

North Slovan Community Greenhouse Feasibility Study



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Executive Summary & Recommendations

The proposed North Slokan Community Greenhouse project is being designed to significantly contribute to the North Slokan's food self-reliance by improving access to fresh, nutritious food, and to serve as a catalyst for other initiatives that support regional food sustainability in the West Kootenays of British Columbia. We will achieve this by growing and extending the seasonal availability and affordability of a variety of locally popular produce; and by forming a producer-consumer co-op to build strong relationships around growing, selling, processing, celebrating, and eating local food.

Our goal is to have produce available ahead of season and ahead of what is typically coming out of local gardens. In this way we would be providing a service to the local residents by making the foods they love available for a much longer season; and by bringing produce to market when we can receive a fair price. Initial target wholesale markets for our produce include five local retail stores and six restaurants in New Denver, Silverton and Slokan City area. Retail sales include directly selling produce to co-op members and at the New Denver Farmers' Market. While researching these markets, we found local retailers, restaurants and the general public are enthusiastically in favour of a local greenhouse. Through interviews and food surveys conducted this summer we learned people of the North Slokan value and will financially support locally-grown produce. Eighty-three percent of our survey respondents indicated that locally-grown produce is important to them and their family; and 90% said they would buy more locally-grown food if a greenhouse could provide fresh produce earlier in the spring and later into the fall.

According to the BC Greenhouse Growers' Association, vegetables grown in greenhouses are British Columbia's future food supply. Greenhouses are a very efficient way to make the most use of land, producing 10 to 20 times the amount of vegetables on the same area of field. Community-scale greenhouses are following this trend by fast becoming a popular way to provide more local food in a small amount of space and extend the growing season in northern areas. Community greenhouses also provide community-building solutions to sustainable food production and healthy, nutritious food choices. For example, Invermere, Creston, Whistler, and Banff have successful community greenhouses, and communities such as Meadow Creek are in the planning stages. Community greenhouses are beneficial assets to communities because they address multiple issues important to sustaining community vitality—issues such as climate change, energy and resource conservation, food security, and decline in agriculture in our communities and region.

The feasibility study was performed by Marcy Mahr, Jeff Pilsner, Ana Bokstrom, Mick Wilson, and George Meier who brought to this endeavour relevant knowledge, abilities and expertise in agriculture, sustainable building methods, business, law, and education. In this feasibility analysis we were able to generate enough information to conclude a community greenhouse in the North Slokan Valley could be a sustainable and worthwhile effort to provide an important source of local food crops.

To structure our approach and manage our data we developed new software to quantify aspects of greenhouse operation and perform as a data-driven decision tool. Throughout the analysis portion of our study we continually fine-tuned our assumptions and input data to model different ways of utilising our growing space. Our goal was to maximize our ability to grow food without the burden of unmanageable levels of fundraising. Consequently, we made beneficial adjustments as choices presented themselves en route to achieving a 'best scenario' that met our goals of quality produce + community service + profitability. The growing scenario contained within our feasibility analysis is the result of that fine-tuning process.

As of this writing we do not have a location for the community greenhouse. Initially our vision was to locate the greenhouse project on land owned by either the Village of New Denver or Silverton. We hoped to partner with a Village in providing our service and integrating the greenhouses into community life. Considerable effort was made in investigating the feasibility of this arrangement however no Village properties are well-suited for our project.

Given that we do not have a location, there are some costs within this feasibility analysis we cannot account for. Consequently, our analysis reflects a starting point as to how best to design the facility and utilise the growing space. We anticipate further fine tuning of this scenario as we consider options for locating the project; and further yet after a year or two of production. We believe this report is a solid starting place, and the accompanying software will allow us to efficiently consider new opportunities that result from changes to our initial design. Ultimately, we would hope we can operate sustainably without the need for extensive fundraising.

We envision utilising approximately 1/4-acre of land preferably in or around the villages of New Denver and Silverton for the purposes of building and operating two (2) 30' X 48' greenhouses (1,440 square foot each); one (1) 30' X 15' potting and equipment shed; and two (2) 500 square foot outdoor beds for berry production. The total footprint would be approximately 12,000 square feet (for example, 120' X 100') for the purposes of operating a commercial vegetable, fruit, and bedding plant production facility specialising in extended season growing. Our business will be structured as a producer-consumer co-operative through which we will sell quality produce directly to community members, local stores and restaurants. Such produce will include varieties of tomatoes, cucumbers, peppers, carrots, salad mix, head lettuce, spinach, Swiss chard, kale, strawberries, and raspberries. We also envision the North Slocan Community Greenhouse as a facility that provides growing space for area residents seeking an opportunity to increase their own food production as well as educational opportunities for the community to learn more about extended season growing.

We expect our leading sources of income will be tomatoes, strawberries, raspberries, bedding plants, and salad mix. We anticipate most of our income will be generated in June, July, and August; and we expect income will continue to exceed expenses in the months of May, September, October, and December. Some of the reasons for the losses we anticipate incurring are due to intentional decisions to value food security and community participation and education over profit potential. For example, for crops like

cucumbers, peppers, Swiss chard, kale, and head lettuce we intend to accept some financial loss in order to meet a recognized need for these crops in the community. We are also expecting a loss in the rental of bedding plant tables and growing space to community members. We have determined the actual cost of heating and lighting half of one of the greenhouses for community member use at \$900 per year—which will not fully be covered by the rental fee of \$50/year for 6 rental spaces (i.e., \$300/yr.). By setting our rental rate low we are trying to make this facility accessible to area residents.

Our capital costs total approximately \$75,000. Large capital expenses include the two greenhouses; potting and equipment shed; market stand; wood furnace; cooling system; lighting; electrical services; and irrigation and equipment costs. Our annual operating cost is expected to be around \$45,560 which includes such large expenses as salary for a greenhouse manager, utilities, transportation, and possible land lease.

Our analysis affirms a community greenhouse would be a viable investment, especially if the initial infrastructure costs of \$75,000 are paid off within the first three years with a substantial source of funding. In terms of financial feasibility, partial funding of 50% at \$37,500 will reduce the overall payback time of 16 years to 8 years. Full funding of the infrastructure costs will eliminate this debt, and allow the community greenhouse to begin to utilise its reinvestment potential of an estimated \$4,700 per year. How we use our surplus would be determined by the co-op membership and might include subsidizing food prices, new programs to educate the community in sustainably growing food, or moving into value-added products such as canned or dried foods.

In conclusion, we believe a community greenhouse such as we are envisioning is an exciting way to provide community-building solutions to sustainable food production and healthy, nutritious food choices in the North Slovan Valley. With this study in hand, these next steps are among the first that must be taken to move this project forward.

- Enlarge the project group beyond the Management Team to include more community members with interest and skills to provide leadership on the next steps.
- Identify how, where and when full or partial funding might be obtained to cover the capital costs.
- Determine where the facility will be located, and then identify any new factors that should be quantified and run through the feasibility software program.
- Investigate markets in more detail to generate a committed clientele.
- Research and consult with experts to determine whether the co-operative should be structured as a for-profit or not-for-profit enterprise.
- Investigate potential partnerships with organisations committed to food security and healthy youth. For example, Interior Health is strongly committed to encouraging youth's access to healthy food in order to help extend the life expectancy of this generation of young people.

Research and resolution of these issues would be packaged into a business plan. Funding support should be sought to ensure these steps can be taken in an organised and timely manner so the project does not lose momentum.

1. Project Overview

This document assesses the viability of a community greenhouse to serve the communities of the North Slovan Valley. The primary goal of the analysis is to answer: *Will a community greenhouse work and should we proceed with it?* The feasibility study of the North Slovan Community Greenhouse Project (hereafter also referred to as the 'community greenhouse' or 'greenhouse project') was conducted from May – October 2010. This investigation addresses the above question by 1) identifying how the various components of a community greenhouse work together to serve our needs; and 2) developing and utilising computer software to explore the potential pros and cons, and the costs and benefits of our decisions. Conducting this analysis allowed us to gain a more thorough understanding of the opportunities and challenges in locating, designing and building a community greenhouse facility. It also helped organise our production scenarios for a variety of crops, and develop marketing strategies responsive to the needs of local customers. As we finalized this report we had not yet secured a site for the facility however we believe that having gone through a feasibility process will greatly benefit our search for an appropriate location for the project.

When we began investigating the idea of a community greenhouse we assumed we would generate a few different scenarios from which we could select the best opportunity. We expected we might have a suite of different circumstances to consider based upon location, sources of energy and water, configuration, crop production, profitability, and other components. In the end, we did not encounter clear A, B or C scenarios as part of our evaluation. We believe location and the particularities of potential sites will generate new opportunities for us to re-evaluate the ideas we investigate in this report.

An unexpected outcome of our feasibility analysis is the development of analytical software that performs as a data-driven decision tool. We found that in the process of building and using the software we could make beneficial adjustments as choices presented themselves en route to a 'best scenario' that met our goals of quality produce + community service + profitability. Throughout the analysis we continually fine-tuned our assumptions and input data. Consequently, with this report and our accompanying software we have created a starting place (an initial scenario) as well as a process through which to consider new opportunities based on possible locations or other major changes in our initial components.

The level of specificity of information provided in this study is dependent upon the depth in which we were able to investigate the components, and the degree to which we could reach resolution on particular issues. Consequently, this feasibility study is best viewed as a solid starting point for developing more refined site analysis and a business plan.

1.1 Background

Over the last few years, a community greenhouse has emerged as of vital interest in the New Denver area and Area H North. Area residents believe large community greenhouses are an efficient means to contribute to local food self-reliance, and an empowering means to encourage community-building around growing and eating

nutritious food. In early February 2010 during a community forum on “Building a Healthy Economy,” the idea for a North Slokan Community Greenhouse project topped the voters’ list as the project most likely to succeed from a long list of possible projects. In mid-February, a group of citizens began regularly meeting to further explore the role of a community greenhouse as part of a larger vision of sustainable agriculture and a more secure regional food system in the North Slokan.

The group reviewed several scenarios and configurations for a community greenhouse, including various purposes and outcomes that might benefit the community. We learned from established greenhouse projects such as those in Invermere, Creston, Whistler and Banff. We also met with a leader of the emerging Meadow Creek community greenhouse project to share approaches and resources. As important as these projects have been in shaping our thinking and enthusiasm, none was an exact fit for our needs.

Consequently, in March our group concluded we needed a framework to help organise our own investigation of what would work in the North Slokan and formed a Steering Committee consisting of organic growers, educators, parents, business owners and civic leaders. (See pp. 19-20 for biographies of several of the Steering Committee who would like to serve as the initial project Management Team). In April, our group submitted a grant proposal and was successful in securing funding from the Columbia Basin Trust Community Development Grant Program (Small Grants Stream) and launched the study process reported on in this document.

During the months of May–August we were actively searching for possible locations by meeting with private landowners, and Village staff and Councils. We also visited local commercial and residential greenhouses, and interviewed local retailers and restaurateurs who include local produce as part of their business. In June and July, we conducted a community ‘Food Survey’ to: 1) identify potential consumers who would purchase local organic food from a greenhouse, 2) learn about the eating habits of community members, 3) explore how a greenhouse could meet their needs, and 4) gauge people’s interest in becoming a member of a producer-consumer co-op. (Refer to Appendices A–C for results.)

1.2 Why a Community Greenhouse

There are several reasons for developing a community greenhouse in our area.

- The communities of North Slokan are concerned about food self-reliance according to the Village of New Denver Food Charter (2009), Village of Silverton OCP (2010), Slokan Lake North portion of Area H OCP (2009), North Slokan Community Greenhouse Food Survey (2010).
- Community greenhouses provide community-building solutions to sustainable food production and healthy, nutritious food choices.
- Community greenhouses are popular because they address multiple issues important to sustaining community vitality—issues such as climate change, energy and resource conservation, food security, and decline in agriculture in our communities and region.

- Greenhouse vegetable growing is a British Columbia agriculture success story because it supports the local as well as the provincial economy. The growers live and work in their communities and are committed to making farming a profitable profession.
- Community-scale greenhouses are fast becoming a popular way to provide more local food in a small amount of space and by extending the growing season. For example, communities such as Invermere, Creston, Whistler and Banff have successful greenhouses. And, communities such as Meadow Creek and several others are in the planning stages.
- Community greenhouses also contribute to sustaining the vitality of communities by creating a new business enterprise and building economic partnerships with other businesses in the trades and retail sectors.
- The North Slokan Valley faces having main highway routes cut off due to landslides, snow slides, floods, and fire making self-sufficiency extremely important.
- 'Locally-grown' is a significant niche market to be promoted and exploited. Producers from outside can never supply local, and local produce will always be distinct from imported produce.

1.3 Community Service Goals

We envision our community greenhouse serving and benefitting the communities of the North Slokan by

- increasing food sustainability and self-sufficiency by encouraging more food-growing in the area;
- producing food sustainably by growing a lot of food in a small amount of space;
- creating food-related partnerships among Slokan Lake communities from Hills to Slokan City;
- creating local employment and training opportunities;
- educating the local community in season-extending growing techniques by making greenhouse growing space available to the public and by holding workshops;
- increasing the availability, quality and quantity of local foods sold by local retailers and restaurants; and
- feeding excess profits back to the community.

1.4 Mission

To significantly contribute to the North Slokan's food self-reliance by improving access to fresh, nutritious food, and to serve as a catalyst for other initiatives that support regional food sustainability.

We will achieve this by growing and extending the seasonal availability of a variety of locally popular and profitable produce; and by forming a producer-consumer co-op to build strong relationships around growing, selling, processing, celebrating, and eating local food.

1.5 The North Slovan Community Greenhouse Project: A Snapshot

The proposed North Slovan Community Greenhouse project is intended to contribute to local food self-reliance and improve the North Slovan's access to fresh, nutritious food by extending the seasonal availability of high quality produce. We would like to utilise approximately 1/4-acre preferably in or around the villages of New Denver and Silverton for the purposes of building and operating two (2) 30' X 48' greenhouses (1,440 square foot each, 2,880 square feet in total), a 30' X 15' potting and equipment shed, and two (2) 500 square foot outdoor beds for berry production. The total footprint would be approximately 12,000 square feet (for example, 120' X 100') for the purposes of operating a commercial vegetable, fruit, vegetable starts and bedding plant production facility specialising in extended season growing. Our business will be structured as a producer-consumer co-operative through which we will sell quality produce directly to community members, local stores and restaurants. Such produce will include varieties of tomatoes, cucumbers, peppers, carrots, salad mix, head lettuce, spinach, Swiss chard, kale, strawberries and raspberries. We also envision the North Slovan Community Greenhouse as a facility that provides growing space for area residents seeking an opportunity to increase their own food production.



Figure 1. Several varieties of tomatoes, peppers and cucumbers will be grown in the community greenhouse.

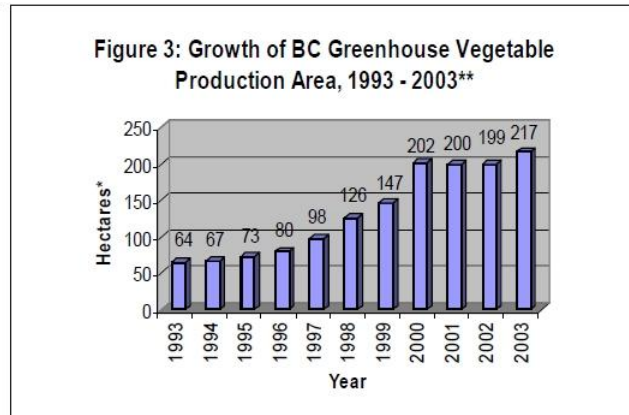
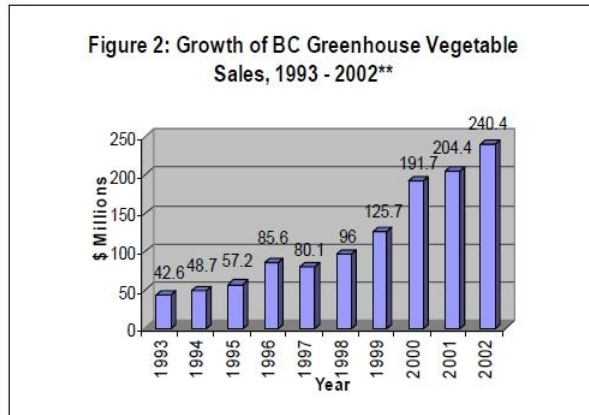
2. Greenhouses are Hot: Growing the BC Greenhouse Industry

According to the BC Greenhouse Growers' Association, vegetables grown in greenhouses are British Columbia's future food supply. Canada has a short summer which limits the quantity of field vegetables grown. A greenhouse allows farmers to control the climate for their plants 24 hours a day, enabling plants to grow strong, healthy and big. Greenhouses can grow food more months of the year to feed people healthy, fresh vegetables virtually year-round. Greenhouse growers from British Columbia and Ontario have been at the forefront of greenhouse production technology. As a result, they have developed close ties with research institutions, which has helped to provide a competitive advantage.

Greenhouses also make the most use of land. The BC Greenhouse Growers' Association estimates their greenhouses produce 10 to 20 times the amount of vegetables on the same area of field. In fact the total amount of B.C.'s farmland used by greenhouse growers is 0.01 percent. Size of fields needed to produce the same amount of vegetables grown in BC greenhouse is 5,436 acres—more than five times the size of Vancouver's Stanley Park. (Source: <http://www.bcgreenhouse.ca>.)

Almost all commercial-scale greenhouse vegetable production occurs in glass greenhouses and uses various forms of hydroponics. The most common systems use rock-wool slabs as the growing medium. Computerized production facilities and new varieties have increased the diversity of products, improved quality and improved efficiencies. Lower per unit costs in spite of relatively cool climates have increased the competitiveness of the industry significantly. Most greenhouses in British Columbia are heated with natural gas, usually purchased through producer-owned co-operatives. In warmer climates cooling becomes a significant cost. Biological control of insects using predator insects has become a very common management practice in recent years. The use of bumble bees has improved the efficiency of pollination and can also be used to distribute biological controls for certain diseases.

The BC greenhouse vegetable industry is regarded as an economically successful and healthy sector within BC agriculture and horticulture according to the BC Ministry of Agriculture and Lands. The BC greenhouse vegetable industry has been at the forefront of rapid expansion since the 1990s in terms of sales and land area in crops (see Figures 2 and 3). In 2002, BC greenhouse vegetable grower receipts were over \$240 million. This figure is more than double the sales figure of five years earlier and an increase of 400% since 1993, when sales were \$42.6 million (see Figure 2). In 2002, the estimated value of the greenhouse sector to British Columbia's economy was more than \$600 million. (Source: <http://www.bcgreenhouse.ca>.)



*1 ha = 2.471 acres

**Source: BC Ministry of Agriculture, Food and Fisheries, Horticultural Statistics.

Figures 2 and 3. BC greenhouse vegetable sales and production area have steadily grown since 1993, with an increase of 400% in sales since 1993.

We plan to grow many of the vegetables successfully grown by the bigger greenhouses, such as several varieties of tomatoes, long English cucumbers, mini cucumbers, and sweet bell peppers—all of which have a good track record. We also plan to grow salad mix, head lettuce, spinach, Swiss chard, kale, and carrots in the greenhouses, and strawberries and raspberries outdoors because our potential local consumers have identified these foods as preferences.

While we share the BC Greenhouse Growers’ Association enthusiasm for growing food in greenhouses, we also believe in making our greenhouse project sustainable by relying upon local resources and low-cost inputs as much as possible. We prefer the design and construction of our greenhouses to include energy-efficient sources of heating and lighting; using soil as the growing medium (not hydroponics); and regulating climate, fertilizing, and irrigation without computers.

3. Marketing & Sales

3.1 Marketing

Regarding the marketing of this venture, local retailers, restaurants and the general public are enthusiastically in favour of a local greenhouse. Through food surveys and interviews with businesses conducted this summer, we learned people of the North Slokan value and will financially support locally-grown produce (Refer to Appendices A and B for the Food Survey, and Appendix C for the Business Survey). Eighty-three percent of our survey respondents indicated that locally grown produce is important to them and their family, and 90% said they would buy more locally-grown food if a greenhouse could provide fresh produce earlier in the spring and later into the fall. Retailers interviewed said, “I’m happy to take what’s locally grown. If you grow it I can sell it.” And, “typically when the first local food comes in, it’s gone.”

If we are to be successful in this endeavour we believe it is important to listen to what our potential clients want and identify several successful avenues through which we can get our produce into the stomachs of local residents. Local retailers have indicated a desire to increase their sales of local produce as there is insufficient supply to meet demands. There is also a market to sell to local restaurants provided we can keep our costs low and make reliable delivery. Our chances of competing with even the big supply areas like California are improving due to uncertain supply from traditional sources due to changing weather conditions and increasing fuel costs. Many of the locals who have their own gardens have expressed a desire for bedding plants grown locally—a portion of the business which is very profitable and brings revenue early in the year to provide necessary cash flow for our production season. In terms of retail markets, we anticipate selling at farmers' markets and doing on-site sales. Plus, as a co-op, we would be selling to members slightly below retail which might be attractive to some people and encourage loyalty.

We recognize the balancing act of growing what people want, affordably pricing it, and meeting our bottom-line profitability. Our goal is to have produce available ahead of season and ahead of what is typically coming out of local gardens. For example, we will provide produce early in the spring when general demand and prices are high. Once local residents are picking these varieties from their own gardens we will have moved onto the next crop which should be ready for harvest after the local residents have exhausted their own supply. In this way we would be providing a service to the local residents by making the foods they love available for a much longer season, and hopefully bringing produce to market when the price is favourable to the greenhouse.

3.2 Initial Target Markets & Primary Customers

The owners of retail stores and restaurants selected for interviews were ones with a history of making an effort to source and market local produce as part of their business decisions. Results, presented in Appendix C, show a lot of support for locally-grown produce. We found that several of those interviewed thought demand for locally-grown produce is exceeding the supply. Many retailers and restaurateurs would like to have more access to local produce because they want to support local.

Initially, we will target the following markets.

Wholesale Markets:

Local stores: Ann's Natural Foods (New Denver), Mountainberry (New Denver), Valhalla's Garden Market (New Denver), Newmarket Grocery (New Denver), Slocan Market (Slocan City).

Local restaurants: Cup and Saucer Café (Silverton), Silverton Lakeshore Inn (Silverton), The Apple Tree (New Denver), Wild Rose (Rosebery), Retallack (Sandon), Harold Street Café (Slocan City).

Retail Markets:

Community Greenhouse Co-op members
New Denver Farmers' Market

4. Technical & Organisational Requirements

4.1 Location

Initially our vision was to locate the greenhouse project on lands owned by either the Villages of New Denver or Silverton. One of the primary reasons for this was to partner with a Village in providing our service. Considerable effort was made in investigating the feasibility of this arrangement however no Village properties seem well-suited for our project. Below we provide a synopsis of our search.

4.1.1 Village of New Denver

In New Denver six sites were considered. Village-owned properties are denoted with (*).

- *Centennial Park
- *Old Arena site/Current Recycling & Commercial Truck Parking
- *Denver Siding
- Carpenter Creek
- S-Curve
- Street Alleys

Of the three Village-owned properties under consideration, there are the following limitations. There are restrictions on the type of enterprises that can be allowed on Village property at Centennial Park. The old arena/commercial truck parking area is designated an “Environmental Reserve” to protect a wellhead. There is a restrictive covenant on the contaminated property of the old dump site at Denver Siding that precludes any development prior to an environmental hazard assessment.

A property at the S-Curve owned by BC Transportation Authority was identified, however we would like to have the feasibility analysis complete before approaching the Transportation Authority. Regarding Carpenter Creek, the Village owns no land along the creek. The Province owns the north side by the dike, and also the south side where the Village has a licence of occupation for recreational purposes only. Regarding alleys, according to New Denver’s CAO, Council could not allow construction in the alley way. Although there is a street allowance, ownership is with the provincial government.

4.1.2 Village of Silverton

In Silverton six sites were considered. Village-owned properties are denoted with (*).

- *Dewis Memorial Park
- *Behind Village Office and Shop
- *Pump House Lot near the Finland cabin display and Silverton Creek
- *Lot near Silverton Lakeshore Inn
- *Isolated lots near Day Park
- Crown Land N19882

Of the five Village-owned properties under consideration, we encountered the following limitations. When Dewis Park was transferred from the Province to the Village of Silverton a restriction was placed on the deed stating the Village cannot use the land for any purposes other than community recreation and a memorial park. Other Village lots

are either too small, or buildings or other issues with sun exposure, cold pockets, steepness or proximity to Silverton Creek limit their suitability.

We also considered Crown Land N19882 (150' x 80'), bench land behind the Lakeshore Inn at the top of '1st Street' as platted (not yet developed). Village lot NEP81969 to the north of the hotel could be made contiguous if the Village could close the top of 1st Street. It was suggested that the Village could apply to the Crown for N19882, however the steep approach to access the bench, and the general steepness of the terrain would require significant excavating to make the land more usable and level for the greenhouses. The cost of power and water also makes this site less favourable than those sites which are closer to both.

Both New Denver and Silverton were very helpful during our search process. Some things we learned along the way are worth noting in this report. For example, a Village cannot enable a private for-profit enterprise as stated in the Local Government Act and Community Charter. Also, if our project was located in a Village we would need to have engineer-approved greenhouses if they are 1) permanent, four-season structures, and 2) for the public. It was recommended we talk to a building inspector about the regulations while in the design phase. Within the Villages, our project must also meet all of the setbacks stated under bylaws, and we should consult neighbours first before getting too far along.

If we found a property that was a good fit, we would need to apply for an amendment to the zoning bylaw—if the existing zoning did not include commercial uses—in order to include a greenhouse operation as a permitted use. If this was the case, we would need to:

- 1) Apply to Council for an amendment to the zoning bylaw.
- 2) The Village must publicly advertise the proposed changes and notify neighbours within 100 m of any proposed re-zoning.
- 3) Proposed bylaw gets 2 readings.
- 4) Hold a public hearing.
- 5) 3rd reading of bylaw then consideration for adoption.

Any changes to the zoning bylaw must remain consistent with the vision of the Official Community Plan. Moreover, if we asked Council to consider an area for lease the public is notified and may object and/or another enterprise may also make application to Council for a project to use the leased land.

As stated previously, presently we do not have a location for the community greenhouse. We will continue to investigate site options in the coming months because this is obviously a critical issue to resolve. With this feasibility analysis in-hand, our next step is to approach a few private landowners with suitable land and in proximity to town.

4.2 Greenhouses, Materials & Equipment

As stated above, we plan to establish and operate two (2) 30' X 48' greenhouses of approximately 1,440 square feet each or 2,880 square feet in total. Due to concerns about snow loading we chose a length-to-width ratio of less than 2 to 1. We envision the

greenhouses standing separately and side by side, however this may change based on the location. For the purpose of this feasibility study, they are assumed to be side by side.

4.2.1 Structures & Materials

In May our Steering Committee visited local commercial greenhouses to examine different types of structures. We learned about the pros and cons of owner-built and commercially manufactured greenhouses. We decided to obtain quotes from commercial greenhouse vendors B&W Greenhouse Construction, Ltd. based in Aldergrove, BC, and The Professional Gardener Co., Ltd., based in Calgary, AB with a local representative in Vernon, BC. Price quotes for just a greenhouse were in the range of \$9,000 – \$10,000 per greenhouse and were based upon the following specifications.

- Two free-standing 30' X 48' Gothic arch greenhouses covered with clear double poly (Figure 4).
- Double walled poly consisting of a 6 mil inner roof with anti-condensate and a 6 mil outer roof.
- A frame made of galvanized steel tubing that is highly corrosion resistant and has a tensile strength of 55,000 PSI.
- A peaked, 'Gothic' shape at the top of the structure for easy shedding of snow.
- Arches of 1-1/2" X 2-1/2" rectangular steel and spaced on a 4-foot centre.
- Cross ties and diagonal struts designed and spaced for maximum wind and snow loading. Ground posts, steel baseboards, wind braces, and seven runs of roof purlins (the bracing that runs the length of the building) provide necessary stabilization (Figures 5, 6 and 7).
- Four 10' X 8' double panel sliding doors, one for each end of each greenhouse. Aluminum doorframes covered with clear corrugated polycarbonate.
- Doors can come pre-drilled from the manufacturer for easy installation; and each door is to come with a door track, rollers, hangers, handles, and other necessary hardware.
- Gable ends framed with 1-1/2" square steel tubing and covered with clear poly.
- Roll-up sides in which the poly sheets on both sides of the frame roll up 5' above grade using gear cranks and strapping for added ventilation.



photo courtesy of B&W Greenhouse

Figure 4. Front view of a 30' wide Gothic style greenhouse manufactured by B&W.



photo courtesy of B&W Greenhouse

Figure 5. View of the growing space and internal frame of a 30' wide Gothic style greenhouse manufactured by B&W Greenhouse.

GENERAL VIEW OF A 30' WIDE GREENHOUSE

#5

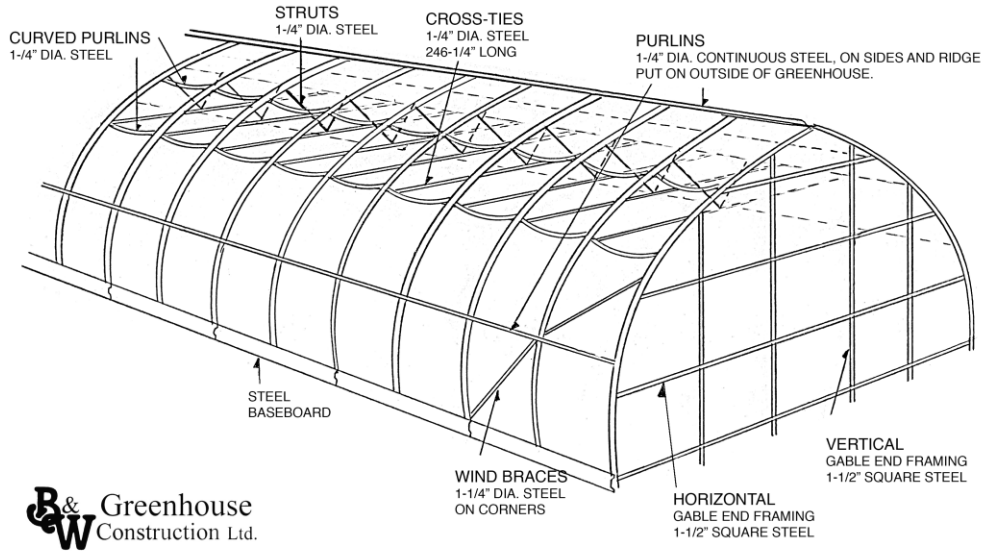


Figure 6. Detailed view of a 30' wide greenhouse from B&W Greenhouse.

B&W Greenhouse Construction Ltd.

30
GABLE END ON A 25', 30', OR 36' WIDE GREENHOUSE
WITH A 4' X 8' DOOR

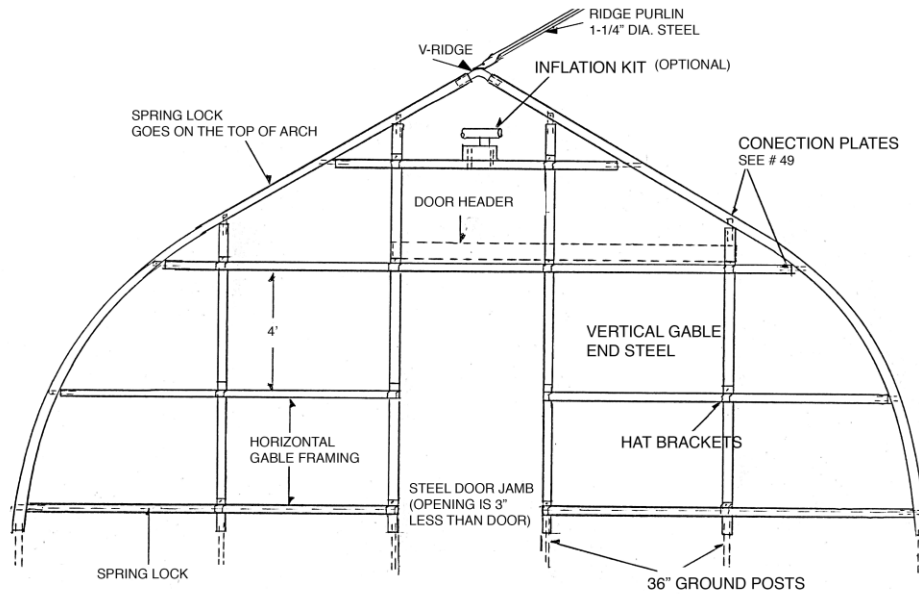


Figure 7. Diagram of the internal frame of a 30' wide greenhouse provided by B&W Greenhouses.

4.2.2 Greenhouse 1 Utilisation: Propagation & Member Use. We propose this space contain fourteen (14) 4' X 8' tables. Eight (8) of the tables will be used by greenhouse staff to raise starts for growing seedlings for transplanting into Greenhouse 2 and for selling as bedding plants. The remaining six (6) tables will be rented to co-op members for their use.

Underneath the tables, 4' X 8' growing areas will be available to greenhouse staff and co-op members as trays of bedding plants when tables are removed.

4.2.3 Greenhouse 2 Utilisation: Primary Production Area. We propose this greenhouse serve as the primarily production greenhouse with long rows of beds separated by paths. An example might be nine (9) rows of growing space 30 in x 40 ft long. Emphasis will be on tomatoes (50%), peppers, cucumbers, salad mix, and a variety of leafy greens.

4.2.4 Ventilation

Each greenhouse will have two (2) 24" fans for air circulation and cooling, one at either end of the two buildings. Four solar panels mounted near the greenhouses would power the fans and provide some electricity to power the grow lights.

4.2.5 Heating

We are considering using a wood gasification boiler from Advanced Wood Heat from Blind Bay, BC. The system requires 2 heat coils for in-soil heating, water storage and forced air heat.

4.2.6 Lighting

We will have 24 fluorescent lights in the potting shed mounted over shelves to help propagate seeds and raise seedlings; and another 12 LED grow lights in the greenhouse with six (6) lights suspended above 2 growing tables.

We are proposing to use some LED grow lights (Figure 8) instead of the more traditional high intensity discharge (HIDs) growing lights for these reasons:

- a. LED grow lights are more efficient, using 25% to 90% less power than HIDs,
- b. LED bulbs have a production life of 100,000 hours, which is 10 to 50 times longer than a typical HID grow light bulb,
- c. LED grow lights can pay for themselves in 6 months of heavy use,
- d. LED grow lights only deliver the colours of light used by plants for efficient growth and health, and
- e. LEDs interface well with solar-generated power sources.



Figure 8. Example of a long-lasting LED grow light utilizing red and blue bulbs for enhanced growing capability.

4.3 Producer-Consumer Co-operative Business Model

In evaluating possible organisational models for the community greenhouse project, we considered the ethos of the area, the relatively small geographic area to be served, the small number of businesses, and the area's modest population. Finally, we considered the production capacity of two greenhouses, number of workers, and the various consumers of greenhouse produce and bedding plants.

We envision members of the community would be able to access a designated space in one of the greenhouses for their needs in growing starts and crops. The vast majority of the production capacity would be for local sale to individuals and families, local food stores, and restaurants, and occasionally to the general public at local farmers' markets.

The greenhouse project is driven by public policy goals to increase local food security and sustainability, and to educate the community on the use of greenhouses to help achieve food security and sustainability. The project would exist in an area very familiar with co-operatives as a form of doing business and one that tenaciously values equal voice and democracy in conducting its affairs.

Based on the matters evaluated above, the co-operative form of doing business was selected as the best business model for structuring greenhouse project operations. Some of our committee members are familiar with the use of co-ops and the Upper Columbia Co-op Council. We also reviewed the British Columbia Co-operative Association Act of 1999 as amended in 2007 and various web-based resources relating to co-operatives in British Columbia as well as Canada. The democracy and active participation of co-op members fits with the local ethos, and would in this small area

enrich and ensure that the greenhouse project was responsive to the area's needs. The co-op model is flexible enough to accommodate the varied stakeholders who may be interested in being members. The model also permits a variety of ways to raise capital to sustain project start-up, and to service any debt through sale of produce and rental of bedding and growing space.

As this project moves towards a full business plan analysis in the future, we will be conducting a much finer evaluation of establishing a co-op including issues relating to the size of any reserve needed to cash out persons who terminate membership and defining member classes in accordance with the Act in a way that best serves the various stakeholders likely to be interested in membership. We will also be evaluating the best ways to raise capital that fit within the co-op business model. At that point we will retain and consult experts in the co-op area to help establish the co-op and its bylaws. We will be paying special attention to a number of factors including how to resolve differences, if any, among stakeholders. Among those we would consult would be the Upper Columbia Co-op Council and the British Columbia Co-operative Association.

The most technical and difficult issue impacting how we structure the business side of operating the greenhouse is whether the greenhouse project could or should qualify as a Community Service Co-op that permits charitable status and seeks qualification as such for tax deduction purposes with Revenue Canada. While the requirements for becoming a Community Service Co-op have been studied, expert advice and guidance would be required to make that determination. The project is designed to meet public policy goals that may well qualify it for charitable status, for example, educating the public about sustainability issues and food security to promote stated public policy goals of the area's villages and regional district. However, the emphasis on sale of produce and the benefits of the greenhouse project to members such as businesses selling produce need to be carefully evaluated. Even after evaluating such advice, the non-profit form of co-op may not be the best model in the end for raising capital, as there may be less interest of members and others in financing a not-for-profit enterprise.

On the positive side, a non-profit offering tax deductibility for donations may offer incentive to a wider base of donors and certainly opens grant funding possibilities not available under the for-profit co-op model. One of the research issues remaining is a finer evaluation of grant sources, grant restrictions, and an evaluation of what business form provides optimum long-term funding. Grants do not generally make a good source for long-term funding, as priorities change, funding availability may not be predictable, and many grants are based on the premise of reducing reliance on grants over a three- to five-year time frame.

Short-term greenhouse construction funding will likely be possible under either a non-profit model or a for-profit model, as the costs we are anticipating are more modest than some community greenhouse projects such as in Invermere. The approach may also depend on testing the willingness of business members to invest in the project. We would want our business plan finished before we asked a few key businesses to sit down and indicate their potential level of commitment to the project's financing.

The issues are well defined and will be finely evaluated at the appropriate stage. For this initial appraisal of the viability of the project, a determination of 'not-for-profit' or 'for profit' seemed premature and expensive. Such a conclusion is based on the perceived need to retain tax experts and test financing sources when the business plan is complete. While the availability of grants is never assured, we assume if we continue with a careful analysis we will qualify and be able to make a good case for such grants.

Whether a Community Service Co-op or a for-profit business, the co-op structure has been deemed the best model for this project. The particular details await closer conversation with stakeholders and experts on co-op issues to ensure a successful start and achieve the project's goals in the long term.

4.4 Feasibility Study Team

The contributors to this feasibility analysis bring relevant knowledge, abilities and expertise based upon a wide variety of experience in agriculture, sustainable building methods, business, law and education.

Marcy Mahr: Marcy is a professional ecologist with an MSc degree in Plant Ecology. For twenty-five years she has worked in science research, land and biodiversity conservation, and small-scale agriculture. She has directed projects investigating issues related to sustainability in both Canada and the US. Marcy also spent 10 years with her husband jointly owning and working on an organic farm in Montana's Flathead Valley. In addition to farmers' markets, a primary service of their farm was delivering a Community Supported Agriculture (CSA) weekly subscription program to 60-100 local families per year. Currently Marcy works with her husband in Hills, BC operating a small-scale greenhouse business that grows and locally markets vegetable bedding plants.

Jeffrey Pilsner: Jeff is a professional computer programmer with a background in accounting, financial planning and an extensive background in sales & marketing. For most of his adult life Jeff has had a passion for sustainable building, power and food generation. His latest programming project was developing a web-based food ordering system called: www.everythingunderthesun.ca which could be utilised as an online ordering and administration system for the Community Greenhouse Project.

Ana Bokstrom: Ana has a background in design, project management and computer programming. She teaches businesses and individuals computer skills and web design. Ana is also a specialist in sustainable building methods and construction.

Mick Wilson: Mick has a BSc Hons. degree in Business Administration and Society and Government. Raised in the U.K., Mick emigrated to Canada in 1994. After farming and market gardening in different areas of BC he settled in New Denver where he has operated a market garden business for the past 14 years. Mick is experienced in growing and selling fresh produce at the New Denver Farmers' Market and to local restaurants and stores. Mick is also a trained plumber.

George Meier: George is a Conference Minister in the United Church of Canada and former lawyer in the United States who has founded, advised and been a board member of numerous non-profit organisations. He has also served as a non-profit executive director. A detailed biography can be found at www.heartsrest.com.

4.5 Key Staff Positions

Primary goals for employment are to foster a safe working environment through training programs and supervision, and to create a productive work force with high job satisfaction. We envision employing an experienced full-time Greenhouse Manager supported by one to two dedicated part-time volunteers and co-op member volunteers. We will target local youth to fill the part-time positions. By year three, we hope to offer one part-time paid position to support the Greenhouse Manager as well as continue to enlist volunteers from the co-op membership and the community.

5. Estimates of Production

We developed a software tool to quantify all aspects of a greenhouse operation and help us model different ways of utilising the growing space. Although it is not a perfect science, quantifying real-life growing situations into charts and graphs helped inform our decisions and forecasting. We ran potential cropping scenarios and made choices about what might be the most effective use of the greenhouse space. For example we suspected that tomatoes would yield higher profits as compared to peppers—and our suspicions were confirmed by entering all of the variables in the software.

What is really exciting about this software is it can be used to provide real-time administration of various aspects of production, and analyse the profit/loss ratio on a month-to-month and bed-by-bed basis. In this way we can make decisions regarding the impact of planting choices relative to operating costs and refine our choices accordingly. Please refer to Appendix D for an explanation of the planting schedule.

In the first year we would expect to achieve no greater than 30-40% of our potential capacity because of delayed planting. We would however endeavour to make immediate use of the proposed berry beds (strawberries and raspberries)—tilling and planting at the same time that the greenhouse structures are being assembled so that we would be able to harvest our first crop of berries in the summer of the following year.

Figure 9 illustrates a sample from the graphical user interface we created as part of our software to assess the best possible usage of our growing space. It is linked to a database which includes all of the income and cost potentials, and allows us to quickly change our space allocation and assess the impact on our revenue. The legend for Figure 9 represents the different plant varieties that we intend to grow and the growth scale represents the plants' phenological changes over time which will help us to estimate harvest timing and production quantity.



LEGEND		Growth Scale			
Tomatoes	10		fallow	0	
Peppers	11		potting shed	1	
Cucumbers	12		new planting	2	
Salad Mix	13		seedling	3	
Head Lettuce	14		beddingplants	4	
Swiss Chard	15		transplant	5	
Kale	16		immatureplant	6	
Spinach	17		early harvest	7	
Cherry Toms	18		mid harvest	8	
Strawberry	19		peak harvest	9	
Raspberry	20		mature plant	10	
Carrots	21				
BeddingPlants	22				
Rental	24				

Figure 9. Schematic of the North Slovan Community Greenhouse growing area both inside the greenhouses and the outdoor berry production. Colour coding listed in the legend corresponds to crop types that are linked to production and harvest tables within Microsoft Excel spreadsheets to calculate income and expense per growing bed by crop type and by month of operation.

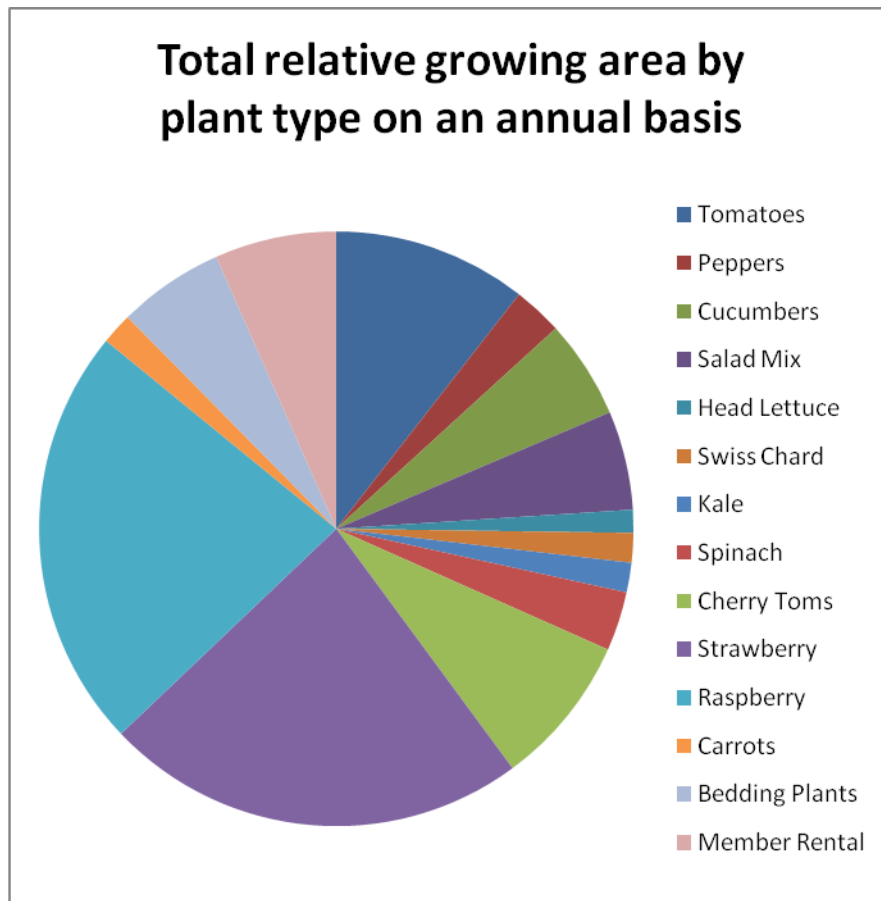


Figure 10. Relative allocation of space by plant type according to square feet of growing area and the length of time that the plant occupies the bed space. Some spaces have a crop rotation whereas other plants are perennials and so occupy space year-round. For example, perennial crops of strawberries and raspberries utilise the most growing area over the year in contrast to tomatoes which also take up a large amount of space but don't occupy the space year-round.

6. Financial Plan

6.1 Estimates of Capital Costs

Our intention is to establish a profitable business with a positive net income within three years and directly finance our capital costs from retained earnings, grants and fundraising campaigns within five years. In the first year of operation we will break ground in March 2011 and complete the building phase of the two greenhouses plus potting shed by August 2011.

Estimates of the costs associated with the various components of this project discussed in Section 4 Technical and Organisational Requirements range from prices quoted directly from manufacturers to our experienced estimates. Some decisions we cannot make without knowing the location of the greenhouse (e.g., an engineering plan or

Village water hook-up). We expect over time to become increasingly precise as this document is further scrutinised as we continue to look for a location.

Only the large capital expenditures are described below. Refer to Appendix E for a more detailed breakdown of these expenditures as well as the costs of the smaller capital investments.

6.1.1 Greenhouses and Other Building Costs: \$34,600

Two freestanding 30' X 48' greenhouses from B&W Greenhouse as described in Section 4.2 (\$22,000); a foundation (\$5,000); high fencing (\$1,300); and labour and lumber costs to build the Potting Shed and Market Shed (\$6,300). *If the community greenhouse project is located in one of the Villages we are required to have an engineering plan which could cost around \$1,500.

6.1.2 Heating, Cooling, Lighting & Electrical Service Costs: \$33,700

Heating: wood gasification boiler system (\$7,500); heating poly tube, fan coils, in-ground poly pipe (\$3,500) and installation of all of the heating components (\$7,000). *Lighting:* grow lights (\$6,500). *Cooling:* solar electric (\$3,220). *Electrical Service:* 200 amp service with a 100 amp underground feed to sub-panel for second greenhouse, electrical installation, electrical permit (\$6,000).

6.1.3 Irrigation Costs: \$2,100

Circulating pump, drip tape, poly tubing, filters, spigots, hoses, water wands, and excavation and plumbing labour. * In Village \$2,000 for water hook-up.

6.1.4 Equipment Costs: \$3,860

Propagation mats, heat tape, pots and trays (\$1,920); 14 start tables (\$940); gardening tools (wheelbarrows, shovels, hoes, rakes, hand trowels) (\$1,000).

Greenhouses & Buildings	\$ 34,600.00
Heating, Cooling, Lighting, Electrical	\$ 33,700.00
Irrigation	\$ 2,100.00
Gardening Equipment	\$ 3,860.00
Soil	\$ 1,000.00
Perennials	\$ 200.00
Total Capital Cost	\$ 75,460.00

6.2 Estimates of Annual Operating Costs

Only the large annual operating expenditures are described below.

6.2.1 Human Resources: \$25,000–\$30,000

The only employee in Years 1–3 will be the Greenhouse Manager. This position is expected to fulfill duties that will be enumerated in a job description. Based upon the anticipated peaks and lulls that are tied to growing cycles, hours range from 160 per month during the peak time of March through September, and taper down to 20 hours for the slowest month of December. For budgeting purposes we have estimated the hourly wage to be \$18.00/hr. including benefits and an annual salary range of \$25,000–\$30,000.

6.2.2 Utility Costs: \$6,800

Electricity for grow lighting, and heat-circulating fans and pumps.

6.2.3 Transportation Costs: \$4,000

Greenhouse Manager will use their own vehicle and will be reimbursed \$0.40/km for 1,000 km travelled per year for transporting produce and any materials necessary for proper functioning of the greenhouse operation.

6.2.4 Lease: \$3,000

Given that we do not yet have a location for the greenhouse we wanted to have a placeholder for some amount of rental cost in case a lease is required. Ideally we could keep our monthly lease fees around \$250. Depending on the location, we may be able to entertain in-kind donations and/or profit sharing with the landowner in lieu of a fixed rental or lease payment.

Manager Labour	\$ 29,520.00
Utilities	\$ 6,800.00
Transportation	\$ 4,000.00
Maintenance	\$ 900.00
Fertilizer	\$ 1,100.00
Seed	\$ 240.00
Lease	\$ 3,000.00
Total Annual Operating Cost	\$ 45,560.00

6.3 Projected Profit (Loss)

Table 1. Monthly Sales and Expense Comparison.

This table summarises information contained in Appendix G Revenue Projections and is displayed as a graph in Figure 11 where it is further explained.

	Sales	Expenses	Net
January	\$ 235.44	\$ 575.00	-\$ 339.56
February	\$ 235.44	\$ 3,696.65	-\$ 3,461.21
March	\$ 1,048.44	\$ 4,035.00	-\$ 2,986.56
April	\$ 1,048.44	\$ 3,985.00	-\$ 2,936.56
May	\$ 4,815.48	\$ 3,658.71	\$ 1,156.77
June	\$ 6,065.00	\$ 3,688.71	\$ 2,376.29
July	\$ 8,822.59	\$ 3,644.79	\$ 5,177.80
August	\$ 6,819.13	\$ 3,669.80	\$ 3,149.33
September	\$ 4,223.51	\$ 3,669.80	\$ 553.72
October	\$ 3,988.38	\$ 3,950.00	\$ 38.38
November	\$ 2,708.79	\$ 3,432.18	-\$ 723.40
December	\$ 2,275.92	\$ 360.00	\$ 1,915.92
TOTAL	\$ 42,286.56	\$ 38,365.63	\$ 3,920.93

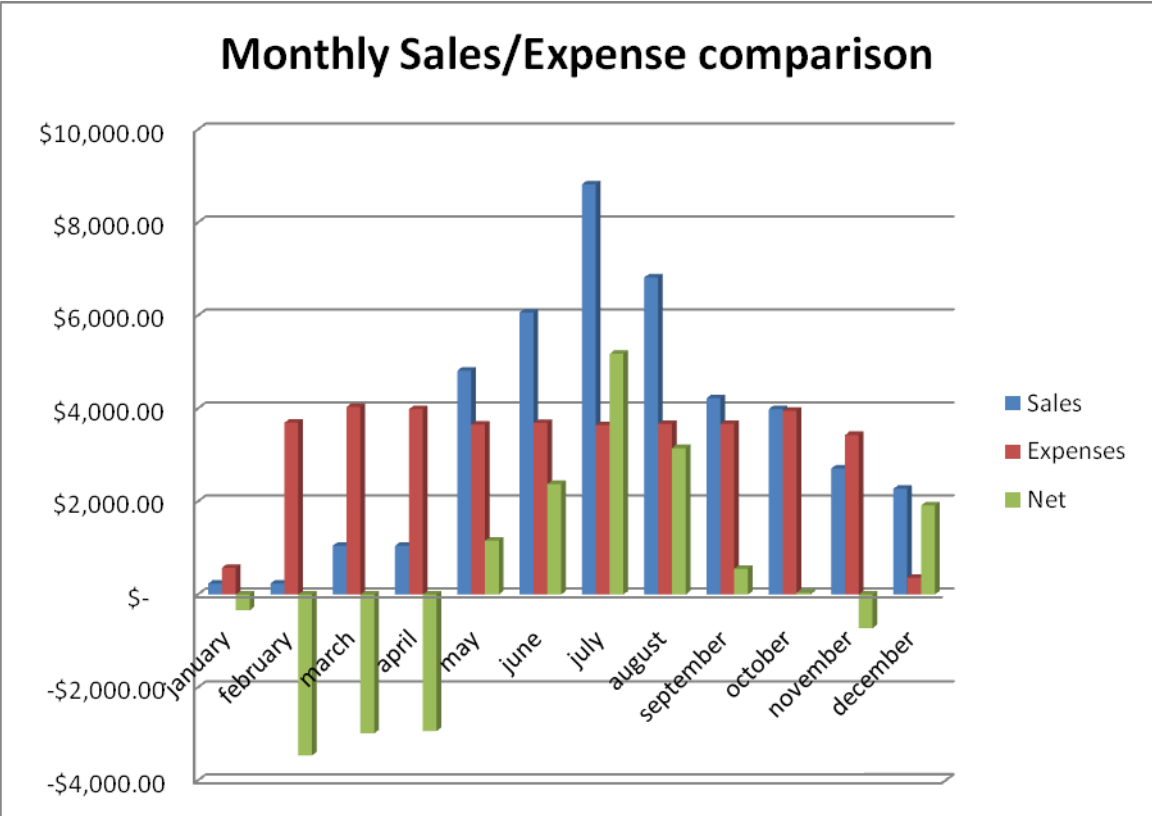


Figure 11. Monthly profit and loss comparison using summary information from Table 1 (refer to Appendix G for more detailed information). We anticipate three peak income months (June, July, August), with another four months (May, September, October, December) in which income is expected to exceed expenses. During five months (January, February, March, April, November) we anticipate expenses to exceed income.

In terms of our annual profit/loss the following results in Table 2 show that strawberries, raspberries, bedding plants, salad mix and tomatoes are our leading sources of income. Some of the reasons for the losses we anticipate incurring in Table 2 are due to the intentional decisions to value food security and community participation over profit potential. For example for some of the crops like cucumbers, peppers, Swiss chard, kale and head lettuce our assumptions in the database may be correct but regardless of a potential loss we intend to meet a recognized need in the community. We are also expecting a loss in the rental of bedding plant tables and growing space to community members. This loss reflects the cost of heating and lighting the greenhouse which will not fully be covered by the rental fee of \$50/year for 6 rental spaces (i.e., \$300/yr.). By setting our rental rate low we are trying to make this facility accessible to all members of the community in the spirit of community service. The actual cost of that portion of the greenhouse is \$900 per year. This amount divided equally across 6 rental tables is a cost of \$150 per table which we believe is not supportable by potential community users. We plan to cover the difference of \$600 (refer to Table 2 under Net Rental Income) by growing some crops as part of our commitment to servicing the community.

Table 2. Annual Profit/Loss Breakdown by Plant Type.

PLANT TYPE	Net Profit/Loss	TTL lbs of produce	Net Profit/Loss per lb
Tomatoes	\$ 1,296.55	2109	\$ 0.61
Peppers	-\$ 1,189.18	169	-\$ 7.05
Cucumbers	-\$ 1,921.43	615	-\$ 3.12
Salad Mix	\$ 2,696.50	951	\$ 2.84
Head Lettuce	-\$ 616.01	164	-\$ 3.76
Swiss Chard	-\$ 140.79	488	-\$ 0.29
Kale	-\$ 140.79	488	-\$ 0.29
Spinach	\$ 10.21	1701	\$ 0.01
Cherry Toms	-\$ 458.46	806	-\$ 0.57
Strawberry	\$ 5,574.10	1748	\$ 3.19
Raspberry	\$ 1,429.72	518	\$ 2.76
Carrots	-\$ 1,507.59	250	-\$ 6.03
Bedding Plants	\$ 1,908.85	2880	\$ 0.66
Empty Beds	-\$ 102.66	0	\$ -
Rental Cost	-\$ 905.26		
Income from Rental	\$ 300.00		
Net Rental	-\$ 605.26		
Transportation	-\$ 4,000.00		
Memberships	\$ 450.00	TTL lbs of produce	
TOTALS	\$ 2,683.76	12,886	

7. Feasibility Assessment

We ran three scenarios to help us better understand the necessity of paying off the \$75,000 capital expenses as soon as possible to ensure financial sustainability and reinvestment potential.

Each scenario has the same set of initial assumptions: We subtract a \$3,000 annual land lease from the \$2,684 of anticipated profit (from Table 2 in Section 6.3), and include \$5,000 of local fundraising income. We then consider three levels of financial contribution which we call “funding for infrastructure” at 1) zero contribution, 2) 50% (partial) funding, and 3) 100% (full) funding for infrastructure. The respective payback times shown below signify how important it is for this community greenhouse project to secure partial to full funding for paying back the infrastructure expenses. We believe carrying such a debt for more than five years will jeopardize the project’s ability to make improvements and reinvest profits back into the business and into the greater community.

Scenario 1 – No funding for infrastructure

LEASE	\$	3,000.00	(\$250/month)
Profit after lease	\$	- 316.00	
Fundraising	\$	5,000.00	Annually
INFRASTRUCTURE	\$	75,000.00	
Infrastructure Payback			16 years

Scenario 2 – Partial funding for infrastructure

LEASE	\$	3,000.00	(\$250/month)
Profit after lease	\$	- 316.00	
Fundraising	\$	5,000.00	Annually
INFRASTRUCTURE	\$	37,500.00	
Infrastructure Payback			8 years

Scenario 3 – Full funding for infrastructure

LEASE	\$	3,000.00	(\$250/month)
Profit after lease	\$	- 316.00	
Fundraising	\$	5,000.00	Annually
INFRASTRUCTURE	\$	0.00	
Reinvestment potential	\$	4,684.00	

8. Possible Sources of Financing

Our sources of financing and strategies may be the same depending on whether we are advised to run our co-op as an enterprising not-for-profit or for-profit enterprise. Given the long-term economic, social and environmental benefits to our communities, we hope the Columbia Basin Trust will provide initial financial support for the capital expenses of our greenhouse project regardless of which business model is implemented. We would also pursue other sources of financial support through, for example, the RDCK, BC Healthy Communities Seed Grants, Investment in Agriculture Foundation of BC, and Provincial Health Service Authority's Community Food Action Initiative.

Our primary goal in year 1–3 will be to pay off our capital costs. We would need to organise a capital campaign that may include a mix of community fundraising and approaching the Kootenay Savings Credit Union, either for grant money or for a business loan. Community-oriented fundraising ideas include a “Salsa Party” in early September with music, dancing and a lot of salsa-making and tasting. We are also considering the idea of inviting a circle of 20 initial investors to each give \$250 to the project. We also would like to evaluate whether there is interest in some investors buying a \$1,000 5-year bond which can be repaid over a certain period of time with interest.

In order to encourage customer loyalty of our retail clients (i.e., stores and restaurants) we would invite them to provide an upfront investment which would increase the wholesale savings they would receive. For example, for an investment amount of \$500 they would receive the best wholesale price that we have available. They would be considered an investor and a co-op member, and we would solicit their input into what we grow and when we make it available to them. We would hope that their stake (based on their investment) would encourage a feeling of ownership in the greenhouse project and dissuade them from shopping elsewhere for their produce.

All of these are ideas to be further developed as the project moves ahead. This community greenhouse project should continue moving forward to capitalise on the good momentum it has generated. For as one respondent to the food survey wrote, “Splendid! Great, needed, get going! Desire, will, interest and action!”

9. CONCLUSION

The community greenhouse project is looking five to 10 years into the future to begin addressing the needs of the community. Within this timeframe, our remote rural area may be noticeably impacted by rising food and energy prices. We believe a community greenhouse such as we are envisioning is an exciting way to provide community-building solutions to sustainable food production and healthy, nutritious food choices in the North Slokan Valley. With this study in hand, these next steps are among the first that should be taken to move this project forward.

- Enlarge the project group beyond the Management Team to include more community members with interest and skills to provide leadership on the next steps.
- Identify how, where and when full or partial funding might be obtained to cover the capital costs.
- Determine where the facility will be located, and then identify any new factors that should be quantified and run through the feasibility software program.
- Investigate markets in more detail to generate a committed clientele.
- Research and consult with experts to determine whether the co-operative should be structured as a for-profit or not-for-profit enterprise.
- Investigate potential partnerships with organisations committed to food security and healthy youth. For example, Interior Health is strongly committed to encouraging youth's access to healthy food in order to help extend the life expectancy of this generation of young people.

Research and resolution of these issues would be packaged into a business plan. Funding support should be sought to ensure these steps can be taken in an organised and timely manner so the project does not lose momentum.



North Slocan Community Greenhouse Project Food Survey Results September 2010

From June 3 to July 9, 2010, the Community Greenhouse Project distributed a public Food Survey in the New Denver area with the purposes of:

- identifying potential consumers who would purchase local organic food from a greenhouse;
- learning about the eating habits of community members and exploring how a greenhouse could meet their needs; and
- gauging people's interest in being a member of a producer-consumer co-op.

Points of survey distribution and collection were Lucerne School, Mountainberry, New Denver Farmers' Market and the *Valley Voice* in New Denver; and the Cup & Saucer in Silverton. Fifty-nine (59) people responded to the survey. Their answers are summarized below.

1. *Is locally grown produce important to you and your family?*

Very important: 49 (83%)
Somewhat important: 7 (12%)
Not important: 2 (3%)
No answer: 1 (2%)

2. *Where do you currently purchase the majority of your fresh produce during the summer?*

Ann's Natural Food Store: **27 (46%)**
Bigway: **10 (17%)**
Mountainberry: **9 (15%)**
Nakusp Farmers' Market: **0**
New Denver Friday Market: **35 (59%)**
Overwaitea (Nakusp): **15 (25%)**
Your own garden: **39 (66%)**
Other, please specify: **6 (10%)** [*Friend's garden, Lone Mule Farm (New Denver), Gaia Tree (Winlaw), Four Seasons Greenhouse (Winlaw), Kootenay Co-op (Nelson), Ellisons (Nelson), Save On Foods (Nelson)*]

3. *Would you like to have more local organic produce available in our area?*

Yes: **52 (88%)**
No: **5 (9%)**
Don't Know: **2 (3%)**

4. Are you a gardener who grows vegetables and fruits?

Yes: 52 (88%)

No: 7 (12%)

5. If you grow produce, do you have a cold-frame, small greenhouse or other means to extend the growing season?

Yes: 27 (46%)

No: 32 (54%)

6. If you have a garden, do you typically buy veg and fruit starts?

Yes: 40 (68%)

No: 19 (32%)

7. Would you buy from a community greenhouse selling veg and fruit starts?

Yes: 48 (81%)

No: 8 (14%)

Don't Know: 3 (5%)

8. How would you describe your eating habits? Please check all that apply.

During the summer growing season:

a. I buy all of my produce at stores: 9 (15%)

b. I eat my own garden vegetables as well as buy some produce from stores, farmers' markets, and other vendors: 48 (81%)

c. I eat only what I grow and avoid purchasing any produce: 2 (3%)

During late fall-winter-early spring:

a. I buy all of my produce at stores: 20 (34%)

b. I eat my own garden vegetables that I have preserved and stored in my freezer, cold storage or root cellar and I buy some produce from stores: 38 (64%)

c. I eat only what I have preserved and stored in my freezer, cold storage or root cellar and avoid buying produce in stores in the off-season: 1 (2%)

9. Would you buy more locally-grown food if a greenhouse could provide fresh produce earlier in the spring and later into the fall?

Yes: 53 (90%)

No: 3 (5%)

Don't Know: 3 (5%)

If Yes, please check the top (5) favourites you would be interested in purchasing from a community greenhouse: *responses listed in terms of decreasing preference

mixed salad greens: **41 (70%)**
tomatoes: **35 (59%)**
peppers: **34 (58%)**
cucumbers: **33 (56%)**
spinach: **28 (48%)**
strawberries: **21 (36%)**
lettuce: **20 (34%)**
melons: **18 (31%)**
basil: **16 (27%)**
Swiss chard: **15 (25%)**
kale: **13 (22%)**
parsley: **13 (22%)**

other (please specify): asparagus, broccoli, carrots, corn, eggplants, herbs, parsnips, peas, rapini

10. Is there any produce you like but cannot find grown locally out of season?

Yes: **37 (63%)**
No: **22 (37%)**

Favourites listed by ≥ 2 respondents: lettuce, salad greens, tomatoes, peppers, broccoli, avocados, artichokes, strawberries.

Listed by 1 respondent: beans, beets, berries, bok choy, brussel sprouts, cabbage, carrots, cauliflower, celery, cilantro, cucumber, dill, eggplant, melon, mushrooms, parsley, parsnips, Swiss chard, sui choy, zucchini.

11. Would you like to see more area restaurants serving locally-grown food?

Yes: **51 (86%)**
No: **1 (2%)**
Don't Know: **7 (12%)**

12. Would you be interested in using a group winter food storage (root cellar) facility?

Yes: **27 (46%)**
No: **20 (34%)**
Don't Know: **12 (20%)**

13. Would you be interested in renting a 4 x 8 ft. table + growing bed and receiving potting soil and pots to start your own bedding plants in a community greenhouse?

Yes: **24 (41%)**

No: **29 (49%)**

Don't Know: **6 (10%)**

14. Would you be interested in taking greenhouse courses if they were available at a local greenhouse?

Yes: **36 (61%)**

No: **17 (29%)**

Don't Know: **6 (10%)**

15. Would you be interested in becoming a member of a consumer co-operative centred around the community greenhouse? If Yes, would you be interested in a 'working member share' that would give you access to produce at a discounted price?

Yes membership/Yes "working membership": **37 (63%)**

Yes membership/No "working membership": **3 (5%)**

Maybe membership/Yes "working membership": **3 (5%)**

No membership/no "working membership": **13 (22%)**

Don't Know: **3 (5%)**

16. What does a "community greenhouse" mean to you? *See Appendix B

Responses: **49 (83%)**

17. Comments & Suggestions: Responses: 27 (46%) *See Appendix B

What does a “community greenhouse” mean to you?

1. Ideally, a well-run **business serving the community** with fresh produce that could possibly involve participation as in a co-op, but not necessarily.
2. I think it could really **educate** many locals on the importance of eating and growing local food as well as showing many how easy it can really be.
3. **Delicious veggies year-round.**
4. One in which community members have **access to use and grow food**. One that serves the community and is **publicly or collectively owned**.
5. Not important.
6. Would encourage me to have a greater interest in **eating veggies**.
7. **Accessibility to public of fresh food during the winter.**
8. **More variety and better quality** of produce. Supporting a **local economy**.
9. Our community **working together** to provide high-quality food to families and making it **affordable** to do so.
10. Greater **food security** and opportunity to **build better community relations**.
11. Greenhouse that is **accessible** and used by community members—no idea how the finances work.
12. Like-minded people **growing locally produced food together**.
13. **Good, healthy-for-me, healthy-for-the-planet food! Local economic stability.**
14. Provides **social cohesion** focused around **self-reliance** and increasing **independence** from international, urban-oriented corporations.
15. I feel these types of projects become a source of unkept weeds.
16. Being able to **shop local. Food sustainability**. Less gas used to buy local.
17. A **locally run business/co-op** where I can buy food.
18. A **business/co-operative** that provides a location and **opportunity** for people to grow their own produce, and that sells produce to the larger community. Memberships could be a good way to get commitment from customers and from greenhouse farmers.
19. A community greenhouse would be able to provide **fresh salad stuff in the winter** and maybe other veggies and strawberries. It would be great to either be able to buy or grow veggies in the spring. It would provide **local employment, reduce our carbon footprint** and provide fresh veggies **affordably** for our families.
20. **Sustainability** and easier on the environment re: transporting, travelling to stores.
21. **FRESH VEG! SUPPORT LOCAL ECONOMY! HEALTHIER LIVING!**
22. **Shared space** for individuals and growers co-op for commercial production.
23. **FOOD!**

24. An **opportunity** for people to become more **self-sufficient with food production**.
25. **Locally grown, fresh produce year-round**.
26. A greenhouse that grows and produces specific foods the community needs, i.e., here in New Denver it's **winter greens**. A co-op component is also implied—some kind of **community support and direction** for the greenhouse and its produce.
27. **Each person has area** that's theirs to grow in.
28. Group **think-tank** to realize visions coming to fruition. Also a renewed connection to terra firma.
29. Having **access** to the benefits of a greenhouse (starting seedlings and buying produce) without having to build our own. Other advantages would be **sharing gardening information** with others, having another **social gathering place**, creating something together.
30. I envision a community greenhouse as big with enough space to **grow lots of food** for people and **provide organisation for gardening activities** that encourage **co-operation and community spirit around food**.
31. A **co-operative greenhouse** of sorts.
32. Local initiative is taking steps towards **smart nourishing eating, creating local jobs, being more self-sustaining**.
33. **Food security, quality food, quality of life, local economy**.
34. As a seasonal commercial business we have been **committed to buying local produce**. It is good and can only get better.
35. Raises and sells food to the **local community, restaurants and stores**, maybe implies a consumer co-operative, but not necessarily.
36. A greenhouse **where people could have their own plot**.
37. **Allowing people to grow veggies** who don't have gardens and **learning, sharing ideas, garden tips, etc.** Also greenhouse extends the growing season.
38. 1) **More choices** and 2) **less dependence on imported food**. The closer to home our food is grown the better off we will be.
39. A space where **people in the community can grow fresh produce**.
40. Increased **food security, more community involvement**.
41. A place to **learn and grow food**, as well as producing and promoting healthy and local food.
42. A hippie garden, not efficient, more politics, less work.
43. I would like to see more **young people involved in learning** how to grow and growing food for their families.
44. A CSA **social gardening/work/participation**.
45. It means an energy sink. Good for **community building**. Maybe good for seniors. I feel it is a waste of community energy, fossil energy, and at a great financial expense vs. the benefit.

46. **Collectively growing** and sharing food grown locally.
47. **Co-operatively run** a greenhouse but with one main manager; supply produce to locals in off-season.
48. **Longer season for healthy food, great community initiative.**
49. **Fresh** fruits and veggies.

Comments & Suggestions

1. **It's a great idea.** A very cool 'self-contained' tilapia fish tank in the greenhouse has shown great success. The fish eat plant refuse and the fish poop fertilizes the plants. Sounds like a great way to produce vegetables and good fish.
2. Let's make this happen!
3. Encourage people to grow their own and teach them how. Strive for community **food independence**. Keep prices low! Some local produce is too expensive. Start a food bank like they have in Kaslo.
4. **This is a great idea if it sold the product to the local stores.** Everyone has the **opportunity and space to grow their own produce** if they wanted to. We don't need something that will harm our local stores even more! Don't put another nail in our economic coffin, so when we are cut off from the rest of the world we won't even be able to buy the loaf of bread or jug of milk in the dead of winter!
5. Because of MS, I'm unable to contribute much but would be **pleased to benefit from it!**
6. Good Luck!
7. Thanks for putting the work into this. I **hope it works out.**
8. **Start small and grow from there.**
9. Provide **lots of information to the community**, both practical and inspirational, as project develops.
10. I don't think you should compete with local stores or even try to supply them at a reasonable cost. If this is a go ahead it should not be at ANY expense to the tax payers.
11. **Thank you** for your community-minded spirit and hard work on this very worthy project.
12. **Splendid! Great, needed, get going! Desire, will, interest and action!**
13. **PLEASE DO IT. WE NEED IT!**
14. Put it in **Silverton's Dewis Park!**
15. **Thanks** for thinking of this!
16. **Great idea.** Mick, how about a 30 x 150' on the back side of your field? ... to start with!
17. Perhaps a part-time manager for the greenhouse. I'm very concerned about sharing soil which may have club root, molds, etc. and sharing bugs, i.e., an

uncontrolled aphid infestation. If one members' seedlings are not being well cared for, they won't thrive and will be vulnerable to infestations which then generalizes to the rest of the greenhouse. We'd all have to be conscientious and responsible, hmmm...

18. Make sure you find a large enough site to accommodate expansion. The **greenhouses could become central to other community initiatives around food and energy production.**
19. What about **creating a winery** by using all the fruit in the area?
20. **It's a great and important project. Thank you for your efforts. I want IN!**
21. **Thanks! We are very supportive of organic local produce.**
22. **Best idea ever!**
23. A shared facility "averages" or reduces quality, takes away initiative and enterprise motivation.
24. Keep the organisation a source of fun & enjoyment—**sharing and interrelating.** Power to you Marcy and Mick. **I really appreciate you doing this. I would help and support.**
25. Food security might be better focused on teaching people to grow high calorie food and wheat at home and create facilities for storage and preserving. Whatever people were doing before 1910 (oil) should be our guides for where to start getting beyond oil. Icehouses, granaries, drying houses, smoke houses, canning.
26. Greenhouse would need to be managed by a paid manager, especially to make sure disease doesn't spread.
27. **I hope we do it!** Not for myself so much because I grow a lot of food but for the entire community!

Interviews: Retailers & Restaurateurs (May-September, 2010)

We interviewed a sample of local businesses in New Denver and Silverton to gauge how important 1) buying local, 2) seasonal availability, 3) quality, 4) reliable delivery, and 5) price was to their buying decisions when it came to local produce versus non-local produce. Given our limited resources, we decided not to interview every retailer, restaurant and caterer in the New Denver-Silverton area. Instead, our intent was to glean as much information from a select group of businesses from which we could determine whether there would be a market for our greenhouse produce.

The owners of retail stores and restaurants selected for interviews were ones with a history of making an effort to source and market local produce as part of their business decisions. Retail stores interviewed were Ann's Natural Foods and Mountainberry. We also interviewed the owners of the new Valhalla's Garden Market scheduled to open next year in order to explore how the community greenhouse might supply some of their produce needs. Restaurants interviewed included the Apple Tree, Cup & Saucer, Wild Rose, and Panini's (no longer in business as of October). We also spoke to Soup du Jar, a soup-making company that supplies many of the area stores as well as New Denver and Nakusp schools.

We discovered a lot of support for locally-grown produce. We also found that several of those interviewed thought demand for locally-grown produce is exceeding the supply. Many retailers and restaurateurs would like to have more access to local produce because they want to support local. Almost everyone agreed the quality of locally-grown produce is better. The reasons most often cited for why retailers and restaurants don't or can't buy local produce came down to consistency of availability, reliable delivery and low price (Table 1).

Table 1. Five aspects of marketing ranked for importance from 1 (very low) to 5 (very high) by three local retail stores, four restaurants, and one soup company located in New Denver and Silverton, BC.

	desire local produce	seasonal availability	reliable delivery	quality	price
Retailers (3)	4.7	5	5	4.7	4
Restaurants (5)	4.4	4.6	4.6	3.8	4.4

Local produce: all interviewees said they wish they could buy, sell, or use more local produce.

Seasonal availability: Early-season as well as in-season produce are a big draw and selling point for retailers and have the potential to be more of a feature of restaurants.

Reliable delivery: Most retailers and restaurants rely upon 1/wk. or 2/wk. delivery schedule.

Quality: The need for quality produce for retail stores is high; whereas restaurants are comfortable with purchasing seconds and may actually prefer seconds because they come with a discount.

Price: Retailers seem to have an easy time selling local produce. For restaurants, price is a factor determining whether they can afford to use local produce. It is not easy to pass higher costs of expensive produce onto the customer so they typically choose the commercially-available produce when cheaper.

These comments by retailers and restaurateurs support the findings summarized in Table 1.

Key quotes: Retailers

“I’m happy to take what’s locally grown. If you grow it I can sell it.”

“Typically when the first local food comes in, it’s gone.”

“When people are happy with the produce they will stick around and shop.”

“Consistency is very helpful with set harvest and delivery days.”

“Local isn’t as predictable because there is not a continuous source. It’s disappointing because we’d like to buy more.”

“Prices vary with the big suppliers. There’s one area where local might be more reliable.”

“Put us on the top of the community greenhouse list. Local and organic produce may seem like a nice thing to have now but in 10 years it will be of necessity.”

Key quotes: Restaurants

“I prefer to buy through local stores for my restaurant. We need people to buy locally to keep stores open. I like the combination of buying local produce at local stores.”

“Most local businesses support other businesses to encourage growth around here.

Once your greenhouse is up and running tried and true I think more people would support it because we support local around here. I might even switch to buying from you if I can get the quantities I need and close to the prices I’m currently paying.”

“Local is almost non-existent at our restaurant. If we’re asked, it’s in the summer by a tourist. Our food isn’t gourmet or specialty so I don’t think featuring ‘local produce’ would benefit us very much.”

“My restaurant would benefit from specials featuring super fresh, in-season, local produce.”

“If more produce was grown locally I’d give up relying on Gordon Foods Service.”

“Price is important. It’s hard for restaurants to pass extra costs onto the customer.”

“It’s one thing to pass the additional cost onto the customer in the summer...and quite another in the winter.”

“I have to order produce weekly because storage is an issue. It would really pay for us to have something regular.”

“I am very open to having more local food in my restaurant and I think customers would be open to it, too. It’s a good cause.”

“Maybe you [the community greenhouse] shouldn’t feel pressures to have to do commercial business right away where you have to have certain quantities ready and delivered on a certain day. Start with customers in the Villages. Maybe your service could be specialized focusing on salad mix or tomatoes for us.”

“This spring there was a tomato crisis in California. When a 25-pound box of tomatoes from my supplier went from \$22 to \$65, being able to buy local became even more important.”

“Something went on with the onion crop earlier this year. The price of onions went through the roof, up to \$75 for a small box this year.”

“During 9/11 all food delivery from the States was suspended for 3 weeks. We went without serving salads and made do. It was a real setback. It’s amazing how quickly the unforeseeable can impact us locally.”

“Addressing food security is a must.”

Greenhouse Use: Planting & Harvesting Schedule

PS: Potting Shed

GH 1: Greenhouse #1 for Propagation, Some Production & Co-op Member Use

GH 2: Greenhouse #2 for Production

Harvest: May-November

Co-op member use of rental space: March-October

JANUARY *both greenhouses are shut down

PS: open and begin preparations; mid-month begin seeding trays

GH1: shut down; harvesting mulched carrots

GH2: shut down

FEBRUARY

PS: full use for veg starts

GH1: shut down until mid-month when section off part of greenhouse, begin heating, and move transplants out to tables. Harvesting last of mulched carrots.

GH2: shut down

MARCH

PS: full use for veg starts

GH1: trays of potted bedding plants on tables; remove sectioning and open up greenhouse for member use

GH2: mid-month move trays of tomatoes, cucumbers, peppers from GH1 to GH2 and transplant; seed salad mix

APRIL *full use of both greenhouses

PS: new bedding plants for market and members

GH1: bedding plants for market and members on tables

GH2: everything is growing

MAY *begin to harvest

PS: moving last of seedlings out to GH1

GH1: bedding plants and co-op member use

GH2: start to harvest cherry tomatoes and salad mix

JUNE *empty potting shed *finish with bedding plants

GH1: bedding plants mostly gone; remove tables for growing space; plant salad mix, head lettuce, Swiss chard, kale; co-op member use

GH2: harvest cherry tomatoes, salad mix, tomatoes, cucumbers, peppers

JULY

GH1: harvest salad mix, lettuce, Swiss chard, kale; co-op member use

GH2: harvest last of salad mix, cherry tomatoes, tomatoes, cucumbers, peppers

AUGUST

GH1: harvest salad mix, lettuce, Swiss chard, kale; late in month plant spinach, carrots; replant salad mix

GH2: harvest cherry tomatoes, tomatoes, cucumbers, peppers

SEPTEMBER

GH1: harvest salad mix, lettuce, Swiss chard, kale

GH2: harvest cherry tomatoes, tomatoes, cucumbers, peppers; plant spinach, Swiss chard, kale

OCTOBER

GH1: harvest spinach, Swiss chard, kale; mulch carrots; plant more spinach

GH2: remove spent plants; continue harvesting tomatoes, cucumbers, peppers; plant spinach, salad mix, lettuce, Swiss chard, kale

NOVEMBER *closing down GH2

GH1: harvest carrots, spinach, Swiss chard, kale

GH2: remove spent plants; harvest spinach, Swiss chard, kale, lettuce, salad mix

DECEMBER *both greenhouses shut down

GH1: early harvest to clear out greens; leave mulched carrots

GH2: early harvest to clear out greens

Itemized look at Year 2011 Infrastructure Budget

Category	Qty	Item	Cost
GREENHOUSES	2	greenhouse - 30' X 48' freestanding	\$ 20,820.00
		labour	\$ 1,500.00
HEATING	1	poly heat tube 18" pre-punched 100'	\$ 100.00
	1	wood gasification boiler	\$ 7,500.00
	2	fan coil	\$ 2,000.00
		installation of all heating components	\$ 7,000.00
		in ground poly pipe	\$ 1,500.00
SOLAR ELECTRIC	4	24" direct DC circulating fan (\$570 ea)	\$ 2,280.00
	4	thermostat (1/fan) (\$35 ea)	\$ 140.00
	4	25 watt solar panels (\$200 ea)	\$ 800.00
ELECTRIC	1	200 amp service with a 100 amp underground feed to sub-panel for second greenhouse	\$ 2,800.00
		electrician for installation of service and lighting	\$ 2,800.00
	1	electrical permit	\$ 400.00
ENGINEERING PLAN			\$ 1,500.00
FOUNDATION	2	rubble trench with grade beam x 2 GHs	\$ 5,000.00
POTTING & EQUIP SHED	450 sq ft	materials for 30' X 15' construction	\$ 2100.00
	6	lumber for growing 8' X 4' bed shelves	\$ 400.00
		labour	\$ 1500.00
MARKET STAND	100 sq ft	lumber for 10' X 10' market stand	\$ 500.00
		labour	\$ 300.00
TABLES	14	4' X 8' veg start wooden tables w/ lath tops	\$ 640.00
		labour	\$ 300.00
IRRIGATION & WATERING	1	water circulating pump	\$ 400.00
	1	drip tape: 4,100 ft 15 mill 8" spacing - high flow	\$ 172.00
		.67gal/min per 100 ft-->23 rows of drip x 50 ft = 8 gal/min	
	100	barbed fittings: 25 = 1/length of T-tape x 2 GHs x 2 ends	\$ 50.00
	1	500' roll of 1/2" poly tubing (header line, main tubing)	\$ 44.00
	4	disc filters (1/faucet): 4 diff lines can run at same time	\$ 100.00
	2	water timers	\$ 100.00
	4	spigots	\$ 160.00
		poly pipe under ground	\$ 100.00
		poly pipe installation: excavator time	\$ 180.00
		installation & hook-ups: plumber time	\$ 200.00
	8	hoses (4/greenhouse)	\$ 400.00
	8	water wands (4/greenhouse)	\$ 160.00

APPENDIX E, CONT.

Category	Qty	Item	Cost
FENCING (ft)	300	high fencing around berry patch	\$ 1,300.00
PROPAGATION	12	propagation mats	\$ 410.00
	3	heat tape (80 ft)	\$ 210.00
	6	cases of pots (1-in, 2-in, 4-in)	\$ 800.00
	1000	starter trays	\$ 500.00
LIGHTING	12	300 watt LED fixtures and bulbs	\$ 6,000.00
	24	fluorescent fixtures and bulbs	\$ 500.00
SEEDS & PLANTINGS		seeds for crops (see operating costs)	
		raspberry canes	\$ 100.00
		strawberry plants	\$ 100.00
SOIL		cubic yards of sterile soil	\$ 1,000.00
GARDENING TOOLS		wheelbarrow, rakes, hoes, shovels etc	\$ 1,000.00

Sample Monthly Breakdown of Income and Expenses

The following 2-page table reflects a typical monthly summary of what is being grown in each bed and what our projected income and expenses are for each bed. The information helps us to analyse our space utilization in terms of costs such as power, fertilizer and labour and compare it to income projections. Note that income is broken down into four categories—our standard retail and wholesale member pricing and volume pricing for both categories. Income projections reflect a combination of all four categories when appropriate.

Appendix F. Sample Monthly Breakdown of Income and Expenses by Bed and Plant Type

Bed Designation	Plant Type	# Plants Per sq ft mature	Yield lb Per Plant	Growth Stage	pro- ducing?	Plant Seed Cost	Price Per	Bed Sq Ft	Labour Hrs	% of Utilities Units	\$ of TTL Maint \$	\$ of TTL Labour \$	\$ of Fertilizer \$	\$ of Utilities \$	Cost per Sq Ft	Cost per pound	Retail member \$	
GH 01 Bed A-1	Salad Mix	1.00	0.75	7	1	\$ -	\$ 10.00	32.00	6.00	3%	\$ 1.25	\$ 107.98	\$ 1.25	\$ 12.97	\$ 3.86	\$ 5.14	\$ 9.50	
GH 01 Bed A-2	Salad Mix	1.00	0.75	7	1	\$ -	\$ 10.00	32.00	6.00	3%	\$ 1.25	\$ 107.98	\$ 1.25	\$ 12.97	\$ 3.86	\$ 5.14	\$ 9.50	
GH 01 Bed A-3	Salad Mix	1.00	0.75	7	1	\$ -	\$ 10.00	32.00	6.00	3%	\$ 1.25	\$ 107.98	\$ 1.25	\$ 12.97	\$ 3.86	\$ 5.14	\$ 9.50	
GH 01 Bed A-4	Head Lettuce	1.00	1.00	7	1	\$ -	\$ 3.00	32.00	15.45	3%	\$ 1.25	\$ 278.06	\$ 1.25	\$ 12.97	\$ 9.17	\$ 9.17	\$ 2.85	
GH 01 Bed B-1	Swiss Chard	1.00	0.75	7	1	\$ -	\$ 4.00	32.00	15.45	3%	\$ 1.25	\$ 278.06	\$ 1.25	\$ 12.97	\$ 9.17	\$ 12.23	\$ 3.80	
GH 01 Bed B-2	Kale	1.00	0.75	7	1	\$ -	\$ 4.00	32.00	15.45	3%	\$ 1.25	\$ 278.06	\$ 1.25	\$ 12.97	\$ 9.17	\$ 12.23	\$ 3.80	
GH 01 Bed B-3		0	0.00		0	\$ -	\$ -	32.00	0.00	0%	\$ 1.25	\$ -	\$ -	\$ -	\$ 0.04	\$ -	\$ -	
GH 01 Bed B-4		0	0.00		0	\$ -	\$ -	32.00	0.00	0%	\$ 1.25	\$ -	\$ -	\$ -	\$ 0.04	\$ -	\$ -	
GH 01 Bed C-1		0	0.00		0	\$ -	\$ -	32.00	0.00	0%	\$ 1.25	\$ -	\$ -	\$ -	\$ 0.04	\$ -	\$ -	
GH 01 Bed C-2		0	0.00		0	\$ -	\$ -	32.00	0.00	0%	\$ 1.25	\$ -	\$ -	\$ -	\$ 0.04	\$ -	\$ -	
GH 01 Bed C-3	Rental	0.19	0.00		0	\$ -	\$ -	32.00	0.00	3%	\$ 1.25	\$ -	\$ -	\$ 12.97	\$ 0.44	\$ -	\$ -	
GH 01 Bed C-4	Rental	0.19	0.00		0	\$ -	\$ -	32.00	0.00	3%	\$ 1.25	\$ -	\$ -	\$ 12.97	\$ 0.44	\$ -	\$ -	
GH 01 Bed D-1	Rental	0.19	0.00		0	\$ -	\$ -	32.00	0.00	3%	\$ 1.25	\$ -	\$ -	\$ 12.97	\$ 0.44	\$ -	\$ -	
GH 01 Bed D-2	Rental	0.19	0.00		0	\$ -	\$ -	32.00	0.00	3%	\$ 1.25	\$ -	\$ -	\$ 12.97	\$ 0.44	\$ -	\$ -	
GH 01 Bed D-3	Rental	0.19	0.00		0	\$ -	\$ -	32.00	0.00	3%	\$ 1.25	\$ -	\$ -	\$ 12.97	\$ 0.44	\$ -	\$ -	
GH 01 Bed D-4	Rental	0.19	0.00		0	\$ -	\$ -	32.00	0.00	3%	\$ 1.25	\$ -	\$ -	\$ 12.97	\$ 0.44	\$ -	\$ -	
TTLs for Greenhouse 1																		
											\$ 20.03	\$ 1,158.12	\$ -	\$ 155.59	\$ -	\$ -	\$ 38.95	
GH 02 Bed A-1	Tomatoes	0.19	6.00	7	1	\$ -	\$ 3.50	50.00	2.51	4%	\$ 1.96	\$ 45.19	\$ 1.96	\$ 20.26	\$ 1.39	\$ 1.23	\$ 3.33	
GH 02 Bed A-2	Tomatoes	0.19	6.00	7	1	\$ -	\$ 3.50	50.00	2.51	4%	\$ 1.96	\$ 45.19	\$ 1.96	\$ 20.26	\$ 1.39	\$ 1.23	\$ 3.33	
GH 02 Bed B-1	Tomatoes	0.19	6.00	7	1	\$ -	\$ 3.50	50.00	2.51	4%	\$ 1.96	\$ 45.19	\$ 1.96	\$ 20.26	\$ 1.39	\$ 1.23	\$ 3.33	
GH 02 Bed B-2	Tomatoes	0.19	6.00	7	1	\$ -	\$ 3.50	50.00	2.51	4%	\$ 1.96	\$ 45.19	\$ 1.96	\$ 20.26	\$ 1.39	\$ 1.23	\$ 3.33	
GH 02 Bed C-1	Tomatoes	0.19	6.00	7	1	\$ -	\$ 3.50	50.00	2.51	4%	\$ 1.96	\$ 45.19	\$ 1.96	\$ 20.26	\$ 1.39	\$ 1.23	\$ 3.33	
GH 02 Bed C-2	Tomatoes	0.19	6.00	7	1	\$ -	\$ 3.50	50.00	2.51	4%	\$ 1.96	\$ 45.19	\$ 1.96	\$ 20.26	\$ 1.39	\$ 1.23	\$ 3.33	
GH 02 Bed D-1	Tomatoes	0.19	6.00	7	1	\$ -	\$ 3.50	50.00	2.51	4%	\$ 1.96	\$ 45.19	\$ 1.96	\$ 20.26	\$ 1.39	\$ 1.23	\$ 3.33	
GH 02 Bed D-2	Peppers	0.19	2.00	7	1	\$ -	\$ 6.50	50.00	7.72	4%	\$ 1.96	\$ 139.03	\$ 1.96	\$ 20.26	\$ 3.26	\$ 8.70	\$ 6.18	
GH 02 Bed E-1	Peppers	0.19	2.00	7	1	\$ -	\$ 6.50	50.00	7.72	4%	\$ 1.96	\$ 139.03	\$ 1.96	\$ 20.26	\$ 3.26	\$ 8.70	\$ 6.18	
GH 02 Bed E-2		0	0.00		0	\$ -	\$ -	50.00	0.00	0%	\$ 1.96	\$ -	\$ -	\$ -	\$ 0.04	\$ -	\$ -	
GH 02 Bed F-1	Cucumbers	0.19	4.00	7	1	\$ -	\$ 2.00	50.00	4.07	4%	\$ 1.96	\$ 73.34	\$ 1.96	\$ 20.26	\$ 1.95	\$ 2.60	\$ 1.90	
GH 02 Bed F-2	Cucumbers	0.19	4.00	7	1	\$ -	\$ 2.00	50.00	4.07	4%	\$ 1.96	\$ 73.34	\$ 1.96	\$ 20.26	\$ 1.95	\$ 2.60	\$ 1.90	
GH 02 Bed G-1	Cucumbers	0.19	4.00	7	1	\$ -	\$ 2.00	50.00	4.07	4%	\$ 1.96	\$ 73.34	\$ 1.96	\$ 20.26	\$ 1.95	\$ 2.60	\$ 1.90	
GH 02 Bed G-2	Cucumbers	0.19	4.00	7	1	\$ -	\$ 2.00	50.00	4.07	4%	\$ 1.96	\$ 73.34	\$ 1.96	\$ 20.26	\$ 1.95	\$ 2.60	\$ 1.90	
GH 02 Bed H-1	Cherry Toms	0.19	2.00	8	1	\$ -	\$ 5.50	50.00	4.22	4%	\$ 1.96	\$ 75.89	\$ 1.96	\$ 20.26	\$ 2.00	\$ 5.34	\$ 5.23	
GH 02 Bed H-2	Cherry Toms	0.19	2.00	8	1	\$ -	\$ 5.50	50.00	4.22	4%	\$ 1.96	\$ 75.89	\$ 1.96	\$ 20.26	\$ 2.00	\$ 5.34	\$ 5.23	
GH 02 Bed I-1	Cherry Toms	0.19	2.00	8	1	\$ -	\$ 5.50	50.00	4.22	4%	\$ 1.96	\$ 75.89	\$ 1.96	\$ 20.26	\$ 2.00	\$ 5.34	\$ 5.23	
GH 02 Bed I-2	Cherry Toms	0.19	2.00	8	1	\$ -	\$ 5.50	50.00	4.22	4%	\$ 1.96	\$ 75.89	\$ 1.96	\$ 20.26	\$ 2.00	\$ 5.34	\$ 5.23	
TTLs for Greenhouse 2																		
											\$ 35.21	\$ 1,191.26	\$ -	\$ 344.41	\$ -	\$ -	\$ 64.13	
Strawberry																		
											\$ 19.56	\$ 265.31	\$ 19.56	\$ -	\$ -	\$ 0.61	\$ 0.25	\$ 4.75
Raspberry																		
											\$ 19.56	\$ 265.31	\$ 19.56	\$ -	\$ -	\$ 0.61	\$ 2.34	\$ 9.50
TTLs for Berry Patches																		
											\$ 39.12	\$ 530.62	\$ -	\$ -	\$ -	\$ 0.61	\$ 2.34	\$ 14.25

Sample Monthly Breakdown of Income and Expenses by Bed and Plant type

Retail Volume \$	Wholesale member \$	Wholesale Volume \$	Full Retail \$	AVG Price ALL	yield per bed/LB	Retail member income	Retail Volume income	Wholesale member income	Wholesale Volume income	Full Retail income	Total Gross Profit	Total Gross Expenses	Net Profit/(Loss)	Gross profit per lb	Gross cost per lb	Net profit/loss per lb
\$ 9.00	\$ 7.50	\$ 6.00	\$ 10.00	\$ 8.40	72.00	\$ 171.00	\$ 64.80	\$ 216.00	\$ 64.80	\$ 72.00	\$ 588.60	\$ 123.45	\$ 465.15	\$ 8.18	\$ 5.14	\$ 3.03
\$ 9.00	\$ 7.50	\$ 6.00	\$ 10.00	\$ 8.40	72.00	\$ 171.00	\$ 64.80	\$ 216.00	\$ 64.80	\$ 72.00	\$ 588.60	\$ 123.45	\$ 465.15	\$ 8.18	\$ 5.14	\$ 3.03
\$ 9.00	\$ 7.50	\$ 6.00	\$ 10.00	\$ 8.40	72.00	\$ 171.00	\$ 64.80	\$ 216.00	\$ 64.80	\$ 72.00	\$ 588.60	\$ 123.45	\$ 465.15	\$ 8.18	\$ 5.14	\$ 3.03
\$ 2.70	\$ 2.25	\$ 1.80	\$ 3.00	\$ 2.52	32.00	\$ 22.80	\$ 8.64	\$ 28.80	\$ 8.64	\$ 9.60	\$ 78.48	\$ 293.53	\$ 215.05	\$ 2.45	\$ 9.17	\$ 6.72
\$ 3.60	\$ 3.00	\$ 2.40	\$ 4.00	\$ 3.36	72.00	\$ 68.40	\$ 25.92	\$ 86.40	\$ 25.92	\$ 28.80	\$ 235.44	\$ 293.53	\$ 58.09	\$ 3.27	\$ 12.23	\$ 8.96
\$ -	\$ -	\$ -	\$ -	\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 36.90	\$ 30.75	\$ 24.60	\$ 41.00	\$ 34.44	392.00	\$ 672.60	\$ 254.88	\$ 849.60	\$ 254.88	\$ 283.20	\$ 2,315.16	\$ 1,341.25	\$ 973.91	\$ 33.52	\$ 49.06	\$ 15.55
\$ 3.15	\$ 2.63	\$ 2.10	\$ 3.50	\$ 2.94	56.25	\$ 46.76	\$ 17.72	\$ 59.06	\$ 17.72	\$ 19.69	\$ 160.95	\$ 69.36	\$ 91.59	\$ 2.86	\$ 1.39	\$ 1.47
\$ 3.15	\$ 2.63	\$ 2.10	\$ 3.50	\$ 2.94	56.25	\$ 46.76	\$ 17.72	\$ 59.06	\$ 17.72	\$ 19.69	\$ 160.95	\$ 69.36	\$ 91.59	\$ 2.86	\$ 1.39	\$ 1.47
\$ 3.15	\$ 2.63	\$ 2.10	\$ 3.50	\$ 2.94	56.25	\$ 46.76	\$ 17.72	\$ 59.06	\$ 17.72	\$ 19.69	\$ 160.95	\$ 69.36	\$ 91.59	\$ 2.86	\$ 1.39	\$ 1.47
\$ 3.15	\$ 2.63	\$ 2.10	\$ 3.50	\$ 2.94	56.25	\$ 46.76	\$ 17.72	\$ 59.06	\$ 17.72	\$ 19.69	\$ 160.95	\$ 69.36	\$ 91.59	\$ 2.86	\$ 1.39	\$ 1.47
\$ 3.15	\$ 2.63	\$ 2.10	\$ 3.50	\$ 2.94	56.25	\$ 46.76	\$ 17.72	\$ 59.06	\$ 17.72	\$ 19.69	\$ 160.95	\$ 69.36	\$ 91.59	\$ 2.86	\$ 1.39	\$ 1.47
\$ 3.15	\$ 2.63	\$ 2.10	\$ 3.50	\$ 2.94	56.25	\$ 46.76	\$ 17.72	\$ 59.06	\$ 17.72	\$ 19.69	\$ 160.95	\$ 69.36	\$ 91.59	\$ 2.86	\$ 1.39	\$ 1.47
\$ 3.15	\$ 2.63	\$ 2.10	\$ 3.50	\$ 2.94	56.25	\$ 46.76	\$ 17.72	\$ 59.06	\$ 17.72	\$ 19.69	\$ 160.95	\$ 69.36	\$ 91.59	\$ 2.86	\$ 1.39	\$ 1.47
\$ 5.85	\$ 4.88	\$ 3.90	\$ 6.50	\$ 5.46	18.75	\$ 28.95	\$ 10.97	\$ 36.56	\$ 10.97	\$ 12.19	\$ 99.63	\$ 163.20	\$ 63.57	\$ 5.31	\$ 3.26	\$ 2.05
\$ 5.85	\$ 4.88	\$ 3.90	\$ 6.50	\$ 5.46	18.75	\$ 28.95	\$ 10.97	\$ 36.56	\$ 10.97	\$ 12.19	\$ 99.63	\$ 163.20	\$ 63.57	\$ 5.31	\$ 3.26	\$ 2.05
\$ -	\$ -	\$ -	\$ -	\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 1.80	\$ 1.50	\$ 1.20	\$ 2.00	\$ 1.68	37.50	\$ 17.81	\$ 6.75	\$ 22.50	\$ 6.75	\$ 7.50	\$ 61.31	\$ 97.51	\$ 36.20	\$ 1.64	\$ 1.95	\$ 0.32
\$ 1.80	\$ 1.50	\$ 1.20	\$ 2.00	\$ 1.68	37.50	\$ 17.81	\$ 6.75	\$ 22.50	\$ 6.75	\$ 7.50	\$ 61.31	\$ 97.51	\$ 36.20	\$ 1.64	\$ 1.95	\$ 0.32
\$ 1.80	\$ 1.50	\$ 1.20	\$ 2.00	\$ 1.68	37.50	\$ 17.81	\$ 6.75	\$ 22.50	\$ 6.75	\$ 7.50	\$ 61.31	\$ 97.51	\$ 36.20	\$ 1.64	\$ 1.95	\$ 0.32
\$ 1.80	\$ 1.50	\$ 1.20	\$ 2.00	\$ 1.68	37.50	\$ 17.81	\$ 6.75	\$ 22.50	\$ 6.75	\$ 7.50	\$ 61.31	\$ 97.51	\$ 36.20	\$ 1.64	\$ 1.95	\$ 0.32
\$ 4.95	\$ 4.13	\$ 3.30	\$ 5.50	\$ 4.62	18.75	\$ 24.49	\$ 9.28	\$ 30.94	\$ 9.28	\$ 10.31	\$ 84.30	\$ 100.06	\$ 15.75	\$ 4.50	\$ 2.00	\$ 2.50
\$ 4.95	\$ 4.13	\$ 3.30	\$ 5.50	\$ 4.62	18.75	\$ 24.49	\$ 9.28	\$ 30.94	\$ 9.28	\$ 10.31	\$ 84.30	\$ 100.06	\$ 15.75	\$ 4.50	\$ 2.00	\$ 2.50
\$ 4.95	\$ 4.13	\$ 3.30	\$ 5.50	\$ 4.62	18.75	\$ 24.49	\$ 9.28	\$ 30.94	\$ 9.28	\$ 10.31	\$ 84.30	\$ 100.06	\$ 15.75	\$ 4.50	\$ 2.00	\$ 2.50
\$ 4.95	\$ 4.13	\$ 3.30	\$ 5.50	\$ 4.62	18.75	\$ 24.49	\$ 9.28	\$ 30.94	\$ 9.28	\$ 10.31	\$ 84.30	\$ 100.06	\$ 15.75	\$ 4.50	\$ 2.00	\$ 2.50
\$ 60.75	\$ 50.63	\$ 40.50	\$ 67.50	\$ 56.70	656.25	\$ 554.41	\$ 210.09	\$ 700.31	\$ 210.09	\$ 233.44	\$ 1,908.35	\$ 1,604.13	\$ 304.22	\$ 3.07	\$ 1.78	\$ 1.28
\$ 4.50	\$ 3.75	\$ 3.00	\$ 5.00	\$ 4.20	1200.00	\$ 1,425.00	#####	\$ 900.00	\$ -	#####	\$ 5,475.00	\$ 304.44	\$ 5,170.56	\$ 4.56	\$ 0.61	\$ 3.95
\$ -	\$ -	\$ -	\$ -	\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 9.00	\$ 7.50	\$ 6.00	\$ 10.00	\$ 8.40	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 304.44	\$ 304.44	\$ -	\$ 0.61	\$ 0.61
\$ 13.50	\$ 11.25	\$ 9.00	\$ 15.00	\$ 12.60	1200.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,475.00	\$ 608.97	\$ 4,866.13	\$ 4.56	\$ 1.22	\$ 3.34

Appendix G Revenue Projections

Bed Designation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Bed Sq Ft	Total Sales	Total Expenses	Net Profit/(Loss)	
	Plant Type	Plant Type	Plant Type	Plant Type	Plant Type	Plant Type	Plant Type	Plant Type	Plant Type	Plant Type	Plant Type	Plant Type					
GH 01 Bed A-1	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Spinach	\$1,569.60	\$1,490.95	\$78.65	
GH 01 Bed A-2	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Spinach	\$1,569.60	\$1,490.95	\$78.65	
GH 01 Bed A-3	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Spinach	\$2,040.48	\$1,490.95	\$549.53	
GH 01 Bed A-4	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Spinach	\$1,020.24	\$1,475.96	-\$455.72	
GH 01 Bed B-1	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Swiss Chard	\$1,412.64	\$1,380.72	\$31.92	
GH 01 Bed B-2	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Kale	\$1,412.64	\$1,380.72	\$31.92	
GH 01 Bed B-3	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Spinach	\$1,451.88	\$1,282.22	\$169.66	
GH 01 Bed B-4	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Spinach	\$1,451.88	\$1,282.22	\$169.66	
GH 01 Bed C-1	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	\$2,001.24	\$1,434.43	\$566.81	
GH 01 Bed C-2	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	Carrots	\$2,001.24	\$1,434.43	\$566.81	
GH 01 Bed C-3	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Rental	\$0.00	\$282.33	-\$282.33	
GH 01 Bed C-4	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Rental	\$0.00	\$282.33	-\$282.33	
GH 01 Bed D-1	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Rental	\$0.00	\$282.33	-\$282.33	
GH 01 Bed D-2	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Rental	\$0.00	\$282.33	-\$282.33	
GH 01 Bed D-3	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Rental	\$0.00	\$151.67	-\$151.67	
GH 01 Bed D-4	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Seedling Plants	Rental	\$0.00	\$151.67	-\$151.67	
TTLs for Greenhouse 1														\$15,931.44	\$15,576.22	\$355.22	
GH 02 Bed A-1	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	\$885.20	\$691.98	\$193.22	
GH 02 Bed A-2	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	\$885.20	\$691.98	\$193.22	
GH 02 Bed B-1	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	\$885.20	\$691.98	\$193.22	
GH 02 Bed B-2	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	\$885.20	\$691.98	\$193.22	
GH 02 Bed C-1	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	\$885.20	\$691.98	\$193.22	
GH 02 Bed C-2	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	\$885.20	\$691.98	\$193.22	
GH 02 Bed D-1	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	Tomatoes	\$1,337.38	\$951.16	\$386.22	
GH 02 Bed D-2	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Spinach	\$1,061.47	\$1,395.40	-\$333.93	
GH 02 Bed E-1	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Peppers	Spinach	\$1,061.47	\$1,395.40	-\$333.93	
GH 02 Bed E-2	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Salad Mix	\$864.51	\$1,117.72	-\$253.21	
GH 02 Bed F-1	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Salad Mix	\$864.51	\$1,117.72	-\$253.21	
GH 02 Bed F-2	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Head Lettuce	\$496.63	\$989.72	-\$493.09	
GH 02 Bed G-1	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Swiss Chard	\$1,015.00	\$518.37	-\$496.63	
GH 02 Bed G-2	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Cucumbers	Swiss Chard	\$1,015.00	\$518.37	-\$496.63	
GH 02 Bed H-1	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	\$1,778.06	\$1,717.25	\$60.81	
GH 02 Bed H-2	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	\$906.28	\$1,021.64	-\$115.37	
GH 02 Bed I-1	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	\$906.28	\$1,021.64	-\$115.37	
GH 02 Bed I-2	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	Cherry Toms	\$906.28	\$1,021.64	-\$115.37	
TTLs for Greenhouse 2														\$16,896.96	\$17,971.13	-\$1,074.17	
Strawberry	Strawberry	Strawberry	Strawberry	Strawberry	Strawberry	Strawberry	Strawberry	Strawberry	Strawberry	Strawberry	Strawberry	Strawberry	Strawberry	500	\$7,984.38	\$2,409.16	\$5,575.22
Raspberry	Raspberry	Raspberry	Raspberry	Raspberry	Raspberry	Raspberry	Raspberry	Raspberry	Raspberry	Raspberry	Raspberry	Raspberry	Raspberry	500	\$3,796.00	\$2,365.16	\$1,430.84
TTLs for Berry Patches														\$11,780.38	\$4,774.31	\$7,006.06	
ANNUAL TOTALS														\$44,608.77	\$38,372.36	\$6,236.41	