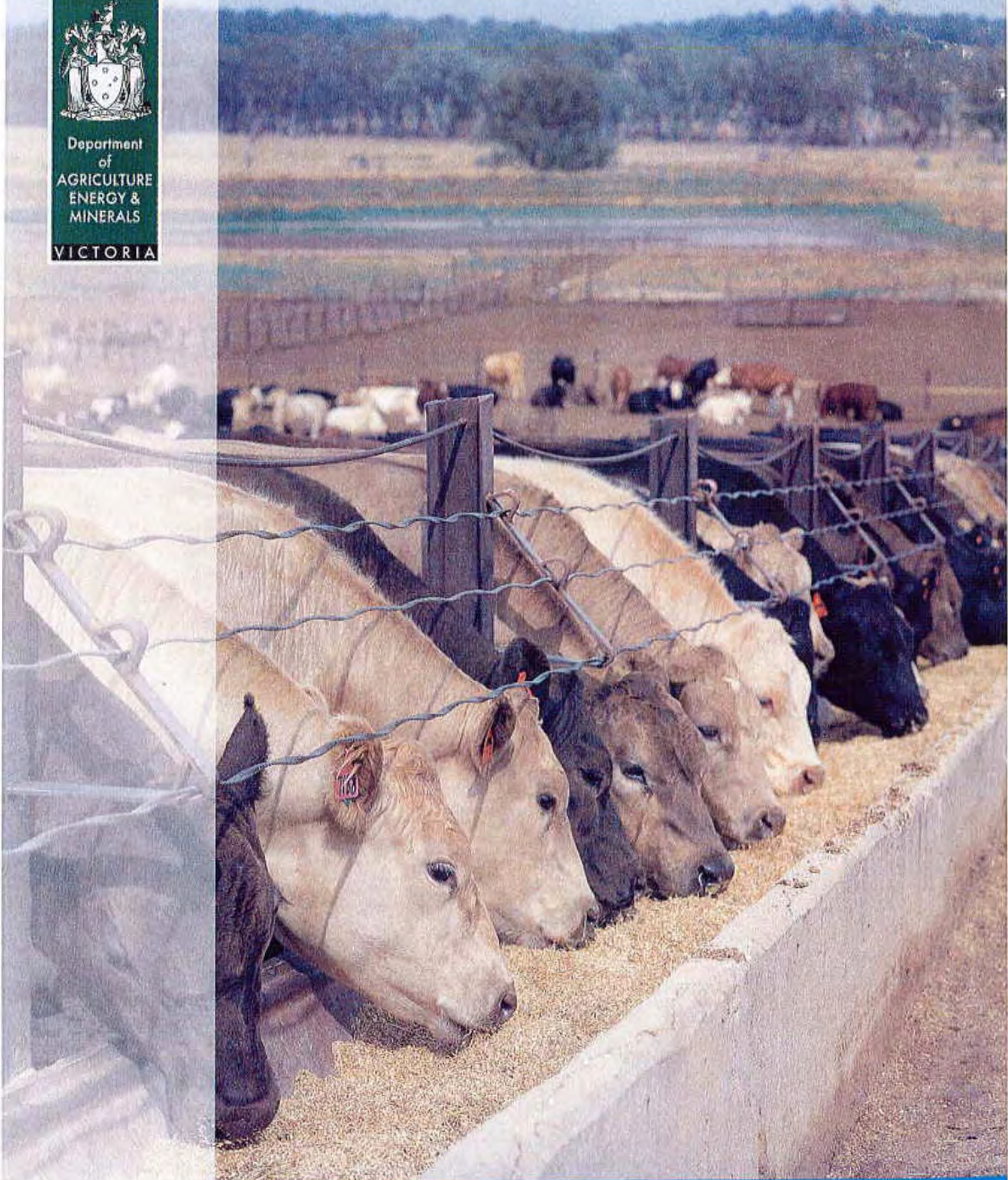




Department
of
AGRICULTURE
ENERGY &
MINERALS

VICTORIA



VICTORIAN CODE
FOR CATTLE FEEDLOTS
AUGUST 1995

FOREWORD

There is industry demand and government support for the development of cattle feedlots in Victoria. The State Government considers that it is appropriate for Victoria to become more involved in this sector of the cattle industry and receive the benefits that are available through the production, processing and marketing of lot fed cattle.

VICTORIAN FEEDLOT COMMITTEE

This Code has been developed under the auspices of the Victorian Feedlot Committee which has been established by the Minister for Agriculture to provide advice and assistance in regard to the development of feedlots in Victoria.

The Victorian Feedlot Committee is supported by Agriculture Victoria Officers and is the key vehicle for the provision of advice to the feedlot industry, the development and co-ordination of feedlot policy and for the consideration of feedlot proposals.

The Victorian Feedlot Committee comprises representatives of the following organisations:

- * Agriculture Victoria
- * Department of Planning and Development
- * Environment Protection Authority
- * Department of Conservation and Natural Resources
- * Office of Regional Development
- * Municipal Association Victoria
- * Australian Lot Feeders Association
- * Victorian Farmers Federation
- * Australian Meat Council
- * Meat and Allied Trades Federation of Australia
- * Feedlot operators

This Code has been prepared to provide all parties involved in the design, approval and development of feedlots with a clear statement of objectives and requirements to ensure both certainty in the planning approval process and the satisfactory commercial and environmental operation of those feedlots which are established. The Code provides "deemed-to-comply" provisions to simplify the planning of feedlots of 1000 or less cattle.

The Code applies to the development of all new cattle feedlots and any expansion to existing feedlots. Lawfully established existing feedlots may continue to operate in accordance with their previous status.

Feedlot applications which meet the requirements of the Code will result in a faster and less difficult approval process. The Code identifies both design and operation requirements which must be met. However, rather than imposing legal sanctions, the Code is primarily designed to guide the development of the feedlotting industry and to assist operators to achieve best practice. Compliance with the Code will demonstrate to the public and regulatory bodies that a feedlot is acting in an environmentally responsible manner.

Under the provisions of an amendment to the State section of all planning schemes in Victoria, cattle feedlot proposals for 1000 cattle or less which demonstrate that they meet the requirements of the Code may proceed without a planning permit. Feedlots for over 1000 cattle must also comply with the Code but require a planning permit.

Attached to the Code is a Proposal Form which provides an environmental appraisal based on the requirements of the Code. This document must be completed for all cattle feedlot proposals. It allows the proponent and the approval authority to readily assess the proposal in accordance with the requirements of the Code, and to assess the environmental impact of the proposal.

TABLE OF CONTENTS

1	INTRODUCTION	1
	1.1 Purpose	3
	1.2 Application and Scope	3
	1.3 Definitions	4
	1.4 Other Legislation	5
	1.5 Animal Welfare	5
	1.6 Other Information and Assistance	6
2	HOW THE CODE WORKS	7
	2.1 Structure of the Code	8
	2.2 Objectives, Accepted Standards and Approved Measures	8
	2.3 Standard Cattle Units	9
	2.4 Feedlot Classes	9
3	HOW TO GET APPROVAL	13
	3.1 Proposal Documentation	14
	3.2 Application Process	14
	3.3 Site Selection	17
4	DESIGN & OPERATIONAL REQUIREMENTS	19
	4.1 Feedlots in Declared Special Water Supply Catchment Areas	20
	4.2 Cattle Feedlots of Less Than 50 Head	22
	4.3 Cattle Feedlots of More Than 50 Head	23
	■ Element 1 - Location and Size	23
	■ Element 2 - Design and Construction	31
	■ Element 3 - Odour	37
	■ Element 4 - Noise	39
	■ Element 5 - Waste Storage, Treatment & Use	40
	■ Element 6 - Traffic and Parking	50
	■ Element 7 - Landscaping	52
	■ Element 8 - Operation and Management	53
	4.4 Maintenance of Standards - Audit Requirements	59
5	PLANNING CONSIDERATIONS	61
	5.1 Strategic Planning Considerations	62
	5.2 Rezoning or Subdivisions Near Feedlots	62
	5.3 New Houses Near Existing Feedlots	63
	5.4 Adopted Policy	63
	5.5 Existing Use and Development	64
6	APPENDICES	65
	1 Preliminary Site Evaluation Check List	66
	2 Water Supply Catchment Areas in Which Feedlots are Prohibited	68
	3 Waste Management Plan	72
	4 Victorian Code for Cattle Feedlots Proposal Form	76

INTRODUCTION



INTRODUCTION

The Victorian Code for the development and operation of cattle feedlots has been prepared to facilitate the sound development of the cattle feedlot industry both financially and environmentally. The State Government has developed the Code to provide guidelines for the planning, design, approval and operation of cattle feedlots, to facilitate investment in feedlots and to ensure the protection of the environment and the amenity of people living in the vicinity of such developments.

The Victorian Code for Cattle Feedlots is a State planning document which is incorporated into all planning schemes in Victoria.

The Code deals with a range of measures including:-

- Feedlot location, size and design;
- Community amenity including odour, noise and off-site transport effects;
- Waste utilisation;
- Land protection;
- Ground and surface water protection;
- Feedlot operation and maintenance.

The Code provides criteria for site selection. It sets out a series of performance objectives for operational and environmental considerations. These are to be met through the implementation of specific design and operational requirements. These provide a high standard of design and operation and a consistent approach across the State. However, the design and operational requirements will vary according to the situation, size and class of the feedlot proposed, but will meet the needs of human and environmental amenity.

Feedlots have the potential to produce large quantities of waste products concentrated in the area of the feedlot. The feedlot proposal must address the management of the waste stream including, where appropriate, arrangements for its use off-site.

The number of cattle which can be accommodated on a given site will be determined by taking into consideration a range of factors. These include, the distance from nearby housing, land zoned for township or residential purposes and other sensitive uses in the nearby vicinity. Other factors to be considered will be annual rainfall, topography and the vegetation characteristics of the area in which the site is located.

The Code is generally based on the National Code for Beef Cattle Feedlots in Australia which also incorporates the Australian Lot Feeders Code of Practice: Cattle Welfare in Feedlots. Compliance with the provisions of the Victorian Code for Cattle Feedlots is required by the local planning scheme, whereas the National Code was developed in 1992 by industry and government in consultation with special interest community groups to provide a broad framework of generally acceptable principles for the establishment and operation of beef feedlots.

The National Code does not provide detailed design and planning requirements. These are specified in State Planning documents of which, in Victoria, the Victorian Code is a part.

The Code introduces two principles to enhance the development of a viable feedlot industry. These are:

- (a) The use of a Class system to facilitate the development of feedlots by having different operational standards which are determined by the characteristics of each site proposed to be used for a feedlot. The class system provides standards for cattle feedlots that are appropriate to the settlement patterns in different locations across the State. It allows the industry and regulatory agencies to identify an appropriate standard for each site.
- (b) The use of a Standard Cattle Unit. This enables consistent standards to apply to all feedlots irrespective of the type and size of cattle being fed.

1.1

PURPOSE

The Victorian Code for Cattle Feedlots has been prepared as the basis for the planning, design and assessment of development applications for feedlots.

This Code has two main purposes. These are to:

- (i) assist in the orderly development of a cattle feedlot industry in Victoria and provide a set of standards that are compatible with the economic operation of the industry; and
- (ii) provide a set of environmental standards which will allow the development and operation of the cattle feedlot industry in such a way that community expectations of environmental protection are achieved.

The requirements for specification of maximum cattle numbers, density, drainage and proper disposal of the solid and liquid by-products are all part of the environment protection standards.

1.2

APPLICATION & SCOPE

The Code is a State planning policy and is to be implemented uniformly across the state.

The Code applies to the development of all new cattle feedlots and extensions to existing feedlots. Feedlots of less than 50 head are exempt from the detailed requirements of all Elements of the Code if they meet the requirements set out in Section 4.2.

Existing feedlots may continue to operate in accordance with the planning controls under which they were permitted. Any expansion of capacity will be required to comply with the provisions of the Code. Only the new facilities need to meet the requirements of the Code, unless the expansion results in changes to existing facilities e.g waste management systems, in which case these may be required to be upgraded to meet the Code. It is expected that over time as maintenance and refurbishment works are required, the design and operational standards included in the Code will be adopted as these represent industry best practice.

An EPA Works Approval will be required for extensions to feedlots which take the total number of cattle to over 5000.

DEFINITIONS

The National Code for Beef Cattle Feedlots in Australia provides a basic definition of a beef cattle feedlot which has been used as the basis of the definition developed for planning purposes for cattle feedlots in Victoria. A definition of the "feedlot works area" has also been adopted in this Code to identify specific requirements which relate to this area.

In this Code definitions are used as follows:

"Cattle feedlot" and "feedlot" mean:

Land on which cattle are restrained by pens or enclosures for the purposes of intensive feeding and includes any structure, work or area:-

- (a) in which such cattle are handled, fed, loaded and unloaded;
- (b) where the animal wastes from the feedlot are accumulated or treated pending removal or disposal;
- (c) where the animal wastes from the feedlot are treated, placed or dispersed on the land. (NB: This does not include land that does not form part of the land on which the feedlot pens and associated works are located.);
- (d) in which facilities for feeding such cattle are maintained and the feed for such cattle is stored; or
- (e) set aside for the purpose of landscaping and planting of vegetation.

It does not include any area in which cattle are penned or enclosed for:

- (a) grazing; or
- (b) hand feeding prior to 12 weeks of age or for weaning, or for the provision of subsistence rations due to fodder shortage, abnormal seasonal conditions or other like events; or
- (c) the provision of supplementary rations for cattle which have daily access to pasture."

"feedlot works area" means:

The area of the site which contains the pens, feed storage and handling facilities, drainage system, waste collection system, waste settlement area, stockpiling and stock handling areas. (All buffer and separation distances are to be measured from the outer perimeter of the feedlot works area unless otherwise indicated).

"waterway" means

- (a) a river, creek, stream or watercourse; or
- (b) a natural channel in which water regularly flows, whether or not the flow is continuous; or

- (c) a channel formed wholly or partly by the alteration or relocation of a waterway as described in paragraph (a) or (b); or
- (d) a lake, lagoon, swamp or marsh, being -
 - (i) a natural collection of water (other than water collected and contained in a private dam or a natural depression on private land) into or through or out of which a current that forms the whole or part of the flow of a river, creek, stream or water course passes, whether or not the flow is continuous; or
 - (ii) a collection of water (other than water collected and contained in a private dam or a natural depression on private land) that the Governor in Council declares under section 4 (1) of the Water Act 1989 to be a lake, lagoon, swamp or marsh; or
- (e) land on which, as a result of works constructed on a waterway as described in paragraph (a), (b) or (c), water collects regularly, whether or not the collection is continuous; or
- (f) land which is regularly covered by water from a waterway as described in paragraph (a), (b), (c), (d) or (e) but does not include any artificial channel or work which diverts water away from such a waterway; or
- (g) if any land described in paragraph (f) forms part of a slope rising from the waterway to a definite lip, the land up to that lip.

1.4

OTHER LEGISLATION

Proponents should be aware that there may be other legislation which requires an approval to be obtained from another agency or arm of government prior to the establishment of the feedlot.

Feedlots of over 5000 head will require a Works Approval from the EPA (Environment Protection Authority, Victoria). This Code has been designed to meet EPA requirements, however, proponents should make contact with the EPA at an early stage in their planning.

Other Victorian legislation which may apply includes the Flora and Fauna Guarantee Act 1988, the Archeological and Aboriginal Relics Act 1972 and the Environment Effects Act 1978.

At the time of preparation of the proposal, proponents should check with the local Council planning office to identify whether there are additional planning controls or other requirements which apply to the site.

1.5

ANIMAL WELFARE

Feedlot operators are required to comply with the Victorian Code of Practice for the Welfare of Cattle (as amended) which is a code approved by the Governor-in-Council under the Protection of Animals Act 1966.

However, the provisions of the Victorian Code of Practice for the Welfare of Cattle have been prepared in a manner which is consistent with the Australian Lot Feeders Association (ALFA) Code for the Welfare of Cattle in Feedlots. All cattle feedlot operators are expected to maintain cattle conditions in compliance with the ALFA code, although this is not a statutory requirement.

Copies of both Codes are available from Agriculture Victoria.

Proponents are encouraged to discuss their proposals with Agriculture Victoria officers at an early stage. This will ensure that the appropriate design assumptions are adopted and an appropriate class is selected for the feedlot. For all feedlots of over 1000 head, the Victorian Feedlot Committee will convene a planning focus group meeting to allow full discussion of issues related to the proposed feedlot.

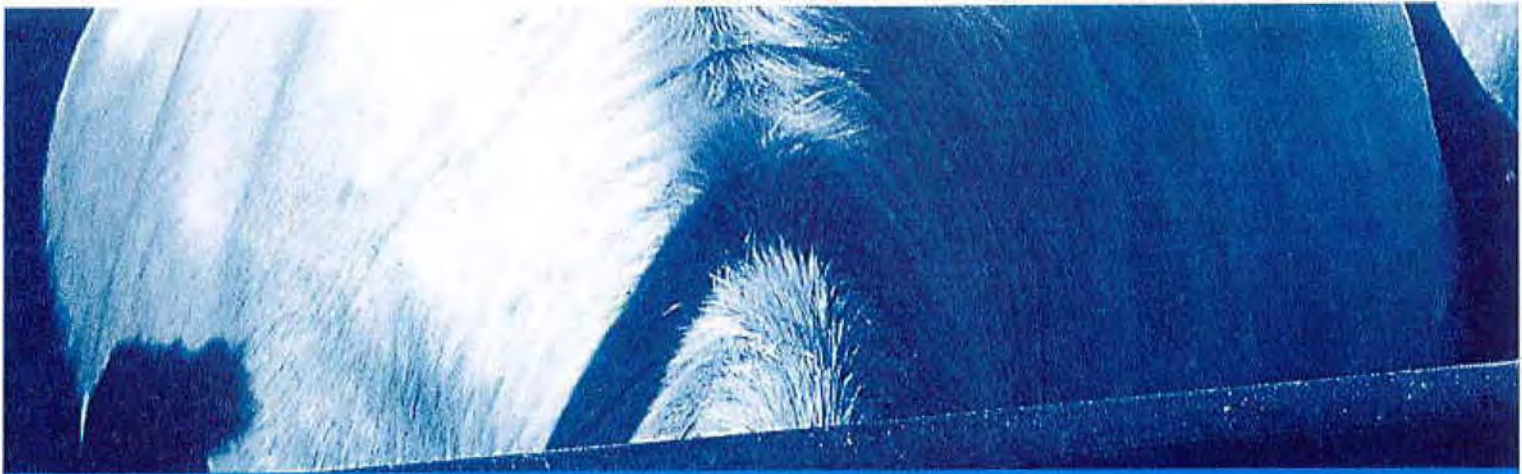
Those attending the planning focus group meeting may include members of the Victorian Feedlot Committee, the proponent and any consultants, representatives of the local government body involved and, for major feedlots, local community representatives.

This process is designed to assist proponents to ensure that, by the time they have prepared plans and other documents required for their proposal, the key matters have been identified and discussed with the approval authorities. This will save time and avoid costs by ensuring that, to the extent possible, application and proposal documents are able to be approved with the minimum of time and with the minimum provision of additional information.

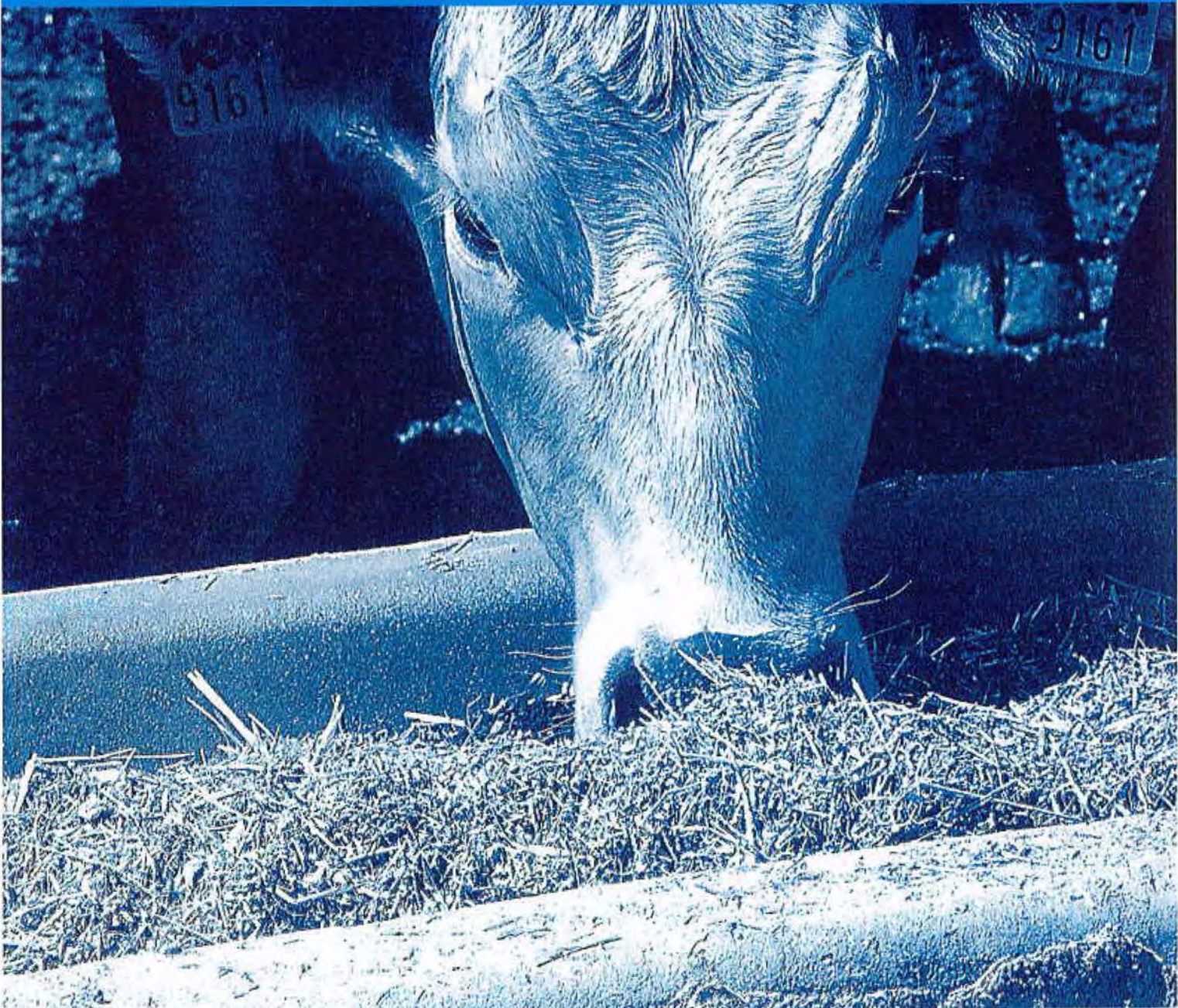
An important consideration is the distribution of potable water supply catchments across Victoria. While feedlots are not prohibited in all catchments, they are prohibited in the most sensitive catchments and there are additional special requirements for the development of feedlots within catchments. These requirements are included in Section 4.1 of the Code.

Assistance is available for proponents in the calculation of nutrient, salt and water balance statements. Computer programs (which run on Personal Computers) are available, and engineering and agricultural consultants can assist in the calculation of nutrient, salt and water balance statements as required by the Code.

Any person who proposes a feedlot should contact the Agriculture Victoria feedlot advisory service at the earliest possible stage in order to discuss the issues associated with site selection and design requirements. This should be done prior to the purchase of a property or prior to undertaking any detailed design.



HOW THE CODE WORKS



All the requirements are grouped together in Section 4 of the Code. These deal with special cases including feedlots of less than 50 head and feedlots in special catchment areas.

The key controls of the Code are structured in a way which follows a sequence of site selection and determination of feedlot size, design, construction and the implementation of performance requirements.

The Code is broken up into eight key elements for which objectives, accepted standards and approved measures are specified. The elements are:

Element 1	Location and Size
Element 2	Design and Construction
Element 3	Odour
Element 4	Noise
Element 5	Waste Storage, Treatment and Use
Element 6	Traffic and Parking
Element 7	Landscaping
Element 8	Operations and Management

Each Element specifies Objectives, Accepted Standards and, for some aspects of design and operation, Approved Measures.

The Objective is a general statement of principle for the design and performance of the feedlot. All feedlots must meet the Objectives.

The Accepted Standards are specific characteristics of the performance of the feedlot related to the achievement of the objective. In most cases the standards will be in the nature of a design or operational requirement. All feedlots must meet the Accepted Standards.

The Accepted Standards may be met by using the Approved Measures set out in the Code or, by other means approved by the responsible authority on the advice of the Minister for Agriculture. The Approved Measures are in the nature of a "deemed-to-comply" provision. If the Approved Measures are adopted for the design and operation of a feedlot, this will be accepted as the basis for approval.

It is expected that feedlot proponents will generally adopt the Approved Measures specified in the Code. Alternative solutions which meet the Objectives and Accepted Standards may be explored and presented for evaluation by the approval authorities. In general, the Approved Measures described in the Code are regarded as the Best Practice available at the time of preparation. Any alternatives to the Approved Measures must be designed to achieve the Objectives and Accepted Standards of the Code. They will generally require detailed design calculations to demonstrate compliance with the Code.

The Code has been prepared on the basis of the best available information at the time of preparation. The Standards and Measures which have been adopted are generally conservative. Further research and analysis may justify some changes. The Code will be revised as new information and expertise relating to the design and operation of feedlots becomes available.

2.3 STANDARD CATTLE UNITS

The range of cattle markets available to the feedlot industry means the final weights vary from about 400 kg liveweight to over 750kg. As manure and urine production are a function of liveweight, feedlots of the same number of cattle but supplying different markets have dramatically different waste production characteristics.

The use of “standard cattle units” allows all feedlots to be compared on a similar basis.

A Standard Cattle Unit (SCU) has a turnoff liveweight of 600 kg. Conversion factors allow adjustments in the numbers of head a feedlot can carry where the stock produced are heavier or lighter than this reference weight.

Table 2.1 Conversion to Standard Cattle Units

Approximate Weight of Beast at Turnoff kg Liveweight	No of Cattle Standard Units
750	1.18
700	1.12
650	1.06
600	1.00
550	0.94
500	0.87
450	0.81
400	0.74

2.4 FEEDLOT CLASSES

The potential for off-site impacts from feedlots is largely dependent on three factors:

- (i) the distance to and numbers of people who may suffer an impact from the feedlot,
- (ii) the characteristics of the feedlot such as the number and density of cattle yarded, and
- (iii) the management and operation of the feedlot.

Provided that basic cattle welfare and on-site environmental protection requirements are satisfied, feedlots may have differing standards of operation related to the local climatic conditions and local settlement patterns (eg the distance to nearest housing).

The use of a Class system, in which the feedlot size, cattle density and operational standards can be varied in a manner appropriate to the location, particularly related to the distance to dwellings, allows all feedlots to operate in the most efficient manner and to meet appropriate environmental and operational standards without giving rise to any nuisance or detriment. For example, provided that environmental requirements are met, it is not necessary for a feedlot which is located 10 kilometres from the nearest housing to operate at the same standard as a feedlot which is only 5 kilometres distant.

The purpose of the class system is to allow the selection of the most appropriate feedlot operation for the location. Each successive class imposes more stringent design and operational standards.

At the time of proposing a site for a feedlot, the applicant must identify the proposed Class based on local climatic and topographic conditions together with the distance from sensitive uses. The Class is nominated on the feedlot proposal form. The Class nominated will be reviewed by Agriculture Victoria and the responsible authority (local Council); if it is considered that the Class nominated is inappropriate, consultation with the proponent will occur and a more appropriate Class selected.

Detailed standards relating to each Class are described in Section 4 of the Code. These deal with the design and operation of each aspect of the feedlot.

The identification of an appropriate Class is undertaken on the basis of the calculations set out in Element 1 - Location and Size (page 20). A brief qualitative description of each Class is as follows:

Class D - These are small feedlots of no more than 500 SCU. The feedlot must be well removed from housing, other sensitive uses and urban centres. The standard of design can be more basic than for other feedlot classes but must still comply with the requirements of State Environment Protection policies and the provisions of the Environment Protection Act for the sustainable use of all waste by-products, and must meet statutory animal welfare requirements.

Class C - These must be well designed, constructed and operated with higher standards than Class D for pad preparation and maintenance, and for pen cleaning. The separation distance of a Class C feedlot from sensitive uses limits the cattle numbers that can be allowed in closer settled areas. In some circumstances for feedlots of over 1000 standard cattle units (SCU), a Class C operation may not be the most appropriate choice even though the separation distances specified in the Code can be met. This situation can arise in more closely settled areas where the existing number or potential for additional housing may justify a Class B operation being required. The approval authority would need to exercise discretion in such a case.

Class B - A Class B feedlot operation will be the most appropriate standard for many situations. It is adopted as a general reference standard by which to evaluate feedlot design and operation. It provides a high standard of design, construction, maintenance and operation. These requirements determine the size of feedlot to be operated in areas of closer settlement. As cleaning, maintenance and other operational requirements are more stringent than for a Class C operation, greater cattle numbers may be accommodated.

Class A - A Class A feedlot must conform to the highest standards of design, construction, operation, maintenance, pad management, cleaning frequency and runoff control system management of all classes. Because odour from feedlots is the most common cause of opposition to the conduct of a feedlot, and a Class A feedlot has the potential to carry large numbers of cattle, no conditions which allow the production of unacceptable odour will be tolerated.

Opportunity Feedlot. Often cattle producers will see an opportunity to lot feed limited numbers of cattle on an irregular basis. This type of feedlot is described as an "opportunity feedlot".

For the purposes of this Code, an opportunity feedlot is regarded as a normal feedlot; it must therefore meet the same standards of environmental protection as a permanent feedlot and be constructed to the class standards appropriate to its situation as if it was a year-round, permanent operation.

Page 12 Deliberately blank



HOW TO GET APPROVAL

The Code has been designed to apply equally to those feedlots which do not require formal planning approval (i.e. those of 1,000 cattle or less) and to those which do require a permit from the responsible authority (generally the local Council).

All feedlot proponents are required to prepare a proposal in the form of the Feedlot Proposal attached to this Code and to submit this to the responsible authority for assessment. A copy is to be forwarded by the responsible authority to the Minister for Agriculture.

For feedlots of 1,000 cattle or less, the proposal will be forwarded by the responsible authority to the Minister for Agriculture for checking. If the assessment contained in the proposal document is confirmed, the applicant will be advised that the proposal complies with the Code and may proceed without any further formal consent in accordance with the planning scheme provisions. If modifications to the proposal are needed, consultation between the proponent and the Victorian Feedlot Committee will occur.

For feedlots of greater than 1,000 cattle, a formal town planning application must be lodged with the responsible authority (Council) in the form required by the Code. This will include the Feedlot Proposal, a copy of which is to be sent by the responsible authority to the Minister for Agriculture.

The assessment form has been designed to allow the person proposing development of the feedlot to check that the feedlot meets the requirements of the Code with a minimum amount of information and research. Adherence to the format required will ensure that all requirements are addressed.

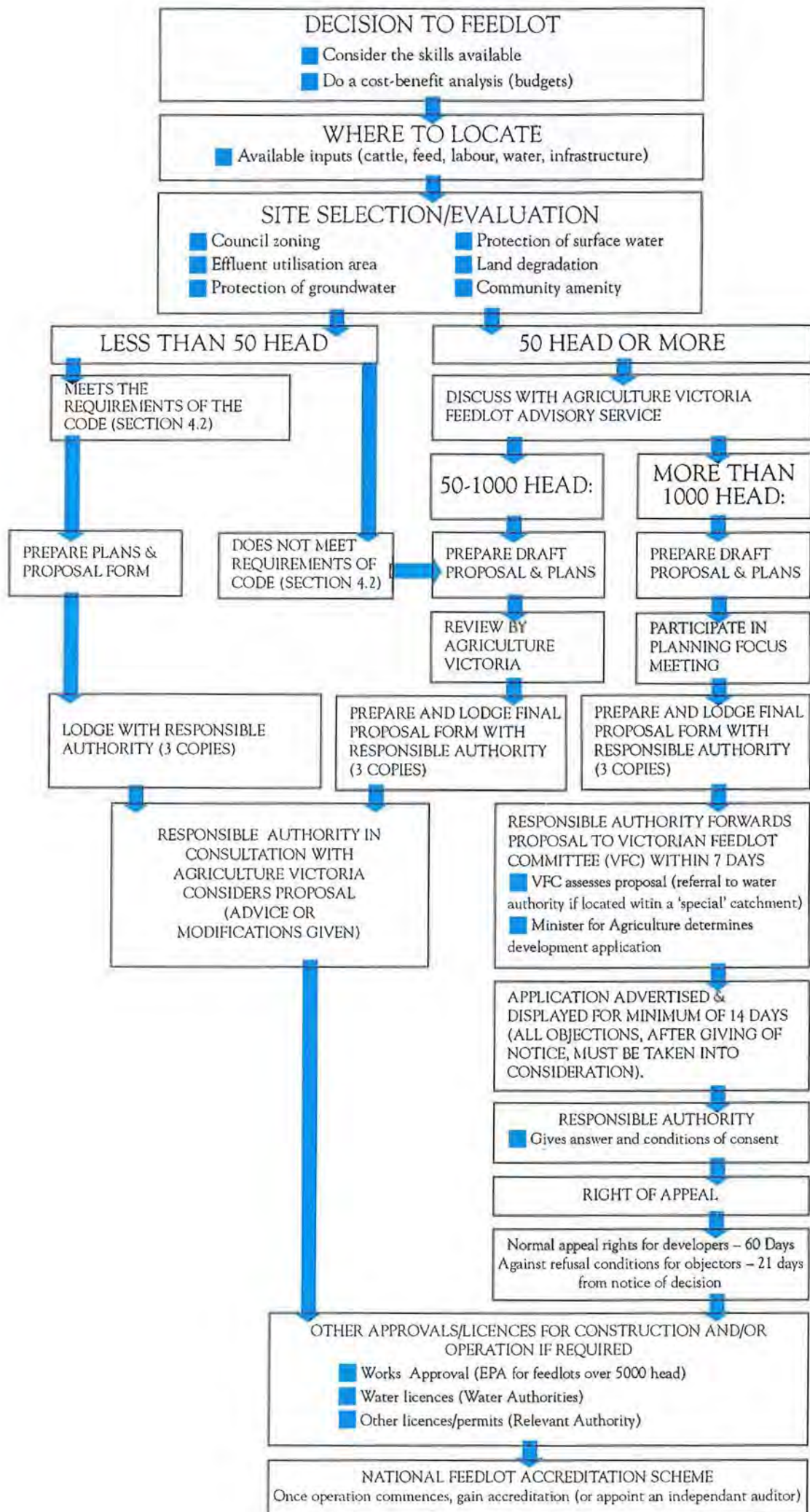
If assistance is required with any calculations or advice on aspects of the Feedlot Proposal, contact should be made with the Agriculture Victoria feedlot advisory service.

The recommended application process for each size of feedlot is described below:

A. Feedlots of less than 50 head.

- (1) Check that feedlot site meets the requirements of Section 4.2 of this Code.
- (2) Prepare plans and Proposal Form.
- (3) Lodge 3 copies of plans and Proposal Form with local Council planning office.
- (4) Council will refer the Proposal Form to Agriculture Victoria and on acceptance of the Proposal will return approval documentation to the proponent.

If the proposal cannot meet any of the requirements of Section 4.2 of the Code, a detailed proposal will need to be prepared in accordance with Elements 1 to 8 in Section 4.3 of the Code.



B. Feedlots of between 50 and 1000 head

- (1) Contact Agriculture Victoria's feedlot advisory service to discuss Code requirements and site selection issues.
- (2) Prepare preliminary plans and draft Proposal Form.
- (3) Review proposal with Council (and Agriculture Victoria staff if appropriate).
- (4) Prepare and lodge final Proposal Form and supporting documents with the responsible authority (3 copies).
- (5) Reviewed by officers of responsible authority and Agriculture Victoria.
- (6) Proponent advised as to compliance or modifications required to meet Code.
- (7) Approval documents issued by responsible authority (Council).

C. Feedlots of greater than 1000 head

- (1) Contact Agriculture Victoria's feedlot advisory service to discuss Code requirements, site selection issues, the possible requirement for an Environmental Effects Statement and the need for EPA Works Approval for feedlots of over 5000 head. Note, these requirements can be addressed concurrently in order to shorten the approvals processes.
- (2) Contact responsible authority to determine zoning and any other requirements.
- (3) Prepare preliminary sketch plans and draft Proposal Form.
- (4) Participate in focus group discussion with Council staff, Agriculture Victoria staff and other parties as appropriate.
- (5) Prepare and lodge final Proposal Form plans and supporting documents to the responsible authority (3 copies).
- (6) Reviewed by Victoria Feedlot Committee, notification to Proponent if any change required and advice by Minister for Agriculture to responsible authority.
- (7) Grant of permit or refusal by responsible authority.
- (8) Appeals (if any).

The selection of a site and the size of a proposed feedlot must be determined having regard to the likely off-site effects which may be generated by the operation of the feedlot, the soil conditions and topography of the proposed site, and the availability of appropriate transport routes to and from the site.

Critical factors in the selection of the site will include the following:-

- Distance to farmhouses or other scattered residential development;
- Distance from rural residential areas, towns, urban centres and other sensitive uses;
- Environmental constraints including significant landscapes, aboriginal archeological sites, vegetation clearance and location of water supply catchments;
- Topography;
- Identification of 1 in 100 year flood level or areas of flood prone land (feedlot works area to be above this level);
- Water supply;
- Soil types;
- Location of surface streams, aquifers, aquifer re-charge areas and depth to water table; and
- Road access.

When a site has been identified as a potential feedlot site, it must be assessed against the approved measures in Element 1 of the Code to identify the possible capacity and class of the feedlot. The Class will be selected based on the separation distances, cattle density and cattle numbers proposed.

The site selected must also have sufficient area for adequate waste disposal or arrangements must be entered into with owners of land outside the feedlot site for the re-use of solid by-products.

The approved measure for solid waste disposal is a minimum of 1 hectare per 5 SCU in the absence of a balance statement for nutrients, salt and water which demonstrates that different rates of application of waste are appropriate. Higher rates of application can only be used if a cropping programme based on detailed appraisal of soils, crops and nutrient values, shows such rates to be sustainable.

Higher rates of application may not be sustainable depending on the cropping regime.

Other factors to be considered include the soil type and drainage patterns. These two factors will have an impact on the design of the waste system including the construction of lagoons and drains.

A preliminary checklist has been prepared and is included in Appendix 1.

Page 18 Deliberately blank



D E S I G N & O P E R A T I O N A L R E Q U I R E M E N T S

This section of the Code contains the detailed requirements for the design and approval of cattle feedlots.



FEEDLOTS IN DECLARED SPECIAL WATER SUPPLY CATCHMENT AREAS

Water supply catchments are of particular value to the community and are sensitive to disturbance of the catchment or pollution of the water. The special value of certain catchments has been recognised in the provision for their Declaration as Special Areas under the Catchment and Land Protection Act 1994 (previously Proclaimed as Water Supply Catchments). In addition, there are a number of reticulated water systems drawing potable water from streams for which no catchment has been declared. Separation distances from such streams or channels will be calculated as if they were in a special catchment area.

The potential impact of feedlots on the whole water supply catchment (surface and sub-surface waters) requires consideration in terms of both the probability of any escape of nutrients or contaminants, and the consequences of such an escape into the water system. The likely consequences of such an escape are the dominant consideration. Thus, prevention, by the selection of a site outside catchments, is a more effective strategy than rehabilitation.

Advice is available on catchment boundaries from local water authorities and the Department of Conservation and Natural Resources (DCNR). A certificate is available from DCNR to confirm that land is outside a catchment area.

The State Environment Protection Policy (Waters of Victoria) highlights the need for careful consideration of any proposal for a feedlot in a proclaimed water supply catchment.

Critical considerations in assessing such proposals will be:

1. The size and shape/topography of the catchment (small, long and narrow, or steeply sloping catchments will substantially restrict the options in the selection of a satisfactory site for a feedlot, irrespective of the design or the intensity of management);
2. The nature of the land, including climate (the ability of land to retain nutrients and not lose them in runoff or through leaching is dependent upon a range of factors and the interaction of those factors);
3. The degree of treatment of water currently applied (untreated supplies are more vulnerable to contamination; detention is a form of treatment);
4. The current nutrient status of the water resource (some water resources are already enriched by nutrients and have less capability to absorb additional nutrients without adverse effects on established uses and users); and
5. The use of the water resource (domestic consumption is more sensitive to deterioration of quality than are irrigation or power generation uses; waters from virtually all proclaimed catchments are used for domestic consumption although the proportion varies).

Persons seeking to develop feedlots in water supply catchments must recognise that they will be required to provide a detailed technical assessment of the site and the proposed development in addition to the standard performance requirements in this Code and the information required in the Feedlot Proposal document. They must also satisfy the approval authorities that they can adhere to strict management and monitoring requirements.

Requirements for Feedlots in Special Water Supply Catchments

A detailed environmental appraisal must include the following matters in addition to the other requirements of this Code and any other matters specified by the relevant water authorities, EPA and planning agencies:

- detailed topographic assessment, including survey data to confirm contours;
- detailed soil assessment, including depth, permeability, physical and chemical analyses;
- surface and groundwater hydrology, including location, depth and quality of groundwater/water table;
- existing vegetation, including native vegetation subject to Native Vegetation Retention controls;
- design calculations for all earthworks, drains and structures; and
- detail of the waste re-use system, including nutrient, water and salt balances for all areas of land to be used for re-use of the wastes.

All designs will be required to cope with a 1 in 100 year rainfall event.

Minimum separation distances for feedlots or land application of wastes are:

- 800m of full level of a water storage used for supply of potable water, or the off-take or bore for supply of potable water;
- 200m from a watercourse in a declared catchment, or from a watercourse supplying potable water.

The feedlot will be required to be of Class A, B or C standard.

Some catchments have been excluded from any form of feedlot development. These are listed in Appendix 2. Information regarding catchment boundaries may be obtained from local water authorities or the Department of Conservation and Natural Resources.

The Department is also able to provide (for a nominal fee) a Certificate as to whether or not a specific parcel of land is in a Declared Special Water Supply Catchment. The Minister for Agriculture will accept this Certificate as conclusive proof that a proposal does not fall within a declared special water supply catchment area.

CATTLE FEEDLOTS LESS THAN 50 HEAD

Cattle feedlots of less than 50 head which meet the following requirements, and have lodged a completed proposal form with the responsible authority that demonstrates compliance with this section of the Code, are deemed to be as-of-right for planning purposes. Where any of the following requirements cannot be met, the feedlot must be assessed in accordance with the provisions of Elements 1 to 8 of the Code and a Feedlot Proposal completed and provided to the responsible authority.

Approved Measures for Feedlots of less than 50 Head.

- AM1 The cattle feedlot is sited outside a proclaimed water supply catchment.
- AM2 The cattle feedlot is sited on land which is above the 1 in 100 year defined flood level. Where such information is not available, the site for the feedlot is outside an area known to be subject to flooding.
- AM3 No part of the cattle feedlot is closer than 300m to a farmhouse on an adjoining property.
- AM4 Minimum set back of 200m from a watercourse, groundwater recharge area, bore or spring.
- AM5 Minimum set back of 800m from the full level of a water storage used for the supply of potable water, or the take off or bore for the supply of potable water.
- AM6 Minimum setback of 200m from any road.
- AM7 Density of not more than one head of cattle per 20 sqm of pen area.
- AM8 Pens have a uniform slope of not less than 2% and not greater than 6%.
- AM9 Wastes are prevented from flowing toward the watercourse by mounds or levies, unless traversing a prepared dispersal area.
- AM10 Fresh runoff water is prevented from running into the feedlot area by mounds or levies.
- AM11 Liquid wastes are dispersed by spreader banks or contour furrows or drainage levies where required to ensure adequate dispersion.
- AM12 The area for liquid waste dispersal is not less than 2 hectares.
- AM13 The area for solid waste application to land is not less than 1 hectare for every 5 head of cattle housed in the feedlot. Wastes are to be incorporated into a vegetation production system.
- AM14 An area of not less than 2.5m around the drinking trough is kept substantially free of manure and dressed with crushed rock or concrete.
- AM15 An area of not less than 2.5m around the feed trough is kept substantially free of manure and dressed with crushed rock or concrete.

AM16 Pens are cleaned at least annually.

AM17 Operated in a manner to keep the surface in a generally dry condition and avoid the development of wet areas within the pen area.

AM18 Operated in a manner to keep feed and water troughs in a clean condition.

AM19 The cattle feedlot is maintained so as to prevent the propagation of weeds and the breeding and spread of vermin and flies.

If any of Approved Measures 1 to 19 above is not met, the feedlot is assessed under Elements 1 to 8 of Section 4.3 below.

4.3

CATTLE FEEDLOTS OF MORE THAN 50 HEAD

ELEMENT 1 - LOCATION AND SIZE

Cattle feedlots must be located in a way and be of a size that takes into account the location of existing housing, other sensitive uses and land zoned for residential or urban purposes.

Criteria have been determined, based on potential odour production, which relate the size of feedlot, cattle density and the class of feedlot to the distance to all sensitive uses.

The assessment of proposed feedlot sites and the determination of appropriate cattle numbers may be undertaken using the formula provided in the Performance Standard below. Alternatively, proponents may wish to undertake odour dispersion modelling to demonstrate satisfactory performance for a proposed site.

Note that where there is an existing feedlot in close proximity or it is proposed to develop two feedlots on one site, separation distances must be determined having regard to each feedlot and the combined effect of the two feedlots.

Odour Dispersion Modelling

For proposed feedlots with no site-specific meteorological data, the following atmospheric and site conditions have been assumed in deriving recommendations for typical situations:

■	wind direction	towards receptor
■	wind speed	1m/s
■	stability category	F
■	mixing height	500m
■	terrain	flat, open

At locations where site specific meteorological data have been recorded, EPA objectives may be used in dispersion modelling and design for particular situations.

For some feedlot proposals it will not be appropriate to use the formula which is specified in the approved measures below. In such cases atmospheric modelling will be required; currently "Ausplume" is the model of choice.

OBJECTIVE - LOCATION AND SIZE

- O1 The development of feedlots on appropriate sites having regard to existing and foreseeable residential development and urban communities.

ACCEPTED STANDARD - LOCATION AND SIZE

The objective may be achieved where:

- AS1 The development is located a sufficient distance from the nearest residential development so as not to cause material detriment (that is so as not to interfere with the normal use and enjoyment of life and property and being more than of a trivial or minor nature) due to odour, noise, dust or other nuisance.
- AS2 Where two feedlots are proposed in close proximity, modelling is used to demonstrate adequate separation distances from receptors.

APPROVED MEASURES - LOCATION AND SIZE

This element will be satisfied where the following requirements are met.

AM1 Separation Distance and Number of Standard Cattle Units

The following formula provides the basis for estimating the number of cattle allowable, "N", for a site at distance "D" metres from an impact location. It also allows the calculation of the distance required for a specified number of Standard Cattle Units (SCU's).

$$N = (D \div S)^2, \text{ alternatively}$$

$$D = S\sqrt{N}$$

where:

N = number of SCU

D = separation distance in metres from the feedlot

S = the composite site factor $S1 \times S2 \times S3 \times S4$,

where:

S1 = the stocking density for different classes of feedlot

S2 = the receptor type (ie from single farmhouse to large town)

S3 = terrain characteristics

S4 = vegetation cover

S1 - Stocking Intensity Factor

Using field trial relationships between odour generation rates and stocking density for the various feedlot categories (defined by pad moisture content), and with model-predicted odour levels at impact locations (calibrated using the observed odour impact at some existing feedlots), the values of S1 were derived for selected stocking intensities and are given in Table 4.1.

The factor S1 for each class of feedlot will vary with the minimum stocking intensity proposed and is determined from Table 4.1. Note: The stocking intensity is considered as the pen area available per SCU of stock held in the pen. The values given here assume 450 kg beast at the start of feeding and a feeding period of 14 weeks which equates to a 600 kg beast (i.e. 1 SCU) at the end of the period. Proportionally higher or lower intensities apply to heavier or lighter beasts, so an SCU equivalent should be used for beasts with turnoff weights lighter or heavier than 600kg.

Moisture content and the rate of deposition of manure are major factors influencing odour production rate from the manure pack.

Table 4.1 S1 Value in relation to Class and Average Annual Rainfall

Average Annual Rainfall	Stocking Intensity (sqm per SCU)		
< 750 mm	10	15	20
> 750 mm	15	20	25

Class	S1 Value		
A	17	14	11
B	25	21	15
C	34	28	21
D	42	34	26

S2 Receptor Factor

The factor S2 will vary depending on the likely impact area and is determined according to Table 4.2.

The impact location may be a neighbour's house, small town or large town that may be affected by odour generated at the feedlot. Factors are shown in Table 4.2.

The separation distances to impact locations are usually the key factors which limit the number of cattle which may be accommodated on a particular site. Each of the critical separation distances must be assessed for each receptor applicable to a particular site to determine if the adopted odour objective is applicable to that impact location. In each case it is the closest part of any development, zoning or adopted strategy or structure plan which should be used.

Table 4.2 Value of S2

Receptor Type	Value
Large towns >2000 persons:	5
Towns >100 persons:	4
Small towns >20 persons:	3
Rural Residential Zone or rural residential development with 5 or more houses or house sites*:	3
Three or four (3 or 4) houses or house sites* within a single radius of 250m:	2
Two (2) houses or house sites* within a distance of 250m of each other:	1.5
Isolated house, house site or a site for a dwelling on land greater than 2ha in area where the furthest dwelling site from the Feedlot is used to establish the separation distance:	1
Public areas:	
Maximum value ** (e.g. high usage national parks and recreation areas):	3
(schools and similar high usage non-residential institutional uses):	2
Minimum value ** (e.g. State forest; isolated public halls, mechanics institute, rural cemeteries and similar low frequency uses):	0.1

*Note: "Rural residential" and "house site" means land used or capable of being used under the relevant planning controls for a dwelling and having an area of 2 hectares or less.

**Note: The values indicated for public uses apply to areas subject to occasional or less frequent use outside towns. Higher values are appropriate for public areas used frequently or sensitive in nature such as schools, and frequently used halls and recreation areas. Lesser values are appropriate for less frequently used facilities. In many cases the appropriate value will need to be determined in conjunction with officers of Agriculture Victoria and the local planning authority having regard to the characteristics of the use.

S3 Terrain Factor

The terrain factor S3 will vary according to topography and is determined according to Table 4.3.

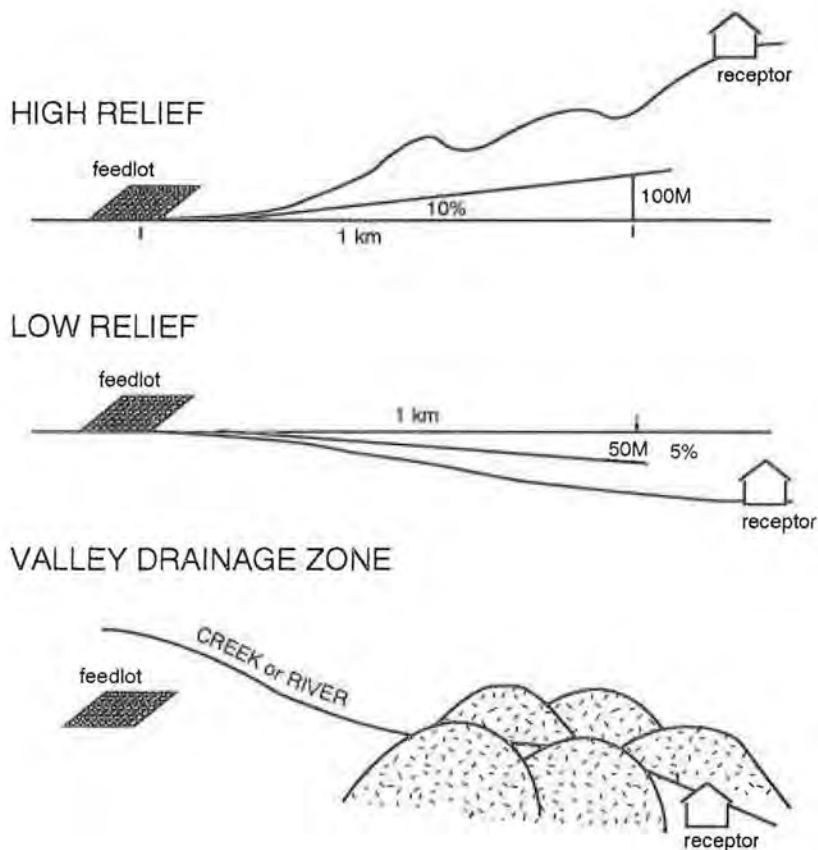
Topographical features of the selected site may increase the odour impact under certain circumstances. During the early evening or night time under low wind speed conditions, population centres located in a valley at a lower elevation than a feedlot may be subject to higher odour concentrations as a result of down-valley wind or the occurrence of low-level inversions. Unless site specific information has been gathered under conditions dominated by low wind speeds, the value for the factor S3 given in Table 4.3 will apply.

The proposed reduction in separation distance for receptors located at a higher elevation through the use of lower values for S3 is a combination of a number of factors including; upslope winds occurring during daylight hours and the tendency for winds to pass around hills.

Table 4.3 Value of S3.

Topography	Value
High relief at (> 10% upslope from site) (a)	0.7
Low relief (> 5% downslope from site) (b)	1.2
Valley drainage zone (c)	2.0
Flat (< 1% slope)	1.0
Areas subject to catabatic drift (d)	1.5

- (a) High relief is regarded as upslope terrain or a hill that projects above the 10% rising grade line from the feedlot. Thus the receptor location will be either uphill from the feedlot or be behind a significant obstruction.
- (b) Low relief is regarded as terrain which is generally below the 5% falling grade line from the feedlot. Thus the receptor will be downhill from the feedlot.
- (c) A valley drainage zone has low relief topography (as above) with significant confining side walls.
- (d) Receptors located downslope from the feedlot which are subject to potential impact from the movement of odour laden air during late afternoon or evening as the cool air mass moves downslope.



S4 Vegetation Factor

The factor S4 will vary according to vegetation density and is determined according to Table 4.4.

Upper storey and lower storey tree cover should not provide shade for confined stock but act as a buffer promoting odour dispersion. The congregation of stock in shaded areas results in the formation of wet patches and a subsequent increase in odour generation potential. The values suggested for S4 given in Table 4.4 for tree covered areas should be used with care and a number of provisions should qualify an approval given on this basis.

For example, no permanent concession is allowed for tree cover not controlled by the occupier, except permanent state forest which is not subject to logging. No concession is given for an intention to plant a barrier, and, if an occupier fails to maintain a stipulated barrier, then a reduction in the allowed number of cattle follows. However, operators are encouraged to maintain and plant an upper storey and lower storey vegetation cover buffer zone which would not cast shadows on to the feedlot, to improve visual amenity, odour dispersion, dust control and noise attenuation.

Table 4.4 Value of S4

Vegetation	Value
No tree cover	1.0
Light tree cover	0.9
Heavy tree cover	0.7

Note: Proponents and assessing officers must recognise that, if tree cover relied on in the initial calculation of cattle numbers disappears during the life of the feedlot, this will require a change in the number cattle allowed at that time.

To qualify for light tree cover, vegetation must be of dense upper and lower storey and not less than 250 metres in width or, if little lower storey vegetation, of greater than 500 metres in width.

To qualify as heavy tree cover vegetation there should be dense upper and lower storey of not less than 750 metres in width or if little lower storey vegetation, of not less than 1.5 kilometres in width.

Intermediate values should be interpolated for intermediate vegetation conditions.

The distances specified above are based on feedlots of 5000 head and above and a proportionately lesser amount of vegetation may be required for smaller feedlots. This matter will need to be assessed for each case in consultation with Agriculture Victoria and the responsible authority.

APPROVED MEASURES - LOCATION AND SIZE

Operational Specifications

AM2 Two feedlots in close proximity

Where a second feedlot or feedlot works area is proposed (whether on the same or another property) the separation distance of the second feedlot which is determined by the formula in AM1 above shall be increased by 20% from any receptors which lie within a radius which is 20% greater than the required separation distance for the first feedlot.

This calculation would need to be undertaken for all types of receptors to ensure that appropriate separation distances are provided.

AM3 Access to areas for Solid and Liquid Waste Disposal

Access shall be arranged to areas for solid and liquid waste disposal in accordance with the requirements of Element 5 of this Code.

AM4 Environmental Buffer Separations

Minimum buffer separations provided are:

Distance from land application of liquid wastes to:

- site boundary 20 m
- public area 100m
- watercourse, bore or spring 100m
- off site residence 200m
- flood prone land 200m (1 in 100 year flood level)

Distance from solid waste spreading areas to:

- site boundary 20m
- public area 100m
- watercourse, bore or spring 200m
- off site residence 200m
- flood prone land 200m (1 in 100 year flood level)

Distance from feedlot works areas to:

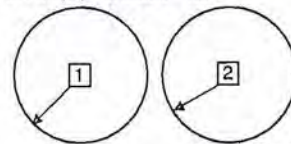
- site boundary 50m
- watercourse, bore or spring 200m
- flood prone land 200m (1 in 100 year flood level)

Class

Additional Information

FIGURE 1

1. Established feedlot or No 1 of 2 proposed feedlots 2. Proposed second feedlot



Standard separation distance for each type of receptor for each feedlot from formula AM1

FIGURE 2

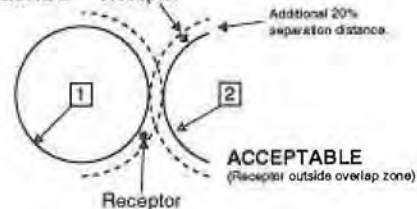
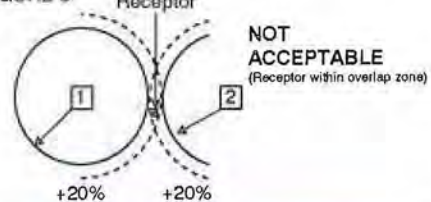


FIGURE 3



A B C D

A B C D

Buffers should reflect the potential impact of the operation. They should be applied prudently so as to take account of particular site characteristics.

Generally a buffer separation will be required to neighbours, public areas and watercourses to avoid odour and water pollution during a waste disposal operation.

Examples

1. Proposal for a Class B feedlot with cattle turn-off live weight at 700 kg. Stocking density 15m² per standard cattle unit.

Receptor = small town population more than 20 people.

Flat open terrain.

No vegetation.

What distance is needed?

Turn-off live weight 700 kg = 1.12 SCU from Table 2.1.

No of SCU = 5,000 x 1.12 = 5600.

Site factors are:	S 1	=	14.0	from Table 4.1
	S 2	=	3.0	from Table 4.2
	S 3	=	1.0	from Table 4.3
	S 4	=	1.0	from Table 4.4
Composite	S	=	S1 x S2 x S3 x S4	
		=	42	
Distance	D	=	S√N	
		=	42√5600	
		=	3140m.	

2. Proposal for a Class B feedlot with stocking intensity of 20m² per standard cattle unit. Turn-off live weight 650 kg.

Receptor = an isolated residence, at 3000m distant.

Flat, open terrain.

Greater than 250m of fairly dense vegetation on the feedlot property toward the receptor.

How many cattle can be run?

Site factors are:	S1 = 15	from Table 4.1
	S2 = 1.0	from Table 4.2
	S3 = 1.0	from Table 4.3
	S4 = 0.9	from Table 4.4

Composite	S	=	S1 x S2 x S3 x S4
		=	15 x 1.0 x 1.0 x 0.9
		=	13.5

Number of SCU	=	(D ÷ S) ²
	=	(3000 ÷ 13.5) ²
	=	49,382

Number of cattle	=	49,382 ÷ 1.06 (SCU equivalent from Table 2.1)
	=	46,586.

ELEMENT 2 - DESIGN AND CONSTRUCTION

The design should provide the optimal layout in response to the site conditions.

Factors which should be taken into account include the following:-

- Existing access and internal roads
- Existing vegetation
- Streams and dams
- Slopes and other topographic features
- Existing buildings
- Rainfall data based on the nearest rainfall recording station
- Views into the site
- Any existing site services (location of water mains, electricity supply etc.)
- Boundaries and easements.

OBJECTIVE – DESIGN AND CONSTRUCTION

- O1 A coherent layout that provides an efficient design which minimises the impact on the environment, and allows the collection and treatment of all wastes in a manner that does not give rise to any off-site detriment.

ACCEPTED STANDARD – DESIGN AND CONSTRUCTION

The objective may be achieved where:

- AS1 The development is integrated into the landscape to the extent possible utilising slopes on the site.
- AS2 The design and layout minimises vehicle movements on site, provides for orderly management of stock, and provides an efficient system for the collection, treatment and handling of all waste.

This may be achieved by:

- locating the feedlot in a central location on the site or a location which provides ease of access both from within and beyond the site;
 - locating suitable vehicle access from a main or secondary road for stock movement and fodder delivery;
 - designing the layout of pens such that all pens are graded to catch drains leading to the waste treatment system;
 - constructing the pens and associated works to standards which minimise odour production potential and facilitate cleaning and maintenance.
- AS3 The layout recognises the location of any nearby watercourses and provides adequate set backs and protective devices to prevent contamination by polluted runoff from the feedlot.

APPROVED MEASURES - DESIGN AND CONSTRUCTION

The following provide ways of meeting the objectives and criteria of this Element:

Operational Specifications

AM1 Pen floor preparation

1. The pen floor is prepared by grading, to provide an even surface and uniform slope and is compacted to road base specifications using a vibrating or sheepsfoot roller.
2. If necessary, suitable clay or gravel is used to provide a compacted base.
3. The pen floor is graded and compacted.
4. The pen floor is graded if needed to ensure drainage and animal welfare.

Class

A B

A B

C

D

Additional Information

Pen floor slope to be between 2% and 6%.

Where the on-site soil is not suitable for compaction gravel or other suitable material must be introduced.

AM2 External Surface Runoff Control

1. Clean surface runoff is diverted from areas affected by animal waste and spilt feed by diversion structures or drains.
2. The runoff from affected areas is directed to the runoff control system.
3. Diversion structures are designed to accommodate a 1 in 20 year recurrence interval storm having a duration producing the maximum runoff flow rate (a one hour figure will be acceptable).
4. Overflow runoff is dispersed before reaching any waterway.

A B C D

A B C D

A B C D

Bank diversion structures do not fill with sediment as quickly as drains. The diversion structures should be designed as banks or bunds rather than channels so that the likelihood of blockage is reduced.

Advice should be sought from a qualified drainage engineer.

All structures should be designed to facilitate cleaning with on-site or readily obtainable equipment.

AM3 Laneways

1. Feed trucks are able to deliver feed directly to feed troughs.
2. Cattle handling laneways provide for free movement of stock. Minimum width 6m except for 'cattle only' lanes which may be 4m in width.

A B C D

A B C D

Laneways should facilitate feeding with minimum spilling of feed.

If feed lanes are separate from laneways used for runoff drainage and feed lanes are kept clean, the drainage from feed lanes may be directed away from the pen drainage system.

APPROVED MEASURES - DESIGN AND CONSTRUCTION

Operational Specifications

Class

3. Laneways should allow all-weather access, be graded and have a consolidated surface.

A B C D

4. Laneways to have free drainage of runoff. Maximum longitudinal fall 6%.

A B C

AM4 Cattle Handling Yards

1. Yards and facilities, adequate for speedy trouble-free handling of cattle, are included in the feedlot layout.

A B C D

2. Yards have an all weather floor surface.

A B C D

3. Yards to be designed to meet animal welfare requirements.

A B C D

AM5 Water Supply

The water supply is adequate for stock watering and dust control

A B C D

AM6 Internal Pen Drainage Control

1. Maximum pen to pen drainage is less than 50% of total runoff.

A B C D

2. Pen to pen slope is less than pen to drain slope.

A B C D

Feed Storage and Preparation Facilities

Noise and dust may cause problems and should be considered in the design stage; however, separations required for odour control will control this problem.

These should be located in reasonable proximity to the feedlot pens to minimise unnecessary truck movements.

The minimum daily requirement for stock watering may be estimated at 5 litres per 50 kg live weight.

Additional water is needed for other purposes such as food preparation and dust control. It is estimated that an annual requirement is 24 megalitres per 1000 cattle.

Diversion Banks between pens are not recommended.

Pen to pen drainage is undesirable.

APPROVED MEASURES - DESIGN AND CONSTRUCTION

Operational Specifications

Class

Additional Information

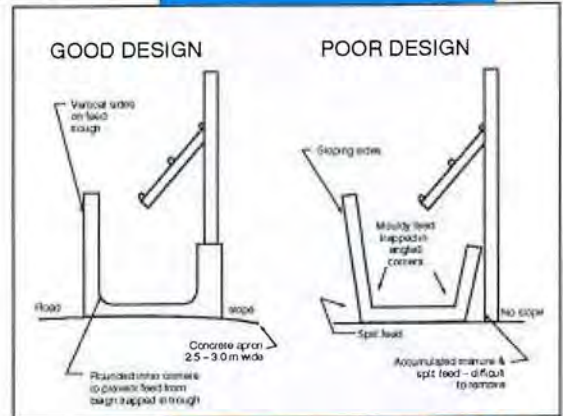
AM7 Feed Troughs

1. Feed spillage is minimized by appropriate trough design.
2. Troughs have fully enclosed bases, or are designed to allow adequate mechanical cleaning under troughs.

A B

A B

Feed Troughs constructed directly on the ground are preferable to prevent build up of manure and spilt feed under troughs.



AM8 Water Troughs

1. Water drained from the trough during cleaning is drained directly from the pen :
 - *by pipe or hose without wetting the pen floor
 - *by a prepared drain.
2. Water supply flow is adequate for maximum demand.
3. Water troughs are constructed with enclosed vertical sides and ends to prevent the accumulation of manure under the trough.
4. Drainage from the trough passes immediately into the feedlot drainage system without passing across the pen floor.

A

B

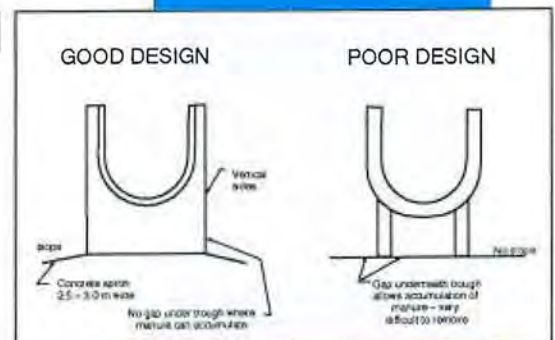
A B C D

A B

Troughs should be designed for easy cleaning.

Water troughs are required to have enclosed bases because continued wetness will result in a permanent odour source if manure can accumulate beneath the trough.

A



AM9 Fencing

There is minimum clearance of 350mm along the bottom of fences to allow mechanical cleaning.

A B C D

Fencing should be adequate for stock control without interfering with pen cleaning.

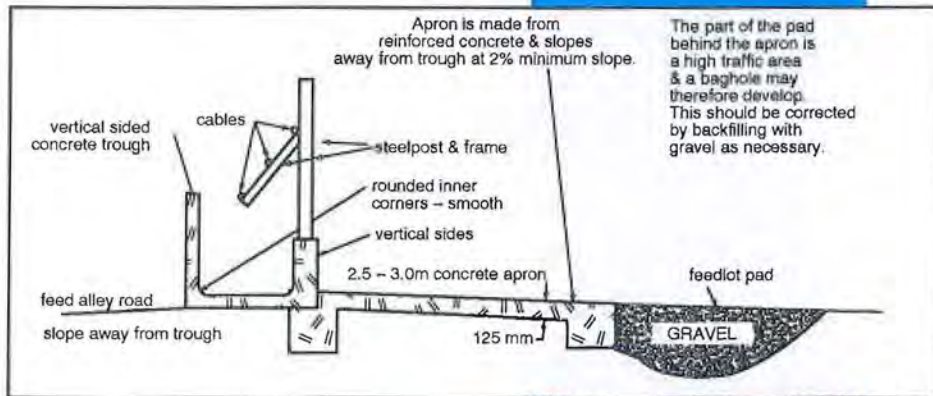
APPROVED MEASURES - DESIGN AND CONSTRUCTION

Operational Specifications

Class

AM10 Feed Trough Aprons

1. Feed trough aprons are designed to withstand the load of pen cleaning machinery. A B C D
 * Reinforced concrete is used A B
 * Reinforced concrete or compacted crushed rock is used. C D
2. Aprons extend a minimum of 2.5m clear of trough into the pen. A B C D
3. Aprons slope away from the trough. A B



AM11 Water Trough Aprons

1. Water trough aprons are designed to withstand the load of pen cleaning machinery. A B C D
 * Reinforced concrete is used A B
 * Reinforced concrete or compacted crushed rock are used. C D
2. Aprons extend a minimum of 2.5m clear of trough into the pen. A B C D
3. Water trough aprons extend around the end of the trough. A B C D
4. Water trough aprons slope away from the trough. A B C D

APPROVED MEASURES - DESIGN AND CONSTRUCTION

Operational Specifications	Class	Additional Information
AM12 Drains		
1. Drains have minimum fall of 0.4% and a maximum fall of 1%.	A B C D	Adequate slope to carry slurry from pens to settling area should be provided in those drains.
2. Drains accommodate a 1 in 20 year peak flow rate using the "Rational Method, Australian Rainfall and Runoff" at a non scouring velocity.	A B C D	On some sites 0.4% slope may be difficult to achieve. In such cases a lesser slope will be appropriate provided adequate measures are demonstrated to ensure the proper performance of the drainage system.
3. Any overflow from the drains that would otherwise escape from the feedlot site boundaries should be diverted to the runoff storage dam.	A B C D	The bottom width of the drains should be such that the on-site machinery can satisfactorily clean the drain.
AM13 Service Roads		
1. The feedlot site is serviced by internal roads adequate to carry the vehicle traffic generated by the feedlot.	A B C D	Guide Values per 1000 head: Feed trucks - about 4 per week Cattle trucks (double decker) - in - about 12-15 per draft - out - about 20-25 per draft.
2. Roads satisfy the requirements of Element 6.	A B C D	

ELEMENT 3 - ODOUR

Feedlots must be designed and operated so as not to produce any odour which gives rise to material detriment to any person (i.e. so as not to interfere with the normal use and enjoyment of life and property to an extent which is more than of a trivial or minor nature). Potential nuisance from odour is a function of several factors including:

- distance of receptor from odour source;
- sensitivity of receptor to odour;
- cattle numbers;
- climatic conditions;
- feedlot operation; and
- frequency, intensity, duration and offensiveness of odour.

Odour is produced from biological activity which occurs in the decomposition of manure, spilt feed and other organic matter.

Overall, a combination of design, management and regular cleaning and maintenance will reduce or virtually eliminate the risk of offensive odours.

Design will assist the reduction in odour potential by eliminating opportunities for odour generation. For example, having fully enclosed feed and water trough bases prevents a build up in spilt feed and manure in a difficult to clean location.

Where intensive animal industries are not sufficiently separated from sensitive land uses, amenity and quality of life in the adjacent area may be reduced due to odour, dust or noise, creation of a potential hazard, or aesthetically unpleasant due to physical aspects. Because it is not always possible to eliminate impacts on adjacent areas, it is unwise to permit land uses which would be sensitive to such reduced amenity to be located within the affected area. Any proposals for residential rezoning, urban development or other land uses which would increase the number of persons residing within the separation distances of a lawfully established feedlot should be consistent with the policy outlined in Section 5.

While management and design reduce odour generation, buffer distances are a necessary means of reducing the effects of emissions.

People who use land in particular ways have expectations of amenity that relate to that use. Residents, for example, expect higher standards of amenity than people at work in an industrial area.

If buffer distances are to be implemented effectively, the points between which the distance is to be measured must be clearly defined. At the "emitting" end, it will be the closest boundary of all facilities giving rise to air emissions. At the "receptor" end, it will be the boundary of any sensitive land use nearest the emission source.

OBJECTIVES – ODOUR

- O1 Protection from amenity-reducing off-site odour effects of cattle feedlots by recognising the need for a buffer separation.
- O2 Best practice emission control technology is used to ensure that routine emissions satisfy the requirements of State Environment Protection Policy - The Air Environment.
- O3 Provision of a guide to planners when considering the zoning of sensitive land use proposals near cattle feedlots.

ACCEPTED STANDARDS – ODOUR

The objectives will be satisfied where:

- AS1 No odour is discharged from any feedlot in such concentration and of such duration as may tend to be injurious to or adversely affect human health or welfare, animal life, vegetation, or property or as to interfere with the normal use and enjoyment of animal life, vegetation or property.
- AS2 The size of the feedlot is determined having regard to the distance from the proposed site to the nearest residential zone, township zone or group of five or more houses not located on a farm so as to ensure that no offensive odour is able to be detected by the residents within the zone or houses.
- AS3 The size of feedlots shall have regard to the distance to the nearest farmhouse not located on the site of the proposed feedlot so that no significant detriment is caused.
- AS4 A design ground level odour concentration of less than (1) one odour unit in a residential area as determined by EPA's Ausplume model with atmospheric conditions of:

- Wind direction towards receptor
- Wind speed 1 m/s
- Stability category F
- Mixing height 500m
- Terrain Flat, open

APPROVED MEASURE – ODOUR

The approved measure for odour is based on a combination of factors. The major variables are cattle numbers and the distance between the pens and manure stockpiles to the odour receptor sites.

For any given distance and cattle number, factors which will influence odour dispersal and, hence, the likelihood of an odour problem arising at the receptor sites, are rainfall, topography, vegetation and the nature of the receptor site. For example, a large town will be more liable to receive odour due to its larger area than a single house which will have a reduced probability for the same odour dispersal characteristics.

The following measure will meet the design objectives and accepted standards:

AM1 The formula used to determine feedlot separation distances and feedlot size in AM1 of Element 1 is utilised as the performance measure for odour control.

ELEMENT 4 – NOISE

Noise is unlikely to be a major problem except for residents nearby and in relation to truck movements.

The feedlot layout should optimise the distance between noisy machinery and cattle handling areas and any nearby farmhouses. Heavy vehicles entering or leaving feedlot premises before 6am and after 10pm may provide grounds for noise complaints. Truck access should be located away from nearby dwellings.

Advisory truck routes may be useful for minimizing the impact of truck noise on townships.

OBJECTIVE – NOISE

O1 Noise levels generated by the feedlot do not cause any material detriment to nearby residents or persons affected by transport of cattle and feed associated with the operation of the feedlot.

ACCEPTED STANDARDS – NOISE

The objective will be satisfied where:

- AS1 Location and design of all mechanical equipment including pumps, feed augers, and other equipment minimizes the likelihood of mechanical noise or vibration being identified off-site.
- AS2 The areas used for the loading and unloading of cattle and handling of cattle for veterinary or livestock management purposes are located to minimize the likelihood of any noise reaching beyond the site boundaries.
- AS3 Truck movements are regulated to minimize the impact on persons living along the route used by vehicles for the delivery and removal of cattle, grain and other goods.

APPROVED MEASURES – NOISE

The following is one way of satisfying the objective and accepted standards for this Element:

- AM1 Noise levels generated on the feedlot do not exceed the measures established in State Environment Protection Policy, Control of Noise from Commerce, Industry and Trade N1.
- AM2 Noise on adjacent properties from hammer mills, roller mills, grain elevators and screw conveyors used in the storage, transfer and preparation of stock feed do not exceed existing ambient background noise levels before 6am and after 10pm. Enclosure and efficient insulation may be required for feed preparation plant.
- AM3 Property access points and roads on the premises are located a minimum of 250m from neighbouring dwellings.
- AM4 All vehicles operating on-site and off-site have efficient exhaust mufflers.

ELEMENT 5 - WASTE STORAGE, TREATMENT AND USE

Feedlots produce large quantities of liquid and solid by-products through runoff from the feedlot area and manure from the cattle. These by-products must be disposed of and used in a manner that will not cause contamination of land and surface or underground water supplies nor cause offence to people. They can most beneficially be used in a manner that obtains the maximum benefit from the nutrients they contain.

The waste system should be designed to be simple and require minimal maintenance input. It shall be an integral part of the feedlot complex.

Factors to be considered in the design and operation of the waste management system include:

- Land slopes;
- Pen and laneway layout;
- Vehicle and stock movements;
- Drainage systems;
- Location of settling and storage ponds;
- Availability of areas with suitable soils for waste usage.

If not properly designed and maintained the waste system can be a major source of complaint and lead to enforcement proceedings.

OBJECTIVE – WASTE STORAGE, TREATMENT AND USE

- O1 No liquid or solid wastes from the feedlot shall be allowed to enter into any stream or watercourse, ground water or to contaminate any land so as to render it unfit for future farming activities.
- O2 The waste treatment system is designed and operated in such a manner as to minimise the likelihood of odour and to allow the maximum recovery of material from the waste stream.
- O3 Waste products are incorporated into a crop production system so that a balance between nutrients applied and nutrients removed through the crop is achieved.

ACCEPTED STANDARDS – WASTE STORAGE, TREATMENT AND USE

The objectives will be satisfied where:

Waste Management

- AS1 The drainage system is designed to accommodate the maximum runoff from pens in a 1 in 10 wet year and is capable of retaining the runoff from a 1 in 20 year 24 hour storm event using a runoff coefficient of 0.8 for the feedlot pens and associated works.
- AS2 Solid waste washed from the pens by stormwater runoff is removed by settling in terraces or basins.
- AS3 All pens, laneways and other areas used by cattle are regularly cleaned and the material stockpiled at a storage facility within a controlled drainage area.

Waste Use

- AS4 All waste is disposed of to land on-site or off-site in a manner which allows all nutrients to be incorporated into a production system.
- AS5 Nutrients, salts and water in the wastes applied to land are balanced by losses due to evapotranspiration and harvesting of crop product under crop production systems commonly used in the area.

The following meets the objectives and accepted standards:

In relation to the settling and disposal of liquid waste, there are two ways of meeting the objectives and accepted standards.

The first method involves the settling out of manure solids from the runoff and then collecting and storing the liquid effluent ready for irrigation. If this method is used, compliance with only AM1, AM2 and AM3 is required.

The second method involves the direct dispersal of liquid effluent to land after manure solids have been removed. This method can only be used for C & D class feedlots not exceeding 500 Standard Cattle Units. If this method is used, compliance with only AM1, AM2 and AM4 is required.

AM1 Settled Manure Volume

Manure is washed from pens during rainfall. It is necessary to remove as much of this as possible before runoff enters the holding pond. This is done in the settling pond or terrace.

The quantity of manure so collected is termed "The Settled Manure Volume" and this volume requires calculation to allow design of the settling facility.

Settled Manure Volume is provided in the sedimentation terrace or settling basin calculated using the following:-

$$V = (D \times M \times A_p \times F_s) \div 1000$$

V = storage volume (m³)

D = nominal pack depth (mm) from Table 4.5

M = proportion of manure lost during rain periods from Table 4.6

A_p = area of the pens (m²)

F_s = safety factor (1.25) to allow for variations in cleaning interval

The settled manure volume required is estimated using two components:

- A component to account for the amount of moisture likely to be in the manure pack at the time of rain, reflected in D;
- A component to account for the slope of the pad and for the amount and intensity of rainfall that will fall on the manure pack, reflected in M.

For the purpose of determining the depth of manure used in calculating the settled manure volume the following applies:

Table 4.5 Nominal Pack Depth (mm)

Class	Nominal Pack Depth (mm)
C&D	200
A&B	100

The above assumes a stocking density of 10m²/head and that the rate of deposition of manure is proportional to the stocking density. Consequently, with a different stocking density, the cleaning interval may be altered to maintain the nominal pack depths for the various categories.

The second component of the settled manure volume calculation relates to the rainfall intensity usually experienced in the region to the slope of the pen.

The steeper the pen and the higher the likely rainfall intensity, the more manure will be washed off as indicated in Table 4.6.

Table 4.6 Proportion of Manure Lost

P	Proportion of Manure
mm/hr	(Slope: 0-12%)
20	0.2
25	0.25
30	0.3
35	0.4
40	0.5

If the settling of the manure in the pen runoff is carried out in a deep settling basin (greater than 1m) rather than in a terrace or shallow basin, then a stilling volume determined in accordance with AM2, below, needs to be provided to allow that settling to occur. Generally terraces are shallow and the provision of a 200mm freeboard above the settled manure volume will provide the necessary stilling.

AM2 Settling Basin Stilling Volume

If manure sediment is to be settled in a sedimentation tank, then the stilling volume above the settled manure is calculated as follows:-

$$S = P \times T \times Ac \div 1000$$

S = sedimentation tank stilling volume (cubic metres)

P = rainfall intensity for a 1 hour, 1 in 20 wet year storm (mm/hr)

T = Detention time (0.5 hr) (This is the time water takes to pass through the settling tank.)

Ac = Catchment area served by the tank (m²)*.

*Ac is the total area of the catchment. It includes both pens and lanes and any other areas where the runoff is directed into the disposal system.

The total volume required for a settling basin is the sum of sedimentation tank stilling volume (S, above) and the settled manure volume (V, from AM1 above).

AM3 Runoff Storage

Runoff leaving the manure settling system is directed to a runoff storage dam, having the volume Q (calculated below), prior to irrigation dispersal or to direct dispersal in restricted situations.

The runoff storage capacity provided in the retention pond is calculated as follows:-

$$Q = [(A_p + A_b) \times (R_f \times R_o)] \times F_s + [A_s \times R_f] \div 1000$$

Where:

Q =	Volume (cubic metres)
A _p =	Area of pens (m ²)
A _b =	Balance catchment area (m ²)
R _f =	1 in 10 year annual catchment yield data, or 80% of the 1 in 20 year 24 hr rainfall event, whichever is the greater.
R _o =	Runoff coefficient:
	greater than 600mm per annum = 0.4
	501 to 600mm = 0.35
	400 to 500mm = 0.3
	less than 400mm = 0.25
F _s =	Safety factor (1.25)
A _s =	Area of storage dam.

AM4 Runoff Dispersal Area

Requirements for runoff dispersal are the same for all feedlot classes, and assume on-site dispersal without pollution of surface or groundwater resources. Any proposal to discharge waste to waters of the State following treatment would be subject to EPA approval.

Direct dispersal of runoff on to land following manure settling is restricted to Class C and D feedlots not exceeding 500 SCU. Considerable caution should be exercised where this approach is proposed in higher rainfall areas.

Dispersal is not permitted in declared special water supply catchment areas.

The net area required for the direct dispersal of pen runoff, as an alternative to irrigation, is determined as follows:-

$$A_d = A_c \times 5 \times (R_f \div 400)$$

Where:	A _d = Dispersal area (ha)
	A _c = Area of catchment (ha) (ie the controlled drainage area)
	R _f = 1 in 10 year annual rainfall occurrence (mm).

Specifications for this type of system concentrate on land preparation so that runoff does not reach the property boundary, even during prolonged wet weather, without undergoing sufficient dispersal to render the discharge environmentally acceptable.

APPROVED MEASURES - WASTE STORAGE, TREATMENT AND USE

Operational Specifications	Class	Additional Information
<p>AM5 Waste Stockpile</p> <p>1. External runoff is diverted from the stock pile. It will normally be part of the controlled drainage area of the feedlot. If a separate stock pile area is used it is protected by diversion banks and the runoff from the stockpile area has an acceptable disposal system.</p> <p>2. The floor of the stock pile is compacted and sealed to prevent the seeping of moisture into the soil below the stockpile.</p>	<p><input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D</p> <p><input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D</p>	<p>The manure must be dry before incorporating into stockpile.</p> <p>High moisture content at stockpiling can cause auto-ignition with consequent fire control problems and serious odour emission. Manure stored at the desired moisture content in a properly made stack can be stored for extended periods to allow for correct agricultural use.</p>
<p>AM6 Solid Waste Use</p> <p>1. Solid waste is spread on to crop or pasture land in accordance with the capacity of agricultural productive activity to take up waste product.</p> <p>(a) Less than 1000 SCU</p> <p>For feedlots of less than 1000 SCU, in the absence of a nutrient balance statement, available land area is a minimum of 1 hectare for 5 SCU.</p> <p>(b) Greater than 1000 SCU</p> <p>For feedlots of greater than 1000 SCU the area is determined by the preparation of nutrient and salt balance statements for all areas used for waste product application.</p> <p>2. Solid waste is spread on to land which is above the 1 in 20 year flood line.</p>	<p><input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D</p> <p><input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D</p> <p><input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D</p>	<p>It is necessary to have sufficient land available to allow for the sustainable use of waste product. This should be on agricultural land with a systematic cropping program. The area needed should be determined by preparing a nutrient and salt balance statement for the land in question and the proposed cropping system. The figure of 5 SCU/ha is an average figure based on grass pasture.</p> <p>Where available land on the feedlot site is insufficient manure is to be used in productive agriculture on other properties. Details of such arrangements must be provided and supported by suitable agreements with the property owner(s).</p> <p>A system of cropping or pasture production involving the harvesting and removal of produce should be used to achieve maximum nutrient usage. Recommended options are:</p> <ul style="list-style-type: none"> - legume cropping - fodder cropping - cereal production.

APPROVED MEASURES - WASTE STORAGE, TREATMENT AND USE

Operational Specifications	Class	Additional Information
AM7 Monitoring.		
1. Soil testing of all areas used for waste use is conducted at the commencement of the feedlot and at 5 year intervals thereafter or as otherwise required.	A B C D	Differing soil types can mean that there may be considerable variation in the disposal areas needed for similar sized feedlots on various sites. All lands being continuously used for the disposal of feedlot wastes shall be subject to a soil nutrient monitoring program to ensure that the application of manures is not causing land degradation and is assisting in the achievement of optimum crop yields. The terms of this monitoring shall be determined at the time of granting feedlot operational approval.
2. Monitoring of crop production is undertaken annually.	A B C	
3. Surface water monitoring of any waterway within 1 km of the feedlot is undertaken upstream and downstream of the feedlot.	A B C D	
AM8 Runoff Irrigation.		
1. The area of irrigation is determined on the basis of nutrient balance, salt balance and water balance. Guidelines for Waste Water Irrigation (Publication No. 168) available from the EPA provide one basis for the calculation of the area required; or	A B C D	If irrigation water is available to dilute the feedlot runoff, this will enhance the value of the runoff water and assist in its safe disposal. If water is being disposed of by flood irrigation it will be necessary to have tail drains and a holding pond to allow overflow water to be collected and returned to the storage pond or reused immediately.
2. A standard of 1 hectare per 80 SCU is adopted for the irrigation of waste water.	A B C D	
3. The area used is NOT the same area as that used for solid waste use.	A B C D	
AM9 Runoff Dispersal Systems		
1. As an alternative to irrigation, for feedlots of less than 500 SCU, a runoff dispersal system is developed consisting of a prepared area of land, of suitable slope and physical characteristics, which will disperse feedlot runoff. The area of land required, Ad, is as calculated in AM5 above.	C D	

APPROVED MEASURES - WASTE STORAGE, TREATMENT AND USE

Operational Specifications	Class	Additional Information
2. The area should be prepared so that the overland flow does not concentrate into flow channels.	C D	Additional Information
3. This should be achieved by using "keyline" or contour cultivation technique or cross-gradient ripping in conjunction with small windrows formed on the "keyline".	C D	
4. The dispersal area shall be checked and reworked if necessary each year to preserve its capacity	A B C D	
5. Dispersal systems should not be in the immediate catchment of a declared special water supply or in areas of possible underground water recharge.	A B C D	
AM10 Avoidance of Groundwater Contamination		
1. Soil under feedlot pens is compacted, so as to be impermeable after addition of modifiers, and should be compacted to 90% of maximum field compaction using engineering equipment.	A B C	
2. Manure collection areas and drains should be treated and compacted so as to be impermeable.	A B C D	
3. Retention ponds in permeable soils should be lined with clay or other suitable material to reduce permeability.	A B C D	
4. Manure stockpile pads on permeable soil should be treated and compacted.	A B C D	

APPROVED MEASURES - WASTE STORAGE, TREATMENT AND USE

Operational Specifications	Class	Additional Information
AM11 Waste Management Plan		
<p>A waste management plan is provided showing:</p> <ul style="list-style-type: none"> * all areas used for on-site waste use, * rates and frequency of application, * nutrient, salt and water balance calculations for all areas, * any arrangements for off-site waste use, * a program for cropping or other agricultural production activity on the areas used for waste product application, * a monitoring program in accordance with Appendix 3 prepared and approved by the Agriculture Victoria and Department Conservation and Natural Resources, and * management arrangements. <p>The waste management plan includes a communication strategy for the immediate reporting of any failures to the relevant authorities.</p> <p>Appendix 3 provides an outline of the requirements for a waste management plan which is one way of satisfying this measure.</p>	<div style="border: 1px solid black; display: inline-block; padding: 2px;">A</div> <div style="border: 1px solid black; display: inline-block; padding: 2px;">B</div> <div style="border: 1px solid black; display: inline-block; padding: 2px;">C</div> <div style="border: 1px solid black; display: inline-block; padding: 2px;">D</div>	<p>Areas outside of the ownership or control of the feedlot operator which are used for waste use must be included in the waste management plan.</p> <p>It is recognised that the requirement of waste usage on land outside the feedlot site will not generally arise for 2 to 3 years after commencement of operations. It is expected that proponents will demonstrate the availability of suitable sites; however, the Waste Management Plan will need to be updated if changing ownership or agricultural practices affect the proposals contained in the original Waste Management Plan.</p>
AM12 Salinity		
<p>1. Regard is had to salinity of ground water in preparing the waste management plan.</p>	<div style="border: 1px solid black; display: inline-block; padding: 2px;">A</div> <div style="border: 1px solid black; display: inline-block; padding: 2px;">B</div> <div style="border: 1px solid black; display: inline-block; padding: 2px;">C</div> <div style="border: 1px solid black; display: inline-block; padding: 2px;">D</div>	<p>Factors influencing the salt budget will be:</p> <ul style="list-style-type: none"> * feed salt content * salt level in water supply * soil conductivity
<p>2. Salt levels in feed are set having regard to animal salt requirements, and salinity of drinking water.</p>	<div style="border: 1px solid black; display: inline-block; padding: 2px;">A</div> <div style="border: 1px solid black; display: inline-block; padding: 2px;">B</div> <div style="border: 1px solid black; display: inline-block; padding: 2px;">C</div> <div style="border: 1px solid black; display: inline-block; padding: 2px;">D</div>	

APPROVED MEASURES - WASTE STORAGE, TREATMENT AND USE

Operational Specifications	Class	Additional Information
AM13 Salt Budget		
1. A salt budget is developed for all pasture disposal areas.	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	
2. Reference is made to a Salinity Management Plan if one exists for the area in which the feedlot is located.	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	
AM14 Disposal of Animal Carcasses		
1. Dead animals are disposed of in a pit of sufficient depth that there is not less than 1m of soil above the carcass or are disposed of off-site in a manner approved by the responsible authority.	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	
2. Soil conditions are of a nature that no seepage to groundwater will occur.	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	
3. There is a plan for the disposal of animal carcasses in the event of large scale death as a result of disease or other causes.		

ELEMENT 6 - TRAFFIC AND PARKING

This element covers vehicle movement to and from the site and the provision of accommodation for stationary vehicles on site.

Access to the site must be designed so that there is no interference with the function of State Highways and Main Roads and so that there is minimal off-site impact on adjoining residents.

For some sites, acceleration and deceleration lanes may be required to cater for truck movements.

Contact should be made with the local council at an early stage to determine access and road layout requirements and to identify whether Vic Roads approval is required.

OBJECTIVES – TRAFFIC AND PARKING

- O1 Efficient operation and function of arterial and local roads and appropriate access to the site.
- O2 Sufficient and convenient parking for employees, visitors, delivery and service vehicles.
- O3 Sufficient area set aside within the site to accommodate all vehicle movements associated with the delivery of cattle and goods to and from the premises.
- O4 Detrimental impacts of vehicle accommodation and access on the amenity of nearby residents and population centres is minimised.

ACCEPTED STANDARDS – TRAFFIC AND PARKING

The objectives will be satisfied where:

Parking on Site

- AS1 Provision is made for parking on site for trucks and cars. A car park area is provided for staff and visitors to the feedlot.
- AS2 Parking for trucks is provided in order that trucks do not have to queue along the access driveway during any high volume movement periods. An area with sufficient turning circle for articulated vehicles (including B-doubles and road trains, where applicable) is provided adjacent to the cattle loading docks and the area where stock feed is brought into the area.

Access and transport routes

- AS3 Access to the site is provided from an arterial road or semi-arterial road which is constructed to a standard to take articulated vehicles. Access should only be provided from a private street or local road where it is not practicable to provide access from a main or secondary arterial.

(Where access is to be provided from other than a main or secondary arterial road, additional road works may be required to ensure no deterioration in pavement and sufficient road width for truck turning movements).

- AS4 Vehicle routes should avoid local areas of high residential population. The routes should avoid nearby townships and other urban settlements. Access to the site should be located at a point in excess of 250m from any nearby dwellings not located on the feedlot.

APPROVED MEASURES – TRAFFIC AND PARKING

The following provide one way of meeting the objectives and accepted standards:

AM1 Access

The access design has been approved by Vic Roads, or the responsible authority.

AM2 Driveways and Access Roads

Driveways and access roads are not less than 6m wide; and 9m wide where truck parking is provided parallel to the roadway.

AM3 Loading Ramp Location

The cattle loading ramp is sited to allow direct truck areas clear of other vehicle movements and the holding area for waiting trucks where multiple truck movements are likely.

AM4 Surface Treatment

Car and truck spaces and access roads shall be formed, defined and drained so they can be used in accordance with the plan and are surfaced with:

- an all weather seal; or
- crushed rock;

and are drained to stormwater runoff areas with culverts where necessary.

AM5 Parking

Cattle feedlots have a minimum of:

- one car space per employee plus three visitor car spaces;
- one truck loading bay;
- one truck parking space plus one truck parking space per 5000 SCU for cattle trucks; and
- one truck parking space for feed trucks.

AM6 Maintenance

The surface is maintained to allow all weather access.

ELEMENT 7 - LANDSCAPING

Landscaping plays an important part in softening the visual impact of the feedlot.

Landscaping should not be located in the area of the pens and associated works as any shade cast by vegetation is likely to lead to wet spots on the pen floor and related areas.

Belts of landscaping should be provided around the entire area which is used for the feedlot with a mixture of local species being selected to provide a heavy visual screen and inclusion of species which will mature into taller trees where the feedlot works area is visible from roads, other public areas and adjoining properties.

Where possible, existing trees should be retained and incorporated into the design of landscaping.

Major plantations assist in lowering the water table and help to reduce any seepage out of site.

The landscape design and species selected should be low maintenance and not require further watering following the initial planting period and the first summer season.

OBJECTIVES – LANDSCAPING

- O1 A visual screen to the major buildings, handling area and pens from surrounding properties and roads.
- O2 Assistance with the takeup of any waterborne nutrients that have escaped from the waste system.

ACCEPTED STANDARDS – LANDSCAPING

The objectives may be achieved where:

- AS1 An area around each appropriate side of the feedlot works area is landscaped to provide a visual screen from roads, public areas and nearby residences.
- AS2 Trees and other vegetation are located downslope from the feedlot works area in a location suitable to assist in filtering of any water seepage.
- AS3 Major existing trees and other vegetation are to be retained wherever practicable.
- AS4 The landscape design should utilise local species and be of a low maintenance approach.

APPROVED MEASURES – LANDSCAPING

The following is one way of satisfying the objectives and accepted standards:

- AM1 Landscape strips of not less than 30m in width are located not closer than 20m to the perimeter fence of the feedlot works area.
- AM2 Where feed and service buildings are located separately from the feedlot works area and are visible from outside the site, suitable screen landscaping is provided.
- AM3 Access roads to the feedlot are provided with either boulevard style planting or suitable random planting along both sides.
- AM4 A landscape plan is approved by the responsible authority.
- AM5 Landscaping is maintained and any dead or diseased plants are replaced.

ELEMENT 8 - OPERATION AND MANAGEMENT

The operation and management of a cattle feedlot has a critical bearing on whether or not environmental problems arise. Operational standards are to be specified and adopted for each feedlot related to its class and local circumstance.

OBJECTIVE – OPERATION AND MANAGEMENT

- O1 Circumstances leading to odour production and other detriment due to the operation of the feedlot are avoided.
- O2 Appropriate operations and maintenance related to the class of feedlot.

ACCEPTED STANDARDS – OPERATION AND MANAGEMENT

The objectives will be met where:

- AS1 The frequency of cleaning is sufficient to ensure that the feedlot meets the requirements of Element 1 and Element 4.
- AS2 Standard of maintenance and operation of the waste usage system employed under the Waste Management Plan do not lead to soil degradation or pollution off-site and to any material detriment due to odour or other cause.

APPROVED MEASURES - OPERATION AND MANAGEMENT

The objectives and approved standards will be satisfied where:

Operational Specifications	Class	Additional Information
AM1 Feeding Out and Watering		
1. Feeding out equipment is operated to minimise spillage.	A B C D	Fresh clean water is essential to promote maximum intake by cattle which is needed for welfare and optimum performance. Troughs should be cleaned as frequently as is necessary to maintain them in a clean condition. Water troughs well separated from feed troughs do not foul as readily as those close by. It is preferable to locate water troughs at the opposite end of the pens from the feed troughs.
2. Feed residues are removed from the trough at least weekly.	A B C D	
3. Water troughs and float valves are maintained to minimise overflows and spillage	A B C D	
4. Disposal of drainage water from the water trough during cleaning is done without wetting the pad surface.	A	
5. Disposal of drainage water from the water trough during cleaning is done with minimum wetting of the pen surface.	B C D	
6. Water troughs are located adjacent to drains.	B C D	
AM2 General Routine Cleaning and Maintenance		
1. Spilt feed is cleaned:		
weekly	A	
at each pen cleaning	B	
yearly	C D	
2. Wet patches are eliminated:		
weekly	A	
monthly	B	
at each pen cleaning	C D	
3. Potholes in pens are repaired:		
weekly	A	
monthly	B	
six monthly	C D	

APPROVED MEASURES - OPERATION AND MANAGEMENT

Operational Specifications	Class
4. Cleaning under fences is carried out:	A
monthly	B
quarterly	C D
at each pen cleaning	
5. Drainage channel maintenance is undertaken:	
after rainfall	A
quarterly	B
annually	C D
immediately after damage	A B C D
6. Diversion banks and dam wall maintenance is undertaken:	
after rainfall	A
quarterly	B
six monthly	C D
immediately after damage	A B C D
7. Settling area maintenance is undertaken:	
after rainfall	A
quarterly	B
six monthly	C
8. Retention pond or dispersion area maintenance is conducted annually, prior to winter.	A B C D
9. Pen cleaning by removal or mounding is carried out at intervals given as follows.	A B C D

Table 4.7.
Manure removal interval (weeks)

Class	Stocking Intensity (m ² /head)		
	10	15	20+
A	7	10	14
B	14	20	26
C	21	30	42
D	26	38	52

For Class C and D feedlots, where the cleaning interval is less than the period that pens, are occupied by one draft of cattle, removal of pack manure by scraping and mounding or pen cleanout should only be carried out when weather conditions are such that damage to the pad will not occur and in regions of the pen (mainly near feed and water areas) where there is sufficient manure pack to scrape.

APPROVED MEASURES - OPERATION AND MANAGEMENT

Operational Specifications

Class

AM3 Mounding

1. Mound area is no more than 25% of pen area. A B C D
2. Mounds are shaped to a maximum depth of 2m with side batters of a slope of not greater than 1:4. A B C D
3. Mounds are aligned in the downslope direction. A B C D
4. Mounds are located so as not to interfere with pen drainage. A B C D

Mounding of manure involves the scraping of manure into mounds at intervals between full pen cleaning. Manure must be reasonably dry before mounding or odour problems will occur. The net effect of mounding is to reduce the depth of manure and consequently reduce the odour potential during and after wet weather.

Mounding allows manure to decompose and reduce in volume by up to 50%.

The mound is compacted by cattle action and tends to shed water and provides a dry stand area. Mounded manure is more difficult to excavate for removal if it has been mounded for some time.

AM4 Pack Removal

1. The pad, a minimum 50mm layer of compacted soil/manure mix, is maintained. A B C D

The pad is a layer of soil and manure mixture which forms on the pen surface. It should be maintained at a depth of not less than 50mm. It becomes a very dense impermeable layer and provides a barrier against the movement of contaminants into the soil and water tables below the feedlot.

THE PAD MUST NOT BE DISTURBED DURING CLEANING.

APPROVED MEASURES - OPERATION AND MANAGEMENT

Operational Specifications

Class

2. Light ripping of the pack is undertaken, if required, prior to pack removal.

A B C D

3. The pack is removed in a manner which does not damage the pad.

A B C D

4. Grading of the remaining pad following pack removal is carried out.

A B C D

AM5 Pad Renovation

1. Pen floor preparation is undertaken for Class D and C feedlots. Any necessary repairs should be made to restore the pad to the original pen floor specification following pack removal.

A B C D

AM6 Manure Stockpile

1. Stockpile areas are protected from rainfall runoff by diversion banks or drains.

A B C D

2. To avoid auto-ignition within the pile, the manure is dry (maximum 25% moisture) before stockpiling.

A B C D

3. The surface of the stockpile is graded to avoid rainwater ponding.

A B C D

4. The stockpile area is drained.

A B C D

The pack is the layer of generally loose manure which collects above the pad and is to be removed during cleaning. The depth varies according to moisture content and the time since previous cleaning. It is sometimes necessary to lightly rip this pack during cleaning.

Implements such as a box scraper or self loading scraper with teeth removed are most suited to pad cleaning. It is more difficult to maintain a good surface with a bobcat or front end loader.

It is recommended that the pad be maintained at a thickness of a minimum 50mm. With time the pad thickness will gradually increase. Occasionally it will be necessary to reduce the thickness to about 50mm.

The separations specified in this Code assume that the pen floor has been prepared by compaction and grading to aid drying and to avoid pot-hole formation.

APPROVED MEASURES - OPERATION AND MANAGEMENT

Operational Specifications

Class

AM7 Disposal of Runoff

1. All runoff is disposed of in accordance with the approved Waste Management Plan.

A B C D

2. Only managed irrigation systems must be used to apply collected runoff water.

3. The rate of application and volume applied allows no surface runoff to occur and no percolation into ground water.

A B C D

4. The volume of water applied does not exceed the capacity of soil or crop to assimilate the organic and inorganic contents of the water.

A B C D

5. The retention pond is lowered to near bottom water level by the anticipated beginning of winter.

A B C D

Note: A maximum irrigation depth of 25mm per application is suggested.

AM8 Manure Disposal

1. Manure is spread on to pasture, crop or fallow land in accordance with the approved Waste Management Plan.

A B C D

2. The rate of application is in accordance with the specification in Element 5.

A B C D

AM9 Vermin and Weed Control

1. A program of vermin control is maintained.

A B C D

2. A program of weed control is maintained to prevent the propagation and spread of weeds within the feedlot and from manure usage.

A B C D

AM10 Cessation of Operations

1. When feedlot operations cease, all waste material and compacted manure is removed and the site restored to pasture.

A B C D

MAINTENANCE OF STANDARDS - AUDIT REQUIREMENTS

All feedlots are required to provide independent audit statements which verify compliance with the construction and operational requirements of the Code to ensure that the approved standards are maintained. Such audit statements will be provided to the responsible authority and Agriculture Victoria, with the cost of preparation and submission being met by the feedlot operator.

Three types of audit statements are required, viz.

- i. Pre-operation audit: prior to beginning operation of a new feedlot or an extension to an existing feedlot, an audit statement indicating that the provisions of the Code in relation to construction and organisational requirements have been met.
- ii. Annual audit: an annual audit statement demonstrating compliance with the design and operational requirements of the Code.
- iii. Additional audit: where in the view of the responsible authority there is reasonable evidence to believe that a feedlot is not complying with the Code, additional audits may be required.

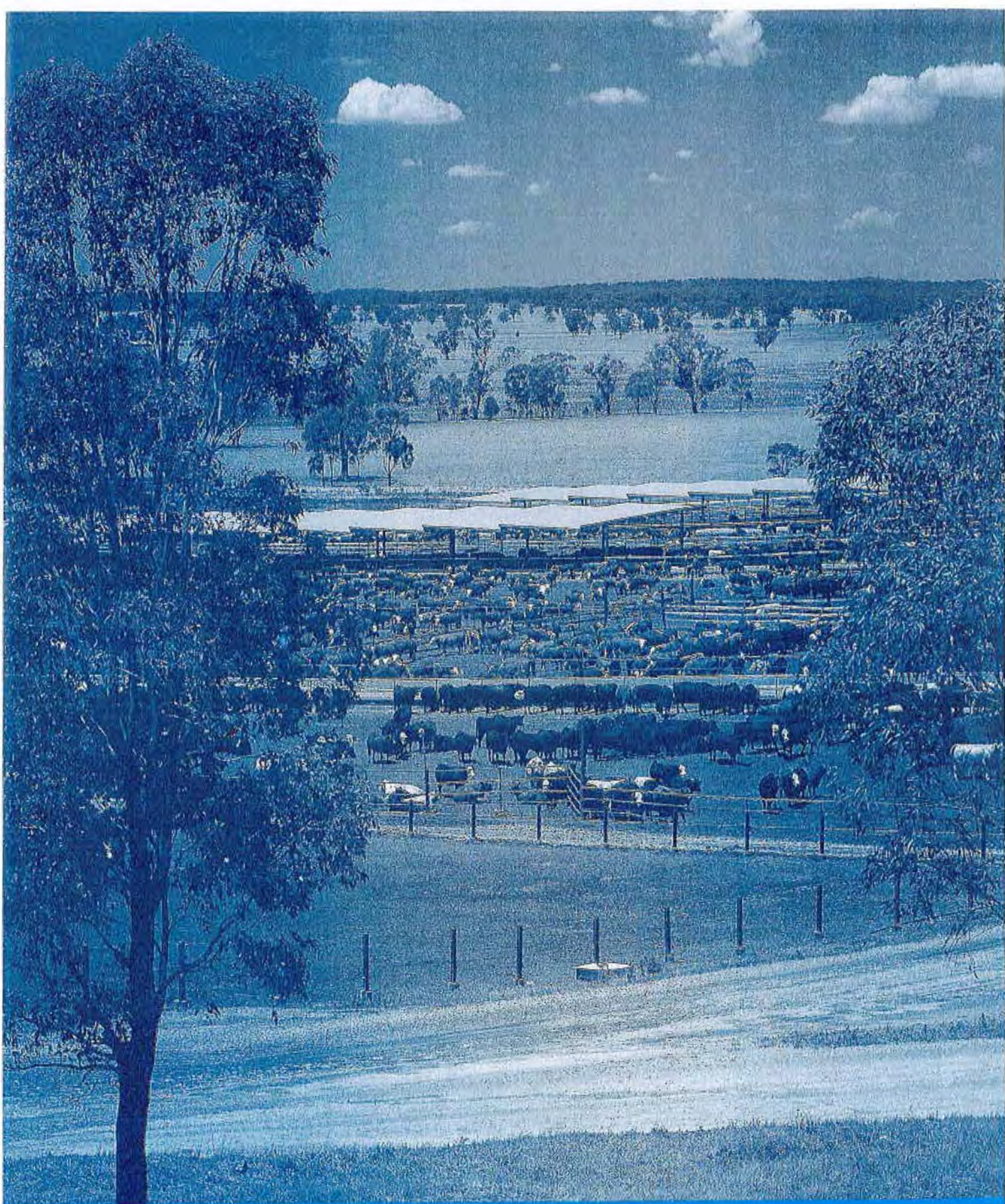
Accreditation under the National Feedlot Accreditation Scheme (NFAS), where the requirements of the Victorian Code for Cattle Feedlots are embraced in the feedlot operators NFAS quality assurance manual, will fully meet the audit requirements of the Code if copies of the environmental compliance section of individual audit statements under the NFAS are supplied to the responsible authority and Agriculture Victoria.

All audit statements must be prepared by an auditor approved for the purposes by the Minister for Agriculture. Such auditors will usually be accredited environmental auditors under Victorian EPA legislation or the NFAS.

A suitably qualified and experienced person may be nominated for approval by Agriculture Victoria.

In the event of non-compliance, proceedings may be brought in the Administrative Appeals Tribunal of Victoria.

Page 60 Deliberately blank



PLANNING CONSIDERATIONS

STRATEGIC PLANNING CONSIDERATIONS

One of the duties of a planning authority under the Planning and Environment Act is to provide sound, strategic and coordinated planning of the use and development of land in its area. This means that a local council, whether considering a proposal for the establishment of a feedlot or the expansion of urban areas where there is an existing feedlot, should (inter alia) consider:

- (i) the long term future for land in the proximity of the feedlot;
- (ii) the impact on existing urban areas, isolated rural houses, etc; and
- (iii) the likely use and development of the intervening land between the feedlot and an urban area.

The local council that may be desirous of having a feedlot establish in its municipality should prepare a strategic land use plan for the area in which the feedlot could be located.

The preparation of a strategic plan has two main benefits:

- (i) to protect the future development of land within the separation areas determined in Element 1 of the Code; and
- (ii) to protect the feedlot, once established, from encroachment by uses that may affect the operation of the feedlot.

REZONING OR SUBDIVISION NEAR FEEDLOTS

The separation distances between existing feedlots and dwellings or urban areas which are required under this Code should be maintained when considering the establishment of a new urban or rural residential zone near an existing feedlot or any application to subdivide land near an existing feedlot for residential or rural residential purposes.

Any reduction in separation distances which might result from new dwellings being built closer to a feedlot established under the Code should only be approved on the basis that:

- (i) there are sound planning reasons for the distances to be varied, and
- (ii) the impact of the feedlot on the potential new dwellings will be no greater than if the original separation distances were maintained.

Where existing zoning will allow further subdivision near a feedlot, it may not be possible in the future to adhere to the required separation distances. In this case, the responsible authority should ensure that any subdivision proposal will be designed to minimise the impact of the feedlot on potential new dwellings.

The onus is on the applicant to satisfy the responsible authority why any change from the separation distances required under Element 1 of this Code should be granted.

There are a variety of planning scheme provisions that apply to individual lots in rural areas. In many cases there is the potential for conflict should the owner of a vacant allotment situated very close to a feedlot decide to build a new home. The potential for conflict centres around odours, noise and visual intrusion impinging upon the new home dweller to a greater extent than may have been anticipated.

With sufficient warning and adequate advice, the new resident could take steps to minimise any adverse impacts by such measures as:

- siting the home further away from the feedlot;
- the use of vegetation to assist in odour dispersal and visual screening;
- siting the dwelling up slope from the feedlot.

When any proposal is being examined which will allow increased housing within the separation distances required by Element 1 of this Code for an existing feedlot, the possible impact of the feedlot on potential new dwellings should be considered in the following way:

- (a) The planning authority or responsible authority should not support any application for rezoning of land which would establish:
 - (i) a new urban zone within the separation distance of any lawfully existing feedlots or feedlots approved under this Code or previously approved;
 - (ii) a new rural residential zone with lots of 4 ha or less, within the separation distance of any lawfully existing feedlots or feedlots approved under this Code;
 - (iii) the possibility of a new dwelling being built within the separation distance of any existing feedlot(s).
- (b) The authority should ensure that, where subdivision of land near a feedlot is permitted under existing planning controls, any proposed subdivision for residential development shall be designed in a way that minimises potential impact on new dwellings from the feedlot.
- (c) The development of a new dwelling within the vicinity of any existing feedlot or the site of a feedlot approved under this Code or previously approved should be controlled to ensure measures are considered to minimise the potential adverse effects of such a location.
- (d) The authority should amend planning controls to make the development of any proposed new dwelling in a rural zone within the separation distance of an existing or approved feedlot subject to conditions. These conditions should require the applicant to demonstrate that measures such as house siting, setback, design, and use of physical barriers and screen plantings, have been incorporated to minimise any potential adverse effects of the location.
- (e) The applicant for any residential subdivision, rezoning or use or development of a dwelling within the separation distance of a feedlot must satisfy the planning authority or responsible authority as to the suitability of the site having regard to the location of the feedlot.
- (f) Planning authorities should prepare and maintain with their planning scheme maps, maps showing the separation distance for all feedlots approved within the area affected by the planning scheme.

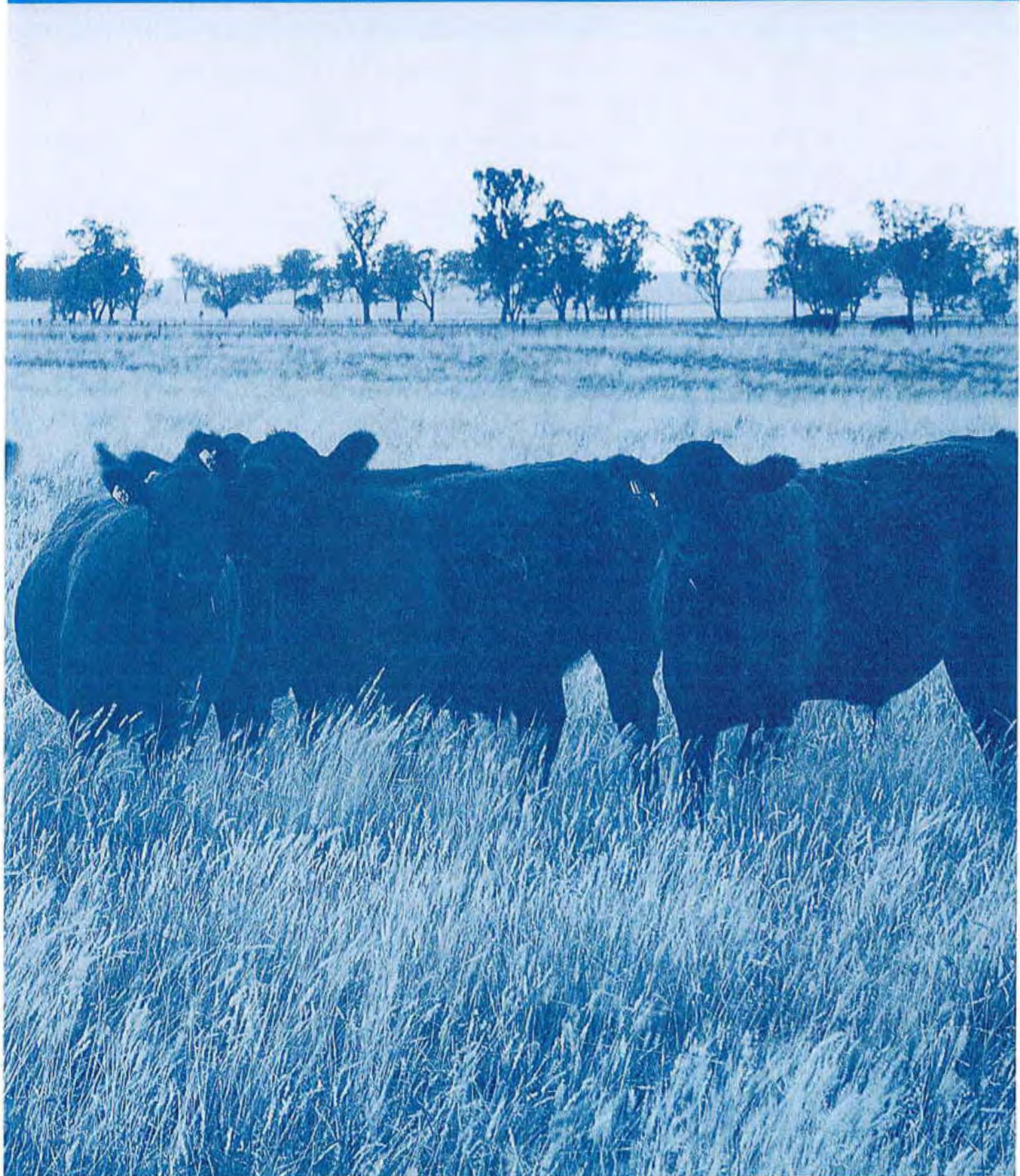
The provisions of Sections 6(3), 6(4) and 6(4A) of the Planning and Environment Act apply to the existing use and development of land, buildings and works. These sections of the Act have special relevance to how an existing feedlot may continue to operate or for the expansion of a feedlot.

Feedlots which have been lawfully established prior to the introduction of the Code may continue to operate in conformity with their previous lawful operations. These rights are referred to as "non-conforming use rights".

Proponents, councils and other interested persons are advised to check the above sections of the Act when considering the impacts of the Code on existing feedlots.

In some situations an existing feedlot could be what is referred to as a "lawful non-conforming land use" and have certain rights under Section 6 of the Act. It is advisable in dealing with situations that involve "non-conforming use rights" that professional advice is obtained on these matters.

A P P E N D I C E S



PRELIMINARY SITE EVALUATION CHECK LIST

The check list set out below indicates the decision sequence and the order of consideration which proponents should give to site selection. It is a summary only and does not replace the detailed calculations required under the Code.

1. Is a feedlot permissible under the relevant planning scheme? Yes / No
(Check with local Council).

2. Is the proposed site in a declared catchment or near (ie within 800m) of a supply takeoff for potable water? Yes / No

3. Area of proposed site. ...ha

Calculate available area of site. (ie. total site less: areas within 200m of any watercourse; areas committed to other farm buildings and adjacent land; areas below 1 in 100 year flood level; and, areas containing natural vegetation.)

4. No. of cattle initially proposed by operator.

5. Check distance to receptors (Refer Element 1)
 - nearest isolated house not on the site
 - nearest township
 - nearest other sensitive uses (rural residential, residential zoning)

6. No. of SCU able to be accommodated under appropriate class determined by using the formula in Element 1. (Refer table 2.1)

7. IS THE CATTLE NUMBER ABLE TO BE ACCOMMODATED SUFFICIENT?
 - NO - Test using a higher class (go to 6 above).
 - If Class A has been adopted and the cattle number is too low, identify alternative site (start again at 1. above).
 - YES - proceed below.

8. Calculate approximate total area of feedlot pens, lanes, solid waste storage and ancillary areas needed (Cattle no. x density (m²/head) x 1.5) ...ha

- | | |
|--|----------|
| 9. Area for solid waste disposal
(Standard Cattle Units x 0.2 hectares) | ...ha |
| 10. Area of lagoons etc.
(Refer AM 9 of Element 5) | ...ha |
| 11. Area for irrigation of liquid waste
(Refer AM 1, 2 & 3 of Element 5) | ...ha |
| 12. Add together areas calculated in items 8, 9, 10 and 11.
Total area required | ...ha |
| Is this area less than the total site area? | Yes / No |
| If no, are there options for solid waste re-use off
site which could be explored? | Yes / No |
| If not, cattle numbers may have to be reduced or an
alternative site selected. | |
| 13. Can the feedlot and associated waste disposal areas be sited at a
distance greater than 200m from nearest watercourse? | Yes / No |
| 14. Can the feedlot be set back a minimum of 200m from the nearest
main road? | Yes / No |
| 15. Are site slopes generally between 2% and 6% or can the area of pens
and lanes and associated works be graded to achieve suitable slope? | Yes / No |
| 16. Is road access able to be provided from a constructed (ie. sealed) road at
a location which is greater than 250m from the nearest house not on the
site and greater than 250m from the nearest intersection? | Yes / No |

WATER SUPPLY CATCHMENT AREAS IN WHICH FEEDLOTS ARE PROHIBITED

Catchments to domestic water supplies may be extremely sensitive to certain activities in the catchment - particularly activities which result in extensive soil disturbance or the concentration of nutrients. The sensitivity of the catchment and therefore the water supply depends upon a range of matters, including the nature of the land, the proximity to the water system, the value of the water resource for consumptive or in-stream purposes, and the activity itself.

State Environment Protection Policy - Waters of Victoria establishes water quality indicators and objectives to be achieved by an Attainment Program. The Policy provides that, within proclaimed potable water supply catchments (ie. declared Special Water Supply Catchments under the Catchment and Land Protection Act) which supply potable water, no new intensive animal industry shall be established except where the Authority (EPA) is satisfied that no off site discharge of wastes, including contaminated stormwater, will occur.

Victoria has identified, through processes defined by the Land Conservation Act and the Catchment and Land Protection Act, a range of water supply catchment areas. Feedlots are prohibited in a number of these catchments, either because there is no private land in the catchment, the land of the catchment is steep or erosion prone, there is limited private land available on which to establish a feedlot, the catchment is a groundwater supply, or the water supply system already suffers from nutrient enrichment or has little buffering capacity. In many cases, the land will be intrinsically unsuited to feedlot establishment because of high rainfall or proximity of available land to the stream system.

These catchments (listed below), 102 in total, cover only 9261 sq km, or some 4% of Victoria (declared water supply catchment areas cover some 61000 sq km, or some 27% of Victoria). The total private land in these 'prohibited' catchments is only 2370 sq km, or approximately 1% of Victoria.

Further information on these catchment areas may be obtained from:

- **Department of Conservation and Natural Resources**

Les Russell
Centre for Land Protection Research
Osborne Street, Bendigo 3550
Phone: (054) 44 6777; fax: (054) 44 6721

- **Victorian Feedlot Committee**

- **Department of Agriculture, Energy & Minerals**

Duncan Rowland
Feedlot Development Officer
Rutherglen Research Institute
RMB 1145
Rutherglen Vic 3685
Phone: (060) 30 4500 fax: (060) 32 9827

Further information on State Environment Protection Policies can be obtained from:

EPA Regional Offices

- South West Region
Cnr Little Malop & Fenwick Streets
Geelong Vic 3220
Phone: (052) 26 4825 fax: (052) 26 4632
- Gippsland Region
7 Church Street
Traralgon Vic 3844
Phone: (051) 76 1744 fax: (051) 74 7851
- North West Region
261 Hargreaves Street
Bendigo Vic 3550
Phone: (054) 42 4393 fax: (054) 43 6555
- North East Region
Rear of 21 Faithfull Street
Wangaratta Vic 3677
Phone: (057) 21 7277 fax: (057) 21 2121

The catchments in which feedlots are prohibited (and the relevant municipalities) are:

NAME OF CATCHMENT	MUNICIPALITY
Avoca	Pyrenees
Bakers Gully (Bright WWT)	Alpine
Ballarat	Ballarat, Moorabool
Barambogie Creek (Chiltern)	Indigo
Barwon Downs Wellfield Intake Area (Geelong)	Colac Otway
Battery Creek (Fish Creek)	South Gippsland
Bealiba	Central Goldfields
Bellview & Ness Creeks (Korumburra)	South Gippsland
Betka River	East Gippsland
Billys Creek	La Trobe
Britannia Creek	Yarra Ranges
Brodribb River (Orbost)	East Gippsland
Buckland River	Alpine
Bunyip River	Baw Baw, Cardinia
Cairn Curran (Lake Environs)	Central Goldfields, Mount Alexander
Candowie Reservoir North Arm	Bass Coast
Creswick	Hepburn, Moorabool
Crusoe Group Reservoirs (Bendigo)	Greater Bendigo
Deep Creek & Loch River (Noojee)	Yarra Ranges, Baw Baw

Deep Creek (Foster)
 Diddah Diddah Creek (Springhurst)
 Djerriwarrh
 Drouin
 East Kiewa
 Eppalock (part) (refers to water supply catchment to Kyneton from the Little Coliban Rivers)
 Eppalock - Lake Environs
 Eppalock (part) (refers to land in the Parish of Newham)
 Fiery Creek Tributaries (Beaufort)
 Forest Creek (Amphitheatre)
 Gellibrand River
 Gellibrand River (South Otway)
 Gisborne-Sunbury
 Healesville
 Honeysuckle Creek (Violet Town WWT)
 Kilmore
 King River (Lake William Hovell)
 Konong Wootong Reservoir (Coleraine)
 Lake Merrimu
 Lake Merrimu (Goodmans Creek)
 Lake Merrimu (Lerderderg River)
 Lal Lal Reservoir
 Lance Creek
 Lancefield
 Langi Ghiran Reservoir (Ararat)
 Learmonth Borefield (Learmonth)
 Little Bass River (Poowong-Loch-Nyora)
 Little Tea Tree Tributaries (Hamilton)
 Lorne
 Macedon
 Malakoff Creek (Landsborough)
 Mason Creek (Willaura)
 McCraes Creek
 Merino
 Micks Creek
 Mirboo North
 Monument Creek
 Moorabool River (Sheoaks)
 Mortlake Spring (Mortlake)
 Mount Macedon
 Muscial Gully and Troy Reservoirs (Beaufort)
 Nicholson River
 Nine Mile Creek (Longwood)

South Gippsland
 Indigo, Milawa
 Macedon Ranges, Melton
 Baw Baw
 Alpine
 Hepburn, Macedon Ranges

 Greater Bendigo
 Macedon Ranges

 Pyrenees
 Pyrenees
 Colac Otway
 Colac Otway, Corangamite
 Macedon Ranges
 Yarra Ranges
 Strathbogie
 Mitchell
 Delatite, Milawa
 Southern Grampians
 Macedon Ranges, Moorabool
 Macedon Ranges, Moorabool
 Macedon Ranges, Moorabool
 Ballarat, Moorabool
 Bass Coast
 Macedon Ranges
 Ararat
 Ballarat
 South Gippsland
 Southern Grampians
 Surf Coast
 Macedon Ranges
 Pyrenees
 Ararat
 Yarra Ranges
 Glenelg
 Murrindindi, Yarra Ranges
 South Gippsland
 Macedon Ranges
 Golden Plains
 Moyne
 Macedon Ranges
 Pyrenees

 East Gippsland
 Strathbogie

Nine Mile Creek, Clear Creek and Hurdle Creek (Lake Kerford)	Indigo
Ovens River (Bright)	Alpine
Painkalac Creek (Aireys Inlet)	Surf Coast
Pennyroyal Matthews & Gosling Creek	Surf Coast, Colac Otway
Picnic Road (Ararat)	Ararat
Redbank Creek (Redbank)	Pyrenees
Riddells Creek	Macedon Ranges
Rocky River	East Gippsland
Rollo Creek	Baw Baw
Romsey	Macedon Ranges
Rosslynne Reservoir (Jacksons Creek)	Macedon Ranges, Moorabool
Ruby Creek (Leongatha)	South Gippsland
Running Creek	Delatite
Serra Range Tributaries (Dunkeld)	Southern Grampians
Skenes Creek	Colac Otway
Spring Gully Reservoir (Bendigo)	Greater Bendigo
St Enochs Spring (Skipton)	Pyrenees
Stony Creek Reservoirs (Geelong WWT)	Greater Geelong, Golden Plains
Sunbury	Macedon Ranges
Sunday Creek (Broadford/Kilmore)	Mitchell
Sunny Creek	Baw Baw
Tanjil River	Baw Baw, La Trobe
Tarago River	Baw Baw
Tarra River	Wellington
Teddington Reservoir (Stuart Mill)	Northern Grampians
Tennent Creek (Candowie Reservoir)	Bass Coast
Thomson (Stage 3)	Baw Baw
Thomson Riber (Stages 1, 1A, 2)	Baw Baw
Tomahawk Creek (Gembrook)	Yarra Ranges
Tyers River	Baw Baw, La Trobe
Upper Barwon	Colac Otway, Surf Coast
Upper Delatite (Mansfield)	Delatite
Upper Goulbourn (part) (refers to environs of Lake Eildon)	Murrindindi, Delatite
Upper Kiewa (part) (refers to East Kiewa U2 area)	Alpine
Walkley Creek	South Gippsland
Wannon River Tributaries (Lake Bellfield)	Ararat
Wartook Reservoir (Wimmera River and Catchment State Environment Protection Policy No. W-15A (Segment A))	
West Barham River	Colac Otway
Woodend	Macedon Ranges
Yuppeckiar Creek Reservoir (Glenthompson)	Southern Grampians

WASTE MANAGEMENT PLAN

A Waste Management Plan must be prepared which provides the basis for the management and use of all solid and liquid by-products produced by the feedlot. The plan must demonstrate how the feedlot by-products are to be applied to land or otherwise used in a manner which is environmentally sustainable having regard to existing and proposed nutrient levels, salinity and hydrological considerations.

The complexities of waste management preclude definitive and detailed statements to cover all situations, and this aspect of the Plan should be developed in consultation with the Victorian Feedlot Committee.

The following list tabulates the major matters which must be addressed in the Waste Management Plan. This list does not purport to be exhaustive and the order in which consideration is given to each factor is suggested only. Proponents may wish to consider engaging the services of professional consultants to produce a Waste Management Plan in which case their own approach will influence the nature of the document produced.

Key issues to be addressed are as follows:

1. Calculate the amount of liquid and solid waste products which will be produced by the number of SCU proposed to be accommodated at the feedlot.
2. Identify the characteristics of that material having regard to nutrients (nitrogen, phosphorous and potassium), salts and the volume of water which will be produced.
3. Identify areas of land used for cropping or other forms of agricultural activity which will provide for the use of waste products. The background characteristics of these areas should be identified including soil type and soil characteristics, background nutrient levels, salt levels and hydrological factors.
4. Identify the ability of the soil to absorb nutrients and salts.
5. Identify the nutrient uptake potential of the cropping or other agricultural productive activity which occurs on the land.
6. Determine the ability of the crops to remove nutrients.
7. Identify the amounts of liquid and solid products which can be applied to the areas identified for waste use having regard to the ability of crops to take up nutrients.
8. Calculate the areas required and identify and confirm the areas available by the use of detailed maps describing the cropping regimes and the use of agreements or other documentation where off-site waste usage is to occur.

9. Establish the parameters for a monitoring program which is to:
 - (a) identify the background conditions including nutrient levels, salt levels, depth to water table and related hydrographic characteristics;
 - (b) monitor changes over time; and
 - (c) provide a feedback mechanism such that adjustments can be made if necessary to the cropping program and the rate of application of waste product to land areas.
10. Monitoring of surface and groundwater systems which could be contaminated by escapes of nutrients and other matter from the wastes, either before collection, during stockpiling, or after application to land. In general, the degree of complexity of the monitoring component of the Waste Management Plan should be commensurate with:
 - (a) the probability of feedlot wastes reaching the surface or groundwater systems, either before or after application to land; and
 - (b) the consequences of wastes reaching the surface or groundwater systems.
11. Plans should ensure the protection of underground and surface waters through correct application of liquid and solid waste products maintaining appropriate set back distances from aquifer intakes, soaks and surface water courses, through the appropriate construction of feedlots and associated works and the proper carrying out of monitoring.
12. The volume of waste product produced by the feedlot should be monitored and adjustments made to the Waste Management Plan to take into account any changes in volume from those predicted.
13. A communication and response strategy for the notification of key agencies and action to be taken in the event of a system failure or gross contamination event.

The following table identifies some of the key physical characteristics which will need to be measured and recorded as part of the Waste Management Plan.

The Waste Management Plan should not be considered a static document which relies on a simple once-off design approach. It must be considered to be an evolving plan which is update at least annually on a complete basis and on an ongoing basis as monitoring data is fed back into the plan.

WASTE MANAGEMENT PLAN PHYSICAL PARAMETERS

These are guidelines, not prescriptions. Some sites may require additional or more intensive monitoring. Guidance should be sought from the Victorian Feedlot Committee or local office of the Department of Conservation and Natural Resources.

ACTION	VARIABLE	PARAMETERS	FREQUENCY/LOCATION
1 maintain rainfall record for water balance calculations	rainfall	mm/day	daily/on property
2 monitor available storage in holding pond	depth of wastes in holding pond	centimetres	weekly/staff gauge in holding pond
3 establishment of baseline soil conditions	soil profile description Initial soil nutrient & salt status soil stability	horizons, depths of horizons, soil texture (particle size analysis), soil structure, soil colour (see Australian Soil and Land Survey Field Handbook) Olsen P (mg/kg) Skene K (mg/kg) Nitrates (and Total N for feedlots > 1000 head (mg/kg) Exchangeable Na (or Na absorption ratio) Electrical Conductivity (dS/m) pH Cation Exchange Capacity Total Exchange Basis Dispersion tests (Emerson test)	each soil sampling site pre-startup/<1000 head - minimum 3 sampling points for solid waste application area, 1 for liquid waste application area pre-startup/>1000 head - minimum 3 sampling points for solid waste application area, 3 for liquid waste application area samples taken from: 1) A horizon 2) top of B horizon (within root zone) 3) below root zone no pooling of samples
4 establishment of baseline conditions - groundwater	surface water status quality of ground water	depth to groundwater (m) pH Electrical Conductivity (dS/m) Olsen P (mg/kg) Nitrates	pre-start up - 1 site per 100 ha liquid application area located towards the centre of application area 1 piezometer installed per site no pooling of samples
5 quality of surface water where there is any water way within 400 metres of the area used for waste application and where there is potential for water movement into the waterway	ground water status up-stream and down-stream	Olsen P (mg/l) Nitrates (mg/l) Electrical Conductivity (dS/m) Biological Oxygen Demand	Immediately post rainfall event and minimum of 3 or 4 times per year 1 test site immediately upstream and 1 test site downstream of the area used for waste application and feedlot

ACTION	VARIABLE	PARAMETERS	FREQUENCY/LOCATION
6 monitoring of current soil status	soil status	Olsen P (mg/l) Skene K (mg/l) Nitrate (mg/l) (and all nitrogen for feedlots > 1000 head) Exchangeable Na (ppt) (or Na absorption ratio) pH Cation Exchange Capacity Total Exchangeable Bases Dispersion	<1000 head - minimum 3 sites for solid waste application area, 1 site for liquid waste application area/every 3 years or application cycle >1000 head- minimum 5 sampling points for solid waste application area, 3 sites for liquid waste application area/every year at a 'typical site' samples taken from: 1) A horizon 2) top of B horizon (within root zone) 3) below root zone from within 10 m radius of fixed point receiving wastes, no pooling of samples
7 establishment of current conditions - groundwater	groundwater status quality of groundwater	depth to groundwater (cm) Electrical Conductivity (dS/m) Olsen P (mg/l) Nitrate (mg/l) pH	1 site per 100 ha liquid waste application area located towards the centre of application area 1 piezometer installed per site from within 10m radius of fixed point receiving wastes, no pooling of samples from within 10m radius of fixed point receiving wastes, no pooling of samples at a 'typical site' selection of test sites should be biased towards those parts of the landscape at the feedlot site likely to exhibit higher groundwater levels (eg. lower slopes)

VICTORIAN CODE FOR CATTLE FEEDLOTS PROPOSAL FORM

THIS PROPOSAL FORM MUST BE COMPLETED AND SUBMITTED TO THE RESPONSIBLE AUTHORITY TOGETHER WITH PLANS AND OTHER INFORMATION REQUIRED FOR ALL CATTLE FEEDLOT PROPOSALS IN VICTORIA.

FOR FEEDLOTS OF LESS THAN 50 CATTLE, PROPONENTS ARE ONLY REQUIRED TO DEMONSTRATE COMPLIANCE WITH SECTION 4.2 OF THE CODE.

FOR FEEDLOTS OF 1000 HEAD OR LESS THE PLANS AND PROPOSAL FORM WILL BE ASSESSED BY THE APPROVING AUTHORITY AND, IF IN CONFORMITY WITH THE CODE, THE PROPONENT WILL BE ADVISED THAT THE PROPOSAL CAN PROCEED WITHOUT A PLANNING PERMIT UNDER THE PLANNING SCHEME.

FEEDLOTS OF ABOVE 1000 HEAD REQUIRE A TOWN PLANNING PERMIT FROM THE LOCAL COUNCIL (RESPONSIBLE AUTHORITY). FEEDLOTS OF ABOVE 5000 HEAD REQUIRE A WORKS APPROVAL FROM THE ENVIRONMENT PROTECTION AUTHORITY. A TOWN PLANNING APPLICATION FORM AND A WORKS APPROVAL APPLICATION MUST BE COMPLETED AND LODGED TOGETHER WITH THE PROPOSAL FORM, PLANS AND OTHER DOCUMENTATION REQUIRED.

ADVICE TO PROPONENTS

Any person who wishes to develop a feedlot must complete the following documentation and provide the information which is required. The document may be completed in neat clear handwriting and must provide the information which is sought.

If for any reason it is considered that the information requested is not relevant or not appropriate, the reasons why the information is not relevant or not appropriate should be indicated, if necessary by attaching additional written documents which refer by number to the item.

Completion of this proposal and assessment form will take several hours and will require the carrying out of certain calculations.

The ability to construct and operate a feedlot without the need for a planning permit (for feedlots of less than 1000 cattle) and without the need for an Environment Effects Statement, necessitates a full and detailed examination of any proposal at this stage owing to the potential impact of feedlots on the environment.

Completion of the Proposal Form in the prescribed manner which indicates that the proposal meets the requirements of the Code will satisfy the approval authorities in most cases. It will only be in unusual circumstances or in areas of high environmental value that a full Environment Effects Statement will be required.

PLANS AND DOCUMENTATION REQUIRED TO ACCOMPANY THE PROPOSAL

1. PROPOSAL AND APPLICATION FORMS

A standard proposal form for a proposed feedlot (attached) is to be completed by the feedlot proponent. For feedlots of greater than 1000 head a town planning permit application form is also required.

The attached proposal form should be fully completed except for feedlots of less than 50 head for which only Sections 1, 2 and 4 need to be completed.

All maps, plans and drawings must be to a scale shown on the documents.

2. TITLE DETAILS

Copies of titles for all the land proposed to be used and developed for a feedlot must be submitted. All land on which the feedlot works area and liquid runoff system use occurs shall be under the ownership or control of the applicant.

3. AERIAL PHOTOGRAPH

The most recent aerial photograph of the site showing the location of the proposed development and surrounding area must be submitted. These are available from the Map Sales, Information Victoria, 318 Little Bourke Street, Melbourne (on corner ground floor).

4. ENVIRONMENTAL BUFFER PLAN

An environmental buffer plan is to be submitted showing the separation distances from the edge of the feedlot works area to all receptors in the area. (Refer Element 1 Table 4.2). Each distance is to be marked on the plan and dimensioned. Receptors include isolated residences, residential development, towns and public areas (eg. parks). Any land in the vicinity of the feedlot which is not zoned for rural purposes should be identified and marked. Existing feedlots should be noted.

This can be a 1:25,000 cadastral or similar map.

The feedlot works area is defined as that area which includes the feedlot pens, drainage system, sedimentation basin, retention pond, manure stockpile area, feed handling facilities and cattle induction facilities.

A brief description of the topography and vegetation between the feedlot complex and each receptor is required. If appropriate, photographs showing views into and from the site should be submitted.

5. SITE PLAN

The site plan for the existing and proposed works shall show the location of all existing and proposed buildings, storage facilities, roadways, drainage points, dams, vegetation (natural and introduced) and the fall of the land (contours).

6. YARD PLAN

A yard plan for the existing and proposed premises shall show the location of each pen (including dimensions, slope and stocking density), yard or containment area including cattle handling facilities and hospital pens and shall show the location of existing and proposed laneways, fences, gates, feeding and watering points and their aprons. Apron width and construction materials are to be stated.

Details of pen numbers, pen area and stocking density are to be included on the attached form.

Dimensions of pens, lanes, roads and the distance between the proposed pens and existing access roads should be shown.

Drawings or specifications of pen design, troughs and fencing are also required.

7. DRAINAGE PLAN

The drainage plan shall show any existing and the proposed floor drainage plan, slopes, drain ways, settling tanks, storage and overflow dams, disposal facilities and manure stockpile areas. This plan must clearly show the boundary of the Controlled Drainage Area and the nature and extent of clean water diversion structures. Calculations are to be shown on the attached form of all catchment areas and pond capacities.

8. WASTE MANAGEMENT PLAN

The Waste Management Plan shall show all existing and proposed disposal methods, areas and location of crop or pasture land used in association with effluent disposal.

For solid wastes (manure), the plan should clearly show the areas on which manure is to be applied taking into account the separation buffers required in the Code. The plan should show that the available manure spreading area exceeds that required under the Code. Where solid waste reuse is to take place off-site, details must be provided including agreements with other land owners, contracts or Letters of Intent.

For the liquid waste disposal area, the plan should clearly show the areas on which effluent is to be spread and the method to be used. The plan should show that the available disposal area satisfies that required under the Code. This area should be calculated and shown on the attached form (Refer to Appendix 3). Any use of mixing dams and dilution of effluent with irrigation water should be explained with plans and location of proposed pipelines.

The site for and method of disposal of dead animals is to be clearly shown on the plans with evidence that if burial is to be the chosen method, the soils will not allow contamination of ground or surface waters.

9. VEGETATION PLAN

A plan shall be prepared and submitted with the application showing all existing vegetation having a height of greater than 3m and setting out the landscaping proposals for the site in accordance with Element 8 of the Code.

10. WATER SUPPLY

The application should include details of current and proposed water usage for drinking, food preparation, dust control, cattle and irrigation. Details of existing and proposed water supply arrangements should be included. Any other sources of water, e.g. on-farm dams, should be outlined.

11. STAGED DEVELOPMENT

A brief statement outlining the proposed development stages and timing should be included. Any differences between this proposal and previous development proposals (if any) should be outlined.

12. TRAFFIC GENERATION

Details of staffing, traffic numbers, vehicle weights and preferred routes should be provided. Any differences between the original estimates of traffic volume and existing experience should be noted and included in the estimates for any proposed expansion of an existing feedlot.

The plans must show parking and access requirements in accordance with Element 6 of the Code

13. CORPORATE APPLICANTS

If the applicant is a company, a current ASC search is to be supplied. The Manager or other person responsible for the proposal is to be nominated.

NOTE:

Notwithstanding the above requirements for plans and specifications, the applicant shall furnish any other information that may be relevant to the assessment of this proposal.

Additional information may be required by the responsible authority. Where the Approved Measures of the Code have not been adopted, the onus is on the applicant to demonstrate that the proposal meets the Objectives and Accepted Standards of the Code.

The following proposal form may be torn out or photocopied.

PROPOSAL FORM

SECTION 1 PROPONENT AND SITE INFORMATION

Proponent Name:.....

Contact Name:

Postal Address:.....

Telephone Number:.....Fax number:

Feedlot Name:.....

New Proposal/Proposed

Expansion:.....

Name of Property Owner

(if not Proponent)

Postal Address:.....

Postcode

Telephone Number:.....Fax Number:

Location of Feedlot:.....

Feedlot Managers Name:

(if known)

Telephone Number:.....Fax Number:

PROPERTY DESCRIPTION

Title Details:Vol.....Fol.....

(attach copy of title)

Crown Allotment(s):

Section(s):

Parish of

Feedlot Address:

Postcode

SECTION 2 FEEDLOTS OF LESS THAN 50 HEAD

Indicate compliance with the Code requirements (Refer Section 4.2 of Code)

- AM1 Outside a declared special water supply catchment (Check with Department of Conservation and Natural Resources)Yes/No
(Refer Section 4.1 of Code, if in a declared special water supply catchment a permit will be required)
- AM2 Above 1 in 100 year flood level.....Yes/No
Outside an active flood plain.....Yes/No
(Check with local Council)
- AM3 Distance from boundary of feedlot works area to nearest dwelling on adjoining propertymetres
- AM4 Set back of feedlot works area from nearest watercourse.....metres
(Supply topographic map indicating watercourses)
- AM5 Set back from water storage, bore or take off for potable water supplymetres
- AM6 Setback of feedlot works area - not less than 200m - from any road.....metres
- AM7 Pen area.....m² Density.....m²/beast No. of cattle.....
- AM8 Pen slope (not less than 2% and not greater than 6%)%
- AM9 Mounds or levies shown on plan – waste water cut-off.....Yes/No
- AM10 Mounds or levies shown on plan – fresh water cut-off.....Yes/No
- AM11 Liquid waste dispersal details provided - plan attachedYes/No
- AM12 Area for liquid waste dispersal (Not less than 2 hectares.)ha
- AM13 Area for solid waste application (Not less than 1 hectare for every 5 cattle housed).....ha
(Wastes are to be incorporated into a vegetation production system.)
- AM14 Drinking trough surround preparation (specify details).....
.....
- AM15 Feed trough surround preparation (specify details)
.....
- AM16 Pen cleaning frequencyper annum
(Not less than annually, one cleaning to be just prior to the onset of the wet season).
- AM17 Be operated in a manner to keep the surface in a generally dry condition and avoid the development
of wet areas within the pen area.....Yes / No
- AM18 Be operated in a manner to keep feed and water troughs in a clean condition..... Yes / No
- AM19 Prevention of propagation of weeds and the spread of vermin and flies.....Yes / No

SECTION 3 FEEDLOTS GREATER THAN 50 HEAD

ELEMENT 1 LOCATION AND SIZE

Number of Standard Cattle Units
(Refer Table 2.1)

.....

Proposed Class of Feedlot:
(Refer Section 2.4)

.....A B C D

CONFIRMATION OF 'S' FACTOR DETAIL

Proposal Stocking Density:m²/standard cattle unit

Annual Rainfall:mm Rainfall Station:

General Site Description:

.....
.....
.....

(Refer to attached maps, plans and reports. Note the presence of any large stands of vegetation and the direction of slopes between the feedlot works area and the nearest housing, residential zones and towns.)

SEPARATION DISTANCES

AM1

[This section is to include a description of the area between the feedlot and various receptors. On the Environmental Buffer Plan, the separation between the edge of the feedlot area and each receptor is to be clearly marked and dimensioned. The feedlot area includes the pens, manure storage area, sedimentation basins, retention pond and induction facility. The table below is to be completed for each receptor including residences and towns. The various S factors must be justified.]

Separation Description:

.....
.....
.....

(attach further details if inadequate space).

Identification of 'S' Factors

Receptor Name	S1	S2	S3	S4	SN (S1xS2xS3xS4)	Distance Required	Distance Available (m)

AM2 Access to Areas for Solid and Liquid Waste Disposal

(Details of access arrangements are to be provided in accordance with Element 5 of the Code)

AM3 Environmental Buffer Separations

(check plans - are these met?) Yes / No

AM4 Boundary Setbacks

(Check plans - are these met?) Yes / No

ELEMENT 2 DESIGN AND CONSTRUCTION

Identify the selected standard for the proposed class for each approved measure and indicate compliance if accommodated in design.

		Compliance Tick box to indicate adoption of measure. * Delete as appropriate.	Non Compliance Approved measure not complied with. Alternative approach explained in attached documentation.
AM1 Pen Floor Preparation	1.		
	2.		
	3.		
	4.		
AM2 External Surface Runoff Control	1.		
	2.		
	3.		
	4.		
AM3 Laneways	1.		
	2.		
	3.		
	4.		
AM4 Cattle Handling Yards	1.		
	2.		
	3.		
AM5 Water Supply	Details to be supplied in attached report		
AM6 Internal Pen Drainage Control - slope to drain ...% - pen to pen slope ...%	1.		
	2.		
AM7 Feed Troughs	1.		
	2.		
AM8 Water Troughs	1.		
	2.		
	3.		
	4.		
AM9 Fencing (Confirm minimum clearance of 350mm along bottom fences).....	Yes/ No		
AM10 Feed Trough Aprons	1.	*Reinforced concrete/ *Crushed rock	
	2.		
AM11 Water Trough Aprons	1.	*Reinforced concrete/ *Crushed rock	
	2.		
	3.		
	4.		
AM12 Drains	1.		
	2.		
	3.		
AM13 Service Roads	1.		
	2.		

ELEMENT 3 ODOUR

Have the separation distances determined by AM1 of Element 1 been adopted? Yes..... No.....
 If not, supporting documentation to justify any lesser distance must be provided.

ELEMENT 4 NOISE

- AM1 SEPP - Noise - Checked?..... Yes / No
- AM2 Night time noise not to exceed ambient levels.....Yes / No
- AM3 Location of truck access points. (Refer to plans.)
- AM4 Efficient exhaust mufflers to all vehicles.....Yes / No
- Distance to nearest dwelling not on feedlot site.....m
- Distance of cattle handling facilities from property boundarym
- Distance of feedmill/hoppers etc. from property boundary.....m
- Distance of feedmill/hoppers etc. to nearest dwelling not on site.....m

ELEMENT 5 WASTE STORAGE, TREATMENT AND USE

AM1 SETTLED MANURE VOLUME

$V = \text{Storage Volume (m}^3\text{)}$
 $= (D \times M \times A_p \times F_s) \div 1000$

D = Nominal pack depth
 (classes A&B = 100mm, C&D = 200mm)

M = Proportion of manure lost during rain periods (refer table 4.6)

$A_p = \text{area of pens (m}^2\text{)}$

$F_s = \text{Safety factor to allow for variations in cleaning interval (1.25)}$

D:

P:

M:

A_p : m^2

F_s :

Hence: $V =$

$V(\text{available}) =$
 [to be provided] m^3

PEN AREA

Number of Pens:

Total Pen Area: A_p

Total Balance Area: A_b
 (laneways, yards and other areas within the feed lot drainage area)

TOTAL CATCHMENT AREA:.....

Pen Slope: [%]

Drain Slope: [%]

AM2 SETTLING BASIN STILLING VOLUME

$S = \text{sedimentation tank stilling volume (m}^3\text{)}$
 $= P \times T \times A_c \div 1000$

P = rainfall intensity for a 1 hour, 1 in 20 wet year storm
 (mm/hr)

T = detention time (0.5 hr)*

$A_c = \text{area served by the tank (m}^2\text{)**}$

* This is the time water takes to pass through the settling tank.

** A_c is the total area of the catchment. It includes both pens and lanes and any other areas where the runoff is directed into the disposal system.

P:

T:

A_p : m^2

Hence: $S =$

$S(\text{available})$
 [to be provided] m^3

Total volume of settling basin is calculated by adding together settled manure volume (V from AM1 above) and settling basin stilling volume (S above).
 Vplus S = m^3

AM3 RUNOFF STORAGE

$Q = [(A_p + A_b) \times (R_f \times R_o)] \times F_s + [A_s \times R_f] \div 1000$
 (Refer to Section 4.3 Element 5)

A_p :

A_b :

R_f :

F_s :

R_o :

Hence: $Q =$

$[(A_p \times A_b) \times (R_f \times R_o)] \times F_s + [A_s \times R_f] \div 1000$

$Q(\text{available}) =$
 [to be provided] m^3

AM4 RUNOFF DISPERSAL AREA

Area Available.....ha

A_c :

R_f :

Hence $A_d =$

[$A_d = A_c \times 5 \times R_f \div 400$]

		Compliance Tick box to indicate adoption of measure.	Non Compliance Approved measure not complied with. Alternative approach explained in attached documentation.
AM5 Waste Stockpile	1. 2.		
AM6 Solid Waste Use 1. (a) Is an area of land available to allow a ratio of 5 SCU per hectare?Yes/No (b) Is a nutrient balance statement provided?.....Yes/No 2. Land used for solid waste disposal is above the 1 in 20 year flood lineYes/No 3. Is all the land to be used for disposal identified on plans attached?Yes/No If No, provide further details of disposal. Details of off-site disposal to be provided.			
AM7 Monitoring	1. 2. 3.		
AM8 Runoff Irrigation	1. 2. 3.		
AM9 Runoff Dispersal Systems	1. 2. 3. 4. 5.		
AM10 Avoidance of Groundwater Contamination	1. 2. 3. 4.		
AM11 Waste Management Plan Is a Waste Management Plan attached to this proposal? (Refer Appendix 3 of Code).....Yes/No If not, describe in detail the arrangements for waste disposal and management. (Refer to attached plans and documents)			
AM12 Salinity	1. 2.		
AM13 Salt Budget	1. 2.		
AM14 Disposal of Animal Carcasses Provide details of disposal arrangements (Refer to attached plans or documents)	1. 2. 3.		
ELEMENT 6 TRAFFIC AND PARKING			
AM1 Access Evidence of Vic Roads or Council approval is attached; orYes/No is to be provided.....Yes/No			
AM2 Driveways and Access Roads Driveway and access road widths.....			

AM3	Cattle Loading Ramp	Siting complies with requirements	Yes / No
AM4	Surface Treatment	Driveway and access road preparation and surface	
AM5	Parking	Estimated number of employees	
		Number of car spaces	
		Number of truck parking spaces	

ELEMENT 7 LANDSCAPING

A plan of existing and proposed vegetation/landscaping is attached. Yes/ No

(If not, a plan must be submitted)

AM1	Landscaping and width of landscaping	
AM2	Distance from feedlot to landscaping	
AM3	Access road planting	
AM4	Approval of plan by responsible authority	
	(Refer to plans as necessary)	
AM5	Maintenance to be carried out	Yes / No

ELEMENT 8 OPERATION AND MANAGEMENT

(Nominate Class or interval as appropriate)

		Compliance Nominate class or interval as appropriate.	Non Compliance Approved measure not complied with. Alternative approach explained in attached documentation.
AM1	Feeding Out and Watering	1.	
		2.	*
		3.	
		4.	
		5.	
		6.	
AM2	General Routine Cleaning and Maintenance	1.	
		2.	
		3.	
		4.	
		5.	
		6.	
		7.	
		8.	
		9. Indicate proposed pen cleaning frequency	
AM3	Mounding	1.	
		2.	
		3.	
		4.	

		Compliance Nominate class or interval as appropriate.	Non Compliance Approved measure not complied with. Alternative approach explained in attached documentation.
AM4 Pack Removal	1.		
	2.		
	3.		
	4.		
AM5 Pad Renovation	1.		
AM6 Manure Stockpile	1.		
	2.		
	3.		
AM7 Disposal of Runoff	1.		
	2.		
	3.		
	4.		
	5.		
AM8 Manure Disposal	1.		
	2.		
AM9 Venom and Weed Control	1.		
	2.		
AM10 Cessation of Operations	1.		

SECTION 4 ATTESTATION

I,
[print name]

of
[address]

the proponent or, where a corporate entity, the public officer of the proponent of the feedlot described in this proposal, undertakes that the feedlot shall at all times comply with the requirements, standards and specifications set out herein and in the Victorian Code for Cattle Feedlots.

Dated this.....day of19.....

Witness:

Witness Name: [print] [signed]

OR

The Seal of was affixed in accordance with the memorandum and articles of the Company.

Director

Secretary

Land owner acknowledgment (where land owner is not proponent)

Signed:

Print Name:

Date:.....

Last Page Deliberately blank