initiative to divert unsaleable books from the regional landfill and recycle them for other uses. As a local service club, our goal is to actively support projects that will have a positive impact in our community – socially, economically and environmentally. This initiative has great potential to do all these while reducing waste and contributing to the development of a circular economy in our region. The Rotary Club of Nanaimo can help ensure Habitat for Humanity's initiative is successful and sustainable over the long term by being a reliable supplier of unsaleable books.

Nanaimo and area residents donate thousands of unwanted books to the club throughout the year which are then sold through our bi-annual used book sale. Through the community's generosity and our volunteer efforts, over \$1 million has been raised from the Rotary book sale to date, enabling us to fund many worthwhile causes and projects in our community. And, until recently, thousands of books that may have otherwise ended up in the landfill, have been recycled through our collection process.

Unfortunately, not all donated books are in a saleable condition and the company that used to take them has stopped doing business in Canada. As a result, these unsaleable but recyclable books have to be taken to the regional landfill. In February 2022, 36,390 kg of unsaleable books had to be disposed of. Not having a recycling solution has been a source of great frustration and disappointment for our club as our annual projection for unsaleable books is approximately 25-30 tonnes. We appreciate the RDN's generosity in waiving tipping fees so those funds can be invested in our community while we seek a solution.

We believe Habitat for Humanity Mid-Vancouver Island's initiative is the solution to our recycling needs and would be of benefit to others in the region who are also in need of these services. We look forward to supporting the RDN's zero waste goals and the circular economy in partnership with Habitat for Humanity should they be successful in securing a grant for their exciting initiative.

Regards,

Keith McFarlane
President
Rotary Club of Nanaimo

ISLAND FUTURE SOCIETY'S
CIRCULAR ECONOMY WASTE VEGETABLE
OIL INITIATIVE



Submitted to RDN
October 3, 2022

RE-PURPOSING WASTE VEGETABLE OIL

From 2016 to 2021 Island Futures Society (IF) used the waste vegetable oil (WVO) from Gabriola Island restaurants to make biodiesel, which was then been used to fuel the GERTIE community buses. Due to purchases of buses in 2021 that cannot use the biodiesel there was a need to rethink how to re-purpose the waste vegetable oil, while continuing its use as part of the circular economy. There are currently about **7,000 litres** per year of waste vegetable oil disposed of by Gabriola restaurants. There is also residential WVO (~ 100 litres) that many Gabriolans were contributing to IF to make the Biodiesel. Restaurants have the option of having West Coast Reduction (WCR) pick up their oil and trucking it to Duke Point where the product is sold to large corporations who add it to their animal and fish farm food. A WCR manager indicated that he felt the best use for the used vegetable oil was to upcycle it, such as turning it into biodiesel. When Island Futures was making the biodiesel all the restaurants felt it was more important to support this local environmentally friendly option. We feel it is important to treat this as a valuable local resource and are aiming to divert all of this WVO and use it to replace fossil fuels.

Phase I of this project was aimed at identifying uses, costs, and markets for the WVO to determine the next steps forward for the repurposing of waste vegetable oil. We contracted with Darryl McMahon of *Econogic* (www.Econogics.com) to review a wide range of potential uses and their viability. His report is attached as Appendix A.

Findings of the report

After reviewing his report and findings, and assessing the current status of WVO use on Gabriola we identified three core actions that Island Futures should undertake:

1. Start making biodiesel again. There is a transportation organization on Gabriola that has indicated they would like to make the biodiesel. Gulf Island Food Transport (GIFT) uses a Sprinter, which runs easily on the biodiesel. GIFT travels throughout Vancouver Island providing delivery services to sustainable enterprises such as local agricultural co-operatives and local breweries. They would use the majority of WVO from the island restaurants.
2. Use a WVO Heater for a Commercial Greenhouse on the island (determined in partnership with the Gabriola Agricultural Co-operative) for the remainder of island WVO. The initial heater may stay at one farm or may be moved to other farms throughout the year depending upon the Agricultural Co-operative's feedback from farmers. Using WVO to heat greenhouses not only uses a waste product; it also results in a more resilient food system for Gabriola. The results of the use of this heater will be assessed from operational and cost benefit perspectives, as well as from the advantage of supplying food for the island throughout the winter.

Once the results of the first winter is assessed we will then work with the Gabriola Island Community Investment Co-operative to offer opportunities for farmers to purchase WVO heaters for their operations.

3. Econogics suggests we *"investigate using some of the Springboard technology as a way towards methanol recovery and processing of other material from the by-product."* We have had conversations with Springboard and understand that the machine mentioned by Econogics was a pilot carried out with a university and the cost was \$140,000. The Springboard representative said that we would be better off buying the separate components to purify the glycerine by-product.

Therefore, our third action will be to turn the raw glycerine by-product from the production of biodiesel into several useful products. We will purchase the different pieces of equipment to

purify the glycerin, a by-product from the production of biodiesel. The purification will result in a cleaner glycerin, which can be used to make liquid soap and other cleaning products (true circular economy products). According to *Econogics* it will also result in a potassium-based fertilizer, which can be sold to farmers/gardeners on the island. IF and GIFT will work together on this action. The key piece of equipment required is a centrifuge.

OBJECTIVES, TIME FRAME AND ACTIVITIES:

Objectives:

- To Upcycle the Waste Vegetable Oil on Gabriola Island
- To create a viable, sustainable, circular economy initiative for WVO on Gabriola that could be replicated and scaled up in the Nanaimo Regional District and beyond
- To produce biodiesel, replacing diesel.
- To produce a purer glycerine, liquid soap, recovered methanol, and potassium fertilizer.
- To use WVO to heat a greenhouse throughout the winter, analysing the cost benefit to determine viability for greenhouses throughout the RDN.

TIMELINE AND RESPONSIBILITY

Actions	Feb	Mar	April	May	June	July	Aug	Sept	Responsible
Biodiesel: Transfer of biodiesel equipment plus training			financially sustainable, managed by GIFT						IF and GIFT
WVO Heater purchased, installed and operations start. Centrifuge used to clean WVO.				financially sustainable, managed by Agricultural Co-op & IF					Project Manager, Agi Co-op & Greenhouse Owners
Glycerine by-product (a): Set up systems and equipment to purify glycerine									Project Manager
Glycerine (b): Purify glycerine and start producing various products.									Project Manager/Marketing
Glycerine (c): Market analysis and start selling purified glycerine products		We aim to be financially sustainable by 2024 as products pay for labour							Project Manager/Marketing

As noted above it is hoped that all three actions will be financially sustainable within a relatively short time period.

ESTIMATED COSTS:

Request from RDN’s Zero Waste Recycling Fund

Start-up project manager	\$ 7,200
Centrifuge purchase	4,200
Marketing	2,000
WVO Heater	7,300
10% contingency	2,100

Total	\$22,800

Island Futures contribution

Training project manager re: project, purifying glycerine and soap making	\$ 500
Moving BioPro to new location (405 lbs)	1,000
Training GIFT re: biodiesel	500
Methanol Recovery System	500
Soap making equipment and supplies	1,300

Total	\$3,800

RATIONALE FOR EXPENSES

Start-up project manager: The project manager will be responsible for ensuring each of the different initiatives are implemented successfully. They will be responsible for working with both GIFT and the Agricultural Co-op to ensure smooth set up for the WVO collection, biodiesel making and the greenhouse heating. They will be responsible for setting up the systems to purify the glycerin. This will include methanol recovery, clarification of the glycerin by-product, soap-making, inventory control and maintenance of all equipment. The project manager will hire and manage the marketing contract in collaboration with IF Directors. After the system has been set up, is running smoothly, and costs are covered by revenue from the product the manager may stay on or hire someone else to oversee the operation.

WVO Heater: This will use the remaining WVO on Gabriola and will extend the growing season without using fossil fuels. We recognize the value of producing biodiesel but recognize that due to supply chain challenges or climate change induced extreme weather systems there may be challenges getting the methanol required to make the biodiesel. By monitoring the use of the WVO heater for a greenhouse we can determine the feasibility for other heating uses on Gabriola that would replace fossil fuels. Putting this system in place and working with the Gabriola Agricultural Co-operative also allows an analysis of the opportunities for winter food production and opportunities for a similar system to be replicated throughout Gabriola, and potentially in other areas of the Regional District of Nanaimo.

We have determined that the best burner for our purposes is the one made by YellowHeat (<https://www.yellowheat.com>). Using a Babbington burner, it is the only one we could find specifically designed for burning WVO. (We looked at two other waste oil burners - one made by FireLake (<https://www.firelakeheaters.com/>) and one made by Clean Burn (<https://www.cleanburn.com/clean-burn-products/>, each available for around \$6,000 US), and rejected them because both manufacturers claimed they aren’t suitable for use with WVO as they need to be taken apart and cleaned too often. YellowHeat has quoted us a price of \$4,400 US for its burner. With US exchange at 1.38 and an estimated delivery cost of \$400+ this comes out at \$6500 CAD. The burner also needs a small compressor to supply combustion air, a fuel tank, 50 ft of 6” metal ducting to distribute the burner’s heat throughout the greenhouse, and a few miscellaneous fittings. The recommended compressor is available for \$301.28 CAD including shipping and taxes and the other components can be procured locally for around \$150. Adding all this together, we estimate the total cost of the burner to be \$7,000 CAD. Add installation labour - 8 hours @ \$35/h = \$280 and the total estimate is ~ \$7300.

Centrifuge: Centrifuges use centrifugal force to speed up the removal of solids and higher density liquids from liquid mixtures. The centrifuge will be used to remove solids from both the WVO and the glycerin. There are numerous sizes, types and complexities of centrifuges. Prices range from \$1,000 to \$50,000. For this initiative we looked at several of the smaller and simpler models and concluded that the Extreme Raw Power Centrifuge was the most reasonably priced and would also do the job we needed it to do. Both the cone and heater accessories will improve the cleaning and processing. We found two companies selling this package:

Utah Biodiesel: \$4,200

Myriad Products: \$4,500

Start-up Marketing costs: We will require a marketing expert to identify options for cost, packaging, target market, wholesale vs. retail aspects of selling the glycerine, potassium fertilizer, and soap. The purpose is to have end products that pay a living wage to the maker of the products while at the same time ensuring the price is within market range. We expect the total marketing contract to be \$2000.

ORGANIZATION RESPONSIBLE: ISLAND FUTURES

Island Futures Society was registered as a not for profit society in 2008 (Registered Society #: **S0053920**).

We aim to:

- promote community sustainability on Gulf Islands through public education and action-oriented initiatives
- support individuals and groups working towards local sustainability to connect with each other
- report and improve upon local sustainability practices, and partner with local groups, governments and other communities to implement sustainability initiatives

Over the past 13 years Island Futures (<https://islandfutures.ca/>) has initiated or been involved in numerous innovative projects. These initiatives include Gertie (Gabriola's Community Bus), making biodiesel, Gabriola GHG Emissions Inventory, Cyclepaths, Island Connections, Village Vision, Fix-it Fairs, Gabriola's Mental Health initiative, the Heat Pump program, creating Gabriola Co-operatives, the Community Sustainability Plan, and the Green Burial Initiative.

The biodiesel initiative: In 2009 Island Futures hired a VIU student to carry out a report on making biodiesel on Gabriola. The results of the study indicated that making biodiesel could be a viable and sustainable operation on Gabriola, if the biodiesel was used to fuel the Gertie buses. Gertie initially used a combination of WVO and diesel to fuel the buses. Then, in 2016, a 190 litre/batch BioPro biodiesel processor (<http://www.springboardbiodiesel.com/biopros190/biopros190>) was loaned to Island Futures, in order to transform the WVO into biodiesel. The biodiesel that has been produced underwent the following test: ASTM D2709 Water and Sediment Test. It passed this test (See Appendix C).

The biodiesel program has been an opportunity for Island restaurants to donate their waste vegetable and know that it was being recycled locally.

Governance of WVO Repurposing Initiative: Island Futures will be responsible for this initiative. An advisory group, comprised of the following people, will oversee the project, and report to the IF board:

Julie Sperber, President and CEO, Vancouver Island Economic Alliance

Bob McKechnie, Mechanical Engineer, Island Futures Board Director

Fay Weller, Environmental policy expert, Island Futures Board Director, GIRO board director

Steve Earle, Geologist, Climate scientist, Island Futures board director, Sustainable Energy Co-op board member

PARTNERSHIPS:

We will be partnering with the following individuals and organizations to implement the proposed actions.

Dan Backe, Gulf Island Food Transport (GIFT)

Gabriola Agricultural Association Co-operative

Sustainable Energy Co-op of Gabriola

Gabriola Island Community Investment Co-operative

SUBCONTRACTORS:

We will be hiring two short term subcontractors for this initiative:

- 1) Project manager:** We will advertise this contract in local media and with the Gabriola Chamber.
- 2) Marketing Expert:** We will advertise this contract in the Gabriola Sounder and with the Gabriola Chamber.

BUDGET

	Feb	Mar	Apr	May	Jun	July	Aug	TOTAL
Revenue								
Regional District of Nanaimo	13050	1550	2050	2050	2050	2050		22800
Island Futures	1500	1650	650					3800
Revenue from products				50	200	350	450	1050

Total	14550	3200	2700	2100	2250	2400	450	27650
Expenses								
project manager	1200	1200	1200	1200	1200	1200	1050	8250
Training	500	250	250					1000
Biopro transfer	1000							1000
Centrifuge	4,200							4200
WVO Heater	7,300							7300
Methanol Recovery		500						500
Soap making equipment & supplies		900	400					1300
Marketing			500	500	500	500		2000
10% contingency	350	350	350	350	350	350		2100

Total	14550	3200	2700	2050	2050	2050	1050	27650
Net								0

APPENDIX A: ECONOGICS REPORT

POTENTIAL USES FOR WASTE VEGETABLE OIL



PREPARED FOR ISLAND
FUTURES (GABRIOLA
ISLAND)

By Darryl McMahon, Econogics
September 2022

CONTENTS

INTRODUCTION.....2

FILTERED WVO.....2

RE-USE FOR COOKING.....2

TRANSPORTATION3

BLENDED WVO 3

TWO-TANK DIESEL ENGINE SYSTEMS..... 3

SPACE HEATING.....4

SOAP MAKING.....4

FARM USES / GARDENING– NON-POWER.....5

EARWIG TRAPS.....5

STABLE BEDDING5

HOOF OILS AND DRESSINGS.....5

KILLING COW LICE.....5

ANIMAL FEED5

PET FOOD.....6

COMPOST1

FARM USES – POWER.....1

STATIONARY POWER1

MOBILE FARMING EQUIPMENT.....2

Potential Uses for Waste Vegetable Oil for Island Futures

OTHER.....2

WEED SUPPRESSION2

DUST SUPPRESSION2

SPILLED PETROLEUM REMEDIATION2

MOSQUITO CONTROL.....2

BIODIESEL.....2

GROUND TRANSPORTATION2

MARINE TRANSPORTATION3

WHAT SEEMS INTUITIVE BUT SHOULD BE AVOIDED3

BICYCLE CHAIN LUBRICANT3

LAMP OIL..... 3

RENDERING AND FISH FEED3

WVO SPACE HEATERS5

METHANOL RECOVERY AND BY-PRODUCT SEPARATION.....7

CENTRIFUGE RESEARCH11

CONCLUSIONS12

RECOMMENDATIONS12

APPENDIX - DIFFERENT NAMES FOR METHANOL:14

REFERENCES15

INTRODUCTION

Island Futures (Gabriola Island) has a source of waste vegetable oil (WVO) which was previously used to make biodiesel for the local bus operation (GERTIE). The previous bus fleet based on Sprinter minibuses could run on biodiesel, but the replacement fleet (GM) produces black smoke when fueled with the locally produced biodiesel. Island Futures is now looking for alternative use for the WVO which is local, environmentally responsible and affordable. This document explores a number of ways in which WVO has been used by others, and provides a cursory discussion of costs associated with that use.

The approach with the lowest processing is to simply have the WVO (yellow grease) removed by a renderer. Typically, restaurants pay to have their WVO removed. Rendered used oil is typically turned into feed for livestock. This report looks into higher value outcomes while keeping additional inputs low.

The research work was conducted in two main cycles. The work in the second round was guided by the client based on the work in the first pass.

FILTERED WVO

RE-USE FOR COOKING

Cooking oil degrades with exposure to air, heating and particularly over-heating. Storing used oil for long periods can lead to the oil going rancid, and consuming rancid oil is a health risk. There is a fair bit of material about storing of used cooking oil for

Potential Uses for Waste Vegetable Oil for Island Futures

subsequent use. Most of that information is superficial and blurs the line between household cooking oil use and commercial (restaurant, industrial food processing).

Cooking oil which has been used once or possibly twice, has not been overheated and has been properly stored is likely fine for re-use. That's typical of household use, but not commercial or industrial use. But cleaning the used oil is important – before storing. Storage should be limited to a couple of weeks maximum in a cool, dark place (e.g. refrigerator) in an air-tight container with as little air present as possible.

Conventionally, cleaning the oil consists of warming the oil (not hot for safe handling) to help release water, and then filtering through a mesh (e.g. cheesecloth). This article provides a reasonable treatment of the topic.

Can You Reuse Frying Oil? <https://www.epicurious.com/expert-advice/you-can-reuse-frying-oil-article>

Some choose to add a flocculent to the process to enhance the removal of small solids. *The Easiest Way to Clean and Reuse Frying Oil* https://www.cooksillustrated.com/how_tos/11549-the-easiest-way-to-clean-and-reuse-frying-oil

This article provides an alternate approach, which (briefly) is use gelatin as a flocculent to bind and settle out particles in used cooking oil, leaving cleaner oil to be poured off for re-use. .

A Mind-Blowing Technique for Cleaning Deep-Fry Oil Using Gelatin | *The Food Lab* <https://www.seriouseats.com/clean-cooking-oil-with-gelatin-technique>

The restaurant industry has long established practices on how long to use cooking oil to obtain maximum value from it (typically 10 to 20 hours of cooking time, and no more than a couple of days in fryers). When a restaurant is finished with cooking oil, it is finished for cooking use. The smoking point of cooking oil decreases with the time it is hot and heating cycles, and it undergoes chemical changes. At some point, the oil is considered 'broken'. The standard for McDonalds restaurants is to change the oil daily. They are experts on squeezing resources to the limits to increase profit. (They use their waste cooking oil as a resource, turning it into biodiesel to power their trucks,) Lighter

'neutral' oils like canola, soy and sunflower degrade faster than oils with more saturated fats like olive and palm. There are health concerns related to using vegetable oil which is heated (used) repeatedly, e.g.

Evaluation of the deleterious health effects of consumption of repeatedly heated vegetable oil <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5616019/>

This article speaks to the FFA test (they say 6%, whereas 5% was the old rule of thumb I was taught) to determine when cooking oil has done its time in the deep fryer. In my opinion, when used oil reaches this state, it should not be processed for re-use for cooking; it's time to get fresh oil for cooking and use the WVO for something else. *When to Change Deep Frying Oil* <https://hygienefoodsafety.org/when-to-change-deep-frying-oil/>

There used to be a practice of 'defoaming' used cooking oil and mixing it with fresh oil for sale for cooking use. As best I can tell, this practice has been abandoned in North America, at least publicly.

TRANSPORTATION

It has long been known that Diesel cycle engines can run on vegetable oil. It has been widely and incorrectly reported that Rudolf Diesel used peanut oil to demonstrate his engine in 1900 at the World Exhibition in Paris, France. He wasn't there. Still, in other reports, it is clear that diesel engines have run on vegetable oil. Due to the high cetane and low octane values of vegetable oil, the oil can power a compression ignition engine, but not a spark ignition engine. However, it is necessary that the engine and vegetable oil both be warmed to ensure flow through the fuel lines, fuel pump and injectors. Those temperatures are not typical of ambient conditions in Canada. Therefore, two approaches are generally employed to allow use of WVO in diesel engines here: blending the WVO with diesel, kerosene or biodiesel; or, running a twotank system with WVO in the main tank and diesel or biodiesel in the start/stop fuel tank.

There are no ASTM or parallel standards for WVO quality. It is typically categorized as food or municipal waste. This makes it difficult to get approval from engine manufacturers to use a waste product with high variability in characteristics in their engines. In turn, that makes it harder to convince possible users to try the WVO in valuable equipment.

BLENDED WVO

Tickell reports that it is feasible to run a mix of WVO and commercial diesel fuel successfully in diesel engines. Mixes of up to 80% WVO have been used in warm ambient conditions, while 50% or less WVO operate in colder climates (e.g. winter on the southern BC coast). Local reports indicate a 50-50 mix does not work on cold Ottawa winter days.

TWO-TANK DIESEL ENGINE SYSTEMS

Given the issue with burning WVO in diesel engines is the oil is not warm enough to flow when cold, people have devised a solution where the engine is started and warmed up using petro-diesel or biodiesel, then the fuel supply is switched to a second tank of WVO. This set-up requires that the WVO tank and fuel lines both have a heater, usually warmed with waste heat from the engine. It is also advised that a couple of thermostats reporting the temperature of the fuel line and the WVO tank to the operator so they will know when it is safe to switch to operating from the WVO tank. Finally, it is necessary to switch back to the petro-diesel / Darryl McMahon – Econogics

Potential Uses for Waste Vegetable Oil for Island Futures

biodiesel tank for 5 minutes of operation before shutting off the engine. This ensures the fuel line and engine are clear of WVO before the engine cools down after shut-off. These additional parts and operating steps make this approach inappropriate for short engine run times, or where the operator finds the extra steps and need for 2 filling stops too bothersome.

A friend of mine had an Elsbett 2-tank system fitted to his VW with TDI engine some years ago. This cost about Cdn\$7,000, using a licenced mechanic prepared to warranty their work. His conclusion was that in 8 years of driving before the vehicle no longer met family needs, it did not come close to breaking even financially.

This system is still available today. Cdn\$2,130 does not include the second tank, additional fuel lines, shipping (from Europe), installation or taxes.

https://www.elsbett.com/epages/63102114.sf/en_CA/?ObjectPath=/Shops/63102114/Products/481009M2/SubProducts/481009M2-0004

SPACE HEATING

Many experiments over the years have demonstrated that straight WVO cannot be used directly in a conventional furnace designed for heating oil (very similar to kerosene or diesel fuel). There have been anecdotal reports of success with blending of WVO and biodiesel with petro heating oil, ranging from 2% to 20% WVO or even higher with water-washed ASTM-compliant biodiesel. There are also reports of corrosion and pitting with straight WVO (likely due to fatty acids and particulate content) and with unwashed biodiesel, reducing furnace life.

This website advertises the ability to burn unprocessed WVO for space heating: <http://wasteoilheat.com/index.shtml>

I'm skeptical about the party behind the website. The site seems poorly organized to me in terms of finding detailed information. The link to the EPA is not related to their product(s), nor is the link to the ANSI. Other than the payments page, almost everything leads to 'call for more information'. Their toll-free number is listed as "+1(866)XXX-XXXX", which is not helpful. One of their testimonials is about the Deluxe Town Diner in Watertown, MA which does appear to burn WVO for space heating. <https://greenbusinessowner.com/can-your-kitchen-grease-become-biofuel-andearn-extra-money-for-your-restaurant/> (see last paragraph)

Based on my participation the biofuel sustainable lists forum over a decade or so, the 'holy grail' of using WVO and biodiesel for space heating for years was the Babbington burner, which was developed by a number of individuals with varying levels of success. It appears that in recent years, Tom Leue of Yellow Heat has come up with an effective and reliable version, which he has patented and made available for commercial sale. (I have met Tom a couple of times, and spent a day at his facility in Massachusetts. He's a knowledgeable, credible person committed to making use of a waste product to make cleaner fuel.)

Therefore, I would take this statement from the starting page of the operations manual to heart:

"The Yellow Heat Burner is suitable for heating greenhouses, warehouses, shops, barns, garages, certain commercial spaces and selected other larger heating spaces. Yellow Heat Burner is not appropriate for most residential applications due to insurance restrictions."

Pricing and delivery of the Yellow Heat space heater furnace can be found at: <https://www.yellowheat.com/yellow-heat-burner/>

In summary, I would not recommend WVO or biodiesel for residential heating within the building. It might be OK for warehouses or greenhouses with occupancy of only a few hours a day. Even then, I would not do it for my own building.

SOAP MAKING

Soap making from WVO requires lye. You will want a really clean WVO so that it does not introduce any undesired odour. Around here, there are a number of artisanal soap makers with guarded recipes as to what else they add to their soaps to make them creamy and pleasantly fragrant. If you are hoping to sell the soap, you may find a competitive market locally as well. Allow for packaging and marketing costs, as well as materials and effort.

You may find this story inspiring: "From Grease to Soap: How One Woman is Repurposing Used Oil" https://www.earthisland.org/journal/index.php/articles/entry/from_grease_to_soap_how_one_woman_is_repurposing_used_oil/ Laura and FROG Soap are based in Bremerton, WA. It looks like it's been a while since their website has been updated. It does appear they have implemented some COVID19 reality, like curbside pick-up. Perhaps they will restart soap-making workshops if COVID-19 restrictions permit in future. <https://www.frogsoap.com/>

This article speaks to the process, and incorporates the minimum ingredients for soapmaking from WVO. <https://beauty.onehowto.com/article/how-to-make-soap-with-used-oil-1505.html>

The major operating costs for making soap are the lye (sodium or potassium hydroxide), fragrances, possibly softeners, and time. Note the caution to age the soap for a month before use to avoid skin irritation.

The less-basic recipes generally call for a blend of unused oils, possibly including beef tallow. That will be hard to control if you are using WVO unless you know exactly what original oils each source is using, and you can keep them separated and labelled until

Potential Uses for Waste Vegetable Oil for Island Futures

after the filtering, settling and possible other cleaning processes before using them for soap-making. Here's another starting point: <https://www.thesprucecrafts.com/create-a-basic-soap-recipe-516796>

Costs will increase with the more artisanal you choose to be with the soap-making.

Lye is currently selling for \$37.99 for 3 kg at the Arbutus Home Building Center, roughly enough for 20 litres of WVO, or about \$2/litre of WVO.

One comment I encountered mentioned the smell of cooked food (especially fish) was hard to overcome in the resulting soap.

It is also possible to make soap from glycerine, which is a by-product from biodiesel production. Some effort is required to clean the glycerine (mostly warming, filtering and decanting) enough to use for soap-making

<https://beauty.onehowto.com/article/how-to-make-glycerin-soap-1123.html>

FARM USES / GARDENING— NON-POWER

EARWIG TRAPS

Apparently WVO can kill earwigs, in much the same way that beer-traps can kill slugs.

This article is about vegetable oil in general, not specifically WVO.

<https://www.almanac.com/how-make-earwig-trap-your-vegetable-garden>

STABLE BEDDING

I have heard from one person that WVO mixed with straw can be used for bedding material. However, because I haven't seen any reference to this in the literature and think it might attract vermin, I remain skeptical. Still, this commercial product for that application says it uses vegetable oil as a key ingredient. <https://www.strathconaventures.com/animal-bedding-freshner-organic>

ULTIMATE BEDDING CONDITIONER & NATURAL DEODORIZER

HOOF OILS AND DRESSINGS

<https://www.thefarrierguide.com/2015/02/home-remedies-for-hooves.html>

"This is a pretty intuitive one, because oils and dressings basically moisturize the foot, and we're all pretty down with the concept of moisturizing. As a note, most farriers aren't convinced hoof oils actually do anything beyond superficially making the hoof look better. That said, here are some recipes people swear by:

"Just plain cooking oil – vegetable, canola, whatever. Coconut oil seems to be especially popular, and frankly, it's great for literally everything else you would ever need anything for, so why not for your horse? Application is exactly what you'd think it would be. Just smear it on."

KILLING COW LICE

<https://animals.mom.com/organic-treatments-for-cattle-lice-12360975.html>

"You can use certain forms of oils, such as vegetable or canola oil, to coat the affected areas of a cow. Oils smother adult lice, as well as kill lice eggs. Oils used on your cow will clog up the pores of the lice. The lice will lose needed oxygen for survival and die as result of lack of oxygen."

ANIMAL FEED

"Recycling used cooking oil also helps enhance animal feeds. Used oil is a common replacement for corn due to its nutrients acting as an alternative source for calories. In fact, these nutrients can contain 2.25x more energy than corn. This is particularly beneficial for pig and poultry farms located in areas with hot weather that encourages the livestock to eat less. These nutrients provide more energy and calories in a smaller amount of food, helping keep the livestock healthy despite the restrictive weather." <https://www.darpro-solutions.com/media/blog/environmental-benefits-recycling-uco> Roto-Rooter provides this advice:

"Animal feed. While it has traditionally been used in feed for farm animals, many people also pour waste cooking oil over their pets' food to add extra flavoring." <https://www.rotorooter.com/blog/drains/unique-uses-for-waste-cooking-oil/>

The leads I have followed for using vegetable oil or cooking oil (whether WVO or not), generally refer to rendering and commercial production of feed. There appear to be lists of what are acceptable feed items for different types of livestock by province.

Per the BC SPCA, a list of supplements or additives to (dairy cattle) feed must be presented to the Validator.

Standards for the Raising and Handling of Dairy Cattle <https://spca.bc.ca/wp-content/uploads/SPCA-Certified-Dairy-Standards-2012-v.4.pdf> (page 6)

For hogs, this rule applies:

Darryl McMahon – Economics

Potential Uses for Waste Vegetable Oil for Island Futures

Feeding

Hog rations may be prepared and supplied by local feed companies, or they may be prepared on the farm premises by using integrated feed milling and delivery systems. On-farm feeding systems require regular maintenance and monitoring to ensure that feed is stored properly and to ensure that the most efficient utilization of feed nutrients is realized.

https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agricultureand-seafood/agricultural-land-and-environment/strengthening-farming/farmpractices/870218-22_pork.pdf (page 3)

I found this cautionary note regarding feed for beef cattle in my research. “High oil content (over 7%) can impair rumen function, reducing voluntary intake” <https://www.beefresearch.ca/research-topic.cfm/alternative-feeds-100>

If you plan to use WVO as a supplement for livestock feed, I recommend talking to a farm veterinarian or livestock diet specialist to find out what concerns or recommendations they may have, and what rules and regulations are in force. I have not found solid information I trust in my searching for DIY supplementing feed with WVO, and don’t have such a person in my personal network.

PET FOOD

From: <https://pets.thenest.com/vegetable-oil-dog-itching-9361.html>

Potential Uses for Waste Vegetable Oil for Island Futures

“Vegetable oil is great for sautéing and frying, but it can also be wonderful for your dog. If your dog is constantly scratching, vegetable oil may be the answer to that itch. The only downside is that too much oil can lead to messy bouts of diarrhea.”

In WVO from commercial sources, contamination could be a concern. The context for the above is household WVO where the pet owner would likely know what food was cooked in the oil and how it was stored.

WHY IT HELPS

“Vegetable oil contains omega-6 fatty acids, which help the dog's coat inside and out. Rub the oil into your dog's skin or feed it to him so that it helps internally. When rubbed onto the skin, the oil works to soothe the skin and moisturize it. When fed to the dog, the vegetable oil's omega-6 fatty acids make the dog's skin moist from the inside out. You can choose to use both methods or just one.”

HOW TO APPLY IT

“Dip your forefinger and middle finger in vegetable oil and rub it into the dry area. If you want to make the experience more pleasant for the dog, heat the oil until barely warm. This will not only make the skin moist, but the motion of rubbing the oil into the skin along with the heat can serve as a gentle massage for the dog. Make sure the dog's skin absorbs the oil or you risk getting oil all over your home and furniture. Too much oil can also clog the skin's pores and prevent essential oils from being secreted.”

FEEDING VEGETABLE OIL TO YOUR DOG

“WebMD recommends mixing 1 teaspoon vegetable oil into a small dog's food and adding 1 tablespoon to a large dog's food. Feeding your dog too much oil could cause diarrhea. You never want to feed oil directly to your dog. Always mix it in so that you're sure your dog gets enough food with the oil, which will also cut down on the chances of diarrhea.” <https://pets.thenest.com/vegetable-oil-dog-itching-9361.html>

COMPOST

There are a lot of references on using WVO for composting. Most warn about using too much WVO in the compost, as it can overwhelm the composting microbes. The articles also warn about potential for attracting rodents. This seems like a reasonable treatment of the subject.

<https://yuzumag.com/can-you-compost/vegetable-oil/>

“But throwing in the oil you used to deep fry your chips with isn't a good idea. Always make sure oil only makes up a tiny percentage of the total waste you're putting in.” What's lacking is good information on how much can be used in a dose, and how long between doses.

This article recommends no more than a cup (250 ml) for a household compost pile, which I will guess is less than a ¼ of a cubic metre, or 250 litres. If my estimate is correct, that's a ratio of 1:1000. <https://rusticwise.com/can-you-compost-vegetable-oil/>

City of Calgary says up to 2 litres in a green cart, which seems high to me, but they may be planning to mix with yard waste. <https://www.calgary.ca/waste/what-goes-where/cooking-oil-or-grease.html>

I had one correspondent (over 15 years ago) who reported good results mixing the dark lower – likely had emulsified water content - layer of settled WVO which he did not want to use for making biodiesel, with sawdust and grass clippings (probably for nitrogen-carbon balance) in a compost pile. Said the pile got hotter, so presumably more microbe activity.

If you are looking to add WVO to compost, based on my reading, it would be worth mixing with some water and soaking them into waste paper or other compostable materials. If you are picking up from restaurants anyway, perhaps used paper napkins, used coffee grounds and filters and other compostable materials could be collected as well and mixed. Wet coffee grounds would provide the water content.

Or you could provide this information to the restaurants, if the municipality has reviewed your educational material and wants this material in their landfill diversion program for composting.

FARM USES – POWER

STATIONARY POWER

Farms often have back-up power generators to ensure they can maintain operations when the grid power goes out. These are typically powered by natural gas, propane, gasoline or diesel. On-farm production of methane from waste biomass is not unusual,

Potential Uses for Waste Vegetable Oil for Island Futures

and can be directly substituted for natural gas (adding a perfume is recommended). Some propane engines can be switched to methane by changing fuel nozzles. Gasoline can be replaced by ethanol blends up to E85, depending on the engine. Biodiesel can be used as a drop-in substitute for petro-diesel. However, it is also possible in a lot of diesel generators to use a 2-tank approach with WVO as the main fuel and biodiesel / petro-diesel as the start-stop fuel. As with vehicles, the WVO and fuel lines will have to be warmed, which may be easier for stationary equipment which is sheltered. If the generator is used infrequently, WVO may go rancid while stored. Biodiesel has a longer storage life (minimal air in sealed containers; dark, cool locations preferred).

MOBILE FARMING EQUIPMENT

Trucks, tractors and other implements which use diesel engines can likely operate on WVO, provided start and stop/cool down operations are done with petro-diesel or biodiesel. There are caveats. Some diesel engines (e.g. the late Duramax GM diesel truck engines) don't work well on WVO or biodiesel. For WVO, additional equipment may have to be added (e.g., second tank, valves, thermometers.) There are additional operating steps to be followed. Extra care is required to ensure there is enough fuel in the start-stop tank so that it will not run out of fuel during the cool-down running period.

I don't personally know anyone running WVO in tractors or mobile farm equipment, but this article says it has been done, at least in Arkansas. <https://www.farmprogress.com/waste-vegetable-oil-powering-tractors-trucks-arkansas>

OTHER

WEED SUPPRESSION

Use it to kill weeds. Just place WVO in a spray bottle and spray those unruly nuisances away. <http://www.grease-cycle.com/blog2/cooking-oil-disposal/>

DUST SUPPRESSION

Dust suppression (roads, arenas)

Enjoy Dust Free Roads and Arenas, Thanks To Soybeans <https://soynewuses.org/case-study/enjoy-dust-free-roads-and-arenas-thanks-to-soybeans/>

Local regulations may prohibit – e.g. Indiana <https://www.in.gov/idem/waste/hazardous-waste/used-oil/>

SPIILLED PETROLEUM REMEDIATION

There is evidence that vegetable oil can be applied to soil contaminated with petroleum products like heating oil, diesel fuel and gasoline. This study used sunflower oil, but there's no reason to believe that other vegetable oils – including filtered WVO – would not also work.

Removal of polycyclic aromatic hydrocarbons from manufactured gas plant contaminated soils using sunflower oil: laboratory column experiments <https://pubmed.ncbi.nlm.nih.gov/15982705/>

MOSQUITO CONTROL

There is a long-standing practice of spraying used motor oil onto standing water as a mosquito control measure. That puts a toxic, carcinogenic material directly into the environment. WVO could be applied instead, which would have the same benefit, but without as much unintended harm to the environment. Depending on the size of the water surface (e.g., bird bath, ornamental pond), this could be done with a hand-held spray bottle repurposed from holding laundry stain remover or similar (properly relabeled of course).

BIODIESEL

Where an application for biodiesel can be accommodated by WVO, for the most part I won't be addressing it again in this section. The differences are generally about convenience of use and cost of the additional processing.

There are applications and users which will require that any fuel they use meets an acceptable, approved standard or is permitted by the engine manufacturer without voiding the warranty or both. There are such standards for biodiesel; there are not for WVO.

GROUND TRANSPORTATION

BLENDING BIODIESEL WITH PETRO-DIESEL

Potential Uses for Waste Vegetable Oil for Island Futures

Several studies, mostly in the U.S., have indicated that the biggest gain in using relatively scarce biodiesel is to blend it into petro-diesel stock over many more vehicles. This allows the engines to run smoother (lubricity of the biodiesel) and reduce engine wear. Fuel consumption (in litres or gallons) may increase with higher biodiesel ratios. With 100% biodiesel, up to 10% more fuel may be used than with petro-diesel, and some drivers report lower power. It also reduces the amount of smog precursor emissions by a higher ratio than the amount of biodiesel in the blend. A number of jurisdictions now mandate blending in as much as 5% biodiesel into the standard diesel fuel. I have used B20 blend with success. Combined with synthetic engine oil, it smoothed out the idle considerably compared to the typical diesel rumble and vibration. No difference in fuel economy or power were noticed. The exhaust did smell better (a hint of French fries).

MARINE TRANSPORTATION

There is a renaissance of interest in using biofuels for marine power applications again in recent months. <https://www.theglobeandmail.com/business/article-in-the-search-for-less-carbonintensive-fuels-great-lakes-freighters/>

The MV Quinsam – Nanaimo-Gabriola ferry uses 4 diesel engines. I am guessing that BC Ferries wouldn't be interested in using WVO (at least initially) for a mission critical operation. However, in general in marine operations when there are multiple engines on board, part of the reasoning is redundancy – operations can continue with a single failure. BC Ferries might be prepared to consider trying local biodiesel – especially if made to ASTM standard and they can get engine manufacturer blessing. I would propose doing the trial runs in September-October when summer traffic volumes will have subsided but the temperatures are still warm, and only as a blend, starting with a low ratio (e.g. 2% and working up). If that goes well, they might be open to trying something similar the following year with WVO, again with a ramp-up testing process.

WHAT SEEMS INTUITIVE BUT SHOULD BE AVOIDED

BICYCLE CHAIN LUBRICANT

<https://pedalchile.com/blog/bicycle-chain-lubes>

Not recommended: While most vegetable oils will reduce the amount of force needed to pedal a bicycle to similar levels of those of bike specific lubricants (in laboratory settings), the main reason you wouldn't want to use them is because they will pick up dirt and grime, increasing chain wear.

LAMP OIL

In my experience, corroborated by others, WVO and biodiesel do not work in flat wick kerosene lamps (the typical type in my history). The vegetable oil does not travel up the wick the way that kerosene does. Circa 2000 I did see conversations about using biodiesel in tube wick lamps, aka centre draft lamps (e.g., Rayo, Argand). Wikipedia does suggest that vegetable oil would work in an Argand lamp. To my knowledge, neither are made anymore, though parts are advertised on eBay.

This article – read it to the end – gives a good overview (eventually) of why this is not a good idea (open flames, finicky operation, smoking combustion affecting indoor air quality...). <https://www.primalsurvivor.net/vegetable-oil-lamp/>

RENDERING AND FISH FEED

Doug Davidson of West Coast Reduction Ltd, a rendering company on Duke Pt. told me WCRL collects used cooking oil via their Redux division. They make a range of feedstock products from animal waste, used cooking oil and other materials, such as blood meal, bone meal, fish meal ... <https://www.wcrl.com/finished-products>

WCRL don't make the feed for livestock, pets, fish, etc. The primary customers for their products are the Big Ag companies like Cargill, ADM, Nutrien ..., who make the feed which is sold to farmers and producers. As noted previously, feed for commercial livestock operations is regulated provincially, and the feed formulations are pretty rigid and have to be 'certified' as to quality and content by the feed supplier.

Feed for fish farming seems to be less structured by regulators, so far, but the fish farms are particular about feeds, looking for very high protein ratios (around 90%). Cooking oil is not high in protein, so it won't be a big part of fish feed. One of the properties of value for cooking oil in dry livestock feed is that it is a binder and helps keep the pellets intact for easier handling. That same need does not apply to feed that will be put into water.

Doug says Cargill and competitors will not talk to me (small potential player), and they guard their formulations as trade secrets. He suggested I look on the Web for 'david groves scientist fish food'. Apparently, he is (was?) based on Vancouver Island. Doug provided him with sample quantities of meal products for his work on fish nutrition, I gather in the 1990s. I found this in House of Commons Committee Proceedings from 2000.

"Dr. David Groves of Sea Spring Salmon Farm was one of the pioneers of salmon farming in B.C." <https://www.ourcommons.ca/DocumentViewer/en/36-2/FOPPO/meeting-39/evidence>

Potential Uses for Waste Vegetable Oil for Island Futures

I have not researched Dr. Groves beyond proving I had the name right, and I found the right guy. More below on why the fish feed angle may not be worth pursuing.

Doug indicated that for small fish ponds (and my extension – small poultry flocks), is that the same rigidity would not be in force, as fish in an open pond would choose what to eat from what is available to them in the water and a free-range chicken will eat what it wants from what it finds foraging. (It's been almost 60 years since I got to collect eggs from the chicken coop and dodge the hens, but I suspect chickens haven't changed much.)

For commercial fish farming, there are regulations and standards at the international level, Canadian federal government level, and in the industry.

I have not found that BC has a voice on fish feed, but they do control licensing of operations. I have seen recent media stories that BC salmon farms will start to be shut down this year (2022). That may be why fish feed producers are looking to sell in other Canadian markets.

Other things to note. Doug really doesn't like the term WVO. They don't see what they collect as waste, but as an input feedstock. WCRL pays for it. He was consistent in using the term used cooking oil (UCO). In Doug's opinion, the highest value use of used cooking oil (UCO) is to make biodiesel.

Coming back to using WVO/UCO for feeding chickens, I think there are two distinct markets to consider: commercial scale and small scale (overlaps free range). In the commercial poultry business, regulation is pretty tight, and likely increasingly so for the next while as bird flu is an increasing threat. There might be small market for using WVO as poultry feed, but I think more research on treating the oil and the amount that should be in the feed would be valuable.

Here is a sampling of what I found on the subject.

The Use of Recovered Frying oil in Broiler Chicken Diets: Effect on Performance, Meat Quality and Blood Parameters https://www.researchgate.net/publication/326147144_The_Use_of_Recovered_Frying_oil_in_Broiler_Chicken_Diets_Effect_on_Performance_Meat_Quality_and_Blood_Parameters

"The experimental results indicated that the use of recovered oil instead of fresh oil in the chickens' diet did not cause any significant ($P>0.05$) alteration in their body weight, weight gain as well as their feed intake and feed conversion ratios. The meat quality, carcass characteristics and blood cholesterol and triglycerides were not affected significantly ($p>0.05$) by the use of recovered oil in the diets. The use of recovered oil in replacement of the fresh oil in broilers feed was shown to be more economically." [sic]

How Used Cooking Oils and Animal Fats are Recycled <https://www.darpro-solutions.com/media/blog/second-life-for-used-cooking-oil-and-animal-fats>

"We reuse virtually 100% of the material we collect from our customers. Almost all of the used cooking is used to produce biofuel, while the meat scraps, fat and bone are used to create animal food, household goods, and more biofuel."

This resource is from Iran, but pretty current and it does point out some pitfalls in the collection and use of the WVO (EOW = Edible Oil Waste in their paper).

A mixed-method study of edible oil waste from farm to table in Iran: SWOT analysis <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8459144/>

"They mentioned that there is not any specific management for recycling the discarded edible oil. The biggest buyers of discarded oil are illegally private sectors without refinements for poultry feeds.

"The use of such oils is only restricted by their chemical composition and provided that the oil's peroxide value is not higher than allowed [42]. However, a recent study in Iran showed that the peroxide content of discarded oils in restaurants was higher than the standard [34]. It seems that due to the high cost of edible oil in Iran, they are overused. Non-recovered discarded oils in broiler chicken diets could return to our bodies.

Initially, EOW should filter and then be directly used in the animal feed [43]."

This piece is long, but the key item I got from it is an actual ratio for inclusion of fats and oils in feed: up to 4%.

Best Type of Chicken Feed? The result will surprise you!

<https://patchtotable.com/chickens/feed-types/#t-1604874547547> (Unfortunately, this site is currently generating SSL certificate error – 2022-09-28 – so the page will not open.

Use this link as an alternative:

<http://web.archive.org/web/20211128090418/https://patchtotable.com/chickens/feedtypes/>)

Go to section 1 Chicken Feed Ingredients > Fats and oils.

Another source on feeding scraps to chickens on household scale which mentions Fats and Oils.

7 Tips on Feeding Kitchen Food Scraps to Chickens <https://www.hobbyfarms.com/kitchen-food-scraps-chickens-tips/>

"4. Fats & Oils

Potential Uses for Waste Vegetable Oil for Island Futures

“If you have the bad habit of pouring cooking oil down the sink, you really should see what this stuff looks like when it congeals inside a city sewer pipe. These grotesque icebergs of fat (aka “fatbergs”) cause nearly half of the sewer overflows in the U.S. each year. And even when the fat doesn’t congeal into a fatberg, it still has to be removed from the wastewater, and that costs taxpayer money.

“Instead of pouring cooking oil or fat from bacon, burgers, steaks and pork chops (mmm ... pork chops) down the drain or even putting that stuff in the trash, we pour—and scrape—our waste oils and fat into a bowl and let it set up in the fridge overnight. We then feed it to the hens the next morning. It’s like pudding for chickens, and they gobble it up fast. That’s not nearly as strange as it sounds. Many cooking oil-recycling operations turn waste oils from restaurants and food processors into livestock feed anyway.

“Another tip: If you have dusty bits of pellets or grains that the chickens aren’t eating, mix them with liquid waste oils into a paste that your hens will devour.”

You had expressed interest in using a centrifuge to treat the collected WVO before using it in poultry feed. There isn’t a lot of information on this, but here’s one link. Not very informative.

Extract valuable raw material from old deep fryer fat

<https://www.flottweg.com/applications/edible-fats-and-oils-biofuels/used-cooking-oil/>

Centrifuges for processing used cooking oil and waste oil

“The food industry and cafeterias generate considerable quantities of used cooking oils. Used cooking oils are reprocessed by waste oil disposal companies. The recycled and processed used cooking oils serve as raw materials used in the production of biodiesel, hydrogenated vegetable oils (HVO) and technical greases. Good for the environment and the operator.

“Waste fats, such as frying fat or the contents of grease separators, sometimes contain considerable amounts of undesirable foreign materials. Vegetable and animal fats, as well as used cooking oils and fat from grease traps, are used in the production of biodiesel, HVO or technical fats. The Flottweg Tricanter® separates the unwanted solid particles from the fat in just one step.” (it is a product pitch)

It's unclear to me what the centrifuge process accomplishes that settling and filtering does not. I suppose centrifuging is faster. I'll also just mention again the gelatin method for removing impurities and solids from used cooking oil (reference provided in my earlier draft report).

In summary, I suspect you will encounter issues trying to provide your WVO directly to conventional poultry producers because of regulatory barriers related to feed content and quality control. For small scale (household to small farm), there is information on how much cooking oil is acceptable as part of the feed. In your place, I would seriously investigate liability issues if poultry consuming your treated UCO became sick or died – whether or not the oil is the likely cause.

WVO SPACE HEATERS

I have sorted through at least 20 trails looking for viable large space heater systems which will run on WVO, including some dead ends I’m not including here.

ASSUMPTIONS

I have selected only those which are commercially available (there is a lot of homebrew) and specifically mention support for WVO / UCO. I don’t think your group wants to become responsible for the construction, installation or maintenance of these units, or potential complications from using a fuel which is not explicitly supported by the manufacturer or installer / maintainer. There are a lot of waste oil burners that are primarily or only for burning waste motor oil. (A brief list is presented later of the better-known vendors.)

In case my assumptions are wrong, I’ll just point you to one item as a sample. I have chosen a page from the Journey to Forever site, as I think the material there likely aligns fairly well with your perspective. Don’t stop at just Roger’s heater, go further down the page for some good overview information on the workings.

https://journeytoforever.org/biofuel_library/ethanol_motherearth/me9.html

While I think it’s interesting, the idea of combined heat and power units strikes me as more work than I think you want to undertake. This would involve using a stationary diesel engine to run a generator / alternator to produce electricity, and taking heat off the engine via a heat exchanger. I think this would require a very specific kind of installation with the engine outside the building, and the heat exchanger having an indoor unit. There is an additional complexity in determining which load (electricity or heat) takes precedence. The oil used in a diesel engine needs to be better filtered than in an oil burner.

This article from ASME talks about a commercial product. Waste Not: Used Cooking Oil = Energy Source

<https://www.asme.org/topics-resources/content/waste-not-used-cooking-oil-energysource>

More on the Vegawatt

Vegawatt Cogeneration System Powers Restaurants with Waste Vegetable Oil <https://www.onsetcomp.com/content/vegawatt-cogeneration-system-powers-restaurantswaste-vegetable-oil/>

Sadly, I can’t find references to this product after 2012, so I expect the company is defunct. The vegawatt.com domain name is available for sale.

Potential Uses for Waste Vegetable Oil for Island Futures

In my reading, I have found a few cautions that burning vegetable oil in a unit designed for waste petro oil will cause some issues because the viscosity and flash point of vegetable oil is higher than waste petro oil. This will lead to increased coking and varnishing, meaning more frequent cleanings and maintenance required. Unless the petro-burner specifically addresses these issues, I think it will be a poor choice for burning vegetable oil.

So, with my overall thinking about the situation set out above, here are the commercial units I have found (searching in Canada and the U.S.) which may be of interest.

WVO Burners

CLEAN-BURN

Based in the U.S., Clean Burn has a Canadian authorized distributor, De-on Supply Inc (DSI), which claims to serve all of Canada. So far, I'm assuming they will contract out installation and maintenance to a local furnace or boiler installer.

Clean Burn website <https://www.cleanburn.com/>

De-On Supply Inc. website <https://www.deonsupply.com/>

From my reading (2005), the Clean Burn unit has to be set for either waste petro oil or waste vegetable due to different burning characteristics of the fuels. That needs to be investigated further before believing it is a good choice. I cannot find pricing online.

DSI Canadian headquarters is in Waterloo, ON.

FIRELAKE

<https://www.firelakeheaters.com/>

They claim they can burn vegetable oil, but their site includes this paragraph:

“Concerns with burning used cooking oil for fuel?

“The most common concern with burning used cooking oil for fuel in a waste oil heater is an increased need to do maintenance of the burner and heat exchangers more frequently. The burner systems will need a quick cleaning of the nozzle area about every two weeks to maintain best performance when burning used cooking oil. In comparison, burners that fire used motor oils only need attention every few months.”

Unless there is no better alternative, I don't think greenhouse operators will want to have to do bi-weekly cleaning and frequent maintenance.

YELLOW HEAT

A short treatment of the Yellow Heat burner is presented here. <https://www.yellowheat.com/yellow-heat-burner/>

They have both a burner and furnace product. The burner is intended for retro-fit into an existing furnace or boiler system. The furnace system is intended for new-build installations. (Presumably retrofits will usually have an existing furnace blower and ductwork in place.)

This video provides a good introduction to the burner and context for its use and benefits. <https://youtu.be/Q35MT-1CHeU>

This page gives a static description of the burner, features and specifications. Prices are in U.S. dollars. <https://www.yellowheat.com/yellow-heat-burner/>

As far as I can tell, Yellow Heat does not have a distributor or service network in Canada. That presents a risk, but possibly an opportunity for someone in Canada, preferably already in the heating appliance industry, to create a market for a lowenergy, high-benefit utilization of waste vegetable oil. I believe the Babbington burner is a significant technology advantage.

Note, this burner system can burn petro-waste oil or regular fuel oil, in the event the operator runs out of WVO, a flexibility which eliminates a big risk in single-fuel systems.

I have not contacted any of the suppliers listed above as yet.

If I was looking for a heating solution for an industrial space using WVO as the fuel for myself, this is the one I would pursue first. I would also connect with De-On Supply (Clean Burn rep) for context and comparison. If buying for a pilot installation, that would likely be sufficient. If contemplating a bulk-buy, I would also contact FireLake and even spend more time looking for a possible fourth candidate running a more formal evaluation.

The following units, despite some indication they can burn vegetable oil, a deeper read tells me they are really designed to burn petro waste oil only. [CleanEnergy https://cleanenergyheatingsystems.com/](https://cleanenergyheatingsystems.com/)

Based in the U.S. No indication of a dealer or maintenance network in U.S. or Canada.

Kroll

Potential Uses for Waste Vegetable Oil for Island Futures

Kroll (based in Germany, distribution in UK, Russia and Australia, not Canada) <http://www.kroll.de/en/products/multi-fuel-oil-burner/> Lanair <https://www.lanair.com/>

Based in the U.S. No indication of a dealer or maintenance network in U.S. or Canada.

METHANOL RECOVERY AND BY-PRODUCT SEPARATION

I started by working on the questions of methanol recovery and cleaning the glycerine as separate items, but in the course of my research I discovered that methanol is also present in the glycerine by-product, so there's potential for methanol recovery in two places, with one is integral to cleaning the by-product. (In the literature, the terms glycerin, glycerine and glycerol are all used. They mean the same thing. I have chosen to use glycerine. Methanol also goes by a lot of names, and I have provided a list in the Appendices.)

WORKING FROM FIRST PRINCIPLES

There are a number of processes small producers use to make biodiesel, typically in batches rather than continuous process. Reactor vessels are typically cleaned out and the materials loaded in after titration of the feedstock oil to determine the acidity level and adjusting the lye and methanol mix (methoxide) accordingly. The materials are mixed to aid the reaction, intermittently or continuously. After a prescribed period of time or based on measurement or inspection of the reactor contents, the contents may be transferred to a settling container, which may be open, vented or closed.

At the end of the WVO-to-biodiesel conversion process excess methanol is present in both the biodiesel and glycerine by-product. If open to the air, the methanol liquid will eventually evaporate from the batch. (This is why methanol is stored in air-tight containers.) Unless there is a desire to recover the methanol (generally for economic or environmental reasons), evaporation with a lot of time in a warm, ventilated place combined with washing the fuel is sufficient to remove the methanol from the fuel for purity purposes. (This point has been argued many times in the material read.)

In a closed environment, the free methanol will separate into a different layer from the biodiesel and glycerine by-product paste (semi-solid), but there isn't much free methanol, most of it is chemically bound to other things in the brewed batch.

The specific gravity of methanol at room temperature and atmospheric pressure is about 0.792. The specific gravity of biodiesel ranges from 0.85 to 0.9, depending largely on the original WVO feedstock and completeness of the reaction. Water, having a specific gravity of 1.0, will increase the specific gravity of the biodiesel until it has had a chance to separate. Glycerine (pure) has a specific gravity of 1.26, while the crude byproduct specific gravity is variable, but in the range of 1.05.

As a result, if a batch of freshly reacted biodiesel is emptied into a container, with time and if the mixture is allowed to sit still (minimal stirring or agitation) and kept warm, eventually the components will settle into layers based on the specific gravity values. From bottom to top these layers will be liquid glycerine, glycerine by-product (usually a sludge or paste), water, biodiesel and free methanol. (Most of the methanol isn't free; it's bound to other elements.) A suction hose can be used to remove the top liquid layers. A bottom drain can take off the liquid glycerine. The sludge or paste can be removed with a stronger vacuum hose system, or scraped out mechanically.

There has been work done on heating the freshly reacted biodiesel so the methanol boils off, possibly assisted by use of vacuum to lower the boiling point, and using a condenser system to liquify the methanol for collection and storage. (distillation)

The following text comes from *The Biodiesel Bible* (pp 233-234):

“Some homebrewers do recover the methanol before separating the by-product (some of them use vacuum), but we'd rather not risk ending up with anything less than good process completion. It's best to recover the methanol after separating the biodiesel and the glycerine by-product. [emphasis added]

“More than 70% of the excess methanol collects in the by-product layer [emphasis added], and it's easily reclaimed.

“The methanol left in the biodiesel can also be reclaimed, but it's not cost-effective, it takes more energy than you'll recover. Best write it off as a production cost – washing the biodiesel removes the methanol, and it does no harm in the wash-water”

“The reason we call it the "glycerine by-product" is that what sinks to the bottom of the tank during the settling stage is not just glycerine, it's a mixture of glycerine, soap, most of the excess methanol, and most of the catalyst. In fact there's usually more soap than glycerine – it's more of a "soap" layer than anything else (unless you use the two-stage acid/base process, which produces less soap).

“You can separate the by-product into its components (see *Chapter 18: The glycerine byproduct, Separating the glycerine*). Adding concentrated phosphoric acid to the byproduct converts the soap back to FFAs and separates it from the glycerine, and releases the lye catalyst, in the form of

Potential Uses for Waste Vegetable Oil for Island Futures

potassium phosphates, which is valuable fertiliser (or sodium phosphates if you used NaOH, which makes a less valuable fertiliser, but it's valuable nonetheless).

“This leaves you with about 90% pure glycerine, which is a much more attractive product to sell to refiners – or at least they should be more willing to accept it from you. It's also a useful compost activator and accelerator, and it boosts methane production in biogas digesters.

“But the mixture won't separate without the methanol. After separation all the methanol is concentrated in the glycerine and can then be recovered.

“You can do it either way: if you're planning to separate the by-product using phosphoric acid, then do that first, and then recover the excess methanol from the glycerine portion. Or it can be recovered direct from the raw by-product cocktail.

“Methanol boils at 64.7 deg C (148.5 deg F), though it starts vaporising well before it reaches boiling point. Crude glycerine is much more viscous, with a higher boiling point, 288 deg C (550 deg F).

“In theory, you can recover the methanol by heating the by-product to 65–70 deg C (149–158 deg F) in a closed container fitted with a condenser. But, as the methanol evaporates, leaving an ever-lower proportion of methanol in the mixture, the boiling point increases, and when the temperature reaches 100 deg C (212 deg F) or a little higher, it starts to froth and you have to stop or you'll get frothy brown by-product in your methanol condensate.

“It can be done, if you monitor the temperature very carefully, keeping it just below the "frothing point": you can get it up to 130 deg C (266 deg F) with no frothing, recovering almost all the methanol, but it takes hours of careful attention.”

Note: methanol is categorized as a hazardous material. It is poisonous and flammable. Methanol vapour is flammable and explosive and exposure should be mitigated by proper ventilation and personal protective equipment.

<https://www.methanex.com/sites/default/files/about-methanol/safe-handlingmethanol/SDS/Methanol%2867-56-1%29%20NA%20EN-final%205.3.pdf>

I'm presenting the above to show methanol recovery from the biodiesel portion is not cost-effective, and that recovering methanol from the glycerine by-product is a better source. Also, working with methanol vapour is not to be undertaken lightly.

This video reinforces the information above, including the safety issues, and that doing it well is complicated, requires some special equipment for separation (e.g. distillation) and quality testing. It also requires frequent, if not continuous monitoring.

Methanol Recovery in Biodiesel Production (USDA, University of Idaho, National Biodiesel Education Program)

<https://www.youtube.com/watch?v=ck1eAM7grPs>

As an aside, it's essentially illegal to own a still in Canada for distilling alcohol without a federal government permit (Excise Act of 2001). Methanol is an alcohol (and so is glycerine aka glycerol), so the language is not clear enough to say this application is in the clear. I would contact the local Regional Excise Duty Office to get clarification, before proceeding with any kind of distillation process. Some fun related reading: <https://learntomoonshine.com/wp-content/uploads/2014/11/Federal-Licence-And-LawsTo-Distill-Spirits-Canada.pdf>

The point about more residual methanol being in the glycerine by-product than in the biodiesel is repeated in this paper:

Advanced vacuum biodiesel process https://make-biodiesel.org/images/pdffiles/Advanced_vacuum_process.pdf (page 4)

Selected text from the source above:

“6. Glycerin cocktail: The glycerin from oil is brown and may turn to a solid below about

20 deg C. Glycerin (glycerol) is the main co-product of making biodiesel. Theoretically 79 ml of glycerin per litre of oil used, 7.9% glycerin should be produced. The cocktail drained from the system is not pure glycerin. What sinks to the bottom of the biodiesel processor during the settling stage is a mixture of glycerin, methanol, soaps, water and the excess KOH catalyst. **Most of the excess methanol and most of the catalyst remains in this layer.** [Emphasis added] Once separated from the biodiesel, adding phosphoric acid to the glycerin layer precipitates the catalyst out as potassium phosphate which is useful as a fertilizer, and also converts the soaps back to free fatty acids (FFAs), which float on top. You are left with a light-colored potassium phosphate precipitate on the bottom, glycerin/methanol/water in the middle, and FFA (free fatty acid) on top. The excess methanol can be recovered similarly to the way water is removed from oil when drying. Recovered methanol must be dried for reuse in the process which is an advanced technique. Another idea for disposing of the glycerin is breaking it down, with an anaerobic digester to produce methane gas. This is mentioned here for reference but is covered in detail in the advanced process documentation.”

A third source for there being more methanol in the glycerine cocktail than in the biodiesel at the end of the reaction process:

<http://www.fenixchemtech.in/pdf/Recovery%20of%20Methanol%20from%20Biodiesel%20Process.pdf>

From the source above:

Potential Uses for Waste Vegetable Oil for Island Futures

"BIO-DIESEL Process:

"Biodiesel (methyl ester) is transesterification of vegetable oil by using methanol and KOH/ NaOH as catalyst. The reaction is carried out in 2 reactors. Esterification is carried out to about 80 – 90% level in the first reactor. Glycerin is separated which carries methanol. More methanol is mixed in second reactor to complete remaining Esterification. Glycerin phase is again separated. Consumption of methanol is about 10% of the weight of oil input but excess quantity of methanol is used for the reaction. The excess methanol goes with Bio-diesel phase as well as with glycerin phase. **Biodiesel phase has about 10% of methanol and Glycerin phase has about 40% to 50% of methanol.** [emphasis added] Bio-diesel phase also has some quantity of soap in it and needs to be washed with water to remove soap"

In short, for a small production operation, I recommend against manual processes for methanol recovery given the hazards, and especially if the work will be done by volunteers with any degree of turnover of personnel. For safety reasons, I would not do this work myself alone.

A number of the sources I read on biodiesel production don't even touch on the subject of methanol recovery.

Because of the temperatures associated with boiling methanol or glycerine, the use of vacuum to lower the boiling point is frequently employed. This adds complexity, labour and points of failure.

I did some research on what tools might be available to automate or at least make some of the processes safer. When I was involved in small scale biodiesel production, there were no such tools available commercially, and everything was home-brew. In my current research, I see there are some entrants in the automation market, but it's not all as painless as one would hope, and prices appear to be high – possibly out of reach for small scale operations.

One cautionary story:

Why you should never buy an RSI-55 Methanol Recovery System <https://www.trianglebiofuels.com/why-you-should-never-buy-an-rsi-55-methanolrecovery-system/>

I did not find much on solutions for methanol recovery from small scale biodiesel production. There are a few companies that have solutions for large plants, generally continuous operation. E.g.,

<http://www.srsbiodiesel.com/technologies/methanol-recovery/> <https://wintek-corp.com/flash-evaporation-systems/methanol-recovery-systems/> <https://incbio.com/methanol-recovery/> (there are more).

This looks like a one-stop solution for recovering methanol from biodiesel and the glycerine by-product.

<https://www.springboardbiodiesel.com/glycerin-and-biodiesel-demethylation.html>

It can even process the demethylated glycerine by-product into soap.

Springboard is the only supplier I found on the Web which appears to be an appropriate commercial product for methanol recovery for small scale biodiesel production.

DRYING METHANOL

I have not dug into this in depth, as it appears to be a solved problem. Boiling is not a good solution, as methanol boils at a lower temperature than water, so a closed system with a condenser would be required to capture the methanol.

Some citations.

Drying Solvents https://chem.libretexts.org/Ancillary_Materials/Demos_Techniques_and_Experiments/General_Lab_Techniques/Drying_Solvents

"**Methanol:** For most purposes, drying over 3A molecular sieves overnight followed by distillation is sufficient. Alternatively, the methanol can be dried from magnesium methoxide. Magnesium turnings (5 g) and iodine (0.5 g) are refluxed in a small (50-100 mL) quantity of dry methanol (from a previous batch) until all of the magnesium has reacted. The mixture is diluted (up to 1 L) with reagent grade methanol, refluxed for 23 hours then distilled under nitrogen."

Drying of Organic Solvents: Quantitative Evaluation of the Efficiency of Several Desiccants
http://ccc.chem.pitt.edu/wipf/Web/Solvent_Drying.pdf

"Methanol and Ethanol

"Lower alcohols are typically dried by heating over iodine activated magnesium with a magnesium loading of 0.5- 5.0 g/L. Several other desiccants, including KOH, BaO, and CaO, 1,3 have also been recommended. KOH and Mg/I 2 are found to provide methanol with a water content of 33 and 54 ppm, respectively (Table 5). Molecular sieves (3 A) were efficient at drying this solvent only when present at a loading of 10% m/v (mass/volume) or higher and when the solvent was left to stand over the sieves for a minimum period of 72 h. Optimum drying is obtained with storage of the methanol over 20% m/v 3 A molecular sieves for 5 days, by which time the water content reduces to about 10 ppm.

"Ethanol behaved similarly, requiring a minimum of 10% m/v of activated 3 A molecular sieves before efficient drying is noted, optimally also after a period of 5 days over 10% or 20% m/v of the sieves, under nitrogen (Table 6). Powdered KOH proved a rather

Potential Uses for Waste Vegetable Oil for Island Futures

active desiccant for methanol, and ethanol and may be used in a predrying step prior to storage over activated 3 A molecular sieves to provide ultimate drying efficiency.”

Drying Alcohol Using Magnesium and Molecular Sieves <https://www.youtube.com/watch?v=NMfs3e9OdZQ> **Cleaning the Glycerine By-Product**

So, what is actually in the glycerine by-product (or ‘cocktail’) that precipitates out of the biodiesel reaction?

Obviously, glycerine (65% to 85% (w/w)) and methanol at this point. What else? Soap (FFAs), lye, salts (calcium, magnesium, phosphorus, and sulphur, in the range of 1 to 30 ppm each).

In addition to heating and separating the layers, a filter should also be used to capture any solid bits that escaped the pre-reaction filtration step or appeared as part of the reaction or post-processing. The heating to separate the material into layers which can be decanted without a condensation stage should not be considered a still.

This seems like a relatively simple approach to breaking down the glycerine product into its constituent elements:

http://journeytoforever.org/biodiesel_glycsep.html

Separating glycerine/FFAs

”Most of the lye and most of the excess methanol used in the biodiesel process collect in the glycerine layer that settles out at the bottom, along with the soap formed when Free Fatty Acids (FFAs) are neutralized by the excess lye.

”The proportions of each depend on the oil you used and your process -- the **two-stage acid-base process** will give different results to a single-stage base process. “Adding phosphoric acid (H_3PO_4) converts the soap back to FFAs and separates it all into three distinct layers, with catalyst-phosphorus on the bottom, glycerine-methanol in the middle, and FFAs on the top.

”The methanol can then be recovered from the glycerine in the middle layer by heating to above 65 deg C (150 deg F) in a closed container fitted with an outlet into a simple condenser.”

More details on the process follow at the link provided above. (This may be considered a still.)

Making soap may not be the only, or even best, by-product which can be extracted from the glycerine by-product.

The Byproducts of Biodiesel Production Are Valuable Organic Acids, Researchers Say <https://www.renewableenergyworld.com/baseload/the-byproducts-of-biodieselproduction-are-valuable-organic-acids-researchers-say-53116/>

This looks like a fun topic to pursue further. Biodiesel Glycerol Conversion to Anti-Freeze <https://www.trianglebiofuels.com/biodiesel-glycerol-conversion-to-anti-freeze/> Presumably whatever fleet is running the biodiesel fuel will also need some engine coolant, and mechanics are forever using degreasers (on parts and their hands – and this would be better than a solvent-based degreaser).

And when all else has been extracted, don’t discount these end-paths for some of the small remainders:

- a) The compost pile (the salts are typically soil nutrients – NaCl / sodium chloride or table salt being an exception)
- b) Feeding to a (methane) biodigester

Chapter 18 of *The Biodiesel Bible* also treats the topic of the glycerine by-product and possible uses, including glycerine soap-making. It also recommends this book on soapmaking: *The Soapmaker’s Companion: A Comprehensive Guide With Recipes, Techniques & Know-How* by Susan Miller Cavitch. <https://www.chapters.indigo.ca/en-ca/books/the-soapmakers-companion-acomprehensive/9780882669656-item.html>

Potential Uses for Waste Vegetable Oil for Island Futures

CENTRIFUGE RESEARCH

Assuming liquids and small suspended solids with differing specific gravities, a centrifuge is a device which performs the same function as settling, but in a shorter time period by using centrifugal force to amplify what settling does by gravity. The agitation caused by the mechanical action also enhances the separation of different materials. An early and well proved centrifuge is the farm milk separator.

This article on vintage cream separators provides a readable and concise analogy: <https://www.farmcollector.com/equipment/cream-separator-zmh12mayzbea/>

The gravity separation method is described, along with shallow separation and deepsettling (also known as a fractionating column), including the glass windows (sometimes a sight tube is used on current settling tanks).

This article provides a concise description of the factors of operation for a centrifuge. <https://druckerdiagnostics.com/knowledge/how-a-centrifuge-works/>

“Principles of Centrifugation

“At its core, centrifugation is separation through sedimentation. The denser particles sink to the bottom of the container, while the more lightweight particles remain suspended. Centrifugation will displace particles that are even slightly different in density, and is influenced by these four factors:

- The density of the samples and solution
- The temperature and viscosity
- The distance that the particles are displaced
- The speed of rotation

“Relative centrifugal force (RCF), or G-force, is the amount of acceleration that is applied to the sample. When RCF exceeds the buoyant and frictional forces in the sample, the particles will move away from the axis of rotation and result in sedimentation.”

For separation of the glycerine [glycerin, glycerine and glycerol are interchangeable terms; I choose to use glycerine] by-product, there are a couple of additional factors to take into account.

- 1) *Will the mixture be maintained at a temperature above the melting point of the pure glycerine?* At 13.3 degrees C, it should not be difficult, and will enable separation.
I am assuming the answer is yes for the remainder of this research.

- 2) *Should the remaining methanol be recovered before separating the rest of the mixture?*

The distillation process typically used with vacuum and heating is energy intensive and produces methanol vapour, which is a hazard (flammable, explosive, toxic).

Therefore, it could be advantageous to use a centrifuge to perform the separation of methanol from the rest of the glycerine by-product. Unfortunately, to date, I have not found a solid source for this being done.

This may be because methanol-water bonds are strong and may not succumb to typical centrifuges. Hence, the need for heat in the distillation process to supply the energy to break the molecular bonds between methanol and water. (but this should be the drying stage).

This discussion of the separation / purification process assumes distillation (for methanol recovery) before other steps in the process. https://www.researchgate.net/publication/336488063_Conversion_of_Glycerol_to_Valuable_Products

The Dolphin Centrifuge, marketed specifically for the biodiesel production market (notably for separating the biodiesel from the glycerin by-product (rather than using settling), says this: <https://dolphincentrifuge.com/biodiesel-centrifuge/>

“Glycerin Clarification

“Distilling separated glycerol recovers the methanol and produces glycerin. [emphasis added] Pure glycerin has good resale value and is in demand in the food and cosmetics industries.

“Clarification of glycerin to remove small impurities makes it usable. A disc stack centrifuge has the required g-force to remove the finest trace particles from glycerin.

“The advantages of using industrial centrifuges (listed above) are applicable for glycerin purification as well.”

While centrifuges for extracting ethanol exist, a quick Web search did not find any relevant hits for a methanol centrifuge (ethanol units did come up on that search).

Potential Uses for Waste Vegetable Oil for Island Futures

I have been through a few papers which satisfied the “methanol + centrifuge” Web search criteria, and none mention using the centrifuge to separate free methanol from other materials in a glycerine mixture. Several of the papers mention removing free methanol before using a centrifuge. For example:

A sustainable methanol-based solvent exchange method to produce nanocellulose-based ecofriendly lubricants
<https://www.sciencedirect.com/science/article/pii/S0959652621028730>

Based on the research I have done, while I have not found a definitive ‘do not use a centrifuge when free methanol is present’ statement, I believe the implication is that this is not done in practice. Unhappily, in my opinion, that leaves us back at using distillation and vacuum to recover the excess methanol from the glycerine by-product before using a centrifuge to further separate / purify the glycerine.

Which brings me back to the Springboard GL 95 “demethylator”. Perhaps it can be operated in such a way that the methanol is recovered from the glycerine by-product and then the remainder provided in raw form for processing (possibly in a centrifuge) rather than going directly into unpurified ‘soap’ bricks. This would require discussion with the vendor. Having dealt with other customers, they may be able to suggest an even better solution.

My research also led me to look into ElectroDialysis as a means of separating the components of the glycerine by-product, and while there was some interest years ago, it seems nobody is actively pursuing it now.

EET Corporation HEED technology Company no longer operational
<https://www.bluetechresearch.com/tools/innovation-tracker/eet-corporation/>
<http://www.eetcorp.com/heepm/heepm.htm>

There does seem to be current interest in ionic treatment, physico-chemical treatment and micron sieve technologies as other means of separation, but these may also fail at the breaking the methanol chemical bonds in the glycerine by-product.

CONCLUSIONS

It is possible that biodiesel could be used in the new bus fleet (GM), but research would be required on additives, possibly modded ECU chips and consultation with the manufacturer to ensure the warranty will not be affected.

There are other uses for WVO than just making biodiesel, although the expert I interviewed feels this is the highest value use for WVO.

It is possible to use WVO for space heating, but not recommended (by vendor) for living spaces. One unit researched can run on WVO and other fuels, reducing supply risk for the property owner.

It is not worth trying to recover methanol from the produced biofuel.

It probably is worth trying to recover methanol from the glycerine by-product (‘cocktail’), for both environmental and financial reasons.

Recovering the methanol via distillation could be considered to be operating a still, which has legal implications under Canadian law and regulations.

Dealing with methanol vapour is hazardous and complicated.

There are hazards associated with distillation and vacuum recovery of excess methanol from the glycerine by-product.

I would prefer that Island Futures staff and volunteers not use a distillation and vacuum system to recover methanol vapour (which would then be condensed to a liquid which needs to be dried for re-use).

There is a commercial product on the market which claims to simplify and reduce the hazards of recovering methanol from the glycerine by-product.

There are other uses for the glycerine by-product elements after methanol extraction. Some of these may be more attractive than making glycerine soap, and easier. Automotive anti-freeze (based on the glycerol content) is just one.

A centrifuge can work at separating the elements of the glycerine by-product mixture. However, it appears that separation of the methanol is typically done as a pretreatment step before using the centrifuge to separate the salts and other impurities from the liquid glycerine (acid process). Otherwise, the energy costs of methanol recovery are high.

RECOMMENDATIONS

Potential Uses for Waste Vegetable Oil for Island Futures

1. Make biodiesel from the WVO for fueling diesel vehicles and equipment.
2. Connect with Yellow Heat (Tom Leue) to investigate the potential for using their system to burn WVO for heating a warehouse or greenhouse or other structure that is not occupied continuously. I don't recommend WVO or biodiesel for residential heating within the building, per the information from Yellow Heat.
3. With the expectation of purchase, investigate using some of the Springboard technology as a way towards methanol recovery and processing of other material from the by-product. In particular, the GL95 which recovers methanol from the glycerine by-product and also produces soap.

APPENDIX - DIFFERENT NAMES FOR METHANOL:

This can be useful information when sourcing product for biodiesel production. When I was making small amounts of biodiesel, methyl hydrated (marketed as a paint thinner / cleaner) was less expensive than 'methanol', which was sold in bulk by car performance outlets.

- Bieleski's solution
- Carbinol
- CH₃OH
- Methylol
- Methyl alcohol
- Methyl hydrate
- Methyl hydroxide
- Monohydroxymethane
- Pyroxylic spirit
- Wood alcohol
- Wood naptha
- Wood spirit
- White spirit

Potential Uses for Waste Vegetable Oil for Island Futures

REFERENCES

Websites used to obtain specific information are not listed here, but are inserted in the document as appropriate

15 Creative Uses of Used Cooking Oil You Never Knew About Mahoney Environmental
<https://www.mahoneyes.com/blog/15-creative-uses-of-used-cooking-oil-you-never-knew/> (use with caution)

Applications of Waste Cooking Oil Other Than Biodiesel: A Review D.C. Panadare & V.K. Rathod 2015 Iranian Journal of Chemical Engineering
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<https://sustainability.williams.edu/files/2010/09/WilliamsbiodieselRKalb.pdf>

From the Fryer to the Fuel Tank Joshua Tickell published 2000 ISBN 0-9707227-0-2 (author's personal collection)

Market Warms to Bioheat Joanna R. Turpin 2014 ACH News <https://www.achrnews.com/articles/128196-market-warms-to-bioheat>

Waste Cooking Oil-to-Biodiesel Conversion for Space Heating Applications Daniel J. Bruton 2014 (Masters Thesis, Rochester Institute of Technology <https://scholarworks.rit.edu/cgi/viewcontent.cgi?article=8835&context=theses>

Tom Leue (Yellow Biodiesel) personal conversations with the author

The author's personal files and correspondence <http://www.srsbiodiesel.com/technologies/methanol-recovery/>
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https://www.webpages.uidaho.edu/mindworks/Capstone%20Design/Project%20Options/2018-19%20Projects/01_Biodiesel_Redesign%20of%20Methanol%20Recovery%20System.pdf https://make-biodiesel.org/images/pdffiles/Advanced_vacuum_process.pdf

https://www.researchgate.net/publication/41464046_Excess_Methanol_Recovery_in_Bio_diesel_Production_Process_Using_a_Distillation_Column_A_Simulation_Study <https://www.youtube.com/watch?v=m6uiAZ1BbmY>
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<https://farm-energy.extension.org/new-uses-for-crude-glycerin-from-biodieselproduction/>

<https://pubs.acs.org/doi/10.1021/acsomega.1c02402>

[https://www.messiah.edu/departments/engineering/projects/ipc/pdf/B/Biodiesel-Methanol%20Recovery%20Project%20\(2009%20FR\).pdf](https://www.messiah.edu/departments/engineering/projects/ipc/pdf/B/Biodiesel-Methanol%20Recovery%20Project%20(2009%20FR).pdf)

(glycerine used as fire starter and soap product)

<https://www.methanol.org/wp-content/uploads/2016/06/Methanol-Technical-DataSheet.pdf>

https://www.researchgate.net/publication/228589856_The_specific_gravity_of_biodiesel_fuels_and_their_blend_with_diesel_fuel <https://www.e-education.psu.edu/egee439/node/685>

<https://farm-energy.extension.org/new-uses-for-crude-glycerin-from-biodieselproduction/>

The Biodiesel Bible by Keith Addison, 2013

Two-Step Purification of Glycerol as a Value Added by Product From the Biodiesel Production Process
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6878765/>

Biofuel Centrifuge Patent

Potential Uses for Waste Vegetable Oil for Island Futures

<https://www.mysciencework.com/patent/show/biofuel-centrifuge-US7635328B2>

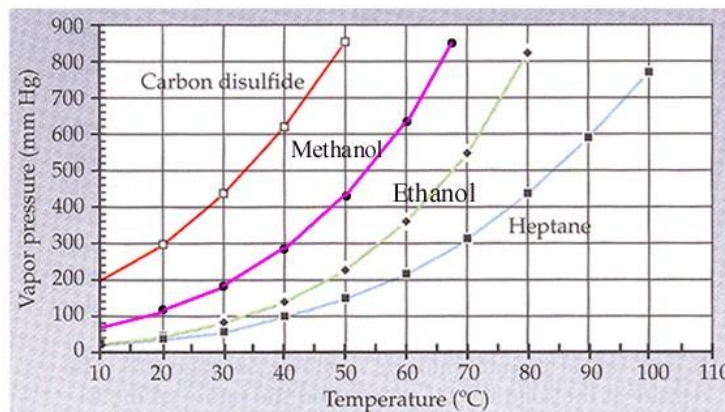
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Bioprocesses for the Biodiesel Production from Waste Oils and Valorization of Glycerol <https://www.mdpi.com/1996-1073/15/9/3381/pdf>

Biodiesel Centrifuge | Operation, Benefits, Applications & Specifications (Dolphin) <https://dolphincentrifuge.com/biodiesel-centrifuge/>

PURIFICATION OF CRUDE GLYCEROL BY A COMBINATION OF PHYSICO-CHEMICAL TREATMENT AND SEMI-CONTINUOUS MEMBRANE FILTRATION PROCESSES

Masters Thesis by Chol Ghai Chol 2018 <https://harvest.usask.ca/bitstream/handle/10388/11230/CHOL-THESIS-2018.pdf>
(methyl alcohol, wood alcohol): 66°C or 151°F at STP



The vapor pressure of **chloroform** is 400 mm Hg at **42.0** °C. From the plot of vapor pressures vs temperature above, estimate the temperature at which the vapor pressure of **carbon disulfide** is 400 mm Hg. °C

The heat of vaporization of **chloroform** would be expected to be than the heat of vaporization of **carbon disulfide**.

If using vacuum for lowering the boiling point of methanol, these might be useful information:

STP is 20 C and 760 mmHg

350 mm Hg at 25 C as a boiling point

110 mm Hg at 20 C

2023 RDN Zero Waste Recycling Funding Application

Submitted By:



Address: 210 Fry Street, Nanaimo BC. V9R 4Z1

Charitable Registration Number: 874258429RR0001

Contact Person: Abby Sauchuk

Contact Info: abby@nanaimoloavesandfishes.org

210 Fry Street, Nanaimo

250-754-8347

In response to the RDN's requests for proposals to increase Zero Waste Recycling, Loaves and Fishes Food Bank is pleased to submit this application for funding.

Overview of Loaves & Fishes Food Bank Operations

Loaves & Fishes fulfills its purpose and mission by using the problem of food waste to address the problem of food insecurity:

- Collecting food donations from local, regional and national grocery store partners and local individual donors
- Sorting and storing food
- Providing quality, nutritious food to people through Loaves & Fishes market style food distribution depots
- Providing quality, nutritious food to people in Nanaimo & across Vancouver Island through partnerships with Indigenous Communities, other non-profits, schools and other food banks
- Providing surplus food which is unfit for human consumption to farms for livestock and compost
- Disposing of unfit food the farmers do not take through industrial compost partners

Loaves & Fishes Food Bank provides food bank services directly to people in need through a network of 10 free food market depots open 7 days a week in Nanaimo and through our Northern Vancouver Island food bank. Our free markets combined with partnerships with Indigenous Communities, other non-profits, schools and other food banks reach approximately 15,000 people across Vancouver Island. Food Banks BC recognizes Loaves & Fishes as one of the leading food banks in Canada.



Using the Problem of Food Waste to Address the Problem of Food Insecurity

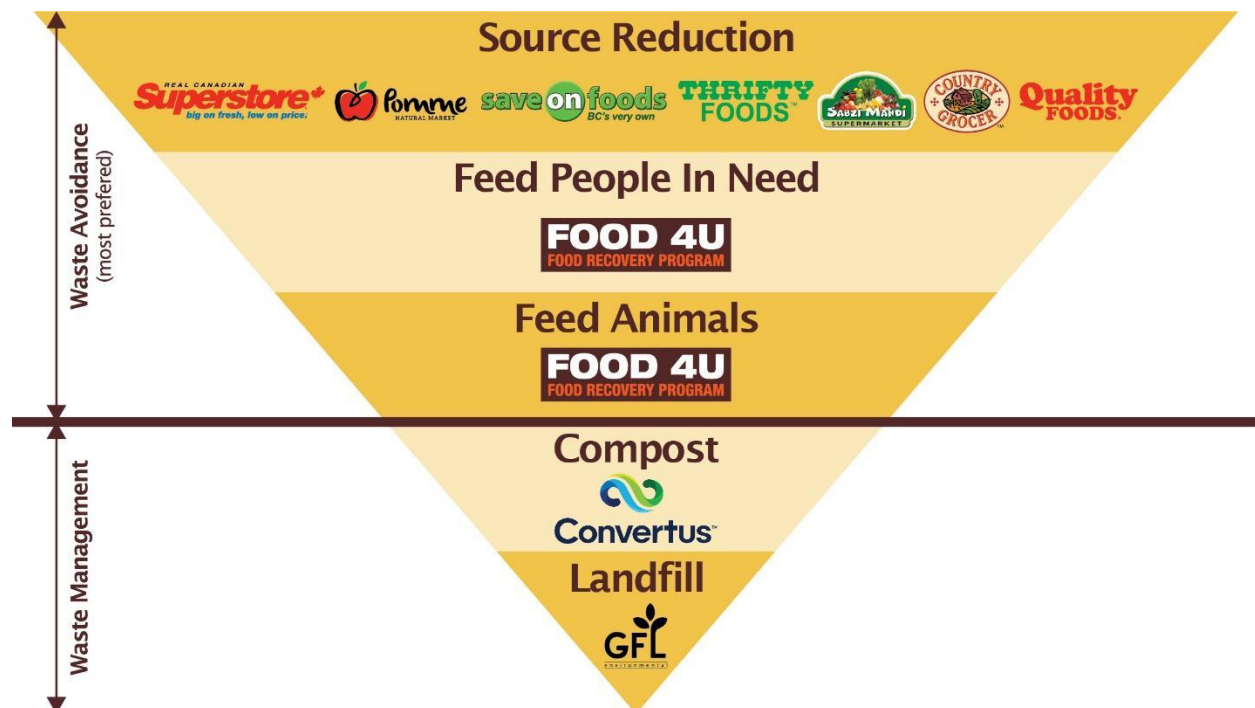
Diverting Food Waste through Food 4U Food Recovery - The circular economy in action.

Since 2012 Loaves & Fishes Food Bank has operated our successful Food 4U Food Recovery Program in Nanaimo BC. This program ensures that grocery retailers, food wholesalers, trucking companies, farmers and others have a simple, efficient and cost effective way of ensuring their surplus food can be diverted from the waste stream and put to its highest and best use.

Loaves & Fishes primary mechanism of recovering surplus food is to provide grocery stores with 7 day a week pick up of ALL surplus food they are disposing of. The food industry's waste disposal need is resolved as their surplus food is diverted from the landfill to benefit people. Food is also accessed at a provincial and federal level through our partnerships with Food Banks BC, Food Banks Canada and Second Harvest. In most instances, that food is through large scale food recovery from other communities.

Our food recovery partnerships have grown from one store in 2012 to 30 currently. The increase in food recovery partners is made possible by Loaves & Fishes refined and reliable operating systems. This methodology has proven Loaves & Fishes ability to sustain the increasing food recovery within the Regional District of Nanaimo and beyond.

Loaves & Fishes approach to the food recovery model is congruent to the Zero Waste Hierarchy of Highest and Best Uses utilized by the RDN. The graphic below summarizes this approach.



Humanitarian & Social Benefits of Food 4U Food Recovery

Loaves & Fishes Food 4U Food Recovery Program has dramatically improved the lives of thousands of people by ensuring they have abundant access to healthy food. Due to the amount of good food available to Loaves & Fishes through food recovery, people within and outside the RDN (who can get to Nanaimo area) are able to receive food 7 days per week and are welcome to come daily. Additionally, Loaves & Fishes free food market depots operate on an “everyone welcome” policy with no income or address check required for service.

Farms & Composting Benefit from Food 4U Food Recovery

In the interest of putting food to its highest and best use, food collected by Loaves & Fishes that is unfit for human consumption is made available to farmers for livestock and compost. The food the farmers don't take is composted through local industrial compost partners. Circular Waste BC provides 8 tons per month of composting to Loaves & Fishes, free of charge. Taking the unfit food to the landfill is our last resort.

Environmental Benefits of Food 4U Food Recovery

Loaves & Fishes Food Recovery Program dramatically reduces the amount of food that ends up in the RDN landfill. Since 2012, the Food 4U Food Recovery Program has recovered over 15,500,000 pounds of food that would otherwise have become part of the waste stream.

Building & Maintaining Operations

In order for Loaves & Fishes to continue growing successful, sustainable food recovery and distribution programs, **Two key aspects need to be in place:**

1. Strong and long term community partnerships. From food collection and distribution to fundraising and social enterprise, Loaves & Fishes maintains a positive relationship with all community partners.

Surplus food is collected from the following Food Recovery Partners:

Nanaimo & Cedar:

- Thrifty Foods
- Walmart
- Superstore
- Fresh Point
- Quality Foods
- Coco Cafe
- Country Grocer
- COBS Bakery
- Save on Foods
- Van Kam
- Shoppers Drug Mart
- Starbucks
- Sabzi Mandi
- Cold Star Solutions
- Pomme Market
- Comox Pacific
- London Drugs
- 49th Parallel Grocery

Ladysmith:

- Save on Foods

Nanoose Bay:

- Quality Foods

Parksville & Qualicum:

- Quality Foods

Port Alberni:

- Quality Foods

Comox & Courtenay:

- Quality Foods (Currently stat holidays only)

Loaves & Fishes operates free food market depots in partnership with the following churches in the Nanaimo area:

- | | | |
|-----------------------------------|-------------------------|---------------------------|
| • St Paul's Lutheran Church | • Salvation Army Church | • Christ Community Church |
| • St Andrew's Presbyterian Church | • Brechin United Church | • Nanaimo Alliance Church |
| • Maranatha Church | • Neighbourhood Church | • Generations Church |
| • Generations Church | | |

Loaves & Fishes operates a food bank in Port Hardy in partnership with:

- St Columba's Anglican – United Church

As Vancouver Island distribution hub for Food Banks BC and Food Banks Canada, Loaves and Fishes receives, stores and provides food to food banks in the following communities:

- | | | |
|---------------------|-----------------|-------------------|
| • Victoria | • Sooke | • Goldstream |
| • Sidney | • Lake Cowichan | • Chemainus |
| • Pender Island | • Parksville | • Port Alberni |
| • Ladysmith | • Ucluelet | • Comox Valley |
| • Tofino | • Quadra Island | • Mayne Island |
| • Campbell River | • Denman Island | • Powell River |
| • Saltspring Island | • Hornby Island | • Saanich |
| • Denman Island | • Mill Bay | • Gabriola Island |

Loaves & Fishes provided food free of charge to the following non-profits on Vancouver Island in 2021:

- Nanaimo 7-10 Club
- AVI Health & Community Services
- Canadian Mental Health
- Chemainus Harvest House
- Compass Church
- Cowichan Neighbourhood House
- Crisis Pregnancy Centre of Nanaimo
- Nanaimo Food Share
- Girl Guides of Canada
- Habitat for Humanity
- Haven Society
- Island Crisis Care Society
- Ladysmith Association of Family & Friends
- Nanaimo Literacy Association
- Nanaimo Association of Community Living
- Nanaimo Affordable Housing Society
- Nanaimo Community Kitchens
- Nanaimo Family Life
- Nanaimo Youth Services Association
- Society of St Vincent de Paul
- Vancouver Island Mental Health
- Vancouver Island University
- World Tree Ministries
- Youth with a Mission
- Wisteria Community Association
- BGC of Central Vancouver Island
- Nanaimo Men's Resource Centre
- Youth for Christ
- BGC Central Vancouver Island
- Nanaimo John Howard Society
- North Island Community Society
- Hardy Bay Seniors Society
- The Pentecostal Assemblies of Canada
- British Columbia and Yukon District Society
- North Island Crisis and Counseling Society
- St John Gualbert Anglican – United Church
- St Columba's Anglican – United Church
- Denman Island Community Education Society
- People for a Healthy Community on Gabriola Society

Indigenous Communities & Organizations encompassing several agencies in 2021:

- Stz'uminus First Nation
- North American Indigenous Ministries (Penelakut)
- Tillicum Lelum Aboriginal Society
- Namgis First Nation
- Gwa'sala - Nakwaxda'xw First Nation
- Quatsino First Nation
- School District 68
- School District 85
- Island Health
- Ministry of Children and Family Development
- Salvation Army (Nanaimo & Port Alberni)

Current Community Food Reach 2022:



2. Investment in capital infrastructure. Funding for equipment is essential for all aspects of Loaves & Fishes food recovery and distribution operations.

Expansion of food recovery to communities beyond Nanaimo, Ladysmith, Chemainus and Parksville requires significant investments in infrastructure to ensure the facilities and equipment are in place to collect, sort, store and distribute additional food. From refrigerated trucks, coolers, freezers and warehouse space, to collection bins and washing facilities, considerable equipment is required to operate a robust food recovery program. Some of these investments are lower cost and mid-level, while others require significant funding.

Examples:

Lower Cost: Purchase of 80 new collection bins costing \$24 per bin (recently increased from \$13 per bin) with each new food recovery grocery partner.

Mid - level Cost: Refrigerated 5 ton trucks now average \$235,000 (recently increased from \$210,000 per truck). A new truck is required each time a new community is added to Loaves & Fishes food recovery program.

Large Cost: Loaves & Fishes 6,000 square foot warehouse and equipment within. Warehouse acquired in 2014.

Collecting Recycling to Fund Food Recovery

Empties 4 Food Social Enterprise – Keeping recyclable drink containers out of the landfill

Loaves & Fishes Empties 4 Food Program contributes to the RDN's Zero Waste goals by providing a convenient option to the public for recycling and thereby reducing the number of beverage containers that end up in our landfill. Empties 4 Food social began in 2017 and currently collects donations of refundable drink containers through 29 public donation bins from Cedar to Nanoose Bay. Empties 4 Food has also expanded to 14 condo buildings and businesses which previously had no recycling system in place. At the same time, the revenue stream of \$20,000 - \$30,000 per month from this program is put directly towards Loaves & Fishes food recovery and distribution operations. Since 2018, Loaves and Fishes has recycled over 6,440,000 drink containers.

Loaves & Fishes partners with the following organizations & businesses to host public Empties 4 Food donation bins:

- | | | |
|--------------------------|------------------------------|-----------------------|
| • Regional Recycling | • Thrifty Foods Port Place | • Superstore |
| • 7 Eleven Departure Bay | • John's Bedrooms | • VIU North Residence |
| • VIU South Residence | • Departure Bay Liquor Store | • DBL Disposal |
| • Stones Marina | • Cassidy Farm Market | • RDN Landfill |
| • Delicados | • Jolly Giant Day Care | • Milner Group |

- Hammond Bay Church
- Oceanside Church
- 7 Eleven Dover Rd
- St Philip Anglican
- Triple T Party Rentals
- Neighbourhood Church
- Generations Church
- Thrifty Foods Longwood
- Snaw Naw As Shell Station
- Country Grocer Chase River
- Maranatha Church
- Alliance Church
- Brud House
- BCG South Nanaimo

Looking to the Future

Expanding & Growing Food Recovery

Loaves & Fishes' goal is continuing expansion of food recovery to serve people and the planet. With our expertise gained from the scalable model Loaves & Fishes created, food recovery and distribution is possible anywhere within 90 minutes of Nanaimo, from Duncan to Campbell River and Port Alberni.

The growth of food recovery is made possible through Loaves & Fishes central warehouse hub in Nanaimo. Grocery stores within a 1.5 hour drive of Nanaimo can be provided with 7 day a week collection of all food they are disposing of. The food in these communities will be brought to Nanaimo and put to its highest and best use.

Putting the Recovered Food Back into the Communities

Centralizing the collection of surplus food can only happen when there is a high level of trust between the other communities and Loaves & Fishes. As such, food recovery only expands to communities outside of Nanaimo by invitation. In January 2021, the Ladysmith Food Bank and Chemainus Food Bank invited Loaves & Fishes to work in their community. Since then, Loaves & Fishes provides 7 day a week food recovery collection from Ladysmith Save on Foods. That food is brought back to Loaves & Fishes warehouse in Nanaimo where it is sorted. In turn, food Loaves & Fishes has available is delivered weekly back to Ladysmith and Chemainus for distribution to people in their communities.

Since August 2021, Loaves & Fishes has also provided weekly delivery for non-profits in Parksville. The success of these partnerships has provided a scalable template for providing food recovery services across the RDN. The trust built has enabled Loaves & Fishes to expand food recovery to the Save on Foods in Nanoose, Parksville and Qualicum.

Food and delivery is provided free of charge and will continue benefiting the food programs of Indigenous Communities, non-profits, schools and other food banks in Nanaimo and across Vancouver Island.

Expanding Empties 4 Food Recycling Collection

Loaves & Fishes has made large strides in setting up regular recycling collection in condo strata complexes and businesses within the RDN. There are opportunities to grow this convenient recycling option across the RDN. Additionally, many smaller communities on Vancouver Island where Loaves & Fishes is currently delivering food do not have a local recycling facility. Loaves & Fishes intends to offer recycling in these communities wherein their donated empty drink containers will be brought back to Nanaimo for processing.

Space Constraints Inhibiting Growth

In the last 7 years Loaves & Fishes food recovery program has grown beyond the current facility's efficient operating capacity. The success of the two zero waste programs; Food 4U Food Recovery and Empties 4 Food has established the need for a much larger facility.

Food 4U Food Recovery:

As Loaves & Fishes takes on new food recovery grocery partners and expands food collection through regional and national partnerships, a crisis of space becomes apparent. Specifically, we do not have the cooler, freezer and sorting space to receive the entire volume of food that can be made available to us. Currently, we are having to rent overflow refrigerator space at a local cold storage facility. We are unable to accept large tractor trailer loads of food offered when warehouse storage is already at capacity. Additionally, efficient sorting of food requires space to implement an assembly line system. With our current space constraints, food is sorted in individual stations by volunteers less efficiently. This results in good food sometimes being allocated to lower levels of the food recovery pyramid there is not time and space to properly sort it.



Empties 4 Food:

The success of Loaves & Fishes Empties 4 Food program creates additional space concerns due to the volume of drink containers acquired daily. Currently, empty drink container sorting must happen outdoors at the 1861 East Wellington Road property. Sorting under tents at a separate location limits Loaves & Fishes ability to implement more efficient sorting systems. At peak empties donation times, over 100 mega bags of empty drink containers are collected every week.



Having both of these programs operating indoors at the same location will significantly increase Loaves & Fishes ability to grow both of these programs.

Solution - A New Larger Warehouse

Design & Plan

Loaves & Fishes intends to build a 25,000+ square foot warehouse at 1861 East Wellington Rd in Nanaimo. This property has been purchased by the City of Nanaimo for Loaves & Fishes to lease for 30 years at the cost of \$10.00. Among the many benefits, the new building will ensure people experiencing food insecurity have food to eat while at the same time contributing toward the RDN's Zero Waste goals. We currently have a design specification and budget in place and are ready to move forward with the build once funding is secured. Saywell Contracting has been selected to oversee the design build process.

We are seeking financial support from the RDN to build this facility and ensure it has the equipment needed to optimize food and empties sorting. We are also seeking funding from the Government of BC.



Timeline & Budget

Budget Item	Time Frame	Value	Proposed Funder
Planning/Design	Currently ongoing	\$300,000	RDN/Loaves & Fishes
Land Purchase	December of 2021	\$1,300,000	City of Nanaimo
Construction	July 2022 to December 2023	\$11,440,000	Provincial Government
Warehouse Equipment	March 2022 to December 2023	\$1,000,000	RDN and other grant opportunities.

Aligning with the RDN Zero Waste Goals

Ability to Grow Key Zero Waste Operations

Food 4U Food Recovery

Loaves & Fishes intends to integrate more food recovery grocery partners into our food recovery program. Food recovery services to all major grocery stores in the RDN will be possible. Our experience has shown us that each new store that joins our food recovery program results in between 110,000 and 264,000 pounds of food being diverted annually from the waste stream to higher and better uses. A larger facility will enable Loaves & Fishes staff and volunteers to more efficiently sort and distribute food. This will dramatically increase the amount of food diverted from being wasted and directly benefit people in need in Nanaimo and across Vancouver Island.

Empties 4 Food

The new larger warehouse will enable Loaves & Fishes to further expand our Empties 4 Food Program within the RDN and to communities where we will be doing food recovery and distribution. Empties 4 Food fills the recycling gap by offering a convenient way to recycle within the RDN, especially in strata complexes and communities that do not offer drink container recycling solutions. Additionally, the

expansion of Empties 4 Food will help ensure operational funding is available to assist in covering the costs of food recovery and distribution growth. Regional Recycling has agreed to continue supplying Empties 4 Food donation bins at no charge as we increase the service within the Regional District of Nanaimo and to other communities.

Intended Use of RDN Funding

Loaves & Fishes is requesting \$150,000 in the 2023 fiscal year to be used toward the new warehouse development costs and warehouse. By providing funding in 2021 and 2022, the RDN has provided crucial seed money that will catalyze support from other levels of government. As the above budget shows, now that Loaves & Fishes has received funding from the RDN and City of Nanaimo, we intend to seek further financial support from the Provincial Government.

Food 4U Food Recovery

Continuing a successful food recovery program requires a significant investment in key equipment. Ensuring food is put to its highest and best use relies on Loaves & Fishes ability to maintain operations 7 days per week, 364 day per year. As such, funding for investment in equipment is essential.

Empties 4 Food

We are currently looking at options for automated empties sorting equipment. This sorting equipment is required to ensure empties can be efficiently stored and sorted. Our goal is to accept delivery of this system prior to completion of the warehouse so that our current backlog of unsorted empties can be reduced. Additionally, Loaves & Fishes will be able to handle the increasing influxes of drink containers with the implementation of better sorting equipment and systems.

Recognition & Reporting

Recognition of Support

As the original financial contributor to Loaves & Fishes new warehouse, the RDN will be recognized as the founding contributor in the main entrance. Additionally the RDN will be recognized in Loaves & Fishes Annual Reports.

Reporting

Loaves & Fishes agrees to provide reporting updates according to the following schedule:

1. February 2023: Update on the development process for new warehouse and design of empties sorting equipment.
2. July 2023: Update on the development process for new warehouse and design of empties sorting equipment.
3. Quarterly construction reports once construction begins.
4. Continuation of quarterly reports on food recovery operating metrics reporting the volume of food recovered.

5. Continuation of quarterly reporting of other operational metrics that are of significance to the RDN for achieving its zero waste goals.

Concluding Comments

Implication of Partial Funding

In a best case scenario, partial funding would result in a delay in the completion of the warehouse and a delay in the acquisition of the empties sorting system.

Proven Track Record of Responsible Funding Use

Loaves & Fishes is pleased to provide this proposal for your consideration. We are confident that with your support we will be able to scale up our operations to further contribute to the RDN's zero waste goals. Opportunities to tour our operations and for on-site clarification of where the funding is being used is always available at your convenience.

If you require any additional information or have questions, please don't hesitate to contact me.



PROPOSAL

INITIATIVE TO INCREASE WASTE DIVERSION AND DECREASE WASTE PRODUCED BY SMALL BUSINESSES AND MULTI-FAMILY HOUSING COMMUNITIES IN THE REGIONAL DISTRICT OF NANAIMO

Contact: Dr. Kelsey Gil
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(236) 999 - 4119

OCT 3, 2022

TABLE OF CONTENTS

1.0 Ocean Ambassadors Canada	4
1.1 Our History & Philosophy	4
1.1.1 Who we are	4
1.1.2 Purpose, Mission & Values	4
1.1.3 Our History	4
1.2 Organizational Structure	5
1.2.1 Key Staff	5
2.0 Business Plan	6
2.1 Project Aim	6
2.2 Goals	7
2.3 Operational Logistics Plan	7
2.4 Indigenous Involvement	10
2.5 Marketing & Advertising	10
2.6 Safety & Security	10
3.0 Capacity for This Work	10
3.1 Past & Present Successes	10
4.0 Budget (Jan 1 - Dec 31, 2023)	13
5.0 Funding Request	13
Appendix 1: Example of Zero Waste Coaching for Small Businesses Toolkit for OAC Staff	14
Appendix 2: Examples of Zero Waste marketing collateral	26
Appendix 3: References	29

Executive Summary

Ocean Ambassadors Canada is an environmental charity that is turning the tide on marine pollution through experiential ocean education programs, zero waste coaching and education for small businesses, and community initiatives such as PickUp3 and single-use item reduction campaigns. Through our programs, initiatives, and coaching, we empower people of all ages to protect what they love and make real change.

Ocean Ambassadors Canada (OAC) seeks to lead a region-wide zero waste initiative, in collaboration with the Regional District of Nanaimo, for small businesses and multi-family housing communities to reduce the amount of food scraps and organics ending up in the landfill, increase recycling, decrease the number of single-use items used and disposed of, and increase understanding of the waste hierarchy.

This initiative is focused on meeting and working with small businesses and multi-family housing communities to educate about the waste hierarchy and how to recycle effectively. OAC will work with small businesses and multi-family housing communities to reduce organics and food waste, and minimize the use of single-use items. We will engage with 80 small businesses, primarily cafes and restaurants, and 50 multi-family communities.

We have a proven track record of being timely and on-budget and have led numerous sustainability initiatives, enabling us to be well-equipped for the tasks outlined in this proposal. Most recently, we have partnered with Vancity Credit Union and Metro Vancouver to implement zero waste coaching and education projects. In August 2022, we entered into a 2-year partnership with Metro Vancouver to deliver zero waste education throughout the region.

This initiative will help the Regional District of Nanaimo to achieve the SWMP's goal of 90 per cent diversion of waste from landfill by 2029. OAC looks forward to promoting RDN programs, such as ReTHINK Waste, as an integral part of our project.

1.0 Ocean Ambassadors Canada

1.1 Our History & Philosophy

1.1.1 Who we are

Ocean Ambassadors Canada is an environmental charity that is turning the tide on marine pollution through experiential ocean education programs, zero waste coaching and education for small businesses, community initiatives and single-use item reduction campaigns. Through our programs, initiatives, and coaching, we empower people of all ages to protect what they love and make real change.

Our two portfolios - Education & Zero Waste - are spearheaded by a dynamic team combined with a hands-on management style. We have strong financial controls, conduct strategic and operational planning, and have considerable management and staff resources. Our staff have great respect for the environment and a drive to make the world a better place; this devotion has been key to successfully implementing our many sustainability initiatives.

1.1.2 Purpose, Mission & Values

As an organization, our core purpose is to connect people with the ocean, educate them about marine pollution, and inspire them to care for the ocean. We have set out on a mission to start Canadians on a journey of reconnecting with nature, caring for the ocean and learning ways they can help to restore and protect it. Every time we 'set sail' in our work, we are guided by the following core values:

Stewards of the Sea | Devoted to deep connection | Nurturing the flow of big ideas | Steered by passion

1.1.3 Our History

Ocean Ambassadors Canada was incorporated in 2017 and earned charity status in 2018. In our first 5 years, we have worked with more than 19,000 young people in our on-the-beach programs where students experience joy and fun on the ocean and at the beach, learn about ocean health and marine pollution, and are inspired to take meaningful action at home, school and in the community. More than 90% of classes that come through our programs launch a single-use or other waste reduction initiative in their schools. These initiatives range from litter-less lunches to purchasing china and metal cutlery for cafeterias, to education workshops for other students.

OAC's zero-waste initiatives began in 2018 to target marine pollution at the upstream source. These initiatives are increasingly impactful as we learn and adapt our strategies with each initiative. Our community business involvement began with the successful implementation of a community single-use reduction initiative in Deep Cove, "The Last Straw." We then worked with communities and business owners in Edgemont Village and Horseshoe Bay. Most recently, OAC implemented a reusable take-out container initiative in North Vancouver, East of Seymour. With the support of Vancity Credit Union and some support from the City of North Vancouver, we have conducted our zero-waste coaching for more than 190 small businesses in Metro Vancouver. We are currently working with Metro Vancouver to deliver zero waste education throughout the region.

OAC currently operates in Victoria, Nanaimo, Metro Vancouver and Chilliwack. Our school programs have been operating in Metro Vancouver, Chilliwack, and Nanaimo since 2017, and Victoria since 2022. We are currently working with Return-It to implement our PickUp3 initiative across Vancouver Island, and we have partnered with Reusables Vancouver Island to implement a pilot project for their reusable takeout container and cup platform.

1.2 Organizational Structure

1.2.1 Key Staff

Executive Director & Co-Founder - Alison Wood

A former competitive sailor and triathlete, her lifelong love of the oceans also includes kayaking, and prone and stand-up paddleboard (SUP) racing — which has taken her to the Maui2Molokai (M2M) channel crossing race and to the ISA's World SUP championships in Fiji. A lifelong educator, her experience includes developing and teaching continuing education courses for BC paramedics, developing curriculum and courses for Sail Canada, and developing ski instructor programs for Mt. Seymour.

“The inspiration for Ocean Ambassadors came while on my SUP board in Deep Cove. The incredible beauty of the ocean was regularly contrasted with garbage floating in the water. We need to inspire people to protect our oceans, and to do that we need to get people to the beach and onto the water to experience its magic.”

Marine Biologist; Vancouver Island Program Director & Zero Waste Coordinator - Kelsey Gil

Kelsey has been passionate about the ocean and marine life for as long as she can remember, despite growing up in the prairies. In her journey to study marine life, Kelsey completed a B.Sc. (Hons) degree in animal biology and studied at the Bamfield Marine Sciences Center where her love for all marine life – big and small, continued to grow. She obtained her Ph.D. in Zoology from the University of British Columbia where she studied the internal anatomy and biomechanics of lunge-feeding whales. She continued her research as a postdoctoral fellow, and lecturer at UBC. Kelsey has recognized that the most important thing she can do to help our oceans is share her knowledge to help educate people about how important our oceans and all their inhabitants are, to demonstrate how much we stand to lose if we don't take action.

Zero Waste Manager Metro Vancouver - Alicia Gowan

Alicia has deep connections to the ocean due to her upbringing in Nova Scotia and resultantly grew aware of the challenges coastal regions face when threatened by climate change and marine pollution. She holds a bachelor's specialization in Environmental Chemistry from Queen's University, in Kingston Ontario. In addition, she holds an International MSc. in Environmental Studies and Sustainability Science from Lund University, in Sweden. While in Sweden, she dedicated time to waste reduction initiatives in local non-profits, from food to household plastic waste, including co-launching a non-profit called Circle Center and its “Library of Goods” to address the problem of overconsumption. She is presently a Board Member of the Car Free Vancouver Society focusing on Grants and Diversity, Equity, and Inclusion, and volunteers for the local municipal party, OneCity Vancouver. Alicia's unwavering commitment to serving her local community has provided her with confidence to engage with many different stakeholders.

Education Program Coordinator – Florence Norton

Florence has 6 years of teaching experience, teaching a range of ages from grades 1 through 6. Before qualifying as an elementary school teacher from the Institute of Education - UCL with a postgraduate degree, Florence completed her undergraduate bachelor's degree of Sciences in Environmental Science at the University of Birmingham.

Science Advisor - Rhiannon Moore

Rhiannon works for the City of Victoria, and previously worked as a Researcher at Ocean Wise. Her research focused on microplastic pollution in beluga whales and their prey in the western Canadian Arctic. She published the first evidence of microplastic pollution in cetaceans within North America, was named one of Canada's top 30 under 30 sustainability leaders, later receiving the Garfield Weston Award for Northern Research. Her passion for science communication and waste reduction paired with the sobering findings of her research enabled her to shift her career from ocean research to waste reduction policy communication. Rhiannon now works for the City of Victoria's Zero Waste team.

Controller - Carla Cove

Carla Cove, CPA, oversees the finances of Ocean Ambassadors. She oversees bookkeeping, accounts payable and receivable, and all reporting to WorkSafe and governments.

Board of Directors

Ocean Ambassadors is supported by a Board of Directors with extensive business experience. Our board members include a marketing professional, business owners, and a passionate 17-year-old environmentalist.

2.0 Business Plan

2.1 Project Aim

OAC is conducting this zero-waste initiative with the aim of developing skills and knowledge that promote the Zero Waste Hierarchy of highest and best uses. Conducting this initiative in collaboration with RDN and appropriate partners will advance RDN's work in the [Solid Waste Services Department](#) and [Solid Waste Management Plan](#) (SWMP) as we chart a path to 90% waste diversion by 2029. We will:

- Work directly with 80 small businesses to decrease the percentage of food scraps going to the landfill, improve recycling and waste diversion systems and compliance from staff and customers, and improve business owners, staff, and customers' understanding of the importance of minimizing waste and maximizing reuse.
- Work directly with 50 multi-family housing communities to decrease the percentage of food scraps going to the landfill, improve recycling and waste diversion systems and compliance from residents and strata councils, and improve residents' understanding of importance of minimizing waste and maximizing reuse

2.2 Goals

The measurable goals of this initiative include the following:

Small Businesses:

- Reduce waste generated, by underscoring the waste reduction hierarchy and particularly focusing on minimizing waste and maximizing reuse
- Educate small business owners and staff about the importance of separating food scraps and organic waste from landfill waste.
- Work with businesses to implement appropriate food and organics waste systems in their businesses.
- Educate small business owners and staff about effective recycling practices.
- Assist small businesses in educating customers through signage, appropriate receptacles, and communication e.g. “Are you having your coffee here? I’m happy to put it in a ceramic mug.”
- Inform businesses of regional and municipal bylaws/plans implemented by member municipalities, as well as emerging regulations implemented by the B.C. and federal government

Multi-family Housing Residents:

- Reduce waste generated by underscoring the waste reduction hierarchy and particularly focusing on minimizing waste and maximizing reuse
- Educate residents about the importance of separating food scraps and organic waste from landfill waste.
- Work with strata councils and residents to implement appropriate food and organics waste systems.
- Educate strata councils and residents and staff about effective recycling practices. Promote the RDN Curbside app
- Promote the ReTHINK waste tools and resources (Love Food Hate Waste, Recycle Right, What Goes Where)

2.3 Operational Logistics Plan

Small Businesses:

1. Initial meeting and information gathering

OAC will meet with individual businesses to:

- Assess their waste output, compost and recycling efficacy. Does the business have a plan to deal with organic and food waste? Are there well-labeled garbage, compost, and recycling bins? Are there appropriate systems in place to direct these items to the appropriate stream?
- Look at materials, packaging and single use items currently in use. What types of take-out packaging exist? Are there separate dishes/materials for dine-in customers? Do the staff ask customers if they require cutlery and/or condiments or is it automatically provided?

In cooperation with North Shore municipalities and Metro Vancouver, OAC has developed a Zero Waste Coaching Framework. Please find this attached as Appendix 1. If OAC is a successful recipient of this grant we will work with RDN staff to amend this framework to meet the needs of the RDN.

2. Decals and marketing assets for businesses

OAC will provide 'moving towards zero-waste' window decals for participating businesses; design to be approved by all partners. OAC will also provide other co-branded digital and paper-based marketing assets for businesses.

3. Staff and community education and engagement

OAC will offer to support staff education workshops (virtual or in-person) for participating businesses. OAC will also work with businesses to launch community initiatives including education campaigns and events.

Reaching Businesses:

OAC will work with local Chambers of Commerce, Business Improvement Associations and Business Associations to be introduced to small business owners who are interested in participating in zero-waste coaching. OAC will also work with municipal sustainability experts to connect with interested businesses.

Determining Program Success:

OAC will use quantitative and qualitative tools to measure program success. OAC will create a short survey for businesses to complete at 3 months after the start of education services and 10 in-depth interviews of business owners 6 months into the program.

Surveys:

Recognizing that small business owners are very busy, this survey may be completed verbally by OAC staff members when necessary. The survey will include*:

1. Purchase rate of single-use items, types of single-use items in use
2. Volume of waste, recycling, compost generated by business
3. Fees paid to private haulers
4. Number of customers bringing reusable mugs - reusable mug discount
5. Number of businesses allowing customers to bring their own cups
6. Number of businesses offering for-here cups
7. Number of businesses offering cup-share programs.
8. Number of businesses allowing customers to bring their own container

* Criteria to be determined in cooperation with RDN staff

Interviews:

OAC will seek business owners who express interest in being interviewed. These interviews will provide more in-depth information on the success of the program and areas where it can be improved.

The results of the quantitative and qualitative evaluation will be used to continually improve the coaching program. The results will be shared with business owners who can use this information in their marketing campaigns. Confidentiality will be maintained.

Multi-Family Housing:

1. Meeting and information gathering

OAC will meet (in person or on zoom) with strata councils and residents to:

- Assess their waste output, compost and recycling efficacy. Does the housing facility have a plan to deal with organic and food waste? Are there well-labeled garbage, compost, and recycling bins? Are there appropriate systems in place to direct these items to the appropriate stream?
- Provide a presentation about the waste hierarchy and effective recycling using the ReTHINK waste tools and resources (Love Food Hate Waste, Recycle Right, What Goes Where); OAC will consult with RDN staff to ensure that we are delivering the most appropriate information.
- Answer questions that the strata council and residents have about the current systems in place
- Provide suggestions and support for improving current systems

2. Assist in implementing effective waste practices

Based on initial meetings with strata councils and residents, OAC will provide assistance in implementing waste disposal, recycling, and organics/food waste systems as needed. OAC will provide written suggestions and information to the strata council and offer to present the report to residents.

Timeline

Date	Milestone
2022	
December	Proposal approval & adjustments Planning for initiatives
2023	
January - May	10 businesses per month 6 multi-housing communities per month
May	Mid-year review, including completed surveys Meeting with RDN staff
June	10 businesses 8 multi-family housing communities
July - August	No businesses or communities
September - October	10 businesses per month 6 multi-family housing communities per month
November	Finish all work with businesses and communities Conclude surveys Reflections
December	Final report and meeting with RDN

2.4 Indigenous Involvement

OAC recognizes that the ocean is inextricably linked to First Nations communities of coastal British Columbia. To honor this connection and to take meaningful action on reconciliation, we will work together with First Nations in the RDN area, including Snuneymuxw and Qualicum nations. We will offer our educational services to all Indigenous owned businesses, including Island Roots Farmers' Market Co-op, Ay Lelum, Four Clover Electric, JoJo's Emporium, St. Jean's Cannery and Smokehouse, Evolution Business Marketing & Communication, and Stevens and Company Law Corporation. We will communicate with each Nation to explore how we might work with them to provide education and assistance with zero waste work.

OAC will seek to work with the Nanaimo Aboriginal Centre and [Nuutsumuut Lelum](#) (Nanaimo Passive House) to collaborate on providing zero waste educational events in the community.

2.5 Marketing & Advertising

We will distribute information about the initiative and promote the businesses, communities and RDN. This will include posting on social media, creating posters, press releases, and distributing leaflets.

2.6 Safety & Security

Ocean Ambassadors Canada carries liability and directors' insurance with Marsh Canada. If required, OAC will add RDN as a named insured party for the duration of this project. We have an up-to-date emergency plan, and all staff are trained in emergency procedures. Ocean Ambassadors is in good standing with WorkSafe BC. All employees and volunteers have completed criminal record checks.

3.0 Capacity for This Work

3.1 Past & Present Successes

To address marine pollution at the upstream source, Ocean Ambassadors has set out on a mission to change the way we consume single-use items. Since 2018, we have worked with forward thinking communities, local businesses, impact-driven start-ups, and organizations to create single-use and plastic reduction initiatives that cater to changing societal needs. These initiatives have brought communities together around an issue that impacts us all. The success of our past and current engagements corroborates our capacity for this region-wide initiative.

Past successes:

- ❖ East of Seymour Zero Waste Takeout (2021)
 - To address the problem of single-use waste, especially due to the exploding demand since the start of the COVID-19 pandemic, OAC and Reusables.com paired up to deliver a community-wide container and cup-share system to the East of Seymour community. By mid-October 2021, the shopping districts in Deep Cove, Dollarton, and Parkgate Village, offered takeout meals and drinks in reusable containers and to-go mugs using Reusables.com sharing platform. This community became the first in Canada where all restaurants and cafes offer takeout in reusable containers.

- ❖ Vancity Zero Waste Coaching for Small Businesses (2020-2021)
 - Ocean Ambassadors completed zero-waste coaching for 130 businesses with the support of Vancity. OAC's Zero Waste Coordinator worked with small business owners and managers to complete audits of waste management, single-use item use and communication/education of employees and customers. OAC then worked with businesses to find the most appropriate single-use items and to decrease or eliminate single-use item use where possible. OAC worked with businesses through education with owners and managers, staff education sessions, creation of marketing assets for each business. These assets included tents cards for POS locations, posters, cards containing staff prompts for take-out and for-here orders.
- ❖ Horseshoe Bay Beyond Plastic Bags (2020)
 - Horseshoe Bay Business Association and OAC collaborated for a joint initiative to shift Horseshoe Bay businesses from using disposable plastic bags to reusable alternatives. Together, we successfully empowered 28 out of 35 businesses in the seaside village to get on board. To build capacity in this shift, OAC provided a toolkit that helped businesses choose an alternative that best suits their financial and logistical needs. Businesses were encouraged to educate their customers and staff about the environmental impact of all single-use items.
- ❖ Edgemont Village Plastic Bag Free Campaign (2020)
 - Edgemont Village Businesses initiated a voluntary ban on single use plastic shopping and carrier bags in March 2020. 82 businesses participated and an additional 20 businesses supported this initiative. This action was led by OAC, endorsed by Edgemont Village Business Association and Edgemont & Upper Capilano Community Association, and supported by Vancity Credit Union.
- ❖ Marine pollution education implemented in Sail Canada "Learn to Sail Programs" across the nation (Ongoing)
 - OAC has partnered with the National Sailing team as well as the Learn to Sail programs to deliver marine pollution education across Canada, led by National Team members and sailing coaches.
- ❖ Straw Free Deep Cove Initiative & The Last Straw Event (2018)
 - OAC worked with Deep Cove merchants to facilitate all businesses in Deep Cove going straw free in May 2018. The OAC team met with business owners to discuss the crisis of single-use plastics and promote the business case for the use of paper straws and marketing opportunities around the initiative. OAC hosted a launch event "The Last Straw Deep Cove" to engage the community in the initiative. This event was sold-out and was very successful, with 110 Deep Cove community members attending. The event raised money to support Deep Cove restaurant owners to stop using straws or, if absolutely required, switch to paper straws.
- ❖ A single-use plastic free event at the Canadian Downwind Paddle Championships (2018)
 - OAC worked with event organizers to source single-use plastic free supplies. The OAC team was on sight educating competitors and families. Competitors were encouraged to

bring their own reusable cups and dishes for the post-race dinner. OAC had over 100 competitors pledge to reduce single-use plastic in their lives.

Current engagements:

- ❖ Zero Waste Initiative to reduce single use item waste in workplaces and communities across Metro Vancouver
 - Two year initiative to lead a region-wide zero waste initiative to reduce single use item waste in workplaces and communities across Metro Vancouver. This will have a cascading effect on nearby businesses to reduce the number of single use items purchased, used and disposed of. The initiative is twofold: engage 80-120 corporate and government offices, and engage with the public at 120-130 events. Both initiatives will be focused on education and awareness of “for here, bring your own cup” and cup/container share platforms.
- ❖ Zero Waste Take-out comes to the Shipyards and Lower Lonsdale
 - In collaboration with Reusables.com, OAC worked to get as many businesses as possible on board with Reusables.com cup and container sharing platform to help make the Shipyards-Lonsdale area a zero-waste community. So far, there are a handful of businesses on board. The current focus is on community outreach at public events in the business area.
- ❖ Zero Waste goes Live on The Drive
 - In collaboration with ShareWares, OAC worked to get as many businesses as possible on board with ShareWares cup and container sharing platform to help move Commercial Drive towards being a zero-waste neighborhood. There was little uptake on Commercial Drive, leading us to conclude education and awareness should be the focus for this proposal.
- ❖ North Shore Zero Waste Coaching
 - In collaboration with all three North Shore municipalities, OAC is working to bring our Zero Waste Coaching program to businesses in the City of North Vancouver, District of North Vancouver, and District of West Vancouver.
- ❖ Vancity Zero Waste Coaching
 - With funding from Vancity Credit Union, OAC is conducting Zero Waste Coaching throughout Metro Vancouver to help 80 businesses shift towards more sustainable waste-less business operations.
- ❖ PickUp3 Community Initiative
 - PickUp3 is a movement that’s making ‘taking action on ocean waste’ fun and easy. The process is just three simple steps: 1) going to a local beach 2) picking up at least 3 pieces of garbage and 3) scanning a QR code to record your trash count on www.pickup3.org. During PickUp3 community events, staff discuss the harmful issues surrounding single-use and plastic items and encourage citizens to take action. Rather than just participating in beach clean ups once or twice a year the idea behind PickUp3 is to make picking up trash a habit.

4.0 Budget (Jan 1 - Dec 31, 2023)

Type	Details	Staff	Amount
Small Business Education & Coaching	Delivery of education programs to 80 small businesses - 480 hours -includes communication and scheduling of meetings	VI Zero Waste Coordinator	\$14,976
	Design of marketing collateral (leaflets, posters, tent cards, stickers)	Graphic Designer	\$2,370
Multi-Family Housing Education and Engagement	Delivery of education programs to 50 multi-family housing communities - 200 hours - Includes communication and scheduling of meetings and presentations	VI Zero Waste Coordinator	\$6,240
Marketing Assets	Printing of marketing collateral	n/a	\$3,500
Travel	2000km @\$.61/km	VI Zero Waste Coordinator	\$1,200
		SUB-TOTAL	\$28,286
		5% contingency	\$1,414
		TOTAL	\$29,700

5.0 Funding Request

Based on the financial projection in the previous section with a 5% contingency, OAC proposes the following funding request: \$29,700 for the funding period January 1st to December 31st 2023.

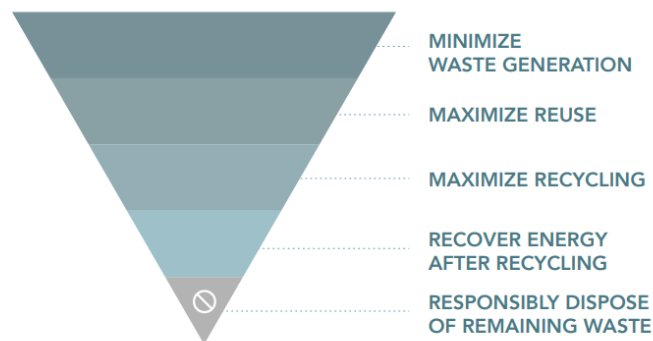
Appendix 1: Example of Zero Waste Coaching for Small Businesses Toolkit for OAC Staff

** To be amended in cooperation with RDN upon successful receipt of funding*

About this Toolkit

The purpose of this toolkit is to guide the Zero Waste Manager at Ocean Ambassadors Canada (OAC) when conducting informal waste audits during the Zero Waste Coaching Program. This toolkit includes guidelines, bylaws, bans, and other information relevant to the zero waste landscape in Metro Vancouver, B.C and has been gathered from credible sources such as municipal reports, the National Zero Waste Council, and other leading edge research on single-use items, plastic reduction, ocean conservation, and zero waste. This toolkit has primarily utilised the guidance from the Metro Vancouver [“Single-use Item Reduction Toolkit”](#) (2021), the City of Vancouver’s [“Single-use Item By-Law Guide”](#) (2021), as well as municipal sustainability experts to create the auditing toolkit.

This is a working document and will be continually edited as new sustainable practices emerge, as well as when municipal, provincial, and federal regulatory changes are made. In addition, this toolkit is treated as a guideline rather than a blueprint given that each municipality within Metro Vancouver has varying waste diversion strategies and bylaws.



(Metro Vancouver, 2021)

OAC’s Zero Waste Coaching program is guided by Metro Vancouver’s waste-reduction hierarchy. This hierarchy places minimising waste generation - through avoidance and reduction - at the top of this hierarchy. This follows by maximising reuse, then maximising recycling, recovering, and disposal in that order of preference. Resultantly, this toolkit aligns with Metro Vancouver’s recommendations to emphasise reduction and reuse over recycling and disposal since it is [“most effective at preventing litter, protecting our oceans, reducing street collection costs, and reducing resources needed to produce single-use items”](#). Therefore, the practices and materials within this toolkit listed under “Avoid, Reduce, and Reuse” should be prioritised as best practices. Those listed as “Not readily recyclable”, “Compostable Plastics”, “Single-use”, “Disposable” and/or “Increases waste” should be seen as unfavourable and should be avoided.

Legend

R = Readily recyclable in residential blue-bin recycling programs

C = Readily recyclable in commercial recycling programs

D = Depends on type of material, e.g. PET #1 (readily recyclable) versus black plastic container (not readily recyclable)

Extent → By request only (BRO), provides as an option (O), only option available (M)

Key Messaging - North Shore ZWC Program

Goal

Help small North Shore businesses:

- Decrease use of single-use items and move toward zero waste.
- Prepare for anticipated federal and provincial single-use item regulations.
- Establish communication channels and relationships to better share information.

Background

- Many single-use items provide benefits such as food safety and shipping cost savings. However, as these items are produced in large amounts, they result in increased resource consumption and garbage.
 - In Metro Vancouver, it is estimated that 1.1 billion single-use items are disposed of each year (the equivalent of 440 items per person).
- From a local government perspective, single-use items are problematic because of their negative financial impacts on municipal infrastructure and services.
 - Municipal collection of single-use items from public spaces costs taxpayers millions of dollars annually, and single-use debris enters catch basins, pumps, storm inlets, streams, and waterways as litter.
- In general, it is the businesses (food services in particular) and their customers that are most impacted by regulations that restrict the distribution of single-use items.

Upcoming Regulatory Changes

- In the last couple of years, there has been significant new policy development moving towards regulating single-use items in a more widespread, consistent manner at the provincial and federal levels.

Federal

- The federal government recently declared “plastic manufactured” items as toxic substances.
- They also published draft regulations for single-use plastics (“Single Use Plastics Prohibition Regulations” to prohibit the manufacture, import, and sale of checkout bags, cutlery, ring carriers, stir sticks, straws, and items made from hard to recycle plastics.
- These regulations could be finalised later in 2022.

Provincial

- This year, the provincial government announced the publication of an intentions paper that outlined their approach to regulating single-use items in the province.
- The regulation would restrict the following items: checkout bags, disposable foodservice accessories (e.g., straws, cutlery, stir sticks, condiment satchets, etc.), problematic plastic foodservice packaging (e.g., polystyrene foam, PVC, and oxo-degradable and compostable plastics).
- These regulations are anticipated to come into effect December 2023.

Municipal

- [Insert municipality name] is currently focusing on educating and assisting local businesses in preparing for potential provincial and federal single-use regulations that would come into force in 2023.

Operations

- The best way to move towards zero waste is to follow the zero waste hierarchy and try to avoid consumption first and then reduce, reuse, and recycle as a last resort.
- Some ways to avoid and reduce single-use item use are as follows:
 - (Reduce) Eliminate single-use item options where possible
 - (Reuse) Participating in a cup or container share program, e.g. Reusables.com, ShareWares, Mugshare, etc.
 - Consider offering condiments in bulk at serving stations rather than individually packaged items
 - Offer straws and utensils by-request only
- Products that are listed as “compostable” are not compatible with residential recycling programs in the region because these items do not break down fast enough to be processed at local facilities.
 - Additionally, the proposed provincial waste prevention regulation expands on the proposed federal regulation by including additional problematic materials (e.g. compostable and oxo-degradable plastics).
 - (Recycle) Look for alternatives that are easily recyclable and compatible with local waste programs.
 - Ideally don't suggest alternatives that are included in the upcoming provincial and federal bans

Business Information Template

BUSINESS INFORMATION	
Business Name	
Location	
Business Owner(s)/ Contact Person(s)	
Overview of product(s)/service(s)	
Special Requests	
Additional Notes	

Auditing Toolkit

CUPS			
Practice or Material	Y/N	Extent	Notes
<i>Avoids</i>			
Dine-in, washable cups, mugs, glasses (e.g. ceramics, steel trays/containers, tiffins, plastic, glass)			
<i>Reduces & Reuses</i>			
Reusable Take-out/To-go Mug/Cup Platform			
Accepts BYO Cups, Mugs			
<i>Readily Recyclable</i>			
PET (#1) Rigid Plastic Cups			
PP (#5) Rigid Plastic Cups			
HPDE and LPDE plastic cups			
Paper cups and containers coated with plastic			
Rigid plastic cups with plastic lids			
<i>Not-readily Recyclable / "Compostable" Plastic / Disposable (Single-use)</i>			
Not readily recyclable cups (e.g. foam - banned in several municipalities)			
Black cups			
Cups labelled "compostable"			
NOTE: Compostable substitutes are currently not available for cups			

CONTAINERS, TRAYS, CARTONS, WRAP				
Practice or Material		Y/N	Extent	Notes
Avoids				
Dine-in, washable plates, bowls, baskets, and containers (e.g. ceramics, steel trays/containers, tiffins, plastic, glass)				
Reduces & Reuses				
Reusable Take-out/To-go Container Platform				
Accepts BYO Containers				
Minimalistic (recyclable/compostable) packaging				
Compostable				
Moulded fibre or pulp containers				
Paper plates, bags (pastry), paper wrap (e.g. for seafood or meat)				
Leaf plates and cups				
Readily Recyclable				
PET (#1) Rigid Plastic Take-out/to-go Containers, including trays and cartons	R + C			
PP (#5) Rigid Plastic Take-out/to-go Containers	R + C			
HPDE and LPDE plastic containers				

Clear plastic lids or containers	D			
Plastic-lined paper soup/rectangular containers	R			
Aluminum containers	R			
<i>Not-readily Recyclable / "Compostable" Plastic / Disposable (Single-use)</i>				
Not-readily recyclable plastics (e.g. #7, #6 and PVC)				
PVC film wrap				
Styro-Foam take-out/to-go containers				
Fibre-based containers or trays with plastic liners or synthetic waxes or intentionally added per- and poly-fluoralkyl substances (PFAs) - not safe for composting, "forever" chemicals				
White plastic containers or lids				
Dark or black plastic containers or lids				
Rigid plastic containers and plastic-lined paper containers labeled "compostable"				
Other Single-use containers or lids				

STRAWS			
Practice or Material	Y/N	Extent	Notes
<i>Avoids, Reduces & Reuses</i>			
Metal reusable straws			
Glass reusable straws			
Plastic reusable straws			
Silicone reusable straws			
Accepts BYO straws			
<i>Compostable</i>			
Paper straws (not lined with plastic)			
Edible straws (e.g. pasta, rice, tapioca)			
Grain-based straws (hay, rye)			
Straws made from pressed leaves or bamboo			
<i>Not-readily Recyclable / "Compostable" Plastic / Disposable (Single-use)</i>			
Plastic disposable straws made from fossil fuel products (single use, disposable)			
Plastic straws labelled as "compostable", "biodegradable", "oxo-degradable", "photodegradable" or "bioplastics"			
Plastic straws made from plants or other biological materials (corn, potatoes,			

sugar cane), such as PLA (polylactic acid)			
NOTE: OAC recognizes the need for straws in the food service and medical industries for accessibility reasons. There are currently no recyclable substitutes available for straws.			

CUTLERY			
Practice or Material	Y/N	Extent	Notes
<i>Avoids, Reduces & Reuses</i>			
Metal, hard plastic, or ceramic cutlery			
Wood or plastic reusable chopsticks			
Accepts BYO Cutlery			
<i>Compostable</i>			
Wood or bamboo cutlery			
Unpainted wood or bamboo chopsticks			
<i>Not-readily Recyclable / "Compostable" Plastic / Disposable (Single-use)</i>			
Single-use plastic cutlery			
"Compostable" plastic cutlery			
NOTE: There are currently no recyclable options for cutlery			

BAGS			
Practice or Material	Y/N	Extent	Notes
<i>Avoids, Reduces & Reuses</i>			
Accepts BYO bag			
BYO Bag for Purchase			
<i>Readily Recyclable</i>			
Paper bags with paper or fibre handles	R		
<i>Not-readily Recyclable / "Compostable" Plastic / Disposable (Single-use)</i>			
Thin, disposable plastic bags			
Compostable plastic bags			
PVC cling wrap and bags			
Paper pastry bags with plastic liners and/or "forever" chemicals (PFAFs)			
NOTE: There are currently no compostable substitutes for shopping bags			

OTHER PRACTICES			
Practice	Y/N	Extent	Notes
<i>Avoids, Reduces & Reuses</i>			
Ask customer "For here or to-go"			
Make reusables the norm and train staff to automatically provide a reusable cup for drinks to stay and always ask customers if they need a single-use cup before providing one			
"Only distribute if asked" for sachets, condiments, cutlery, straws, bags, lids, etc.			
Bag share program - "Take-a-bag, leave a bag"			
Dispensers (e.g. condiments, milks, water, sugar, salt/pepper, etc.)			
If cup or bag fees exist, showing "CUP FEE" as separate line item on customer receipts			
"Ask customer first" for sachets, cutlery, straws, bags, lids, etc.			
Purchasing food in bulk			
Selling food at the counter (avoid pre-packaging)			
Selling loose items (e.g. produce, coffee beans, etc.)			
Purchasing and selling local food, supplies, retail			
Training staff of sustainable practices such as "for here or to go, setting tables without single-use items, asking whether utensils are needed for takeout orders			
Marketing materials that support reuse			
<i>Recycling, Composting, & Waste Diversion</i>			

Paper, plastic, and metal/glass recycling in front of house			
Paper, plastic, and metal/glass recycling in back of house			
Composting in front of house			
Composting in back of house			
Clear signage for customers and staff to make informed decisions on composting and recycling			
<i>Increases Waste Produced by Business</i>			
Pre-packaged foods			
Imported food, supplies			
Refusing customer personal mugs, containers, or bags			
Non-compliance of single-use item, EPR, and waste diversion bylaws			
Including single-use utensils in orders without asking first			
Setting tables to "sit-in" with single-use utensils			

Appendix 2: Examples of Zero Waste marketing collateral



EAST OF SEYMOUR

ZERO WASTE TAKEOUT



Starting **October 18th**, enjoy your favourite takeout in reusable cups and containers at participating businesses in **Parkgate, Dollarton & Deep Cove.**

An initiative by:



Ocean
Ambassadors
Canada

 reusables

SCAN TO
LEARN
MORE




ZERO WASTE TAKEOUT LAUNCH PARTY!

FREE COMMUNITY EVENT
SAT OCT 16 | 5-7:30 PM
DEEP COVE ON GALLANT AVE



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Ambassadors
Canada

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Appendix 3: References

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