Township of Spallumcheen

TOWNSHIP OF SPALLUMCHEEN EMERGENCY PLAN

ANNEX: FARMED ANIMAL CARCASS DISPOSAL PLAN

Objectives and Strategies for Site Support at Foreign Animal Disease Events or Natural Disasters that Results in Mass Farm Animal Mortality.

March 2009

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REVISIONS

All requests for addition, deletions or amendments to this plan should be addressed to the Township of Spallumcheen, Emergency Program Coordinator.

All requests for revisions should be made using the '*Emergency Management Plan Revision Request Form*' which can be found on the following page.

Every revision to this plan must be supplied with reason and authorized by the appropriate staff member. Revisions will be presented to the Township of Spallumcheen administrator for final approval and all revisions will be recorded in the Record of Changes.

Record of Amendments

AMENDMENTS #	DATE OF AMENDMENTS	ENTERED BY	DATE ENTERED

Emergency Management Plan Revision Request Form

TO:	Emergency Program Coordinator Township of Spallumcheen	
FROM:	REQUEST SUBMITTED BY:	SUPERVISOR:
DATE:		

SUBJECT:			
SECTION:		PAGE NO:	

PLEASE REVISE THE FARMED ANIMAL MASS CARCASS DISPOSAL PLAN AS FOLLOWS:
REASON FOR REVISION

TO BE COMPLETED BY THE TOWNSHIP OF SPALLUMCHEEN	
DATE RECEIVED:	
DATE REVIEWED:	
APPROVAL:	
PLAN REVISED	
DISTRIBUTED:	

REVIEWS

All reviews of the Farmed Animal Mass Carcass Disposal Plan will be recorded in the Record of Reviews.

Record of Reviews

REVIEWED BY	DATE

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OVERVIEW OF RESPONSIBILITIES FOR CARCASS DISPOSAL

LOCAL LIVESTOCK INDUSTRIES

Local livestock industries are the first line responders in a carcass disposal emergency. Producers are required to manage routine animal mortality and should have emergency plans for mass carcass disposal. When mass carcass disposal is related to a foreign animal disease emergency, or is beyond industry's capability to manage, producers cooperate with all levels of government to ensure an effective response.

LOCAL GOVERNMENTS

Local governments should have emergency plans for carcass disposal and will manage carcass disposal emergencies caused by natural disasters or by non-reportable animal diseases. When a carcass disposal emergency involves a foreign animal disease, or is too large to be managed locally, the local government participates in an expanded response in conjunction with other levels of government.

GOVERNMENT OF BRITISH COLUMBIA

The Provincial Emergency Program (PEP), in conjunction with the Ministry of Agriculture and Lands and the Ministry of Environment, will provide support to local governments for planning and responding to carcass disposal emergencies. When a local government EOC opens in response to a carcass disposal emergency, PEP will activate and provide support appropriate to the situation. When a carcass disposal emergency is the result of a foreign animal disease, the provincial government will participate in a joint federal-provincial response in accordance with the Foreign Animal Disease Emergency Support Plan.

GOVERNMENT OF CANADA

Foreign animal diseases fall into the federal arena of legislated authority and responsibility. When a carcass disposal emergency is the result of a foreign animal disease the federal government, through the Canadian Food Inspection Agency, will initiate and lead a joint federal-provincial response, in accordance with the Foreign Animal Disease Emergency Support Plan.

COLLECTIVE RESPONSIBILITY

The complex nature of carcass disposal operations require that all levels of government and local livestock industries work together to resolve the situation quickly and efficiently, with minimum risk to human health and the environment.

GLOSSARY

Composting
Carcass composting is a natural biological decomposition process that takes place in the presence of oxygen (air).

Control Area
A geographical area that is legally defined in a Ministerial declaration and which is subject to specified activities to contain and/or eradicate a Foreign Animal Disease outbreak.

Disaster
A calamity caused by accident, intent, fire, explosion or technical failure, or by the forces of nature, which results in serious harm to the health, safety or welfare of people, the environment, or in widespread damage to property.

Emergency
A present or imminent event caused by accident, intention, fire, explosion or technical failure, or by the forces of nature which requires prompt coordination of action or special regulation of persons or property to protect the health, safety or welfare of people or to limit damage to property.

Farmed Animals
For the purposes of this plan, farmed animals include alpacas, cattle, donkeys, fur farmed animals, goats, horses, llamas, mules, poultry, rabbits, sheep and swine.

Fomites
Inanimate objects (e.g., boots, clothing, equipment, vehicles, crates, packaging) that can carry an exotic agent and spread a disease through mechanical transmission.

Foreign Animal Disease
All federally-reportable foreign animal diseases listed by the Office International des Epizooties as transmissible diseases that have the potential for very serious socio-economic or public health consequences, and are of major importance in the international trade of animals and animal products. (A list of Foreign Animal Diseases is at Annex A).

Foreign Animal Disease Emergency Support Plan
A plan which provides an agreement whereby federal and provincial agencies accept responsibilities for a collaborative response to a foreign animal disease event in BC.

Hazard
A source of potential harm, or a situation with a potential for causing harm in terms of human injury, damage to health, property, the environment or some combination of these.

Infected Premises
A private or public building and appurtenant buildings and land area in which a Foreign Animal Disease agent has been found or is suspected.

Infected Zone
A geographic area that contains infected premises. Depending on the disease, the perimeter of the infected zone shall extend a minimum of three kilometers beyond all known infected premises and shall follow, when possible, natural barriers and roadways to facilitate implementation of disease control procedures.

Livestock
The term *livestock* in BC includes alpacas, aquaculture animals, cattle, donkeys, fur farmed animals, game farmed animals, goats, horses, llamas, mules, musk oxen, poultry, rabbits, sheep, swine and other exotic animals as prescribed by the Minister of Agriculture and Lands.

Local Authority
Defined by the BC Emergency Program Act to include:
- for a municipality, the municipal council; and
- for an electoral area in a regional district, the board of the regional district.

Movement Control
The primary process of reducing the spread of a foreign animal disease, as most diseases spread by contact with infected or contaminated animals, animal product, by-products, feeds and items used to feed and care for animals. The movement of all pertinent animals or things within the prescribed area may be tracked, monitored and controlled through a permit system.

Office International des Epizooties (OIE)
The OIE is an intergovernmental organization created by international agreement. The 28 member countries undertake to report the animal diseases detected on their territory. The OIE then disseminates the information to other countries, which can take the necessary preventive action.

Pathogen
Any organism capable of producing disease or infection. Often found in waste material, most pathogens are killed by high temperatures.

Rendering
The breaking down of animal tissues into constituent fat and protein elements by the application of heat, pressure or other means.

Reportable Disease
These diseases are outlined in the federal *Health of Animals Act* and *Regulations* and are usually of significant importance to human or animal health or to the Canadian economy. Animal owners, veterinarians and laboratories are required to immediately report the presence of an animal that is contaminated or suspected of being contaminated with one of these diseases to a CFIA district veterinarian. Control or eradication measures will be applied immediately. (A list of Reportable Diseases is at Annex A).

Specified Risk Material
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. Plus all material from dead stock and condemned cattle containing SRM.

Surveillance Zone
A geographic area that extends from the perimeter of an infected zone to a minimum of ten kilometers from any infected premise or to the outer perimeter of a control area.

Vector
An animal that has the potential to transmit a disease, directly or indirectly, from one animal or its excreta to another animal.

Zoonosis
Any disease that can be transmitted to humans from animals.

ACRONYMS/ABBREVIATIONS

AAR	After Action Report
ALR	Agricultural Land Reserve
BCAS	British Columbia Ambulance Service
BCERMS	British Columbia Emergency Response Management System
CCG	Central Coordination Group
CFIA	Canadian Food Inspection Agency
EOC	Emergency Operations Centre
FAD	Foreign Animal Disease
FADES	Foreign Animal Disease Emergency Support
IHA	Interior Health Authority
INAC	Indian and Northern Affairs Canada
JEOC	Joint Emergency Operations Centre
MAL	Ministry of Agriculture and Lands
MOE	Ministry of Environment
MOH	Ministry of Health
MOT	Ministry of Transportation
NORD	Regional District of the North Okanagan
PAB	Public Affairs Bureau
PEP	Provincial Emergency Program
PREOC	Provincial Regional Emergency Operations Centre
SRM	Specified Risk Material

1. INTRODUCTORY MATERIAL

1.1 Purpose and Scope

The primary purpose of this plan is to guide response within the Township of Spallumcheen (Spallumcheen) for dealing with mass animal carcasses generated in an emergency. The plan is designed to enhance the township's capacity to recover quickly from a mass animal carcass emergency and reduce the impact on the local agriculture industry.

A corollary purpose of the plan is to provide a source of local information related to a carcass disposal emergency which may be used by federal, provincial and local agencies that participate in an expanded response to a carcass disposal emergency. This information includes a profile of animal farming sites and activities in Spallumcheen, and a list of resources and capabilities which may be utilized in an emergency response.

The scope of this plan includes:

a) a description of the agriculture in Spallumcheen with emphasis on local farmed animal populations;
b) identification of hazards and vulnerabilities that could result in a mass carcass disposal emergency situation in the townships area;
c) a concept of operations for disposal operations;
d) approved methodologies for mass carcass disposal;
e) identification of disposal resources and key personnel required to respond to an emergency situation;
f) activities that must be performed in the event of a mass carcass disposal emergency;
g) identification of resources required and available;
h) identification of resource shortfalls; and
i) a framework for post-emergency recovery.

1.2 Responsibility for the plan

This plan will be maintained by Spallumcheen's *Emergency Program Coordinator.* The plan will be reviewed on a regular basis, and updated if necessary.

1.3 Authorities

Animal carcass disposal is governed by several federal and provincial regulations. Principal among these are:

Federal
a) Emergency Preparedness Act
b) Emergencies Act

c) Health of Animals Act
d) Health of Animals Regulations

Provincial
a) Animal Disease Control Act
b) Animal Disease Control Regulation
c) Emergency Program Act
d) Emergency Management Regulation
e) Environmental Management Act
f) Health Act
g) Local Authority Emergency Management Regulation

Foreign animal diseases fall into the federal arena of legislated authority and responsibility. The Government of Canada considers such diseases a threat to national security and, through the Canadian Food Inspection Agency (CFIA), leads response efforts to control disease outbreaks. However, it is recognized that no single federal agency can manage the risks from these diseases and response plans require all levels of government to work together along with local livestock industries.

1.4 Requirement for the Plan

Section 2(1) of the *BC Local Authority Emergency Management Regulation –1995* requires local authorities to prepare emergency plans that reflect the local authority's assessment of the relative risk of occurrence and the potential impact on people and property of the emergencies or disasters that could affect all or any part of the jurisdictional area for which the local authority has responsibility.

The desirability of having a carcass disposal plan at the local government level is set out in the *Ministry of Agriculture and Lands Emergency Response Plan 2006*, which states in part:

"BC local authorities should have emergency plans to deal with livestock mortalities from livestock disease outbreaks, as well as to address dead stock arising from natural disasters such as floods, fires and earthquakes.

Local plans should allow for timely and efficient disposal of dead stock so as to minimize impacts on human, environmental and livestock health. Local authorities should take into account animal related threats to human health and the environment; identify resources and key personnel to deal with the threats; identify methods of utilizing resources; and outline activities

that must be performed in the event of an emergency".

1.5 Related Plans

This emergency plan is related to other plans, the most important of which are:

FADES – Foreign Animal Disease Emergency Support Plan (2008 Interim Plan);

Emergency Response Plan for BC Ministry of Agriculture and Lands (2006)

Township of Spallumcheen Emergency Plan (2005)

Township of Spallumcheen Hazard Risk and Vulnerability Assessment (2007)

1.6 Township of Spallumcheen Emergency Organization

The Emergency Planning and Operations Committee will oversee and make decisions regarding mass carcass disposal emergencies.

Emergency Operations Centre
Spallumcheen Township Hall
4144 Spallumcheen Way, Spallumcheen, BC, V0E 1B6

The livestock industry may be called upon to work with Spallumcheen and/or other levels of government in a mass carcass disposal emergency.

1.7 Identification of Key Personnel

Key personnel involved in handling of a carcass disposal emergency will include the following:

Mayor	Public Works Manager
Township Administrator	Chef Financial Officer
Fire Chief	Interior Health Authority
RCMP Officer in Charge	Ministry of Environment
Canadian Food Inspection Agency	Development Service for Regional District of North Okanagan
Emergency Program Coordinator	

The roles that each individual will fill during an emergency are outlined in Section 4 of the main Spallumcheen Emergency Plan.

1.8 Plan Activation

The following personnel have the ability to activate the plan:

a) Mayor
b) Acting Mayor
c) Township Administrator
d) Fire Chief
e) RCMP Officer in Charge
f) Public Works Manager and/or
g) Emergency Program Coordinator

ON ACTIVATION OF THIS PLAN CONTACT:
Provincial Emergency Program:
1-800-663-3456
(24 hours)

Ministry of Agriculture and Lands
(604) 556-3001
(Business hours)

2. LOCAL AREA DATA

2.1 Agricultural Profile

Spallumcheen is located approximately 6 km north of Vernon city limits in the vast Spallumcheen Valley (Figure 1), which lies within the North Okanagan Regional District (NORD). Spallumcheen was incorporated in 1892, and has a land area of approximately 261 km^2 of which 66 % is within the ALR. The Spallumcheen Valley has an arid climate, with a mean total precipitation of 487.8 mm annually, 185 mm to 250 mm of which falls during the growing season of May 1st to September 30th.

Figure 1: Geographic setting of the Township of Spallumcheen within British Columbia

The total area of farms is 17,155 hectares in Spallumcheen. There are a total of 450 farms of which 262 farms are livestock farms. The average area of individual farms is 38 hectares, which is 61 % smaller than the average farm size in NORD. The most common type of agricultural in Spallumcheen is horse and other equine production which accounts for 35% of all livestock farming. The second most common is Beef Cattle ranching and farming which comprises 28% of livestock farming.

Agriculture plays a vital role in the Spallumcheen economy by employing almost 19% of the community. The farm capital for all 450 farms was $499,265,229, while the total value of livestock and poultry in 322 of these farms was $14,137,481, according to the Statistic Canada 2006 census.

The approximate number of livestock farms in Spallumcheen is shown below by type:

Dairy	24
Beef Cattle	74
Poultry and Eggs	32
Swine	3
Sheep	10
Goat	6
Horse	91
Livestock combination farming	17
All other miscellaneous animal production	5
Total Farms Reporting	262

These numbers are derived from Statistics Canada Census 2006 information which is dependant on farms reporting and will fluctuate annually.

2.2 Local Farmed Animal Population

The approximate number of farmed animals in Spallumcheen:

Poultry	908,928
Cattle (Dairy and Beef)	11,109
Swine	1,783
Horse	1,144
Sheep	1,005
Goat	794
Turkeys	296
Llamas and Alpacas	89

These numbers are derived from Statistics Canada Census 2006 information and will fluctuate annually.

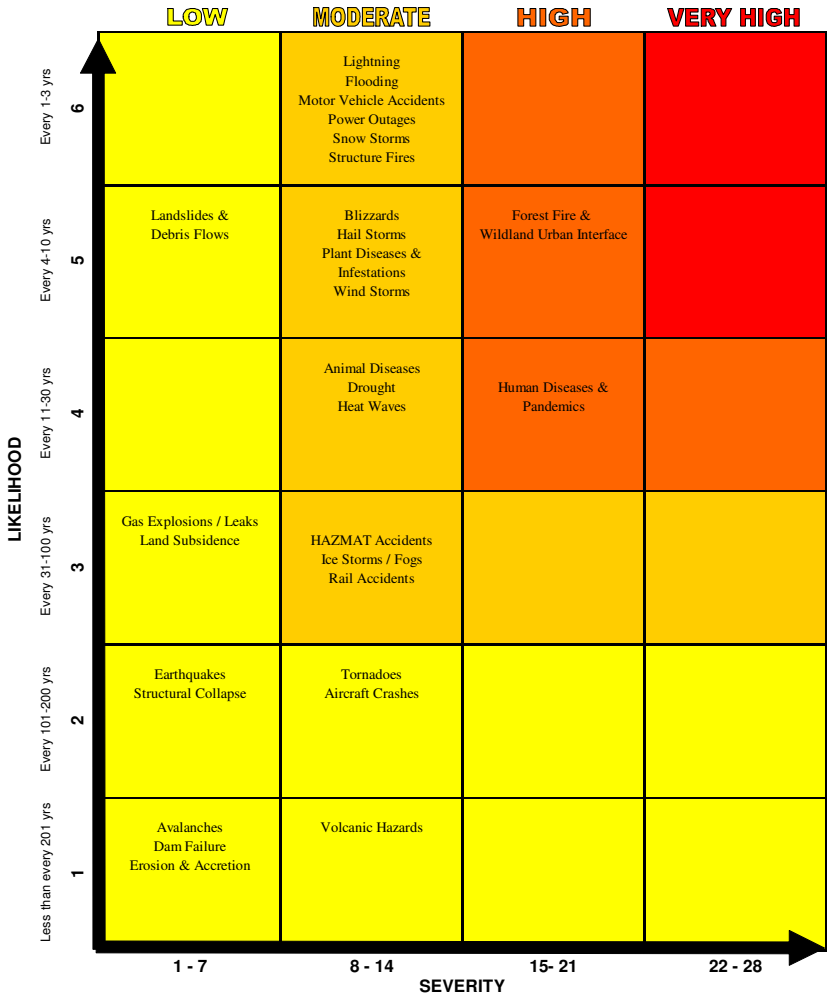
Calculation of volumes and mass by species is provided in Appendix 1 of this section, and a map showing the distribution of farms is provided in Appendix 2 of this section.

2.3 Distribution of Farms In Spallumcheen

The *Township of Spallumcheen Agricultural Land Use Inventory, 2005,* has not been completed and therefore distribution of livestock is not available. A copy of the farmland distribution taken from *Phase 1 Report: Township of Spallumcheen Agricultural Situation Profile* is provided in Appendix 2 of this section.

2.4 Risk Profile

The hazard profile for Spallumcheen is figured below.



Note1: The figure illustrates the likelihood of specified hazards causing mass animal mortality and the relative impact of the event.

2.5 History of Mass Animal Mortality in the Region

There is no historic record of mass animal mortality in Spallumcheen.

2.6 Commodity and Advisory Groups

A list of Spallumcheen livestock producer associations and agriculture advisory groups is provided in Appendix 3 of this section.

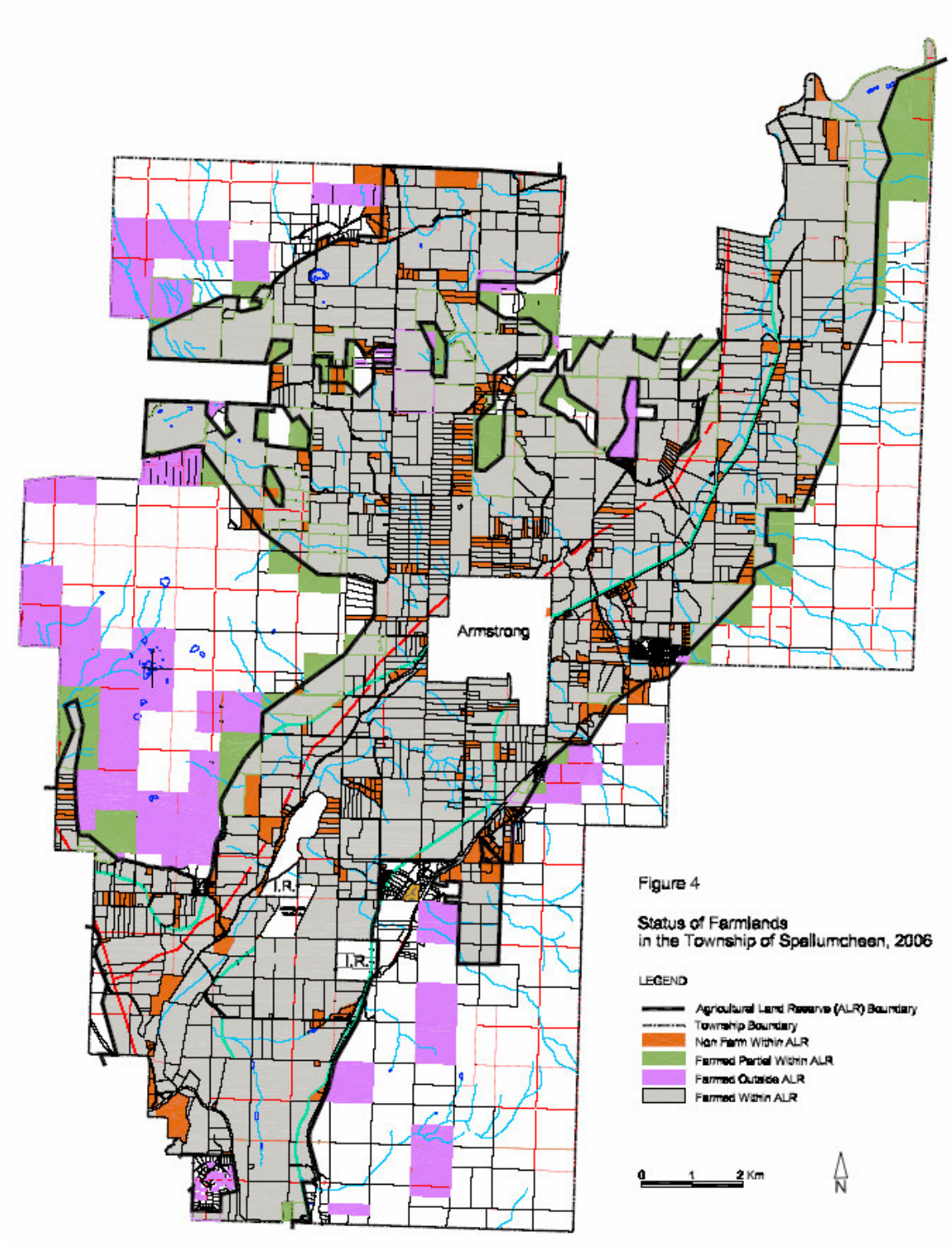
Appendix 1 to Section 2:
The Township of Spallumcheen – Calculation of Farmed Animal Volume and Mass by Species

Livestock	Number of Head [Note 1]	Average Mass (kg) [Notes 2, 4]	Total Mass (tonnes) [Note 3]	Volume Factor (cu metres) [Note 2]	Total Volume (cu metres) [Note 4]
Hens and Chickens	908,632	1.25	1135.79	0.015	13629.48
Turkeys	296	5	1.48	0.0375	11.1
Total	**908,928**		**1,137**		**13,641**
Cows (Dairy/Beef)	4,078	635	2589.53	1.5	6117
Bulls (Dairy/Beef)	146	727	106.142	1.5	219
Heifers(Dairy/Beef)	3,473	455	1580.215	1	3473
Steers (Dairy/Beef)	1,098	635	697.23	1.5	1647
Calves (Dairy/Beef)	2,314	210	485.94	0.5	1157
Total	**11,109**		**5,459**		**12,613**
Pigs- Boars	24	210	5.04	0.375	9
Pigs – Sows	353	200	70.6	0.375	132.375
Nursery	1,029	15	15.435	0.12	123.48
Grower/Finisher	377	75	28.275	0.3	113.1
Total	**1783**		**119.35**		**378**
Sheep – Rams	37	80	2.96	0.3	11.1
Sheep – Ewes	478	80	38.24	0.3	143.4
Lambs	490	40	19.6	0.15	73.5
Total	**1005**		**60.8**		**228**
Horse	1,144	523	598.312	1.5	1716
Goat	794	70	55.58	0.3	238.2
Llamas and Alpacas	89	75	6.675	0.6	53.4

Notes:

1. Number of head is derived from Statistics Canada Census 2006 – Agriculture Community Profiles
2. The average mass and volume factors for each livestock category are per CFIA publication, *Mass Slaughter and Disposal of Livestock, Rural Municipality of Hanover, Manitoba, Information Book, July 21, 2006 (Draft)*
3. The total mass calculation is based on the average livestock weight in kilograms multiplied by the number of head.
4. The total volume is the space required for burial based on the number of head multiplied by the volume factor.

Appendix 2 to Section 2:
Township of Spallumcheen - Location of Farmed and Unfarmed Properties in the ALR,
(Source: BC Assessment, Vernon).



Appendix 3 to Section 2:
Livestock Commodity and Advisory Groups

PROVINCIAL & REGIONAL LIVESTOCK GROUPS & ASSOCIATIONS	
Armstrong Enderby Riding Club 5105 Lansdowne Armstrong, BC V0E 1B4 1(250) 546 - 6083	Armstrong Spallumcheen Environmental Trust 2235 Fletcher Avenue Armstrong, BC V0E 1BI
Armstrong, Vernon & Lumby District 4H Council 7220 Mountridge Road Vernon, BC V1B 3S8 1 (250) 545 – 7140	BC Angus Association 4664 Sleepy Hollow Road, Armstrong BC V0E 1B4 1 (250) -546-2813
BC Association of Cattle Feeders 800 - 15355 - 24th Ave., Suite 495, White Rock BC V4A 2H9 1 (604) -608-3454	BC Cattlemen's Association #4-10145 Dallas Dr. Kamloops BC V2C 6T4 1 (250) -573-3611
BC Chicken Marketing Board 101 – Windermere Court 32450 Simon Avenue Abbotsford, BC V2T 4J2 604-859-2868	BC Chicken Growers' Association PO Box 581, Abbotsford, BC V2S 6R7 604-859-9332
BC Cutting Horse Association 5195 Deadpan Drive Kelowna, BC V1P 1A3 250-765-6608	BC Dairy Council 7000 Blackwell Road Kamloops, BC V2C 6V7 250-573-4747
BC Dairy Research Committee RR-1 Enderby, BC V0E 1V0 250-838-6701	BC Egg Marketing Board 150 – 32160 South Fraser Way Abbotsford, BC V2T 1W5 604-556-3410
BC Goat Breeders Association 30854 Olund Road Mt Lehman, BC V4X 1Z9 604-854-6261	BC Guernsey Breeders Assn RR-2, C-4B – 1855 Kirschner Road Armstrong, BC V0E 1B0 250-546-3407
BC Llama and Alpaca Association 1045 – 165th Street White Rock, BC V4P 2P3 604-541-4141	BC Milk Producers Association 3236 Beta Avenue Burnaby, BC V5G 4K4 604-294-373
BC Pork Producers' Association 2010 Abbotsford Way Abbotsford, BC V2S 6X8 604-853-9461	BC Poultry Association 1839 Mt Lehman Road *Abbotsford, BC V2T 6H6* 604-864-6400
BC Sheep Grazing Association Box 307 Savona, BC V0K 2E0	BC Turkey Growers Association and BC Turkey Marketing Board 106 - 19329 Enterprise Way

250-373-4785	Surrey, BC V3S 6J8 604-534-5644
City of Armstrong Box 40 3570 Bridge Street Armstrong BC V0E 1B0 1 (250) 546 - 3023	First Nations Agricultural Association Contact Person: Trevor Kempthorne 408 Paul Lake Road Kamloops, BC V2H 1J8 250-314-6809
Horse Council of BC 27336 Fraser Highway Aldergrove, BC V4W 3N5 604-856-4304	Interior Goat Owners Associations c/o 3478 Yankee Flats Road Salmon Arm, BC 1 (250) 379 - 2247
Interior Health Corporate Office 220-1815 Kirschner Road Kelowna, BC, V1Y 4N7 Phone: (250) 862-4200	Kamloops Okanagan Dairymen's Assn Box 695 Armstrong, BC V0E 1B0 250-546-3737
Lucky Steppers 4H Horse Club 2098 Wolfgang Road Armstrong, BC V0E 1B4 1 (250) 546-0334	North Okanagan Livestock Association (Regional beef cattle organization part of the BC Cattlemen's Assn) Lee Hesketh 248 Whitevale Road Lumby, BC V0E 2G7 250-547-6586
Okanagan Miniature Horse Club 6060 Okanagan landing Road Vernon, BC V1T 1M3 1 (250) 542 - 8978	Okanagan Shuswap Sheep Producers Association 3535 Lockhart Drive Armstrong, BC V0E 1B8 1 (250) 546 – 3546
Peruvian Horse Club of BC Box 207 Armstrong, BC V0E 1B0 250-546-3125	Township of Spallumcheen 4144 Spallumcheen Way Spallumcheen, BC V0E 1B6 1 (250) 546 - 3013
Valley Miniature Horse Club Box 436 Armstrong, BC V0E 1B0 1 (250) 546 - 3144	

3. CONCEPT OF OPERATIONS

3.1 General

Mortality losses are a normal part of livestock production. Producers may have losses due to disease, natural events such as extreme weather, fires, accidents or inter-animal competition. It is the responsibility of the producer to dispose of these routine mortalities in an acceptable manner. Industry and primary producers are responsible for developing their own plans for carcass disposal.

Mass carcass disposal will only become an emergency if the scale and extent of farmed animal mortality is beyond the capability of local producers, results from an animal disease or if there is otherwise a significant risk to public health.

The primary objectives of a carcass disposal operation are to prevent the dissemination of infection and to protect the environment. This process is therefore an essential part of an animal disease eradication program and is important from both a public health and environmental perspective.

Potential causes of mass farmed animal mortality range from natural disasters to more complex situations involving infectious diseases. Notwithstanding the cause, timely and effective local response is essential in order to limit impact on the industry and community, and to allow for the mobilization of resources locally and from other levels of government if required.

The efficient and environmentally safe disposal of mass animal carcasses will require:

a) early notification;
b) an estimate of the scale of carcass disposal required;
c) the selection of an appropriate disposal methodology;
d) the availability of suitable disposal sites;
e) the timely provision of applicable resources.

3.2 Operational Context

Emergency planning for mass livestock carcass management anticipates a cooperative partnership between local livestock producers, local authorities, the province and CFIA. While producers will take the lead role in any livestock emergency, local authorities are expected to manage a consultative framework that allows for a timely and efficient approach to the emergency.

There are few circumstances in which a carcass disposal emergency will exist independently of a larger emergency or disaster situation. The circumstance that caused the animal mortality, e.g. a foreign animal disease or a natural disaster such as a flood, will frequently in itself trigger an emergency response. Carcass disposal therefore, will normally be a component of a larger emergency situation and will fit into the existing response and recovery structure.

There are two categories of response applicable to a mass animal mortality emergency:

Non-FAD Response
When a carcass disposal emergency is caused by mass animal mortality from natural or manmade disasters, carcass disposal operations will, to the extent possible, be managed by individual producers in cooperation with the local livestock industry. In all such cases PEP will activate and provide an appropriate level of direction and assistance under the provincial integrated response structure.

FAD Response
In mass mortality events involving an animal disease, the carcass disposal operation will be managed within an expanded response structure involving other levels of government in accordance FADES Plan. Note 1 In such cases a Joint *Emergency Operations Centre* (JEOC) will normally be established in the operational area. Local government emergency resources must be effectively integrated with this expanded federal-provincial structure.

Note1: A FAD response may also be conducted for a federal *Reportable Disease* of significant importance to human and animal health or to the Canadian economy. The determination of the level of response will be made by CFIA.

During an animal disease response, the local government emergency structure will work in conjunction with the federal-provincial JEOC in the affected area. Local government officials will play a key role in advising on local conditions, coordinating with the local livestock industry, providing information on disposal sites and resources, providing resources to the disposal effort and keeping the public advised.

The local government may be required to undertake a variety of operational tasks within or as coordinated by the JEOC.

The structure of a federal-provincial JEOC that may be established during an animal disease response is illustrated at Appendix 1 to this section.

3.3 Probable Roles and Tasks

Roles and tasks applicable to local government in mass carcass disposal emergencies may include, either directly or in support of the federal/provincial emergency management structure, the following:

a) **Assessment of Requirements**
Determine the scale of the emergency in the local area. Review disposal protocols, adjust to the situation and obtain appropriate approvals.

b) **Enforcement**
Insure that all blockades, holds and quarantines are being maintained and comply with the carcass emergency plan.

c) **Disposal Site Selection**
Identify local sites suitable for mass animal carcass disposal. (Note: Contact MAL for up to date disposal protocols)

d) **Transport of Carcasses**
Identify, contact, and organize appropriate resources for primary and alternate carcass transport to disposal site.

e) **Coordinating Support**
Identify and coordinate equipment and support resources throughout the emergency.

f) **Monitoring**
Visit off-farm disposal facilities to ensure compliance

with plan.

g) Documentation
Gather and record information on carcass management**.**

h) Communication
Timely communication among agencies and stakeholders is very important during carcass disposal emergencies. Every effort should be taken to ensure current information is communicated to local industry representatives, neighbouring jurisdictions, health sector organizations and any other organizations involved in the emergency.

i) Assisting Federal/Provincial Agencies
Provide support as required for the federal and provincial organizations, including PEP, MAL, MOE and CFIA

3.4 Adapting the Local Emergency Structure

The local response will be in accordance with *Township of Spallumcheen Emergency Plan,* which contains the carcass disposal emergency plan.

3.5 Natural Disasters

Natural disasters such as fires, floods or extreme weather can cause a large livestock mortality. Intensive livestock operations have a higher risk due to high density situations, an example of which is poultry farming. The hazard profile in Section 2.4 Risk Profile illustrates which events are most likely to affect Spallumcheen.

If the magnitude of livestock mortality is too large for farm operators and/or local livestock industry to dispose of, or there is a public health risk, then the situation becomes a carcass disposal emergency. At this point the local government, PEP, MAL and Interior Health Authority will become involved. The local government provides the emergency framework and resource for carcass disposal. PEP provides support to the local government regarding the situation. Both MAL and Interior Health Authority must be advised on disposal and health situation.

3.6 Animal Diseases

In accordance with the *Health of Animals Act* and *Animal Disease Control Act*, warning of animal mortality caused by an animal disease will originate with the producer(s), and carcasses must be inspected immediately by a local veterinarian. Until the

mortality is confirmed to be the result of a reportable disease, the producers are initially responsible for carcass disposal. If the scale of mortality from any disease is beyond the capabilities of the local livestock industry, the matter becomes an emergency and an expanded federal-provincial response will be initiated. Initial notification may come from a producer, abattoir, diagnostic laboratory, local veterinary practitioner, public health unit or the BC Chief Veterinary Officer who, in turn, contacts the CFIA District Veterinarian or District Office Manager.

Each CFIA District Office is responsible to maintain a contingency response plan to guide their response to an animal health emergency. CFIA evaluates the situation and determines what steps, if any, are necessary to further characterize the disease based on the epidemiology report from the initial visit to the suspect premises.

If the existence of a serious/reportable disease situation is confirmed, a CFIA *Emergency Response Team* will be mobilized for further assessment of the situation and to commence control and eradication activities. The need for a JEOC will be assessed and, if required, will be established in the vicinity of the affected area.

Control and eradication activities will normally begin by controlling movements of animals and people in zones where the disease has been diagnosed. There may be one or more infected zones containing the infected premises.

Surrounding the infected zone(s), will be a restricted zone extending from the perimeter of the infected zone(s) to a specified distance, which could vary according to the disease. A security zone will extend from the outer limit of the infected and restricted zones to the limit of the control area. The three zones will constitute a *Control Area* where certain measures would be applied according to a pre-approved disease control/eradication strategy (see figure below).

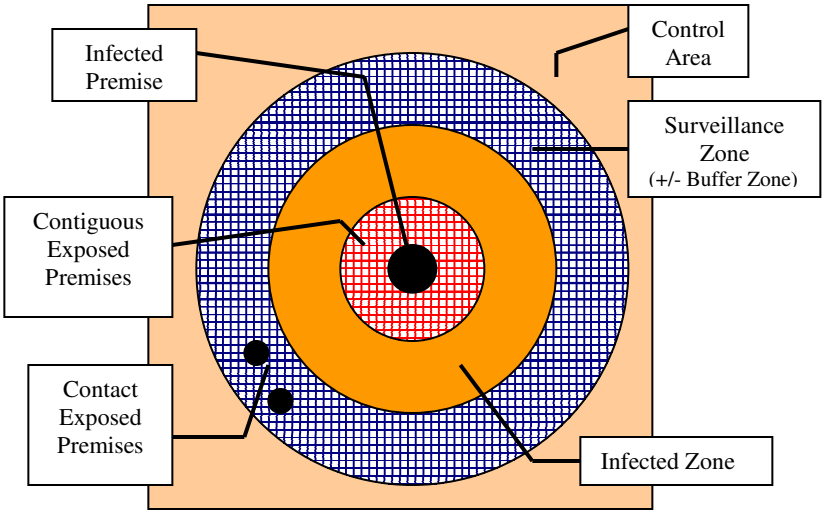


Figure 1. FAD Control Area Schematic

In situations involving mass animal mortality, the JEOC will contain a *Disposal Group* to oversee carcass disposal operations. This group directs the disposal of carcasses and regulated materials associated with destruction ordered in the disease response. The *Disposal Group* designs a disposal plan to prevent the spread of the pathogen and mitigate public health or environmental risks. It is essential that the *Disposal Group* receives assistance from the local government in order to identify appropriate sites for disposal of carcasses.

Local governments will be required to assist the federal/provincial JEOC by providing local coordination and support. The nature of the assistance will vary according to the situation, but may include: advice on local conditions; coordination with local industry; provision of local emergency services including police, fire and communications services; the provision of local resources and the coordination of federal, provincial and local media.

Appendix 2 for this section illustrates the notification sequence in a FAD event.

3.7 Destruction of Animals

The destruction of animals to support attempts to control and eradicate the disease is an integral part of a response to an animal health emergency involving an animal disease. In such cases the JEOC will normally contain a *Destruction Group*.

Given information about the disease, animal type, location of infected premises and disposal methods, the *Destruction Group* develops a strategy for destroying all animals that are known or suspected to be infected in an attempt to contain and eradicate the disease. Preemptive slaughter may extend, in some emergencies, to hobby farms and/or backyard poultry flocks.

Animals destroyed in this way may not be infected with the underlying disease, but will still become part of the carcass disposal operation. Such carcasses may require separate transportation and disposal channels.

Disposal should be completed as soon as possible after destruction to minimize opportunities for infectious material to disperse and to complete handling of carcasses before decomposition has set in.

In some disease situations, many of the animals slated for preemptive slaughter may be suitable for market. The market option is preferable where possible but the animals must be transported alive to approved commercial slaughter/processing facilities using approved transportation and handling protocols.

Officials must recognize the significant emotional impact on the owners of destroyed animals and deal with these situations with appropriate empathy. Representatives from the respective producer associations may be engaged to mitigate any conflicts which arise between the producers and the *Destruction Group*.

3.8 Impact on Human Health

The presence of a zoonotic disease, that has a potentially serious impact on human health, will require close cooperation between animal health and human health officials in a carcass disposal emergency. Zoonotic diseases with a high risk of animal mortality are listed at Annex A.

In the event of an animal disease emergency the general public will be concerned with the implication of disease on their own health and that of their families. A key part of the emergency response will be ensuring that potential threats to human health are fully understood and managed effectively, which will necessitate a comprehensive public information strategy.

In an animal disease/carcass disposal event the JEOC will normally include a *Human Health Branch*, which will be activated whenever the identified disease presents public risks

associated with a zoonotic disease.

INTERIOR HEALTH CORPORATE OFFICE
Risk Management/ Emergency Planning
220-1815 Kirschner Road
Kelowna, BC, V1Y 4N7
Phone: (250) 862-4200
Fax: (250) 862-4201

3.9 Safety

Personnel safety is an overriding consideration during disposal operations. Before commencing disposal work, personnel must be fully briefed on the nature of the disease and any specific hygiene requirements.

Safety issues to consider include personal hygiene facilities, the availability of rescue equipment, hearing protection and protection from dust.

Protective clothing including respirators must be supplied to personnel when there is any risk to humans from the organism involved or if large amounts of dust or odour are generated

3.10 Environmental Issues

Disposal of animal carcasses and other infectious material may have adverse environmental consequences. It is essential for the environmental aspects of proposed disposal activities to be thoroughly evaluated so as to ensure that the impact of such consequences is minimized.

Proper environmental monitoring before and after carcass disposal is essential. Sampling frequency and volume should be determined based on a standard sampling method to prevent human induced errors, and to provide true characteristics and variability of the pollutant(s) from carcass disposal areas.

Consultation with the MOE during any carcass disposal operation is required to obtain specific information, permits and ensure that current guidelines and best practices are being applied.

3.11 First Nations

First responders are permitted to enter First Nations Lands only if specifically requested by the native bands and INAC.

Should a carcass disposal emergency affect First Nations Lands, prior authorization for entry must be obtained. This will normally be done through the JEOC or PEP, but in emergency situation may be done directly with INAC and the First nations entity involved if this is practicable.

3.12 Media/Public Information

An effective public information strategy is an essential part of managing an emergency. The public will demand information even if the effects of the emergency are limited. Negative public reaction can often be defused by an articulate, calm and confident spokesperson that is able to reassure the public that the response is appropriate and effective.

Experience has shown that there will be a high demand for information throughout disposal operations. The effective fusion of information is particularly important as there are likely to be several levels of responders involved. The key is to have designated public information officers and/or spokespersons from the outset, including industry representatives, who cooperate closely with each other. A clear, timely and consistent message is essential.

All organizations involved must ensure that the overarching requirement to deliver information is not unduly delayed by a perceived need to assemble complete information.

The public wants to know the situation and should be briefed accordingly. An information officer should be in the EOC at all times to collect and coordinate the information being received, and to ensure that the media and public are briefed regularly and comprehensively. This protocol is set out in the Townships of Spallumcheen Emergency Plan.

Appendix 1 to Section 3:
FAD Response- JEOC Structure

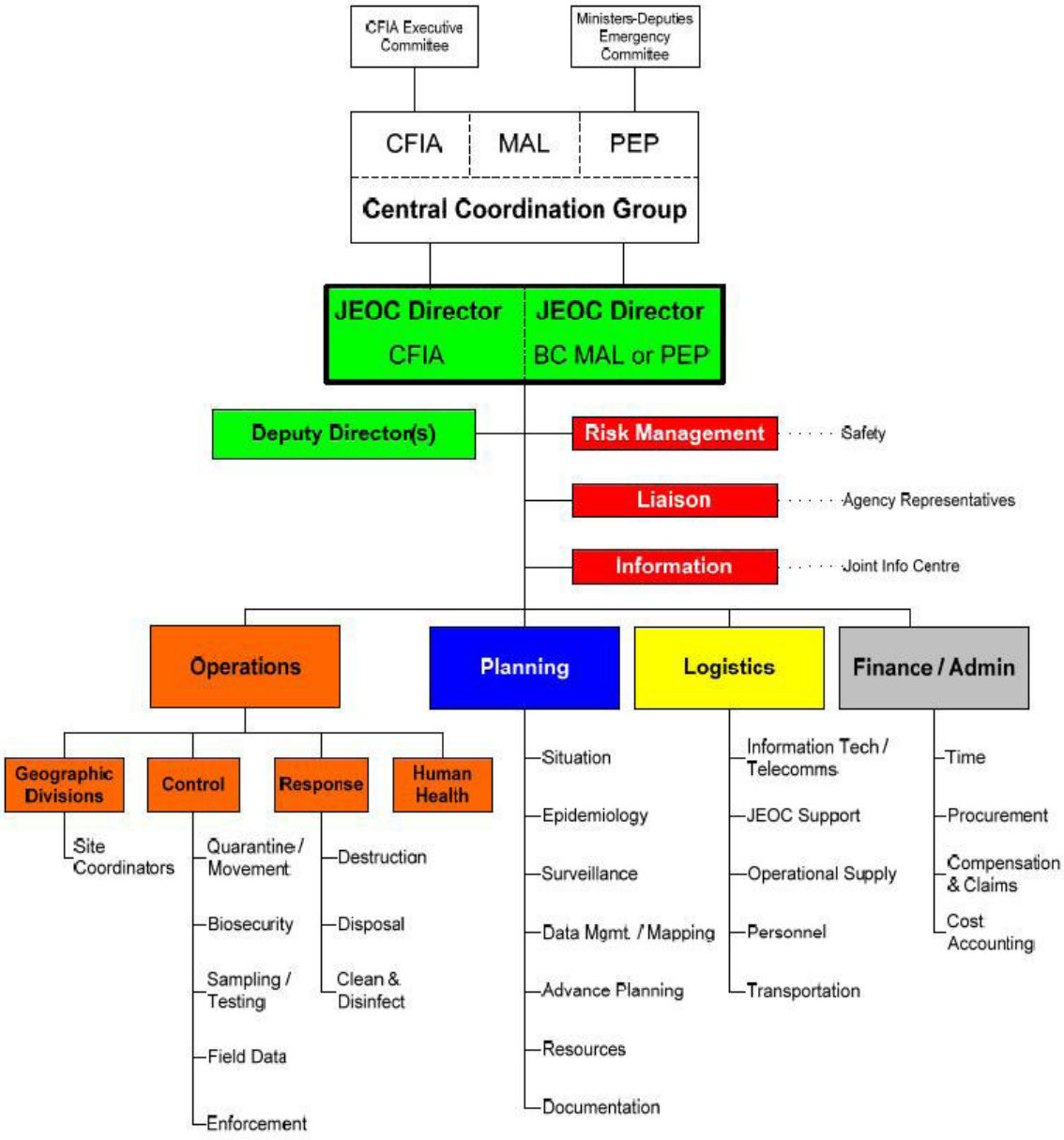
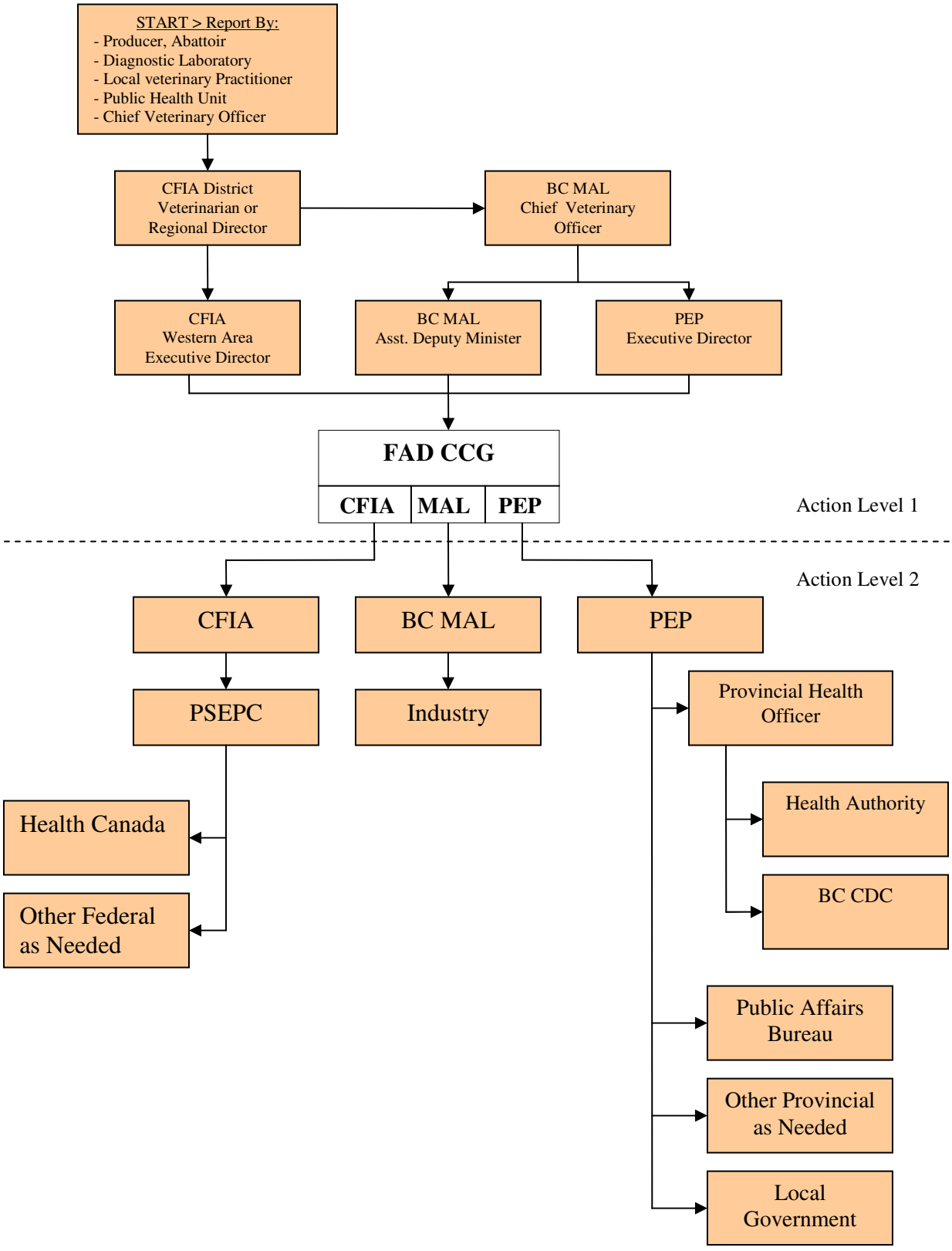


*Figure 2. Function Chart for a Fully-Activated Joint Emergency Operations Centre (JEOC)**

The Township of Spallumcheen EOC will interact with and/or provide liaison directly to the JEOC as required by the situation.

Appendix 3 for Section 3: Notification in a FAD Event



4. DISPOSAL OPERATIONS

4.1 General

Effective disposal operations will be those that are planned in advance and managed by trained emergency managers and responders. Decisions on disposal may have to balance the interests of animal health officials, whose primary goal is to quickly eradicate the disease, with potentially competing concerns about environmental protection and safeguarding public health.

It is essential that disposal operations be carefully coordinated among all levels of government and producers, the public and other stakeholders.

A key to success will be the early identification of suitable disposal sites and resources. There will be little time to do this once the animal carcass emergency develops, and the benefits of early site and resource identification will be quickly evident.

The objective is to select the disposal method that offers the best disease control without creating unacceptable human health and environmental risks. More than one method of carcass disposal may be required.

4.2 Disposal Protocols

Selection of an appropriate methodology for carcass disposal in an emergency is situation dependent – choices must be based on the animal species involved, the scale of the mortality, environmental concerns, public opinion and other factors.

The protocols for emergency carcass disposal depend primarily on the cause of mortality:

a) Non-Infected Animals
For non-infected animals the full range of disposal choices is available, with market or rendering being preferred options. Only live animals are suitable for market slaughter and processing and this will normally include only non-infected animals although for certain diseases such as tuberculosis, infected animals may also be suitable for the market option.

b) Infected Animals
For infected animals, emergency disposal methods must meet five key criteria:

- suitability (disease agent inactivation);
- legality (environmental protection);
- safety (public safety not compromised);
- practicality (time and cost efficient); and
- if an animal disease is present, CFIA approval of the disposal method is required.

Disposal of infected carcasses may be onsite, depending on the type of carcasses and the cause of mortality, and this is normally the preferred option unless environmental and social factors dictate other choices. If movement of carcasses offsite for disposal is required, this must be carried out according to strict bio-security controls.

MAL continues to develop a comprehensive package of protocols which establish approved methods of disposal for each type of disease and animal species. The responsible office in the Ministry should be contacted for information on current protocols and guidance at the outset of any carcass disposal emergency.

MINISTRY OF AGRICULTURE AND LANDS
(604) 556 -3100 (Business hours)
SUSTAINABLE AGRICULTURE MANAGEMENT BRANCH,
WASTE MANAGEMENT ENGINEER

4.3 Disposal Methodology

Primary disposal methodologies for use in an emergency are described at Annex B.

4.4 Local Disposal Options

The majority of the land in Spallumcheen is privately owned and is unsuitable for mass carcass disposal due to aquifer and well locations, urban development and slope gradients. Appendix 1 of this section illustrates the locations of aquifers and wells.

Open-air burning and air-curtain burning may also be an unsuitable option for Spalumcheen due to burning restrictions, air quality issues and public opinion.

Suitable disposal methods must be selected with regard to environmental concerns, safety and public opinion. Disposal options are described below.

Methodology	Notes
Market	Market is the option of choice for non-infected carcasses. A carcass disposal emergency is likely to have a large number of carcasses from destroyed non-infected animals available for processing through normal channels. However, particularly in the early stages of an emergency, slaughter facilities might not continue to process livestock if there was no immediate prospect for sale.
Rendering	Rendering is an option of choice for non-infected animals, particularly for bovine carcasses, however there is a lack of appropriate facilities in the local area. The two closest rendering plants are West Coast Reductions Ltd (WCR), in Vancouver and its subsidiary, Alberta Processing (APC), in Calgary. Since, WCR ships all bovine carcasses out of the area for processing, primarily to APC, it may be beneficial for carcasses in Spallumcheen to be ship directly to APC given the distance to either facility is similar. NB: Rendering of cattle carcasses results in a by-product that has to be disposed of in accordance with SRM regulations.
Composting	Composting can provide for the bio-containment and safe disposal of cattle and other species of livestock and their wastes at the site of a FAD outbreak. New composting methodologies are being developed which reduce environmental impacts and accelerate destruction of pathogens and the degradation of carcasses. The volume of cattle carcasses in a mass disposal emergency may exceed the amount of composting that can practically be undertaken. This can be mitigated in part by

	grinding carcasses prior to composting. However, one or more portable grinders would have to be acquired from outside Spallumcheen. NB: The end product from composting cattle carcasses must be disposed of in accordance with SRM regulations.
Incineration	High-temperature incineration is a suitable disposal option. There are currently no large biological incinerators in Spallumcheen or the surrounding area. Portable incinerators may be used, but these have a relatively small capacity and may have a long lag time to obtain, assemble and set up. Large incinerators exist in the Swan Hills facility in Alberta, however costs and bio-security risks of long distance transport would have to be assessed for any emergency situation. NB: Incineration of cattle carcasses must meet specified critical temperatures in accordance with SRM regulations.
Burning	Pyre (outdoor, fuel-fired) burning is an option for non-bovine carcasses where environmentally suitable areas exist. However, burning restrictions and air quality issues make this option unsuitable for Spallumcheen. Air curtain burning utilizing a trench or contained system is more effective than pyre burning, although high fuel consumption per unit volume of carcasses is a negative aspect of this option. A list of suppliers of air curtain burning equipment is provided in Appendix 2 of Section 5. NB: Neither pyre nor air curtain burning is suitable for cattle carcasses due to SRM

	regulations.
Burial	On-site burial is a suitable option for small numbers of carcasses where geological and hydrological conditions are suitable. Spallumcheen is located on top of several aquifers, some of which are unconfined, therefore suitable burial sites may be limited. Burial gets rid of the carcasses but the residue within a burial site will persist for many years and ultimate elimination of the carcass material represents a long-term process. There is public concern regarding private burials as they are unregulated and SRM's could contaminate the surrounding areas. On-site burial should therefore be used cautiously for mass disposal.
Landfill	Only one public landfill, the Armstrong/Spallumcheen Landfill, exists within the Spallumcheen Township, and they do not accept animal carcasses. The landfill is located on a hill above Fortune Creek which flows into the Fraser Basin. Animal carcasses are not accepted by the landfill as there is concern that residue material may contaminate the creek.

4.5 On-Site or Off-Site Disposal

Historically, disposal of diseased carcasses was done on the infected premise to avoid spreading the infection by transporting the carcasses to an offsite facility. However, some onsite disposal methods, burial and burning, have potentially serious environmental consequences and onsite composting may be limited by space requirements and access to carbonaceous bulking agents (wood chips, straw, peat moss).

While onsite disposal is still the preferred option, offsite methods may increasingly be used in emergencies, particularly for the carcasses of large animals. It is important to differentiate between limited disposal action for routine mortalities and the vast disposal challenges of, for example, a foot-and-mouth

disease emergency. A decision to move the disposal activities offsite will be related to the scale of event (i.e., the volume of material), site capacity, potential human health concerns and environmental concerns.

For off-site disposal, the primary issue will be to identify a suitable site for disposal and the transportation of carcasses in a safe, sanitary and timely fashion to avoid spreading the disease and/or endangering public health

4.6 Transport of Carcasses

Transport of infected carcasses must be planned and executed with care, utilizing leak-proof vehicles approved for transporting hazardous material. Refrigerator trucks may be used.

Vehicles should not be overloaded – at least 24 inches freeboard, depending on distance to be travelled and temperature, should be left clear for expansion of carcasses. Smaller carcasses should be bagged if feasible and larger carcasses covered with a layer of poly sheeting. If vehicles are not enclosed, they should be lined and an airtight vinyl tarp should be placed over the top. All vehicles must be cleaned and disinfected before leaving the infected premise and after unloading.

Vehicles should travel on designated routes, preferably with an escort vehicle. They must travel slowly to avoid splashing of contaminated material and a supply of an approved disinfectant should be carried to deal with minor spills during transit.

Carcasses and other items awaiting disposal should be secured to prevent unauthorized access, and to prevent wild animals and birds removing potentially infectious material. Control of insects should be considered if there is a risk of passive transmission by insects to nearby susceptible species. If disposal is delayed, carcasses should be thoroughly sprayed with an approved disinfectant.

Federal and provincial protocols for the transportation of animal disease material are under development by CFIA/MAL. Once issued, these protocols will guide decisions on applicable transportation issues.

4.7 Specified Risk Materials

The *Health of Animals Act* regulates the handling of specified risk material (SRM). SRM are tissues that, in BSE infected cattle, have been shown to contain the infective agent and

transmit the disease. Consequently, these tissues are considered to be SRM in all cattle as defined in the glossary.
The handling of bovine carcasses therefore is affected by federal SRM regulations. Rules related to the handling of SRM in landfills and by other disposal methods are prescribed by CFIA and may be viewed at:

http://www.inspection.gc.ca/english/anima/heasan/disemala/bseesb/enhren/art/wasdece.shtml

As the mass disposal of bovine carcasses will present unique issues with respect to SRM handling, guidance for specific situations must be sought from CFIA before any decision on the disposal or movement of bovine carcasses is taken. This is true for both disease and non-disease related mass carcass disposal emergencies.

4.8 Making Choices

Selection of an appropriate methodology for carcass disposal in an emergency is situation dependent – choices must be based on the animal species involved, the scale of the mortality, environmental concerns, public opinion, current SRM regulations and other factors.

The selection of a preferred method of disposal will usually be determined by the cause of death. When a natural disaster is the cause, the disposal method chosen should be the most environmentally acceptable. If the death was due to an infectious organism, then the method that most efficiently prevents further disease spread is usually the preferred choice, while taking all possible actions to protect the environment.

The animal species involved will be a major consideration. The choices potentially available in Spallumcheen area for *non-infected carcasses* will normally be:

Non-Infected Carcasses		
Priority	**Methodology**	**Notes**
1	Market	Processing plants may have limited surge capacity, which will limit this option. List of all meat processing plants are listed in Appendix 4 of Section 5.
2	Composting	Limited by volume in large scale emergencies. Equipment may have to be sourced from outside the Spallumcheen area.

3	Burial	Farm site must be environmentally acceptable (approved by MOE). Any off-farm burial site must be a pre-engineered site as close to place of mortality as possible, based on geo-technical survey. Due to the presence of aquifers, wells and surface water within Spallumcheen, burial sites may be limited.
4	Rendering	Transportation must be cost-effective and freshness must be preserved. The closest two facilities are located in Vancouver BC. and Calgary AB.
5	Incineration	Incineration is a preferred option, but suitable high temperature incinerators are not readily available. The nearest facility is located in Swan Hills, Alberta.
6	Air- Curtain Burning	Air-curtain burning is not suitable for cattle carcasses. Open burning is also limited in Spallumcheen due to public pressures.
7	Landfill	No landfills in the Spallumcheen area currently accept animal carcasses.

The Ministry must be contacted for current information prior to any final decisions about disposal methods being made:

MINISTRY OF AGRICULTURE AND LANDS
Sustainable Agriculture Management Branch
Waste Management Engineer
604-556-3001

For an animal disease event, the responsibility for disposal rests with the CFIA, in consultation with provincial and local officials

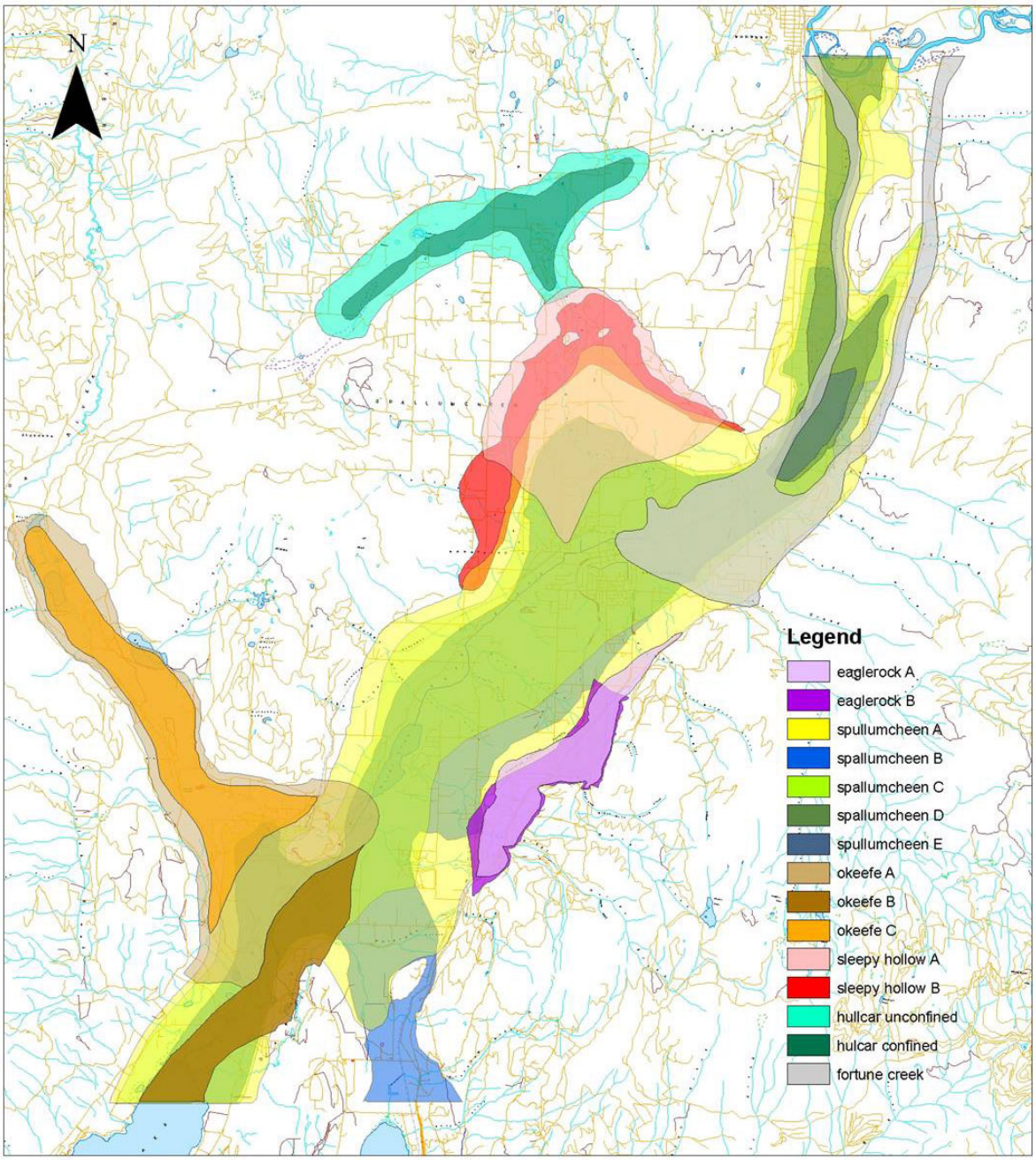
CANADIAN FOOD INSPECTION AGENCY
BC Mainland / Interior Office
604-666-2847
District Veterinarian Vernon
250-260-5018

The options listed in Section 4.4 above will also apply to an animal disease event, with special requirements for infected carcasses. In particular, transportation of infected carcasses must be done in vehicles suitable for the transportation of hazardous waste and the disposal option must destroy the infective agent.

Spallumcheen will be required to work closely with federal and provincial officials in determining suitable local disposal options during an animal disease event. An example is, cattle carcasses disposal will be subject to current SRM regulations.

Appendix 1 of Section 4:
Map of Aquifer tops under the Township of Spallumcheen

North Okanagan Mapping Project Aquifer Delineations (Monahan, 2006)
and NOGWCA Survey Well Locations



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5. DISPOSAL RESOURCES

5.1 General

The key to managing mass carcass disposal lies in the identification and provision of appropriate resources. This includes resources for the storage and transportation of carcasses as well as those needed for the actual disposal.

Each mass carcass disposal event will be unique, and therefore no complete list of required disposal resources can be developed. The resources will always have to be specifically tailored to the situation.

5.2 Resource Requirements

Transportation, heavy equipment and personal protection equipment are all disposal resources for carcass disposal. The following generic resources list provides a planning guidance:

Transportation:	Trucks up to 1ton for equipment transport. Vans/minibuses for personal transport. Heavy trucks, approved for transporting hazardous material (leak-proof hazardous material trucks, refrigerator trucks or trucks with liners and tarps to prevent leakage/wind loss).
Heavy Equipment:	Excavators (for burial operations). Graders (for burial operations). Tractors with front-end loader. Backhoes with front-end loader. Midsize skid-steer loaders. High-lift front-end loaders. Cranes. Loading ramps. Bulldozers. Water tanker (if no water source at sites).
Light Equipment:	Motorized pressure spray units (cleaning, washing and disinfection of vehicles and containers) Generators, various capacities. Pumps. Compressors. Fans (blowers)
Safety and Security:	Warning signs. Portable disposal site lighting. Road pylons. Site marking tape. Identification badges

Personal Protection:	Protective clothing including footwear. Coveralls (for temporary visitors to disposal sites). Masks or respirators. Decontamination equipment and chemicals. Medications such as anti-virals (controlled by medical staff). Portable toilets. Temporary shower and changing facilities. Clothes washing facilities. Walkthrough footwear disinfectant facility.
Miscellaneous:	Tow chains. Bins for temporary storage of carcasses. Bags if required for transport of small carcasses. Poly sheeting and tarpaulins. Plastic film. Garbage cans and/or metal bins. Disinfectant. Lime. Digging tools. Cleaning and disinfectant supplies. Hand tools (shovels, picks, rakes, etc). Pickets / portable fencing. AgBags for in-vessel composting. Composting thermometers. Grinders with screens. AgBag filling machine. Carbon source / bulk agent (litter, sawdust, straw, wood chips/shavings). Water hoses. Fuel for pyres / air curtain burners. Cell phones. Digital cameras or camcorders.
Documentation:	Office equipment and supplies. Forms and templates. Printing facilities.

Specialized equipment list for selected disposal methodologies are at Annex C.

5.3 Specialized Disposal Resources

Specialized disposal resources will be required in certain circumstances. They include a broad range of items from professional engineering, environmental and geotechnical consultants to specialized equipment and supplies. Examples are:

a) mobile incinerators / air-curtain burners;
b) composting equipment;
c) container equipment;
d) generators; and
e) decontamination equipment and chemicals.

5.4 Resource Availability

Appendix 1 of this section lists the equipment and resources available from Spallumcheen Public Works.

Appendix 2 of this section lists commercial disposal resources and equipment suppliers.

A list of provincially licensed slaughter facilities/meat plants in BC and their map locations are provided in Appendix 4 and 5 of this section, respectively.

5.5 Resource Shortfalls

Spallumcheen does not have the equipment or the resources required to respond to a carcass emergency. See Appendix 1 to Section 5 for a complete list of the Township of Spallumcheen resources. Shortfalls exist in the following areas:

a) Incineration Capacity. There are no large biological incinerators in the area of Spallumcheen. There is the option of portable incinerators but capacity may be a limiting factor.
b) Rendering Capacity. Alberta Processing Co. would be the best location for Spallumcheen to send all animal carcasses. It is comparable in distance to BC's West Coast Reductions but is able to process ruminant and horse carcasses.
c) Approved Landfills. There is only one landfill in the area and it does not accept animal carcasses.
d) Composting Equipment and Supplies
e) Heavy Duty Equipment
f) Personal Protective Clothing
g) Rendering and Incineration are limited by logistical and bio-security concerns posed by the distance to available facilities.

Appendix 1 to Section 5:
Township of Spallumcheen

Vehicles

Truck ½ ton	3
Truck ¾ ton	1
Truck Dump Single axle with Sander	1
Truck Dump Tandem axle with Sander	4

Heavy Equipment

Grader	1
Excavator	1
Front End Loader	2
Tractor (100HP) with blade, sweeper, & mower	1
Brush Clipper	1
Water Tank	1

Appendix 2 to Section 5:
Disposal Resources and Equipment Supplies

AIR-CURTAIN BURNERS

Western Destructor Burn Box 1199 Salmon Arm, BC 604-240-1111	Manufactures air curtain trench burners for sale/rental. System includes trench construction and over-fire air curtain with under-fire air if required.
Mounce Construction Ltd. Box 814 Salmon Arm, BC 2508329786 http://www.mounceconstruction.com/	Lease/contract ABC Air Curtain Destructor Incinerators, a trailer mounted portable air curtain destructor incinerator.
ABY2 Environmental Prince George, BC 2506141483 http://portableincinerators.net/	Locally manufactured auxiliary fuel fired (propane) portable air curtain burners with under-fire and over-fire air and continuous ash removal.
Air Burners, LLC 4390 Cargo Way Palm City, Florida 34990 772-220-7303 After hours: 5612489011 http://www.airburners.com/	Manufactures aboveground air curtain destructors and in ground trench burner systems utilized for wood waste disposal and disaster recovery operations including carcass disposal.
WAYCON Manufacturing Ltd 275 Waterloo Ave Penticton 1-877-492-7718	Manufactures ABC Destructor, a trailer-mounted portable air curtain destructor
Envirogreen Technologies Ltd. Suite 480, 4400 Dominion Street Burnaby 604-689-53236	Incineration facilities and a range of environmental remediation services
Bruce Lougheed Box 76, Heffley Creek 250-578-7532	Portable, trailer-mounted air curtain destructor.

RENDERING PLANTS

Alberta Processing Co. (APC) 7030 Ogden Dale Place SE Calgary, Alberta T2C 2A3	Processing plant in Calgary that is able to dispose of cattle and horses. Not currently permitted by CFIA to process infected carcasses.

West Coast Reduction Ltd. (WCR) 105 North Commercial Drive Vancouver, British Columbia V5L 4V7 604-255-9301 http://www.wcrl.com/index.htm	Only rendering plant in BC. Processes small animals (sheep, hogs) in Vancouver and ships cattle carcasses to Calgary for disposal. Not currently permitted by CFIA to process infected carcasses.

HAZARDOUS WASTE TRANSPORT AND DISPOSAL

BC Environmental Industry Association (BCEIA) 604-683-2751 http://www.hazwastebc.com/index.html	A current list of hazardous waste transporters in BC is available from BCEIA. http://www.hazwastebc.com/Hazardous_Waste_Transporters.html

LIVESTOCK VETERINARY POLICY AND SERVICES

Canadian Food Inspection Agency District Veterinarian Room 103, 4475 Viewmont Avenue Victoria, BC V8Z 6L8 250-363-3097 http://www.inspection.gc.ca/english/directory/offbure.shtml	CFIA District Veterinarians will provide information on reportable/transmissible animal diseases to veterinary practitioners, livestock owners and poultry producers.
BC Ministry of Agriculture and Lands Animal Health Centre 1767 Angus Campbell Road Abbotsford, BC V3G 2M3 1-800-661-9903 604-556-3003 http://www.al.gov.bc.ca/ahc/index.htm	The Animal Health Centre (AHC) is a full-service veterinary diagnostic laboratory, located in the Abbotsford Agriculture Centre in Abbotsford, British Columbia and funded by the Ministry of Agriculture and Lands.
Armstrong Veterinary Clinic Box 550 3125 Smith Drive Armstrong, BC VOE 1BO 250-546-9506	Large Farm Animal Veterinary Clinic
Shuswap Veterinary Clinic 1050 4th Ave SW, Salmon Arm, BC V1E 4M2	Sheep, horse and cows 24 hours services

Vernon Veterinary Clinic 805 Kalamalka Lake Road Vernon, BC V1T 6V4	Exotic and Horses 24 hours services
Dr. Moffat Denton 4234 Hales Road RR 6, Spallumcheen, BC V0E 1B6 250-546-6992	Horses
Flater Veterinary Services 2143 Shuswap Ave, Lumby, BC. V0E 2G0 250-547-9700	Farm Animal Veterinary Clinic
Enderby Veterinary Clinic 2-908 Belvedere Enderby, BC V0E 1V0 Armstrong Clinic 250-546-9506	Farm Animal Veterinary Clinic
Creekside Animal Clinic Ltd 5001 24 Street, Vernon BCV1T 8X7 250-549-3533	Farm Animal Veterinary Clinic
Deep Creek Veterinary Services Ltd, 942 Gardom Lake Rd. Enderby BC 250 833-8585	Horses
Mills Veterinary Services, 4285 MacDonald Rd. Spallumcheen BC 250-546-8860	Horses

Appendix 3 to Section 5:
Meat Plants in British Columbia

PROVINCIALLY LICENSED MEAT PLANTS PURSUANT TO THE BRITISH COLUMBIA MEAT INSPECTION REGULATIONS
As at December 18, 2008

Michael Peterson **Cole Creek Farm Ltd** (Red Meat) 755 Winfall Road Victoria, BC V9B 5B4 250-478-4850	Lenard B. Hofer **South Peace Colony Poultry Farm** (Poultry) Box 475 Dawson Creek, BC V1G 4H3 250-782-8164
Don Ball **Johnston Packers Ltd** (Red Meat) 5828 Promontory Road Chilliwack, BC V2R 4M4 604-858-4121	Dave Herfst **Scott's Meats Ltd** (Red Meat) RR#2 2310 Scott Road Agassiz, BC V0M 1A0 604-796-9002
Abe Falk **Fraser Valley Duck & Goose Farm** (Poultry) 4540 Simmons Road Chilliwack, BC V2R 4R7 604-823-4435	Al Grand'Maison **AGM Beef Farm Ltd** (Red Meat) 5175 184 Street Cloverdale, BC V3S 4N9 604-576-8318
David Fernie **Rodear Meats Ltd** (Red Meat) 3736 Beaver Valley Rd Box 15 Big Lake, BC V0L 1G0 250-243-2340	George Gomerich **Valleyview Farms** (Red Meat) 2322 Gomerich Road Nanaimo, BC V9X 1R9 250-753-1753
Alan Bird/Richard Bell (Mgr) **Farmcrest Foods Ltd** (Poultry) 1880 30th Street SW Salmon Arm, BC V1E 4M1 250-832-0036	Norman Quist **Westholme Meat Packers Ltd** (Red Meat & Poultry) 7824 Westholme Road Westholme, BC V0R 1K0 250-246-9500
Stephen W.M. Lau **Fairline Development Canada (1992) Ltd** (Poultry) 2391 Vauxhall Place Richmond, BC V6V 1Z5 604-276-2886	W.L. (Bill) Meikle **Riverside Meats Ltd** (Red Meat) 2945 Haines Road Salmon Arm, BC V1E 4M1 250-832-0012
Lyle Young **Island Farmhouse Poultry Ltd** (Poultry)	Joel Tschetter **Peace Country Poultry** (Poultry)

1615 Koksilah Road Cowichan Bay, BC V0R 1N1 250-746-6163	PO Box 194 Farmington, BC V0C 1N0 250-789-3018
Larry Noullett **Kawano Farms** (Red Meat) 11030 Old Cariboo Hwy Prince George, BC V2N 5T9 250-963-7127	Lars Jorgensen **Gate to Plate Food Services Inc** (Red Meat) 9325 – 100th Street Fort St. John, BC V1J 4N4 250-785-7738
Karl Rainer **Rainer Custom Cutting** (Red Meat) 7493 Darlington Creek Road General Delivery Darfield, BC V0E 1R0 250-672-9407	Dennis & Harry Gunter **Gunter Bros. Meat Co. Ltd** (Red Meat) 6200 Ledingham Road Courtenay, BC V9J 1M5 250-334-2960
Fred & Sue Babyn **Van Diemen Turkey Farm Ltd** (Poultry) 3068 10th Ave (RR#1) Keremeos, BC V0X 1N0 250-499-5890	Lori Gillis **The Cluck Stops Here** (Poultry) 1229 Walz Road Qualicum, BC V9K 2S8 250-752-3082
Frank Rohls **Spokin Lake Meats** (Red Meat) 4030 Spokin Lake Road Box 172 150 Mile House, BC V0K 2G0 250-296-4355	Alistair Harley **Al's Feathers Be Gone** (Poultry) 6795 Swanson Road West Port Alberni, BC V9Y 8L7 250-723-8307
Kathy Beaton **StoneCroft Farm** (Poultry) 2165 Kelland Road Black Creek, BC V9J 1G4 250-337-5789	Dwain & Shelly Funk **Country Locker** (Red Meat) 6900 Teichrob Road Box 11 Vanderhoof, BC V0J 3A0 250-567-4774
Mark Cardin **Hidden Valley Processing** (Red Meat) 6010 Old Cowichan Lake Road Duncan, BC V9L 6H7 250-746-7235	Eric Boulton **Somerset Farm** (Red Meat) 2585 North Road Gabriola, BC V0R 1X7 250-247-9202
Gordon Peter **Sunshine Acres Poultry** (Poultry) 8486 Island Highway Black Creek, BC V9J 1M3 250-897-8008	Jacques Campbell **Campbell Farm** (Red Meat) Box 9, 102 Quarry Saturna Island, BC V0N 2Y0 250-539-2470

Musa Ismail **Pitt Meadows Meats Ltd** Seasonal – Halal Slaughter (Red Meat) 18315 Ford Road Pitt Meadows, BC V3Y 1Z1 604-465-4752	Ronald Keely **Kam Lake View Meats** (Red Meat) 6453 Buckhorn Road Lot 20, Section 19 Kamloops, BC V1S 2A1 250-828-1015
Eugen Wittwer **Northwest Premium Meat Co-op** (Red Meat) 5986 Donaldson Road Telkwa, BC V0J 2X0 250-846-5092	Richard Yntema **Valley Wide Meats** (Red Meat) 40 Matthews Road Enderby, BC V0E 1V4 250-838-7980
Tom Tarzwell **Tarzwell Farms** (Red Meat) 524 Williams Road Creston, BC V0B 1G8 250-428-4316	Gerald Brinders **Kootenay Mobile Poultry Abattoir** (Poultry) 2540 Godderis Road Cranbrook, BC V1C 7B8 250-489-5798

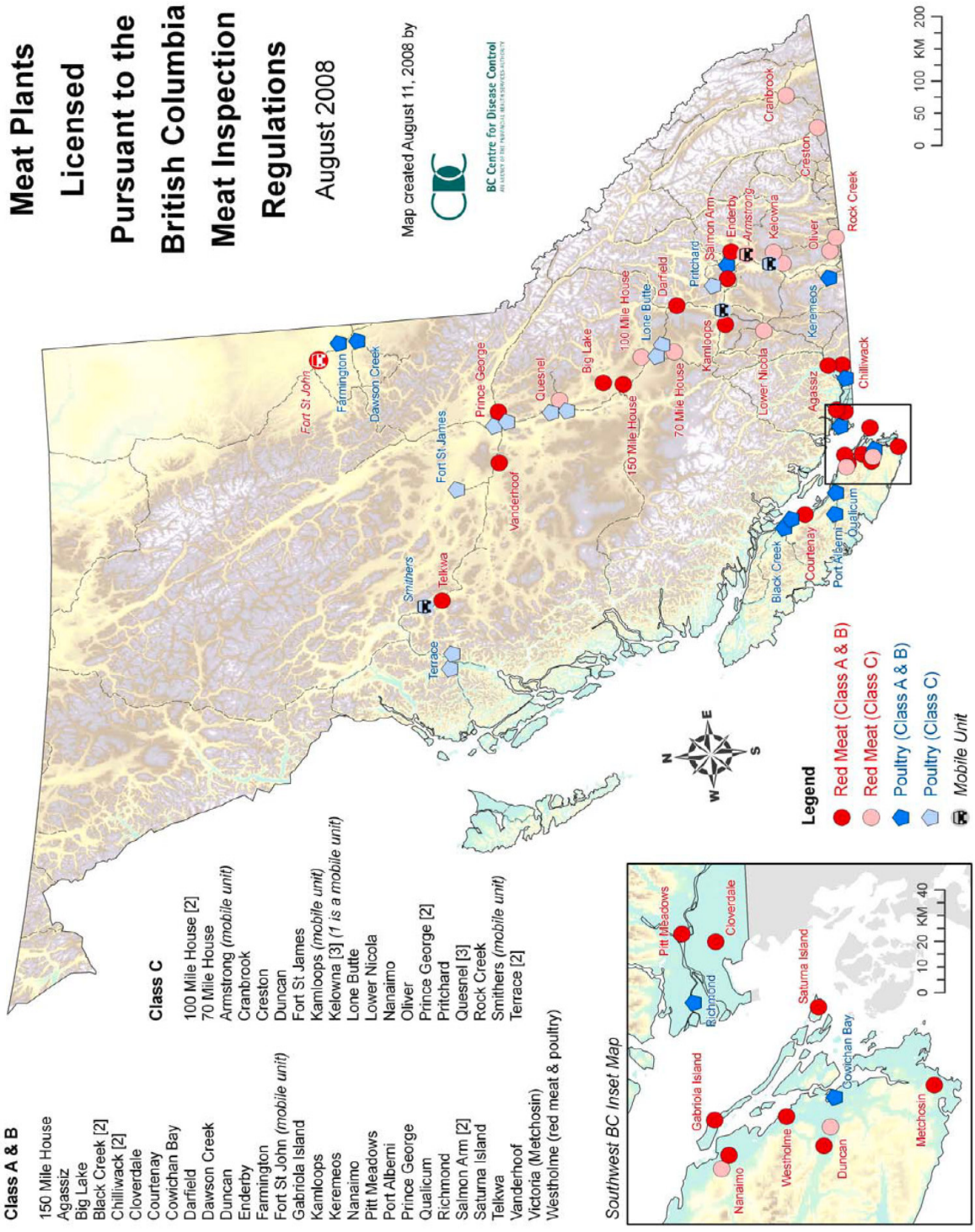
Transitional "Class C"
Licenses Issued

Sue Haley **Ceres Circle Farm** (Red Meat) 1 – 3652 Spiers Road Kelowna, BC V1W 4A9 250-861-7005	Rick Armstrong **Gold Creek Custom Meats** (Red Meat) 3256 Gold Creek Road Cranbrook, BC V1C 6Z4 250-426-7770
Robert Johnston **Johnston Meats** (Red Meat) Box 572 Oliver, BC V0H 1T0 250-498-2903	Rod Plecas **D. Plecas & Son** (Red Meat) 2100 Plecas Road Nanaimo, BC V9X 1R9 250-754-2238
Adrian Baiton **Adrian Baiton Abattoir** (Red Meat) 3790 Highway 3, Box 93 Rock Creek, BC V0H 1Y0 250-446-2259	Margaret (Peggy) Thompson **Okanagan Poultry Processing** (Poultry) 2 – 1077 Clement Avenue Kelowna, BC V1Y 7E3 250-448-8400
Keith & Wilma Watkin **Walk'In Acres**	Hans Karlen **XH Buffalo Ranch**

(Poultry) 1020 Wiersma Road Quesnel, BC V2J 6C6 250-747-2757	(Red Meat) 938 South Green Lake Road, RR1 70 Mile House, BC V0K 2K0 250-456-2319
Perry Bros. Contracting LTD **Perry Bros Ranch** (Poultry) Box 579, 24500 East Perry Road Prince George, BC V2L 4S8 250-963-8562	James Boesem **The Quesnel Abattoir** (Red Meat) 2320 West Fraser Road Quesnel, BC V2J 6K1 250-992-6788
Alfred Braun **Braun's Custom Butcher Shop** (Red Meat) 3901 Rowe Road Duncan, BC V9L 6T1 250-746-6507	Robin Hawes **Dunn Loggin Ranch** (Poultry) 4625 Rodney Road Smithers, BC V0J 2N5 250-846-5946
Charlotte Croquet & Sandra Willick **Spring Lake Farm** (Poultry) 4282 Lind Lake Pit Rd (PO Box 1618) Fort St. James, BC V0J 1P0 250-996-7869	Eileen & Del Myers **October Farm** (Poultry) 21845 Hwy 97 South Prince George, BC V2N 6A3 250-330-4465
Margaret Bishop **New Cal Rabbit Farm** (Poultry) 6691 Hwy 97 100 Mile House, BC V0K 2E2 250-395-3336	Mona Illerbrun **Berkana Berry Farm** (Poultry) 6730 Fawn Creek Rd, RR#1 Lone Butte, BC V0K 1X0 250-395-7785
Myles & Leslie Downey **My-Les Poultry Plant** (Poultry) 2432 Stark Road PO Box 287 Pritchard, BC V0E 2P0 250-577-3763	Tuan D.W. Chalk **Maple Valley Farms** (Poultry) 4157 Drummond Rd Quesnel, BC V2J 6W5 250-992-8316
Phillip Copping **Coppings Mobile Processing** (Red Meat) 3225 Upper McLeod Road Armstrong, BC V0E 1B8 250-546-4010	Terry Espenhain **Pluck'n Maniacs Poultry** (Poultry) 584 Deer Drive Kamloops, BC V1S 1Z9 250-314-1007
Unruan Pierce **Happy Ranch** (Poultry) PO Box 565 4612 Kalum Lake Road Terrace, BC V8G 4B5 250-615-0230	Sandra Hunt **Gemarius Farms** (Poultry) 3331 Old Lakelse Lake Drive Terrace, BC V8G 6G8 250-638-1759

Robert H. Morrison **Findlay Meats Ltd** (Red Meat) Box 1794 100 Mile House, BC V0K 2E0 250-395-2578	Dave Marshall **Longhorn Farms** (Red Meat) 2511 Old Vernon Road Kelowna, BC V1X 6N8 250-765-4396
Mino Kuiper **Nicola Valley Meats Inc** (Red Meat) 540 Highway 8 Box 4122 Lower Nicola, BC V0K 1Y0 250-378-6879	Bea & Ben Standish **J&B Farms** (Poultry) 2837 Pinantan Road Pinantan Lake, BC V0E 3E1 250-573-5524
Christine Piltz **Kirby Hill Farm** (Poultry) 5266 Clouston Road Quesnel, BC V2J 6X9 250-992-5205	

Appendix 4 to Section 5:
BC Slaughterhouses and Meat Plants



6. FINANCE AND ADMINISTRATION

6.1 General

Provincial guidelines and regulations for financial management in an emergency are contained in the Emergency Program Act and its Compensation and Disaster Financial Assistance Regulation.

Some financial information for emergency situation is also provided in the MAL Emergency Response Plan, 2006.

It is important to note that the financial programs which apply to compensation for animal mortality in an emergency are separated between provincial programs which apply during a non-FAD emergency, and federal programs which apply when a FAD is present. In the latter care, claims are normally made directly by the producers to the applicable federal agency, either through the JEOC Compensation Unit or under other arrangements promulgated by federal authorities.

Instruction regarding compensation and application procedures will be issued during an animal health emergency by PEP and/or CFIA as applicable.

6.2 Provincial Programs

Producers who suffer losses through farmed animal mortalities from causes other than a FAD may be eligible for *Disaster Financial Assistance* arranged through PEP. This program is for uninsurable losses.

The PEP financial guidelines applicable to farmers and ranchers are contained in Disaster Financial Assistance Guidelines For Private Sector. The Guidelines may be reviewed at:

http://www.pep.gov.bc.ca/dfa_claims/PrivateSectorGuidelines.pdf

Financial assistance from PEP may also be provided to local authorities for specified types of response and recovery costs. The PEP financial guidelines for local governments are contained in *Financial Assistance for Emergency Response and Recovery Costs – A Guide for BC Local Authorities and First Nations, September 2005 (Revised January 2008)*. This document may be reviewed at:

http://www.pep.gov.bc.ca/dfa_claims/Financial_Assistance_Guide.pdf

6.3 Federal Programs

Owners of animals ordered destroyed during a reportable disease/ FAD emergency may be compensated directly by the federal government under the federal *Health of Animals Act* and *Regulations*. Compensation under these regulations will normally be arranged through the JEOC, or may be arranged directly between producers and the applicable federal agency when no JEOC has been established.

The *Compensation for Destroyed Animals Regulations* establish the maximum amount of compensation payable for an animal that is required to be destroyed in an animal disease emergency. The *Regulations* are available online at:

http://laws.justice.gc.ca/en/showdoc/cr/SOR-2000-233/bo-ga:s_3::bo-ga:s_4?page=3

Compensation awarded to owners is determined by an assessment of the market value of an animal and takes into consideration factors such as genetic background, age and production records. The assessment is made by a team of experts that includes the CFIA veterinary inspector and two evaluators – one chosen by the owner and the other by the CFIA.

The compensation awarded is subject to maximum levels set out in the *Regulations*. The owner is awarded market value less the value of the carcass received if salvage is possible, but if the animal's market value is equal to or exceeds the maximum permitted, the owner is awarded the maximum compensation amount.

Owners of animals ordered destroyed may also be awarded compensation for disposal costs including transportation, slaughter, labour, and equipment

6.4 First Nations

First Nations in BC qualify for federal assistance for emergency response, including eligible costs for animal services. The provincial and federal governments have agreed to work together in providing financial assistance to First Nations.

First Nations are required to prepare and submit their own claims for response costs to PEP, even if they participate with a local authority or with the Ministry in response.

First Nations are subject to the same eligibility and documentation requirements for disaster financial assistance in

BC that apply to local authorities (see Section 6.2 above).

6.5 Application Procedures

Authorization and application procedures for financial compensation will be confirmed and promulgated on an event specific basis, by PEP and/or CFIA

6.6 Compensation Q&A

Local government may expect to receive queries on compensation issues from producers who have experienced animal mortality during an emergency. Some common *Questions and Answers* are provided at Appendix 1 to this section.

6.7 Requirement for Record Keeping

The key to receiving prompt payment of submitted response costs, disaster financial assistance or compensation claims is good record keeping. All claims must be properly documented with supporting receipts or other written justification.

The EOC for carcass disposal operations must receive and retain all mortality documentation and ensure that the following minimum items are documented:

a) names and contact numbers of person reporting animal mortality;
b) dates of disposal;
c) species of animals, numbers and locations of origin;
d) selected method of disposal and locations;
e) follow-up actions required to monitor and remediate disposal site;
f) soil and water testing results;
g) names and contact numbers of experts utilized in disposal operations; and
h) environmental assessments pursuant to *Canadian Environmental Assessment Act*.

Detailed record keeping of carcass burial sites is particularly important, including the following essential information on each site:

a) exact location in relation to a fixed point;
b) the date of burial;
c) the type and size of carcasses buried;
d) the approximate total weight of the carcasses; and
e) the cause of death.

An example of the Destruction Record Form is provided in Appendix 2 for this section.

Appendix 1 to Section 6:
Compensation Questions and Answers

Q1. All of my animals were destroyed during the recent FAD emergency. How much can I expect to be compensated?

A1. Each animal is evaluated and its market value is determined; however, the compensation awarded is subject to maximum levels set out in the *Compensation for Destroyed Animals Regulations*. Permitted compensation amounts may be found in the *Regulations*. Examples of maximum compensation amounts (in Canadian dollars) for common farm stock are: Note 1

Animal Type	Amount ($C)
Alpaca & Llama	8,000
Cattle – registered	8,000
Cattle – non registered	2,500
Goats - registered	1,000
Goat – non registered	600
Horse – ordered destroyed due to Equine Infectious Anemia	2,000
Horse – all others	8,000
Chicken – Parent breeder – egg production	18
Chicken - Grandparent breeder – egg production	60
Chicken – Parent breeder –meat production	24
Chicken - Grandparent breeder – meat production	75
Turkey – Grandparent breeder	270
Sheep – registered	1,200
Sheep – non registered	300
Swine – registered	5,000
Swine – non registered	2,000

Note 1: Amounts are as of January 12, 2009. Latest amounts can be obtained at http://laws.justice.gc.ca/en/showdoc/cr/SOR-2000-233/bo-ga:s_3::bo-ga:s_4?page=3

Q2. In addition to compensation for each animal destroyed during an animal disease emergency, are there other costs for which I may be reimbursed?

A2. Yes – under the *Compensation for Destroyed Animals Regulations*, owners of animals ordered destroyed may also be awarded compensation for disposal costs such as transportation, slaughter, labour, and equipment.

Q3. I believe that I have an entitlement to Disaster Financial Assistance to compensate me for animals lost in the recent wildfire emergency. How do I apply for DFA?

A3. PEP will coordinate the processing of private sector claims and will provide local advice on the application process. It can be anticipated that PEP will provide this advice to potential claimants and it may be done through newspaper notices and/or arranging public meetings in affected communities.

Q4. The horses and goats on my hobby farm were drowned in the recent floods and I can't afford to replace them. Am I entitled to Disaster Financial Assistance?

A4. In such events Disaster Financial Assistance is limited to farmers and ranchers whose livelihood is based on their farming and ranching activity.

Appendix 2 of Section 6:
Destruction Record Form

Destruction Records

Instructions

The Destruction Group Supervisor should ensure the following record is completed after each disposal operation. Consult the BC SPCA regarding monitoring methods.

Owner's Identification

Name:_____

Address:_____

Location:_____

Premise Code Number:_____

Location of Disposal Site

Items Destroyed

Animal Type	No. Carcasses	Other Materials	Amount
Cattle		Milk	
Swine		Straw	
Sheep		Hay	
Goats		Feed	
Poultry		Animal Products	
Other		Manure	
Other		Others	

Method of Disposal Used

Description of Disposal Method(s)

Monitoring Methods

Suitability of Destruction Methods, e.g., timing, use of sensors, etc

Date and Time

Start Disposal Operations: _____
Complete Disposal: _____

C & D Procedures

Description of C & D for Personnel at disposal site:

Person in Charge

Signature: _____ Date: _____

7. RECOVERY

7.1 General

In most cases, disposal operations will be conducted within a larger emergency scenario. There will therefore be no recovery phase or process linked directly to disposal operations. Rather, it will be related to the foreign animal disease or other event within which the animal mortality occurred. The recovery phase may include activities to support restocking, re-establishing markets and rebuilding viable industry activities.

Recovery serves several linked objectives, including:

a) administering financial compensation for critical losses incurred (as outlined in Section 6);
b) capturing lessons learned during the emergency so that they may be applied to any future emergency response;
c) re-establishing the local livestock industry to pre-emergency levels and capabilities as cost-effectively as possible; and
d) providing community support for those who have suffered severe impacts from the event.

Environmental issues related to disposal will also be key to a successful recovery. Monitoring of disposal sites will be required over a specified period to ensure that appropriate environmental safeguards are in place and there is no degradation of the sites which could have long-term environmental impacts.

7.2 Recovery Objections

Recovery objectives may include damage assessment, restoration and reconstruction, economic impact studies and financial assistance.

Local authorities will lead activities designed to support animal producers, in conjunction with industry associations and other producer groups.

7.3 Recovery Organization

A small recovery team will be required to guide the recovery process. The composition of the team will depend on the scale and extent of the emergency, and the scale of carcass disposal. Local authorities should work closely with any provincial recovery team that may be instituted.

7.4 After-Action Report

On the completion of response activities an *After Action Report* (AAR) should be prepared. The primary purpose of the AAR is to document the lessons learned from the experience. Core questions to be addressed in the AAR include:

a) What went right?
b) What went wrong? and
c) How can we improve?

The intent of this step is not to find fault, but to uncover opportunities for improving plans, procedures, equipment, and personnel training for the district's emergency program.

The Emergency Program Coordinator is responsible for ensuring that an AAR is completed and that all documented records are complete and available for internal review.

ANNEXES

Annex A: Animal Disease

Foreign Animal Diseases

The following diseases are currently listed by the OIE as transmissible diseases that have the potential for very serious socio-economic or public health consequences, and are of major importance in the international trade of animals and animal products:

African Horse Sickness
African Swine Fever
Bluetongue
Classical Swine Fever
Contagious Bovine Pleuropneumonia
Foot and Mouth Disease
Highly Pathogenic Avian Influenza
Lumpy Skin Disease
Newcastle Disease
Peste des Petits Ruminants
Rift Valley Fever
Rinderpest
Sheep Pox and Goat Pox
Swine Vesicular Disease
Vesicular Stomatitis

Reportable Diseases – Federal

The following are reportable diseases per the *Reportable Diseases Regulations* pursuant to the *Health of Animals Act*:

African horse sickness
African swine fever
Anaplasmosis
Anthrax
Bluetongue
Bovine spongiform encephalopathy
Bovine tuberculosis (*M. bovis*)
Brucellosis
Chronic wasting disease of cervids
Contagious bovine pleuropneumonia
Contagious equine metritis
Cysticercosis
Equine infectious anaemia
Equine piroplasmosis (*B. equi and B. caballi*)
Foot and mouth disease
Fowl typhoid (*Salmonella gallinarum*)
Highly pathogenic avian influenza
Hog cholera (classical swine fever)
Lumpy skin disease
Newcastle disease
Peste des petits ruminants
Pseudorabies (Aujeszky's disease)
Pullorum disease (*S. pullorum*)
Rabies
Rift Valley fever
Rinderpest
Scrapie
Sheep and goat pox
Swine vesicular disease
Trichinellosis
Venezuelan equine encephalomyelitis
Vesicular stomatitis

Reportable Diseases – Provincial

The following diseases are reportable under the BC Animal Disease control Act.

Tuberculosis
Brucellosis

The following are “infectious or contagious diseases” as defined by the *Animal Disease Control Regulations* of BC and must be reported:

Infectious Laryngotracheitis (Avian)
Mycoplasma gallisepticum of turkeys

Diseases with High Potential for Mass Mortality

Following is a list of diseases with a likelihood of occurring of possible, likely or certain and a risk to animal health of medium, high or very high. The diseases identified as zoonotic potentially present a risk to human health.

Disease	Likelihood	Risk to Animal Health	Zoonotic Status (Risk to Human Health) Note 1	Species at Risk
	Rare Unlikely Possible Likely Certain	Very Low Low Medium High Very High	Yes/No If zoonotic: (Insignificant) (Low) (Moderate) (High)	
Anthrax *(Bacillus anthracis)*	Possible	High	Yes (moderate)	Multiple
Avian Infectious Laryngotracheitis (Herpesvirus)	Certain	Very High	No	Avian
Avian Influenza – highly pathogenic *(Orthomyxovirus*)	Likely	Very High	Yes (Low to High, stain dependent)	Avian
Bovine babesiosis (*Babesia bovis)*	Possible	Medium	Yes (Moderate)	Cattle
Classical Swine Fever or Hog Cholera *(Pestivirus)*	Possible	High	No	Swine
Epizootic haemorrhagic disease *(Orbivirus)*	Likely	High	No	Multiple
Foot and Mouth Disease *(Picornavirus)*	Possible	High	No	Multiple
Fowl Cholera *(Pasteurella multocida)*	Certain	Very High	Yes (Low)	Avian
Newcastle Disease – Velogenic (exotic*) (Avian paramyxovirus)*	Possible	Very High	No	Poultry
Viral haemorrhagic disease of rabbits *(Calicivirus)*	Possible	High	No	Lagomorph (rabbit)
West Nile Fever *(West Nile virus)*	Possible	Medium	Yes (Insignificant)Note2	Equine

Note 1: The risk to human health is relative (to the risk posed by anthrax is higher than that for Newcastle, etc, however in an absolute sense even the risk of anthrax is low).
Note 2: Although West Nile Virus is zoonotic, infected horses present no risk to human health.

Annex B: Disposal Methodology Options

Methodology	Description
Market	The market option involves the commercial sale of non-infected animals, usually resulting from pre-emptive slaughter for the purposes of containing the spread of disease. Marketing should be undertaken whenever possible.
Rendering	Rendering of animal carcasses involves conversion of the carcasses into three end products – carcass meal, melted fat or tallow, and water – using mechanical processes (grinding, mixing, pressing, decanting and separating), thermal processes (cooking, evaporating, and drying), and sometimes chemical processes (e.g., solvent extraction). The main carcass rendering processes include size reduction followed by cooking and separation of fat, water, and protein materials using techniques such as screening, pressing, sequential centrifugation, solvent extraction and drying. Resulting carcass meal can sometimes be used as an animal feed ingredient. If prohibited for animal feed use, or if produced from keratin materials of carcasses such as hooves and horns, the product will be classified as inedible and can be used as a fertilizer. Tallow can be used in producing livestock feed or the manufacture of soaps. A satisfactory rendering process would involve grinding the raw product, solvent extraction of lipids at about 100 °C for one hour and high temperature treatment of both carcass meal and tallow for at least a further 40 minutes. The end product of rendering must pass microbiological tests before release. Rendering is a useful alternative for carcass disposal including infected animals where the service is available (the WCR plant in BC is not approved for rendering of infected carcasses). However, rendering plants have minimal surge capacity and may not be able to accept large numbers of carcasses in an emergency.
Composting	Composting is the controlled biological decomposition and conversion of solid organic material into a humus-like substance called compost that can safely be used as a soil amendment. The process is aerobic, meaning it requires the presence of oxygen. Natural microorganisms such as bacteria

	and fungi break down the complex organic compounds into simpler compounds. Composting methods include bin, static windrow, and in-vessel (AgBag). Bin composting is commonly used on-farm for disposal of routine animal mortality. It involves layering of carcass material with a building agent (wood chips, bedding litter) within containment walls with periodic turning (aeration). Windrow composting also utilizes layering of carcasses and bulking agent in long windrows 4.5 m wide, 2.1 m high with 2.4 m windrow spacing to allow machine access for tuning. A 90 m windrow would hold 55-60 cow carcasses. In-vessel composting utilizes plastic pods (AgBags) 3 m in diameter and 66 m long. Carcasses are simultaneously ground and mixed with wood waste and loaded into the pods which are equipped with aeration pipes and ventilation ports. Each pod can hold up to 50 cow carcasses (~ 35 tonnes) and requires 325 m2 per pod). Composting is cost-effective, environmentally sound and bio-secure provided that the compost is managed correctly (e.g., high temperatures are maintained and leachate is controlled effectively). Most pathogens are destroyed during the composting process. In barn composting is the favoured option for poultry because it limits odour, enhances bio-security and is away from view. If this is not possible, the entire process can be handled outdoors. Large animals can be successfully composted if the process is properly established and maintained. Composting also has the advantage of keeping infected material on site. Site selection is of key importance for composting operations. Considerations include: – flood prone areas, steep slopes and bedrock should be avoided; – sites should be at least 1 m above the high water table and 30 m away from wells or water sources used for domestic purposes; – sites should be on high ground with good drainage where pooling of water does not occur; – a preferred base is a concrete pad, asphalt or packed gravel, however, a field with vegetative cover can be used if it will support equipment and leachate can be effectively contained; – sites should be level and not prone to flooding;

	– runoff and/or leachate must be contained to protect surface and ground water; and – sites should be shielded from public view and secure from predators. Partial composting, or bio-heat treatment, may also be used in some circumstances, particularly with poultry carcasses. Virus inactivation is achieved, but visually the end-product has not matured to the same level of biological decomposition as true compost. Ideally the bio-heat treatment would be performed in the barn. After disease inactivation the material can be brought out for safe composting in the open.
Incineration	High temperature incineration is a method of thermal destruction of both the carcass and pathogens by converting volatile gases, vapours and particulate matter into carbon dioxide, water and ash. Properly designed and operated, biological incinerators produce a stack gas that is largely free of odours and particulate matter. Fixed facility incinerators require industrial sites and should be at least one hectare per facility. Biological incinerators provide a very efficient carcass disposal system, achieving safe and complete disposal with the absence of virtually any pollution. However, their cost and lack of portability means they are unlikely to be readily available or easily accessible in many situations. Incinerators are usually only suited to disposal of small amounts of material.
Burning	Open burning of animal carcasses creates smoke that is extremely high in particulate matter and produces offensive odours. Accordingly, it is normally suitable for only a small number of animals and is prohibited for cattle due to specified risk material fly-ash concerns unless it is performed on the farm where the cattle died. It may be conducted in above-ground pyres or in trenches, and requires the use of accelerants such as diesel fuel or auxiliary fuel such as wood and straw to achieve the combustion temperatures necessary for the complete destruction of animal carcasses. Due to the risk of contamination from fuels, an impermeable soil (clay) is preferred and burn sites should be removed from the public by at least 3 km. Air curtain burning is a technique for burning material in a pit aided by fan-forced air. The equipment consists of a large

	capacity fan and ducting to deliver the air, which may be preheated, down into the long side of a trench. The angle of the airflow results in a curtain of air acting as a top for the incinerator and provides oxygen that produces high burn temperatures. Sufficient hot air re-circulates within the pit, achieving complete combustion. Additional fuel is required to initially establish combustion, but once operating the continuing fuel requirement is reduced. The use of misters can reduce the air emission concerns normally associated with open air-curtain technology. Air curtain burning sites require 2.5 hectares per installation and should be located a minimum of 100 m from neighbouring residences and 500 m from schools, hospitals and continuing care facilities. Air curtain burners are suitable for continuous operation, albeit on a relatively small scale and have the advantage of being transportable. Using an air curtain burner can significantly enhance the efficiency of open burning. Burning results in the destruction of most pathogens, reduces the volume of solid wastes and minimizes the impact on water quality. Residues left over from burning must be buried, composted or transported to a landfill. However, open burning of significant volumes of carcasses has a decidedly negative effect on the community and when used extensively during the Foot and Mouth Disease outbreak in England in 2001, it had a significant negative impact on the tourism economy.
Landfill	Depositing dead animals in a local landfill has been commonly used for disposal of a small numbers of large animal carcasses or a larger number of small animal carcasses. Only landfills that satisfy requirements with respect to flooding and aquifers, engineered containment, leachate management and gas management regimes should be considered for mass carcass disposal. Carcasses disposed in a landfill undergo chemical, bacteriological, and physical changes. Depending on the material and site conditions, decomposition in a landfill can proceed very slowly over a long period of time, in widely varying temperatures that are inadequate for the inactivation of heat resistant organisms and spore formers. There is also a potential for groundwater and surface water contamination from the release of landfill leachate, and the off-site migration of carbon dioxide, and methane gases. Small amounts of

	poisonous and noxious gases including hydrogen sulfide may also be emitted from landfills.
Burial	Mass livestock carcass burial requirements include the need for at least four meters of soil above the water table or bedrock to the trench bottom, and separation distances of 300 meters from any well and 100 meters from a dugout, pond, stream, river or the property boundary. Also, flood prone areas and unconfined aquifers are excluded. Maximum loading rate for non-emergency on-site carcass burial is 700 kg per hectare per year. For mass burial in off-site locations, the loading rate will be determined by environmental considerations and must be determined in conjunction with MAL, MOE and MOH. Experience in past emergency events suggests a loading rate not exceeding approximately 15 cattle, 90 swine, 150 sheep or 800 poultry carcasses per hectare per year, in environmentally acceptable sites, for mass carcass disposal in a major emergency. Environmental risks associated with burial include: – holding (burial) sites that result in surface and/or soil pollution and/or air pollution; – flies or rodent attraction that results in possible disease transfer to people, livestock or wildlife; and – attraction of predators to the site. Important considerations for burial site selection include: – *access to the site*: for both equipment to dig the burial pit and for the delivery of livestock, carcasses or other materials to be buried; – *environmental*: distance to watercourses, bores and wells; height of water-table; proximity to buildings, especially houses; proximity to neighbours or public lands including roads; slope of the land and drainage to and from the pit; permeability of soil; sufficient space for temporary storage of overburden; and direction of prevailing wind (odour); – *construction considerations*: avoid rocky areas (slows digging and increases costs) but select soils with good

	stabilitycapable of withstanding the weight of equipment used to construct and fill the pits. Surface runoff should be prevented from entering the pit by the construction of diversion banks if required. Similar banks should be constructed to prevent any liquids escaping from the burial site. Fencing may be necessary to exclude animals until the site is safe for use. – back-filling: it will likely be necessary to come back to the burial site several times during the course of carcass decomposition to back fill surface depression that result from the shrinking carcass mass. This is important for the purpose of avoiding water pooling right on top of the burial trench. Gas production from decomposition within unopened carcasses may result in considerable expansion in the volume of the buried material to the extent that the surface of the closed pit may rise and carcasses may be expelled from the pit. It is recommended that large animal carcasses be opened by slashing the rumen of cattle or the caeca of horses to permit escape of gas. There appears to be little benefit in opening small animal carcasses. Lime may be added to pits to prevent earthworms bringing contaminated material to the surface after pit closure. The carcasses must be completely covered with soil, and an unbroken layer of slaked lime [Ca (OH)2] should be added before filling is completed. Lime should not be placed directly on carcasses because it slows, and may prevent, decomposition. **Note:** **In case of extreme emergency,** centralized, off-farm mass burial of large carcass volumes may become necessary. In this case the following site selection criteria have been proposed: *Physical Setbacks and site Constraints* • Surface water bodies – 100-m • Domestic wells – 300-m • Provincial highways – 400-m • Provincial roads – 100-m • Railroads – 100-m • Residences – 300-m • Property line – 50-m • Unstable areas, steep banks, cliffs,

	ravines – 100-m • Hotels, restaurants, food processing facilities, schools, churches and public parks – 300-m • National parks, cemeteries, flood prone areas, rocky outcrops – excluded • Underground and overhead utilities – avoid • Difficult sites for excavation such as excessive trees, rocks, and other physical obstructions – avoid • Steeply sloping land (greater than 5%) – avoid • Crown land – preferred • Reasonable truck access – required Geotechnical / *Geological Criteria and Aquifer Protection* • Minimum 5 m of low permeability soil below the base of the proposed trench with a hydraulic conductivity of 1 x 10-6 cm/sec or less which equates to a total depth below ground surface of 10 m for a 5 m deep burial pit. • Minimum 5 m to level of the seasonally high water table below the base of the pit which equates to a total depth of 10 m below ground surface for a 5 m deep burial pit. • Any locations above an existing aquifer are excluded based on consideration of consequence of contamination. • Potential sites should be investigated by a professional geotechnical engineer to confirm suitability based on approved geotechnical and geological criteria.
Other Potential Methodologies	Fermentation The process of lactic acid fermentation is simple and requires little equipment – the process needs only a tank and a grinder. Fermentation is an anaerobic process that can proceed in any sized non-corrosive container provided it is sealed and vented for carbon dioxide release. During this process, carcasses can be decontaminated and there is a possibility of recycling the final products into feedstuff. Fermentation products can be stored until they are transported to a disposal site. Carcasses are ground to fine particles, mixed with a fermentable carbohydrate source and culture inoculants, and then added to a fermentation container. Grinding aids in homogenizing the ingredients. For lactic acid fermentation, lactose, glucose, sucrose, whey, whey permeates, and molasses are all suitable

	carbohydrate sources. The carbohydrate source is fermented to lactic acid by Lactobacillus acidophilus. Under optimal conditions, including a fermentation temperature of about 35°C, the pH of fresh carcasses is reduced to less than 4.5 within two days. Fermentation with L. acidophilus destroys many bacteria. There may be some micro-organisms that can survive lactic acid fermentation, but these can be destroyed by heat treatment through rendering. Lactic acid fermentation creates a large volume of liquid waste product that is expensive to transport and for which it is difficult to find environmentally responsible uses. <u>Gasification and Incineration</u> A thermal process in which organic carbonaceous materials are partially combusted under limited oxygen conditions in a primary chamber. In most systems, the syngas and char will be oxidized through a secondary chamber at a higher temperature supplying heat for pre-drying of the feedstock or auxiliary heat sinks, leaving 1-3% ash. Surplus syngas from the primary chamber can be cleaned and utilized as a fuel. Gasification and incineration are two of the very few methods actually capable of and approved for cattle SRM destruction. <u>Alkaline Hydrolysis</u> Alkaline hydrolysis uses sodium hydroxide or potassium hydroxide to catalyze the hydrolysis of biological material (protein, nucleic acids, carbohydrates, lipids, etc.) into a sterile aqueous solution consisting of small peptides, amino acids, sugars and soaps. Heat is also applied to significantly accelerate the process. The only solid byproducts of alkaline hydrolysis are the mineral constituents of the bones and teeth of vertebrates. This undigested residue, which typically constitutes approximately two percent of the original weight and volume of carcass material, is sterile and easily crushed into a powder that may be used as a soil additive. Alkaline hydrolysis is carried out in a tissue digester that consists of an insulated, steam-jacketed, stainless-steel pressure vessel with a lid that is manually or automatically clamped. The vessel contains a retainer basket for bone remnants and other materials. The vessel is operated at up to 70 psig to achieve a processing temperature of 150°C. The process releases no emissions into the atmosphere and results in only minor odour production. The end product is a sterile, coffee coloured, alkaline solution with a soap-like odour. This method has potential for approval for cattle SRM destruction.

	Thermal Hydrolysis Thermal hydrolysis refers to a process in which biological material is treated with high-temperature high pressure steam. It blasts steam at material in specialized vessels at high temperatures for 30 minutes or longer in order to destroy the cell walls. The process destroys a wide range of pathogens, has a low odour and is normally completed within six hours. This method also has potential for approval for cattle SRM destruction.

Annex C: Specialized Equipment List

The list provides guidance for specific disposal methodologies. It is not intended to provide a complete inventory of equipment/resources required for every foreseeable situation – each disposal emergency will have its own detailed needs. The list does, however, provide a basis for planning and a starting point for the allocation and deployment of resources.

Disposal Methodology	Resources Required
Burial	For burial, the preferred equipment for digging burial pits is an excavator. This equipment is the most efficient available for the construction of long, deep, vertically sided pits. Other advantages include the ability to easily store topsoil separate from subsoil and the equipment can be used if required to fill the pit with carcasses or other materials and closing the pit without disturbing the carcasses. Carcass conveyance such as a tractor with front-end loader. Tow chain. Disposal bins. Vans or other vehicles for personnel transport. Vehicles approved for transporting hazardous material. Bags if required for transport of carcasses (poultry). Poly sheeting and tarpaulins. Disinfectant. Protective clothing.
Burning	Backhoe with front-end loader. Digging tools. Vans or other vehicles for personnel transport. Vehicles approved for transporting hazardous material. Bags if required for transport of carcasses (poultry). Poly sheeting and tarpaulins with anchors. Disinfectant. Protective clothing. Suitable fuel for pyres. Preferred: air curtain burners.
Rendering	Vehicles suitable for transporting hazardous material. Poly sheeting and tarpaulins with anchors. Bags if required for transport of carcasses (poultry). Front-end loader. Tow chain. Vans or other vehicles for personnel. Disinfectant. Protective clothing.

Composting	Midsize front-end or skid-steer loader. Hand tools. Composting thermometers. Carbon source (litter, sawdust, etc). Moisture meter. Water hose and supply. Warning signs. Poly sheeting and tarpaulins with anchors. Cleaning and disinfectant supplies.
Incineration	Vehicles suitable for transporting hazardous material. Poly sheeting and tarpaulins. Front-end loader. Tow chain. Incineration equipment suitable for the carcass type(s) being disposed of. Vans or other vehicles for personnel. Protective clothing.
Fermentation	Containers: – Garbage cans (2 per unit) for less than six bovine units. – Large metal bins from renderer or large garbage bins for 6-60 bovine units. – Above-ground horizontal silo or trench silo or a liquid manure tank for more than 100 bovine units. Plastic film to cover containers. Front-end loaders. Grinder capable of reducing carcasses to 2cm cubes. Mixer capable of mixing animal tissue, water and culture. Lactobacillus culture. Carbohydrate source, such as processed animal feed or high starch vegetable waste.

Annex D: Training Requirements

All personnel involved with carcass disposal operations need training, particularly with respect to safety, health and environmental requirements. This includes all Spallumcheen emergency and support staff and, where possible, representatives from municipalities and the local farming industry.

To ensure the validity of operational plans and the effectiveness of training, a carcass disposal exercise should be conducted once annually. The exercises can take one of the following forms, working incrementally from the simplest (Level 1) to more complicated methods.

Level	Type/Format	Structure
1	**Orientation** (Discussion-based)	The orientation exercise is conducted at an introductory level to familiarize participants with roles, plans, procedures or equipment. It is presented as an informal discussion in a group setting with little or no simulation. A variety of seminar formats can be used, including lecture, discussion, slide or video presentation, computer demonstration or panel discussion.
2	**Tabletop** (Discussion-based)	A tabletop exercise is a facilitated analysis of an emergency situation in an informal, low-stress environment. It is designed to elicit constructive discussion as participants examine and resolve problems based on existing operational plans. Tabletop exercises lend themselves to broad discussion of policies and procedures, provide an opportunity for participating organizations and staffs to become acquainted with one another and are good preparation for more complex exercises.
3	**Drill** (Operations-based)	A drill is a coordinated, supervised exercise activity normally used to test a single specific operation or function. With a drill, there is no attempt to coordinate organizations or fully activate an EOC. Its role is to practice and perfect one clearly defined part of a response plan and to help prepare for more extensive exercises.
4	**Functional** (Operations-based)	A functional exercise is a simulated, interactive exercise that tests the capability of an organization to respond to a simulated event. This is a moderate-to-high stress activity which simulates an incident in the most realistic manner possible short of moving resources to a field site. A functional exercise is always a prerequisite to a full-scale exercise.
5	**Full-Scale** (Operations-based)	A full-scale exercise simulates a real event as closely as possible. It is an exercise designed to evaluate the operational capability of emergency management systems in a stressful environment that simulates actual response conditions and requires the mobilization and actual movement of emergency personnel, equipment, and resources.