Community Forest Feasibility Study for the Village of Pemberton

Prepared For:

Village of Pemberton

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1 January 2016

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Introduction

This report examines the feasibility of establishing a community forest in the Village of Pemberton. The study focussed on six main areas of forest around the Village (see Proposed CFA Areas Map in Appendix 2). This report documents the findings of the feasibility study and has been divided into six sections. Section 1 provides a background and context to the feasibility study including an overview of the Village of Pemberton Community Forest Agreement (CFA) and the proposed areas. The second section provides an in-depth investigation of the key CFA areas, by looking at the forest species composition and health, forest road liability, timber viability and problem areas, potential recreation sites and trails, and potential logical areas for addition. Potential business models, partnerships, and community forest organizational structure were examined in section 3. This section introduces some of the views and suggestions made by the public during the Open House and the One on One interviews with community members. Section 4 provides an explanation of the planning requirements, which includes estimated start-up costs associated with putting together a management team for the Community Forest. Section 5, provides recommendations for future action based on the findings of the feasibility study along with the community forest vision, strategy, goals, and objectives. Section 6, the Final Note, wraps up the report with the main findings and final recommendations.

The team to carry out the Village of Pemberton Community Forest Feasibility study is led by Robin Clark, registered professional forester. The team to conduct the Village of Pemberton Community Forest Feasibility study consists of Robin Clark, Weldon Talbot, Drew Oberson, Deborah Esseltine, Peter Ackhurst, Greg Peterson and Bryan Shier. Community input was received through One on One Interviews and a public Open House. This feedback has been incorporated into the body of the report, to supplement each section.

1. Background and Community Information

In 1998, the Ministry of Forests (MOF) initiated a pilot project called the Community Forest Pilot Agreement (CFPA) in order to allow more communities and First Nations to participate in the management of their local forests. The CFA agreements were designed with a five-year period over which time the tenure would be evaluated and if successful a holder would possibly be offered a CFA with a term of 25-99 years.[1]

Given the changes taking place in the Forest Industry at the time, in 2001 the Village of Pemberton decided to take advantage of this new opportunity by sending an Expression of Interest to the Minister of Forests in 2004. A New Release from the Ministry of Forest in April 2005 the "The communities of Pemberton, Whistler and Squamish will be invited to apply for a five year probationary community forest licences that will provide each with up to 10,000 cubic metres of timber annually" (Appendix 1).

A meeting took place in July 2006 between Ministry of Forestry (MOF) officials and Village Council and staff regarding the creation of a Village of Pemberton Community Forest. The areas that the Village wished to have assessed for consideration of a community forest are as follows:

I. From the west side of Birkenhead Lake to height of land;
II. East side of Lillooet to height of land north to where the Ryan River enters the Pemberton Valley;
III. West side of Lillooet height of land back to Pemberton (including north and south Miller Creeks);
IV. Incorporate Pemberton Creek;
V. North and south sides of Rutherford to height of land;
VI. East side of Green river to height of land as far as Graval Creek.

In 2007, a timber supply analysis was conducted for a number of Woodlot Licenses and Community Forest Agreement areas. Due to the 2010 Olympics, both funds and progress on acquiring a CFA was limited. However, in 2014 a discussion took place between the Village, MFLNRO and BC Timber Sales to discuss opportunities for partnership. A map outlining the Proposed Area (Appendix 2) along with a proposed Allowable Annual Cut (AAC) of 6500 m^3 was provided following a presentation by MFLNRO in 2014.

As a result of the presentations and further information gathered by both staff and Council it was determined that it would be appropriate to undertake a feasibility study. This study would help establish a vision and strategy, undertake preliminary community consultation to determine interest, review the existing tenure areas and timber supply, investigate financial impacts, identify possible business models/partnerships and options for organizational structures. A Request for Proposal was issued in February 2015 to carry out the feasibility study, which was won by

[1] Village of Pemberton Report to Council Community Forest Update. 20 January 2015.

Vancouver-based Robin B. Clark Inc. Natural Resource consultants

Community Forests can mean many things to many people. After looking at the available examples in the province, each community must collectively decide what type of forestry arrangement they wish to pursue. Some communities will take a more traditional approach, deciding to use the forest as a food or fibre source with other values being important, but secondary. Other communities may decide that water quality, or recreation, are primary management objectives and design harvest layouts to reflect this. For long-term viability, a community forest must be economically, ecologically, and socially sustainable.

The community's vision for the forest will shape the financial realities of the organization. The community forest goals and objectives identified through strategic planning will have a direct influence over the expected financial return generated by short- and long-term management.

Goals may include:

- Protecting First Nations' cultural and spiritual endeavours;
- Assuring employment and training for local residents;
- Generating revenue for local infrastructure, and educational and social programs;
- Monitoring and researching harvest and treatment effects; and
- Providing fibre for local value-added manufacturing.

The following sections of this report will lay out the social, economic, and ecological values and metrics for a community forest in the Village of Pemberton.

2. Forest Information

2.1. Timber Viability Review of the Proposed CFA

The tenure area and timber supply review are keys to the long-term success of the community forest endeavor. While it is important to see if the first five to ten years of harvesting looks financially and otherwise favorable, a careful examination of the future timber supply is needed to determine the long-term community forest viability.

The timber viability review included a site visit to Miller Creek on August 25, 2015 by Weldon Talbot, Greg Peterson and Robin Clark. Information provided by BC Timber Sales regarding species mix, timber quality and volumes was reviewed for the areas that have already been laid out for harvesting by a BC Timber Sales contractor. In addition, costs related to road building, timber harvesting and reforesting the areas were assessed. The results of these assessments were summarized and reviewed by Drew Oberson regarding the operating cost and by Bryan Shier for the estimate of log values.

In conjunction with the field exercise to drive all the major road systems looking for potential liabilities, Robin stopped at various locations along each road to see how mapping of the forest types compared to what was onsite. The forest typing of species and ages appear to be reasonably accurate and the forests are healthy with little indication of forest health problems. In general, second growth forests in BC are growing better than anticipated. With warming temperatures and longer growing seasons, the forests in Pemberton, BC may grow faster than current predictions. The older/ mature forests observed are not over-mature and decadent with disease and associated rot. Piles of mature timber cold decked[2] along the recently felled transmission line corridor are relatively sound and show few signs of internal decay.

Not all areas within the Contributing Crown Forest were visited on the ground, but each area not visited was discussed in a meeting with Weldon Talbot and Drew Oberson. Their direct knowledge of the areas or indirect from contractors who logged similar areas or the adjacent areas indicate that the contributing mature timber and young second growth are viable.

The timber viability has several components that contribute to the overall economic viability of the community forest. Since the profile of the timber is similar for both the five and ten year perspective, a more accurate estimate of viability can be derived by using the detailed timber cruise[3] information available for two cut blocks in Miller Creek with a total volume of 29, 733 m3, a bit less than the five year target of 32,500 m^3. The Miller Creek main road bisects the cut blocks

[2] Cold decked timber means that the pile of stored logs will be moved at a later date

[3] Timber cruising is an examination to determine the potential value of a stand. It involves selecting a representative sample from a stand of forest and noting the predominant species, their height and diameter, and average quality. While cruising, a forester will also think about issues which may come up during timber harvesting, like threats to animal species which might be nesting in the trees, the ease of access to the site, and the potential for erosion as trees are removed from the site. Once all of these factors have been accounted for, an accurate estimate of the total value of the timber can be made.

and the additional road building required has been determined, marked in the field, and shown on the cut block maps. The fact that the main road bisects the cut blocks reduces the overall costs as this keeps the additional road building to a minimum.

Siliviculture is an important term used in forestry, which involves the planting and growing of trees. It begins with the planning required to get the most suitable trees that are an ecological match to the area planned for harvesting. Here in British Columbia, the biogeoclimatic ecosystem classifications of zones, subzones, site series and edaphic grids are used to describe the forested ecosystem. In turn, this is how a prescription is made to ensure that specific trees for planting match the site that is planned for harvesting. In addition to tree species, the elevation ranges, seedling age and quality are also specified in order to allow the trees enough time to grow for prompt post-harvest planting. The Forest Cover Map in Appendix 9 shows the forest harvest history around the Village of Pemberton, giving an idea of the forest age. In general, the trees that are planned for harvesting are the ones that are recommended for replanting. Furthermore, certain trees such as hemlock will regenerate naturally and thus do not need to be planted by hand. Depending on the tree species and local growing conditions, the trees will take 5 to 15 years to grow to a condition referred to as “free to grow” meaning that the trees are of sufficient height to establish with confidence a new forest (or you could say that they are free to establish themselves free from direct competing vegetation).

Harvest Costs

In the base case, contract harvest costs have been estimated from commercial operations. These harvest costs are based on a typical clear-cut operation. These costs reflect all harvest activities (stump to dump), including block supervision and engineering. For the purposes of this analysis it is assumed that an average contract costs $45.00/m^3. This includes costs for insurance, maintenance, fuel (yarding / loading / hauling), sorting and scaling. It does not include any road building costs. The following table shows a breakdown of the estimated contract cost.

Table 1: Average Contract Costs broken down by activity

Average Block- based on average of:	
75% Ground based lead[4]:	$14/m^3
25% Cable based lead[5]:	$22/m^3
Weighted average:	*$16/m^3*
Engineering	*$4.00 m^3*
Transport:	*$20-25/m^3*
Total:	**$40-45/m^3**

[4] Ground based lead is done with lower cost equipment on favorable gentle sloping ground.

[5] Cable based lead is with more expensive equipment suspended above the ground on steeper slopes.

Engineering

Engineering is the planning process done to determine how best to harvest timber in responsible yet economical way. The Management Plan and Forest Stewardship plan are key reference documents. While the initial planning for harvesting is an office activity to examine the areas that have timber old enough and of desired species, most engineering activity is done on the ground. The plans on paper may include an entire drainage, but the on the ground focus is typically for a five year harvest cycle. The engineer will walk the ground to determine the best locations for roads, the methods of harvesting and where best to locate the harvest boundaries. In addition to the survey of roads and boundaries, all streams are surveyed and appropriate buffers are added for protecting streams and species at risk assessments are completed. Following the layout a timber cruise is done to provide information on the volume by species and grade. The timber values, along with other cost estimates, are used to prepare a financial analysis. Other resource professionals such a geotechnical professionals are brought in to inspect the site to determine if the terrain is steep or potentially unstable. The plans are referred to First Nations and along with assessments of cultural heritage. Once all the feedback is received, a silviculture plan is prepared and a formal request to the Ministry of Lands, Forests and Natural Resource Operations is sent for road and cutting permits. Once harvesting is completed, surveys of forest waste and residue are completed along with possible road deactivations. Once all these activities are completed, the tree planting can commence. With numerous variables, the cost of engineering will vary from **$3.00 to $5.00 per cubic metre**.

Road Building and Maintenance

The cost of road building and maintenance are highly dependent upon cutting plans and existing road networks. For the purposes of this base case, an estimated annual cost for **road maintenance** is **$1/m^3**, which is derived from maintenance costs typically experienced from similar roads of this quality and location.

Road building would start at a minimum of $52,000-$60,000 per km in this area. The lowest average cost is $52,000/km for easy building; moving up to $120,000 for technical rock dominated roads. With short yarding, less than 100 m, a maximum of 6000-7000 m^3 per km on roads within harvestable areas can be anticipated. This will put the **road building cost between $5 and $7per m^3**. It can be assumed that all roads are built through areas that have timber suitable for harvesting. Since no roads to be built cross non-forest or young forests, for each km built, there will be 6000 to 7000 m3 developed. Furthermore it is assumed that the Village of Pemberton will choose to harvest all timber regardless of species, as this may be the most cost effective harvest method. In most situations, the harvest method will be clear-cutting and as such all trees are cut and removed. It has been concluded that the existing main road in Miller Creek, while having several steep pitches and switchbacks, was well engineered and constructed.

Stumpage

The Amendment No 4 to the Coast Appraisal Manual will apply to all timber harvested from the Community Forest Licence Agreement. Initial stumpage estimates have been established, using this amendment updated stumpage rate as of March 1st, 2015.

The stumpage rates are as follows:

Balsam	$.43
Spruce	$.45
Hemlock	$.72
Cedar	$2.06
Fir	$1.57
Cypress	$.64

Given that the forest species mainly consists of balsam and hemlock, the anticipated **stumpage is $0.68 per m^3** which equates to **$4,420 per year**

Lease Costs

Lease costs or **annual rent is $0.37/m^3** of allowable annual cut determined for the community forest agreement area, which equates **to $2405 per year.**

Basic Silviculture Cost

The silviculture costs include the planning done by a professional forester, the cost of trees and planting them. Surveys follow that may have recommendations for more planting or brushing to achieve the "free to grow" condition.

Using costs that are included with data from BC Timber Sales, the anticipated **silviculture costs are $5.50/m^3** inclusive of any capital requirements.

All the costs are related to the cubic metres harvested. Silviculture takes place after logs are sold, so if there is at least a breakeven, then the funds for silviculture are in the bank. The silviculture costs can vary depending on what the contractors bid to do the work.

Insurance Costs

It can be assumed that average insurance cost is approximately $2,600 per year (standard liability and firefighting coverage). For road building and timber harvesting, contractors usually carry liability coverage in which the client is covered under the contractor's coverage. If 6500 m^3 per year is harvested, the **insurance cost will equate to $0.40 per m^3.**

Environmental Management/Forest Certification

It is assumed that a one-time cost of $10,000 is related to setting up and $2000 per year for maintaining an EMS and eventually establishing forest certification with third party auditing. This would be examined more carefully in the second five-year period as the revenues are generated or an alternate source of funding is found to cover this cost.

Environmental Management and Forest Certification are voluntary systems that can demonstrate due diligence and corporate sustainability. It is a voluntary additional cost and as such it is suggested for consideration in the second five-year planning horizon.

Training, Education and Communication

The cost of training, education and communication activities related to the Community Forest Licence are assigned a ballpark value of $1/m^3/year. These costs are optional and will likely be reflective of the revenue generated. These costs are not intended to reflect the full range of training costs, which may include wages, coordination, and reduced productivity. When a

typical forestry task like tree planting is done by local trainees, the productivity is reduced due to the fact that they are not as skilled and experienced as a tree planting contractor. Additional project funding for studies, job shadowing and other activities may be obtained from other sources such as Human Resources Development Canada.

These activities should be considered as optional until a revenue stream is generated and these activities are evaluated along with other priorities that need funding.

On-going Management and Administration Costs

While the cost of on-going management and administration costs will vary depending on the business model and possible partnerships, operating the community forest will be another expense. The small annual harvest of only 6500 m^3 per year puts the cost per cubic metre of even part time staff in the range of **$7 to $9 per cubic metre for management and administration or $45,500 to $58,500 per year in wages**.

Other management expenditures to consider are fixed assets and working capital. Apart from computer equipment the fixed assets are minimal. Since the harvesting activity will be done with contractors, no working capital is required. In regards to financing the road building and logging, the contractor can often cover those costs until revenues from log sales are generated.

Contingency

A forecast of costs typically includes a contingency. If the forecasts are all correct or balance each other out, then the contingency is profit. Typically though a projected cost is underestimated or a new and unanticipated cost is added to the list. One example might be the cost of insurance, where a decision is made to have more comprehensive coverage than was originally intended.

The contingency cost is **$2.40 per cubic metre.**

The start-up costs are a one-time expense and are explained in Section 10.

Overview of the Miller Creek forests and Timber Values

The boundaries of accessible timber in Miller Creek that could be economically harvested in the first five year cut control period was laid out and timber cruised by a BCTS contractor. It is not known if BCTS would want to recover their development costs should they not be involved in the sale of the timber. With an AAC of 6,500 m^3 annually for the 5 year cut control period that would amount to 32,500 $m^{3.}$ Two potential harvesting areas for the first five years were located within the lower Miller Creek drainage. The timber cruise that was completed provides an estimate volume by type and in each type volume, by species and grade.

Observations that informed these estimates include:

1. The knots were not overly large on lower portions of the trees;
2. There is little or no conk or other defects present in the stand;

4. Saw-logs have relatively little internal decay as indicated from right-of way logs;
5. The ground is steep but not rocky or broken, so breakage should be minimal; and
6. The stand is densely stocked so the net volume is high at 585 m^3/ha.

The three-month average market values by grade published by the Ministry of Forests were used to assign values to each grade.

For the first five years, one or two cut blocks totalling 32,500m^3 should be prepared for harvest. Depending on market conditions, the Miller Creek blocks (MI100 and 103 developed by BCTS) could be a proxy on the expected value and revenues. It should be noted that this is revenue absent of costs and should not be confused with the net return. Layout of the roads and block boundaries well in advance of anticipated harvest will also help to ensure that the harvesting is economically viable.

Table 2: Miller Creek Valuation based on existing cutblocks MI100 and MI103

Miller Creek Valuation			
	Volume (m^3)	Value ($/$m^3$)	Revenue ($)
MI100	10346	$ 80.00	$ 827,680.00
MI103	19387	$ 75.00	$ 1,454,025.00
	29733	**$ 76.74**	**$ 2,281,705.00**

Overall Economics of the Community Forest

While the figures accumulated are preliminary and require refinements, they are sufficient to indicate a trend of caution. The table below is a summary of the anticipated costs and revenues per year for the first five years harvest. This table does not include Environmental Management and Forest Certification costs, as they are proposed for review in the second 5-year period.

Table 3: Anticipated cost and revenues for the first five years of harvest.

Description of Annual Anticipated cost	**Cost per m^3**	**Cost based on 6500m^3**
Timber harvesting and associated costs	$41.00	$ 266,500
Engineering Costs	$4.00	$ 26,000
Road Maintenance	$1.00	$ 6,500
Road Building	$6.00	$ 39,000

Stumpage	$0.68	$ 4,420
Lease Cost or Annual Rent	$0.37	$ 2,405
Silviculture	$5.50	$ 35,750
Insurance	$0.40	$ 2,600
Education and training $1.00 optional	--	--
Management and Administration	$ 8.00	$ 52,000
Contingency	$2.40	$ 15,600
TOTAL ALL COSTS	**$69.35**	**$ 450,775**
AVERAGE NET STAND VALUE	**$76.74**	**$ 498,810**
NET RETURN	**$7.39**	**$ 48,035**

Fixed costs over a five-year period

The situation regarding the feasibility of a Village of Pemberton community forest is unique in that the planning for the first five years of potential harvest in Miller Creek has been completed by consultants working for BC Timber Sales. While the current economic analysis indicates modest revenue, things can change in the year or more it will take to complete a community forest application process. In addition to the start-up costs, there would be annual fixed costs associated with having the tenure shown in the table below assuming that harvesting plans are delayed. The annual rent is not avoidable, but insurance costs could possibly be reduced. Contingency is not a true fixed cost but likely $0.50 per cubic metre makes sense for budgeting purposes as some administration and other costs would be required even if the there was no harvesting activity.

Table 4: Annual fixed costs over a five-year period

Description	Annual Cost	Five Year Total
Annual Rent	$ 2,405	$12,025
Insurance	$ 2,600	$13,000
Contingency @ $0.50	$ 3,250	$ 16,250
TOTAL	**$ 8,255**	**$ 41,275**

The main reason for delaying the harvest would be poor log markets. Fortunately, the annual harvest of 6500 m3 can be accumulated annually and cut anytime within the first five years.

2.2 Identify potential CFA recreation sites/trails

Inclusion of Potential CFA Recreation Sites

The inclusion of additional area for to the community forest was discussed with representatives of the Ministry of Forests, Lands and Natural Resources Operations. The offer from the Ministry is restricted or bound by a Forest Act Regulation related to Allowable Annual Cut. Since additional area for recreation would potentially add more Allowable Annual Cut, the only way to add more area for recreation is to remove existing forest management area that is within the current offer.

Legal Mandate

A Community Forest Agreement does not secure any legal authority regarding the management of old and/or the creation of new recreation trails within the proposed community forest area.

The Forest and Range Practices Act (FRPA) and its regulations govern the activities of forest and range licensees in BC. Sections 56 and 57 outline the legislation regarding trails.

Section 56 is an approval from the minister to establish the site/trail as tenure and enter into an agreement, set objectives, enforce rules with high recreation values. Recreation trails established under this section must receive consideration in resource planning and have some protection from resource extraction activities. Trails are usually designated under this section when entered into a partnership agreement with an organization to maintain the trail.

Section 57 is authorization from the minister to construct, rehabilitate or maintain a trail. Under this Act, “unless authorized in writing by the minister or another enactment, a person must not construct, rehabilitate, or maintain a trail or other recreation facility on Crown land.” This section is used to grant third parties permission to build trails, but does not grant any protection for the trails.

Partnership & Creation of Trails in the Community Forest

The BC government manages and maintains many recreation sites and trails on Crown land through partnership agreements with local recreation groups, forest companies, First Nations, regional districts, private contractors and other parties. The partnership agreements are with Recreation Sites and Trails BC (RSTBC), formerly part of the Ministry of Tourism, Culture and the Arts. Agreement holders are responsible for managing recreation sites and trails to the standards specified in their partnership agreement. The government typically also provides liability insurance to the agreement holder. Opportunities to manage recreation sites and trails under partnership agreements are often advertised in local newspapers through a Request for Proposal (RFP) process.

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Existing Trails Modifications due to Harvest

If and where trail modification may occur due to harvest operations, there should be reasonable efforts to communicate with individuals or groups associated with these features throughout the planning process prior to the commencement of timber harvesting and road construction activities. A map prepared by the Pemberton Valley Trails Association shows the extensive network of exiting trails in the area (Appendix 6).

Until such time that these trails are legally established, with objectives, the trails should be restored to a condition that allows for their continued intended use. This is currently a dynamic process and is dependent on evolving objectives and harvest patterns. This may include suitably relocating the trail(s) and the removal of debris (logs, slash and limbs) associated with timber harvesting operations. Once legally established, these trails should be managed according to the associated objectives.

Except during periods of active timber harvesting, these trails shall be open and accessible to public use. Access management of the trail will be required considering the significant risk to public safety during active operations.

Potential CFA recreation sites and trails from the One on One Meetings

Allowing for the potential to stretch the community forest boundaries for recreation value, the Robin Clark Inc. team asked interviewees to identify areas for inclusion in the Community Forest.

The idea of recreation centered around trail development for mountain biking, horseback riding and alpine hiking. Within this idea was a desire to preserve and enhance wildlife habitat and migration.

The need for a recreation usage plan was predominant with many of the interviewees outspoken in seeing unsanctioned and unsustainable trail development that has had negative environmental impacts. Conversely, they also looked at this as an opportunity to set trail

development standards that protect conservation values and promote sustainability while providing access to areas that meet local trail-user needs and enhances tourist attraction.

The main area suggested for inclusion were along the base of Mt Currie running from the Green River bridge, through Nairn Falls and around to Shadow Lake; encompassing areas of harvestable timber with potential recreation development. The addition of area is constrained due to the fact that deletions are required from other areas in order to add additional areas. In order to secure the areas further away, the areas closer to the community would have to be left out.

Open House

At the Village of Pemberton Open House, many people were interested in how the Community Forest would affect recreation in Pemberton. One individual had suggested that a gondola be built in the Community Forest for recreation purposes, similar to that of the one in Squamish. Others felt that that Community Forest could serve a valuable role in facilitating a dialogue around recreation trails.

On the topic of recreation, there was also interest in paraglide launch site opportunities in the Miller Creek area. Currently there isn't anything easily accessible for paragliders, but a site on the Miller Bench has been identified as desirable. Individuals opened up the discussion of access roads to the paraglide launch site above the Mackenzie Basin. They noted that they had been approached by BCTS about the potential deactivation of the upper launch road access after harvesting is completed on a cut block that will be tendered this fall. This brought about the concern of road permits, liability and maintenance responsibilities and how recreation user groups mitigate and fit into forestry access, operations and road deactivation.

2.3 Identify potential problem timber areas with the MFLNRO suggested CFA areas

Robin Clark, along with Pemberton residents Weldon Talbot and Drew Oberson and with input from resource professional team member Greg Peterson, potential problem timber areas were examined and discussed. The objective of the discussion was to potentially exclude large areas due to items such as Old Growth Management Areas, highly visually constrained areas, wildlife habitat areas, non-timbered areas, etc.

While the community forest area offered is 12,925 hectares, it is highly constrained. The summary below shows a breakdown of the forest contributing and non-contributing areas.

Contributing Crown Forest	1941 ha
Non-Contributing Crown Forest	6700 ha
Other (rock, ice, non-forested)	4284 ha
Total Community Forest Area	**12,925 ha**

While it would seem logical to remove areas that are constrained, none were considered to be a problem. Contributing forest is the area of forest where timber harvesting will take place.

Non-contributing forest are the forested areas that are constrained from harvesting (ie. habitat protection).

Pro's of retaining the proposed area

The ability to have some control over the long-term care and input on management of these areas is seen as beneficial. As the forests evolve over time, they may be subject to negative impacts from fire or insect diseases, so including these areas in the community forest is preferable. Even the non-timbered areas have recreation potential and were not viewed as a problem for inclusion.

The large geographic area around the community sends a clear message that the Village of Pemberton is concerned about its community and the surrounding area. While the community forest tenure has limits on what it can legally enforce within the boundaries, the fact that an activity is proposed in the community forest will have weight in the public forum. With the currently known list of species at risk found within the boundaries funding for research and collaboration with agencies and universities could potentially be revenue generating and draw revenue to support businesses as well.

The large area of non-contributing and other is of prime interest to environmental organizations that may oppose timber harvesting. The large portion of area designated for protection is a positive reflection on the community forest activity.

Should the community forest want to actively manage non-timber forest products (NTFPs); there is a large area in which to be involved. Many other community forests manage for NTFPs by issuing permits to individuals or small companies. In doing so, this helps to keep a record of who uses the forest and what is collected. Issuing permits is also a valuable method to prevent destructive or damaging harvesting.

Con's of retaining the proposed area

The con's of retaining the proposed area are less obvious as none were suggested during the One on One Meetings or Open House. Since the community forest licence is only mandated to manage timber and non-timber forest products the issue of not managing recreation, like mountain biking may be seen as a failure to act by the community.

At the Open House, maps showing the forest constraints were shared with community members. There were no comments suggesting that these areas are problematic and/or should be removed.

2.4 Identify potential liabilities with the MFLNRO suggested CFA areas

Weldon Talbot, Drew Oberson and Robin Clark were responsible for identifying potential liabilities with the MFLNRO suggested CFA areas, since they were familiar with all the major road systems. By viewing the maps of the forest roads with Robin, Weldon and Drew did not think that there would be a liability concern.

The major road systems in the proposed community forest area were explored and a photo essay for each road (Appendix 7). The roads assessed include the Owl Creek FSR, the Miller Bench FSR and the McKenzie Basin FSR. The focus was primarily road and bridge related liabilities but other minor issues were noted such as the general road condition, the need for water bars, and cleaning of culverts. Since no roads come with the CF, all take over of roads would involve a road inspection prior to any change in status. No potential liabilities were identified.

A key aspect related to potential liabilities is the road permitting process. All forest roads, except those crossing private land, are held under a road permit granted by MOFLNR. If a community forest licence is awarded, none of the existing road permits are transferred with the licence. The road permit holders include BCTS timber sales, woodlot holders, forest service roads and active forest licences under the Lil'wat Nation. The total road tenured is 76.3 kilometres. Road permits can be reviewed on a permit by permit basis and an assessment can be made on whether to take over the road and its associated liabilities after the licence is awarded, or closer to the time when an area is being planned for harvesting.

In addition to road permits, there is 9 km of roadway tenure related to the IPP in Miller Creek. The majority of road in Miller Creek drainage is held under a long-term road use agreement. Since Innergex Renewable Energy maintains the road in good condition for access to their power generation infrastructure, it would not be a road system that the community forest would want to be responsible for.

The organization or company that holds the road permit is responsible for the repairs and maintenance. In turn they would negotiate a road use agreement and develop a contract with a user that includes a road use charge.

2.5 Identify potential logical area additions within the Soo TSA

The discussion regarding potential logical area additions was prompted by the shortfall in the Allowable Annual Cut offer in April of 2005 to "*provide up to 10, 000 cubic metres of timber annually*" (Press Release in Appendix 1) and the current offer of 6,500 cubic metres of timber annually.

In meetings with representatives of the Ministry of Forests, Lands and Natural Resources Operations, the process and formula for calculating the offer of 6500 cubic metres was explained. A more detailed explanation can be found in the Forest Act from March 2009, titled *Allowable Annual Cut Administration Regulation*. In making the offer of area and volume for the community forest, the Ministry staff is bound by this legislation.

The 93,000 hectare Soo TSA from the 2011 Timber Supply Review has an Allowable Annual Cut (AAC) of 480,000 cubic metres. By dividing the AAC by the area, 5.16 cubic metres is the average volume per hectare per year. A 10,000 cubic metre harvest would then use 1941 hectares of contributing Crown forest.

The next step in the process of identifying potential area additions was to locate a suitable area of Crown land in and around the Village of Pemberton that is not already allocated in an

area-based tenure. The planning map in Appendix 3 shows the distribution of woodlot licence boundaries, conservation areas, recreation areas, and land base classification.

The contributing Crown forest of 1941 hectares was then analyzed using software to look at the species, age and site productivity of each forest type. With this information, the Allowable Annual Cut can be calculated. Unfortunately, the site productivity of the forests surrounding Pemberton is only growing at 3.45 cubic metres per hectare per year instead of the Soo TSA average of 5.16 and hence the resulting Allowable Annual Cut is only 6700 cubic metres.

Further constraint on obtaining more AAC, which some of the One on One interviewees felt was warranted or was offered, is that there isn't any unallocated Allowable Annual Cut to offer. This would mean that if more is offered, someone or everyone operating in the Soo TSA would be required to harvest less.

However there is the possibility that the Allowable Annual Cut of the 1941 hectares area offered could be increased over time. These increases could be a result of a new inventory showing higher productivity, harvesting of areas currently classified as being Non-Contributing Crown Forest or through utilization of innovative management that would enhance constrained areas. In addition, forest management activities such a spacing and fertilization can potentially increase annual growth, and once documented, can be used to increase the Allowable Annual Cut.

Further Clarity on Logical Area Additions

The area inside the proposed community forest has 1941 hectares of contributing forest. That is the maximum area by regulation that can be allocated. If a logical area for addition was located, then an area currently identified would need to be deleted to keep the contributing hectares at 1941. Since the 1941 hectares are those closest to the Village of Pemberton it was did not seem to make sense to delete these in favour of areas further away. As for the non-contributing lands there are already 6700 hectares plus 4284 hectares of other rock, ice and non-forest so adding more to this was not seen as logical.

Re-charting of the TSA and potential for additional area

A comment regarding the re-charting process indicated a potential for additional area to be added to the community forest. In general the process of re-charting involves meeting with licencees to see if their chart area is sufficient to meet their future harvesting needs. In addition to being bound by regulation on the proposed area of the community forest, an AAC calculation was recently completed to show that the contributing forest can support a 6500 m3 annual harvest.

In conclusion, the process of re-charting of the Soo TSA will not add additional area to the community forest.

3. Management Considerations

3.1 Potential Business Models/ Partnerships

Possible models for organization may be through equal partnerships with BC Timber Sales (BCTS) and/or Lil'wat First Nation. If an equal partnership were the chosen model, this would include the formation of a Community Forest Steering Committee that contains an equal number of members from each organization. The committee may be made up of a combination of interested community members, staff and elected officials. Additionally, an advisory council would need to be established, consisting of resource management experts and local operators to provide specialized advice to the community forest committee. This steering committee may be created to act as an advisory through the whole application process.

Potential objectives may involve, but are not limited to, the following:

- Practice ecosystem-based and sustainable forest management while encompassing the local socio-economical and First Nation's values in the Pemberton Valley;
- Incorporate the Mount Currie Cultural Heritage Resource Plan (CHRP);
- Protect drinking water (Pemberton Creek Watershed);
- Reduce wildfire threat through forest management in the Wildland Urban Interface;
- Manage effects on viewscapes through Visual Quality Objectives;
- Promote wildlife habitat and ecosystem restoration;
- Improve biodiversity and forest health;
- Protect and enhance wildlife and fish habitat;
- Increase recreation and tourism through management of a forested trail system (for snow mobiles, horses, mountain bikes, and hiking trails);
- Improve botanical forest product production (mushrooms, traditional berries);
- Utilize innovative harvesting techniques as required; and
- Pursue forest certification.

Potential Business Models/ Partnerships from One on One Meetings

The undertaking of a Community Forest requires a great deal of expertise in a variety of areas in order to strategically plan and manage short and long term operational objectives.

The Village of Pemberton has several business model/ partnership options that were explored during the interview discussions:

- Go it alone- the size and scope of the VOP CF is similar to a large woodlot wherein a consultant, manager or managing company could facilitate the planning and management. This was the least attractive to those interviewed as it was felt that there would still be a need for significant support from VOP administration and would

potentially not be as cost effective as an operating partner with expert staff support. While these are valid points raised, the Village could retain a professional forestry team to implement an effective management of the Community Forest.

Pro's of this option include 100% control of all aspects. Ability to hire either a contractor or staff to manage the community forest, decide on how contracts for operations are to be awarded, the Board of Directors for the legal entity are all hand-picked or could be elected.

Con's of this option include the lack of strong negotiating ability since the annual harvest volume is quite small in forestry terms. For example, an annual harvest of twice the size would cost a similar amount per cubic metre to operate but would generate double the income. Community members may demand more on how things should be done and how revenues should be allocated. Additionally, this may put stress on the limited resources the Village has and may increase staff workload due to the lack of expertise within staff to facilitate the operation and the cost of hiring a consultant or a staff member with forestry expertise.

- Lil'wat Nation- citing cultural appropriateness, territorial rights, mutual values and current strong economic and operational forestry division effectiveness within the Lil'wat Nation was a natural choice for many of the interviewees. Many community forests in BC have First Nation partnerships and the consultant team would agree with the interviewees and the reasons for their choice.

  There is also potential for increasing the annual allowable cut with a similar or greater contribution of timber to the partnership.

  Lil'wat Nation's objective is in maximizing control over their Territory. By partnering, it would allow Lil'wat a level of additional control over the combined AAC. Although there was some reservation in terms of establishing an equitable working relationship, this would be an opportunity to strengthen the connection between communities and establish a platform for business-to-business transactions.

  Pro's of this option include a much stronger position on negotiating the operating costs and the market price for logs. Since the Lil'wat Nation has contracts for much larger volumes a logging operator can settle for a lower cost when they have more volume to harvest. Similarity when a large volume of logs, or a steady flow of volume is offered, a longer-term and often more favourable rate can be offered. Lil'wat Nation already has a forestry department with trained staff to oversee forestry operations in a cost effective manner.

  Con's of this option include the loss of control in decision making. Since Lil'wat has all the expertise, in house, and can run the operations efficiently, the Village of Pemberton would give up control on day-to-day operations, but would still have equal input on overall management strategy. Demands for input from the two different community members may be conflicting or more difficult to accommodate.

- **BC Timber Sales**- This crown corporation has a mandate to manage 20% of a timber supply areas Annual Allowable Cut. In a 2014 review of its practices, a directive was issued to 'sell the full BC Timber Sales' apportionment' as it had not been able to meet this objective in the past.
  BCTS' inabilities to meet its objectives were set forth by industry professionals for BCTS not being an ideal partner.

  Additionally BCTS cannot partner in a legal entity (such as a corporation), their capacity is in the management, sale and profit sharing of the timber within the community forest tenure.

  These points were highlighted in a presentation by BCTS to the Village of Pemberton Mayor and Council on July 21, 2015. From the PowerPoint Presentation, the benefits of a partnership were noted as:

  In short, the BCTS has the capacity and resources to do all the forest management aspects of the community forest. BCTS has expertise in planning and operations and retains forest management consultants to layout the timber sales they sell. There is the potential of additional AAC allocated from BCTS to increase the timber harvest availability.

  This potential partnership would be worthwhile to compare with other options but it all comes down to the details of exactly how the liabilities, shared costs, development of plans and engineering of blocks would be done and how the cost sharing would be determined. Furthermore, how and in what ways would the input and approval on overall forest management be administered and agreed upon. Lastly, there is the issue of revenue sharing and the possibility of a loss. With constraints by BCTS to accept the lowest bid on sales it is unclear how a profit sharing agreement would be

structured. It all comes down to risk and whether the potential on the revenue side outweighs the potential of any losses.

Forthcoming legislation provides for BCTS to have a timber reservation designated within a community forest and although having them as active managers of the community forest as a whole is not ideal, there will need to be an understood relationship or cooperative agreement established that would allow the community forest some control of BCTS activity.

Pro's of this option include the expertise that BCTS can bring to the overall management of the community forest. They can assume the silviculture liability and share costs related to roads. They can also do all the planning and engineering along with ensuring all the permits applications are prepared and approved. They auction the timber and manage the operations and follow up silviculture.

Con's of this option include a little direct input to the process. The method of timber disposal is very prescriptive and follows government regulation. Forest management consultants report to BCTS and are selected via a bidding process. Contracts for harvesting are by regulation awarded to the lowest qualifying bidder. BCTS was not seen by the interviewees and those that attended the open house as a viable option as a partner.

- **Forest Company**- Few local forest companies remain in full operation. The current staying power of those that are in operation speaks for itself in light of the volatility and challenges that the forest industry has faced over the past fifteen years. However, not much discussion has taken place in recommending any particular one as a partner.

  Further direct discussions with Lizzie Bay Logging company revealed that there was a willingness to be a part of the community forest development process to determine if partnering with a logging company would be a good fit for the Pemberton Community Forest structure.
  Pro's of this option include the opportunity for direct negotiations on every aspect of managing the community forest. The Village of Pemberton input can be a little or a lot and can change overtime with mutual agreement. Forest companies are profit driven and depending on the total volume they control, they can negotiate low operating costs and favourable log prices. The partnership could create training opportunities for community members.
  Con's of this option include a less than favourable response from community members who do not think a forest company should be trusted as a partner. A partnership with a forest company seems not to align with the spirit and intent of a community forest.

Costs associated with establishing each model and how it would impact the net return.

The options to "Go it Alone" or partnering with Lil'wat Nation or a forest company all require the formation of a legal entity. It is not required for BCTS but a comprehensive agreement to do business with them would require and similar effort of time and expense. The net return to the Village from each option is much more difficult or impossible to predict especially when it comes to attaching a dollar value. The table below indicates the best guess as to how each option might look like and why.

Table 5: Partnership models and associated net return

Organization	Net Return	Reason
Go it Alone	Slightly Lower	Lacking expertise and low volume for negotiation
Lil'wat Nation	Slightly Higher	Expertise and other volume for negotiation
BC Timber Sales	Varies from Lower to Higher with each sale	Revenue depends on the price bid for the timber
Logging Company	Slightly Higher	Expertise and other volume for negotiation

Awarding Timber Cutting Contracts from One on One Meetings

The overall response from the interviewees was that the Community Forest would need to be profitable and that although hiring local would be ideal, it should not be done at the expense of the Community Forest's viability.

That being said, most thought that local contractors would have the best knowledge of the local area, its profitability and would most likely provide the best contract bid. For local First Nation and forestry company operations, it is in their best interest to generate income for business sustainability. Controls could be put in place to ensure local access to timber supply and first right of refusal for specific species and quality of timber.

With the BCTS activity that would take place within the CF, there would be pressure to ensure that Timber Sales are Category 2, requiring the bidder to be in conjunction with a wood processing facility and not have an Allowable Annual Cut greater than 10,000 m^3.

The idea that the CF would create more jobs by hiring local seemed to be "a wash" in that there wouldn't be significant growth in work load, but could provide stability for a longer working season.

Revenue from the Community Forest from the One on One Meetings

The overall response regarding income generated was focused on reinvesting in the vitality of the Community Forest to ensure prompt regeneration, maximum growth rates and longevity of harvesting potential.

One interviewee suggested that any residual income recovered through creative management and potentially additional forest activities could be designated back into the community in a long-term community fund to supplement not-for-profit needs and in support of forestry education initiatives.

Open House

Many Pemberton residents who worked in the forest industry visited the Open House and voiced their ideas. Some of these residents said that they would be interested in a community forest to partner and work together with, as they harvest their own cut blocks and have a license to cut.

Furthermore, one suggested that 'no formal proposal should be attempted until Lil'wat Nation has signed and agreed to the Community Forest'.

3.2 Organization Structure

The desire to develop a Community Forest is driven by a member or members of the community that envision the benefits and have the passion to be a part of the local forest industry.

Through dynamic leadership, a Community Forest can attain and engage community participation, including First Nations. It can advance the understanding in the value of undertaking the risk of managing a resource industry that may not generate large monetary returns, but in turn supports the community from a more holistic view.

A collaborative approach is essential and should include a range of viewpoints and perspectives that create an atmosphere of ownership and empowerment. In order to ensure that there is effective collaboration, some communities have established a working or steering committee that is made up of representatives from local government, First Nations, the forestry industry and conservation groups to act in an advisory capacity and provide guidance as part of the development of a Community Forest Application. The Village of Pemberton could consider this approach as it would support the community engagement aspect of the application requirements and show that community input is part of the Community Forest's mandate from its inception.

The legal structure of a community forest must reflect the values and needs of the community. Independent legal advice is required to understand the most appropriate legal structure that clearly defines the purpose of the legal entity and ensures that the legal language aligns with the proposed operational activities.

There is much to consider in deciding the legal structure of a Community Forest. Whether it is a partnership, limited partnership, corporation, society, cooperative, municipality, First Nations or a combination of these, each enterprise has tax status implications, decision-making efficiencies or inefficiencies, community consultation requirements, relevant legislation and capability for conflict resolution.

The many models of legal structures developed by Community Forests across BC are indicative to their business operational vision and how it will be managed.

A Community Forest board of directors is shaped by the legal entity and it '*holds the ultimate legal and ethical responsibility for everything that goes on in the organization. It has a leadership role to govern in the organizations' best interests.*'[6] The board of directors develops what is to be achieved and management determines how it will be done.

Boards of directors can be recruited from the community at large, local governance, First Nations and municipal councils.

It is important to ensure that a board of director's recruitment policy is in place and that all new directors clearly understand their role as a member of the board. It is essential that their involvement is to develop board level policies that identify the values of the community wherein the management will develop operational policies that layout how operations will mitigate these values.

The structural integrity of the Community Forest is what ensures it's success and time must be taken to identify what that is. However, a Transfer Regulation[7] now offers opportunity to make adjustments to the legal structure or tenure ownership. In the event that one of the business structure models was not appropriate, there is the opportunity to change models to another business structure.

Transfer Regulation

It is now possible for the holders of Community Forest Agreements to change the legal structure of their community forest or to transfer the tenure to another entity. Changing names is also possible. For example, if a municipality was the sole shareholder when the Community Forest Agreement was awarded, it may request a tenure transfer on the basis of the following scenarios:

- It wants to move towards a corporation with multiple shareholders.
- It wants a limited partnership with other partners (First Nations, regional districts, etc.).
- It wants to create a new corporate entity in which it is either the sole shareholder or one of several partners.
- It wants to change to a society or co-operative structure.

Other examples include:

- Changing from a non-profit society to a corporation controlled by the municipality;

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[6] & [4] The Community Forestry Guidebook II http://bccfa.ca/pdf/Final%20Guidebook.pdf

- Changing the minority number of the shareholders; or
- Changing the name of the organization to reflect an evolving image or need.

Transfer of Community Forest Agreements

Under Section 54.4(1) (b) of the Forest Act, a Community Forest Agreement can be disposed of to a person or legal entity if:

- The Minister is satisfied that the Community Forest Agreement is substantially controlled by the same person(s) that controlled the Community Forest Agreement before the disposition; and
- The new person or legal entity meets the requirements of Section 43.2(3) of the Act.

(1) The above information and Transfer Regulation quote is found in the Community Forest Guidebook II – Effective Governance and Forest Management.

It is highly recommended that this is read and understood as it provide in-depth detail of community forest governance along with examples of how other BC Community Forests have developed, their structure and the policies that they have put in place.

4. Planning Requirements

4.1 Estimated Start-up Costs

The estimated costs to obtain the Community Forest license can be easy to compile, but depending on the structure selected, these costs could vary considerably. For example, if a partnership is selected, there is the cost to create a new entity, but the costs of start-up are shared with the partner. In some existing community forests and the CF Guidebook produced shows costs of start-up of $100,000. For other communities, the start-up was done with existing staff from the community and/or volunteers at little or no cost.

Many Community Forests establish a Steering Committee that include members that have a broad range of interests, skills and expertise from within the community that lend support to Forest Agreement Application Requirements, Management Plan, Public Communication Plan and Business Plan.

With the efforts in the past year and the information gathered in conjunction with the feasibility study, an estimate for the start-up costs are from $50,000 to $75,000. A breakdown of what is included is shown in the sections below. The costs are what might be anticipated if a RFP is issued for the following work to be completed.

The guideline to be followed must include all the criteria outlined in a document titled 'Community Forest Agreement (CFA) Application Requirements' dated July 1st 2009.

If the Village of Pemberton has other criteria that need to be included, the costs will be higher.

The start-up costs below exclude any costs to date. It also does not include the time and effort that may be required by Village staff to meet all the Application Requirements.

CFA Area Overview
As the text of the feasibility study describes, this is somewhat fixed and the AAC set at 6500 m^3. Costs associated with lobbying for a 10,000 m^3 AAC would be additional.

Costs from $4000-$7000

Management Plan
A management plan covers a very broad spectrum of forest management issues. These include the AAC and the rationale for it, the silviculture practices, the consultation process to be followed, the management objectives and the resource management goals. The Forest Stewardship Plan (FSP) is a higher-level plan. As such, the Community Forest can adopt an existing FSP to meet this requirement.

Costs from $6000-8000

Administrative Authority and Structure

Structure Costs include legal expertise, bylaws and Board development costs. This is not simply consultation, but more of a community "buy in" review.

The estimated costs associated with the development of a limited partnership, establishment of corporation bylaws, and board recruitment would *cost between $10,000 to $20,000.*

Community Awareness, Support and Involvement

The application as mentioned above states, "*The submission **must contain proof** that that there is a high level of community awareness of the application and strong support for the application from a broad cross-section of the community*."

Events like the Open House are very appropriate for community involvement The One on One interviews are very topical and would lend great support for steering the direction of the CF.

Activities before the formal application process has commenced can be referenced but not a substitute for following the detailed guidelines on obtaining the required proof. Questionnaires, a community survey and another Open House would be beneficial in gathering more community support and awareness.

Letters of support required from area licensees and a broad range of community members and stakeholders will provide a description of how ongoing public involvement and consultation will be conducted.

The proponent is required to conduct consultation with First Nations and stakeholders. Once the comments from the consultation process are received, the proponent must then show how their concerns are incorporated into the application.

For the submission to contain the "proof" the different processes may take longer and more effort than anticipated so the cost range is quite broad.

Could be as low as $12,000 up to $18,000

Business Plan

According to the Community Forest Agreement (CFA) Application Requirements dated July 1st 2009, the consultant must prepare the application, read over the Feasibility Study, and make necessary adjustments to the report in order to reflect a more accurate plan if an application for a Community Forest is to be done. A business plan should be done as the first step in the application process. Since the economic viability is a key factor, having a detailed economic analysis and forecast completed and presented to staff and Council before other stages is recommended.

Cost $7500 to $9000

Not For Public Disclosure

This section states, "*It is suggested that the applicant identify which information in the application they do not wish to have released and which they believe to be excepted from disclosure under the Freedom of Information and Protection of Privacy Act*." This can best be accomplished by including such information in a separate section of the application headed "Not for Public Disclosure"

Cost $500 to $1000

Attachment Index

Includes four topics

i. Agreement Holder Legal Entity Information

ii. CFA Area Information- Mostly maps, the most costly

iii. Sample CFA Document - A 49 page template to be reviewed and agreed to.

iv. Evaluation Checklist - A checklist that is used to evaluate the application. Also a good list for the applicant to see that everything required has been completed.

Costs $6000 to $7000

Other start-up costs

In addition to the costs associated with meeting the Application Requirements, the person or organization preparing this documentation will need to allocate time to meet with Village staff and make presentations to mayor and council.

Others include hosting meetings and other miscellaneous costs.

Costs $4000 to $5000

Table 6: Summary of Estimated Start-up costs

Cost Source	Low Range	High Range
CFA Area Overview	$ 4,000	$ 7,000
Management and Stewardship Plan	$ 6,000	$ 8,000
Community Awareness, Support and Involvement,	$ 12,000	$ 18,000
Administrative Authority and Structure	$10,000	$ 20,000

Business Plan	$ 7,500	$ 9,000
Not For Public Disclosure	$ 500	$ 10,00
Attachment Index	$ 6,000	$ 7,000
Other Start-up Costs	$ 4,000	$ 5,000
Total	**$ 50,000**	**$ 75,000**

4.2 Total Cost and Net Return

The total anticipated costs will vary slightly depending on the partnership option selected but in the bigger picture, all the costs are still required even though they are done in collaboration. For example if there is an agreement to share costs then it is likely that revenue would be shared as well. Even if a potential partner has expertise in a specific area, like the creation of a management plan, it can be helpful but not necessarily a cost savings. For all potential partnerships, except BCTS, and "Go it Alone" option, a legal entity is recommended to reduce issues related to liability. While the creation of the legal entity may not be costly, the negotiations and/or discussions leading to the formation may require time and effort by lawyers or other professionals. While the anticipated range of cost is between $5000 and $15,000 a cost of $10,000 will be used for forecasting purposes.

In the ideal situation, log markets are favourable and harvest would be completed in the first year following the awarding of the licence. Since the operating costs are more stable and less variable, a delay in timber harvest for one or two years assuming the future forecast for log prices is more favourable, then the fixed costs of $8255 per year add to the $65,000 deficit before revenue begins to flow.

A cautionary note on costs and net return: The operating costs are based on estimates of current prices from other operations in the Pemberton area. Operating costs are negotiated, so they may slightly higher or lower than the estimated amounts but a huge variation from estimated is not anticipated. Log prices, on the other hand, have historical values and current values to base estimates but forecasts with accuracy are more difficult. The estimated return of $7.39 per cubic metre is a likely average but a drop or rise in average prices of $5 to $10 per cubic metre are common in the historical trends. Hence a cautionary note that a loss in the first five years of operation is possible.

Table 7: Costs and Net return, best and worst case. These costs are based off of the mid-range cost

Description	Mid-range Cost or Revenue	Net return	Best case (Cost or Revenue)	Net on the best case	Worst case (Cost or Revenue)	Net on the worst case
Start-up cost (including legal fees)	$ 62,500	$-62,500	$ 62,500	$-62,500	$ 62,500	$ -62,500
Revenue in first years $7.39 X 6500 m^3 X 5 yrs	$ 240,175	$177,675	$ 402,675 *($ 7.39 + $ 5.00 X 6500 X 5 years)*	$340,175	$ 77,675 *($ 7.39 - $5,00 X 6500 X 5 years)*	$ 15,175
Fixed costs 2nd to 5th year $8255 X 4 years	$ 33,020		$ 33,020		$ 33,020	
Net Return		**$ 115,175**		**$ 277,675**		**$ -47,325**

5. Discussion and Recommended Steps to Achieve Objectives

5.1 Next Steps

With the all the information collected and the analysis done and summarized, a discussion and/or recommend steps to achieve the following long-term opportunities and objectives will be provided:

The 10 objectives below were part of the deliverables outlined in the agreement with VOP.

1. Community management of Crown forest land
2. Achieving a range of community objectives, values and priorities
3. Diversifying the use of and benefits derived from the community forest agreement area
4. Providing social and economic benefits to area residents
5. Undertake community forestry consistent with sound principles of environmental stewardship that reflect a broad spectrum of values
6. Promote community involvement and participation
7. Promote communication and strengthen relationships between Aboriginal and non-Aboriginal communities and persons
8. Foster innovation
9. Advocate forest worker safety; and
10. Confirm community priorities for the use of the forest for fibre source with other values being important, but secondary.

The discussion that follows is derived primarily from what the team heard from community members. Since the future success of the community forest will be driven by active participation by the community, the consultants or other community forest organization ideas that have worked are there only to say" it can be done".

Community Management of Crown Forest

While difficult to quantify in monetary terms, to directly influence what happens to the 12,000 hectares surrounding the Pemberton community is a great opportunity. The concern and valuation of ecosystem services such as clean air and water is becoming more entwined with mainstream economics and used to demonstrate corporate social responsibility.

While the management of the community forest comes with constraints, the sentiment of many community members that were interviewed or attending the Open House was for the Village of Pemberton to have a community forest.

Achieving a Range of Community Objectives, Values and Priorities

Community members identified a key objective of generating revenue. They hold value in caring for the environment and want to make it a priority to deal with mountain bike trails.

These values and objectives, along with a more comprehensive list, match with the spirit and intent of a community forest. The unique location of the Pemberton community and its the homes surrounded by forested hillsides in the valley, makes the connection to a community forest much more real. A community forest for the Village of Pemberton would meet the needs of today and provide flexibility for an ever-changing future.

Diversifying the use of and benefits derived from the community forest agreement area

The typical template of forested licences is to cut the annual harvest and send logs for sale. The once vibrant local industries and small businesses have largely disappeared. Across BC, however, community forests have been catalysts for revival of activity with a local focus. At the 2015 Community Forest AGM in Clearwater BC, and at other meetings over the years, stories have been shared on how innovation and diversity has achieved great results for communities.

One unique aspect of the community forest tenure is the right to manage non-timber forest products. Given the large 12,000 hectare area, the sustainable management and stewardship of these products can create a broad spectrum of cottage industries.

Creating offsets is another opportunity for diversification. The Whistler Community Forest has recently created carbon offsets for their community. Details can be found in Appendix 8.

At a larger scale, the trucking of logs is roughly one quarter of the total cost to operate the community forest. As this cost continues to rise, the economic viability of local value added activity increases. One example could be the creation of an eco-industrial park where the design is developed around the idea of so-called ‘waste products’ of one business are inputs for another. Another complimentary activity to such an industrial park could be a bio-energy facility that would produce heat or electricity or both.

Partnership with university programs to use the Village of Pemberton Community Forest as a training ground may be a possibility. Training may incorporate forestry planning and management, silviculture and regeneration practices, ecological and wildlife studies, new generation equipment operation and exploration of environmentally sustainable manufacturing and energy production.

Providing Social and Economic Benefits to Area Residents

Admittedly, the annual harvest volume of only 6500 m^3 is not going to contribute in a major way to local employment and hence the economy, but there would be some. The key lies more with the social benefits and community pride that would come from the sustainable management of the community forest. The ability to facilitate the creation of a management plan for keeping things like mountain bike and hiking trails well maintained and ensuring future development is carefully planned is more of the role of a community forest than just generating revenue from timber harvesting.

Undertake community forestry consistent with sound principles of environmental stewardship that reflect a broad spectrum of values

The input from community members clearly indicated a broad spectrum of values that a community forest would provide. A management philosophy consistent with sound principles of environmental stewardship was largely assumed to be how a community forest would be managed. Many community forests in BC have achieved a forest certification status and others have received awards for exemplary environmental stewardship. Given the favourable conditions for harvesting and growing trees, there is a high probability the community forest can meet expectations on environmental stewardship.

Promote Community Involvement and Participation

Although forests surround the community of Pemberton, there are no community events directly related to activities in the forest. In an effort to enhance community involvement, the 56 different community forest organizations around BC have created a large number of diverse activities from youth education programs to the building of interpretive trails.

Offering programs and educating community members on forest ecosystems as well as the vast array of edible foods and medicines that are found in the forest is also an opportunity to connect and work with neighbouring Lil'wat community. This would strengthen intercommunity relationships and create an understanding for the traditional uses and values of the land.

Many community forests have created a not-for-profit organization, which has given them access to funds for projects such as habitat stewardship, the creation of other avenues for greater interest and participation from a broader spectrum of the community.

Community Forests '*have a statutory and regulatory obligation to consult and report to their communities regarding matters related to the agreement*'[8] and many host an annual open house that includes live demonstrations of forest harvesting or sawmilling.

Promote Communication and strengthen relationships between Aboriginal and non-Aboriginal communities and persons

Several community members mentioned this aspect of what the community forest could facilitate. The Lil'wat Nation is actively involved in the forestry business and has significantly increased its practice of sustainable forest management over the last several years.

In a report from 2010 prepared for the Lil'wat Nation on forest management of their licences (Appendix 10) it recommends, ecosystem based forest management, examining the opportunities for non-timber forest products and obtaining sustainable wood certification. These are all consistent with the aspirations expressed regarding the Pemberton community forest. Both communities would benefit from increased communication and collaboration.

The expressed view of control of local forestry resources is also consistent with both native and non-native forestry professionals as there is a desire to securely and effectively retain the

[8] Community forestry guidebook II - http://www.forrex.org/sites/default/files/forrex_series/FS30_0.pdf

economic benefits within their communities.

Foster Innovation

The ability to foster innovation will be the difference between a community forest that survives and one that thrives. The interactions with community members would indicate that innovation is what has sustained the community for many years. Being able to adapt and find new ways to get it done is what this community is built on.

Hosting meetings to gather ideas, encouraging diverse views and be willing to accept risk in developing innovative ideas through testing, learning from what did not work, and celebrating successes is a key aspect in supporting the community forests continued growth.

Networking with other community forests in BC and around the world is another great source for innovative ideas.

There is a definite will within the community of Pemberton for the community forest's success and a high level of interest has come from those who are operating within the forest industry and those who are economic, ecological and social drivers of this community.

Advocate Forest Worker Safety

The motto of the BC Forest Safety Council "Unsafe is Unacceptable" demonstrates the importance of this aspect of a community forest goal. Promoting and advocating forest worker safety would be incorporated into every aspect of community forest activities.

Confirm community priorities for the use of the forest for fibre source with other values being important, but secondary.

In discussion with community members, most were clear that the community forest tenure was a licence for timber harvesting. The primary concern held by most was that it would be financially viable and would not involve any additional cost to taxpayers. Beyond that, community members did not express concern that harvesting would have a negative impact on the environment and its many ecosystems.

With 10,000 of the 12,000 hectares constrained for harvest primarily in protection of winter deer range, spotted owls habitat and native cultural sites along with discussion and input on other values such as recreation, there was a level of comfort that harvesting can take place and that these values would be fully cared for and not allocated a status of secondary.

5.2 Community Forest Vision & Strategy

The goals, objectives and vision of the community forest will align with the Village of Pemberton's "Strategic Priorities 2015" document. This document has specific references in regards to a community forest. One priority is in the 'Vision Check-Up' section on Environment where "site lines -community forest – is protected". In the 'Issue/Opportunity' section, it lists the Issue "protect natural areas" and the "community forest". The community

forest was included on the 'Issue and Opportunity Short List' along with 13 other topics. The action that followed was to issue a request for proposals to undertake a feasibility study. In the 'Priority/Desired Outcomes' section, a list of the best ways to realize the potential of a community forest was the create outcomes that:

- Show environmental leadership/stewardship
- Potential revenue
- Job creation, and
- Value added secondary industry

The vision and strategy along with goals and objectives are a result of inputs from existing documents, One on One Meetings and the Community Open House. The discussion and inputs received during the process of completing the community forest feasibility study fully supports and aligns with the Village of Pemberton's strategic priorities and has the potential to create desired outcomes.

Managing a community forest that covers 12, 000 hectares of the area surrounding the Village clearly demonstrates environmental leadership and stewardship. The feasibility study shows that the community forest is economically viable and will create modest revenue. Some job creation will happen, but extending the work year of exiting forestry works was seen as the most likely result. The potential for a value added secondary industry is quite promising with the ever-increasing costs of trucking logs to tidewater. This would also compliment the desired outcome for job creation that would be year round.

A Village of Pemberton community forest is in alignment with strategic priorities and desired outcomes[9].

5.3 Community Objectives, Values and Priorities

One on One meetings took place with community members that are socially active in the community, who are focused on interests that reflect the values of the community, and who have knowledge in forestry and its activities. The list of people interviewed can be found in Appendix 4 along with the questions that were asked.

Community members were asked for their views on the community forest values and vision, other community forest objectives, potential partnerships, inclusion of high recreation value areas, awarding of timber cutting permits and allocation of potential revenue.

A synthesis of the interviewee responses are shown in the sections of the report that relate to the various topics.

[9] Link for Priorities: http://www.pemberton.ca/media/247006/PEMBERTON_SP_APRIL_EDITSv4.pdf

Community Forest Values and Vision from the One on One Meetings

The understanding of a Pemberton Community Forest is that it would provide an opportunity for greater control of forest harvesting management in an area that is sensitive to community values; wildlife preservation, watershed protection, trails development and cultural sensitivity.

There was also an understanding of the economic return to a community, which didn't necessarily come from harvesting income but was more altruistic in forms of training initiatives, cottage industries and development of tourism recreation.

Interviewees that currently work in forestry or have more knowledge of forest practices focused on forest harvesting for sustainability in perpetuity through not only efficient management practices but through education about forestry and its long-term value to the community.

With greater flexibility to manage the forests, there would be opportunities to enhance local economic vitality and grow timber responsibly. The Community Forest would have to develop a vision and strategy that would balance the values of the community with the need to generate profit.

Other Community Forest Objectives from the One on One Meetings

As one interviewee stated there is only the limit of imagination to the potential for forest-related activities and businesses. Whether the Community Forest itself is directly involved or in a support role for these activities would be determined by the overall vision and direction for profitable business operations.

The primary interest from interviewees was a vision of the Community Forest that is involved in forestry education and training. There was a desire to partner with University level programs that would bring the knowledge of forestry back to the community and develop a relationship with the CF through a learning and training ground of forestry. This training ground may incorporate forestry planning and management, silviculture and regeneration practices, ecological and wildlife studies, new generation equipment operation and exploration of environmentally sustainable manufacturing and energy production.

There was further discussion on wood waste usage and the growing capacity to utilize it for energy production in support of additional by-products such as bio-char, electricity and heating.

In support of cottage industries, the Community Forest could provide access and timber availability for interests in woodland foraging/ mushrooming and development of value added small business models.

Forestry enterprise will come over time and with the evolution of the Pemberton Community Forest, entrepreneurs and visionaries will find ways to develop and provide forestry related

products and services.

Open House

Approximately 37 residents of the Village of Pemberton attended the Community Forest Open house from 3pm-8pm on September 16, 2015. The open house was hosted in the Pemberton Museum, a central location in the heart of Pemberton. There was no formal presentation given, but rather storyboards and maps providing enough information for the public to educate themselves on the Forest History, Vision and Strategy, Business Operational Structure, Recreation and Trails, and Economics of the Community Forest were displayed across the room (Appendix 5). On the day of the open house, the Robin B. Clark Inc. team members were in attendance and were available to answer questions. To ensure that all feedback was collected and to accommodate anonymity, sticky notes available for people to write their comments and questions on.

It is clear that community members want to be involved with the future of the community forest. One local forest worker suggested at the open house that there should be other avenues of input into the community, such as putting maps on the website or create an open forum.

6. Final Note

The summary of findings and key recommendations come from each of the primary sections that comprise the report deliverables.

Timber viability: the Miller Creek drainage and timber proposed for the first five year harvest is viable. An existing main haul road bisects the planned harvest area and the timber is mature and relatively free of defect. The tree species is mostly hemlock and balsam and not of high dollar value per cubic metre.

Potential recreation site additions: no additional areas to consider No additions since the existing area would require deletion in order to add more in another area.

Problem timber areas and potential liabilities: none identified

Logical area additions: no additions since restricted by regulation

Business partnerships: Upon review of the Pro's and Con's of each option, "Going it Alone" or a partnership with Lil'wat Nation appear the most favourable. These are selected more based on public perception of what a community forest partnership would look like. From an economic standpoint, a partnership with Lil'wat Nation may provide a slightly better return than "Going it Alone".

Organizational structure: a legal entity to reduce liability

Start–up costs: between $50,000 and $75,000. In the start-up it is recommended that the business plan be completed and presented before other stages.

Total Cost and Net Return: A huge variation in the estimated operating costs is not anticipated. Log prices, on the other hand, have historical values and current values to base estimates but forecasts with accuracy are more difficult. The estimated return of $7.39 per cubic metre is a likely average but a drop or rise in average prices of $5 to $10 per cubic metre are common in the historical trends.

Using the estimated costs the net return in the first 5 years is $115,175

In the best case, log prices increase by $5 per cubic metre and net return is $277,675

In the worst case, log prices fall by $5 per cubic metre and net return is a loss of $47,325

Vision, Goals

Vision: Develop a Community Forest that would balance the values of the community and generate a profit.

Goals:

- Show environmental leadership and stewardship
- Create a stream of revenue
- Job creation
- Greater control of forest harvesting management in sensitive areas
- Wildlife preservation
- Watershed Protection
- Trails development
- Cultural sensitivity
- Education and Training

Decisions required

1. Move forward with an application to MFLNRO. If “Going it Alone” then consider creating a legal entity for the community forest.
2. Decide if a partnership is preferred as the application must come from the new entity created by the partnership.
3. The exception would be a partnership with BCTS whereby only an agreement would be required.