AGENDA

FOOD SECURITY & CLIMATE DISRUPTION COMMITTEE

Thursday October 6, 2016 - 4:30 pm

COMMITTEE ROOM AT CITY HALL

1. ADOPTION OF AGENDA

2. APPROVAL OF MINUTES

Minutes of the September 1, 2016 meeting.

3. FOR DISCUSSION

A. Guest – Marcus Lobb, AV Food Hub Co-ordinator

B. Review of documents forwarded from Marcie deWitt, Alberni Clayoquot Health Network

C. Report from Chris on Council response to request for information on Thunder in the Valley

D. Letter from Jane Oliver regarding reduced water rates for urban growers.

E. Public meeting October 19, 7:30 PM at Beaver Creek Hall re local abattoir (report is attached for reference)

F. Report from Sam on plastic bags issue

G. Committee structure

4. TOPICS FOR NEXT MEETING

5. ADJOURNMENT

FOOD SECURITY AND CLIMATE DISRUPTION COMMITTEE

THURSDAY, SEPT. 1, 2016 AT 4:30 PM IN THE COMMITTEE ROOM

Present: Gary Swann
Chris Alemany
Rosalind Chapman
John Mayba
Sam Brownlee

Regrets: Bob Haynes, Sandra Gentleman, Guy Langlois

1. **Approval of Minutes of the August 4, 2016 meeting.**
Gary Swann moved to approve, John Mayba seconded.

2. **Approval of Agenda**
John Mayba moved to approve, Rosalind Chapman seconded.

3. **Presentation by Marcie DeWitt, Coordinator of the Alberni Clayoquot Health Network.**
Marcie was responsible for the *Working Together to Reduce Poverty Event* held May 30, 2016. (Rosalind Chapman attended.) Her role, funded by Island Health, is to identify social determinants such as poverty, and to facilitate conversations to improve outcomes in the Region's communities. One of the five outcomes developed at that event was **'reducing the number of hungry children'** in our community, given that 33 percent of our kids are living in poverty, and are therefore, food insecure. Lengthy discussion followed on food security for children.

   Marcie will send out a number of questions to our Committee, and we will devote some time at our next meeting to discuss our responses to those questions.

   We also requested that the Committee be notified of future events she is organizing.

4. <u>Drag Races</u>
Issue is whether City Council intends to approve Thunder in the Valley ongoing for five years, and the position of the FSCD Committee with regard to this event.
Councillor Alemany will be bringing forward a motion to the next City Council meeting to request that staff do a full financial report on this year's races, prior to a decision being made regarding the future plans for this event.

5. <u>Plastic Bags</u>
Issue is whether to recommend that there be a city-wide ban on plastic bags.
Sam Brownlee indicated that municipalities do not have the legislative authority to implement such a ban. It's possible it may come up at the next UBCM in Victoria, but it is now too late to submit a resolution from this Committee for Council to consider. Further discussion as to possibly bringing it to the AVICC for next year's consideration. Sam Brownlee will provide Committee members with data regarding biodegradability of various grocery bags.

6. **Hupacasath Waste Disposal Project**
Issue is whether this First Nations project would consider doing a kitchen scraps and garden waste pilot program – is this an opportunity? Discussion. Agreed to wait for the City's response to the FSCD Committee's recommendation for such a program.

7. **Announcement – John Mayba, Cycle Alberni.**
John announced that now that the cycling lanes are done, an urban cycling workshop for adults will be held October 14th and 15th, with actual on-road cycling instruction. Excellent news.

Next meeting – October 6, 2016.

Meeting Adjourned 6:00 pm.

Sam Brownlee, Chair

Davina Hartwell, City Clerk

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Alberni Clayoquot Health Network

Working Together to Reduce Poverty

Poverty Reduction and Alleviation Strategies for the Alberni Clayoquot Regional District

2016

Workshop Report – Theory of Change Draft #1

Executive Summary

The Alberni Clayoquot Regional District (ACRD) is currently experiences the 4th highest rates of poverty out of 29 Regional Districts in BC, with a child poverty rate of 32.2% and significant barriers around housing, transportation and health access which vary between urban, rural, remote and First Nation communities. Many organizations in the region offer services to address these issues but in order to be effective an overarching poverty reduction strategy has proven to be the most effective course of action in regions throughout Canada. Recognizing that poverty is a complex issue which cannot be addressed by any one organization or initiative, leaders in the ACRD have begun to bring together local stakeholders to discuss, identify opportunities and plan around poverty reduction.

Poverty Reduction in the ACRD:

- Alberni Valley community discussion on poverty November 2015 organized by MLA Scott Fraser
- Local Mayors, Regional District Directors and organizational leads convened to identify next steps
- Working Together to Reduce Poverty Workshop, May 30th organized by the Alberni Clayoquot Health Network

In order to maintain the conversation the Alberni Clayoquot Health Network (ACHN) convened a workshop on May 30th to begin the process of identifying outcomes which aim to reduce and/or alleviate poverty in the ACRD. Facilitated by Scott Graham from SPARC BC, the workshop brought together 50 participants from provincial and local government, local service providers, ministries and organizations, First Nation communities, as well as representatives from the community at large.

Working Together to Reduce Poverty:

Workshop participants spent the day identifying and defining outcome statements to create a Theory of Change for poverty reduction in the ACRD. A Theory of Change is a tool to map and evaluate complex systems, it identifies outcomes, allowing groups to identify, narrate and evaluate these outcomes, adding additional levels of detail as preconditions, interventions and rationales. Participants at the May 30th workshop identified 5 outcome statements, with preconditions or activities leading to these outcomes which fell into one of 4 themes.

Poverty Reduction Outcomes

- Increase number of social housing units for low income people
- Decrease the number of hungry children
- Increase the awareness of poverty issues and impacts in the ACRD
- Address mental health and addictions continuity and follow up
- Address youth homelessness

Precondition Themes

- Service Integration and Collaboration
- Program Level Interventions
- Public Policy
- Education

The Working Together to Reduce Poverty Theory of Change for the ACRD is the first draft of a living document which will assist to guide future actions. A Theory of Change is meant to be tested, revised and evaluated based on stakeholder input and regional shifts. No one organization can claim ownership for these activities or address this complex issue themselves, we look forward to supporting future collaborations, revisions and planning with community stakeholders.

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INTRODUCTION

According to the World Health Organization poverty is the single largest determinant of health. Impacts of poverty run deep, influencing the lives of those affected as well as health and economic systems of entire communities. There is no one solution to address poverty but communities which have made a commitment to poverty reduction strategies adopt a collaborative approach, sharing action and accountability to embrace long term solutions.

> *"Poverty and inequality are complex issues that have huge and devastating impacts on individuals and Canadian society as a whole. Systemic poverty is the root cause of many health and social problems, not to mention the economic toll." Canada Without Poverty, 2016*[1]

Initiated by MLA Scott Fraser discussions around the impacts of poverty in the Alberni Clayoquot Region were spearheaded through a community engagement in the Alberni Valley November 2015. Local leaders, service providers and community members sat together for a meal and impassioned discussion around the effects of poverty in our region. Ground work for future discussions was laid with speakers sharing important data sets, opportunities and community information for the Alberni Valley combined with personal stories of poverty and inequality from community members who punctuated the urgency of these discussions.

Following this engagement, local decision makers and organizations met to identify next steps. The meeting had impressive representation from local mayors, regional district directors, the MLA and MP as well as organizations with a mandate to convene and support community development activities. Data sets, opportunities and potential next steps were identified. A commitment to continue convening community engagement and seeking opportunities for dialog was evident.

To maintain the momentum the Alberni Clayoquot Health Network (ACHN) sought out opportunities to begin defining key interventions to reduce poverty in our region. On May 30 the ACHN partnered with SPARC BC facilitator Scott Graham on a workshop to begin the identification and discussion of outcomes which aim to reduce and alleviate poverty in the Alberni Clayoquot Regional District (ACRD). Outcomes generated in this workshop contribute to the first draft of the ACRD Working Together to Reduce Poverty Theory of Change, a living framework which aims to: assist the region identifying and tracking outcomes to reduce and alleviate poverty; initiate discussion and planning around ways forward; identify gaps and opportunities to address root issues and areas of required support to those experiencing poverty.

This report is a summary of work undertook by 50 regional representatives present for the *Working Together to Reduce Poverty in the ACRD* Workshop to be utilized as a starting point for the identification and measurement of poverty reduction and alleviation strategies in the region.

[1] Canada Without Poverty RSS http://www.cwp-csp.ca/poverty/the-cost-of-poverty/

Workshop Attendance

Alisha Pauling, Leader integrated Community Services, Island Health

Ashley Amos, Trainee, Kuu-us Crisis Line

Arnie Robinson, Council Member, Ahousaht First Nation

Candace Wu, Constituent Assistant, MP Office

Charlene Holden, Homelessness Coordinator, Kuu-us Crisis Line

Codi Brock, Practicum Student, North Island College

Darlene Leonew, Elders Cultural Coordinator, PA Friendship Center

Dan Schubart, Board Director, Port Alberni Transition Towns

Darci Morris, Support Worker, Kuu-us Crisis Line

Frank Charlie, Support Worker, Kuu-us Crisis Line

Graham Hughes, Executive Director, Literacy Alberni

Heather Shobe, Project Lead, Alberni Valley Agriculture Plan

Jackie Wells, Family and Health Services Team Leader, Port Alberni Friendship Society

Janice Johnson, Community Engagement Coordinator, First Nation Health Authority

Janis Nairne, Volunteer Board Member, CMHA, Port Alberni/ Alberni Valley Social Planning Council

Jolleen Dick, Communications Coordinator/Council Member, Hupačasath First Nation

John Douglas, Outreach Coordinator, Port Alberni Shelter Society

Julie MacNaughton, Volunteer, Literacy Alberni

Kathy Waddell, Huu-ay-aht First Nation

Laurie Money, Team Leader, Ministry of Child and Family Development

Lindsay Davis, Practicum Student, North Island College

Liz Stonard, Advocate

Marcie DeWitt, Coordinator, Alberni Clayoquot Health Network

Marcus Lobb, Food Hub Coordinator, Alberni Valley Transition Towns

Margaret Morrison, Executive Director, Westcoast Community Resources Society

Mary Choi, Student, Medical Health Office

Matilda Atleo, Health Promotion Nuu Chah Nulth Tribal Council

Megan McRae, Children and Family Services Coordinator, Huu-ay-aht First Nation

Nora Martin, Health Liaison, Tla-o-qui-aht First Nation

Pamela Day, Board member, Bread of Life

Pat Kermeen, PWD Assessor and Advocate, Port Alberni Shelter Society

Patty Edwards, Constituent Assistant, MLA

Paul Hasselback, Medical Health Officer, Island Health

Paulette Tatoosh, Social Development Coordinator, Hupacasath First Nation

Penny Cote, Chair, ACHN/ Vice Chair, ACRD

Rebecca Hurwitz, Executive Director, Clayoquot Biosphere Trust

Ronna Mellaart, Women's Outreach Worker, West Coast Resources Society

Rosalind Chapman, Port Alberni Resident

Scott Fraser, MLA

Shelley Shenton, Port Alberni Resident

Shelli Lyle, ACRD

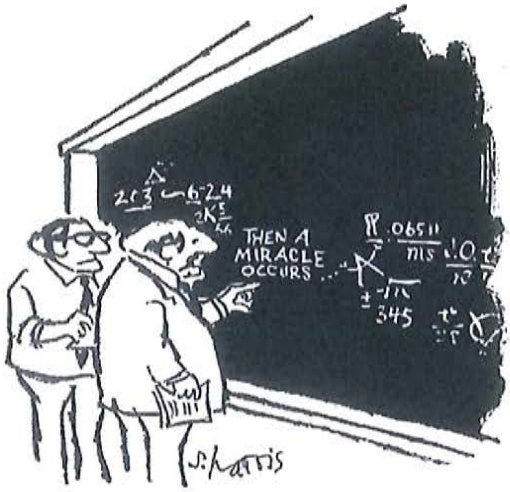
Stacie Camponi, Practicum Student, North Island College

Tim Sutherland, Ahousaht/Port Alberni Resident

Wes Hewitt, Executive Director, Port Alberni Shelter Society

Wendy Haas, Practicum Student, North Island College

THEORY OF CHANGE – WHAT, WHY, HOW



"I think you should be more explicit here in step two."

Theory of Change is essentially a comprehensive description and illustration of how and why a desired change is expected to happen in a particular context. It is focused in particular on mapping out or "filling in" what has been described as the "missing middle" between what a program or change initiative does (its activities or interventions) and how these lead to desired goals being achieved. It does this by first identifying the desired long-term goals and then works back from these to identify all the conditions (outcomes) that must be in place (and how these related to one another causally) for the goals to occur. – The Center for Theory of Change Inc., 2016

IMAGE AND CAPTION: CENTER FOR THEORY OF CHANGE INC. 2016[2]

A Theory of Change (TOC) is a useful tool to map complex social issues to better plan and evaluate action leading to a long term goal such as poverty reduction. A TOC enhances narrative and evaluation of interrelated activities adding measureable information which is commonly overlooked through the use of Logic Models which rely on a direct correlation between an outcome and measurable, often overlooking interconnected variables. A TOC allows initiatives to express the complex relationships between activities, measure success and document course corrections to communicate better with partners, funders and decision makers. Painting a more realistic picture of social change and increasing an initiatives ability to communicate and continue on the path to a long term goal.

We know that poverty is an incredibly complex issue; its roots vary between individuals, communities and demographics. To begin addressing complex issues we must identify areas which we can have the most impact, focus energy and realign resources to stimulate change, record the lessons we have learned, evaluate, course correct and celebrate when we have made measurable change. The ACHN has made a commitment to convene conversations with local knowledge holders to identify and prioritize actions, assist in documenting, stimulating action and evaluation to assist in moving the needle on poverty in the ACRD.

THEORY OF CHANGE RESOURCES

- Logic Model and Theory of Change, what's the difference? - http://www.theoryofchange.org/wp-content/uploads/toco_library/pdf/TOCs_and_Logic_Models_forAEA.pdf
- The Center for Theory of Change Inc - http://www.theoryofchange.org/what-is-theory-of-change/toc-background/toc-benefits/
- Build your own TOC - https://directory.actknowledge.org/?register=true&requestingApplication=tocc&destination=http%253A%252F%252Fwww.theoryofchange.org%252F
- Links and resources - http://learningforsustainability.net/theory-of-change/

[2] Theory of Change Community http://www.theoryofchange.org/what-is-theory-of-change/

WORKSHOPPING

Facilitator Scott Graham took the first part of the morning to set the context and intent of the Theory of Change approach. Following this presentation the group was introduced to the concept of an outcome statement. High level statements which are SMART – specific, measurable, achievable, relevant and time bound. Each participant was asked to come up with three outcome statements which they believed would contribute to poverty reduction in the ACRD.

ALL OUTCOMES GENERATED – LONG LIST

- Persons with Disabilities
  - Variations of Disabilities
  - Universal access to mobility
  - Food services
- Decrease number of children accessing food bank. Take fish lic. out of the hands of big business, take lic. away for non fishers use it or lease it. No Leasing fish lic. (3 dots)
- Increase in partnerships and dialogue between local organizations and leaders to identify and address factors leading to poverty in the region
- Increase in the number of low income people accessing small loans from Coastal Community Credit Union (6 dots)
- An increase in the amount of food being produced locally by farmers and community members (3 dots)
- Reduce Food Insecurity by recovering all food waste and making it available to those who need it (9 dots)
- Community Gardens throughout town/city vs. Food banks
- Free Daycare! (1 dot)
  - Increase working single mothers
  - Decrease children using Food Banks and poverty levels
  - Improve children's lives
  - Parental pride working pride as well as getting out in the community

- Increase access to community based afterschool activities among elementary school aged children
- Increased number of low-income family who are participating in food-accessibility programs and activities (6 dots)
- Increase the number of hard-workers in this field to accomplished desired results
- Increased awareness of local resources and programs by seasonal resort staff
- Increased number of pre-school children receiving adequate nutritional food (7 dots)
- Increased number of children/youth of school age (5-17) having access to Healthy Food Sources
- Families, Youth and Individuals will increase their knowledge of services and programs to support them
- Increase access to Free recreation and community programs for youth (9 dots)
- Decrease the number of couch surfing among teens and young adults
- Decrease in the number of youth transitions from in care (aging out) to becoming homeless
- Increase and simplify the shelter allowance for income assistance recipients (4 dots)
- Increase number of pregnant families access prenatal support services
- Decreased barriers to Adult Education and employment training for low-income persons
- Decrease the number of youth that have no access to phones due to debt
  - Decrease the debt they owe by paying for it once, so they have access to having a phone for the use of job searching, etc
  - Increase communication for youth within job search
- Increase educational outcome (k-12) and graduation rates in our schools (9 dots)
- Increased number of families and individuals income to have access to fresh food programs
- Increased access to support services
- Increased number of youth accessing community resources to successfully transition to workforce participation (3 dots)
- More support for young families on social assistance to be able to transition into a reliable working household
- Increase access to transportation for low income families (6 dots)
- Decrease the number of young families on low income
- Stop clawbacks of professional pensions and CPP from clients on disability financial assistance
- Increase permanent (long-term) affordable housing for low income families and seniors
- Increased number of individuals accessing social housing
- Increase in number of families (of youth with mental health issues) receiving support

Final Outcome Statements

These outcomes where then posted on the wall and reviewed by participants. Natural groupings of ideas began to form, participants were encouraged to place similar outcomes together, the facilitator continued to group outcomes into themes. These groupings were reviewed and validated with participants, once confirmed participants were given dots and asked to vote on outcome groupings which they felt would contribute most to poverty reduction with the intention of identifying 3 – 5 outcomes which would be further workshopped in the afternoon.

Working Together to Reduce Poverty in the ACRD Outcomes and Inputs

For the remainder of the afternoon workshop participants worked in small groups to develop the five outcome statements selected.

Outcome Statements Selected

1. Increase number of social housing units for low income people
2. Decrease the number of hungry children
3. Increase the awareness of poverty issues and impacts in the ACRD
4. Address mental health and addictions continuity and follow up
5. Address youth homelessness

Questions Utilized to Develop Outcome Statements

1. What specific short terms actions (within 2 years) should happen in relation to this Theory of Change element?
2. What types of partnerships are needed for these actions to be successful?

Groups reported their discussions back to the whole group upon completion and the ACHN Coordinator provided the group with information on next steps.

- Information collected from the workshop will be utilized to create a Theory of Change for poverty reduction in the ACRD.
- The ACHN Coordinator will utilize the TOC software to track Outcomes and Indicators identified.
- The ACHN Coordinator will compile a report of the day as well as detailed breakdown of the Theory of Change to share with leadership, participants, ACHN Network and the region as a whole for further information and validation of next steps.
- Local leadership will reconvene to discuss outcomes identified and next steps.
- The ACHN Coordinator will convene further gatherings to maintain momentum and identification of opportunities.

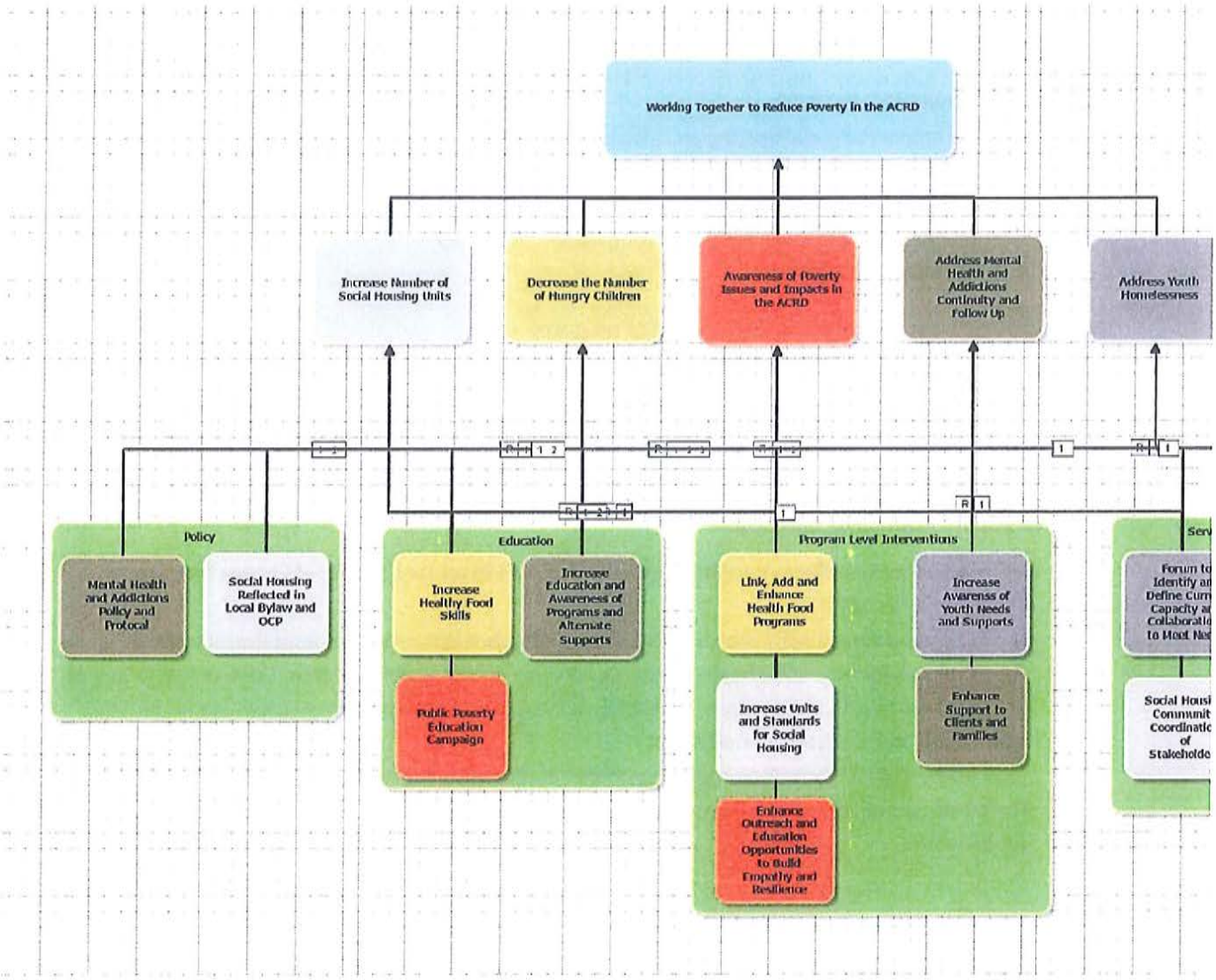
Working Together to Reduce Poverty in the ACRD

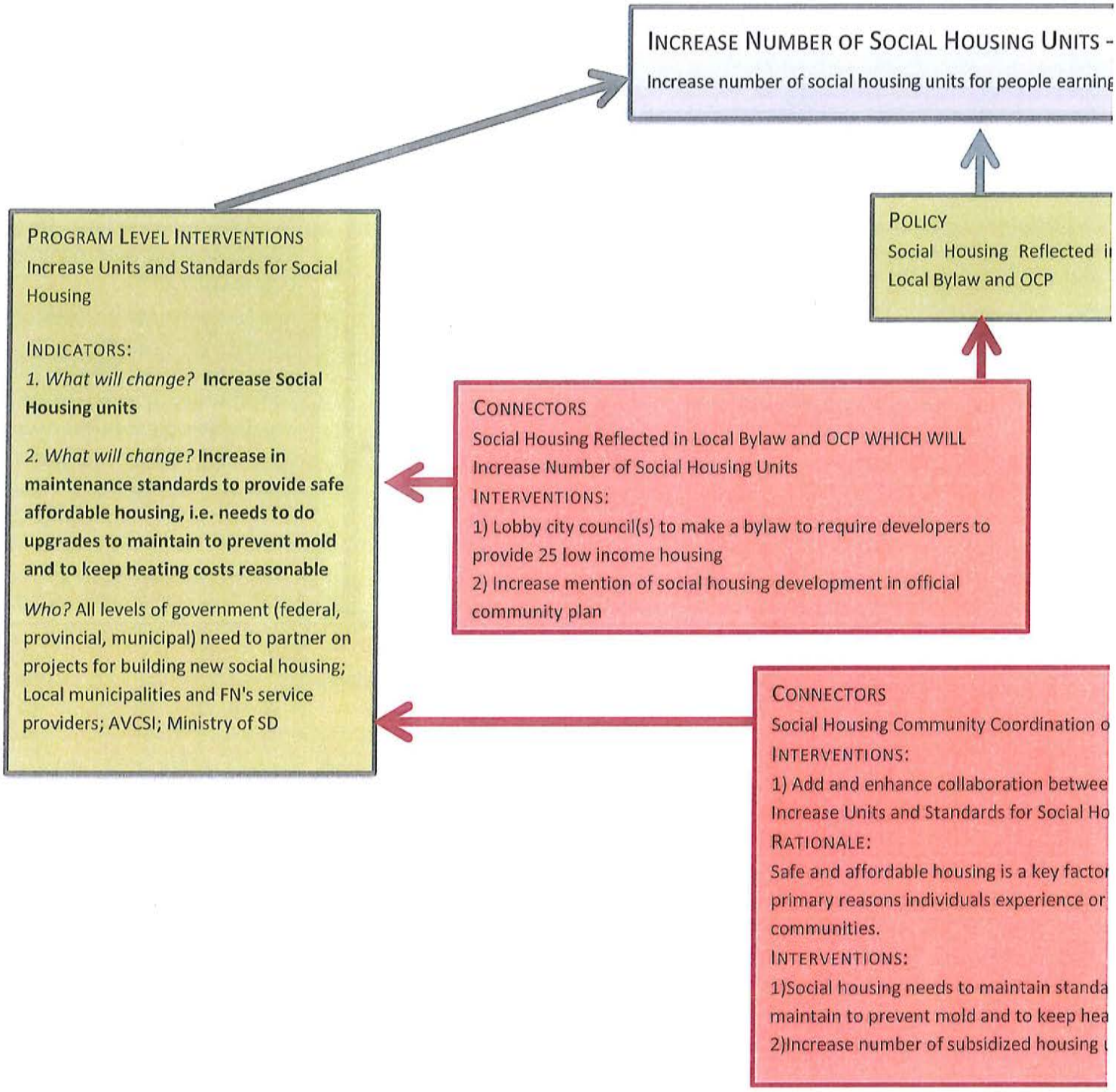
Information from the May 30th workshop was cumulated using the five outcomes identified. The ACHN Coordinator organized outcome actions identified in the workshop into four recurring themes – Service Integration and Collaboration, Program Level Interventions, Public Policy, Education. Utilizing the TOC Software from TOCO Online the outcome actions were entered as preconditions, for high level activities, and connectors or interventions for activities which would lead to the desired outcomes or add detail to the strategy. What, who, how many, how much and when, are additional details which are required for each outcome/precondition identified. While the May 30th workshop assisted to create a framework to start the conversation, many of these questions remain unanswered and much of the work has only just begun.

The following diagrams outline the work conducted on May 30th starting with a high level visual of the Working Together to Reduce Poverty in the ACRD Theory of Change. Following this are detailed diagrams of each outcome statement, with preconditions (activities leading to the outcomes), connectors, interventions and rationales identified from information generated by participants. Arrows identify relations between outcomes and connectors, each intervention and rational is listed below the corresponding statement.

We look forward to sharing this report with you, gathering your feedback and building upon this first draft!

THEORY OF CHANGE FIRST DRAFT




INCREASE NUMBER OF SOCIAL HOUSING UNITS -
Increase number of social housing units for people earning
POLICY
Social Housing Reflected i
Local Bylaw and OCP
PROGRAM LEVEL INTERVENTIONS
Increase Units and Standards for Social Housing
INDICATORS:
1. What will change? Increase Social Housing units
2. What will change? Increase in maintenance standards to provide safe affordable housing, i.e. needs to do upgrades to maintain to prevent mold and to keep heating costs reasonable
Who? All levels of government (federal, provincial, municipal) need to partner on projects for building new social housing; Local municipalities and FN's service providers; AVCSI; Ministry of SD
CONNECTORS
Social Housing Reflected in Local Bylaw and OCP WHICH WILL Increase Number of Social Housing Units
INTERVENTIONS:
1) Lobby city council(s) to make a bylaw to require developers to provide 25 low income housing
2) Increase mention of social housing development in official community plan
CONNECTORS
Social Housing Community Coordination o
INTERVENTIONS:
1) Add and enhance collaboration betwee
Increase Units and Standards for Social Ho
RATIONALE:
Safe and affordable housing is a key factor
primary reasons individuals experience or
communities.
INTERVENTIONS:
1)Social housing needs to maintain standa
maintain to prevent mold and to keep hea
2)Increase number of subsidized housing

Decrease the Number of Hungry Children - Pri

Increase access to healthy and nutritious food and food educat

Program Level Interventions

Link, Add and Enhance Health Food Programs

Indicators:

What will change? **Increase accessibility of Daily School Meals**

Who? PAC; Farmers; Local Government and Provincial; Many volunteers; Students would help to facilitate this project (Grade 12); Grocery Stores; Food Hub Coordinator; University students willing to establish this

What will change? **Increase food for pre-school kids and training for young parents**

- North Island College cooking for young parents
- VAST young moms getting chance to finish school with kids
- Breast milk banks for young dads too, storage too
- Fund pumps for breast milk
- Space at work to make this possible, storage too

Who? Food for pre-school kids and training for young parents; Meals on Wheels; Island Health; North Island College; VAST

Connectors

Increase Healthy Food Skills WHICH W

Rationale:

Increase knowledge around healthy ea and education to all community memb

Interventions:

1) Add and enhance skills of food prep
-Connect elders to schools
-Connect farmers and other foodies
-Partner with soil providing companies
-Teach composting and get compost to
-Offer cooking tools (crock pot) to the
-Encourage more cooking and food pre
-Start more gardening programs in sch
-Learn hunting and food foraging skills
-More social events with food for your

Connectors

Link, Add and Enhance Health Food Programs WHICH WILL Decrease the Number of Hungry Children

Rationale:

Increasing availability of healthy food to all children and youth (not just those in need) increases knowledge around healthy eating, chil outcomes as well as the ability to increase nutritional education. Children pass up messaging to family members.

Interventions:

1) Add and enhance nutritional programming to ensure every person under the age of 19 has access to healthy, affordable food

- Free service for all, not just those in "so-called" need
- Every student should have a breakfast club and lunch every day
- Lunch would be a cooked meal
- Fruit bowl in every class
- For children too young for school we could offer a food drop off for their parents

- Create a program that pays for gardens to be established at yo homes – planter box, seeds, soil...book?
- Create a store where kids can purchase food for themselves at dis
- Add food to our teen social programs (night's alive)

2) Connect our gleaning projects to the schools

Investigate alternative distribution and food collection - farms willing to offer their food waste?

3) Expand B.C. food farmers market coupon program

Awareness of Poverty Issues and Impacts in the A

Increase number of ACRD residents that are aware of regional pover

Connectors

Public Poverty Education Campaign WHICH WILL Awareness of Poverty Issues and Impacts in the ACRD

Rationale:

Stories, dialog and education are imperative to moving forward social change. Educating communities on impacts of poverty, providing decision makers with stories and tools to assist in advocating and addressing issues as well as increasing community ownership of the root causes.

Interventions:

1) Public Education Campaign Ideas Generated:

-Language – Both FN and general public leg.
-Social media, News, agency awareness
-Including all voices – sharing personal awareness
-Sharing public stats. – do we have all stats. and trends
-Stories and stats
-Decision makers, public
-Those in poverty need to be included
-Traditional way of life vs. current
-Access to services many barriers
-Awareness and history of cultures and civilization
-Why are we in poverty
-Living wage calculation and use myth busting
-Needs to happen in schools as well
-Racism is also a need ->cultural awareness o We could be an example
-Need for public education campaigns -> services, stats
-Myth busting reports helpful
-Create awareness of contributing factors -> Historical oppression, Residential schools, trauma...the "why's" of poverty
-Living wage campaign is helpful in spreading awareness -> calculation breakdown has been done
-Holistic approach to represent Health and Poverty balance. Identifying factors
-Compile stats and information. Synthesize -> Island Health and Vital Signs reports, etc School district
-Kids are an excellent way to do public education and raise awareness
-Ambassador training to raise awareness
-University Health Department – incorporate cultural competencies

Awareness of Poverty Issues and Impacts in the AC

Continued

Increase number of ACRD residents that are aware of regional pover

Connectors

Enhance Outreach and Education Oppor
in the ACRD

Interventions:

1) Increase engagement with individuals
- Empower and give people a voice (soup
- Make less formal/fearful gatherings, ma
- "Chummis and Chat"
- "Lunch and Learn"

2) Address impacts and elements which
- Sense of hopelessness of getting out of
- Education -> struggles residual
- Literacy problems
- Work to support these persons through
- Need for: support (literacy, education,
- Legislative and Racism related poverty

3) Add and enhance education around p
- Legislative and Racism related poverty
- Cultural competency -> results -? Racis
- Will racism ever go away
- SD70 -> restricting curriculum to includ
- Children can bring information home, e
- Ambassador Program (Tofino/Ukee) Ab
- West Coast General Hospital -> cultural

Program Level Interventions

Enhance Outreach and Education Opportunities to Build Empathy and Resilience

Indicators:

1. What will change? **Increase in supports to individuals experiencing poverty**

2. What will change? **Increase in education opportunities to address root causes of poverty - Literacy, Life Skills and other empowering education**

3. What will change? Add and enhance education to general public around poverty, racism, cultural competency

Who? Local government, all government those who need help; Service Providers; Media; ACRD; Health Network; Newspapers and Facebook Ad. Space; FN's; School District; Funders; Island Health and FN Health Authority; MP and MLA; Anna Soole – Resiliency, "Create Our Story"; Employers Local government, all government Those who need help

ADDRESS MENTAL HEALTH AND ADDICTIONS CONTINUITY AND FOLL

Increase Continuity and Follow up Support for People with Mental Health and Ad

POLICY

Mental Health and Addictions Policy and Protocol

INDICATORS:

What will change? **Increase awareness of agency protocols**

Adopt shared protocols

Who? Medical Staff; RCMP; Communities Service Providers; Other agencies

EDUCATION

Increase Education and Awareness of Programs and Alte Supports

INDICATORS:

1. What will change? **Increase in education and dialog**

2. What will change? Increase in service acces information on treatment options

Who? Community Services; clients

CONNECTORS

Mental Health and Addictions Policy and Protocol WHICH WILL Address Mental Health and Addictions Continuity and Follow Up

INTERVENTIONS:

1) Increase knowledge around MH&A protocols between agencies

2) Adopt shared protocols between agencies to promote client centered approach, dignity and increase access to services for individuals

CONNECTORS

Increase Education and Awareness Continuity and Follow Up

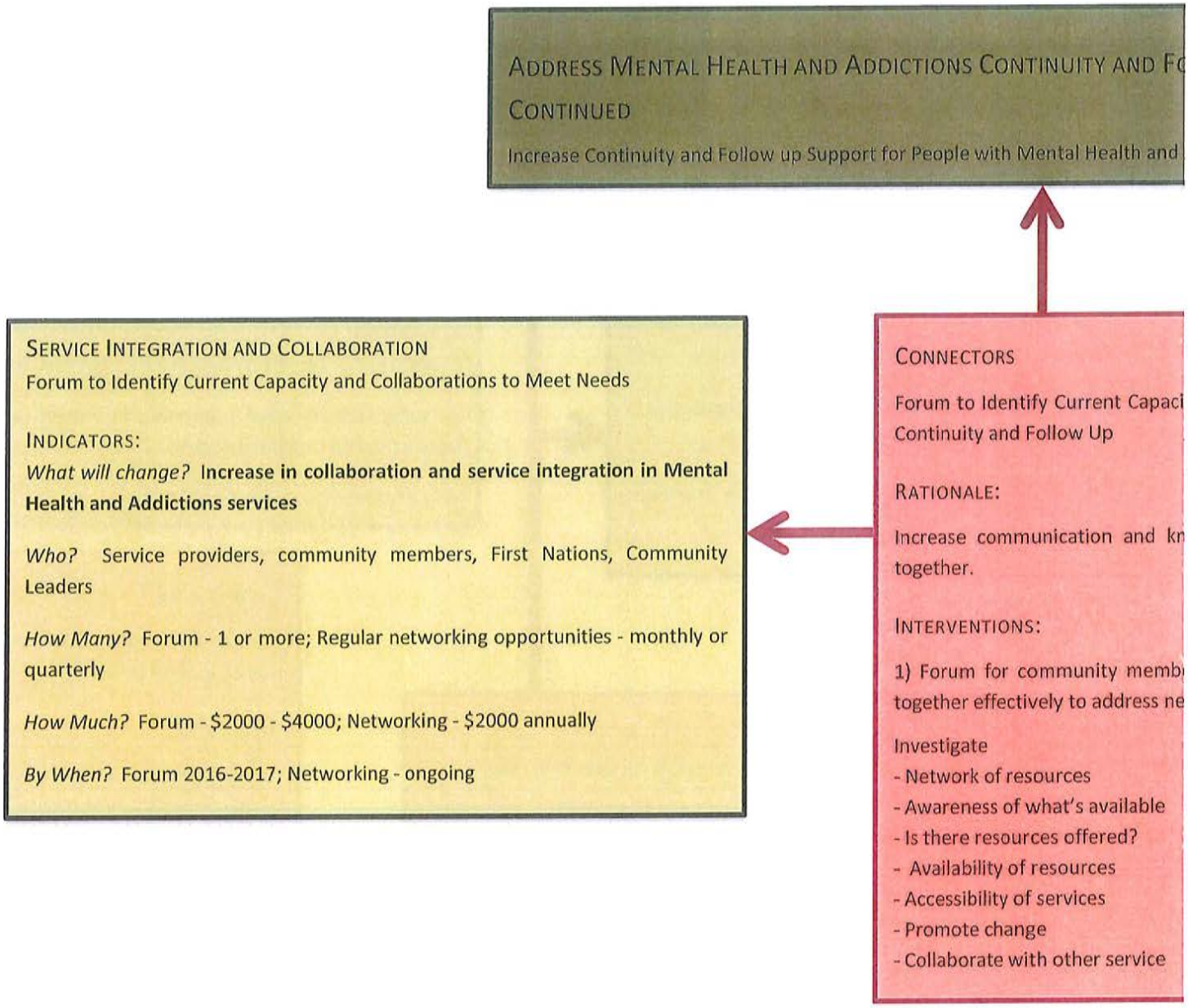
RATIONALE:

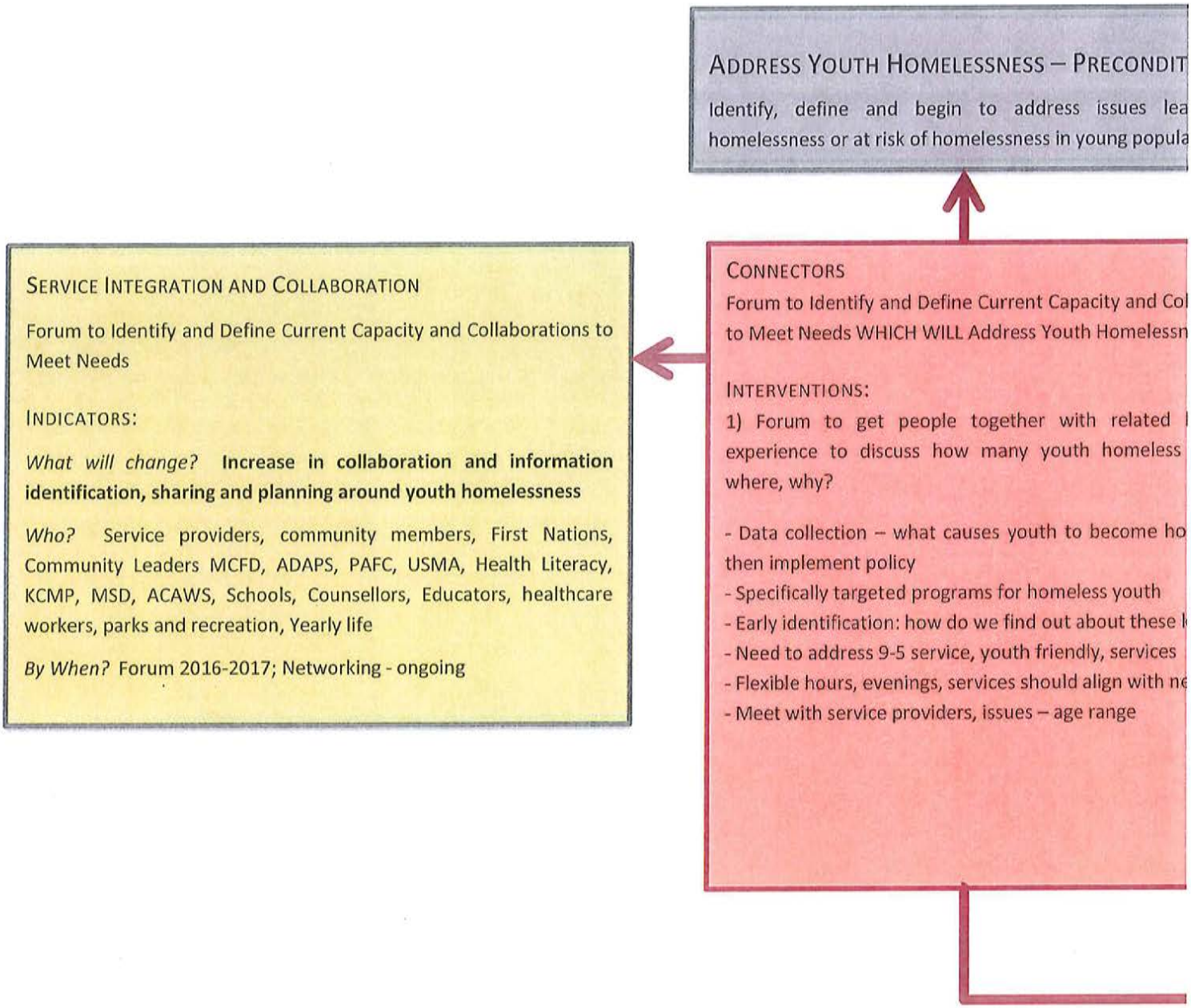
Increasing education and dialog on approach and increase avenues for

INTERVENTIONS:

1) Education on the needs of the pe

2) Increase in information on servic approach.
- Different options for treatments
- Traditional medicine
- Spiritual wellness
- Bring awareness to the issues aro


ADDRESS MENTAL HEALTH AND ADDICTIONS CONTINUITY AND FC
CONTINUED
Increase Continuity and Follow up Support for People with Mental Health and
SERVICE INTEGRATION AND COLLABORATION
Forum to Identify Current Capacity and Collaborations to Meet Needs
INDICATORS:
What will change? Increase in collaboration and service integration in Mental Health and Addictions services
Who? Service providers, community members, First Nations, Community Leaders
How Many? Forum - 1 or more; Regular networking opportunities - monthly or quarterly
How Much? Forum - $2000 - $4000; Networking - $2000 annually
By When? Forum 2016-2017; Networking - ongoing
CONNECTORS
Forum to Identify Current Capaci
Continuity and Follow Up
RATIONALE:
Increase communication and kn
together.
INTERVENTIONS:
1) Forum for community membe
together effectively to address ne
Investigate
- Network of resources
- Awareness of what's available
- Is there resources offered?
- Availability of resources
- Accessibility of services
- Promote change
- Collaborate with other service


ADDRESS YOUTH HOMELESSNESS – PRECONDIT
Identify, define and begin to address issues lea
homelessness or at risk of homelessness in young popula
CONNECTORS
Forum to Identify and Define Current Capacity and Col
to Meet Needs WHICH WILL Address Youth Homelessn
INTERVENTIONS:
1) Forum to get people together with related
experience to discuss how many youth homeless
where, why?
- Data collection – what causes youth to become ho
then implement policy
- Specifically targeted programs for homeless youth
- Early identification: how do we find out about these
- Need to address 9-5 service, youth friendly, services
- Flexible hours, evenings, services should align with ne
- Meet with service providers, issues – age range
SERVICE INTEGRATION AND COLLABORATION
Forum to Identify and Define Current Capacity and Collaborations to Meet Needs
INDICATORS:
What will change? Increase in collaboration and information identification, sharing and planning around youth homelessness
Who? Service providers, community members, First Nations, Community Leaders MCFD, ADAPS, PAFC, USMA, Health Literacy, KCMP, MSD, ACAWS, Schools, Counsellors, Educators, healthcare workers, parks and recreation, Yearly life
By When? Forum 2016-2017; Networking - ongoing

TAMARACK INSTITUTE

COMMUNITY CHANGE SERIES 2016

COLLECTIVE IMPACT 3.0
AN EVOLVING FRAMEWORK FOR COMMUNITY CHANGE

MARK CABAJ AND LIZ WEAVER

FROM THE IMPROBABLE TO THE POSSIBLE

In 2015, the leaders of Medicine Hat, a small city of 60,000 on the Canadian prairies, declared that they had eliminated chronic homelessness. While admitting their limited influence on many of the drivers that create homelessness – such as poor jobs, mental health, family breakdown, or high-priced housing – they had developed a system that can place someone in an affordable house, with an array of support services, within 10 days of being on the street. Emboldened by this success, Medicine Hat is now turning its attention to eliminating food insecurity and poverty.

The citizens of this prairie city are not alone in their efforts to "move the needle" on complex issues. Across Canada there are hundreds of community-wide initiatives to end homelessness, reduce poverty, improve early childhood development outcomes, increase high school graduation rates, and strengthen community safety. There are thousands more across the world.

Many of them are inspired and informed by the Collective Impact (CI) framework. CI was coined in 2011 by John Kania and Mark Kramer of FSG Consulting. Their Stanford Social Innovation Review article of the same name distils some of the key ingredients of successful community efforts to move "from fragmented action and results" to "collective action and deep and durable impact." These ingredients (or "conditions") are a common agenda, shared measurement, mutually reinforcing activities, continuous communication, and backbone support.[i]

The article's effect on the field of community change has been electric. The innovators whose work the article described praised its distillation of the key elements of an approach to community change. Paul Born, a collective impact pioneer, said: "Kania and Kramer understood the work we were doing so well, and described it so effectively, that they essentially laid out a new operating system for community change." Jay Connor, an early practitioner and coach for community-wide collaboration, noted: "I am grateful to FSG for what they have done. We have been trying in our own way to describe these ideas for so many years, trying in our own way to explain it clearly. We can spend more time doing the hard work on the ground."

The article excited early adopters even more. Countless community organizations, government agencies, philanthropies, and socially minded businesses embraced CI in hopes that it might help them to make deep and durable changes in the social, economic, and even environmental challenges facing their communities. Tom Wolff, an experienced coalition builder (and vocal critic of CI), credited the response as a "revolution" in the way that governments and funders thought about and approached community change.[ii]

FSG and other CI advocates have done much to expand and elaborate the original five conditions described in that first article. They have laid out what they feel are the pre-conditions for CI, the phases of the approach, a variety of key practices (e.g., strategy, governance, funding, evaluation), and more recently, eight key principles of practice. The Collective Impact Forum, an online community administered by FSG, is one of the world's most comprehensive resources on community change and a platform for practitioners to share and build knowledge, skills, and tools for the work. CI is now a permanent – even dominant – part of the landscape of community change.

AN EVOLUTION IN THE REVOLUTION

We believe that it's time for an evolution in the revolution. While the CEO of one philanthropic organization argues that support and buy-in for CI is now at "fever pitch," there are two compelling reasons for advocates to find ways to upgrade – not simply elaborate upon – the framework. [iii]

First, there has been enough experimentation with CI, by diverse communities working on diverse issues in diverse settings, to shed light on its limitations. These include: insufficient attention to the role of community in the change effort; an excessive focus on short-term data; an understatement of the role of policy and systems change; and an over-investment in backbone support. [iv] Our colleague Mark Holmgren warns that if these limitations are not taken seriously, the field may experience a "pendulum swing" away from collective change efforts. [v]

The response of the FSG team to the feedback has been excellent. They have welcomed the critiques on the CI Forum, admitted the framework's shortcomings, and worked diligently with others to address them or expand on areas that deserve elaboration. Their recently released "principles of practice for collective impact," for example, address many concerns about the framework. As Karen Pittman, head of the Forum on Youth Investment, noted: "Kania, Kramer and the FSG team get high marks in my book for being consistently open to adapting their theory to better reflect practice." [vi]

Yet the criticisms continue to roll in. And it is good that they do. Like all frameworks, CI reveals a great deal about how people tackle tough issues at scale, but is simply unable to capture the full complexity of the work. It is important for those who have devoted their lives to community change to point out where these gaps or weaknesses lie, because the stakes involved are so high.

Secondly, in the rush to embrace CI, many in the field have ignored the less well-packaged and promoted frameworks of community change developed by other organizations and practitioners. Some of these include the Bridgespan group's work on Needle Moving Collaboratives, the Aspen Institute's work on Comprehensive Community Initiatives and the grassroots Turning Outward model of the Harwood Institute. [vii] Each of these approaches is based on solid experience and research, and offers (slightly) alternative perspectives on community change. They deserve to be taken seriously. Many of the observations and strategies in these community change approaches can be woven into effective CI implementation.

Are CI's limitations significant enough to warrant throwing it away? No. The framework has too much "roughly right" and is too successful in expanding the field of those who want to work together to build stronger communities.

The correct response is to move beyond simply fine-tuning the original framework and begin upgrading it to reflect important criticisms and limitations. Hardware and software developers relentlessly upgrade their operating systems to reach the next level of capability and performance. So too should we look to upgrade the design and implementation of the CI framework.

The task cannot be left to FSG alone. The organization and its leaders have been exemplary in incorporating new learnings. However, the framework's redevelopment is simply too much work for one organization – and it disempowers the rest of the field. If CI is going to get to the next level, community change practitioners and those who support them must step up and partner in building the framework's next iteration.

COLLECTIVE IMPACT 3.0

We are willing to do our share. This article is the first of a series which will lay out a number of upgrades to the CI framework.

We call it Collective Impact 3.0, a term that emerged during our annual CI summit in Vancouver in 2015. At that event, we described the evolution of CI in terms of three phases. The 1.0 phase refers to the days prior to 2011 when diverse groups spontaneously prototyped CI practices without reference to the patterns identified by FSG. The 2.0 phase spans the five years following Kania and Kramer's article. Many communities adopted the CI framework laid out there, and FSG made diligent efforts to track, codify, and assess this second generation of CI initiatives. In the third phase, Collective Impact 3.0, the push is to deepen, broaden and adapt CI based on yet another generation of initiatives.

Who are we to offer Collective Impact 3.0? We at Tamarack have been knee-deep in community change initiatives for more than 20 years, including the sponsorship of Vibrant Communities, an evolving network of prototypical CI initiatives focused on poverty reduction. Tamarack made CI one of its top five themes. Our staff and associates have been involved in scores of CI efforts across North America and beyond.

We are committed to the basic structure of CI, which in our view has "good bones." However, we want to reframe many of the basic ideas and practices due to the limitations of the original framework, the insights of other frameworks, our own experience, and FSG's own work.

We do not believe that what we produce will be the only iteration of CI, or the best one. Like everyone else, we are prisoners of our own experience and limitations. We do hope, however, that our contribution adds to the next generation of the CI framework and encourages other practitioners to do the same. Our field needs diverse voices and perspectives moving forward.

FIRST THINGS FIRST: REVISITING THE FOUNDATIONS

This article, the first in our 3.0 series, revisits the foundational elements of the CI framework. This includes a new look at the Leadership Paradigm which underlies it, as well as CI's five conditions.

From	To
The Leadership Paradigm	
Management	Movement Building
The Five Conditions	
Common Agenda	Community Aspiration
Shared Measurement	Strategic Learning
Mutually Reinforcing Activities	High Leverage Activities
Continuous Communication	Inclusive Community Engagement
Backbone	Containers for Change

Some of these shifts are significant and some are modest. All broaden the original elements laid out in Kania and Kramer's 2011 article.

FROM A MANAGERIAL TO A MOVEMENT-BUILDING PARADIGM

Al Etmanski and Vickie Cammack, two of Canada's most celebrated social innovators, have developed a simple philosophy to guide their efforts: "Act like an organization, but think like a movement." [viii] Would-be change-makers must tend to the day-to-day tasks of research, raising money, planning, and management. But the chances that their efforts will achieve scale improve dramatically if the work is undergirded with relationships based on a common vision and value – relationships that span diverse organizations, sectors, and political affiliations.

In a management approach, the leaders of institutions responsible for a domain – such as health, education, or criminal justice – come together to find ways to get better outcomes than they might achieve independently. While they may consult with the broader community on the nature of the problem and how it might be addressed, they perceive themselves to be primarily

responsible for developing and implementing new responses to an issue. As a result, CI participants employing a managerial approach typically (but not always) focus on improving existing systems through such measures as data-sharing, coordination of services, and joint action on policy or regulation barriers.

The management approach can generate results. In the case of Strive in Cincinnati (the example that FSG used to illustrate CI), educational institutions and community agencies agreed to organize their activities around a comprehensive "cradle to career" framework with 60 key measures. They have succeeded in getting dozens of organizations to align their efforts and produced a score of innovations. Cumulatively, these have resulted in improvements in reading and math scores, high school graduation rates, and post-secondary enrollment and completion. [ix]

In a movement-building approach, by contrast, the emphasis is on reforming (even transforming) systems where improvements alone will not make a difference. Movement-building leaders bring together a diverse group of stakeholders, including those not in traditional institutions or seats of power, to build a vision of the future based on common values and narratives. Movements "open up peoples' hearts and minds to new possibilities," "create the receptive climate for new ideas to take hold," and "embolden policymakers" and system leaders. [x] Movements change the ground on which everyday political life and management occur.

Participants of the End Poverty Edmonton initiative state clearly that they are creating a movement to end – not reduce – local poverty within a generation. [xi] To achieve this, one of their game-changing priorities is to eliminate racism, including a powerful six-point plan to support reconciliation between Aboriginal and non-Aboriginal people. Racism, participants assert, is at the root of the difficulty that many residents experience when securing adequate housing, education, human services, and income. This bold commitment has cleared the way for the community to pursue some atypical initiatives. One is training local police and safety officials to improve their cultural literacy and reduce the stigmatization of racialized groups. More importantly, this initiative also challenges all the city's residents to become actively involved in dozens of little ways. It's too early to judge whether their gamble will pay off. But their prospects for large-scale impact now seem so much greater, it's hard not to be impressed.

This is not to say that a management orientation to CI is incapable of changing systems. Between 2010 and 2014, hundreds of organizations in New York state came together to reform its broken criminal justice system. Youth who committed even minor offences encountered an array of programs and regulations so disconnected and ill-designed as to increase, not decrease, the likelihood that the young person would re-offend or commit an even more serious crime. Through a variety of innovations (one being the requirement that young offenders are served in local day programs, not residential programs in another part of the state), the number of youth in custody fell by 45 percent without an increase in youth crime. Buoyed by these successes, state leaders are now working on a bill that will raise the criminal age of responsibility from 16 to 18, a key move to reduce the number of youth exposed to the harsher edges of the adult system. [xii]

It's possible to point to several other successful CI efforts led by mainstream institutions. Even so, we feel that the chances for impact are dramatically better if would-be changemakers explicitly bring to their work a movement-building orientation. Why? Because when people operate from a management paradigm, their emphasis tends to be on improving systems rather than changing them. As a consequence, participants typically are suspicious of bold measures. In some cases, they resist or block transformative ideas because their instinct is to preserve the systems they manage. As Eric Bonabeau, CEO of Icosystems, observes: "Managers would rather live with a problem they can't solve than with a solution they can't fully understand or control." [xiii]

Compare, for example, how the leaders of two major Canadian cities approached the challenge of ending poverty. In one western city, several

reputable non-profit leaders made the case that reducing wage inequity and introducing a guaranteed annual income should be key features of the poverty reduction plan. Key philanthropic leaders co-convening the plan's development vetoed the idea. It was alleged that such measures were unlikely to gain widespread support in a community that celebrates "pulling yourself up by your bootstraps." Moreover, they risked alienating several of the funder's generous conservative contributors. In Hamilton, on the other hand, the chair of the poverty roundtable declared that poverty was a public health crisis on the scale of SARS. A guaranteed annual income and living wage policies, he said, were as key to poverty reduction in the 21st century as the abolition of slavery and child labour were in the 19th century. Rather than alienate local leaders, the call to action has inspired them. The municipality, the Chamber of Commerce and local school board have signed on as living wage employers. [xiv]

Mainstream leaders are right to heed the interests of the organization they are paid to operate. But we believe that broad, deep, and durable changes in communities are more likely when CI participants embrace a movement-building rather than a managerial approach to their work. By approaching CI in the same way you would a movement, we are far more likely to "shift boundaries for what is socially acceptable and politically expected." [xv]

UPGRADING THE FIVE CONDITIONS

In their 2010 article, Kania and Kramer identify five conditions that communities must fulfill in order to get from isolated impact (where organizations operate independently and scale is achieved through the growth of individual organizations) to collective impact. These are: agreement on a common agenda; the development of a shared measurement approach; leveraging resources through mutually reinforcing activities; building continuous communications; and a backbone structure to mobilize the collective effort.

Although we reaffirm that these conditions are "roughly right," we believe they are too narrowly framed to capture how successful CI actually operates, particularly efforts that are explicitly embedded in a movement-building approach to community change. The following section describes how we would upgrade each of the five conditions and why.

FROM CONTINUOUS COMMUNICATION TO AUTHENTIC COMMUNITY ENGAGEMENT

One of the biggest critiques of the earlier version of the CI framework is its apparent failure to put community at the centre of the change process. While FSG in no way set out to diminish the role of community in the work, there appears to be a strong emphasis on "CEO-level cross-sector leaders" in some of the early articles. [xvi]

The case for authentic and inclusive involvement of a broad spectrum of system stakeholders, particularly those most affected by complex issues, is overwhelming. It allows participants to draw on "360-degree insight" into the nature of the problems and how they might be addressed. It creates a broader constituency for change – so critical in any effort to disrupt and change systems. It cultivates broad ownership and long-term commitment to the change process which is essential when the initial excitement begins to flag and the going gets tough. Most importantly, the idea that those most affected by an issue should participate fully in attempts to address it (aka "Nothing about us without us!") is a fundamental democratic and moral principle.

Robust community engagement is back-breaking work. It takes time to map out which stakeholders to invite to the table, skill to create good opportunities to engage people at each stage of the change process, and confidence and humility to navigate the inevitable conflicts between participants who differ in their values, interests, and power. Tamarack has been working on the craft of community engagement for over a decade. Some of that experience is captured in Paul Born's books, *Community Conversations* (2012) and *Deepening Community* (2014). As central as

community building is, we still feel like we are merely scratching its surface.

The FSG team has since more than made up for this initial omission. In 2015, Kania and Kramer's fourth article in the CI series focused on the importance of equity and argued that inclusion in the change process of the people most affected by an issue is "imperative." [xvii] More recently, of their Eight Collective Impact Principles of Practice, three concern equity, the inclusion of community members, and relationship, trust, and respect. FSG is working with organizations that have a long history in these issues to promote these principles to CI efforts across the world.

The original article on CI identified "continuous communication" as a condition for mobilizing stakeholders, building trust, and structuring meaningful meetings and work. Somehow, "continuous communication" hardly seems to convey all the work that is involved. Why not call a spade a spade? Authentic and inclusive community engagement is, without a doubt, a condition for transformational impact and therefore a condition for CI 3.0.

FROM COMMON AGENDA TO SHARED ASPIRATION

Jay Connor is fond of quoting an exchange between a journalist and Francis Ford Coppola, the movie director famed for *The Godfather* and other hits. When asked to explain the difference between what made a good movie versus a bad one, Coppola responded, "In a good movie, everyone is making the same movie." [xviii]

Kania and Kramer quite rightly point out that many participants who profess to be working on a common problem are in fact working with different perspectives on the nature and root causes of that problem and how it might be resolved. So the results they generate are likely to be fragmented, not collective. A true common agenda requires leadership to bring key stakeholders together; to review the key data which informs the problem or issue; to develop a shared vision for change; and to determine the core pathways and strategies that will drive the change forward. This is more than a simple planning exercise. Indeed, it requires would-be collaborators to find (or create) common ground despite their very different values, interests, and positions.

As much as we believe this to be true, a focus on a community aspiration can have an even more powerful impact when creating a broader movement for change. This requires participants to develop outcomes that are based on community values sufficiently ambitious that they cannot be realized through business as usual. A solid community aspiration can also create the kind of "big tent" under which a wide range of participants can pursue the interdependent challenges underlying tough issues. (See sidebar on *Perverse Consequences*).

Take, for example, the Hamilton Roundtable for Poverty Reduction. Formed in 2002, it drew members from the city's business, government, and voluntary sectors, and community leaders with the lived experience of poverty. After extensive consultations in the broader community, Roundtable leaders concluded that "poverty reduction" would not mobilize the energies of a large and diverse network of people. Instead, they called for the effort to embrace a bolder aspiration: "Make Hamilton the Best Place to Raise a Child." They consequently organized a framework around five critical points of investment (from early learning and parenting to employment) that engaged dozens of networks and organizations.

The aspiration was contagious. In October 2005, Hamilton's major paper, the Spectator, announced that it would make poverty coverage a priority. It published a front page that was blank except for one statement: "The stories have been removed from this page to remind us that nearly 100,000 children, women and men live in poverty in Hamilton, people whose stories rarely make the front page. We're going to change that." [xix] Soon afterwards, city council embedded the words "Best Place to Raise a Child" in Hamilton's mission statement and a local marketing expert praised the

aspiration for its ability to inspire community-wide action.[xx] By 2011, a Nanos survey reported that 80 percent of respondents felt that municipal investment in poverty reduction should be the city's number one priority. It was a result that startled the veteran pollster administering the survey. "There are very few issues that you get 80 percent of anybody to agree on," he remarked in surprise.[xxi]

THE PERVERSE CONSEQUENCES OF NARROWLY FRAMED AGENDAS

Focusing on one slice of a complex problem may make the challenge less overwhelming and improve the chances of developing a shared agenda. It may also have some perverse consequences.

Take, for example, the efforts to reduce malaria and HIV, two leading causes of child mortality in the developing world. Spearheaded by the generous support and relentless leadership of the Bill and Melinda Gates Foundation, international donors for the last decade have focused on developing and deploying high-impact vaccinations. While their efforts have saved millions of lives, they have created other problems. Funders, governments, and health organizations have diverted so many human and financial resources from other types of medical care, nutrition, and education that there has been a sharp jump in more common ailments, such as birth sepsis, diarrhoea, and asphyxia. One report described how some patients walked nine hours to clinics to get their HIV and malaria medications, only to vomit them back up due to hunger and fatigue. In some countries, malaria and HIV rates have begun to climb again.

In response, many international funders have adjusted their effort to focus on a bigger aspiration, "broader, integrated child survival," and have broadened their strategies to focus on prevention and treatment of diseases and on strengthening the entire health care delivery system.[xxii]

FROM SHARED MEASUREMENT TO STRATEGIC LEARNING

> "Developing a shared measurement system is essential to collective impact. Agreement on a common agenda is illusory without agreement on the ways success will be measured and reported. Collecting data and measuring results consistently on a short list of indicators at the community level and across all participating organizations not only ensures that all efforts remain aligned, it also enables the participants to hold each other accountable and learn from each other's successes and failures."[xxiii]

This sums up one of the most popular conditions of CI. It has generated the greatest experimentation across CI initiatives.

Five years later, we've discovered a great deal about the mechanics of developing shared measurement systems, and have concluded we still have a long way to go.[xxiv] One of the biggest of these insights is that CI participants have more success with shared measurement if they treat them as one part of a larger system of learning and evaluation.

Consider, for instance, the different measurement approaches taken by General Motors and Toyota in the 1980s and 1990s. General Motors was a data-heavy and report-heavy organization. It employed sophisticated systems to gather, analyze, and develop thick reports for senior managers. Toyota, on the other hand, emphasized management practices that were data-light and learning-heavy. It chose to focus on a few select measures, real-time feedback loops, and floor-level decision making.[xxv] While the performance gap between the companies has recently closed (due in part to a worrisome decline in Toyota's once-vaunted quality control), researchers and business leaders credit the different evaluation and measurement processes for Toyota's consistently better outcomes in earlier years.

A robust learning and evaluation process is even more critical in community-wide change efforts. Unlike the relatively routinized nature of an automotive production line, social innovators are trying to change the dynamic and complex systems that underlie social problems. They want measurement systems that (a) provide real-time

feedback on the multiple outcomes expressed in their theory of change or strategy; (b) are manageable; (c) have robust processes for sense-making and decision-making; and (d) can co-evolve with their ever-changing strategies. CI participants are known sometimes to rush right into shared measurement with the question, "What should and could we measure together?" Unfortunately, without first having laid the foundations for strategic learning, they find themselves wrapped up in messy, frustrating, tail-chasing processes with slim prospects for producing useful data.

The experiences of the many 10-year plans to end community homelessness illustrate the point. These initiatives are able to employ relatively sophisticated homelessness management information systems (HMIS). This is due in part to a well-developed "Housing First" philosophy that identifies the key outcomes whose measurement deserves extra attention. Most of the groups have also developed good processes for using the data to inform decisions about their overall strategy. Not only have these resulted in adaptations to the Housing First model, they have prompted many to recognize their need to develop entirely new models for the prevention of homelessness. [xxvi] Community-based initiatives to end homelessness are exemplars in strategic learning and data use.

A formal shift to a strategic learning approach, which includes shared measurement as a component rather than a central feature of the process, should be straightforward. It will appeal to more experienced community builders to know that measures are only part of learning. It also will be welcomed by evaluators who want to build measures for outcomes that matter – social innovators will use the feedback, rather than consign it to the shelf.

Happily, much of the groundwork for adopting a strategic learning stance in CI initiatives has already been laid. The Atlantic Philanthropies and the Center for Evaluation Innovation, the pioneers of the approach, feature multiple tools and examples on their websites. FSG has produced a comprehensive, easy-to-use, and solid resource on building strategic learning systems. The next generation of CI practitioners would do well to adopt and adapt these frameworks.

FROM MUTUALLY REINFORCING ACTIVITIES TO A FOCUS ON HIGH-LEVERAGE AND LOOSE/TIGHT WORKING RELATIONSHIPS

Of the five conditions, "mutually reinforcing activities" is our favourite. It so elegantly captures the need of CI to add up to more than the sum of its parts.

Yet, as elegant as it is, the focus on mutually reinforcing activities has two limitations. The first is that it may unintentionally encourage CI participants to focus on areas that offer great opportunities for cooperation rather than the greatest opportunities for results. This is nicely captured by two practitioners, Peter Boumgarden and John Branch. In their article, "Collective Impact or Collective Blindness," they remark:

> "While we do not doubt the benefits of collaboration, we argue that 'collective impact' over and above competition often results in coordinated but misdirected effort." [xxvii]

CI participants must see beyond collaboration and instead focus on strategies that focus on "high leverage" opportunities for change. They must commit to a systemic reading of the complex systems they are trying to change, and to making a realistic assessment of where local actors have the knowledge, networks, and resources to make a difference. [xxviii] Finding this "sweet spot" where these two intersect is not easy.

Just ask the thousands of CI participants working hard to replace fragmented programs for vulnerable families with more holistic, coordinated, and accessible services. The two most typical strategies, co-locating of services and case management methods, offer excellent prospects for cooperation: they are relatively easy to implement and "don't require co-locators to give up funds, authority or turf". [xxix] It turns out that they are also low leverage: while families benefit from having services in one place and an advocate

willing to help them navigate them, the majority of programs still operate with inflexible eligibility criteria, offer cookie-cutter supports, and are so poorly coordinated that accessing them is a full-time job. With few exceptions, these strategies have not resulted in better outcomes for struggling families. The higher leverage strategy is for policy makers and funders to decentralize responsibility for program design to regional and local organizations and hold them accountable for broad – rather than discrete – outcomes. While these measures are more far more likely to lead to comprehensive, flexible, and quality services, along with better results for families, they consistently meet with resistance from people within the systems because they are messy and require shifts in power and resources. [xxx]

The second limitation of a strong emphasis on mutually reinforcing activities is that it seems to exclude the periodic necessity to allow participants to pursue independent – even competing – pathways to a common goal. In the case of Tillamook County, Oregon, for example, health organizations, education groups, and faith-based organizations settled on a common aspiration to eliminate teen pregnancy. But they could not agree on a common strategy. As a result, each pursued its own unique path. Public health advocates promoted safe sex. Educators focused on increasing literacy on sexuality. Faith-based organizations preached abstinence. The cumulative result of their efforts was a 75 percent reduction in teen pregnancy in 10 years. [xxxi] Why? Because different strategies triggered different outcomes for different groups of vulnerable families and teens.

Pursuing different pathways is particularly productive when social innovators are unclear about the nature of the problem they are trying to address. In these situations, it makes good sense for people to fan out and try different approaches. In the case of Opportunities 2000, a pioneering CI effort to reduce Waterloo Region's poverty levels to the lowest in Canada, non-profit organizations worked together to advocate the creation of a fund to invest in innovative ways to reduce poverty. They then applied to access the fund through competitive bidding, with many non-profits participating in multiple proposals. This not only resulted in a range of innovative responses, including Canada's first head-hunting service for working poor immigrants and the country's first Individual Development Accounts, but also an increase in the monthly income of nearly 1,600 low-income families. [xxxii]

The late Brenda Zimmerman, a world expert on managing complex systems, concluded that one of the key attributes of successful social innovators was their ability to know when and how to "mix cooperation with competition." [xxxiii] This flies in the face of conventional wisdom, which suggests that collaboration is always the best response. So it may well be that conventional wisdom is a barrier to what appears to be a critical condition of Collective Impact 3.0: a focus on high-leverage strategies, and permission to participants that they work as loosely or as tightly as the situation requires.

FROM BACKBONE SUPPORT TO A CONTAINER FOR CHANGE

Backbone support, CI's fifth condition, was warmly received by veteran community builders and changemakers.

> "Creating and managing collective impact requires a separate organization and staff with a very specific set of skills to serve as the backbone for the entire initiative. Coordination takes time, and none of the participating organizations has any to spare. The expectation that collaboration can occur without a supporting infrastructure is one of the most frequent reasons why it fails." [xxxiv]

This simple statement reaffirms what community builders have been saying since the 1960s: work on community change across organizational and sectoral boundaries must be placed firmly in the centre – rather than on the side – of participants' desks. It warrants an investment of extra resources in an intermediary or coordinating body whose job it is to see to the day-to-day work of collaboration. Even CI's outspoken critics acknowledge how the

framework has encouraged practitioners and funders to invest greater time, energy, and financial resources into ensuring this support is in place. [xxxv]

The renewed emphasis on backbone support has also led to a much better understanding of the infrastructure required for community change. This includes an elaboration of the various roles that the backbone group can play (e.g., guiding the creation of a vision and strategy, mobilizing funding, and advancing policy) as well as the governance structures, funding models, and leadership styles required to support them. [xxxvi] These insights represent significant steps forward in practice in five short years.

PLENTY OF MISTAKES, TOO

CI practitioners have made plenty of mistakes in our newfound exuberance for backbone supports.

In many instances, people have been confused by what backbone support involves. It simply means to appoint one or more organizations to fulfill various essential functions, sometimes with extra financial resources. Instead, the term has been taken for a recommendation to create specialized organizations from scratch. This may lead to investing substantial time and energy in creating and managing a new legal body. It also increases the risk that leading organizations feel less ownership and responsibility for the change effort. They let the "the new organization" run the show.

In other cases, well-meaning CI leaders working on different challenges (including poverty, homelessness and early childhood development) have created their own boutique backbone groups. This has spread thin what few human and financial resources are available for backbone work. It has also served to strengthen silos and impede joint action across the boundaries of such artificial domains.

Tamarack staff will explore these – and other – missteps in backbone practices in a future article on CI 3.0.

While these capture the "outer game" of change, the next generation of CI practitioners needs to turn its attention to creating a "strong container" to assist CI participants with the inner game of personal change. Put simply, a strong container is where social innovators can:

> "... transform their understandings [of the system they are trying to change], the relationships [with others in the systems] and their intentions [to act]. The boundaries of this container are set so that the participants feel enough protection and safety, as well as enough pressure and friction, to be able to do their challenging work." [xxxvii]

Building a strong container requires paying attention to a variety of dimensions of backbone stewardship. Some of the more important ones are the following:

- The mobilization of a diverse group of funders, backbone sponsors, and stewardship arrangements that demonstrate cross-sectoral leadership on the issue.
- The facilitation of the participants' inner journey of change, including the discovery and letting go of their own mental models and cultural/emotional biases, required for them to be open to fundamentally new ways of doing things.
- Processes to cultivate trust and empathy amongst participants so they can freely share perspectives, engage in fierce conversations, and navigate differences in power.
- Using the many dilemmas and paradoxes of community change – such as the need to achieve short-term wins while involved in the longer-term work of system change – as creative tensions to drive people to seek new approaches to vexing challenges without overwhelming them.

- Timely nudges to sustain a process of self-refueling change that can sustain multiple cycles of learning and periodic drops in momentum and morale.

It is difficult to overestimate the importance of creating a container for change. Some argue that it is more important than "charismatic leadership, technical expertise, or even funding." [xxxviii] Others argue that the critical "soft stuff" is more difficult to manage than the "hard stuff" of research, planning, and program design. Peter Senge notes:

> You cannot force commitment. What you can do is nudge a little here, inspire a little there, and provide a role model. Your primary influence is the environment you create. [xxxix]

The Energy Futures Lab in Alberta demonstrates the value of creating that kind of environment. It's an effort to help actors in the province's export-oriented, oil-and gas-dominated energy sector to "accelerate the transition to a carbon-constrained future" that is economically vibrant, socially equitable, and environmentally sustainable. The design team invested significant time and energy laying the effort's foundations:

- A formal commitment to create a radical middle position in the polarized mainstream debate over the energy system (e.g., "economy versus the environment," "resource development versus community well-being").

- The creation of a backbone group comprising five diverse organizations – an energy company, a key government department, two well-respected environmental non-governmental organizations, and an outstanding leadership development institute with growing expertise in Aboriginal leadership.

- The recruitment of a "whole system team" of participants who are a microcosm of the diverse values, interests, and perspectives of the energy system's current stakeholders, and the engagement of their organizations, networks, and the broader public.

Having laid this groundwork, the backbone team worked diligently to create space for Lab participants to learn more about the energy system, themselves, and other participants. They carried out "deep interviews" with Fellows to surface their hopes, aspirations, and fears of energy transition; facilitated structured conversations about social and political narratives that shape people's perspectives on tough issues and how to empathize with alternative viewpoints; sponsored learning journeys to explore different parts of the energy system from a worm's-eye view, and systems-mapping sessions to look at the same systems from a bird's-eye view; and facilitated methods for dialogue that allowed people to have unspeakable conversations (e.g., can Albertans really maintain this standard of living in a carbon constrained future?). [xl]

The commitment to building a strong container has paid off. The participants signed their names to an op-ed piece in a major newspaper that advocated cross-sectoral leadership to shape – rather than endure – the energy transition already in progress. They crafted a vision document with 11 "pathways to energy system innovation" that they intend to upgrade once it has been tested with scores of networks and organizations across the province. There are nearly a dozen teams developing prototypes to test breakthrough technologies, policies, and business models that comprise the Lab's portfolio of promising initiatives. As one veteran of sustainability activism commented: "The commitment and the progress of this diverse group have been simply remarkable." [xli]

Bill O'Brien, a well-regarded business leader, noted: "The success of an intervention depends on the inner conditions of the intervenor." [xlii] In the same vein, the success of the next generation of CI initiatives depends on the ability of backbone teams to create the strong containers for change that support participants to dig deep when tackling stubborn social challenges.

CONCLUSION

The jury is still out on the ability of CI efforts to generate deep, wide, and sustained impact on tough societal challenges. In their study of 20 years of comprehensive community initiatives, the top-drawer researchers of the Aspen Institute's Roundtable on Community Change concluded that while there have been an impressive number of successful changes in policy and system changes, along with innovative programs, "few if any [initiatives] were able to demonstrate widespread changes in child and family well-being or reductions in the neighbourhood poverty rate." [xliii]

The CI framework has breathed new life into the weary efforts of many long-standing community change initiatives. It has also dramatically increased the number of new and aspiring changemakers. For all that, the exemplary stories of impact (like Medicine Hat's success in eliminating homelessness, or the slow but steady improvement of academic outcomes in the environs of Cincinnati) are still the exception rather than the rule.

The success of this next generation of community change efforts depends, in part, on the willingness of CI participants not to settle for marginal improvements to the original version of the CI framework. Instead, they must take on the challenge to continually upgrade the approach based on ongoing learning of what it takes to transform communities. The CI approach is – and always will be – unfinished business.

In this article, we've laid out what we feel are foundational elements of a CI 3.0 framework. Our core argument is that CI efforts are more likely to be effective when their participants operate from a movement-building paradigm. It is impossible for a leadership table compromised of 20 to 40 leaders – no matter how committed and influential – to tackle issues and make deep and durable change on their own. It requires the engagement, commitment, and investment of an entire community striving to be the best it can be and willing to make whatever changes to community systems – and its own behaviours – that are necessary to build safe, prosperous, inclusive, and sustainable communities.

This is only the beginning. In subsequent articles we plan to weigh in on other elements of the approach, namely:

- Preconditions for CI
- Phases of CI
- Principles of practice for CI
- A selection of key practices (e.g. governance, shared measurement).

We encourage others to do the same. While there is no sure-fire recipe for community change, there are patterns of effective ideas and practices that can improve the probabilities of success. In a world that seems a bit more fragile, disruptive, and anxious than normal, we need all hands on deck to uncover, frame, and share those patterns. It'll make it easier to create newspaper headlines like those now appearing in the local papers of Medicine Hat.

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Mark is President of the consulting company From Here to There and is a Tamarack Institute Associate. Between 1997 – 2000, Mark was the Coordinator of the Waterloo Region's Opportunities 2000 project, an initiative that won provincial, national and international awards for its multi-sector approach to poverty reduction. He served briefly as the Executive Director of the Canadian Community Economic Development Network (CCEDNet) and was the Executive Director of Vibrant Communities Canada (2002-2011). Mark's current focus is on developing practical ways to understand, plan and evaluate efforts to address complex issues

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ABOUT TAMARACK INSTITUTE

Tamarack is a connected force for change. We believe that when we are effective in strengthening community capacity to engage citizens, lead collaboratively, deepen community, and innovate in place, our collective impact work contributes to building peace and a more equitable society. Learn more at www.tamarackcommunity.ca.

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Alberni-Clayoquot Regional District

Abattoir Feasibility Study

FINAL REPORT

April 20, 2016

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1.0 INTRODUCTION

In 2011, the Alberni-Clayoquot Regional District completed an agricultural plan which documented the status of the agricultural industry in the region. It noted that the agricultural sector was relatively small with 89 farms and 3171 hectares (7832 acres) that were currently farmed. The acreage farmed represented about 41% of the land in the Agricultural Land Reserve (ALR)

Livestock production dominated, with 90% of the farmed land devoted to the raising of livestock. According to the report, the Alberni Valley produced between 5 and 11% of the volume of food consumed by locals.

The production of livestock is in decline, a major part of which is due to the near disappearance of the local dairy industry. The BC meat Inspection Regulation which was adopted in 2004 also had an impact on livestock production as it restricted local sales of meat to consumers by requiring meat to be processed in a licensed abattoir.

There is one licensed abattoir in the Alberni valley which does poultry (Al's Feathers Be Gone) but there is no licensed red meat plant. Vancouver Island has a number (7) of Class A licensed abattoirs but their locations are not conducive to utilization by ACRD area farmers. The one-way distances range from 85 to 200 kilometers (51 to 120 miles) and 2 return trips are typically required for each processing order.

Livestock producers in the area are facing increasing demand for quality locally produced meat. Local processing is a key requirement. As noted in the RFP, "the lack of a local abattoir facility has been identified as a key roadblock" for the livestock industry. Other communities have shown significant increases in livestock production when a local abattoir is available. The Alberni-Clayoquot Regional District (ACRD) in cooperation with the local farming community has

therefore commissioned a feasibility study to assess the potential viability of a local abattoir. Janco Associates Business Consulting was awarded the contract for this assignment via the tender process.

2.0 SCOPE OF WORK

As per the RFP, the scope of work is:

- Explore current level of livestock production in the ACRD.
- Calculate a projection of the total capacity for livestock production in the ACRD.
- Research the costs of building, setting up and operating an abattoir either mobile or stationary. Determine the financial advantage and costs associated with including a custom cutting and cooling facility in conjunction with the abattoir.
- Complete a cost benefit analysis to determine the market demand for locally produced meat needed to justify the cost of building and sustaining an abattoir in the ACRD.
- Prepare food producer cost comparison of processing local livestock at nearest existing facility versus processing at a local facility.
- Investigate grant opportunities that may provide funding to assist with the development of a local abattoir.
- Research demand for a custom cutting and cooling facility that could process local game meat.
- Research demand for cold storage and regulations concerning cold storage that may include both fruit/vegetables and meat.

3.0 MARKET FOR MEAT IN THE STUDY AREA

The consumption of meat in Canada is tracked by Statistics Canada , and reports are provided through the market section of Agriculture and Agri-Food Canada. The most recent per capita consumption data available is for 2014 and is provided below:

	Kilograms	Pounds
Beef	26.48	53.4
Pork	20.63	45.5
Lamb	1.13	2.5
Turkey	4.08	9.0
Chicken	30.94	68.2
Fowl	2.45	5.4

It is noted that beef consumption has been on a decline over the past three decades. In 1980 per capita consumption for beef was 38.8 kg (85.6 pounds) Alternatively, chicken consumption has steadily increased from 16.88 kg (37 pounds) in 1980. Pork consumption also declined over the same period.
However, it does seem that red meat consumption has stabilized over the past 5 years.

Lamb consumption is relatively low at 1.13 kg (2.5 pounds) per person. Some attribute this low number to a lack of availability.

The data is based on carcass weight for beef , pork and lamb. Poultry is based on eviscerated weight.

To get live weight from carcass weight , average weight conversions for market animals were used for the various species. The following table shows the weights by species for a live animal, the slaughter carcass and saleable meat.

RED MEAT		Live Weight	Carcass Weight	RWB (lbs)
Hogs	%	100	72	47% of live weight
Planning weight	lbs	240	173	113
Lambs	%	100	54	41% of live weight
Planning weight	lbs	120	65	49
Beef Steers	%	100	63	41% of live weight
Planning weight	lbs	1,200	750	490
POULTRY		**Live Weight (lbs)**	**Dressing Percentage**	**RWB (lbs)**
Chickens		8	70%	5.6
Turkeys		15	77%	11.6
Ducks		6	58%	3.5

The permanent population of the study area from the 2011 census indicates the size of the consumer market in the Alberni-Clayoquot Regional District.

The market size depicted below does not take into account the significant tourist trmarket associated with visits to Port Alberni and the Pacific Rim area. The Pacific Rim area , including Tofino and Ucluelet is a major tourist destination on Vancouver Island.

As per Parks Canada , visitation to their facilities is some 800,000 people annually. According to BC tourism, 50% of visitors to the coast visit Pacific Rim National Park , which would imply that total visitation is 1.6 million people.

Access to the Pacific Rim is via BC highway 4 which originates near Qualicum Beach and goes to Tofino through the abattoir study area. There are air access options but the vast majority of visitors drive the highway and pass through Port Alberni. This provides some options for meat sales direct to visitors as well as to

food service establishments that cater to the tourist market. The extent of this additional market was impossible to estimate but it could be significant.

City of Port Alberni	17,743
District of Tofino	1,876
District of Ucluelet	1,627
Electoral Area "A" (Bamfield)	275
Electoral Area "B" (Beaufort)	456
Electoral Area "C" (Long Beach)	1,818
Electoral Area "D" (Sproat Lake)	2,295
Electoral Area "E" (Beaver Creek)	3,045
Electoral Area "F" (Cherry Creek)	1,926
TOTAL	**31,061**

To get an estimate of total meat demand in the study area, per capita meat consumption was multiplied by the area population. The figures arrived at are not necessarily accurate as local preferences can result in consumption patterns that are different from the averages.

TABLE A ANNUAL MEAT CONSUMPTION BY PERMANENT RESIDENTS				
Type	**No. of People**	**Per capita(lbs)**	**Total weight in pounds –carcass weight basis**	**No of animals**
Beef	31,061	53.4	1,658,657	(1) 2,211
Pork	31,061	45.5	1,413,275	(2) 8,169
Lamb	31,061	2.5	77,652	(3) 1,194
Chicken	31,061	68.2	2,118,360	(4) 378,278
Fowl	31,061	5.4	167,729	(5) 47,922
Turkey	31,061	9	279,549	(6) 24,099

(1) Total weight divided by average carcass weight of 750 pounds
(2) Total weight divided by carcass weight of 173 pounds
(3) Total weight divided by carcass weight of 65 pounds
(4) Total weight divided by eviscerated weight of 5.6 pounds
(5) Total weight divided by eviscerated weight of 3.5 pounds
(6) Total weight divided by eviscerated weight of 11.6 pounds

4.0 BUSINESS MODEL

Red meat abattoirs are defined on the basis of the final products. A plant that processes meat into products such as canned, smoked and cured meats is significantly different from a plant with facilities for slaughtering without further processing.

This abattoir is intended to be a simple Class A slaughter facility that would also do cut and wrap of the carcasses on a custom basis. It would not purchase livestock and engage in the sale of meat products.

It would operate under the auspices of the Meat Inspection Regulations of the BC Food Safety Act. B.C. Reg. 205/2014, November 24, 2014.

The system is based on a graduated licensing system as per the following table:

LICENCES AVAILABLE UNDER THE GRADUATED LICENSING SYSTEM					
Licence Type	**Activities Permitted**	**Sales Permitted**	**Geographic Scope**	**# of Animal Units**	**Oversight**
Class A	Slaughter, and cut and wrap	Retail and direct to consumer	B.C.	Unlimited	Pre and post slaughter inspection of each animal
Class B	Slaughter only	Retail and direct to consumer	B.C.	Unlimited	Pre and post slaughter inspection of each animal
Class D	Slaughter only (own animals and other peoples' animals)	Retail and direct to consumer	Sales restricted within the regional district where meat is produced	1 - 25	Periodic site assessments and audit of operational slaughter records

Class E	Slaughter only (own animals only)	Direct to consumer only	Sales restricted within the regional district where meat is produced	Unlimited	None
Personal Use No licence required	Slaughter only	None	For producer only	Unlimited	None

Basic Process Description

Slaughtering

- Animals are received and kept in holding pens for 1 day. The animals are watered, but in most cases not fed.
- The animals are then driven from the holding pens to the slaughtering area where the following activities take place:
- Stunning;
- Suspension from an overhead rail by the hind legs;
- Sticking and bleeding over a collecting trough. The collected blood may be sewered or processed;
- Hide removal (cattle) or scalding and dehairing (hogs);

  In some plants hogs are skinned to eliminate scalding and dehairing. Scalding is a method to loosen hair before removal. For several minutes the hogs are held in a scalding tank at 45°C to 65°C. After scalding, the hogs are mechanically dehaired by abrasion and singed in a gas flame to complete the hair removal process.
- Decapitation;
- Opening of the carcass by cutting;
- Inspection of the carcass;
- Evisceration (removal of intestines and internal organs);

- Splitting and cutting of the carcass; and
- Chilling or freezing.

As noted, this abattoir is initially intended to do slaughter as well as cut and wrap. Other value added activities such as curing meats could be considered if as and when the abattoir has been established.

5.0 MARKET FOR CUSTOM SLAUGHTER

The proposed abattoir would provide a basis for local farmers to satisfy a portion of the demand for meat exhibited in section 3.0.
In order to market meat to local consumers , animals must be processed in a licensed and inspected abattoir as per the current regulations.

The market for the proposed abattoir is therefore comprised of animals farmers would bring to the establishment for processing.

In order to document the size of slaughter market, a comprehensive survey was undertaken by an agriculture support worker with the ACRD. A complete copy of the survey results is provided in the appendix.

General Highlights:

- 63 farmers responded to the survey. According to the Alberni Valley Agricultural Plan, there are 89 farms in the study area .
- Close to 100% of the respondents expect to still be farming in 5 years
- 77% expect to be still farming in 10 years.
- 67% of the respondents would expand livestock production if there was a local abattoir.

Beef:

The key results of the survey pertaining to beef cattle are as follows:

- 31 respondents indicated beef sales
- Total number of animals marketed by the respondents was 301
- Live sales numbered 121 and 180 were sold as meat.
- The percentage increase indicated for 2016 was 10%.

It was assumed that the new abattoir would capture 80% of the processing market. The processing market was assumed to be 180 plus 10% or 198 animals. An 80% capture would result in 158 animals being processed.

Sheep:

The key results of the survey pertaining to sheep are as follows:

- Total number of breeding ewes was 106.
- 22 respondents indicated lamb sales.
- 182 lambs were sold in 2015, 200 anticipated in 2016.
- The marketing ratio was 10% live and 90% as meat .

Total meat sales were projected at 180 animals. Based on a 80% capture, 144 lambs would be processed.

Swine:

The key results of the survey pertaining to swine are as follows:

- 14 respondents indicated pork sales.
- Total breeding stock is zero, implying most people are buying weanlings.
- 23 pigs marketed in 2015, 45 anticipated for 2016.

The assumption was made that all pigs were sold as meat. A market capture of 80% would result in 36 animals processed.

Goats:

The key results of the survey pertaining to goats are as follows:

- Total number of breeding stock was 32.

- 14 respondents indicated goat sales.
- 10 goats were sold in 2015, 15 anticipated in 2016.
- The marketing ratio was 100% as meat.

A capture of 80% would result in 12 goats processed.

Fallow Deer:

The key results of the survey pertaining to fallow deer are as follows:

- Total number of breeding stock was 49.
- 2 respondents indicated deer sales.
- 44 deer were sold in 2015, 49 anticipated in 2016.
- It is understood all deer are purchased live by Gunter Brothers.

It is not known if this market could be captured by the proposed abattoir.

Water Buffalo:

The key results of the survey pertaining to water buffalo are as follows:

- 1 respondent indicated water buffalo sales
- 10 animals were sold in 2015, 14 anticipated in 2016
- The marketing ratio was 100% as meat

A capture of 100% would result in 14 animals processed.

6.0 PROCESSING PRICES AND REVENUES

6.1 Pricing

Farmers in the study area utilize abattoirs that are in close proximity in order to minimize travel costs. The two abattoirs that are closest are Gunter Brothers in Courtenay (130 kilometers) and Plecas Meats which is located just south of Nanaimo (104 kilometers).

The price schedules for these plants are noted below:

Plecas Meats

Beef utm	slaughter	$120	cut and wrap	$0.75/ pound
Beef otm	slaughter	$150	cut and wrap	$0.75/ pound
Lamb/goats	slaughter	$ 40	cut and wrap	$0.75/pound
Pork	slaughter	$ 50	cut and wrap	$0.70/pound
Pork over 250 lbs	slaughter	$ 60		

Gunter Brothers

Beef	slaughter	$140	cut and wrap	$0.75/pound
Lamb/goats	slaughter	$ 40	cut and wrap	$0.75/pound
Pork	slaughter	$ 60	cut and wrap	$0.75/pound
Sows	slaughter	$100		

Under Thirty Months (utm)

Over Thirty Months (otm)

Prices for these two establishments are similar to those charged by abattoirs in other parts of BC. Note that the meat industry operates mainly in Imperial measure units.

6.2 Projected Revenue

For the purposes of analysis, Gunter Brothers prices were used for the revenue projections.

Other assumptions were as follows:

- The average carcass weight used for beef was 750 pounds
- The average carcass weight used for pork was 173 pounds
- The average carcass weight used for lambs and goats was 65 pounds
- The average carcass weight used for water buffalo was 600 pounds
- It was assumed the abattoir would cut and wrap all the slaughtered animals.

Revenue per beef animal	$140 plus $562.50 equals $702.50
Revenue per pork animal	$60 plus $129.75 equals $189.75
Revenue per lamb animal	$40 plus $48.75 equals $88.75
Revenue per goat animal	$40 plus $48.75 equals $88.75
Revenue per water buffalo	$140 plus $450 equals $590

Total revenue based on 2016 volumes at an 80% capture

Beef	158 at $702.50	$110,995
Hogs	36 at $189.75	$6,831
Water Buffalo	14 at $590	$8,260
Lambs	144 at $88.75	$12,780
Goats	12 at $88.75	$1,065
Total		$139,931

6.3 Hide Revenue

Additional revenue could be obtained from the sale of hides. There is a hide buyer located on Vancouver Island, (Hank Elzinga, 250-398-0757)
The market is for beef hides only. The current price is $20.00 per hide. This would add (158 times $20.00) or $3,160 to total revenues. (It should be noted that prices have been dropping over the past few months) Mr. Elzinga will do on-site pick-up for a minimum lot of 40 hides. To be stored awaiting pick-up, the hides need to be salted and kept indoors.

6.4 Game Processing

The processing of game provides revenue for some abattoirs. However there are some restrictions in terms of how the abattoir must operate when processing game meat.

- Game meat must be processed in the cut and wrap area separately from inspected meat. After completion of game processing the cut and wrap facility and the equipment must be fully sanitized.
- Processed game meat must be stored in a separate cooler. From a logistical standpoint, there should also be a pre-processing storage area so harvested game can be held pending the accumulation of a sufficient quantity of animals.
- At the present time, the BC Agriculture inspection system has no responsibility for the cut and wrap part of the abattoir. The relevant inspection agency is the local health authority. As a general policy, game meat processing in cut and wrap facilities is not a permitted activity unless the local health inspector agrees (on a case by case basis). In the case of the

Alberni health inspector, game processing would be allowed. (As per discussions with Stephanie Bruvall ,EHO)

From a market perspective it is difficult to assess what the market would be for game processing.

- The rates for game meat processing by other abattoirs are as follows:

Game Rainers Meats, Darfield

Hanging	$2/day
Cutting	$0.66/lb
Extra Cleaning	$0.10/lb

Cutting Charges for Game , Gwinners, Cranbrook

Minimum Cutting Charge	$50.00
Elk Skinning	$75.00
Deer Skinning	$45.00
Shrink Wrap Available	$0.50/ bag
Hanging Only	
Elk	$30 1st day, $20 each additional day
Deer	$15 first day, $10 each additional

In the Alberni region, the most common hunted species is the black tail deer. Based on MOE big game harvest statistics for WMU area one for 2013, the following could represent the potential for game processing:

- Zone 3 deer 168, assume 10% 17
- Zone 6 deer 1070, assume 10% 107
- Zone 7 deer 212, assume 50% 106 (Alberni is middle of Zone 7)

  Total 230

The elk harvest in the above zones in 2013 amounted to 8 animals.

A hunter survey would be needed to identify the potential for game processing. The above figures represent a very preliminary estimate of animals that could be available from the 3 zones. Revenue per animal would likely be $75 to $100.

The challenge with doing wild game processing is that the abattoir busy season for beef is the fall which is the same time as hunting season. However it is suggested that the proposed abattoir consider offering game processing if the budget allows for a dedicated game cooler as well as a separate holding area for carcasses.

7.0 SOLID WASTE CONSIDERATIONS

The products resulting from red meat slaughter include carcasses and by-products. The dressing percentage is the carcass weight expressed as a percentage of live weight. Saleable meat results from the carcass being broken down into the various cuts. Dressing percentages and saleable meat percentages vary with a prime finished steer yielding the highest, and canner cows yielding lower.

	Average Dressing %
Prime Steer	64%
Canner Cow	45%

When the animal is further processed, the quantity of saleable meat depends on the quality of the animal. A lean, heavily muscled animal will yield more than a fat animal. For planning purposes, an average beef animal could yield as follows:

- Dressing Percentage of Carcass Weight 61%
- Saleable Meat as a Percentage of Carcass Weight 71%
- Saleable Meat Percentage of Live Weight 43%

(High quality animals could be 52%, lower quality animals as low as 30%.) The 57% residual includes the hide, which is generally saleable. The hide represents about 8% of weight. This leaves 49% of the animal that is waste including bone, fat, viscera, paunch manure, etc. **For planning purposes, 50% of beef volume by weight is waste.**

For hogs, the yield is typically higher. An average market hog would yield as follows:

- Dressing Percentage 72%
- Saleable Meat as a Percentage of Carcass Weight 65%
- Saleable Meat as a Percentage of Live Weight 47%

(High quality animals could yield as high as 65%, low quality animals could be 37%.) **For planning purposes, the waste to be disposed of from hogs would amount to 50-53% of total live weight.**

Lamb yields are somewhat lower than beef. For planning purposes, an average lamb would yield as follows:

- Dressing Percentage of Carcass Weight 54%
- Saleable Meat as a Percentage of Live Weight 75%
- Saleable Meat Percentage 41%

(Lamb yields range from 31% to 44%.) **For planning purposes, lamb waste to be disposed would be 60%. (This could be reduced somewhat if a market could be found for the hides.)**

Based on the volumes depicted in 0.0, the total annual waste produced by the proposed abattoir would be:

Beef	158 animals at 600 pounds	94,800
Lamb/goats	156 animals at 60 pounds	9,360
Swine	36 animals at 110 pounds	3,960
Water Buffalo	14 animals at 500 pounds	7,000
Total solid waste (pounds)		115,120

This would amount to 58 tons or 52.3 metric tonnes.

The existing abattoirs on Vancouver Island have the option of disposing of solid waste to Island Processing, which is a division of West Coast Reduction. The Island Processing facility is located in Nanaimo. They typically pick up waste at abattoir sites every two weeks which means that offal cold storage is needed. Island Processing provides approved containers (barrels or 1 ton bins) to facilitate pick-up by their trucks. The barrels hold about 300 pounds. The pick-up charge is currently $30 per barrel for non SRM waste and $63 barrel for SRM waste. This amounts to $0.10 and $0.20 per pound respectively. For a beef animal generating 600 pounds of waste, disposal costs would be between $60 and $120 per animal.

The industry used to be able to sell offal to the rendering industry which was a major benefit. However this changed several years ago and now there is a cost to the disposal of slaughter waste.

7.1 SRM Considerations

Specified risk material (SRM) is the general term designated for tissues of ruminant animals (beef) that cannot be inspected and passed for human food because scientists have determined that BSE-causing prions concentrate there. As per the CFIA, SRM are defined as:

- the skull, brain, trigeminal ganglia (nerves attached to the brain), eyes, tonsils, spinal cord and dorsal root ganglia (nerves attached to the spinal cord) of cattle aged 30 months or older; and
- the distal ileum (portion of the small intestine) of cattle of all ages.

For animals over 30 months of age, SRM represents 7% of live weight versus 3% of live weight for cattle under 30 months of age.

A SRM separation strategy enables abattoirs to ship most beef waste at the lower price. The BC Agriculture on-site inspector will certify the separation process.

7.2 Solid Waste Disposal Costs

In discussions with Island Processing, it is understood that they do not service the Alberni area as there is insufficient volume to warrant a truck being sent. The nearest pick up point is Qualicum Beach. The proposed volume noted above would not be sufficient to warrant a change in their current policy.

The only other options are land fill disposal or composting.

There is an existing composting operation in Port Alberni (Earth Land and Sea), which uses seafood waste products as its primary feedstock. According to the owner, they have composted dead livestock at their facility and would be prepared to consider handling abattoir waste. The drop cost (preliminary) would be ($45 MT) $40/ton plus trucking from the abattoir. It is not known if they would take SRM material.

SRM material could be accumulated on site, frozen and then transported under permit to Island Processing. Another option would be for farmers to take the SRM material home and compost on their own property. The cost of waste disposal using the local composting company would be about $0.02/lb for the drop off. For trucking it was assumed at $1.00 per ton/mile (20 km haul, 5 MT per trip) Freight costs would be $100 per trip or $0.05 per pound for a total of $0.07 per pound. To this would need to be added the SRM costs if not disposed of locally. For costing purposes we have used a total of $0.10 per pound.

7.3 Liquid Waste Considerations

The processing of the volume of animals depicted in section 2 would result in the following waste volumes:

Step one: Calculate number of Animal Units. (AU)

Animal Unit (AU) - An animal unit is a method for standardizing from species to species by accounting for various sizes. The term was developed to compare waste creation volumes to one standard (a 1,000 lb steer or a stock cow). The conversion is typically done by weight, i.e. a market lamb is 0.1 AU, as a lamb's weight is 100 lbs.

Beef	158 animals	158 AU
Swine/lamb	36 animals	14 AU
Lambs	156 animals	15 AU
Water Buffalo	14 animals	14 AU
Total		201 AU

Step Two: Assign a value to water use for each animal unit.

A minor quantity of moisture comes from the animals slaughtered, but most effluent results from clean-up procedures. All water used results in wastewater that will require disposal.

Slaughterhouse effluent is considered to have significant potential for environmental pollution, bad odours and health hazards.

Guidelines from B.C.D.C. do not prescribe minimum water use quantities per animal unit. The guidelines are generally based on using enough water to adequately maintain the required standard of cleanliness.

Water utilization estimates vary considerably and are dependent on factors such as:

-the use of dry, pre-clean-up procedures;

-blood collection;

-the use of water conservation nozzles; and

-dry dumping of paunch contents or whole handling of paunch.

Water use estimates per animal unit range from 50 gallons to 440 gallons.

Examples:

- Mallot Creek Engineers – Estimate for a Beef Slaughterhouse (Rainy River, Ontario)
  440 gallons/AU

- CFIA in Ontario
  200 gallons/AU

- San Juan Mobile Unit (Slaughter Only) 50 gallons/AU

- BCFPA MIES help desk experience with small operations, 75 gallons/AU

For this project a volume of 150 gallons per AU has been used which should be more than adequate. There are best practices (see appendix) for reducing water use while at the same time assuring proper sanitation. As one example, the use of steam cleaning can be a way of reducing water volumes.

Step Three: Calculate waste volumes

201 AU times 150 gallons equals 30,150 gallons or 136,881 litres. Based on 120 kill days (40 weeks, 3 days each week), the discharge would be 1140 litres per day. (250 gallons) It is suggested the system be designed for an increase in volume to 300 AU.

The scale of the proposed Alberni abattoir is similar in size to the Salt Spring abattoir. It is not possible to provide a definitive size and design without an

engineering study ,which is beyond the scope of this assignment. However the contractor and the engineer for the Salt Spring project provided the following estimates:

- Engineering costs of $5,500
- Capital costs of $30,000
- Annual maintenance costs of $200

The Eco-Flo system by Premier Tech was used for the Salt Spring abattoir.

http://www.premiertechaqua.com/wastewater-sewer-treatment-plants/biofilter-disinfection-peat

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8.0 ABATTOIR DEVELOPMENT

8.1 Site Considerations

Zoning requirements for the proposed abattoir are covered by the zoning bylaw of the Alberni-Clayoquot Regional District as per the following excerpts:

Abattoir or slaughterhouse means a building or structure specifically designed to accommodate the penning and slaughtering of live animals and the preliminary processing of animal carcasses and may include some packing and treating of the product on the premises.

106 RURAL ABATTOIR (RAB) DISTRICT
This district is intended to provide for custom slaughtering on a small scale on larger properties located in ruralor agricultural areas.

106.1 Uses permitted
(1) One abattoir, provided that the total floor area does not exceed 250 square metres (2,691 square feet).
(2) A maximum of one single family dwelling on a lot where the entire legal parcel is zoned Rural Abattoir (RAB) District.
Where a property is split zoned, and a dwelling unit(s) is/are permitted under the other zoning district(s), a single family dwelling shall not be permitted within the RAB portion of the lot.
(3) Buildings and uses accessory only to a single family dwelling permitted under subsection 106.1(2) above.

106.2 Conditions of Use
(1) An abattoir shall be set back a distance of at least 15 metres (49.2 feet) from any residential use building within the same lot.
(2) Development and use of the property shall be in accordance with all relevant provincial and federal regulations and without restricting the generality of the foregoing with all regulations administered by the Ministries of Agriculture, Health and Environment.
(3) Nothing shall be done which is or will become an annoyance or nuisance to the surrounding areas by reason of unsightliness, the emission of odours, dust, liquid effluent, fumes, smoke, vibration, noise, glare, nor shall anything be done which creates or causes a health, fire or explosion hazard, electrical interference or undue traffic congestion.

It is understood that the ACRD is supportive of this project and would be prepared to entertain a re-zoning application if required. If the land chosen is in the Agricultural Land Reserve, the ACRD would need to work with the ALC to get a rezoning. The following outlines the current policy for abattoirs on ALR land:

The ALC position regarding slaughter plants as an "on-farm processing" activity and the composting of red meat waste are as follows:

- *If at least 50% of the farm product being stored, packed, prepared or processed is produced on the farm, then the processing of farm products is permitted as a farm use in the Agricultural Land Reserve (ALR).*
- *Slaughter plants where less than 50% of the farm product being stored, packed, prepared or processed is produced on the farm are considered commercial/industrial plants and must be approved by the ALC through the application process.*
- *Composting facilities in the ALR established in accordance with the OMRR are prohibited from using SRM as compost feedstock without the express written approval of the ALC.*
- *Spreading SRM-compost produced off the farm, or SRM-compost produced on the farm where the SRM compost feedstock is imported to the farm, is prohibited without the express written approval of the ALC.* - *The ALC permits the use of non-SRM red meat waste as an acceptable feedstock for composting, and the land application of non-SRM compost on ALR land, provided the composting and use are consistent with the Agricultural Land Reserve Use, Subdivision and Procedure Regulation. The ALC acknowledges that slaughter plants are necessary infrastructure for a healthy cattle industry and that proper handling of red meat waste is crucial. The ALC will continue to work with proponents wishing to develop slaughter plants in the ALR, the cattle industry, local governments, the Ministry of Agriculture and Lands and other provincial ministries to review potential sites for slaughter plants and composting facilities.*

Abattoir development is more appropriate on rural, semi-isolated properties in somewhat close proximity to livestock production areas. Amenities that would be needed include:

-a source of potable water (best option is from a municipal water system)

-electrical power- three phase ideal but not mandatory

-accessible to an all weather road

-soil suitable for septic (sandy, well drained)

-suitable size (2 acres)

8.2 Sizing and Design

The proposed model is sized for 200 AU with provision for a volume increase of 50% to 300 AU within 5 years.

Sizing is based on the abattoir operating doing up to 120 kill days per year (kill days are only possible when inspectors are available so many abattoirs slaughter 2- 3 days a week and do processing on other days) Weekend inspection is generally not provided.

The farm community generally is looking for fall slaughter service and bookings are difficult to get at that time of year. For this model the allocation is assumed as follows:

Quarter one (January to March)	5%	10 AU
Quarter two (April to June)	15%	30 AU
Quarter three (July to September)	35%	70 AU
Quarter four (October to December)	45%	90 AU

Assume 18 slaughter days in 4th quarter (5 AU per day)

Design considerations for the plant include:

- A covered holding pen is needed for 2 days slaughter. Based on the model, the holding pens would need room for 10 head. The guideline is 60 square feet/AU so 600 s. f. of pen space would be needed, plus 1,000 s.f. for crowding pens and chutes, etc. A separate pen is needed for rejected animals.

- The cooler space guideline for federal plants is nine s.f. per carcass (one AU). (There is no provincial guideline.)

- Typically, a plant would need three coolers; chill or drip, holding and finished products. Freezer space is also needed. The drip cooler should be sized to allow space between the carcasses. Holding coolers can be sized to allow carcasses to be closer together. If game is to be processed a 4th cooler could also be needed. (The game cooler could be a portable reefer unit)

- Cooler/freezer space planning depends on the nature of the business. The aging program will impact on cooler space needs. The maximum hanging time is about 21 days with 14 days being more common for beef.

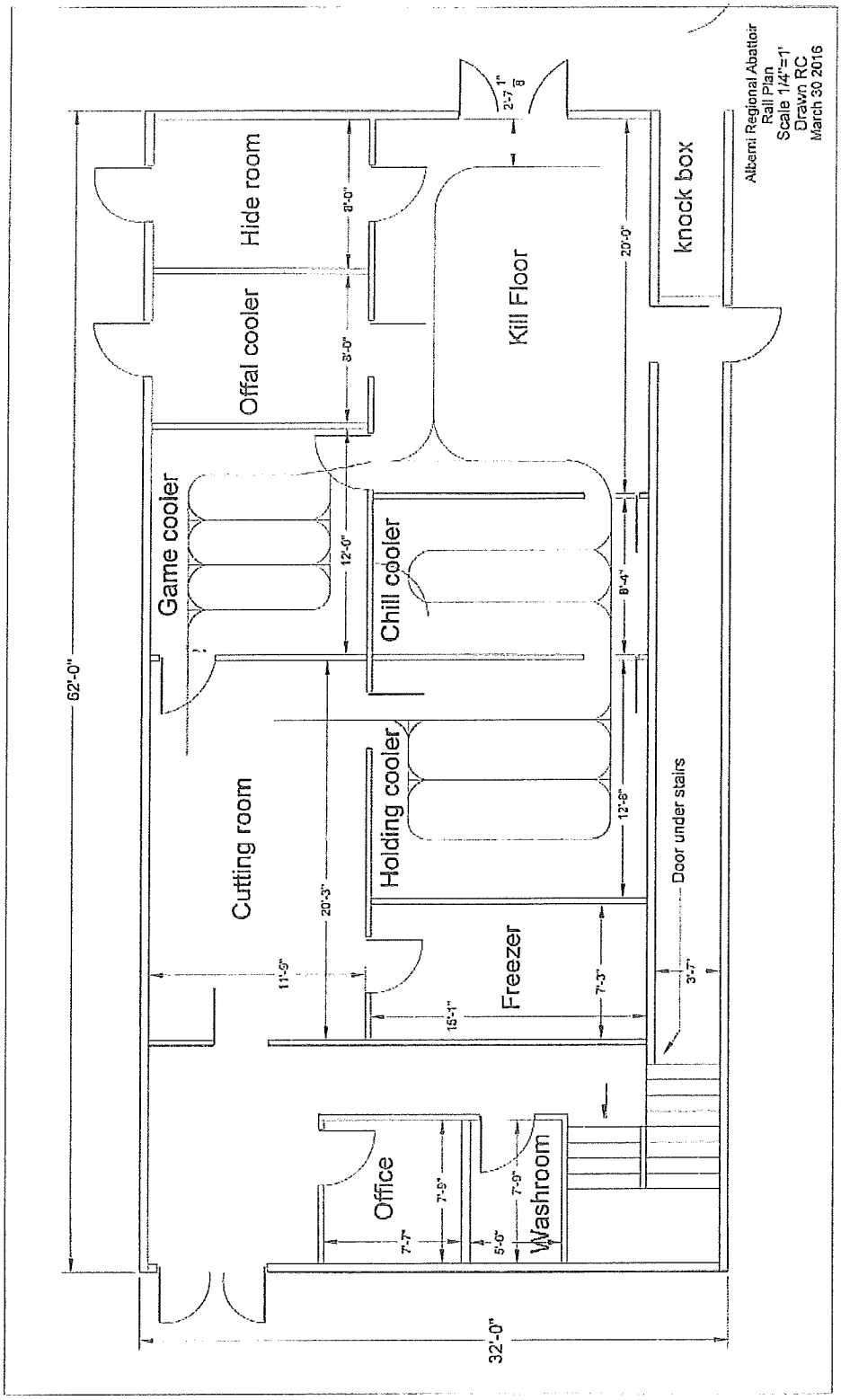
- As per the RFP, there is interest in alternative uses for the cooler(s) such as for vegetables. The storage of vegetables in a meat cooler is not a common practice and the consultant is not aware of any abattoir in BC that that stores vegetables. In fact meat tainting may result from the storing of some fruits and vegetables with meat (apples, potatoes etc)

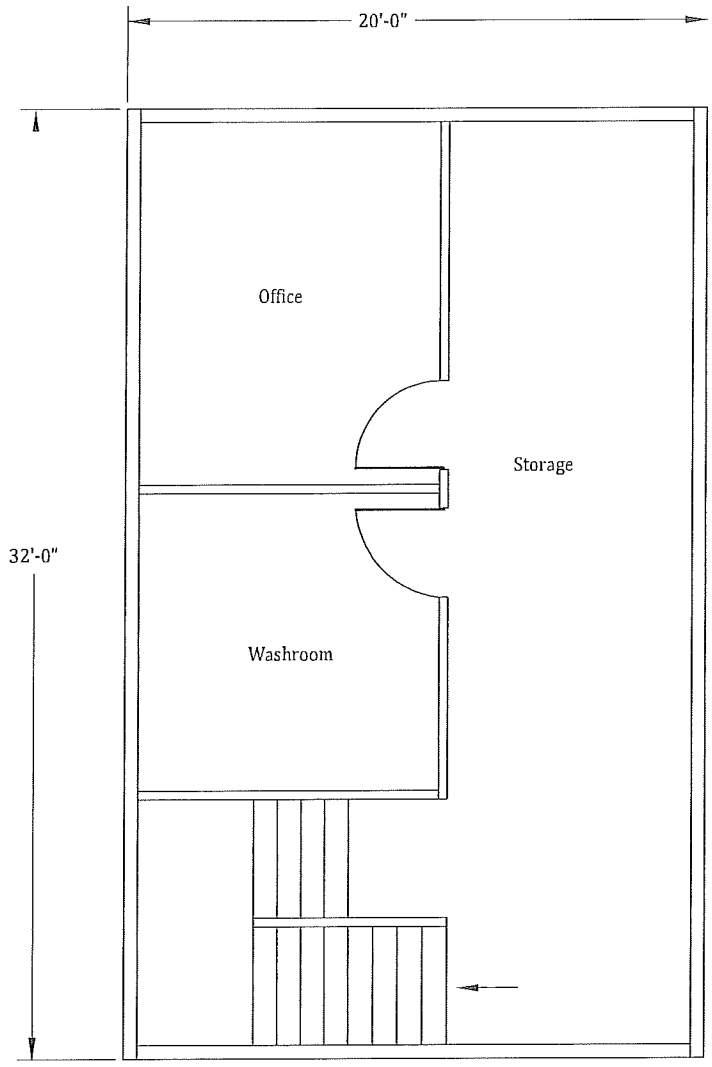
Red Meat Area Program
For Alberni Abattoir, Preliminary
Beef, pork , lamb

Functional Area	**S.F. Area**
Stun area	50
Kill/Eviseration area	300
Chill/Drip cooler	124
Holding Cooler	191
Processing room	240
Finished products/Game cooler	144
Freezer	105
Hide room	96
Offal storage	96
Total Functional	**1346**
Support Areas	
Mechanical (mezzanine)*	
Storage (mezzanine)*	
W/c Unisex	40
Shipping	120
Inspector's office	64
Plant office (mezzanine) *	
Change room/showers *	
Total Support	**224**
Total Space	**1570**
Add circulation for walls, corridors, etc. at 25%	414
Total Footprint	**1984**

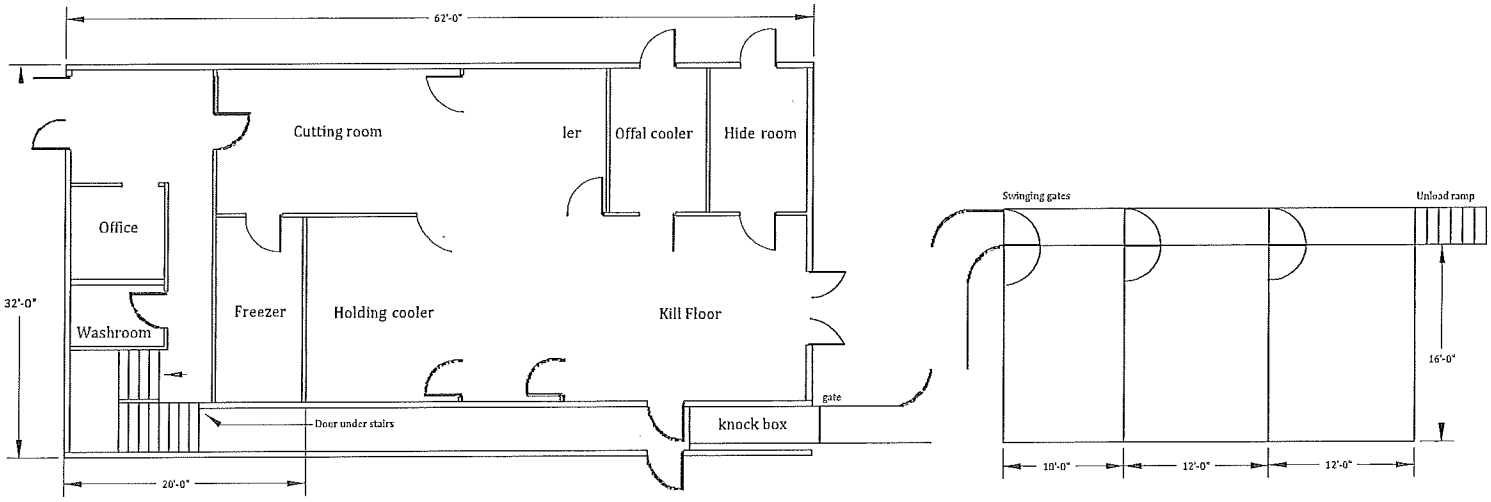
Mezzanine is 20 by 32 which adds 640 square feet of useable space. Mezzanine height available due to ceiling height requirement for rail for beef.

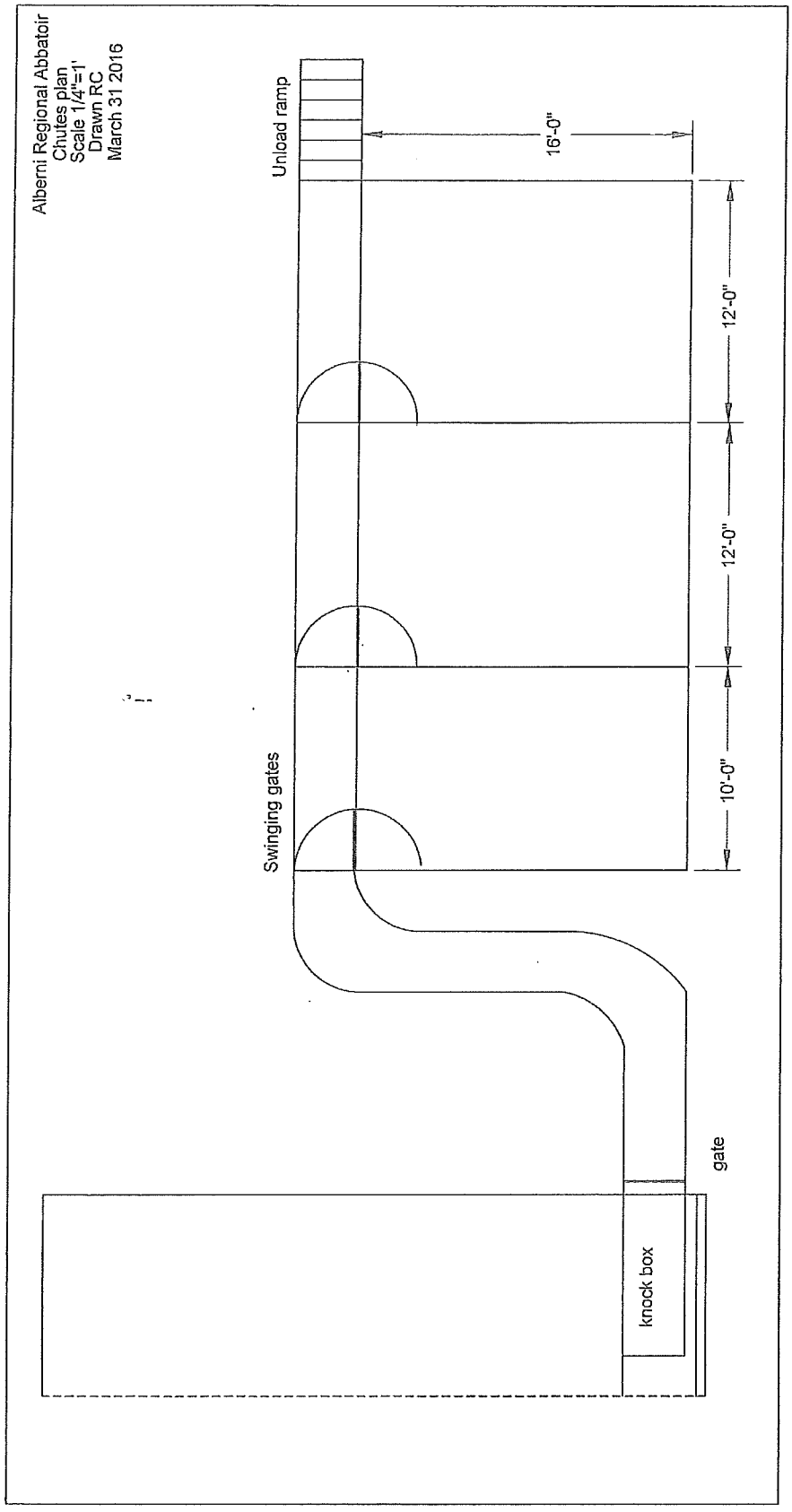
Floor plans are provided as follows:





Alberni Regional Abattoir
Mezzanine
Floor Plan
Scale 1/4"=1'
Drawn RC
March 31 2016


62'-0"
Cutting room
ler
Offal cooler
Hide room
Office
32'-0"
Washroom
Freezer
Holding cooler
Kill Floor
gate
Door under stairs
knock box
20'-0"
Swinging gates
Unload ramp
16'-0"
10'-0"
12'-0"
12'-0"


Alberni Regional Abbatoir
Chutes plan
Scale 1/4"=1'
Drawn RC
March 31 2016
Unload ramp
16'-0"
12'-0"
12'-0"
10'-0"
Swinging gates
gate
knock box

8.3 Specifications and Construction Approach

There are a number of construction methodology options that could be used for the proposed abattoir but the recommended one is to use a pre-engineered steel building. The advantages of such an approach include the following:

- Speed of construction
- Durability
- Fire safety
- Capacity of beams to support hanging animals.
- Low maintenance and upkeep
- Clear span gives lots of design flexibility
- Cost effective

We have obtained a quote for a 32 by 16 building from VISB of Qualicum Beach, BC based on the following specifications:

Specifications for the Building:
Width: 32'
Length: 62'
Eave height: 16'
Roof slope: 1 /12
Roof type: Symmetrical Gable
Bay spacing: 2 @ 21', 1 @20'
Frames: 2 clear span rigid frames.
End walls: 2 post and beam end walls, non-expandable.
Roof cladding: 24 ga. SSR roof system. Galvalume.
Wall cladding: 26 ga. Wall cladding. Manufactures standard colors.
Liner Panel: none included.
Canopies: None included.
Roof Insulation: 6" WMP 50 MBI
Wall Insulation: 6" WMP 50 MBI
Gutters & downspouts: 124' of gutter, c/w downspouts, manufactures standard colours.
Doors: 2 @ 3X7, 2 @ 6X7.
Windows: none included.
Framed Openings: none included
Overhead Doors: none included.
Mezzanine: None.
Overhead Crane: None.

Misc: Primary is shop primed. SP2 prep. Girts and purlins are galvanized. Base channel included.

Design Criteria:

BC Building Code 2012
Collateral Load = 2
Snow Load = 62.656
Rain Load = 6.683
Wind Load 1:50 = 8.145
Seismic Data
Sa (0.2) = 0.76
Sa ().5) = 0.57
Sa (1.0) = 0.30
Sa (2.0) = 0.16

It is suggested that a general contractor be hired to manage the project and sub-contract the various other components as required. This would include:

- Site preparation
- Drainage and plumbing prior to concrete
- Concrete work including foundation, curbs and floor. The final surface would be sealed concrete with coving to the 24" curbs
- Interior partitions (steel studs)
- Plumbing and wiring rough-ins
- Interior insulation for refrigeration
- Wall cladding
- Mezzanine floor including stairs
- Washroom main floor
- Mezzanine floor shower/change room
- Offices
- Corrals and pole barn covering

8.4 Capital Cost

A Class C estimate is provided as well as an equipment schedule.

Alberni Abattoir
Preliminary Cost Estimate 2016
Area in sf 1984

Item number	Description	Notes	Class C
1	Site preparation and access	Assumes site is cleared	$10,000
2	Fill and compaction		$10,000
3	Hook ups	water, electricity	$8,000
4	Concrete	foundation, 24" curbs, 5 inch reinforced slab sloped to drains, coved to curbs, all concrete to be sealed	$10,000
5	plumbing including water and drainage		$25,000
6	electrical	lights, equipment outlets, refrigeration , wiring	$25,000
7	Partitions	walls clad FRP, insulation, doors at $30/sf	$59,520
8	Rails	200 lineal feet at $50	$10,000
9	Knock box	Concrete and pipe with steel doors	$3,000
10	Pole barn covered corrals with asphalt surface and pipe gates	two holding corrals plus reject pen	$25,000
11	landscaping	gravel lot, access approach	$10,000
12	Septic	Engineering and construction (Ecoflo)	$35,000
13	Steel building	As per quote from VISB plus GST	$68,499
Subtotal			$299,019
14	Equipment as per list		$37,500
Total			$336,519
Soft Costs and other			
1	Design	floor plan,	$12,000
2	project management	10% of construction	$33,652
3	legal fees		10000
4	Land		100,000
Subtotal			$155,652
Total			$492,171
Contingency at 10%			$49,217
Total			$541,388

Equipment List

stunner	captive bolt	$ 2500
winches		$ 1000
rail scale	digital readout	$ 3000
splitting saw	Kentmaster 60 Inch new	$ 6000
Hooks, 18 long, 24 short		$ 3000
band saw	Biro 44 used	$ 5000
cradles	beef, and lamb	$ 2000
hog tumbler (used)		$ 6000
grinder	ButcherBoy mixer grinder used	$ 2500
work table	stainless with plastic top	$ 2000
wrapping table	stainless	$ 2000
misc knives and small tools		$ 2500
		$ 37500

Note that land costs are estimated at $100,000 for 2 acres. This is based on realtor information provided from listings.

9.0 FINANCIAL PROJECTIONS

Over the the past several years, the consultant has had experience with 3 abattoir startups.

Case Study one

This project was a new build and was a slaughter only project. The proponent name is not identified due to privacy concerns but the individual was a successful farmer who was willing and able to pledge his farm assets for the project. He also was able to access the MTAP grant funding for a substantial part of the cost. (The MTAP maximum was $150K.) The project cost was over $500,000 including $100,000 for a solid waste composting facility.

Case Study Two

The Salt Spring abattoir was funded without commercial debt. However, it was able to access the MTAP grant in full for the project. The overall cost based on a mobile configuration was around $350,000. The site is on leased land.

Community support was significant and is ongoing. An anonymous donor gave $75,000 conditional on matching community donations and the matching amount was easily exceeded. Some debt was required and this was provided by private supporters. The Agricultural Alliance owns the abattoir which is located on leased land. A non-profit corporation operates the abattoir.

Case Study Three

The Farmers Alliance in Invermere (Columbia Valley) started work on developing an abattoir near the end of the MTAP program. They had land and

were able to access an MTAP grant. However, due to delays in a rezoning submission, plus a lack of other funding, the project did not meet the MTAP funding deadline. As a result the grant was cancelled.

The Columbia Basin Trust has provided a small grant ($25K) . The estimated project cost is over $500,000. According to one of the original proponents, the project is proceeding but is no longer an alliance project. It has been taken over by an area rancher who is funding it as a private business.

Options for the Alberni abattoir

Developing a new abattoir is going to be challenging , given that the MTAP grant program that funded plant upgrades and start-ups is no longer available. (MTAP was administered by the British Columbia Food Processors Association) Capital funding is not available through the Investment Agriculture Foundation .

It is possible that the Economic Infrastructure Program of the Island Coastal Economic Trust could provide funding but significant applicant equity would be needed. (ICET is looking for a 1:3 financing model) In addition, the abattoir would need to be set up as a non-profit community venture.

Bank lending to the small abattoir sector has been a challenge and it would be difficult for a non-profit to access conventional financing due to security issues. There may be possibilities through the Community Futures program. One option to reduce the capital cost would be to lease the land as per the Salt Spring model.

For the purposes of analysis , the financing assumption are as follows:

- 25% equity and a 40% grant, with the remainder financed (perhaps with a Community Futures Loan)
- 2 acres land parcel leased at $5,000 per year

The financial scenario also assumes a 100% capture of cut and wrap (every animal that is slaughtered by the abattoir) The live animal capture rate is 80%.

The abattoir projections indicate that the abattoir could be generating a reasonable profit within 2-3 years. However, as noted above, this is based on an aggressive level of capture of the cut and wrap business. A reduction to a 75% cut and wrap capture would result in losses until year 4.

Another key issue is the financing scenario. A highly leveraged financial structure would put the project at risk. In addition, the availability of a large amount of debt financing is doubtful.

To make this project happen the local community would need to contribute enough equity to attract grant and loan money from other sources.

Another key issue is finding competent management to operate the facility. The financial projections assume the manager would be paid both for working as slaughter person and meat cutter as well as receiving a management wage. In year one total wage costs are about $60,000. Note that the abattoir would only operate about 120 days per year in year one.

One option might be for a local organization to finance and develop the plant and then lease it to a qualified operator.

Alberni Abattoir (alternative financing)
(100% capture cut and wrap)
Income and Expense Projections

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue					
Slaughter Sales	$32,480	$36,286	$40,554	$45,341	$50,710
Cut and Wrap fees	$107,451	$120,032	$134,137	$149,953	$167,688
Hide sales	$3,160	$3,546	$3,978	$4,901	$5,008
Total sales	$143,091	$159,863	$178,669	$200,195	$223,406
Less: Direct Costs	$69,815	$76,299	$83,481	$91,439	$100,256
Total Gross Profit	$73,277	$83,565	$95,188	$108,756	$123,150
Expenses					
Insurance	$3,600	$3,708	$3,819	$3,934	$4,052
Bank Charges	$600	$618	$637	$656	$675
Communications	$3,600	$3,708	$3,819	$3,934	$4,052
Advertising/Donations	$325	$335	$345	$355	$366
Uniforms	$2,400	$2,472	$2,546	$2,623	$2,701
Professional Fees	$3,000	$3,090	$3,183	$3,278	$3,377
Sub-Total	$13,525	$13,931	$14,348	$14,779	$15,222
rent and utilities	$12,000	$12,360	$12,731	$13,113	$13,506
Repairs/Maintenance	$3,600	$3,708	$3,819	$3,934	$4,052
Facility Manager	$24,000	$24,720	$25,462	$26,225	$27,012
Total Expenses	$53,125	$54,719	$56,360	$58,051	$59,792
Net Income BDIT	$20,152	$28,846	$38,828	$50,705	$63,357
Less: Interest costs	$4,173	$3,851	$3,513	$3,157	$2,782
Net Income BDT	$15,979	$24,995	$35,315	$47,548	$60,575
Less: Depreciation	$23,416	$21,159	$19,257	$17,641	$16,260
Net Income BT	$7,437	$3,836	$16,058	$29,907	$44,315

Alberni Abattoir (alternative financing)(100% capture of cut and wrap)
Cash Flow Projection

	Start-Up	Year 1	Year 2	Year 3	Year 4	Year 5
Sources of Funds						
Owners at 25%	$135,347	$ -	$ -	$ -	$ -	$ -
	$135,347	-	-	-	-	-
Grants at 40%	$216,555	-	-	-	-	-
Total equity	$351,902	-	-	-	-	-
Total Debt Financing	$ 79,486	$ -	$ -	$ -	$ -	$ -
Net Income	$ -	$ 7,437	$ 3,836	$ 16,058	$ 29,907	$ 44,315
Add: Depreciation		$ 23,416	$ 21,159	$ 19,257	$ 17,641	$ 16,260
Total Sources of Funds	$431,388	$ 15,979	$ 24,995	$ 35,315	$ 47,548	$ 60,575
Uses of Funds						
Building	$379,138	$ -	$ -	$ -	$ -	$ -
Equipment Purchases	$ 41,250	-	-	-	-	-
Legal	$ 11,000	-	-	-	-	-
Total Uses	$431,388	$ -	$ -	$ -	$ -	$ -
Loan payment		$ 6,125	$ 6,447	$ 6,785	$ 7,141	$ 7,516
Net Cash Flow	$ -	$ 9,854	$ 18,548	$ 28,530	$ 40,407	$ 53,059
Beginning Cash Balance	$ 2	$ 2	$ 9,856	$ 28,404	$ 56,934	$ 97,341
Ending Cash Balance	$ 2	$ 9,856	$ 28,404	$ 56,934	$ 97,341	$150,400

Alberni Abattoir (alternative financing with 100% cut and wrap)
Cost of Sales Projection

	Year 1	Year 2	Year 3	Year 4	Year 5
Sales					
Custom Slaughter	$32,480	$36,286	$40,554	$45,341	$50,710
Cut and Wrap	$80,684	$90,131	$100,723	$112,599	$125,918
Hides	$3,160	$3,546	$3,978	$4,901	$5,008
Total Revenue	$116,324	$129,962	$145,255	$162,841	$181,636
Direct Labour Costs					
Hours/Animal Unit (AU)	7.0	7.0	7.0	7.0	7.0
No. of AUs	218	237	257	280	305
Total Hours Worked	1,526	1,658	1,802	1,962	2,137
Wage Rate	$20.00	$20.00	$20.00	$20.00	$20.00
Benefits	20%	20%	20%	20%	20%
Total Wage Costs/Hour	$24.00	$24.00	$24.00	$24.00	$24.00
Total Direct Labour Costs	$36,624	$39,782	$43,257	$47,078	$51,282
Water and Waste Disposal Costs					
Water Costs/AU	$0.25	$0.26	$0.27	$0.27	$0.28
Liquid Disposal Costs/AU	5.00	$5.15	$5.30	$5.46	$5.63
Solid Disposal Costs/AU	60.00	$61.80	$63.65	$65.56	$67.53
Total Waste Disposal Costs/AU	$65.25	$67.21	$69.22	$71.30	$73.44
Total Waste Disposal Costs	$14,225	$15,915	$17,824	$19,980	$22,417
Materials & Miscellaneous Costs					
Material and Misc. Cost/AU	$15.00	$15.00	$15.00	$15.00	$15.00
Total Material & Misc. Costs	$3,270	$3,552	$3,862	$4,203	$4,579
Total Direct Costs	**$54,119**	**$59,249**	**$64,943**	**$71,262**	**$78,278**
Gross Profit	**$62,205**	**$70,713**	**$80,312**	**$91,579**	**$103,357**

Alberni Abattoir (alternative financing)
Balance Sheet Projection

	Start-Up	Year 1	Year 2	Year 3	Year 4	Year 5
Assets						
Current Assets						
Cash	$2	$9,856	$28,404	$56,934	$97,341	$150,400
Total Current Assets	$2	$9,856	$28,404	$56,934	$97,341	$150,400
Long Term Assets						
Building	$379,138	$363,972	$349,414	$335,437	$322,020	$309,139
Equipment	41,250	33,000	26,400	21,120	16,896	13,517
Incorporation	11,000	11,000	11,000	11,000	11,000	11,000
Total Long Term Assets	$431,388	$407,972	$386,814	$367,557	$349,916	$333,656
TOTAL ASSETS	$431,390	$417,828	$415,217	$424,491	$447,256	$484,056
Liabilities						
Term Loan	$79,486	$73,361	$66,914	$60,129	$52,988	$45,472
grants	$216,555	$216,555	$216,555	$216,555	$216,555	$216,555
Total Liabilities	$296,041	$289,916	$283,469	$276,684	$269,543	$262,027
Equity						
Start Balance	$2	$135,349	$127,912	$131,748	$147,806	$177,713
Additions	135,347	-7,437	3,836	16,058	29,907	44,315
Ending Balance	$135,349	$127,912	$131,748	$147,806	$177,713	$222,028
TOTAL EQUITY AND LIABILITIES	$431,390	$417,828	$415,217	$424,491	$447,256	$484,056

Alberni Abattoir (alternative financing)
Depreciation Schedules

Equipment (20% Declincing Balance)

Year	Opening Balance	Depreciation	Acc. Depreciation.	End Balance
1	$41,250	$8,250	$8,250	$33,000
2	33,000	6,600	14,850	26,400
3	26,400	5,280	20,130	21,120
4	21,120	4,224	24,354	16,896
5	16,896	3,379	27,733	13,517

Buildings (4% Declining Balance)

Year	Opening Balance	Depreciation	Acc. Depreciation.	End Balance
1	$379,138	$15,166	$15,166	$363,972
2	363,972	14,559	29,724	349,414
3	349,414	13,977	43,701	335,437
4	335,437	13,417	57,118	322,020
5	322,020	12,881	69,999	309,139

Long Term Loan

Year	Opening Balance	Principal	Interest	Total	Ending Balance
1	$79,486	6,125	$4,173	$10,298	$73,361
2	73,361	6,447	$3,851	10,298	$66,914
3	66,914	6,785	$3,513	10,298	$60,129
4	60,129	7,141	$3,157	10,298	$52,988
5	52,988	7,516	$2,782	10,298	$45,472

Alberni Abattoir
Custom Slaughter of Lamb,Hogs, Cattle and Water Buffalo

Cattle

	Year 1			Year 2			Year 3		
Month	Cattle	Killing Fee	Total Fees	Cattle	Killing Fee	Total Fees	Cattle	Killing Fee	Total Fees
January	-	$140	$-	-	$143	$-	-	$146	$-
February	-	$140	-	-	$143	-	-	$146	-
March	7	$140	980	8	$143	1,100	8	$146	1,234
April	7	$140	980	8	$143	1,100	8	$146	1,234
May	8	$140	1,120	9	$143	1,257	10	$146	1,410
June	8	$140	1,120	9	$143	1,257	10	$146	1,410
July	16	$140	2,240	18	$143	2,513	19	$146	2,820
August	32	$140	4,480	35	$143	5,027	39	$146	5,640
September	32	$140	4,480	35	$143	5,027	39	$146	5,640
October	32	$140	4,480	35	$143	5,027	39	$146	5,640
November	16	$140	2,240	18	$143	2,513	19	$146	2,820
December		$140	-		$143	-		$146	-
Total	158		$22,120	174		$24,819	191		$27,847

	Year 4			Year 5		
Month	Cattle	Killing Fee	Total Fees	Cattle	Killing Fee	Total Fees
January	-	$149	$-	-	$152	$-
February	-	$149	-	-	$152	-
March	9	$149	1,384	10	$152	1,553
April	9	$149	1,384	10	$152	1,553
May	11	$149	1,582	12	$152	1,775
June	11	$149	1,582	12	$152	1,775
July	21	$149	3,164	23	$152	3,550
August	43	$149	6,328	47	$152	7,100
September	43	$149	6,328	47	$152	7,100
October	43	$149	6,328	47	$152	7,100
November	21	$149	3,164	23	$152	3,550
December		$149	-		$152	-
Total	210		$31,244	231		$35,056

Lambs/goats

	Year 1			Year 2			Year 3		
Month	Lambs	Killing Fee	Total Fees	Lambs	Killing Fee	Total Fees	Lambs	Killing Fee	Total Fees
January	-	$40	$-	-	$41	$-	-	$42	$-
February	-	40	-	-	41	-	-	42	-
March	-	40	-	-	41	-	-	42	-
April	78	40	3,120	86	41	3,501	94	42	3,928
May		40	-	-	41	-		42	-
June	-	40	-	-	41	-	-	42	-
July	-	40	-	-	41	-	-	42	-
August	-	40	-	-	41	-	-	42	-
September	39	40	1,560	43	41	1,750	47	42	1,964
October	39	40	1,560	43	41	1,750	47	42	1,964
November	-	40	-		41	-	-	42	-
December	-	40	-	-	41	-	-	42	-
Total	156		$6,240	172		$7,001	189		$7,855

	Year 4			Year 5		
Month	Lambs	Killing Fee	Total Fees	Lambs	Killing Fee	Total Fees
January	-	$42	$ -	-	$43	$-
February	-	42	-	-	43	-
March	-	42	-	-	43	-
April	104	42	$ 4,407	114	43	4,945
May		42	-		43	-
June	-	42	-	-	43	-
July	-	42	-	-	43	-
August	-	42	-	-	43	-
September	52	42	$ 2,203	57	43	2,472
October	52	42	$ 2,203	57	43	2,472
November	-	42	-	-	43	-
December	-	42	-	-	43	-
Total	208		$ 8,814	228		$9,889

Water Buffalo

	Year 1			Year 2			Year 3		
Month	Water Buffalo	Killing Fee	Total Fees	Water Buffalo	Killing Fee	Total Fees	Water Buffalo	Killing Fee	Total Fees
January	-	$140	$-	-	$144	$-	-	$149	$-
February	-	140	-	-	144	-	-	149	-
March	-	140	-	-	144	-	-	149	-
April	-	140	-	-	144	-	-	149	-
May	-	140	-	-	144	-	-	149	-
June	-	140	-	-	144	-	-	149	-
July	-	140	-	-	144	-	-	149	-
August	14	140	1,960	14	144	2,019	14	149	2,079
September	-	140	-	-	144	-	-	149	-
October	-	140	-	-	144	-	-	149	-
November	-	140	-	-	144	-	-	149	-
December	-	140	-	-	144	-	-	149	-
Total	14		$1,960	14		$2,019	14		$2,079

	Year 4			Year 5		
Month	Water Buffalo	Killing Fee	Total Fees	Water Buffalo	Killing Fee	Total Fees
	$-	$153	$-	$-	$158	$-
January	$-	153	-	-	158	-
February	$-	153	-	-	158	-
March	$-	153	-	-	158	-
April	$-	153	-	-	158	-
May	$-	153	-	-	158	-
June	$-	153	-	-	158	-
July	14	153	2,142	14	158	2,206
August	-	153	-	-	158	-
September	-	153	-	-	158	-
October	-	153	-	-	158	-
November	-	153	-	-	158	-
December	14		$2,142	14		$2,206

Pork: Hogs

	Year 1			Year 2			Year 3	
Month	Hogs	Killing Fee	Total Fees	Hogs	Killing Fee	Total Fees	Hogs	Killing Fee	Total Fees
January	-	$60	$-	-	$62	$-	-	$64	$-
February	-	60	-	-	62	-	-	64	-
March	-	60	-	-	62	-	-	64	-
April	-	60	-	-	62	-	-	64	-
May	-	60	-	-	62	-	-	64	-
June	-	60	-	-	62	-	-	64	-
July	-	60	-	-	62	-	-	64	-
August	-	60	-	-	62	-	-	64	-
September	36	60	$2,160	40	62	2,447	44	64	2,773
October	-	60	-	-	62	-	-	64	-
November	-	60	-	-	62	-	-	64	-
December	-	60	-	-	62	-	-	64	-
Total	36		$2,160	40		$2,447	44		$2,773

	Year 4			Year 5		
Month	Hogs	Killing Fee	Total Fees	Hogs	Killing Fee	Total Fees
January	-	$66	$-	-	$68	$ -
February	-	66	-	-	68	-
March		66	-	-	68	-
April	-	66	-	-	68	-
May	-	66	-	-	68	-
June	-	66	-	-	68	-
July	-	66	-	-	68	-
August		66	-		68	-
September	48	66	$3,142	53	68	$ 3,559
October	-	66	-	-	68	-
November	-	66	-	-	68	-
December	-	66	-	-	68	-
Total	48		$3,142	53		$ 3,559

Total Custom Kill Revenue by the Month

Month	Year 1	Year 2	Year 3	Year 4	Year 5
January	$ -	$ -	$ -	$ -	$ -
February	$ -	$ -	$ -	$ -	$ -
March	$ 980	$1,100	$1,234	$1,384	$1,553
April	$4,100	$4,600	$5,161	$5,791	$6,498
May	$1,120	$1,257	$1,410	$1,582	$1,775
June	$1,120	$1,257	$1,410	$1,582	$1,775
July	$2,240	$2,513	$2,820	$3,164	$3,550
August	$6,440	$7,045	$7,719	$8,470	$9,306
September	$8,200	$9,224	$10,376	$11,673	$13,131
October	$6,040	$6,777	$7,604	$8,531	$9,572
November	$2,240	$2,513	$2,820	$3,164	$3,550
December	$ -	$ -	$ -	$ -	$ -
Total	$32,480	$36,286	$40,554	$45,341	$50,710

Hide Fees

Month	Year 1	Year 2	Year 3	Year 4	Year 5
January	$ -	$ -	$ -	$ -	$ -
February	$ -	$ -	$ -	$ -	$ -
March	$140	$157	$176	$217	$222
April	$140	$157	$176	$217	$222
May	$160	$180	$201	$248	$254
June	$160	$180	$201	$248	$254
July	$320	$359	$403	$496	$507
August	$640	$718	$806	$993	$1,014
September	$640	$718	$806	$993	$1,014
October	$640	$718	$806	$993	$1,014
November	$320	$359	$403	$496	$507
December	$ -	$ -	$ -	$ -	$ -
Total	$3,160	$3,546	$3,978	$4,901	$5,008

Alberni Abattoir Cut and Wrap Fees

based on 100% of kill

Cattle

	Year 1			Year 2			Year 3		
Month	Cattle	CW fee	Total Fees	Cattle	CW fee	Total Fees	Cattle	CW fee	Total Fees
January	-	$563	$-	-	$574	$-	-	$585	$-
February	-	$563	-	-	$574	-	-	$585	-
March	7	$563	3,938	8	$574	4,418	8	$585	4,957
April	7	$563	3,938	8	$574	4,418	8	$585	4,957
May	8	$563	4,500	9	$574	5,049	10	$585	5,665
June	8	$563	4,500	9	$574	5,049	10	$585	5,665
July	16	$563	9,000	18	$574	10,098	19	$585	11,330
August	32	$563	18,000	35	$574	20,196	39	$585	22,660
September	32	$563	18,000	35	$574	20,196	39	$585	22,660
October	32	$563	18,000	35	$574	20,196	39	$585	22,660
November	16	$563	9,000	18	$574	10,098	19	$585	11,330
December		$563	-		$574	-		$585	-
Total	158		$88,875	174		$99,718	191		$111,883

	Year 4			Year 5		
Month	Cattle	CW fee	Total Fees	Cattle	CW fee	Total Fees
January	-	$597	$ -	-	$609	$ -
February	-	$597	-	-	$609	-
March	9	$597	$ 5,562	10	$609	$ 6,240
April	9	$597	5,562	10	$609	6,240
May	11	$597	6,356	12	$609	7,132
June	11	$597	6,356	12	$609	7,132
July	21	$597	12,712	23	$609	14,263
August	43	$597	25,424	47	$609	28,526
September	43	$597	25,424	47	$609	28,526
October	43	$597	25,424	47	$609	28,526
November	21	$597	12,712	23	$609	14,263
December		$597	-		$609	-
Total	210		$125,533	231		$140,848

Lambs/goats

	Year 1			Year 2			Year 3		
Month	Lambs	CW fee	Total Fees	Lambs	CW fee	Total Fees	Lambs	CW fee	Total Fees
January	-	$49	$ -	-	$50	$ -	-	$51	$-
February	-	49	-	-	50	-	-	51	-
March	-	49	-	-	50	-	-	51	-
April	78	49	$3,803	86	50	$4,266	94	51	$4,787
May		49	-	-	50	-		51	-
June	-	49	-	-	50	-	-	51	-
July	-	49	-	-	50	-	-	51	-
August	-	49	-	-	50	-	-	51	-
September	39	49	1,901	43	50	2,133	47	51	2,393
October	39	49	1,901	43	50	2,133	47	51	2,393
November	-	49	-		50	-	-	51	-
December	-	49	-	-	50	-	-	51	-
Total	156		$7,605	172		$8,533	189		$9,574

	Year 4			Year 5		
Month	Lambs	CW fee	Total Fees	Lambs	CW fee	Total Fees
January	-	$52	$-	-	$53	$-
February	-	52	-	-	53	-
March	-	52	-	-	53	-
April	104	52	5,371	114	53	6,026
May		52	-		53	-
June	-	52	-	-	53	-
July	-	52	-	-	53	-
August	-	52	-	-	53	-
September	52	52	2,685	57	53	3,013
October	52	52	2,685	57	53	3,013
November	-	52	-	-	53	-
December	-	52	-	-	53	-
Total	208		$10,742	228		$12,052

Water Buffalo

	Year 1			Year 2			Year 3		
Month	Water Buffalo	CW fee	Total Fees	Water Buffalo	CW fee	Total Fees	Water Buffalo	CW fee	Total Fees
January	-	$450	$-	-	$464	$-	-	$477	$-
February	-	450	-	-	464	-	-	477	-
March	-	450	-	-	464	-	-	477	-
April	-	450	-	-	464	-	-	477	-
May	-	450	-	-	464	-	-	477	-
June	-	450	-	-	464	-	-	477	-
July	-	450	-	-	464	-	-	477	-
August	14	450	6,300	14	464	6,489	14	477	6,684
September	-	450	-	-	464	-	-	477	-
October	-	450	-	-	464	-	-	477	-
November	-	450	-	-	464	-	-	477	-
December	-	450	-	-	464	-	-	477	-
Total	14		$6,300	14		$6,489	14		$6,684

	Year 4			Year 5		
Month	Water Buffalo	CW fee	Total Fees	Water Buffalo	CW fee	Total Fees
January	$-	$492	$-	$-	$506	$-
February	$-	492	-	-	506	-
March	$-	492	-	-	506	-
April	$-	492	-	-	506	-
May	$-	492	-	-	506	-
June	$-	492	-	-	506	-
July	$-	492	-	-	506	-
August	14	492	6,884	14	506	7,091
September	-	492	-	-	506	-
October	-	492	-	-	506	-
November	-	492	-	-	506	-
December	-	492	-	-	506	-
Total	14		$6,884	14		$7,091

Pork: Hogs

	Year 1			Year 2			Year 3	
Month	Hogs	CW fee	Total Fees	Hogs	CW fee	Total Fees	Hogs	CW fee	Total Fees
January	-	$130	$-	-	$134	$-	-	$138	$-
February	-	130	-	-	134	-	-	138	-
March	-	130	-	-	134	-	-	138	-
April	-	130	-	-	134	-	-	138	-
May	-	130	-	-	134	-	-	138	-
June	-	130	-	-	134	-	-	138	-
July	-	130	-	-	134	-	-	138	-
August	-	130	-	-	134	-	-	138	-
September	36	130	4,671	40	134	5,292	44	138	5,996
October	-	130	-	-	134	-	-	138	-
November	-	130	-	-	134	-	-	138	-
December	-	130	-	-	134	-	-	138	-
Total	36		$4,671	40		$5,292	44		$5,996

	Year 4			Year 5		
Month	Hogs	CW fee	Total Fees	Hogs	CW fee	Total Fees
January	$-	$142	$-	$-	$146	$-
February	$-	142	-	-	146	-
March	$-	142	-	-	146	-
April	$-	142	-	-	146	-
May	$-	142	-	-	146	-
June	$-	142	-	-	146	-
July	$-	142	-	-	146	-
August		142	-		146	-
September	48	142	6,794	53	146	7,697
October	-	142	-	-	146	-
November	-	142	-	-	146	-
December	-	142	-	-	146	-
Total	48		$6,794	53		$7,697

Total cut and wrap revenue by the month

100% capture

Month	Year 1	Year 2	Year 3	Year 4	Year 5
January	$-	$-	$-	$-	$-
February	$-	$-	$-	$-	$-
March	$3,938	$4,418	$4,957	$5,562	$6,240
April	$7,740	$8,684	$9,744	$10,933	$12,266
May	$4,500	$5,049	$5,665	$6,356	$7,132
June	$4,500	$5,049	$5,665	$6,356	$7,132
July	$9,000	$10,098	$11,330	$12,712	$14,263
August	$24,300	$26,685	$29,344	$32,309	$35,617
September	$24,572	$27,621	$31,049	$34,903	$39,236
October	$19,901	$22,329	$25,053	$28,110	$31,539
November	$9,000	$10,098	$11,330	$12,712	$14,263
December	$-	$-	$-	$-	$-
Total	$107,451	$120,032	$134,137	$149,953	$167,688

10. BENEFITS AND CONCLUSIONS

The development of a local abattoir can provide a significant benefit to the overall community from the aspect of a number of factors:

One immediate benefit would be a reduction in the cost of production of meat for local farmers through reducing transportation costs of live animals and processed meat. At the present time, farmers in the Alberni valley need 2 trips to the nearest abattoir. Based on the assumption of a 110 kilometer trip, this would result in 440 kilometers per slaughter order. Assuming the producer has the equipment, the cost of truck and trailer operation could add $0.50 per kilometer in costs ($220) divided by the number of animals. A 20 kilometer haul would reduce transport costs by up to 80%.

Another benefit is the improvement in meat quality due the reduced animal stress. There are numerous research papers that deal with the impact of transport distance on meat quality in market animals. It is generally agreed that long transport times may have a harmful impact on animals. Short hauls from farm gate to a local abattoir should provide better meat quality.

Livestock production appears to be on the increase on Salt Spring Island due to the existence of a local abattoir. As noted in the survey , 67% of Alberni area respondents indicated they would increase production if there was a local abattoir. This would expand the farm sector and increase local farm income.

The increase in livestock production and the availability of local processing would result in a reduction in food travel distance from out of the region and perhaps out

of the province or even out of the country. It would also give people the security of knowing the source of what they are eating.

The proposed abattoir would create 3- 4 jobs for local people. There would be construction employment created during the construction period.

In conclusion, the abattoir could provide benefits to the local economy. In order to proceed the community will need to consider how it can support an investment of close to $500,000 for the project.

APPENDIX A

BEST MANAGEMENT PRACTICES

Best Management Practices
for *Nitrogen and Phosphorus Control*
in *Red Meat and Poultry Slaughter Plants*

October 11, 2001 Partial Draft, prepared by J. Willis Sneed of HDR, Inc.

I. Introduction

This document is intended to provide guidance for plant and corporate personnel in voluntarily establishing Best Management Practices (BMP) to control nitrogen and phosphorus in the wastewater from red meat and poultry slaughter plants. These nutrient control practices solely address in-plant waste minimization practices and do not include wastewater pre-treatment or treatment methods.

This is one part of a three-part set of documents. This part addressed BMP for the slaughter operations. The other two documents discuss BMP for cutting up the carcasses, further processing the meat, and rendering. Therefore it may be appropriate for some packing plants to use two or all three of these documents if they also cut up the carcasses, further process the meat, or render.

II. Discussion of various slaughter plant types

In the mid-1970s, the U.S. Environmental Protection Agency (EPA) divided red meat and slaughter plants into the following Segments and Subcategories:

- Simple Slaughterhouse
- Complex Slaughterhouse
- Low-Processing Packinghouse
- High-Processing Packinghouse

The plants were divided as follows

- **Slaughterhouse.** A plant that slaughters animals and has as its main product fresh meat as whole, half or quarter carcasses or smaller fresh meat cuts.
- **Packinghouse.** A plant that both slaughters and processes fresh meat to cured, smoked, canned, and other prepared meat products. **Processed meat products** are limited to: chopped beef, meat stew, canned meats, bacon, hams (boneless, picnic, water added), franks, wieners, bologna, hamburger, luncheon meat loaves, sausages.

Both slaughterhouses and packinghouses are further subdivided into two subcategories, depending on the amount of by-product processing. By-product operations include: rendering, paunch and viscera handling, blood processing, or hide or hair processing.

- **Simple Slaughterhouse.** A slaughterhouse that does very limited, if any, by-product processing; usually no more than two operations.

- **Complex Slaughterhouse.** A slaughterhouse that does extensive by-product processing; usually at least three operations.
- **Low-Processing Packinghouse.** A packinghouse that processed no more than the total animals killed at the plant and normally processing less than the total kill.
- **High-Processing Packinghouse.** A packinghouse that processed both animals slaughtered at the site and additional carcasses from outside sources.

The BMPs contained in this document are applicable to the slaughter portion of each of these plants. Many of these plants will also need to refer to BMPs for Further Processing Plants and BMPs for Rendering.

Although categorical limits were never promulgated for the poultry industry so no legal subcategorization exists in current regulations, in the mid-1970s, the U.S. Environmental Protection Agency (EPA) divided poultry plants into the following subcategories:

- Chickens
- Turkeys
- Fowl
- Ducks

These subcategories are obvious with the exception of the term "fowl", which are breeder-spent hens (heavy fowl), a few roosters, and laying hens (light fowl). From a wastewater perspective, the key difference is the presence of immature eggs in the hens, which can increases loadings from these birds.

More recently poultry plants are commonly split into the following three types of facilities:

- **Slaughter/First Processing**: A facility that simple slaughters birds and packages fresh and frozen whole birds and parts.
- **Slaughter/Second processing**: A facility that, in addition to performing the operations of first processing, also performs operations such as deboning, marinating, tumbling, IQF.
- **Slaughter/Third Processing**: A facility, which in addition to performing the operations of first and second processing, also produces a parfried or fully-cooked product. Parfried product is product that is not fully cooked. It is often done to "set" batter on a formed meat product.

The BMPs contained in this document are applicable to the slaughter portion of each of these plants. Second and Third Processing plants also need to refer to BMPs for Further Processing Plants.

III. Description of production-related activities

[pending]

IV. Typical nitrogen and phosphorus levels

In the 1974, the Environmental Protection Agency (EPA) published a Development Documents for Red Meat Processing. Included within that document are tables showing waste characteristics for each slaughter plant subcategory. Table I shows data for total Kjeldahl nitrogen (TKN) from that Development Document.

TABLE I
RED MEAT SLAUGHTER PLANT EFFLUENT TKN LEVELS
FROM 1974 DEVELOPMENT DOCUMENT

PLANT TYPE	AVERAGE	STD. DEVIATION	RANGE	NO. OF PLANTS
RED MEAT	lb/1000 lb LWK*	lb/1000 lb LWK*	lb/1000 lb LWK*	
Simple Slaughterhouse	0.68	0.46	0.23-1.36	5
Complex Slaughterhouse	0.84	0.66	0.13-2.1	12
Low-Processing Packinghouse	0.53	0.44	0.04-1.3	6
High-Processing Packinghouse	1.3	0.92	0.65-2.7	3

* Live Weight Killed

In the 1975, a similar Development Documents for Poultry was published. That document included tables showing waste characteristics for effluent from each slaughter plant subcategory. Table II shows data for the various forms of nitrogen from the Development Document.

TABLE II
POULTRY SLAUGHTER PLANT EFFLUENT NITROGEN LEVELS
FROM 1975 DEVELOPMENT DOCUMENT

PLANT TYPE	AVERAGE	RANGE	NO. OF PLANTS
	lb/1000 lb LWK*	lb/1000 lb LWK*	
Chicken			
TKN	1.84	0.15-12.16	22
Ammonia-N	0.23	0.005-0.73	19
Nitrate–N	0.0078	0.0-0.14	12
Nitrite-N	0.0069	0.0-0.037	14
Turkey			
TKN	0.94	0.038-1.89	5
Ammonia-N	0.15	0.064-0.37	5
Nitrate–N	0.037	0.005-0.092	3
Nitrite-N	0.0013	0.001-0.002	3
Fowl			
TKN	0.28	----	1

Ammonia-N	0.1	----	1
Nitrate–N	0.0044	----	1
Nitrite-N	0.00053	----	1
Duck			
TKN	1.4	0.80-2.00	2
Ammonia-N	0.79	0.062-2.52	2
Nitrate–N	0.03	0.018-0.043	2
Nitrite-N	0.0097	0.0014-0.018	2

* Live Weight Killed

Table III shows effluent phosphorus levels for both Red Meat and Poultry slaughter plants.

TABLE III
SLAUGHTER PLANT TOTAL PHOSPHORUS LEVELS
FROM 1970s DEVELOPMENT DOCUMENTS

PLANT TYPE	AVERAGE	STD. DEVIATION	RANGE	NO. OF PLANTS
	lb/1000 lb LWK*	lb/1000 lb LWK*	lb/1000 lb LWK*	
RED MEAT				
Simple Slaughterhouse	0.05	0.03	0.014-0.086	5
Complex Slaughterhouse	0.33	0.49	0.05-1.2	5
Low-Processing Packinghouse	0.13	0.16	0.03-0.43	4
High-Processing Packinghouse	0.38	0.22	0.2-0.63	3
POULTRY				
Chicken	0.39	----	0.054-2.46	22
Turkey	0.98	----	0.034-0.18	4
Fowl	0.29	----	0.27-0.31	2
Duck	0.084	----	0.073-0.096	2

* Live Weight Killed

All data in Table Nos. I-III represents plant effluents after physical pre-treatment, i.e. no chemically-enhanced pre-treatment. However pre-treatment facilities were generally less extensive in the early 1970s than is presently typical.

V. Nitrogen and phosphorus sources

A. Nitrogen

Total nitrogen is comprised of TKN, nitrate nitrogen and nitrite nitrogen. TKN is the combination of organic nitrogen and ammonia nitrogen. Table II shows that essentially all of the nitrogen in poultry slaughter plant effluents is in the form of TKN, with very little nitrate or nitrite nitrogen present. Although no effluent nitrate or nitrite data is presented in Table I for Red Meat slaughter plants, nitrate and nitrites are similarly low for these effluents as well. By far the major source of nitrogen is from the protein in the meat particles and blood in the wastewater from slaughter plants. Protein contains about 16 percent organic nitrogen. Other sources of nitrogen are the manure and partially-digested feeds from stomachs and gizzards and intestines, as well as urine. Fat contains no nitrogen, nor is any contained in carbohydrates such as sugars, starches and cellulose. The primary source of the small amount of carbohydrates in packing plant wastewater is from the animal feeds.

As protein is utilized by both aerobic and anaerobic saprophytic bacteria, organic nitrogen is broken down to ammonia. The longer the meat particles and blood are in contact with wastewater, the more the organic nitrogen will be converted to ammonia nitrogen. This is significant because organic nitrogen can be removed from the wastewater by physical pretreatment; such as fine screening, settling or flotation; but ammonia cannot because it is in solution. The longer feeds have been inside the animals, the more the proteins within the feeds will have been broken down into ammonia. All the organic nitrogen in urine has been broken down to urea, $CO(NH_2)_2$. Although ammonia is often used in the refrigeration systems at packing plants, it is not a significant source of nitrogen in the wastewater.

B. Phosphorus

A significant source of phosphorus in packing plant wastewater is also the proteins in the meat particles and blood. Lean meat contains approximately two percent (verify) organic phosphorus. Carbohydrates and fat contain small amounts of phosphorus. The manure and partially-digested feeds from stomachs and gizzards and intestines contribute to phosphorus in packing plant wastewaters. Since the general phosphorus contents in poultry plants shown in Table III were determined in the early 1970s, the use of trisodium phosphate (TSP) as a microbial agent to wash the animals has become common in poultry plants and, occasionally, in pork plants. This use of TSP can cause an appreciable increase in the phosphorus content of the wastewater from these plants. If phosphate-bearing detergents are used for cleaning, these can be a source of phosphorus in the wastewater. Boiler-water additives only contribute minor amounts of phosphorus in the wastewater.

VI. Best management practices for nitrogen and phosphorus control

The following is a list of items for consideration when establishing best management practices nitrogen and phosphorus control at slaughter plants. This list should not be considered as all-inclusive, nor are all of these methodologies necessarily appropriate for every plant. This list should be viewed as a starting point for establishing BMPs specific to each facility.

- A. Blood Collection/Blood Handling
- B. Manure Management
- C. Inedible Material Management

- D. Cleaning Chemical Management
- E. Solids Removal
- F. Dry Cleanup
- G. Egg Harvesting from Hens
- H. Water Conservation
- I. Product Loss Prevention
- J. Pollution Prevention Team
- K. Environmental Awards Program

A. Blood Collection/Blood Handling: Whole blood contains about 27,000 mg/l of organic nitrogen and 300-400 mg/l (verify) phosphorus.

- Maximize Blood Collection:

1. Ensure stunning devices are properly functioning to maximize rapid bleed-out of the animal.
2. Ensure the animals are properly stuck so they are thoroughly bled out before leaving the blood collection area. In poultry plants, maintain sharp blades, and adjust blade cut depth on killers to ensure clean cuts that allow maximum bleed out.
3. Check that adequate hang time is available so that the carcass is only dripping an occasional drop of blood when it leaves the blood collection area. If necessary, provide drip pans past the blood trough to prevent blood accumulation on kill room floor. In poultry plants, strive for minimum bleed times of 45 seconds for broilers and light fowl, 60 seconds for heavy fowl, 90 seconds for turkey hens, and 120 seconds for turkey toms
4. The blood collection pit and blood troughs need to be wide enough to avoid blood splashing outside these collection devises. At corners where the animals may swing outward, it may be necessary to add splash shields to contain the blood. The blood collection system needs to be of sufficient size to hold the blood during extended shifts.
5. Dry clean blood troughs and drip pans with a squeegee, or other appropriate tool, during sanitation and, if necessary, between shifts.
6. Collect and transfer to rendering, the "first rinse" water from blood trough sanitation.
7. Where possible, avoid the use of grating and other materials and areas within the blood collection pit that pack full of blood that cannot be removed during dry cleanup.
8. Electrical stimulation of beef carcasses maximizes blood recovery from the carcasses where it can be collected. This same concept may be possible in other plants as well.

Impacts:

1. Minimizes the loss of blood to the wastewater, thereby reducing nitrogen, phosphorus and BOD in the wastewater. This is particularly important since blood is not removed in physical pretreatment devices like screens, clarifiers and flotation systems.
2. Maximizes the capture of valuable blood.

- Consider Saving Blood Plasma for Sale: Add citric acid to raw blood and centrifuge to separate out most of the plasma for sale to off-site drying operations.

Impacts:

1. Minimizes the discharge of blood plasma from blood processing/drying, thereby affecting nitrogen, phosphorus and BOD reductions.
2. The sale of plasma is profitable.

- Consider establishing a program of routine maintenance to reduce leaks and spills of whole blood or plasma.

1. Where possible, dry clean up blood spills.
2. Repair or replace pump and valve seals as required to minimize or eliminate leaks of whole blood or plasma.
3. Strive to continuously eliminate pipe and equipment blood/plasma leaks and spills.

Impacts:

1. Reduction in total P, nitrite and BOD in the wastewater.
2. Maximizes the capture of valuable blood and plasma.

B. Manure Management: The nutrient content of animal manure and urine is quite high, as shown in Tables IV and V:

TABLE IV
NUTRIENT CONTENT OF RED MEAT MANURE AND URINE

Species	**Nitrogen**		**Phosphorus**	
	mg/l	lb/hd/day	mg/l	lb/hd/day
Beef - 1125 lb/hd	5,770	0.385	1850	0.123
Hogs - 260 lb/hog	6,630	0.115	2,020	0.035

Total P in the wastewater from hog pens has been measured at 106 mg/l, which was 3.5 times higher than the total packing plant flow.

TABLE V
NUTRIENT CONTENT OF POULTRY MANURE

Species	Nitrogen	Phosphorus
	lb/bird/day	lb/bird/day
Broiler (5lb/bird)	.005	.0017
Turkey (20lb/bird)	.015	.006
Duck (8lb/bird)	.006	.0024
Fowl (6lb/bird)	.005	.0019

- Less manure is deposited in the livestock trailers and pens, cages, live holding sheds, live receiving areas and less partially-digested feeds are lost to the slaughter plant sewers from the paunch/stomach/gizzard and intestines if livestock or poultry are taken off feed before they are sent to slaughter.

Impacts:

1. Reduction of total P, TKN, BOD, and TSS in the wastewater.
2. Results in a minor reduction in feed costs.
3. Reduces potential product contamination with manure.

Comment:

1. This may not be feasible if the animals are hauled long distances.
2. This is particularly important in pork plants where there is a current trend to rest the hogs longer in the pens before slaughter.

- To the extent practical, dry clean livestock trailers, cages, pens, live holding sheds and live receiving areas before the initial hose down. Vacuums may be used to assist in this effort. This recovered material should then be land applied at agronomic rates, or landfilled if appropriate.

Impact: Reduction of total P, TKN, BOD, and TSS in the wastewater.
Comments: This is easier in beef plants and live poultry receiving and holding areas, than pork.

- Consider dry bedding cattle pens. The manure and bedding material should be land applied at agronomic rates.

Impact: Reduction of total P, TKN, BOD, and TSS in the wastewater.

- Investigate dry dumping beef paunch and hog stomachs and, to the extent possible, shake out beef pecks (omesum). This recovered material should then be land applied at agronomic rates.

Impact: Reduction of total P, TKN, BOD, and TSS in the wastewater.
Comments:

1. It is difficult to shake much manure out of the pecks.
2. Dry dumping beef paunches is far more common than dry dumping hog stomachs.

- Eliminate hashing and washing of intestines and render whole.

Impact: Reduction of total P, TKN, BOD, and TSS in the wastewater.
Comments: The cost of rendering manure in the intestines exceeds any value in the recovered product.

C. Inedible Material Management

- Red Meat: Try to eliminate the use of water to sluice meat scraps to inedible rendering or rendering trailers. This water must be drained from the raw materials before the inedible material is rendered. This leaches blood and other soluble materials out of the inedible material and sends them to the sewer. Alternatives to sluicing include screw and belt conveyors, ram-type and other solids-handling pumps, blow tanks and vacuum systems.

Impact:

1. Reduction of TKN, total P, BOD, TSS and fat, oil and grease (FOG) in the wastewater.
2. More recovery of inedible material for rendering.

- Poultry

1. Where practical, utilize vacuum system to transport lungs to inedible rendering or rendering trailers.
2. Consider usage, on a plant specific basis, of vacuum systems for hearts, giblets, paws and /or leaf fat.

Impact:

1. Reduction of TKN, total P, BOD, TSS and FOG in the wastewater.
2. More recovery of inedible material for rendering.

D. Cleaning Chemical Management: Consider switching to low-phosphorus or non-phosphorus cleaning compounds. Phosphorous-based cleaners can often be replaced with organic surfactants (butyoxyethanol) and caustic cleaners (NaOH or KOH).
Impact: This step alone reduced phosphorus in the effluent from a pork low-processing packinghouse by approximately 2 mg/l for a six percent reduction.
Comment:

1. Consider food safety concerns when evaluating a switch to a low-phosphorus or non-phosphorus product
2. Non-phosphate cleaning compounds may be less effective and more costly.
3. Caustic cleaners can harm aluminum and copper equipment.

E. Solids Removal: Improve in-plant practices to physically remove solids from wastewater.

- Red Meat Drain Management. Consider a two-tier screening system using the drain covers for coarse solids removal and drain basket screens with finer openings.

Impact:

1. Reduction of TKN, total P, BOD, TSS and FOG in the wastewater. Rapid removal of meat scraps and blood from the floors prevents the breakdown of organic nitrogen to the ammonia form, which cannot be removed through pretreatment.
2. More recovery of inedible material for rendering.

Comment: This may not be practical where large amounts of solids would quickly plug the baskets and require constant attention. In other areas, occasional plugging may force more frequent cleaning of the drains and baskets. Removal of the baskets or emptying them into the open drain must be prohibited for this to be effective.

- Poultry Solids Removal. Investigate improving screenings practices to include both primary (coarse) and secondary (fine) screening.

Impacts:

1. Reduction of TKN, total P, BOD, TSS and FOG in the wastewater. Rapid removal of meat scraps and blood from the floors prevents the breakdown of organic nitrogen to the ammonia form, which cannot be removed through pretreatment.
2. More recovery of inedible material for rendering.

F. Dry Cleanup: A meat particle on the floor is probably at least four percent nitrogen.
a. Review the design of equipment to avoid creating difficulties with dry cleanup. For example, try to minimize numerous legs on equipment that inhibit use of a squeegee or shovel for dry cleanup.
b. Assign workers during the production shift(s), at breaks and lunch to dry cleanup materials from the floors for rendering.
c. Provide tools for dry cleanup, such as squeegees, shovels, dump carts, vacuums, etc. Adapt squeegees to fit within blood troughs.
d. Consider establishing and enforcing written standard operating procedures for dry cleanup, either at the end of the production shift or at the start of the sanitation shift.
Impacts:

1. Reduction of TKN, total P, BOD, TSS and FOG in the wastewater. Rapid removal of meat scraps and blood from the floors prevents the breakdown of organic nitrogen to the ammonia form, which cannot be removed through pretreatment.
2. More recovery of inedible material for rendering.

G. Egg Harvesting from Hens. Harvest eggs from hens before evisceration.
Impacts: Reduction of TKN, total P, and BOD in the wastewater from the broken eggs.
Comments: Foaming caused by the egg whites (like a meringue) prevents The use of dissolved air flotation (DAF) for pre-treatment.

H. Water Conservation: Although there is no readily-apparent reason why water conservation would result in nitrogen and phosphorus reductions, the Development Documents for these industries all contain graphs showing that plants with lower water use per animal also had lower waste loads, on a total mass basis. Obviously less water is used, however, if a scrap of meat is picked up during dry cleaning than if it is hosed to a floor drain during sanitation, for example. This may also simply be an indication that better-run plants use less water and discharge less wastes versus poorer-managed plants in general.

- Use the appropriate pressure and volume of water for sanitation according to each application.

Impact: Reduced water requirements for sanitation.

- Consider installation of "electronic eyes" , foot valves or other devices on spray cabinets, carcass washers, eviscerating machines, chill tanks and other large water users to shut off the water when no animals are present.
- Evaluate installing water meters and monitoring potable water usage for: 1) each department within the plant, 2) each shift, and 3) individual machines that use large quantities of water, such as carcass washers, chitterling machines and stomach machines.

1. Monitoring water use on a day-to-day, month-to-month, and year-to-year basis can detect daily excursions, as well as long-term trends. Gradually increasing water use

for an individual piece of equipment may indicate spray nozzle openings are slowly wearing larger. Significant water flow during idle shifts and weekends may indicate water leaks.

2. Consider establishing baseline quantities and holding each department manager responsible for water usage for his department. Reward usage under budgeted amounts and condemn usage over budgeted quantities.
3. Encourage competition for water reductions between shifts and between different departments

- Consider establishing a program to inspect all hose nozzles and equipment spray nozzles and measure flow rates, where possible, at least annually. Replace nozzles discharging excessive flow.

Impact: Less water usage; hence less pollutant discharge.

- Use push-to-open nozzles on hoses.

Impact: Reduced water requirements for sanitation.

I. Product Loss Prevention: Consider establishing procedures to monitor wastewater pollutant loadings (TKN, total P, BOD, TSS, and FOG).

- Monitoring pollutant loads on a shift-by-shift, week-to-week, month-to-month, and year-to-year basis will reveal daily excursions, as well as long-term trends.
- Consider establishing baseline quantities and holding each department manager responsible for loads from his department. Reward quantities under budgeted amounts and condemn discharge of excessive quantities.
- Encourage competition for waste reductions between shifts and between different departments.

Impacts:

1. Reduced loadings for wastewater treatment, hence reduced waste treatment costs.
2. Problem areas are identified and corrected.
3. Allows measurement of the impact of waste reduction projects within the plant.

J. Pollution Prevention Team: Investigate establishing teams to identify methods to reduce water usage and plant waste, set goals, and monitor progress.

Impacts:

1. Reduced water usage and waste loads.
2. Recognition for employee efforts.

K. Environmental Awards Program: Consider participating in an industry-sponsored awards program or establishing corporate sponsorship of awards to plants, departments or individuals for both water and waste reduction. Plants could compete for awards with winners recognized by the industry or company management with a trophy or plaque.

Impacts: Annual savings over a $1 million/year were attributed to these projects, plus energy reduction, by one red meat corporation.

VII. BMP monitoring

APPENDIX B

Livestock Inventory Survey for Alberni-Clayoquot Abattoir Feasibility Study

Q1

Contact Information

Answered: 63 Skipped: 0

Answer Choices	Responses	
Name	100.00%	63
Farm Name	80.95%	51
Address	100.00%	63
Address 2	9.52%	6
City/Town	100.00%	63
Province	100.00%	63
Postal Code	100.00%	63
Country	0.00%	0
Email Address	95.24%	60
Phone Number	92.06%	58

Q2

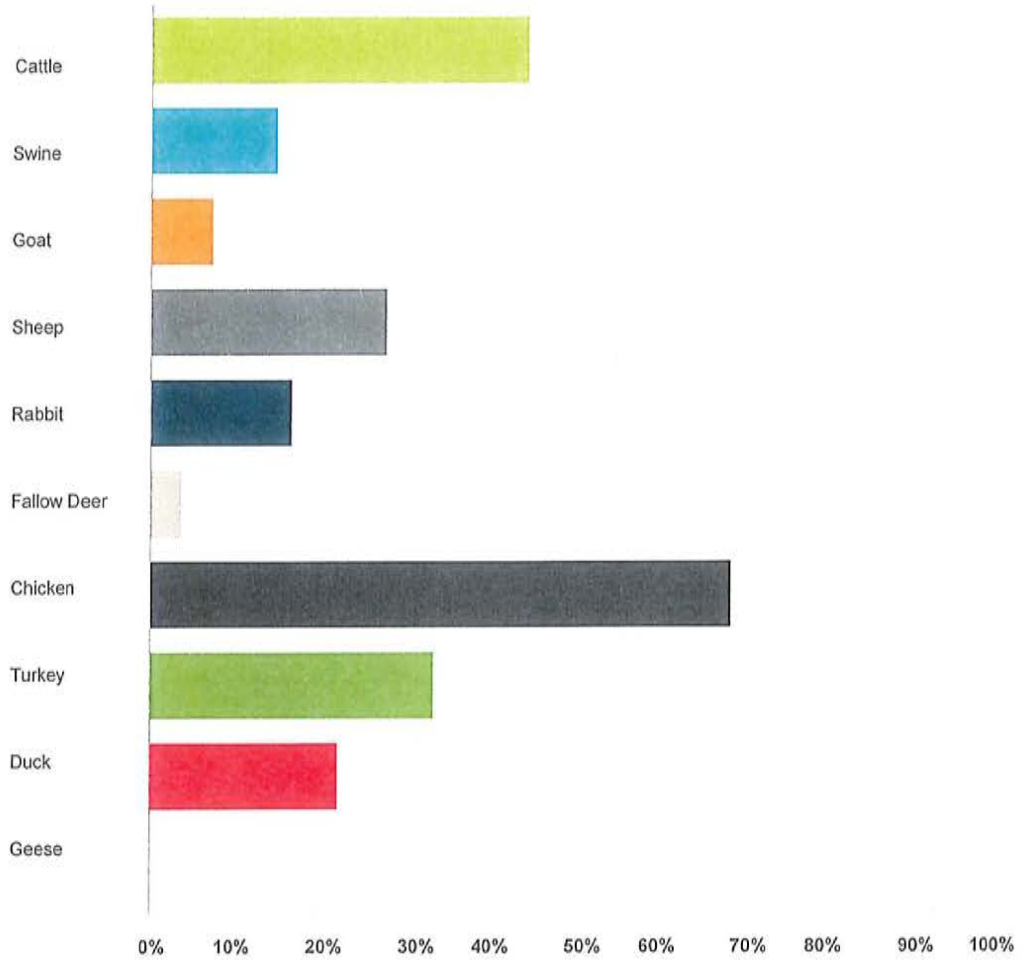
What is the size of your farm? Please specify in acres.

Answered: 63 Skipped: 0

Q3

What types of animals did you process in 2015?

Answered: 54 Skipped: 9

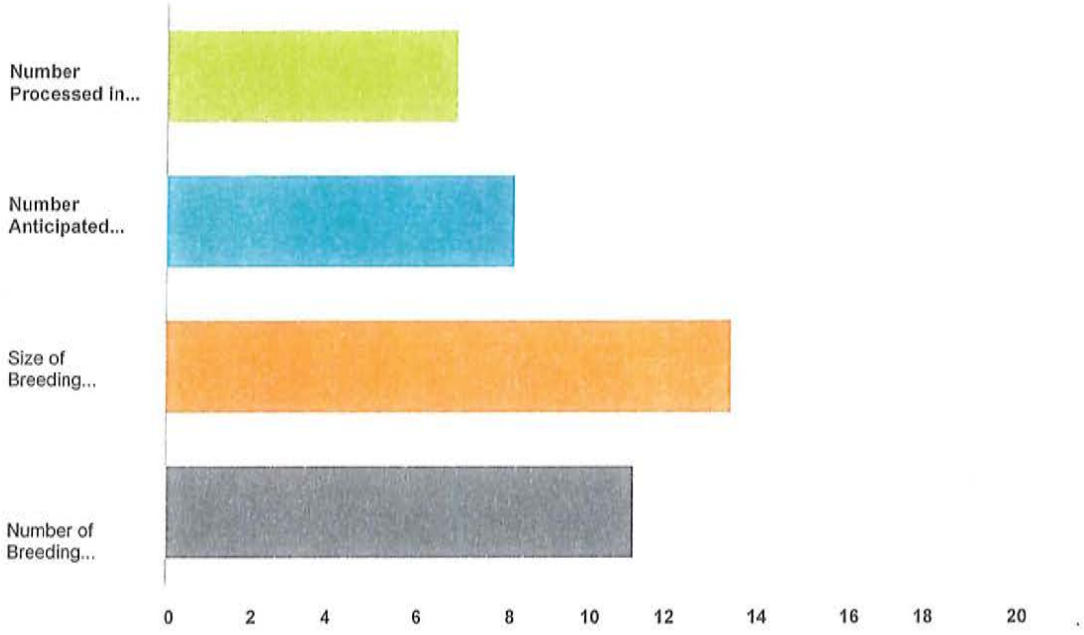


A	Responses	
Cattle	44.44%	24
Swine	14.81%	8
Goat	7.41%	4
Sheep	27.78%	15
Rabbit	16.67%	9
Fallow Deer	3.7%	2
Chicken	68.52%	37
Turkey	33.33%	18
Duck	22.22%	12
Geese	0.00%	0
Total Respondents: 54		

Q4

Cattle Inventory

Answered: 30 Skipped: 33

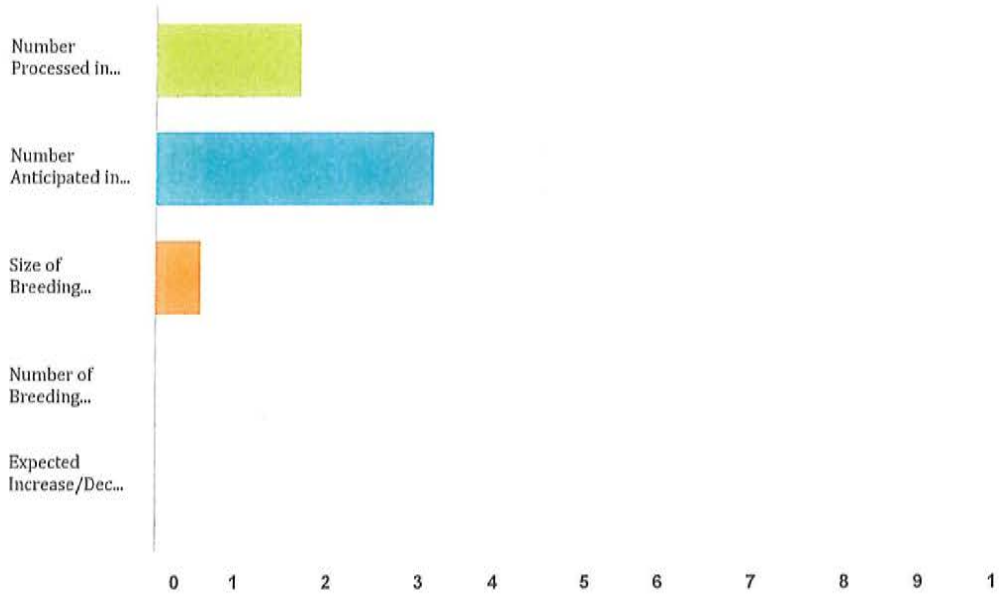


Answer Choices	Average Number	Total Number	Responses
Number Processed in 2015	7	192	28
Number Anticipated to Process in 2016 Calendar Year	8	221	27
Size of Breeding Herd/Flock as of Dec. 31st, 2015	13	385	29
Number of Breeding Females	11	319	29
Total Respondents: 30			

Q5

Swine Inventory

Answered: 15 Skipped: 48

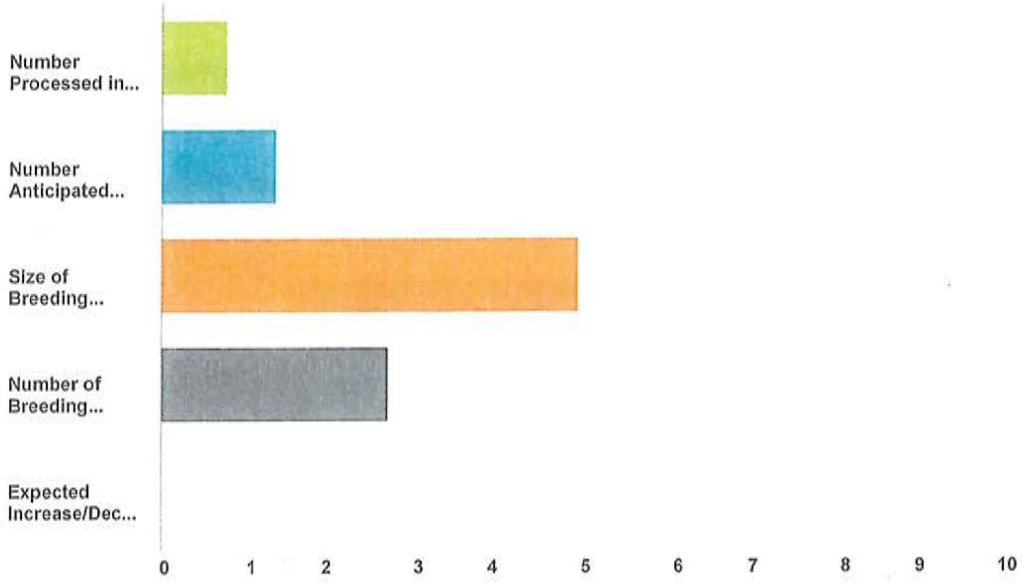


Answer Choices	Average Number	Total Number	Responses
Number Processed in 2015	2	24	14
Number Anticipated to Process in 2016 Calendar Year	3	46	14
Size of Breeding Herd/Flock as of Dec. 31st, 2015	1	6	11
Number of Breeding Females			10
Expected Increase/Decrease in Production for 2016	0	0	0
Total Respondents: 15			

Q6

Goat Inventory

Answered: 14 Skipped: 49

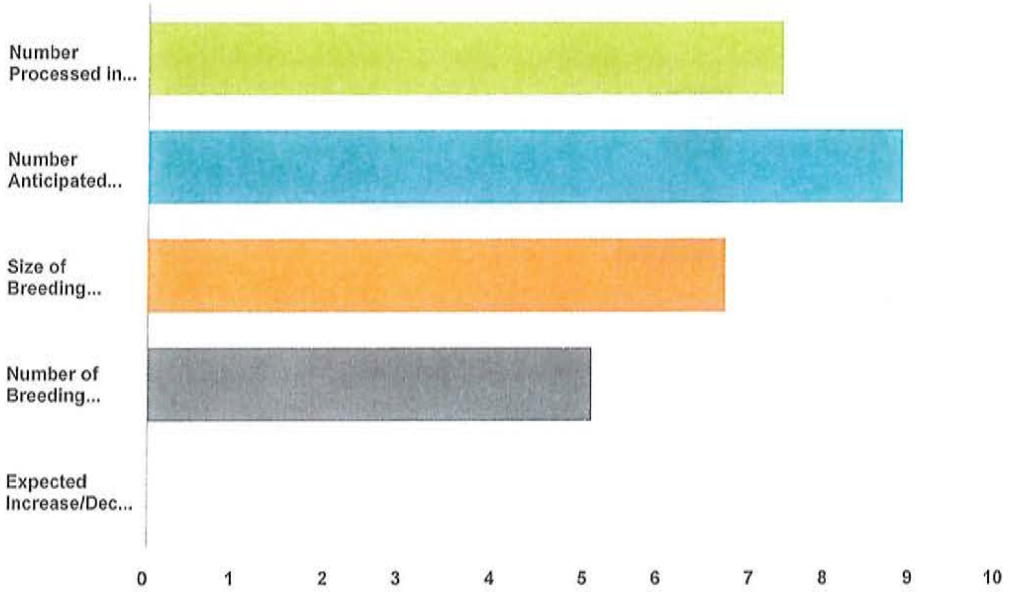


Answer Choices	Average Number	Total Number	Responses
Number Processed in 2015	1	10	13
Number Anticipated to Process in 2016 Calendar Year	1	15	11
Size of Breeding Herd/Flock as of Dec. 31st, 2015	5	49	10
Number of Breeding Females	3	32	12
Expected Increase/Decrease in Production for 2016	0	0	0
Total Respondents: 14			

Q7

Sheep Inventory

Answered: 21 Skipped: 42

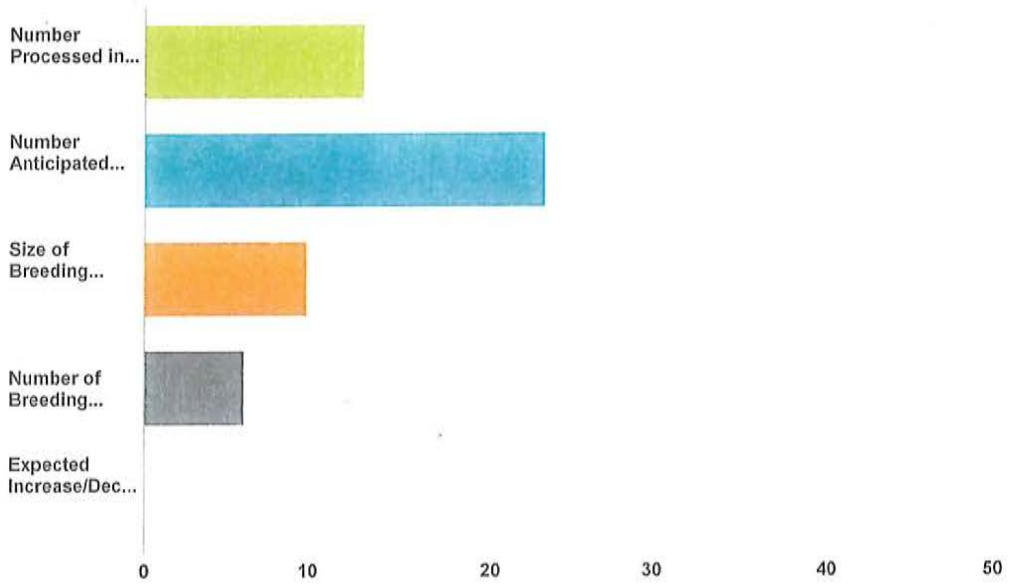


Answer Choices	Average Number	Total Number	Responses
Number Processed in 2015	7	157	21
Number Anticipated to Process in 2016 Calendar Year	9	169	19
Size of Breeding Herd/Flock as of Dec. 31st, 2015	7	136	20
Number of Breeding Females	5	89	17
Expected Increase/Decrease in Production for 2016	0	0	0
Total Respondents: 21			

Q8

Rabbit Inventory

Answered: 16 Skipped: 47

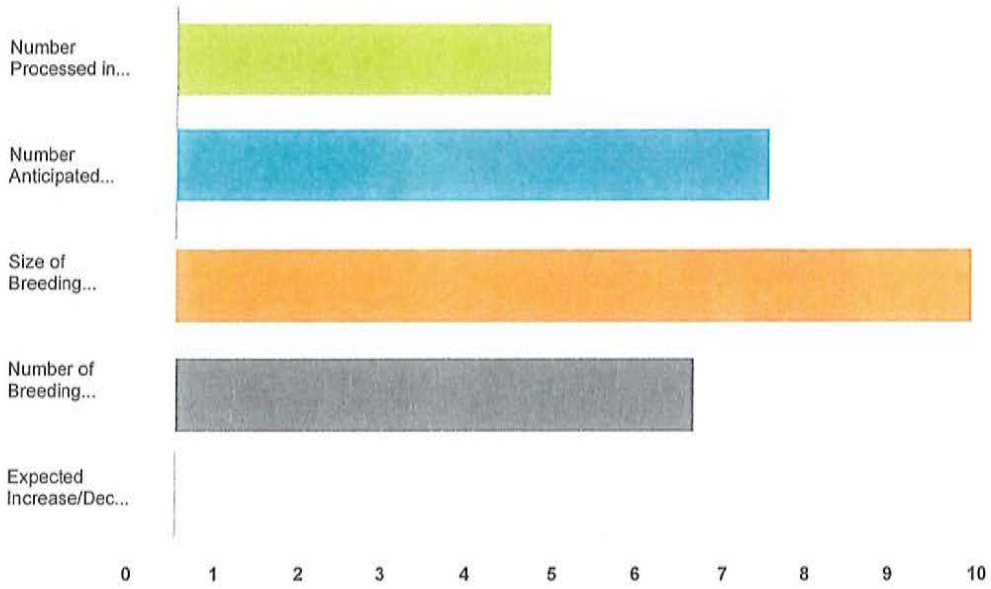


Answer Choices	Average Number	Total Number	Responses
Number Processed in 2015	13	192	15
Number Anticipated to Process in 2016 Calendar Year	24	329	14
Size of Breeding Herd/Flock as of Dec. 31st, 2015	10	133	14
Number of Breeding Females	6	82	14
Expected Increase/Decrease in Production for 2016	0	0	0
Total Respondents: 16			

Q9

Fallow Deer Inventory

Answered: 10 Skipped: 53

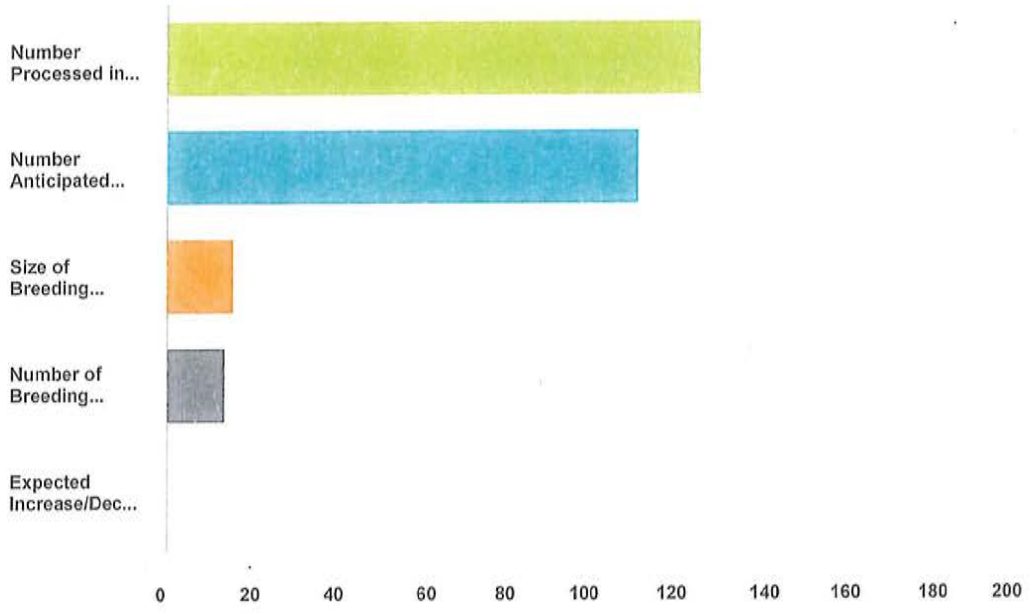


Answer Choices	Average Number	Total Number	Responses
Number Processed in 2015	4	44	10
Number Anticipated to Process in 2016 Calendar Year	7	49	7
Size of Breeding Herd/Flock as of Dec. 31st, 2015	9	75	8
Number of Breeding Females	6	49	8
Expected Increase/Decrease in Production for 2016	0	0	0
Total Respondents: 10			

Q10

Chicken Inventory

Answered: 37 Skipped: 26

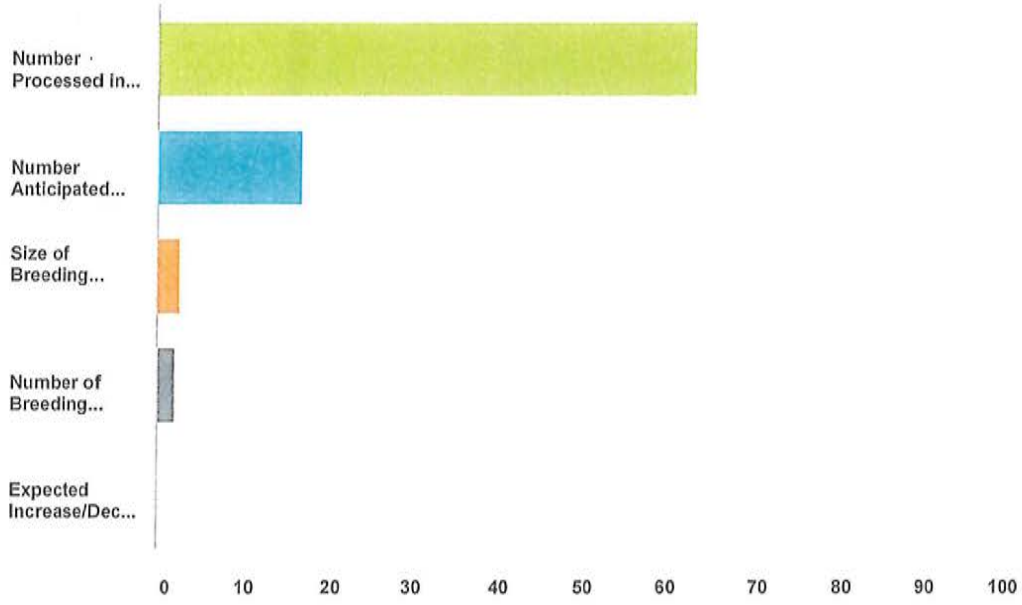


Answer Choices	Average Number	Total Number	Responses
Number Processed in 2015	125	4,514	36
Number Anticipated to Process in 2016 Calendar Year	111	3,657	33
Size of Breeding Herd/Flock as of Dec. 31st, 2015	16	431	27
Number of Breeding Females	14	373	27
Expected Increase/Decrease in Production for 2016	0	0	0
Total Respondents: 37			

Q11

Turkey Inventory

Answered: 24 Skipped: 39

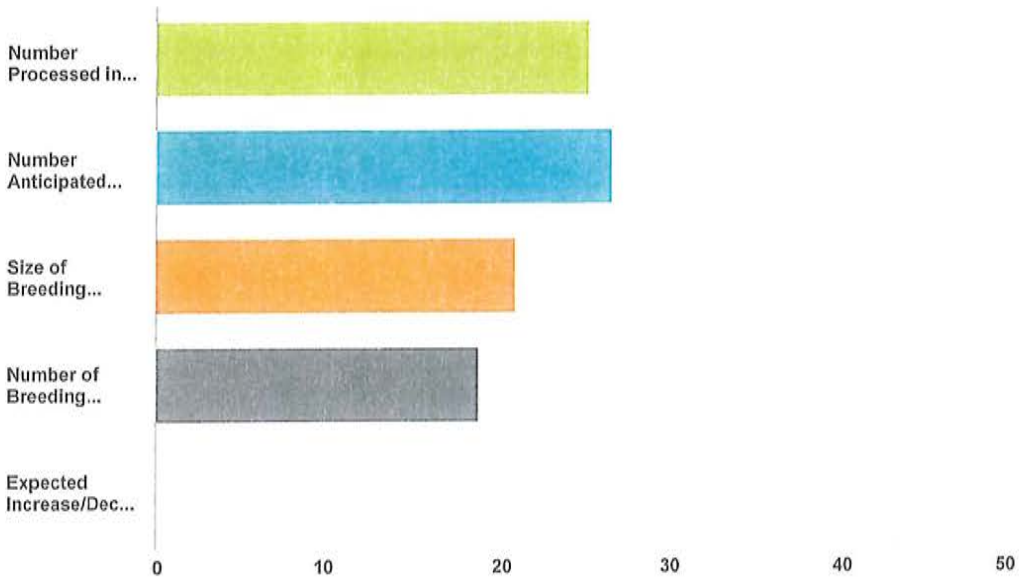


Answer Choices	Average Number	Total Number	Responses
Number Processed in 2015	63	1,453	23
Number Anticipated to Process in 2016 Calendar Year	17	343	20
Size of Breeding Herd/Flock as of Dec. 31st, 2015	3	41	15
Number of Breeding Females	2	32	16
Expected Increase/Decrease in Production for 2016	0	0	0
Total Respondents: 24			

Q12

Duck Inventory

Answered: 20 Skipped: 43

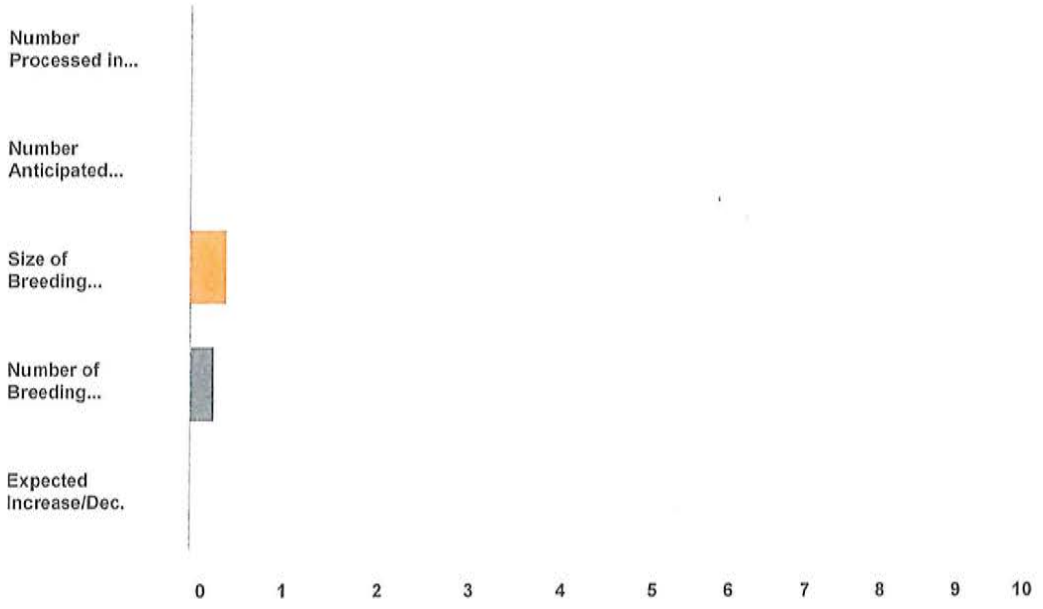


Answer Choices	Average Number	Total Number	Responses
Number Processed in 2015	25	508	20
Number Anticipated to Process in 2016 Calendar Year	27	427	16
Size of Breeding Herd/Flock as of Dec. 31st, 2015	21	337	16
Number of Breeding Females	19	302	16
Expected Increase/Decrease in Production for 2016	0	0	0
Total Respondents: 20			

Q13

Goose Inventory

Answered: 11 Skipped: 52

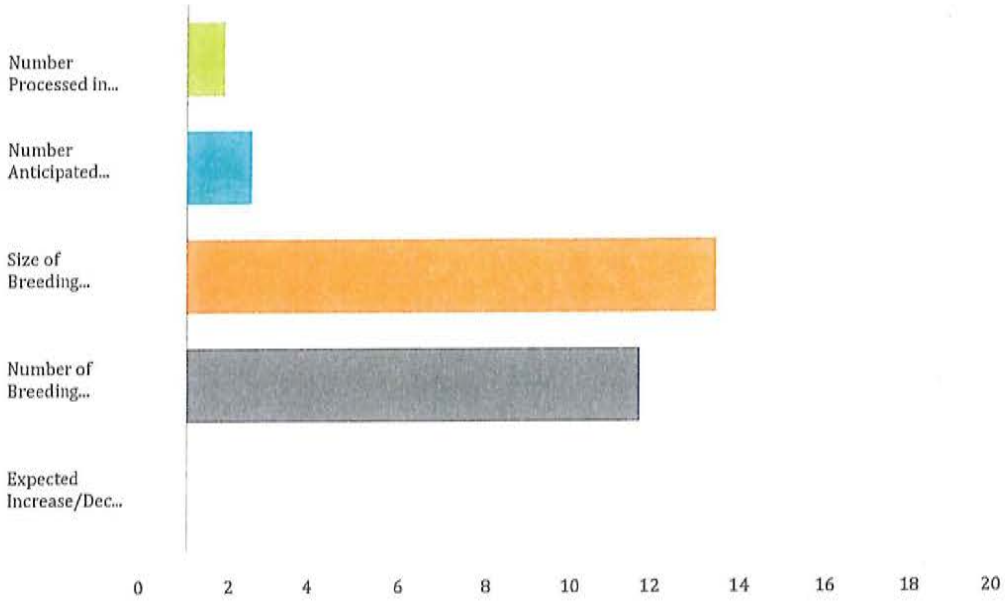


Answer Choices	Average Number	Total Number	Responses
Number Processed in 2015			10
Number Anticipated to Process in 2016 Calendar Year			8
Size of Breeding Herd/Flock as of Dec. 31st, 2015	0	4	9
Number of Breeding Females	0	2	7
Expected Increase/Decrease in Production for 2016	0	0	0
Total Respondents: 11			

Q14

Other Animal Inventory

Answered: 11 Skipped: 52



Answer Choices	Average Number	Total Number	Responses
Number Processed in 2015	1	10	11
Number Anticipated to Process in 2016 Calendar Year	2	14	9
Size of Breeding Herd/Flock as of Dec. 31st, 2015	12	112	9
Number of Breeding Females	11	96	9
Expected Increase/Decrease in Production for 2016	0	0	0
Total Respondents: 11			

Q15

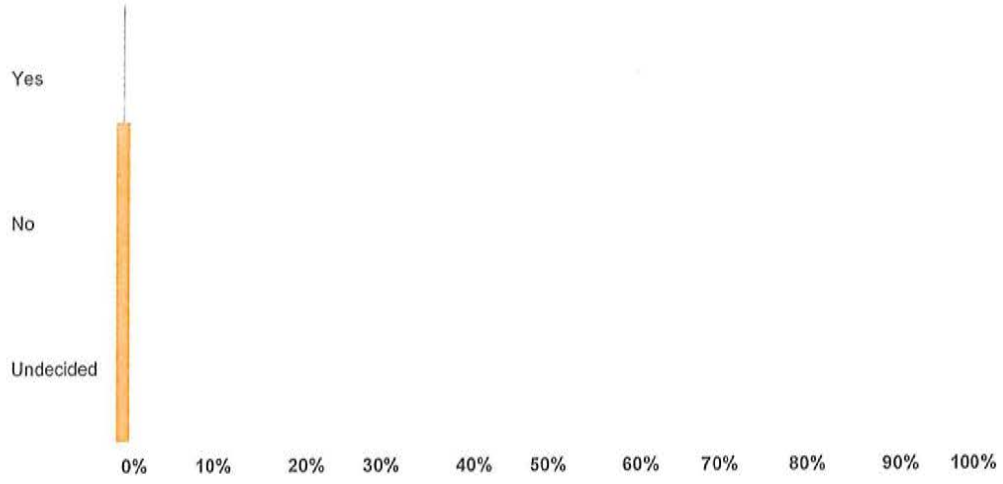
If you have laying hens, how many do you currently have?

Answered: 38 Skipped: 25

Q16

Do you expect to continue farming for the next 5 years?

Answered: 57 Skipped: 6

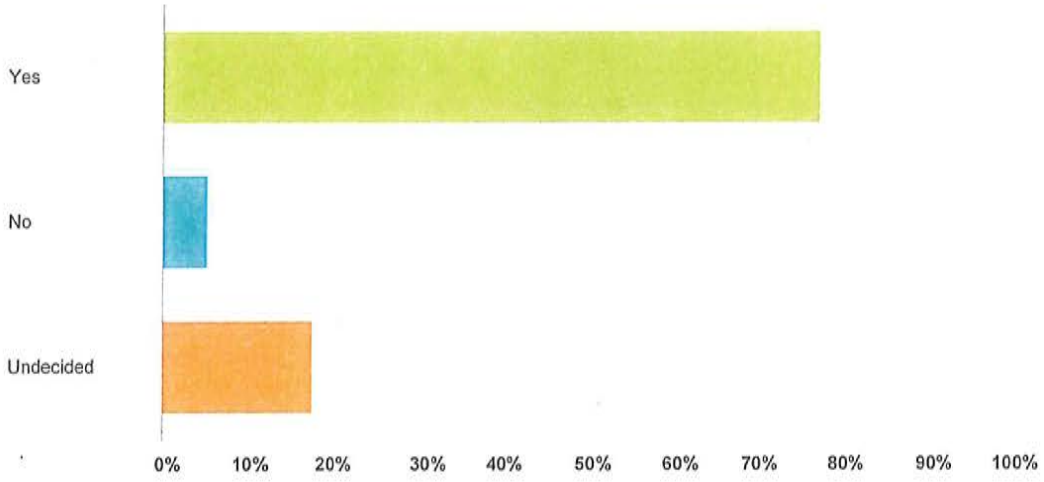


Answer Choices	Responses	
Yes	98.25%	56
No	0.00%	0
Undecided	1.75%	1
Total		57

Q17

Do you expect to continue farming for the next 10 years?

Answered: 57 Skipped: 6

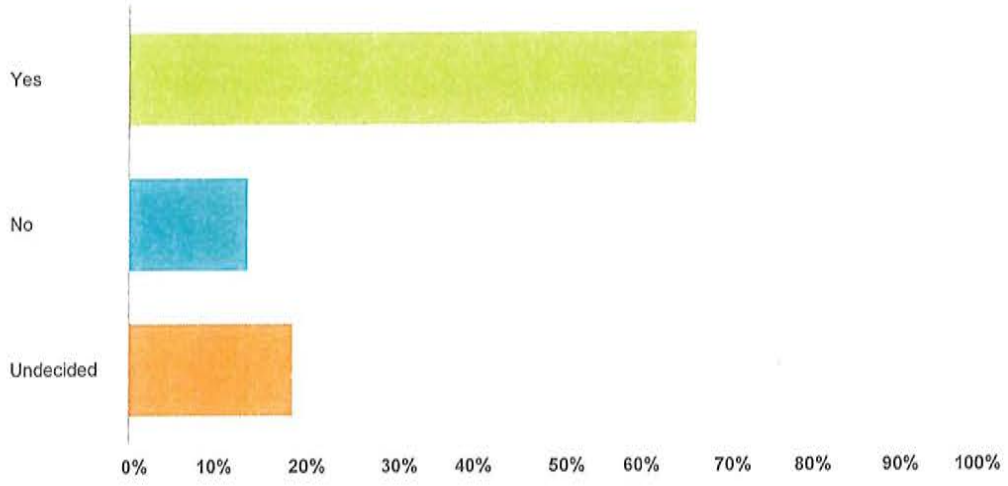


Answer Choices	Responses	
Yes	77.19%	44
No	5.26%	3
Undecided	17.54%	10
Total		57

Q18

Would the construction of a local abattoir influence your decision making process of whether or not to expand your herd?

Answered: 57 Skipped: 6



Answer Choices	Responses	
Yes	66.67%	38
No	14.04%	8
Undecided	19.30%	11
Total		57

Q19
Additional Comments:

Answered: 21 Skipped: 42

APPENDIX C

Vancouver Island Steel Buildings Ltd. Quotation

Vancouver Island Steel Buildings Ltd.

1010 Koskimo Rd.
Qualicum Beach,
B.C.
V9K 2R6

QUOTATION

Date: April 11, 2016

Quotation #: 092

Customer:	Murray Coats
Site Address:	Port Alberni, BC
Re:	Pre-Engineered Steel Building Package

We are pleased to submit a quote, as described below:

Specifications for the Building:

Width: 32'
Length: 62'Eave height: 16'
Roof slope: 1 /12
Roof type: Symmetrical Gable
Bay spacing: 2 @ 21', 1 @20'
Frames: 2 clear span rigid
frames.
End walls: 2 post and beam end walls, non-expandable.
Roof cladding: 24 ga. SSR roof system. Galvalume.
Wall cladding: 26 ga. Wall cladding. Manufactures standard colors.
Liner Panel: none included.
Canopies: None included.
Roof Insulation: 6" WMP 50 MBI
Wall Insulation: 6" WMP 50 MBI
Gutters & downspouts: 124' of gutter, c/w downspouts, manufactures standard colours.
Doors: 2 @ 3X7, 2 @ 6X7.
Windows: none included.
Framed Openings: none
included **Overhead Doors:** none
included. **Mezzanine:** None.
Overhead Crane: None.
Misc: Primary is shop primed. SP2 prep. Girts and purlins are galvanized. Base channel included.

Vancouver Island Steel Buildings Ltd.
1010 Koskimo Rd.
Qualicum Beach, B.C.
V9K 2R6

QUOTATION

Date: April 11, 2016

Quotation #: 092

Design Criteria:

BC Building Code 2012
Collateral Load = 2
Snow Load = 62.656
Rain Load = 6.683
Wind Load 1:50 = 8.145
Seismic Data
- Sa (0.2) = 0.76
- Sa ().5) = 0.57
- Sa (1.0) = 0.30
- Sa (2.0) = 0.16

Exclusions: Foundation, anchor bolts, mechanical & electrical penetrations, louvers, fans, fireproofing and fire stops, interior framing and finishes, permits, third party inspections, garbage bin, roof curbs, roof access ladders and platforms.

Building Price FOB Port Alberni, BC

Building	**$**	
41,352		
Freight	**$ 5,385**	
Install	**$ 18,500**	**Total**
	$ 65,237 plus GST	

Signed as Accepted_____Dated: _____

Option 1

26 ga. screwdown roof in lieu of SSR roof system. Deduct **$3,912** plus GST

Signed as Accepted_____Dated: _____

GST # 817955644

Vancouver Island Steel Buildings Ltd.
1010 Koskimo Rd.
Qualicum Beach, B.C.
V9K 2R6

QUOTATION

Date: April 11, 2016

Quotation #: 092

Terms & Conditions

Deposit
A 20% deposit retainer is due at the time of placing the order, by way of cash, cheque or money order made payable to Vancouver Island Steel Buildings Ltd.in CA Dollars.

Payment
Remaining balance will be due 5 business days prior to the scheduled delivery of the building package by way of Certified cheque or money order made payable to Vancouver Island Steel Buildings Ltd.

Price Changes
Any changes made to the original order, will require a change order form & prices may be subject to change.

It is the customer's reasonability to confirm the seismic and climate data.

Signed as Accepted_____Dated: _____