This Regulatory Impact Statement (RIS) has been prepared to fulfil the requirements of the Council of Australian Governments, and to facilitate public consultation on the proposed Australian standards and guidelines for the welfare of animals - land transport of livestock. A copy of the proposed standards and guidelines is provided as an Appendix to this RIS.

Public comments and submissions are invited on the proposed standards and guidelines, in response to information provided in this RIS. All submissions will be treated as public documents.

Please use the web based opinion survey form to register your comments at the following site: http://www.animalwelfarestandards.net.au/

Written submissions addressing the standards can be forwarded to:

Land Transport RIS Submissions
PO Box 196
DICKSON ACT 2602

Comments must be received by 27 May 2008 for consideration.
This document forms part of the *Australian Standards and Guidelines for the Welfare of Animals*. This report is a stand-alone document:

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This regulatory impact statement was prepared for Animal Health Australia by Tim Harding & Associates in association with Rivers Economic Consulting. The assistance of members of the Standards Reference Group and Ms. Maria Butler, Mr. Damien Coffey, Mr. Ian Davison, Dr. Kevin de Witte, Ms. Michelle Edge, Mr. Tim Flor, Mr. Luke Fraser, Dr. Sue Hides, Dr. Bidda Jones, Dr. Vivien Kite, Dr. Danielle Marotti, Mr. Jed Matz, Ms. Alex Owens, Ms. Melina Tensen, Mr. Peter Weeks, Ms. Liz Schmidt in supplying information and advice is gratefully acknowledged.
Summary

Introduction

This regulatory impact statement (RIS) assesses the proposed Australian Standards and Guidelines for the Welfare of Animals - Land Transport of Livestock (the proposed standards) as set out in Appendix 9 to the RIS.

The proposed standards are the first Australian welfare standards to be developed under a new system stemming from the Australian Animal Welfare Strategy (AAWS) as outlined in Part 1.2.3 of the RIS. They are intended to replace the various existing land transport model codes of practice and include new standards for species and classes of livestock that are not covered by the existing model codes.

The stated purpose of the proposed standards is to set standards that ensure the welfare of livestock during land transport, including both road and rail. The standards are intended to establish the basis for developing and implementing consistent legislation and enforcement across Australia, and provide guidance for all those responsible for livestock during land transport. They are distilled from a blend of scientific knowledge, recommended industry practice and community expectations.

The scope of the standards and guidelines covers the transport of livestock by road, rail and livestock transport vehicle aboard a ship. The standards apply to the major commercial livestock industries in Australia; that is, to alpacas, buffalo, camels, cattle, deer, emus, goats, horses, ostriches, pigs, poultry and sheep.

The standards apply to all those responsible for the care and management of transported livestock. Those responsible include drivers; transport companies; consigners; agents; and livestock handlers at farming enterprises, depots, saleyards, feedlots and livestock-processing plants. An explanatory guide to the proposed standards is provided in Appendix 1.

State and territory governments have the main responsibility for implementing animal welfare law. Through the Australian Animal Welfare Strategy, ministers have agreed that endorsed standards will be consistently implemented under animal welfare regulatory systems of the jurisdictional governments. The guidelines will not be regulated.

While the document assessed by this RIS is a proposed set of national standards and guidelines rather than regulations, it is envisaged that the standards, if endorsed by the Primary Industries Ministerial Council (PIMC), will be adopted or incorporated into regulations by the various jurisdictions, after which compliance with the standards will become mandatory. For this reason, the RIS treats the standards and their alternatives as if they are mandatory, and will use the existing model codes of practice.
(MCOPs) as the base case for assessment of costs and benefits (refer to Part 5.2 of this RIS).

The RIS is required to comply with the ‘Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies’ endorsed by the Council of Australian Governments as amended in June 2004.

The livestock transport industry

Livestock transport is a crucial link in the supply chain that brings together all aspects of the meat and livestock industries. The livestock transport industry provides the key service of transporting livestock between farms and stations, as well as transport to and from saleyards, feedlots, processing establishments and live export ports across the country.

While a large component of livestock transport is for purposes of slaughter, there is also considerable movement of animals from one location to another for purposes of management (e.g. lack of local pasture/fodder) or for resale and relocation as live animals.

The value of livestock transported in Australia is estimated to be around $12 billion per year. An estimated 969.4 million animals are transported 142 million kilometres, taking 1.84 million hours per year. Of the total number of animals transported, most are transported by road and roughly 600,000 head of cattle and roughly 900 head of horses are transported by rail in a typical year in Queensland. The estimated total annual cost of transporting livestock for slaughter, export/import and other purposes by road (excluding rail and the cost of horse transport for recreational purposes) is between approximately $606.8m and $672.7m.

The issues

Animal welfare concerns are becoming increasingly important for the farming and transport of livestock, both in Australia and internationally. Practices which may have once been deemed acceptable are now being reassessed in light of new knowledge and changing attitudes.

‘Animal welfare’ is an elusive concept which has many dimensions including: mental and physical aspects of the animal’s well-being, as well as people’s subjective ethical preferences. The variation in the definition of animal welfare in science, philosophy and the general community has created much confusion and controversy.

Where an animal is failing to cope with a problem, it is said to be stressed. Stress is a physiological response by the individual in the attempt to cope with factors causing the stress. Stress can be objectively measured in animals using indicators such as the level of cortisol in the blood. If stress factors are minimised, poor welfare outcomes can be prevented or made less likely.
Transportation can be a major stressor for farm animals and can have deleterious effects on health, well-being, productivity and ultimately, product quality.

Animals being transported by road and rail are subject to a number of stress factors throughout the journey, including handling, loading, transporting, mixing of unfamiliar animals, unloading and total time without water or food. These risk factors can be cumulative and apply across all phases of land transport, from assembly and handling before the journey, to unloading at the destination.

Animal welfare is now recognised as a characteristic of product quality and customer requirements in some industry sectors. There is increasing recognition by livestock industries that animal welfare is an integral part of good animal husbandry. In the past few years, several food safety-based quality assurance schemes have been implemented either within businesses and/or across industries and these may include animal welfare components. The Quality Assurance (QA) scheme most relevant to animal welfare issues in regard to transport is the Australian Livestock Transport Association’s ‘TruckCare’ program.

**Process and consultation**

Extensive consultation has taken place with government agencies, researchers, industry and animal welfare organisations in the development of the proposed standards and their predecessors.

The standards were developed under the auspices of the Animal Welfare Working Group (AWWG), which is ultimately responsible to the Primary Industries Ministerial Council (PIMC). Membership of AWWG comprises representatives from each of the State and Territory departments with responsibility for animal welfare, CSIRO, and the Commonwealth Department of Agriculture, Fisheries and Forestry - Australia.

The standards development process was managed by Animal Health Australia (AHA) and was initially undertaken by a small writing group comprising research, government and industry representatives; supported by a widely representative Standards Reference Group (SRG). Further drafts of the standards were developed by AHA in consultation with the SRG and smaller working groups covering each species or issue. The SRG was comprised of representatives of the livestock transport industry, the production, saleyard, feedlot and processing sectors of industry for all the animal species involved, animal welfare organisations, state and federal regulators, policy specialists and other technical experts from the veterinary, teaching and research fields.

A summary of outstanding issues where no agreement could be reached between the above stakeholder organisations is given in Appendix 8 to this RIS.
The problems

The problems that the proposed standards are endeavouring to address include the need:

- for greater national consistency in livestock welfare standards;
- to ‘fill in gaps’ in current standards;
- to update current model codes of practice;
- to minimise risks to livestock welfare;
- for clear, essential and verifiable standards;
- to ensure that the benefits justify the costs of standards;
- for standards to be considered within an international context; and
- to meet community expectations.

Market forces alone would not be expected to solve these problems and intervention in the form of regulated standards is necessary.

The policy objective

In relation to the proposed standards and possible alternatives, the following overarching policy objective is identified:

*To ensure that the conditions under which livestock are transported on land are consistent with reasonable animal welfare outcomes.*

Assessment of costs and benefits

Because compliance with the guidelines is voluntary, costs are imposed by the proposed standards rather than by the guidelines. Most of the proposed standards are consistent with the requirements of existing national model codes of practice, where they exist, as listed under the base case in Part 5.2 of the RIS. The main overall difference is that proposed standards are not explicitly stated in the existing model codes. The proposed standards make more verifiable the unverifiable guidelines in the existing model codes, to facilitate incorporation into state and territory regulations and the auditing of compliance with such regulations. In many cases, the proposed standards increase the coverage of livestock species, minimise risks to livestock welfare and reduce unnecessary costs to industry.
The term ‘base case’ means the situation that would exist if the proposed standards were not adopted. The base case provides the benchmark for measuring the incremental costs and benefits of the proposed standards and the other options. The base case includes the relevant state and territory animal welfare legislation but this has not been reviewed in detail for this study. It also includes all relevant existing model codes of practice.

Relative to the base case, the proposed standards would impose minimal to minor incremental costs or savings per journey in the following areas:

- transport costs and savings
- training costs
- veterinary/pathology costs
- verification/auditing/enforcement costs

No costs to livestock welfare have been identified. In other words, no species or class of animal is likely to incur a reduction in its welfare, compared to the existing codes of practice. On the contrary, there is likely to be a net benefit to livestock welfare as a result of the implementation of the proposed standards.

Veterinary and pathology costs will be directly incurred by the relevant livestock owners. The transport costs/savings and the training costs will be incurred initially by livestock transporters, but costs are in most cases likely to be passed on to livestock owners and possibly consumers of meat and other livestock products, depending on whether or not stock are auctioned and on consumer price sensitivities.

Verification, auditing and enforcement costs will be incurred by the relevant government agencies if and when the proposed standards are adopted by regulations or the appropriate legal mechanism. However, most state and territory departments advise that there is unlikely to be any significant increase in enforcement costs of the proposed standards relative to the base case. Some industry associations may choose to develop or modify their own quality assurance programs to encourage compliance with the proposed standards. However, any such costs would be voluntarily incurred, rather than imposed by the proposed standards. It is recognised that industry and industry QA can make an important contribution to livestock welfare practices but this is not considered as a regulatory cost in this study.

A comparison of the proposed standards with the relevant World Organisation for Animal Health (OIE) guidelines shows that there are no significant differences between the proposed Australian standards and the relevant equivalent international standards, except in relation to a few proposed standards as discussed in Part 3.3 of the RIS. These differences are considered reasonable and justified.
The proposed standards would result in a *net incremental cost* to the livestock industry, relative to the base case, estimated to be between approximately **$31.0m** and **$33.5m** per annum or approximately **$145.0m** and **$156.4m** over 5 years, in present value terms (2008 dollars). There are also some relatively minor unquantifiable costs and savings, as set out in Part 5.3.2 of the RIS.

The quantifiable cost over 5 years (in present value terms) represents between 4.97% and 5.11% of the total cost of livestock transport of approximately $2.84b and $3.14b. The estimated change in retail meat prices would entail approximately a 1% increase for beef, a 2% increase for lamb, a 0.3% reduction for pork and a 4.8% increase for chicken.

If and when incorporated into regulations, the proposed standards are expected to result in the following benefits:

- improved livestock welfare outcomes – risks to welfare will be minimised and no species or class will be worse off;
- greater national consistency in the setting of standards;
- clear and verifiable standards, differentiated from guidelines, that are capable of being incorporated into regulations;
- the gaps that exist in the current model codes of practice will be filled in, including coverage of all livestock transported by land;
- the updates to current model codes of practice are reflected in the new standards and guidelines, in the light of new knowledge and circumstances, including industry best practice;
- the proposed standards have been reviewed to ensure that their benefits justify their costs, and that they meet the expectations of the Australian community, which is likely to improve community confidence and implementation of the standards.
- an enhanced international reputation (from providing clear statements of Australia’s livestock welfare standards to the international community, especially our trading partners).

**Alternatives considered**

In the case of national standards, practical alternatives are limited to alternative standards that are relevant and could be applied in all jurisdictions. Having no standards at all is not a practical alternative, because the ‘base case’ is that the existing model codes will remain in place, and can be incorporated by states and territories in regulations at any time, as some already have. The ‘base case’ is used as...
a point of reference for comparison of the proposed standards and the practical alternatives.

The practicable alternatives together with the proposed standards will from here on be referred to as ‘options’. As discussed in Part 4.0 of the RIS, the options assessed in terms of costs and benefits were:

- **Option A:** Encourage the development of industry codes, QA programs etc (i.e. the minimum intervention option);

- **Option B:** the proposed standards;

- **Option B1:** the proposed standards with a variation to standard SB4.5 changing the minimum age for transport of calves for slaughter (other than to a calf-rearing facility) to 8 days rather than 5 days;

- **Option C:** more outcome-based and less prescriptive standards leading to possibly greater choice in ways to satisfy the standards;

- **Option D:** less expensive standards i.e. the most costly standards to become voluntary guidelines;

- **Option E:** more effective standards for livestock welfare that will incur a higher cost to livestock industries i.e. higher standards relating to maximum time off water for particular species/class of species and a minimum voluntary spell of 6 hours to allow recognition of the spell period as a credit in the total water deprivation time calculation; and

- **Option E1:** more effective standards for livestock welfare that will incur a higher cost to livestock industries i.e. higher standards relating to maximum time off water for particular species/class of species and a minimum voluntary spell of 12 hours to allow recognition of the spell period as a credit in the total water deprivation time calculation.

A comparison of quantifiable annual and five year incremental costs or savings for all options is given in the following table.

<table>
<thead>
<tr>
<th>Option</th>
<th>Annual value min</th>
<th>Annual value max</th>
<th>Present value over 5 years min</th>
<th>Present value over 5 years max</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>+$0.9m</td>
<td>+$0.9m</td>
<td>+$0.9m</td>
<td>+$0.9m</td>
</tr>
<tr>
<td>B</td>
<td>+$31.0m</td>
<td>+$33.5m</td>
<td>+$145.0m</td>
<td>+$156.4m</td>
</tr>
<tr>
<td>B1</td>
<td>+$43.7m</td>
<td>+$46.2m</td>
<td>+$204.4m</td>
<td>+$215.8m</td>
</tr>
<tr>
<td>C</td>
<td>Not quantifiable but likely more costly than Option B</td>
<td>Not quantifiable but likely more costly than Option B</td>
<td>Not quantifiable but likely more costly than Option B</td>
<td>Not quantifiable but likely more costly than Option B</td>
</tr>
<tr>
<td>D</td>
<td>-$1.1m</td>
<td>-$1.3m</td>
<td>-$5.3m</td>
<td>-$6.3m</td>
</tr>
</tbody>
</table>
A weighted criteria decision analysis was used to compare the relative costs and benefits of various options (refer to Part 5.4 of the RIS). Option B (the proposed standards) provides the highest weighted score of +1.4 with Option C (more outcome-based and less prescriptive standards) providing the lowest weighted score of -0.4. The proposed standards are therefore the preferred option, in which the expected costs are considered to be outweighed by the expected benefits.

National competition policy test

To the extent that the standards impact on livestock transporters and other businesses, such businesses would be equally affected by the same regulatory environment. The likely incremental costs of the proposed standards are not so high as to constitute a barrier to entry for such businesses. Thus the proposed regulations are unlikely to restrict competition.

Implementation

All jurisdictions can make regulations to require compliance with the proposed standards, and all regulations except those in New South Wales and the Northern Territory can adopt the standards by reference. (New South Wales and the Northern Territory would have to make regulations using similar wordings as the standards).
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1.0 Background

1.1. Introduction

This regulatory impact statement (RIS) assesses the proposed Australian Standards and Guidelines for the Welfare of Animals - Land Transport of Livestock (‘the proposed standards) as set out in Appendix 9 to the RIS.

The proposed standards are the first Australian welfare standards to be developed under the new system stemming from the Australian Animal Welfare Strategy (AAWS) as outlined in Part 1.2.3 of the RIS. They are intended to replace the various existing land transport model codes of practice\(^1\) and include new standards for species and classes of livestock that are not covered by the existing model codes.

The stated purpose of the proposed standards is to set standards that ensure the welfare of livestock during land transport, including by both road and rail.\(^2\) The standards are intended to establish a basis for developing and implementing consistent legislation and enforcement across Australia, and provide guidance for all people responsible for livestock during land transport. They are distilled from a blend of scientific knowledge, recommended industry practice and community expectations.

The scope of the proposed standards is as stated in their introduction –

- The standards cover the land transport of livestock by road, rail and by livestock transport vehicle aboard a ship.

- They apply to the major commercial livestock industries in Australia: alpacas, buffalo, camels, cattle, deer, emus, goats, horses, ostriches, pigs, poultry (broilers, ducks, geese, guinea fowl, layers, partridge, pheasants, pigeons, quail and turkeys) and sheep.

- The standards apply to all those responsible for the care and management of transported livestock, including: drivers, transport companies, owners, agents and livestock handlers at farming enterprises, depots, saleyards, feedlots, and livestock processing plants. The chain of responsibility for livestock welfare in transport begins with the owner or their agent, and extends to the final receiver of the livestock.

The standards and guidelines should be read in conjunction with other requirements for the transport of livestock, and with related Commonwealth, state and territory legislation (refer to Part 1.2.3 of this RIS).

Whilst the document assessed by this RIS is a proposed set of national standards and guidelines rather than regulations, it is envisaged that the standards, if endorsed by the Primary Industries Ministerial Council (PIMC), will be adopted or incorporated into regulations by the various jurisdictions, after which compliance with the standards will become mandatory. For this reason, the RIS treats the standards and their alternatives as if they are mandatory, and will use the existing

\(^1\) As listed on page 1 of the proposed standards and in Part 5.2 of this RIS.
\(^2\) Transport by rail takes place only in Queensland, and is used primarily for cattle plus a small number of horses.
model codes of practice as the base case for assessment of costs and benefits (refer to Part 5.2 of this RIS).

The RIS is required to comply with the ‘Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies’ endorsed by the Council of Australian Governments as amended in June 2004. The RIS will be required to provide information to policy analysts and decision-makers which:

- demonstrates the need for the proposed standards;
- details the objectives of measures proposed;
- outlines the alternative approaches considered and explains why an alternative approach was not adopted;
- documents which groups benefit from the proposed standards and which groups pay the direct and indirect costs of implementation;
- demonstrates that the benefits of introducing the proposed standards outweigh the costs (including compliance and administrative costs); and
- demonstrates that proposed standards are consistent with relevant international standards (or justifies the extent of inconsistency).

1.2. Setting the scene

To set the scene for this RIS, this Part provides some general background information about the Australian livestock land transport industry.

It is important to emphasise that the role of this RIS is strictly to assess the proposed standards, and not to assess existing commonwealth or state legislation, codes of practice, enforcement strategies or other considerations. Nevertheless, relevant background information may be helpful to interested parties in understanding the proposed standards within their legislative, economic, national and international contexts.

1.2.1 Overview of the Australian livestock land transport industry

Livestock transport is a crucial link in the supply chain that brings together all aspects of the meat and livestock industries. The livestock transport industry provides the key service of transporting livestock between farms and stations, as well as transport to and from saleyards, feedlots, processing establishments and live export ports across the country.

While a large component of livestock transport is for purposes of slaughter, there is also considerable movement of animals from one location to another for purposes of management (e.g. lack of local pasture/fodder) or for resale and relocation as live animals. A projection of estimates for the total number of livestock transported per annum by road and rail per species is summarised in Table 1 (refer to Appendix 5 for derivation)
Table 1 – Projected estimates of total numbers, distances and hours of livestock transported per annum by species/class of species

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Total no. Transported (000’s)</th>
<th>Estimated total distance (km) travelled by road/ annum</th>
<th>Weighted total hrs of transport/ annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>2.875</td>
<td>8,788</td>
<td>115</td>
</tr>
<tr>
<td>Cattle</td>
<td>23,880.105</td>
<td>67,603,648</td>
<td>895,529</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>161.053</td>
<td>84,267</td>
<td>1,053</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>955.556</td>
<td>426,901</td>
<td>5,336</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>107.162</td>
<td>39,642</td>
<td>514</td>
</tr>
<tr>
<td>Sheep</td>
<td>66,210.170</td>
<td>30,042,052</td>
<td>389,425</td>
</tr>
<tr>
<td>Pigs</td>
<td>7,729.286</td>
<td>5,219,823</td>
<td>65,248</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>422,333.300</td>
<td>29,200,542</td>
<td>365,007</td>
</tr>
<tr>
<td>Chicks</td>
<td>443,449.965</td>
<td>1,886,804</td>
<td>23,585</td>
</tr>
<tr>
<td>Horses (slaughter + export*)</td>
<td>17.87</td>
<td>44,800</td>
<td>560</td>
</tr>
<tr>
<td>Horses (sales + major events)</td>
<td>2,890.48</td>
<td>6,714,982</td>
<td>83,937</td>
</tr>
<tr>
<td>Deer</td>
<td>49.333</td>
<td>38,203</td>
<td>478</td>
</tr>
<tr>
<td>Camels</td>
<td>0.787</td>
<td>2,077</td>
<td>26</td>
</tr>
<tr>
<td>Alpacas</td>
<td>66.990</td>
<td>37,774</td>
<td>472</td>
</tr>
<tr>
<td>Goats</td>
<td>1,535.294</td>
<td>655,643</td>
<td>8,499</td>
</tr>
<tr>
<td>Emus</td>
<td>5.111</td>
<td>6,453</td>
<td>81</td>
</tr>
<tr>
<td>Ostriches</td>
<td>10.778</td>
<td>12,038</td>
<td>150</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>969,406.114</strong></td>
<td><strong>142,024,436</strong></td>
<td><strong>1,840,014</strong></td>
</tr>
</tbody>
</table>

* Includes imports and re-imports for horses.

As shown in Table 1, an estimated 969.4 million animals are transported 142 million kilometres, taking 1.84 million hours per year. Most of these trips are well within reasonable limits but there is a need in Australia for livestock to be transported long distances to markets or for management.

Of the total number of animals transported, roughly 600,000 head of cattle and roughly 900 head of horses are transported by rail. The estimated total annual cost of transporting livestock for slaughter, export/import and other purposes by road (excluding the cost of horse transport for recreational purposes) is between approximately $606.8m and $672.7m (refer to Part A6.2 of...

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4 Recreation horse movements are estimated at 16 million p.a. and are not included in RIS calculations because the new standards will not have a major cost impact due to short journey length and expected high compliance with the proposed standards. The standards nonetheless will apply to all livestock movements.

5 The estimate provided by Queensland Rail that notes that in 2006 there were 360,000 head of cattle transported by rail however this was 40% lower than a typical year due to drought.

6 The estimate is determined by assuming 5% of horses are transported by rail on advice of Queensland Rail.

7 Other purposes include: mustering; management; companionship; non-event recreation; breeding/breeder replacement; growing out or finishing; racing; show/exhibition and sale.
Appendix 6). The total gross value of livestock transported in Australia for slaughter, disposal and export is estimated to be around $12 billion per year.\(^5\)

The export destinations of Australian livestock products are relevant to the later comparison of the proposed standards with equivalent international standards (refer to Parts 1.2.3.4 and 3.3 of the RIS).

Australia constitutes the second largest beef exporter in the world after Brazil.\(^9\) The other main exporters of beef in order of world market share are; India; New Zealand; Canada; Argentina; Uruguay; the United States; and EU-25.\(^10\) In 2004, Australia produced about 1.3 million tonnes carcass weight of beef, of which more than 950,000 tonnes (see Table 2) was exported to over 100 countries. Australia was the main exporter of beef and veal to the United States from 2002 to September 2007, followed by Canada, New Zealand, Uruguay and Brazil.\(^11\)

### Table 2 – Volume of Australian livestock product exports – 2004/05 to 2006/07

<table>
<thead>
<tr>
<th>Livestock Product</th>
<th>Unit</th>
<th>2004-05</th>
<th>2005-06</th>
<th>2006-07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef and veal</td>
<td>kt</td>
<td>948</td>
<td>892</td>
<td>974</td>
</tr>
<tr>
<td>Mutton</td>
<td>kt</td>
<td>137</td>
<td>145</td>
<td>162</td>
</tr>
<tr>
<td>Lamb</td>
<td>kt</td>
<td>123</td>
<td>143</td>
<td>150</td>
</tr>
<tr>
<td>Pig meat</td>
<td>kt</td>
<td>43</td>
<td>44</td>
<td>41</td>
</tr>
<tr>
<td>Poultry meat</td>
<td>kt</td>
<td>20</td>
<td>22</td>
<td>28</td>
</tr>
<tr>
<td>Live sheep</td>
<td>'000</td>
<td>3,233</td>
<td>4,248</td>
<td>4,138</td>
</tr>
<tr>
<td>Live cattle</td>
<td>'000</td>
<td>574</td>
<td>549</td>
<td>638</td>
</tr>
</tbody>
</table>

Source: ABARE, (December 2007), Australian Commodity Statistics

### Table 3 – Value of Australian livestock product exports $m – 2004/05 to 2006/07

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef and veal</td>
<td>4,584</td>
<td>4,272</td>
<td>4,634</td>
</tr>
<tr>
<td>Mutton</td>
<td>398</td>
<td>432</td>
<td>458</td>
</tr>
<tr>
<td>Lamb</td>
<td>673</td>
<td>767</td>
<td>749</td>
</tr>
<tr>
<td>Pig meat</td>
<td>150</td>
<td>143</td>
<td>142</td>
</tr>
<tr>
<td>Poultry meat</td>
<td>20</td>
<td>21</td>
<td>26</td>
</tr>
<tr>
<td>Live sheep</td>
<td>207</td>
<td>291</td>
<td>289</td>
</tr>
<tr>
<td>Live cattle</td>
<td>374</td>
<td>358</td>
<td>437</td>
</tr>
</tbody>
</table>

**Total** \[6,405, 6,284, 6,735\]

Source: ABARE, (December 2007), Australian Commodity Statistics

Indonesia is Australia’s largest market for live cattle and Australia’s competitiveness in the market for feeder cattle has been enhanced by Indonesia’s restrictions on cheap buffalo meat imports from India and frozen beef from Brazil.\(^12\)

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\(^5\) Refer to Appendix 5.


\(^10\) Meat and Livestock Australia (August 2006), *Australia’s Beef Industry: Fast Facts 2006*


\(^12\) Martin, P et al (February 2007), Australian Beef 07.1 ABARE
Australia has become a net importer of pig meat products since 2002. In 2006 Australia exported only 67kt of pig meat as compared to 1,080kt by Canada and 1,359kt by the United States\textsuperscript{13}.

Australia is considered to be the world’s largest goat meat exporter and total goat meat shipments for the January – April period 2005 totaled 6,960 MT (shipped weight) with the USA being the major destination. Live goat exports are mostly destined for Malaysia.\textsuperscript{14}

Australia was also the main exporter of lamb and mutton to the United States from 2002 to September 2007, followed by New Zealand\textsuperscript{15}. Australia and New Zealand are the largest exporters of lamb and mutton in the world.\textsuperscript{16} Saudi Arabia is the world’s largest importer of Australian livestock (i.e. namely live sheep) – notwithstanding the two-year ban which ended in 2005. A summary of trade patterns for sheep meat is provided in Table 4.

| Table 4 – Volume/pattern of trade of sheepmeat for selected countries 1999 to 2006 |
|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|                                | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Exports from Australia         | 257  | 300  | 298  | 281  | 234  | 258  | 293  | 320  |
| Exports from NZ                | 347  | 357  | 346  | 341  | 378  | 367  | 380  | 389  |
| Imports                        |      |      |      |      |      |      |      |      |
| France                         |      |      |      |      |      |      |      |      |
| – from Australia               | 167  | 169  | 120  | 139  | 133  | 135  | 135  | 137  |
| – from New Zealand             | 26   | 28   | 30   | 39   | 33   | 32   | 30   | 30   |
| Germany                        | 41   | 40   | 42   | 40   | 33   | 32   | 38   | 39   |
| – from Australia               | 1    | 1    | 2    | 1    | 1    | 1    | 1    | 1    |
| – from New Zealand             | 30   | 32   | 34   | 32   | 27   | 26   | 30   | 31   |
| Saudi Arabia                   | 49   | 55   | 45   | 45   | 54   | 52   | 60   | 52   |
| – from Australia               | 21   | 23   | 23   | 26   | 24   | 20   | 26   | 26   |
| – from New Zealand             | 14   | 19   | 13   | 11   | 15   | 13   | 14   | 13   |
| United Kingdom                 | 113  | 109  | 93   | 102  | 111  | 116  | 110  | 114  |
| – from Australia               | 13   | 12   | 9    | 12   | 12   | 13   | 13   | 14   |
| – from New Zealand             | 88   | 85   | 71   | 77   | 81   | 82   | 79   | 83   |
| United States                  | 47   | 55   | 61   | 67   | 69   | 74   | 75   | 79   |
| – from Australia               | 32   | 39   | 44   | 46   | 43   | 47   | 54   | 59   |
| – from New Zealand             | 15   | 15   | 17   | 21   | 26   | 27   | 21   | 20   |

Source: ABARE, (December 2007), Australian Commodity Statistics

The proportion of trade of livestock/meat products for 2006/2007 by main export destination is summarised in Table 5 below:

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\textsuperscript{13} ABARE, (December 2007), Australian Commodity Statistics

\textsuperscript{14} Elliot, M (2005), \textit{Australia Livestock and Products Emerging Goat Meat Industry 2005}, USDA Foreign Agricultural Service, GAIN Report, GAIN Report Number: AS5015

\textsuperscript{15} United States Department of Agriculture USDA


\textsuperscript{16} Meat and Livestock Australia (August 2006), \textit{Australia’s Sheepmeat Industry: Fast Facts 2006}
Table 5 – Main export destination of selected Australian livestock products 2006/2007

<table>
<thead>
<tr>
<th>Product</th>
<th>% of export by major destination</th>
<th>% of export by other export destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live cattle exports (676,877 head)</td>
<td>Indonesia – 66.81% Malaysia – 7.72%</td>
<td>25.47%</td>
</tr>
<tr>
<td>Beef and veal exports (973,880 tonnes)</td>
<td>USA – 31.1% Japan – 41.4% Korea – 16.09%</td>
<td>11.41%</td>
</tr>
<tr>
<td>Australian mutton exports (162,217 tonnes)</td>
<td>Total Middle East – 31.3% South Africa – 12.84% USA – 11.01% Taiwan – 5.83% Malaysia – 5.03%</td>
<td>34.16%</td>
</tr>
<tr>
<td>Lamb meat exports (150,242 tonnes)</td>
<td>USA – 27.55% Total Middle East – 13.39% Total EU – 8% China – 7.81% PNG – 7.32% UK – 6.04% Japan – 5.98%</td>
<td>23.90%</td>
</tr>
<tr>
<td>Live goat exports (75,344 head)</td>
<td>Malaysia – 75.1% Singapore – 7.92%</td>
<td>16.98%</td>
</tr>
<tr>
<td>Live sheep exports (4,140,069 head)</td>
<td>Saudi Arabia – 34.7% Kuwait – 21.68% Bahrain – 13.2% Jordan – 12.02% Oman – 8.23%</td>
<td>10.18%</td>
</tr>
<tr>
<td>Goat meat exports (17,994 tonnes)</td>
<td>USA – 58.35% Taiwan – 24.29% Caribbean – 8.08% Canada – 6.03%</td>
<td>3.25%</td>
</tr>
<tr>
<td>Pig meat exports 18</td>
<td>Singapore – 49% New Zealand – 22% Hong Kong – 5% Japan – 5% Other – 19%</td>
<td>19%</td>
</tr>
</tbody>
</table>


1.2.2 Animal welfare issues

Animal welfare concerns are becoming increasingly important to industry, government, consumers and the general public, both in Australia and internationally. Practices which may have once been deemed acceptable are now being reassessed in light of new knowledge and changing attitudes. The need to continue demonstrating sound animal welfare practices is becoming important in both domestic and import/export markets.

‘Animal welfare’ is a difficult term to define and has several dimensions including the mental and physical aspects of the animal’s well-being, as well as people’s subjective ethical preferences. 19

17 Only 5% or more is reported in this column
18 ABS – Year Book Australia, 2008.
The modern scientific and ethical consideration of animal welfare became a legitimate concern in the late 18th century when it was accepted that animals could suffer. Variations in the meaning of animal welfare in science, philosophy and the general community have created much confusion and controversy. Notwithstanding the challenges of defining animal welfare, it is nonetheless important when dealing with animal welfare to separate scientific considerations of welfare (biological facts) from attitudes and moral judgments about what is appropriate (ethics).

1.2.2.1 The ‘five freedoms’ approach

The UK Brambell Committee introduced the concept of the 'five freedoms' for animals - a set of principles which provide a logical and comprehensive framework for analysis of welfare within any animal production system. The five freedoms have been promoted by the UK Farm Animal Welfare Council for many years, and have been adopted by many animal welfare organisations, including RSPCA Australia, as the basis for their policies on the treatment of food animals and other livestock. These five freedoms for farm animals are:

1. Freedom from hunger and thirst - by ready access to fresh water and a diet to maintain full health and vigour.
2. Freedom from discomfort - by providing an appropriate environment including shelter and a comfortable resting area.
3. Freedom from pain, injury or disease - by prevention or rapid diagnosis and treatment.
4. Freedom to express normal behaviour - by providing sufficient space, proper facilities and company of the animal's own kind.
5. Freedom from fear and distress - by ensuring conditions and treatment which avoid mental suffering.

The ‘five freedoms’ approach to welfare assessment is useful for reflecting ethical preferences and community values.

1.2.2.2 Scientific approaches

It is arguable whether these five freedoms in fact represent an adequate basis for welfare, as it is thought that some require further definition (for example what defines normal behaviour across a wide variety of production systems). Barnett and Hemsworth (2003) argue that most would agree with the ethical basis of this general approach to animal welfare, however it lacks definition and until such time that definitions are provided, ‘this approach is not open to scientific scrutiny.’

23 Brambell, 1965
From a welfare perspective, scientists argue that ‘the freedom to express normal behaviour’ requires
a definition of both desirable and undesirable behaviour, especially in an agricultural environment.  
For example ‘normal’ behaviour in the wild often represents the animal’s effort to survive in a life-
and-death struggle to find food and avoid predation - however this is a situation which would clearly reduce animal welfare compared to many farming practices. 

An alternative definition of the welfare of an animal has been provided by Broom as follows:

[The animal’s] state as regards its attempts to cope with its environment and includes both the extent
of failure to cope and the ease or difficulty in coping. Health is an important part of welfare whilst feelings – such as pain, fear and various forms of pleasure – components of the mechanisms for attempting to cope and should be evaluated where possible in welfare assessment.

While welfare may be considered to be a subjective experience, it has a biological function that is related to the fitness and survival of the animal, and researchers have suggested that welfare is compromised when the animal’s evolutionary fitness is reduced. Fitness can be reduced when the animal is subject to a stressor, and activities such as physiological and behavioural responses in the attempt to cope, fail, thus subjecting the animal to stress and distress. Where an individual is failing to cope with a problem, it is said to be stressed. Stress is a physiological response exhibited by the animal when it is attempting to cope with a stressor (i.e. handling, aggression, predation). Stress can be objectively measured in animals using indicators such as the level of cortisol in the blood.

Transport can be a stressor to livestock and in some instances can have longer-term deleterious effects on health, well-being, productivity and ultimately, product quality. In extreme circumstances, the failure to cope with a stressor may lead to illness, significant morbidity or even death of the animals affected. On the other hand, if stress is minimised, poor welfare outcomes can be prevented or made less likely.

The process of transport begins with the assembly of selected animals, followed by loading, confinement, motion, unloading and penning in a different location. The adverse stimuli that livestock are exposed to during transport and lairage (see glossary) include handling during loading and unloading; removal from familiar to unfamiliar conditions; noise; mixing of unfamiliar animals; crowding; fluctuating temperatures; and deprivation of food and water. There can be deleterious effects on health, well-being, productivity and ultimately, product quality. Events that are unfamiliar to animals, such as transportation, will often be perceived by an animal as dangerous and, even in the absence of pain, can result in elevated levels of cortisol.

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25 Barnett and Hemsworth note that modern domestic animals are the result of thousands of years of selective breeding and consequently both the physiology and behaviour of domestic animals have been modified (i.e. the behaviour of even domestic animals placed in wild or semi-wild conditions is different to their wild relatives).
29 Tarrant & Grandin, 2000.
1.2.2.3 Animal welfare issues related to livestock transport

Animals being transported by road and rail are potentially subject to a number of stress factors throughout the journey, including handling, loading, transporting, mixing with unfamiliar animals, climate, unloading and time without water or food. As stated in the introductory pages of the proposed standards and guidelines document (Appendix 7), the risk of adverse animal welfare outcomes is related to:

- competency of personnel involved in any phase of livestock transport.
- selection and preparation of the livestock for the journey
- journey duration
- food and water deprivation time
- timing of water, feed and rest before transport and at unloading
- species and class of the livestock being transported
- road conditions and terrain
- weather conditions
- vehicle and facility design and maintenance
- space allowance on the vehicle, and
- ability to observe the livestock en route and take action to remedy any problem.

These risk factors can be cumulative and apply across all stages of land transport as defined in the standards, from assembly and loading before the journey to unloading at the destination. From an animal welfare perspective, land transport of livestock is a process that begins before the physical journey on either road or rail and only ends some time after this physical journey is complete.

Defining responsibilities

The welfare of animals during transport is the responsibility of all people involved, including owners and managers of animals, business agents or buying/selling agents, transporters and other animal handlers. For example, the consigner and the transporter have the responsibility to determine whether livestock are fit to load; transporters, processors, agents and buyers all have responsibility in certain instances for the feeding and watering of livestock.

The importance of defining responsibilities for animal welfare is particularly important in transportation, which often coincides with a change in ownership of the animals.

The responsibility for transport is shared amongst livestock owners, producers, agents, buyers, transport operators and people at destinations including saleyard, feedlot and processing personnel. Communication between relevant parties is essential to ensure the welfare of the livestock throughout transport.
Stock handling competency

There is a wide range of attitudes to animals and these have major consequences for animal welfare. During handling and transport, these attitudes may result in one person causing high levels of stress in the animals whilst another person doing the same job may cause little or no stress.

Training of staff can substantially alter attitudes to, and treatment of, animals. If an untrained person is driving a vehicle and in sole charge of tens or hundreds of animals on a transport vehicle, this can easily result in poor welfare outcomes. For example, a competent stock handler would know that different species respond in different ways to stress. Some species like pigs vocalise their distress whilst others like sheep or cattle may show relatively little response or may ‘freeze’.

Loading and unloading

Loading and unloading have been shown to be the procedure most likely to be the cause of stress in transported animals. Inspection of animals prior to loading is also important to ensure that animals not fit for transport are not transported. Where an animal handler believes that there is a significant risk of unfitness among the animals to be loaded, the animals should be inspected by a veterinarian.

Grandin has concluded that the single most important transportation issue is having a physically fit animal for transport. The greatest welfare problems during transport were caused by death losses in stress susceptible pigs and old cows. A practical example of this problem is given in Case Example 1 below.

<table>
<thead>
<tr>
<th>Case Example 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>In May 2004, the manager of West Australian cattle station near Meekatharra was convicted of 10 charges of causing needless suffering to cattle that were not in a fit condition for transport. He arranged for more than 600 head to be transported by road on a 17 hour journey to Perth. On their arrival dozens of the animals were dead and many others were in poor condition. More than 50 cows and calves had to be put down.</td>
</tr>
</tbody>
</table>

The setting of standards for the transport of pregnant animals is problematic, due to difficulties in determining the stage of pregnancy without a veterinary examination and the occasional need to allow the transport of animals in late pregnancy for livestock management reasons, including supervision of parturition.

The effects of efficient loading and unloading can vary considerably by species. For example, sheep tend not to be greatly affected, cattle are sometimes affected, pigs are always affected and poultry usually travel in containers to minimise human contact.

34 Scientific Panel on Animal Health and Welfare, 2004
37 ABC News Online Tue May 11, 2004 8:20pm AEST
It is important to avoid rough handling of livestock. It takes up to 30 minutes for an animal to calm down and have its heart rate return to normal after rough handling. Calm animals move more easily and are less likely to bunch together and be difficult to remove from a pen.\(^{39}\)

As well as inducing fear, stress and even mortality in animals, poor handling can result in bruising and poor meat quality. For example, it was estimated in 2001 that bruising costs the US pork industry US$6 to $7 million annually. PSE (Pale Soft Exudative)\(^{40}\) pork was estimated to cost US$30 million annually. Losses due to mortality of pigs during transportation were estimated at a further US$8 million annually.\(^{41}\)

There is an optimum stocking density for each species on transport vehicles, which varies according to class, age, ambient temperature and humidity. Overcrowding presents the risk that animals that go down during transport may be become trapped on the floor. Low stocking density renders animals more vulnerable to falling as a result of careless driving and sudden stops,\(^{42}\) or winding roads.

Segregation of animals that could injure each other is also important. This need is already widely accepted for dominant animals such as stallions and in situations where there are large size differences between individuals. Any dogs used must be under control, not only for animal welfare reasons but to avoid bite marks on meat products.

**Calves for slaughter (‘bobby calves’)**

Bobby calves are predominantly young unweaned male dairy calves.\(^{43}\) As they are surplus to the herd replacement needs of dairy producers, they are usually transported to slaughter for human consumption in their fifth day of life. (The age of transport is a controversial issue addressed later as an option in this RIS).

Bobby calves are physiologically immature with no fat reserves, poorly developed thermo-regulatory mechanisms and a lack of responsiveness to external stimuli. These factors predispose them to difficulties in coping with transport and handling. Anecdotal observations of bobby calves suggest that those over one week of age are more robust and able to withstand the stresses of transportation.\(^{44}\) However, there is a lack of scientific evidence on this issue and further research is needed.

The mortality of bobby calves during transport is a concern. A study in 2005 by veterinary officers of the Victorian Department of Primary Industries found that the mortality of calves for slaughter increased exponentially with distance of transportation to the processing establishment.\(^{45}\) This problem is exacerbated by calves for slaughter sometimes not being slaughtered at the nearest processing establishment for various market-related or seasonal reasons.

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\(^{40}\) PSE is caused by a combination of factors which stress the animal and cause a rapid decline in meat pH.


\(^{42}\) Watts, undated

\(^{43}\) For the purpose of the proposed standards, bobby calves are defined as being less than one month of age (30 days) and weighing less than 80 kilograms live weight.

\(^{44}\) Shiel and Cave, undated.

\(^{45}\) Cave, Callinan and Woonton, 2005.
Water deprivation

During livestock transport, particularly over long durations (greater than 24 hours), it is the physiological states of dehydration and fatigue that are of most concern from an animal welfare perspective. In the Australian transport context, these factors are more important than time off food for most species and classes.

Species vary in their ability to cope with water deprivation. For example, a recent CSIRO study showed that healthy mature sheep with no pre-transport feed or water curfew and transported in accordance with accepted good practice under normal climatic conditions generally coped with transport durations up to 48 hours. Whilst those on the longer journeys (especially 30 and 48 hours), were initially more thirsty on arrival, the physiological and behavioural data indicates that they were not clinically compromised.46

There is also variation in the ability to cope with water deprivation for classes of animals within species. Special care needs to be taken with young stock, and with lactating animals or those in late pregnancy to avoid excessive water deprivation.

Transport vehicles and facilities

The construction of transport vehicles and loading facilities can have a significant impact on animal welfare. A minimum requirement for all species is non-slip flooring, adequate ventilation, vertical clearance and freedom from internal protrusions or other objects that could cause injury. Careful, quiet handling becomes impossible if animals slip or fall.47

Travel and spell periods

With increasing duration of journey, the welfare of animals generally deteriorates because of travel fatigue.48 Factors affecting travel fatigue include time travelled, the quality of the journey (whether the road is straight or winding; 49 the number of stops and starts encountered); temperature and humidity.

Nevertheless, rest stops or spell periods during transport can be problematic. The stress of unloading and reloading some species such as pigs and extensively raised cattle can outweigh the benefits of spell periods,50 particularly on shorter journeys. If animals are unloaded en route, they should have a minimum spell period of 4 hours before reloading. Spell periods should include access to water, food and the opportunity to rest before commencing another journey.

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48 Scientific Panel on Animal Health and Welfare, 2004
Humane destruction

Destruction of animals is an emergency procedure that is rarely necessary during transport, as long as fit animals are selected for loading. Where it is necessary, for example because of injury caused by a traffic accident, it is important that destruction be done promptly, safely and humanely. Humane destruction methods for newborn stock are relevant for those unexpected births during transport that cannot be cared for adequately.

1.2.3 Relevant legislation, standards and guidelines

1.2.3.1 States and territories

Under constitutional arrangements, the primary responsibility for animal welfare within Australia rests with individual states and territories, which exercise legislative control through ‘prevention of cruelty to animals Acts’ and other legislation (refer to Table 6).

Each state or territory has a bureau or office that deals with animal welfare. In many cases designated officers of the Royal Society for the Prevention of Cruelty to Animals (RSPCA) also have authority under state or territory legislation to prosecute offenders for cruelty offences. Animal welfare concerns arising in particular industries are often addressed in codes of practice developed jointly by government and the industry. Each State and Territory government has an Animal Welfare Advisory Committee (AWAC) that provides advice on animal welfare issues and on associated legislation and codes of practice.51

As shown in Table 6 below, all jurisdictions can make regulations to require compliance with the proposed standards, and all regulations except those in New South Wales and the Northern Territory can adopt the standards by reference. (New South Wales and the Northern Territory would have to make regulations using similar wordings as the standards). The Australian Capital Territory, South Australia and Western Australia can adopt standards as amended from time to time, whereas Queensland, Tasmania and Victoria can only adopt standards as at a particular date (that is, if the standards are amended, the regulations would have to be amended accordingly).

It is not the role of this RIS to examine the extent to which state and territory legislation has adopted existing model codes. That is being considered as part of the AAWS National Implementation Plan.52

1.2.3.2 Federal government

The Federal Government has limited animal welfare responsibility in the livestock sector, covering export processing establishments and the live animal export trade. The Federal Minister for Agriculture receives advice from the National Consultative Committee on Animal Welfare (NCCAW). NCCAW was established in 1989 to provide a forum for agricultural industry representatives, animal welfare interests and Commonwealth and State/Territory government

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51 In Western Australia, specialist animal welfare advisory committees are established from time to time as the need arises.
52 Shiell, June 2006.
agencies to develop balanced advice in animal welfare for the Commonwealth Government.\textsuperscript{53} It advises on the implications of issues and developments affecting the welfare of animals, and on the relevance and effectiveness of existing and possible future Australian animal welfare arrangements including policies, regulation, codes of practice and guidelines. For example, the NCCAW has issued position statements on the humane road transport of animals, and the rail transport of animals.\textsuperscript{54}

Another method of dealing with animal welfare issues of national significance has been through the development of model codes of practice in consultation with industry and other stakeholders, for endorsement by the Primary Industries Ministerial Council. These model codes have been used as a guide by the various state and territory governments in the development of their own legislation and codes of practice. As these model codes are developed primarily for government purposes, they are separate to the various voluntary codes of practice and quality assurance programs that may be developed from time to time by industry associations.

The Primary Industries Ministerial Council (PIMC) consists of the Australian/State/Territory and New Zealand government ministers responsible for agriculture, food, fibre, forestry, fisheries and aquaculture and rural adjustment policy. The Council is the peak government forum for consultation, coordination and, where appropriate, integration of action by governments on primary industries issues, including animal health and welfare.

\textsuperscript{53} The former Minister agreed to the recommendation of the 2006 NCCAW Review Report (Shiell, December 2006) that, as an interim measure, NCCAW be retained as an advisory committee with altered terms of reference and membership until the conclusion of the AAWS implementation period on 30 June 2009. The former Minister also agreed in principle to the NCCAW Review recommendation that an Australian Animal Welfare Council be established to replace NCCAW but decided that a final decision on this recommendation be taken nearer to that date. See <http://www.daff.gov.au/animal-plant-health/welfare/nccaw#report>


\textbf{Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock}
### Table 6 - Summary of relevant state and territory legislation

<table>
<thead>
<tr>
<th>State or Territory</th>
<th>Act</th>
<th>Existing regulations</th>
<th>Adoption of standards by reference?</th>
<th>Compulsory compliance with adopted standards?</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>Animal Welfare Act 1992</td>
<td>Animal Welfare Regulation 2001</td>
<td>Yes. Under s.112(4) of the Act, the regulations may incorporate (with or without modification) an approved code of practice as in force from time to time.</td>
<td>Yes, if adopted by regulations.</td>
</tr>
<tr>
<td>NSW</td>
<td>Prevention of Cruelty to Animals Act 1979</td>
<td>Prevention of Cruelty to Animals Regulation, 2006.</td>
<td>Yes, but regulations can adopt the standards as guidelines only.</td>
<td>Yes, but the wording of the standards would have to be reflected in the regulations themselves.</td>
</tr>
<tr>
<td>NT</td>
<td>Animal Welfare Act</td>
<td>Animal Welfare Regulations</td>
<td>Yes. Under s.24 of Act, Minister may by notice in gazette adopt codes of practice, but compliance with such codes cannot be made mandatory.</td>
<td>Yes, but the wording of the standards would have to be reflected in the regulations themselves.</td>
</tr>
<tr>
<td>QLD</td>
<td>Animal Care and Protection Act 2001</td>
<td>Animal Care and Protection Regulation 2002</td>
<td>Yes. Under s.15(1) of Act, a regulation may require a person to comply with the whole or a stated part of a code of practice.</td>
<td>Yes, if adopted by regulations.</td>
</tr>
<tr>
<td>SA</td>
<td>Prevention of Cruelty to Animals Act 1985</td>
<td>Prevention of Cruelty to Animals Regulations 2000</td>
<td>Yes. Under s.44(3) of Act, regulations can prescribe codes of practice with or without modification or operate by reference to any code of practice relating to animals as in force at a particular time or as amended from time to time.</td>
<td>Yes, if adopted by regulations.</td>
</tr>
<tr>
<td>VIC</td>
<td>Prevention of Cruelty to Animals Act 1986</td>
<td>Prevention of Cruelty to Animals Regulations 1997</td>
<td>Yes. Under s.42(2)(d) of Act, regulations can adopt standards with or without modification as published at the time the regulations are made, or at any time before then.</td>
<td>Yes, if adopted by regulations.</td>
</tr>
<tr>
<td>WA</td>
<td>Animal Welfare Act 2002</td>
<td>Animal Welfare (General) Regulations 2003</td>
<td>Yes. Under s.94(2)(d) of the Act, the regulations can adopt codes of practice with or without modification, as they exist at a particular date; or as they are amended from time to time.</td>
<td>Yes, if adopted by regulations.</td>
</tr>
</tbody>
</table>

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55 Regulations are not needed in NT to adopt standards. This can be done by Minister by notice in gazette.
1.2.3.3 The Australian Animal Welfare Strategy

The Australian Animal Welfare Strategy (AAWS) was initiated by the Australian Government with the assistance of the NCCAW and is based on broad stakeholder and community consultation. It was endorsed by PIMC in May 2004 and provides a national framework to enhance animal welfare outcomes. The AAWS is aimed at all Australians and encompasses all uses of sentient animals.\(^\text{56}\)

AAWS been developed to provide the national and international communities with an appreciation of animal welfare arrangements in Australia and to outline directions for future improvements in the welfare of animals.

A key objective of the AAWS is ‘to facilitate improved consistency of legislation across states and territories for improved and sustainable animal welfare outcomes.’ Two related AAWS activities are to:

- Facilitate the timely development, and revision of codes of practice, standards and guidelines and legislation for the welfare of animals where scientific, social and industry developments justify changes being made to existing practices, and
- Promote the adoption of a harmonised approach to the development and application of clear, contemporary, adequate and consistent animal welfare legislation and codes of practice across all state, territory and local government jurisdictions, for appropriate and agreed outcomes.\(^\text{57}\)

The AAWS National Implementation Plan includes an Animal Health Australia (AHA) managed process to convert the existing model codes to Australian animal welfare standards that can be regulated. The proposed Australian Animal Welfare Standard for Land Transport of Livestock is the first Australian welfare standard to be developed. It incorporates elements in the existing species-specific codes plus new provisions that are not already covered by the existing land transport model codes of practices.\(^\text{58}\)

1.2.3.4 International standards

Animal welfare considerations during land transport are the subject of increasing international focus. The World Organisation for Animal Health (OIE) has nominated transport of live animals as one of three welfare topics for which guidelines are currently being developed by OIE working groups (with a view to the possible development of international standards). The European Union is also revising standards on animal transport.

The OIE is an intergovernmental organisation created by the International Agreement of 25 January 1924, signed by 28 countries. In May 2006, the OIE totalled 167 member countries.

\(^{56}\) Animal Health Australia, 2007.
\(^{57}\) Primary Industries Standing Committee, 2005.
\(^{58}\) Animal Health Australia, 2007.
Australia has pushed strongly for the development of scientifically based OIE international animal welfare guidelines. This was not intended as a means to underpin non-tariff barriers to trade. The OIE has since:

- endorsed animal welfare guiding principles;
- developed welfare guidelines for land transport, sea transport, humane slaughter and killing for disease control.

Scientifically based animal welfare standards are currently being developed by the OIE in line with the following agreed animal welfare guiding principles:

- There is a critical relationship between animal health and animal welfare;
- The internationally recognised ‘five freedoms’ (freedom from hunger, thirst and malnutrition; freedom from fear and distress; freedom from physical and thermal discomfort; freedom from pain, injury and disease; and freedom to express normal patterns of behaviour) provide valuable guidance in animal welfare;60

A comparison of the proposed standards with the relevant OIE guidelines for land transport is given in Part 3.3 and Appendix 4 to this RIS.

1.2.3.5 Industry initiatives

Animal welfare is now recognised as a characteristic of product quality and in some instances is now a requirement for certain markets. There is increasing recognition by livestock industries that animal welfare is an integral part of good animal husbandry. In the past decade, food safety-based quality assurance schemes have been implemented within businesses and/or across industries. These schemes reassure retailers and consumers of the safety and quality of animal products. Some, but not all, of these quality assurance programmes include animal welfare. Quality assurance programs may also be the most appropriate vehicle to include systems to ensure environmental management, occupational health and safety, and animal welfare through a total production chain approach.

These developments illustrate how livestock industries have increased their capacity to define and demonstrate continuous improvement, leadership and best practice standards (e.g. in education and extension training programs for industry participants). To date, a number of auditable quality assurance programs in the pork, dairy, chicken meat, egg, red meat and livestock transport industries have been initiated.61

Several livestock industries have made significant progress in developing their own quality assurance programs that incorporate animal welfare requirements. These industries generally see

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59 <http://www.oie.int/eng/normes/mcode/en_chapitre_3.7.3.htm>
60 Primary Industries Standing Committee, 2005.
such quality assurance programs as a mechanism to demonstrate compliance with legislation, codes of practice, standards or market requirements. Additional potential benefits include improvements in product quality, the benefits of a training aid focussing on practical welfare issues and improvements in work-related characteristics in stock people such as job satisfaction.

Within the livestock transport industry, animal welfare guidelines have already been developed as recommended good practice for the industry and are reflected in the recently revised quality assurance and accreditation program, TruckCare.

TruckCare is the Australian Livestock Transporters Association’s independently-audited quality assurance program. The program is built around the quality assurance principles contained in international guidelines and also uses hazard analysis of critical control points (HACCP). TruckCare is designed to link with related quality programs including CattleCare, FlockCare, National Saleyard Quality Assurance and TruckSafe. The program is designed to raise awareness and implement a quality management system which can be audited by customers, or by an externally qualified auditor and integrated with customers or road transport quality assurance programs. TruckCare has been developed with the assistance of animal welfare scientists from the Department of Primary Industries, Victoria, and in collaboration with industry and animal welfare organisations.

Additionally, a national guide for selecting livestock for transport, *Is it fit to load?*, has been prepared by Meat & Livestock Australia (MLA) in collaboration with the RSPCA and relevant federal, state and territory departments. This guide was developed to help transporters determine if an animal is fit to be loaded for transport to saleyards, processing establishments, or any other destination.

There are also some state-based industry codes of practice, such as the Codes of Practice for the Welfare of Animals prepared by the Livestock Transporters Association of Western Australia (Inc.).

### 1.3 Consultation processes

The preparation of an RIS provides for an informed process of consultation regarding the proposed standards, alternative options and the costs and benefits associated with each option. The publication of the consultation draft RIS is the final step in the consultation process, where the general community and consumers, as well as interested stakeholders have an opportunity to comment on both the proposed standards and the RIS.

As discussed in Part 1.2.3, extensive consultation has already taken place with government agencies, researchers, industry and animal welfare organisations in the development of the proposed standards and their predecessors.

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63 ALTA <http://www.alta.org.au>
64 Meat & Livestock Australia et al, April 2006.
65 Livestock Transporters Association of Western Australia, 2002.
Under the AAWS National Implementation Plan, AHA has been appointed as the project manager for the conversion of the existing model codes into standards that can be regulated. The method to develop the proposed standards was defined in the AHA business plan for the project, following extensive stakeholder consultation and consideration of a review of the existing codes of practice in 2005.66

The proposed standards were developed under the auspices of the Animal Welfare Working Group (AWWG), which is ultimately responsible to the Primary Industries Ministerial Council (PIMC). Membership of AWWG comprises representatives from each of the State Departments with responsibility for agriculture, CSIRO, and the Commonwealth Department of Agriculture, Fisheries and Forestry - Australia.

Some changes to the model proposed in the business plan were made during the development of the proposed standards, partly due to the scale and number of different industries and industry sectors involved and partly due to the process being new and previously untested. For instance, in order to achieve a consistent set of standards, with consensus from stakeholders that could provide for a whole of chain approach, widening the consultation and involvement of several key sectors was required.

The development process was initially undertaken by a small writing group comprising research, government and industry representatives; supported by a widely representative Standards Reference Group (SRG). Further drafts of the standards were developed by AHA in consultation with the SRG and smaller working groups covering each species or issue. Further, several species-specific working groups were established to provide insight into specific issues that may impact on a particular animal industry.

The SRG was comprised of representatives of commercial transport operations, representatives from the production, saleyard, transport, feedlot and processing sectors of industry for all the animal species involved, animal welfare groups, state and federal regulators, policy representatives and other experts from the veterinary, teaching and research fields, as follows:

Animals Australia Inc. (AA) is a federation representing some 40 member societies and thousands of individual supporters throughout Australia.67

The Australian Alpaca Association Ltd. (AAA) represents alpaca owners at all levels and is the collective voice of over 2100 members in all states.

The Australian Chicken Meat Federation Inc (ACMF) is the peak coordinating body for participants in the chicken meat industry in Australia, including growers and processing companies.. Its members are the various State Chicken Meat Councils (QLD, NSW, VIC, SA and WA), APIA (which represents the major chicken meat processors), and the ACGC (Australian Chicken Growers Council).

66 Neumann, 2005.
67 <http://www.animalsaustralia.org/about/>
**Australian Dairy Farmers Limited** (ADF) is a not-for-profit company representing the interests of Australian dairy farmers.\(^{68}\)

The **Deer Industry Association of Australia** (DIAA) is a national organisation representing farmers, processors, transporters, breed organisations and any other party involved in the deer industry.\(^{69}\)

The **Australian Veterinary Association** (AVA) is the professional organisation for veterinarians. The core objective of the AVA is to advance veterinary science.\(^{70}\)

The **Australian Egg Corporation** (AECL) is a producer owned company which integrates marketing, research and development and policy services for the benefit of all stakeholders. AECL is mainly funded through statutory levies collected under the Egg Industry Service Provision Act 2002 and Australian government funds for the purposes of research & development.\(^{71}\)

The **Australian Horse Industry Council** (AHIC) represents the interests of all persons and the health and welfare of all horses in the Australian horse industry.\(^{72}\)

The **Australian Livestock Exporters Council** (ALEC) is the national policy body representing the livestock export industry. ALEC is made up of livestock exporters and state chapters whose members are directly involved in the export of cattle, sheep and goats.\(^{73}\)

The **Australian Livestock & Property Agents Association** (ALPA) is the national peak industry body representing livestock and property agents. The Association represents more than 1,200 agency businesses across Australia.\(^{74}\)

The **Australian Livestock Transporters Association** (ALTA) represents almost 800 road transport companies across rural Australia. The great majority are livestock carriers. ALTA is the national industry body and is made up of State-level associations from every State of Australia.\(^{75}\)

The **Australian Lot Feeders’ Association** is the peak national body for the feedlot industry in Australia.\(^{76}\)

The **Australian Meat Industry Council** (AMIC) is the peak council that represents retailers, processors, exporters and smallgoods manufacturers in the post-farm-gate meat industry.\(^{77}\)

\(^{68}\) [http://www.australiandairyfarmers.com.au/]
\(^{69}\) [http://www.diaa.org]
\(^{70}\) [http://www.ava.com.au/]
\(^{71}\) [http://www.aecl.org/index.asp?pageid=360]
\(^{72}\) [http://www.horsecouncil.org.au/content.asp?z=3]
\(^{73}\) [http://www.livecorp.com.au]
\(^{74}\) [http://www.alpa.net.au/]
\(^{76}\) [http://www.feedlots.com.au]
\(^{77}\) [http://www.amic.org.au/]

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Australian Pork Limited (APL) is the national representative body for Australian pig producers. It is a producer-owned not-for-profit company combining marketing, export development, research, innovation and strategic policy development ‘to assist in securing a profitable and sustainable future for the Australian pork industry’.78

The Cattle Council of Australia’s (CCA) charter is to represent and promote the interests of Australian beef cattle producers. This is achieved through wide and regular consultation with, and policy advice to, key industry organisations, Federal Government Departments and other bodies regarding issues of national and international importance. The CCA membership comprises all of Australia’s major state farming organisations. The collective membership base is more than 22,000 beef cattle producers and over 15 million cattle and the CCA is required by legislation to provide representation for the entire Australian beef cattle industry.79

The Central Australian Camel Industry Association Inc (CACIA) is made up of members from the pastoral industry, meat industry, Aboriginal communities, tourism operators, transport operators, contractors and Government agencies. The role of CACIA is to promote the sustainable development of the camel industry through the use, knowledge and well-being of camels in Australia.80

Dairy Australia is the industry’s services provider; owned by the industry, limited by guarantee, whose members are farmers and industry bodies. The Company invests approximately $30 million of dairy farmer levy payments and $15 million of taxpayer funds in projects and services for the benefit of the Australian dairy industry.81

The Goat Industry Council of Australia (GICA) is the peak national body representing the interests of Australian goat meat, fibre and dairy producers.82

The Livestock Saleyards Association of Australia (LSAA) is a federation of the state saleyard associations of Victoria, South Australia, Queensland and Western Australia.

Meat and Livestock Australia is a producer-owned company that provides services to livestock producers, processors, exporters, foodservice operators and retailers. MLA has over 43,000 livestock producer ‘members’ who have stakeholder entitlements in the company.83

The National Farmers’ Federation (NFF) is the peak national body representing farmers and, more broadly, agriculture across Australia.84

78 <http://www.apl.au.com/index.cfm>
80 <http://www.camelsaust.com.au>
81 <http://www.dairyaustralia.com.au/content/view/15/35/>
The Northern Territory Cattlemen’s Association Inc (NTCA) is the peak primary industry lobby group in the Northern Territory. It represents over 90% of pastoral operations in the NT, from small family operations to the large corporate organisations.\(^{85}\)

**RSPCA Australia** is the federal body of the eight autonomous state and territory RSPCAs in Australia. RSPCA Australia establishes national policies and positions on animal welfare, and liaises with government and industry on national animal welfare issues. RSPCA Australia policy statements regarding the transportation of animals are published on its national web site.\(^{86}\)

The **Rural Research and Development Corporation** (RRDC) is a statutory Corporation formed in July 1990 under the Primary Industries and Energy Research and Development (PIERD) Act 1989. It was set up by the Commonwealth Government to work closely with Australian rural industries on the organisation and funding of their research and development needs.

The **Saleyard Operators of Australia** represents saleyard business and has members in all states and territories except the ACT.

The **Sheepmeat Council of Australia** (SCA) is the peak national body representing the interests of sheep meat producers. The SCA is funded by voluntary membership subscriptions paid by state farming organisations and through the activities it performs on behalf of the Red Meat Advisory Council (RMAC).

**Australian Wool Innovation Limited** (AWI) invests funds in wool research, development and innovation (RDI) and marketing activities aimed at increasing the long-term profitability, productivity and sustainability of Australian woolgrowers. Established in 2001, AWI is a not-for-profit company owned by 32,000 Australian farmers.\(^{87}\)

**WoolProducers Australia** is the peak national body for the wool industry in Australia and represents over 14,000 farmers whose primary business is growing wool.\(^{88}\)

Several key industry and animal welfare organisations were involved in a more detailed consultation process in relation to the proposed standards and the RIS.

In addition, a communication strategy was developed for the project which guided all participants in terms of the timing of communication and industry consultation. Templates and other communication material were also provided and coordinated through the Standards Reference Group across all the industries and industry sectors to ensure wider consultation and opportunity to comment.

A summary of outstanding issues where no agreement could be reached between the above stakeholder organisations is given in Appendix 8 to this RIS.

\(^{85}\) [http://www.ntca.org.au/]
\(^{88}\) [http://www.woolproducers.com.au/]
After a 60-day period of public consultation, adjustments will be made to the standards by consensus of the Standards Reference Group. The revised standards will then be submitted for endorsement by the Primary Industries Ministerial Council. The final RIS will address the responses to submissions made during public consultation. A parallel process will assess and manage the change required by jurisdictional governments to make animal welfare legal systems more consistent. There is likely to be a further implementation committee process for the land transport standards to deal with issues that are most effectively addressed by an implementation committee.
2.0 The problems and policy objective

2.1 Identifying the problems

According to COAG guidelines, the RIS is required to demonstrate the need for the proposed standards. This is best achieved by identifying the problems that the proposed standards are endeavouring to address.

The need for greater national consistency

Economic studies have shown that the development of standards and technical rules by institutions given authority to do so by both the private and public sectors is an essential element of the technological and economic infrastructure of a nation. Industry-wide standards not only have a positive effect on the economy as a whole, but also provide benefits for individual businesses that use them as strategic market instruments. Standardisation can lead to lower transaction costs in the economy as a whole, as well to savings for individual businesses.\(^89\)

As discussed in Part 1.2.2.3 of this RIS, a key objective of the AAWS is ‘to facilitate improved consistency of legislation across states and territories for improved and sustainable animal welfare outcomes.’ Australia’s animal welfare ministers agreed in April 2006 on the need for a nationally consistent approach for the development, implementation and enforcement of animal welfare standards. AAWS 2nd National Australian Animal Welfare Strategy Workshop participants reiterated the importance of having consistency of legislation across states and territories as a major objective of the AAWS. A review of all Australian animal welfare legislation is under way and will report on current jurisdictional laws and approaches. This review is being prepared in close consultation with AAWS working groups and state and territory animal welfare bureaus.

At present, the model codes of practice are referenced in uneven or different ways in the various state/territory animal welfare Acts and Regulations. This lack of consistency causes difficulties, especially for the livestock industries.\(^90\) In a recent submission to the Productivity Commission, the Red Meat Industry said:

‘Animal health and welfare imperatives must balance what consumers expect and are willing to pay for products, with commercial viability of production. Much Australian food is destined for export markets, where Australia is viewed as a single nation that should have one logical set of rules. Yet, at operational level, there are significant variations across States in interpretation of animal welfare needs and circumstances.’\(^91\)

There is also a lack of consistency between codes of practice for different species, which could lead to unequal treatment and different cost pressures on competing meat products, such as beef and lamb. Some differences in standards are required because of biological or behavioural

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\(^{89}\) TU Dresden and Fraunhofer Institute, 2000.

\(^{90}\) Animal Health Australia, 2007.

\(^{91}\) Meat & Livestock Australia et al, July 2007.
variations between species, but other differences in standards are not necessary for these reasons. This problem is accentuated during the transport of livestock across state borders.
The need to ‘fill in gaps’

Several deficiencies have been identified in the current model codes of practice relating to the land transport of livestock, including the lack of clear identification of the chain of responsibility for livestock during transport and in particular, exchange of ownership of livestock; lack of clear targets for areas such as water deprivation and spelling periods; and the need to provide more specific information relating to the fitness of livestock prior to loading. Other gaps in the existing codes include the need for clear standards on appropriate practices during loading, transport, unloading and the holding of livestock. These deficiencies could create risks to the welfare of transported livestock.

Some species and classes are not adequately covered by existing model codes of practice. For example, there are no species-specific existing codes of practice for the transport of alpacas, buffalo, camels, deer, ratites (such as ostriches or emus), goats or sheep. (The proposed model code of practice for the land transport of sheep is still only a draft). However, the 1983 Model Code of Practice for the Welfare of Animals – 3, Road Transport of Livestock applies to ruminants that do not have their own species-specific code of practice such as buffalo, deer, goats and sheep.

The need to update current model codes of practice

Some of the current model codes of practice relating to the land transport of livestock have been in place since 1983. Since that time there have been some significant advances in the understanding of animal physiology and behaviour, and technological changes in animal husbandry together with changes in industry practices regarding livestock welfare.

Since the development of some of these codes, such as those for cattle and horses, there have also been significant changes in technology and practice employed by the livestock transport industry. Further, the increase in the development of industry based standards and quality assurance programs has resulted in recommended practices higher than those in the existing codes in some instances. For example, the transport industry now has requirements for livestock loading schemes, mandated in each State (with the exception of NSW); compulsory consignment sheets; records that are required for driver and driving hours legislation; and increasing recognition of the importance of other practices due to customer and supplier requirements.

In addition, changes have occurred in the welfare standards of other countries, with the development and publication of the new international OIE guidelines on the transport of animals by land (refer to Part 1.2.3.4 of this RIS).

The need to minimise risks to livestock welfare

As discussed in Part 1.2.2. of this RIS, livestock being transported by road and rail are subject to a number of stress factors throughout the journey, including handling, loading, vehicle design, stocking density, mixing with unfamiliar animals, changes in climate, unloading, journey duration and time without water or food. Many of these risk factors are not adequately addressed in the existing model codes.
These risk factors can be cumulative and apply across all stages of land transport as defined in the standards, from assembly before the journey to unloading at the destination. It is therefore essential that effective management practices are in place to minimise any risks to livestock welfare.

The need for clear and verifiable standards

Several deficiencies of the current model codes have been identified, for example, a lack of consistency; ambiguity or lack of clarity; failure to address some chronic stress issues; and the inability of the existing codes to assist in prosecutions due to the lack of defined standards or targets.

The lack of industry compliance with the current model code of practices is often due to there being no regulatory requirements to comply with the code, and therefore no enforcement and penalties for breach of the code. If compliance with the proposed standards is to be made compulsory, legislation or regulations will be required in each participating state or territory, together with appropriate enforcement regimes.

Underpinning the above is the lack of verifiability of much of the current codes of practice, which often makes them unsuitable for adoption as regulations. In addition, the recent increase in the adoption of industry quality assurance programs that include livestock welfare is linked to the inability to integrate the contents of the codes into business practices for operational purposes. By providing clear and verifiable standards, alongside supporting guidelines, their integration into industry programs should be much easier.

The need to ensure that the benefits justify the costs of standards

As indicated in the introduction to this RIS, it is a COAG requirement that the benefits of introducing the proposed standards outweigh the costs. This requirement is demonstrated in Part 5.0 of the RIS. The current uncertainty as to whether the benefits of the existing codes outweigh their costs acts as a disincentive towards their adoption in regulations.

The need for standards to be considered within an international context.

One of the requirements of the COAG guidelines is to demonstrate that proposed standards are consistent with relevant international standards (or to justify the extent of inconsistency).

For example, if the proposed standards were significantly more costly than equivalent international standards, Australian exports of livestock products could be adversely affected.

On the other hand, if the standards were to result in increased imports of livestock products from countries with lower livestock welfare standards, there could be a net cost to livestock welfare, as well as adverse effects on Australian industries.

There is also a need for clear statements of Australia’s livestock welfare standards to the international community, especially our customers and trading partners.
The need to meet community expectations

Finally, there is an important need for the proposed standards to meet the expectations of the Australian community, including producers, transporters, consumers and other interested parties.

Community confidence in the proposed standards is essential for their endorsement by PIMC, their adoption by state and territory legislation and subsequent implementation by industry. The transparency of the public consultation process will help to demonstrate that community expectations have been met.

2.2 Policy objective

In relation to the proposed standards and possible alternatives, the following overarching policy objective is identified:

To ensure that the conditions under which livestock are transported on land are consistent with reasonable animal welfare outcomes.

The main criterion for assessing the proposed standards against the practicable alternatives in the RIS is their relative cost-effectiveness in achieving this policy objective, compared to the benefits of each alternative.

The word ‘reasonable’ embraces the need for standards to be soundly based on science, industry knowledge and community expectations, with their overall benefits outweighing their costs. The policy objective is also consistent with the AAWS vision statement:

‘The welfare of all animals in Australia is promoted and protected by the development and adoption of sound animal welfare standards and practices.’

2.3 A case for intervention

Having identified the nature and extent of the problem (that is, the need for better standards) and the identified policy objective, the ‘threshold’ or preliminary question to be addressed in an RIS is: Is there a sufficient case for further government intervention to assist in solving the problem?

The proposed form of government intervention is the adoption of the standards by PIMC with the intent of these standards being implemented by legislation in each participating jurisdiction.

Economic grounds for intervention

There is a clear economic case for government intervention in markets where some form of market failure is taking place. Government can justify this by saying that intervention is in the public interest. Basically market failure occurs when markets fail to deliver an efficient allocation of resources (economic efficiency). The result is a loss of economic and social welfare. The relevant sources of market failure addressed by the proposed standards (assuming
they will become regulations) are associated with those of **externalities** and **public goods** including a **lack of information**. In other words, market forces alone would not be expected to solve the problems identified in Part 2.1 of this RIS and intervention in the form of regulated standards is necessary.

**Externalities** arise where private decision makers do not incur all the costs or receive all the benefits of their decisions. Negative externalities in the livestock transport market arise where transporters do not incur all the costs of their decisions.

With **public goods** it is considered that the livestock transport market will of its own accord fail to supply ‘adequate’ animal welfare because there is a lack of revealed preferences by consumers regarding the true benefit of animal welfare. In other words, there remains no effective market demand for ‘animal welfare’ as such. Consumers of animal products will not demand animal welfare, hoping that others will pay for it. The result may be a lack of public goods in the form of animal welfare, if left to market forces.

A **lack of information** regarding the nature of animal products (particularly its origin or method of production) is another reason why market forces will not deliver adequate animal welfare outcomes.

Animal welfare legislation provides a balance between the competing views in the community about the use of animals. The successful pursuit of many industries involving animals is dependent on community confidence in the regulation of animal welfare.92

Whether market failure arises from externalities, public goods or lack of information, the role of government intervention is to strike the socially optimal balance between economic activity resulting from the production and consumption of products obtained from animals, on one hand, and risks to animal welfare, on the other.

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3.0 Nature and impacts of proposed standards

This Part of the RIS provides an overview of the proposed standards. It also identifies cost impacts and stakeholders affected by the proposed standards (chiefly the livestock land transport industry, including producers, transporters and consumers of livestock products).

3.1 Overview of proposed standards

Because compliance with the guidelines is voluntary, costs are imposed by the proposed standards rather than by the guidelines. An overview description of the proposed standards is given in Appendix 1.

Most of the proposed standards are consistent with the requirements of existing national model codes of practice, as listed in Part 5.2 of this RIS. Where a proposed standard is relevant to only one or two states, such as the proposed standard SB4.6 banning the transport of calves for slaughter across Bass Strait, it is consistent with the relevant state standards. Such standards are assumed for the purpose of this RIS to be part of the base case and therefore impose no incremental cost impacts.

A summary of the proposed material changes from the relevant current model codes, together with reasons for those changes is given in Appendix 2. The main overall difference is that standards are not explicitly stated in the existing model codes. The proposed standards make more verifiable the requirements of the existing model codes, to facilitate their incorporation into state and territory regulations and the auditing of compliance with such regulations. In many cases, the proposed standards increase the coverage of livestock species, minimise risks to livestock welfare and reduce unnecessary costs to industry.

The proposed standards have been drafted to maximise ease of understanding and implementation by those responsible for compliance with them. Where possible, they are outcomes-based, so that individuals can determine for themselves how best to comply, but where necessary prescriptive standards have been included so that risks to livestock welfare are minimised. For these reasons, the proposed standards are considered to be an appropriate balance of outcome-based and prescriptive standards.

The standards seek to achieve uniformity of key requirements across the species as much as possible, taking into account the inherent physiological and behavioural differences between species. Part A details standards that apply to all livestock species. Standards in Part B chapters detail individual species requirements in addition to, or by exception to, the Part A standards.

Transport usually involves the process of ‘change in ownership’ and the ‘transfer of responsibility’; so the chain of responsibility is integral to making sure that outcomes are consistent with livestock welfare. The central idea is that the person in charge is responsible for
the welfare of livestock at each stage of the journey and has a duty of care to ensure the welfare of livestock under their control and to communicate vital information (see SA1.1, SA1.2).

**Stock-handling competency** is required by SA2.1, and means that any person must be competent in the task that they are performing for livestock transport. These tasks include handling, inspecting, assessing, loading, transporting and unloading, and humane destruction. People must also understand their responsibilities, maintain records, and be able to plan transport and contingency procedures.

**Livestock must be assessed** by a competent stockperson to be fit for the intended journey before every loading according to various visible criteria (SA4.1) that are either general or specific. Any livestock judged as not fit for the intended journey must only be transported under specific veterinary advice (SA4.2). Any stock not transported must be cared for, treated or humanely destroyed at the first opportunity (SA4.4).

**Pregnancy** is a complex issue with a series of species-based, overlapping standards that assume ascendancy based on the increasing risk associated with advancing pregnancy, culminating in SA4.1 vi). This standard permits the transport of livestock for up to 4 hours during the last two weeks of pregnancy, to allow them to be moved to better circumstances for livestock welfare, including closer supervision of parturition.

Livestock must be **inspected** before loading, within the first hour of the journey and then every 3 hours and at unloading (SA5.11). Vehicles and facilities must also be inspected before use (SA5.10). The driver must provide assistance if a distressed animal is identified at the first available opportunity (SA5.12). The person receiving the livestock must provide an appropriate response to deal with weak, ill or injured livestock (SA5.13).

**Journey times** are restricted by the times that livestock may be permitted off water and the ability to provide water and other requirements on the vehicle. **Water provision** is therefore a key factor in the welfare of livestock that extends across all persons in charge at various times during the transport process. For many species it is impractical to provide water on the vehicle during transport.

The term **spelling** includes the notion of rest. Livestock can travel for a time period up to the limits specified in the species chapters, and then they must be given a spell with access to water, food and space to all lie down. This is known as a mandatory spell and it may be performed either on a stationary vehicle or off a vehicle. A spell is a mandatory requirement when maximum time off-water is reached before starting a further journey, as defined by standards for each species. There are no mandatory spells for water deprivation of less than 12 hours.

**Unloading en route** can be counterproductive to livestock welfare, due to the extra handling, unfamiliar surroundings and new social interactions between livestock. To reinforce this fact, four hours is the minimum time for a non-mandatory spell. This time is necessary to permit livestock to drink and rest. As a contingency measure, spells longer than 4 hours can be deducted from the total time off-water up to a spell time of 24 hours, after which a new period (journey) can commence. A spell less than 4 hours duration is not recommended or recognised for water deprivation time calculation, but can be undertaken as necessary.
**Food provision** is a lesser consideration than water for the relatively short times involved in transport, especially for ruminants which can go without food for longer than single-stomached species.

**Vehicles and facilities** are covered by the standard SA3.1 which requires construction, maintenance and operation to be conducted in a way that minimises risk welfare of livestock.

**Heat and cold stress** are addressed directly by standard SA5.14 and as components of time off water (SA5.2) and loading density (SA5.3). The actions and arrangements by the driver can include temporary structures or actions to manage hot and cold conditions.

**Bobby calves and poultry chicks** are the only category of young livestock that are transported in large numbers without the protection of their mothers. Additional standards are in place for feeding of calves (SB4.4, SB4.5), poultry chicks (SB 10.3) and also ratite chicks (SB6.3) and foals (SB8.7).

The standard (SA5.3) for **loading density** is a non-prescriptive standard directed to the management of the number of animals that can be loaded for a journey. Material from existing model codes is contained in the guidelines of the species chapters.

The standard for **segregation** or penning of livestock (SA5.4) is also non-prescriptive, to enable decisions to be made on an individual transport consignment basis. For example, livestock observed to be behaving aggressively must be segregated, or smaller livestock may be segregated from larger livestock. However, this may not be necessary for each journey, and will depend on the species, age, class and condition of livestock to be transported.

**Electric prodders** are restricted by SA5.7, which prohibits use on genital, anal or facial areas; on livestock under 3 months old; on livestock that are clearly unable to move away, or excessively on an animal. In the species chapters in Part B, the use of prodders is prohibited on alpacas, horses, pigs, poultry and ratites; consistent with current industry practice. Prodder use is not really a relevant issue for emus, ostriches and poultry. Use on buffalo, camels and deer is an option of last resort.

**Dog use** on livestock is considered in the context of mustering from home ranges and in livestock handling facilities. Dogs must be under control at all times during loading, transport and unloading of livestock, and must not be transported in the same pen as livestock (SA5.8). Dogs must not be used on alpacas, buffalo, camels and horses in livestock handling facilities. Dog that habitually bite deer, goats, pigs, poultry, sheep, and ratites are not permitted by industry and must be muzzled or not used.

**Humane destruction** in the context of transport is an emergency procedure that is not needed for the great majority of journeys. However it is an important issue that must be done effectively when required. The standards in Chapter 6 detail the important requirements that must be met when humane destruction is necessary and these are self explanatory. Each species chapter has approved methods for humane destruction for each species.
To illustrate how the proposed standards would work in practice, Case Example 2 below is a description of a typical long journey of 2,220 kilometres for a typical consignment of 800 head which complies with the proposed standards from a hypothetical large, extensive Northern Territory cattle property to a hypothetical feedlot in southern Queensland.

**Case Example 2**

**Day 1:** 420 kg live weight (LWT) steers (about 2 years old) are mustered from a paddock into a holding yard where they are held on water over night.

**Day 2:** Drafted, subject to primary fitness to travel inspection, and returned to a holding paddock or tailed out on feed and water overnight and next day (24 hours).

**Day 3:** On feed and water during day and yarded in evening (7 pm), and fed hay but kept off water.

**Day 4:** Loading at 5am next day (10 hour curfew). All animals re-inspected in yard and during loading for fitness. Loading takes 30 to 40 minutes per vehicle, and the last truck in a 800 head consignment would leave at about 8 am. Property to Winton depot yards in Queensland is 1,050 km or about 15 hours driving in a 6 deck unit. Cattle would arrive at about 11pm. Cattle unloaded on feed and water at end of day 4 (takes 20 minutes).

**Day 5:** Cattle remain on feed and water until next evening, at say 7 pm.

**Day 6:** Overnight food and water curfew from 7 pm, load at first light next day at 5 am (overall 29.4 hours break, including 19.4 hours on feed and water and a 10 hour curfew at end). All animals inspected for fitness before and during loading. Loading maybe onto a different truck which means livestock details must be transferred including time off water and feed from the start as the overall journey length will be over 24 hours. The last truck would depart at 8 am from Winton to Mitchell in southern Queensland which is 800 km and takes 11 to 12 hours. Need to cross-load last trailer to a 4 deck unit and unhitch last trailer to comply with Roads and Traffic Authority (RTA) rules (Type 2 road train to a type 1 road train) which takes 1 hour. Transfer of livestock details to new truck which proceeds to destination. Driver has 4 to 5 hours rest stop whilst remaining cattle remain on truck.

**Day 7:** Journey recommences in early am for last 370 km to feedlot which takes 5 hours for a daylight unload at approximately 7 am which takes 20 minutes.

Using the outer estimates for the last truck of cattle for the total transport process:
- Total time off water during journey process = 64.6 hours (10 curfew + 3 load + 15 drive + 0.3 unload + 10 curfew + 3 load + 12 drive + 1 cross load + 5 rest + 5 drive + 0.3 unload).
- Total spell times with water (and feed in this case) during journey process = 19.4.
- Water deprivation time = 45.2 hours (64.6-19.4) (48 hours permitted in the draft standards).
- Longest time off feed = 36.3 hours (10 + 3 + 12 +1 + 5 + 5 + 0.3).
- Longest trip leg = 23.3 hours (12 +1 + 5 + 5 + 0.3)

Full compliance with the proposed ‘Australian Standards and Guidelines for the Welfare of Animals – Land Transport of Livestock’.

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93 If there were no curfew and the spell was 24 hours or longer on feed and water, the subsequent journey could be considered as a new journey and not a continuing journey. Spells are to exceed 4 hours to be counted.
94 Drivers have 16 hours of working hours under Livestock Transporters Association of Queensland (LTAQ) rules for day one, 12 hours work on day two, and must meet the weekly limit for driving hours. Time spent by livestock on a stationary truck during a driver rest stop, with no access to water, does not count as a spell.
3.2 Likely impacts of proposed standards

An assessment of the expected costs and benefits of the proposed standards is given in Part 5.3.2 of the RIS.

In summary, the proposed standards would impose minimal to minor costs per journey in the following areas:

- transport costs and savings
- training costs
- veterinary/pathology costs
- verification/auditing/enforcement costs

No costs to livestock welfare have been identified. In other words, no species or class of animal is likely to incur a reduction in its welfare, compared to the existing codes of practice. On the contrary, there is likely to be a net benefit to livestock welfare as a result of the implementation of the proposed standards.

Veterinary and pathology costs will be directly incurred by the relevant livestock owners. The transport costs/savings and the training costs will be initially incurred by livestock transporters, but costs are likely in most cases to passed on to livestock owners and possibly meat consumers, depending on whether or not stock are auctioned and on consumer price sensitivities.

Verification, auditing and enforcement costs will be incurred by the relevant government agencies if and when the proposed standards are adopted by regulations. However, most states and territories have advised that the proposed standards are unlikely to impose any significant enforcement costs relative to the base case. Some industry associations may choose to develop their own quality assurance programs or other documentation to encourage compliance with the proposed standards. Whilst the cost of such programs may be significant, they would be voluntarily incurred rather than imposed by the proposed standards.

3.3 Comparison with international standards

A comparison of the proposed standards with the relevant World Organisation for Animal Health (OIE) guidelines95 is given in Appendix 4 to this RIS.

This comparison shows that there are no significant differences between the proposed Australian standards and the relevant equivalent international standards, except in relation to the following proposed standards:

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95 Refer to Part 1.2.3.4 of this RIS for background information on the OIE guidelines.
• SA1.2 (documentation to accompany livestock);
• SA2.1 (competency requirements);
• SA4.1 (livestock to be assessed as fit for intended journey);
• SA5.7 (use of electric prodders on animals under 3 months old); and
• SA6.7 (humane destruction of newborns by blunt trauma to head).

OIE Article 3.7.3.3. spells out the actual responsibilities of different persons at each stage of the journey, whereas proposed Australian standard SA1.1 requires the responsibilities for livestock welfare at each stage of journey to be documented. It is considered more important that the responsibilities be recognised by those involved and documented as evidence of compliance, than to spell these out prescriptively in the standards. There are differences in the detail but not in the overall approach.

OIE Article 3.7.3.4. spells out more formal competency requirements than proposed Australian standard SA2.1. Less formal training is considered sufficient in the usually more remote Australian context. For example, most driver training occurs on the job under the supervision of an experienced competent driver.

OIE Article 3.7.3.7.3c specifies generic ‘fitness for travel’ standards, whereas SA4.1 details standards suitable for Australian conditions, relying more on visual observations than tests. Notable differences in them are: newborn are permitted to travel with their mothers with conditions; pregnant animals are permitted to travel up to specified periods depending on the stage of pregnancy; and females that have recently given birth are permitted to travel. Also, the OIE Article does not specify dehydration as a condition.

Proposed standard SA5.7 is a higher welfare standard than OIE Article 3.7.3.7.3 in that it bans the use of electric prodders on animals under 3 months old, on the grounds that young animals have not yet learnt to move away from painful stimuli.

Proposed standard SA6.7 permits the humane destruction by blunt trauma to the head of some newborns only where there is no other alternative, such as where other methods would be unsafe. There is no equivalent OIE Article to this standard.

These few differences between the proposed standards and equivalent international standards are considered reasonable in the circumstances, and unlikely to adversely affect Australia’s international reputation.
4.0 Alternatives to proposed standards

In accordance with the COAG guidelines, an RIS is required to identify practicable alternatives to the proposed standards. Conversely, an RIS is not required to identify alternatives which are not practicable, or where there are no significant cost burdens being imposed.

Public education campaigns using television, radio and newspapers are sometimes a feasible alternative to regulations or codes of practice where the behaviour of a wide section of the community can be influenced by simple clear messages such as 'Don’t drink and drive’ or ‘Don’t waste water’. However in the case of the proposed standards which involve only a limited section of the community and more complex messages, such public education campaigns are likely to be ineffective and therefore not a practicable alternative.

In the case of national standards, practical alternatives are limited to alternative national standards. Having no standards at all is not a practical alternative, because the ‘base case’ or the ‘do nothing’ option is that the existing model codes will remain in place, and can be adopted by states and territories as standards, as some already have (refer to Part 5.2 of this RIS). The ‘base case’ is also needed as the point of reference for comparison of the proposed standards and the practical alternatives, and therefore cannot itself be an alternative.

A minimum intervention option would be to simply encourage the relevant industry associations to develop their own voluntary codes of practice and/or quality assurance (QA) programs in an endeavour to ‘fill in the gaps’ in existing model codes of practice. Because such industry codes would not be developed as part of the PIMC system, they would not be adopted as regulations by the various states and territories.

Other practical alternatives for the purposes of this RIS are limited to alternative sets of standards, such as more outcome-based and less prescriptive standards, less expensive standards or more expensive standards. Two variations of these alternatives (Options B1 and E1) are also listed below, to assess some specific issues that emerged during the SRG consultation process.

The practicable alternatives together with the proposed standards will from here on be referred to as ‘options’. The options to be assessed in terms of costs and benefits are:

- **Option A**: Encourage the development of industry codes, QA programs etc (i.e. the minimum intervention option);

- **Option B**: the proposed standards;

- **Option B1**: the proposed standards with a variation to standard SB4.5 changing the minimum age for transport of calves for slaughter (other than to a calf-rearing facility) to 8 days rather than 5 days;

- **Option C**: more outcome-based and less prescriptive standards leading to possibly greater choice in ways to satisfy the standards;
• **Option D**: less expensive standards i.e. the most costly standards to become voluntary guidelines;

• **Option E**: more effective standards for livestock welfare that will incur a higher cost to livestock industries i.e. higher standards relating to maximum time off water for particular species/class of species and a minimum voluntary spell of 6 hours to allow recognition of the spell period as a credit in the total water deprivation time calculation; and

• **Option E1**: more effective standards for livestock welfare that will incur a higher cost to livestock industries i.e. higher standards relating to maximum time off water for particular species/class of species and a minimum voluntary spell of 12 hours to allow recognition of the spell period as a credit in the total water deprivation time calculation.

### 5.0 Assessment of Costs and Benefits

#### 5.1 Introduction

The purpose of this Part of the RIS is to-

- assess the relative costs and benefits of the proposed standards for the welfare of animals and the community; and

- compare and contrast the costs and benefits of the proposed standards with the ‘base case’ and with the options identified in Part 4.0 of this RIS.

The assessment of the relative benefits and costs for the proposed standards and the other identified options has been conducted in relation to how well the policy objective identified in Part 2.2 of this RIS is likely to be achieved. Where data exists, quantitative estimates of costs and benefits are made, using stated reasonable assumptions to fill in any essential data gaps. However, where sufficient cost and benefit data is not available, the assessment is made using qualitative criteria regarding the achievement of the policy objective.

The summary of cost benefit analysis in Part 5.4 compares the relative merits of the various options with each other, using a weighted criteria decision analysis.

#### 5.2 The base case

##### 5.2.1 Definition of the base case

The term ‘base case’ means the situation that would exist if the proposed standards were not adopted. The base case provides the benchmark for measuring the incremental costs and benefits of the proposed standards and the other options.
The base case includes the relevant state and territory animal welfare legislation (see Part 1.2.3.1 of this RIS). It also includes all relevant existing model codes of practice, including the following:

| Livestock, Road Transport of (1983) | Domestic Poultry (2002); |
| Livestock, Rail Transport of (1983) | Farmed Buffalo (1995); |
| Cattle, Land Transport of (1999) | Farming of Ostriches (2003); |
| Horses, Land transport of (2003) | Feral Livestock Animals (1992); |
| Pigs, Land Transport of (2003) | Husbandry of Captive-Bred Emus (2006); |
| Poultry, Land Transport of (2006) | Livestock at Slaughtering Establishments (2001); |
| The Camel (2006); | Pigs (2007); |
| The Sheep (2006); | The Farming of Deer (1991); |

(Note: The Land Transport of Sheep code is not included here because at the time of writing it is only a draft document).

It is open to states and territories at any time to adopt the existing model codes as standards, and indeed some have already done so. Similarly, it is open to these jurisdictions to adopt or not adopt the proposed standards as state or territory standards. If and when the proposed standards are submitted to PIMC for endorsement, the decision to be made by PIMC will be whether to replace the existing model codes with the proposed standards. For this reason, it is necessary for this RIS to assess the costs and benefits of the proposed changes in **standards**, rather than changes in practices. In other words, the RIS needs to ‘compare like with like’.

Comparisons between the existing model codes and the proposed standards have not always been easy. In some cases, the wording of the existing model codes is unclear, ambiguous or even inconsistent. In contrast, the proposed standards are more clearly worded and more verifiable, which will assist their adoption and implementation by regulations.

The base case also includes other documents such as relevant and industry or professional codes such as:

- the MLA ‘fit to load’ guide (refer to Part 1.2.3.5);
- TruckCare (refer to Part 1.2.3);
- legislated livestock loading schemes and driver regulations e.g. Livestock training for B-double driving licences (except for NSW and NT); and
5.2.2 Likely consequences of the base case

The continuation of the ‘base case’ including existing species specific standards and guidelines, driver regulations and NCCAW position statements is likely to result in the following consequences.

Firstly, there would be a lack of national consistency regarding animal welfare standards for the livestock transport industry and a failure to minimise transaction costs for individual livestock businesses, especially for journeys across state or territory boundaries. The base case would also fail to address the need to standardise welfare requirements across species and classes of species leading to an unfair cost advantage/disadvantage between competing meat producers.

Secondly, the ‘base case’ would fail to address several deficiencies, as identified in Part 2.1 of the RIS under current model codes of practice for the land transport of livestock, including the lack of:

- clear identification for responsibility of livestock during transport and in particular, exchange of ownership of livestock;
- clear targets for areas such as water deprivation, stocking density for some species and classes;
- specific information provision relating to the fitness of livestock prior to loading;
- information regarding areas such as planning and contingencies during delay, breakdown or other emergency;
- clear standards on practices to be undertaken by personnel involved in transport, loading, unloading or holding of livestock;
- existing codes for land transport of particular species (e.g. sheep);
- ability to address some chronic stress issues;
- ability of existing codes to assist in prosecutions because of the non verifiability of some standards; and
- ability to effectively integrate code of practice guidelines into business practices and systems of operation.

Thirdly, the ‘base case’ would fall short in capturing advances in the understanding of animal physiology and behaviour and technological changes in animal husbandry. Also, the base case would not include changes which have occurred in the welfare standards of other countries, with the development and publication of the new international OIE guidelines on the transport of animals by land (refer to Part 1.2.3.4 of this RIS). In this way the ‘base case’ would possibly fail to meet the expectations of the Australian community, including producers, transporters, consumers and other interested parties. Over time, a decline in community confidence regarding the welfare of animals (particularly internationally) could undermine Australia’s ability to compete in the international market for meat and livestock.

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5.3 Assessment of each of the options relative to the base case

This Part discusses the expected costs versus expected benefits with reference to the policy objective identified in Part 2.2 of the RIS. Costs and benefits are analysed in comparison with the ‘base case’ in terms of economic criteria where relevant, and compared to the relative merits of each of the options. The relevant costs of the various options relative to the base case are summarised in a single table in Part 5.4.

The data used in this analysis and the assumptions and qualifications to the data on which the costs and benefits have been estimated are provided in Appendices 5, 6 and 7.

5.3.1 Option A: Encourage industry codes, QA programs etc to ‘fill in the gaps’ in existing model codes of practice

Option A is the ‘minimum intervention’ option and would entail encouraging the relevant industry associations to develop their own individual codes of practice and/or quality assurance (QA) programs as an alternative to the proposed standards. However, it is important to note that the existing model codes of practice and other elements of the base case, as discussed in Part 5.2 of this RIS, would remain in place. Because such industry codes would not be developed as part of the PIMC system, or otherwise endorsed by government, they would not be adopted as regulations by the various states and territories, and therefore compliance with them would not be mandatory.

Expected costs

There are about 25 industry associations represented on the SRG. It is understood that about seven of these associations already have their own codes of practice or similar documents covering the land transport of animals.

Assuming that the estimated cost of developing each code of practice is about $50,000 (including the consultation that would be required), the total one-off additional cost of preparing the remaining 18 codes of practice would be around $0.9 million, compared to the base case.

Expected benefits

Option A would be an improvement on the base case, in that it would go part of the way towards achieving the policy objective identified in Part 2.2 of the RIS, but not far enough.

The main drawback would be that compliance with industry codes of practice would remain voluntary. If members were to breach the industry code, the sanction available to industry associations would be limited to reprimands or possible expulsion from the association for repeated breaches. These sanctions are unlikely to be anywhere near as effective deterrents as infringement notices or prosecutions for breaches of regulations, as would be available for the proposed standards or variations of them as discussed in other options (B to E1).

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97 It is assumed that these codes would be reviewed after 5 years – the same period as the proposed standards.
98 These are industry documents, not government endorsed codes of practice or model codes.
Other significant drawbacks of Option A are that it would not adequately address the problems identified in Part 2.1 of the RIS, including the need:

- for greater national consistency in the setting of standards;
- for clear standards, differentiated from guidelines, that are capable of being incorporated into regulations;
- to ‘fill in gaps’ that exist in the current model codes of practice, including coverage of all livestock transported by land;
- to update current model codes of practice, in the light of new knowledge and circumstances, including industry best practice;
- to review standards to ensure that their benefits justify their costs, and that they meet the expectations of the Australian community.

5.3.2 Option B: the proposed standards

Expected net cost

Table 7 categorises each of the proposed standards into quantifiable and unquantifiable costs or savings.

Table 7. - cost categorisation of proposed standards

<table>
<thead>
<tr>
<th>Standard no.</th>
<th>Cost estimated (Table 8)</th>
<th>Cost not able to be quantified (Table 9)</th>
<th>Cost neutral</th>
<th>Standard no.</th>
<th>Cost estimated (Table 8)</th>
<th>Cost not able to be quantified (Table 9)</th>
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As shown in Table 8, the proposed standards would result in a *net increase in cost* to the livestock industry, relative to the base case, estimated to be between approximately $31.0m and $33.5m per annum or approximately $145.0m and $156.4m over 5 years, in present value terms (2007 dollars)\(^9\). The expected net incremental quantifiable costs/cost savings of each of the proposed standards are summarised in Table 8. The basis of the cost estimates in Table 8 are all provided in Appendix 6 of this RIS. All unquantifiable costs/cost savings are summarised in Table 9.

\(^9\) Present value is calculated using a real discount rate of 3.5%.
### Table 8 – List of estimated quantifiable net incremental costs/cost savings of the proposed standards -Option B

<table>
<thead>
<tr>
<th>Standard No.</th>
<th>Costs imposed on/cost savings for</th>
<th>Reference Appendix 6</th>
<th>Annual $ net cost or saving&lt;sup&gt;100&lt;/sup&gt;</th>
<th>Discounted 5-year $ net cost&lt;sup&gt;101&lt;/sup&gt; or saving (2008 dollars)</th>
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<td><strong>Responsibilities and planning</strong></td>
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<td>SA1.1</td>
<td>Owners, operators or staff at properties, feedlots, saleyards, depots, processing plants, transporters&lt;sup&gt;102&lt;/sup&gt;</td>
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<td>Owners, operators or staff at properties, feedlots, saleyards, depots, processing plants, transporters&lt;sup&gt;103&lt;/sup&gt;</td>
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<td><strong>Pre-transport preparation</strong></td>
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<td>SA4.2</td>
<td>Livestock owners&lt;sup&gt;104&lt;/sup&gt;</td>
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<td>SA5.10</td>
<td>Transporters&lt;sup&gt;105&lt;/sup&gt;</td>
<td>Section A6.8.3 + rail estimates</td>
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<td>SB1.2</td>
<td>Transporters</td>
<td>Section A6.13</td>
<td>-$11,263</td>
<td>-$52,632</td>
</tr>
<tr>
<td>SB1.4</td>
<td>Livestock owners</td>
<td>Section A6.14</td>
<td>+$65,838</td>
<td>+$307,665</td>
</tr>
<tr>
<td><strong>B2: Buffalo</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB2.1 &amp; SB2.2</td>
<td>Transporters</td>
<td>Section A6.16</td>
<td>Between +$33,157 and +$34,858</td>
<td>Between +$154,945 and +$162,896</td>
</tr>
<tr>
<td>SB2.3</td>
<td>Livestock owners</td>
<td>Section A6.17</td>
<td>+$3,767</td>
<td>+$17,605</td>
</tr>
<tr>
<td>SB2.6</td>
<td>Transporters</td>
<td>Section A6.19</td>
<td>Between +$375 and +$395</td>
<td>Between +$1,754 and +$1,844</td>
</tr>
<tr>
<td><strong>B3: Camels</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB3.1 &amp; SB3.3</td>
<td>Transporters</td>
<td>Section A6.20</td>
<td>+$31,120</td>
<td>+$145,426</td>
</tr>
<tr>
<td>SB3.4</td>
<td>Livestock owners</td>
<td>Section A6.21</td>
<td>+$1,031</td>
<td>+$4,819</td>
</tr>
<tr>
<td><strong>B4: Cattle</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB4.1 &amp; SB4.2</td>
<td>Transporters</td>
<td>Section A6.23</td>
<td>Between +$2,818,324 and +$3,222,692</td>
<td>Between +$13,170,250 and +$15,059,894</td>
</tr>
</tbody>
</table>

<sup>100</sup> All figures are rounded to the nearest dollar.
<sup>101</sup> All figures are rounded to the nearest dollar.
<sup>102</sup> Does not include cattle, horses, pigs, poultry, or rail transport.
<sup>103</sup> Does not include cattle, horses, pigs, poultry, or rail transport.
<sup>104</sup> Does not include horses, pigs and poultry.
<sup>105</sup> Does not include horses and pigs.
<sup>106</sup> Does not include cattle, calves for rearing, horses for sale and major events and pigs.
<sup>107</sup> Standards relating to maximum time off water and spelling periods are treated together as one standard always works in conjunction with the other.

Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock
The quantifiable cost over 5 years (in present value terms) represents between 4.97% and 5.11% of the total cost of livestock transport of approximately $2.84b and $3.14b. The estimated change in retail meat prices (if costs are passed on to consumers) would be approximately an increase of 1% for beef, an increase of 2% for lamb, a reduction of 0.3% for pork and an increase of 4.8% for chicken, (see Appendix 6, section A6.54).

Table 9 – List of proposed standards where costs/cost savings are not able to be quantified

<table>
<thead>
<tr>
<th>Standard No.</th>
<th>Costs imposed on</th>
<th>Nature of cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Stock handling competency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost of familiarisation of standards by stock handlers of around 1 hour per person.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre-transport preparation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost of additional training in regards to recognising disease conditions as part of the need to assess fitness of livestock for transport for intended journey at every loading. It is unknown how many livestock transporters or</td>
</tr>
</tbody>
</table>

108 See Appendix 6, section A6.2.5 for derivation of these cost figures
owner drivers would require additional training in this regard as either part of induction training or a short course.

<table>
<thead>
<tr>
<th><strong>Loading, transport and unloading</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SA5.1</strong></td>
<td>Commercial transporters, processing establishment operators</td>
</tr>
<tr>
<td><strong>SA5.15</strong></td>
<td>Transporters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Humane destruction</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SA6.3</strong></td>
<td>Transporters</td>
</tr>
<tr>
<td><strong>SA6.4</strong></td>
<td>Transporters</td>
</tr>
<tr>
<td><strong>SA6.7</strong></td>
<td>Transporters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>B1: Alpacas</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SB1.7</strong></td>
<td>Livestock owners</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>B2: Buffalo</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SB2.4</strong></td>
<td>Transporters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>B3: Camels</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SB3.6</strong></td>
<td>Transporters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>B4: Cattle</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SB4.4</strong></td>
<td>Transporters and livestock owners</td>
</tr>
<tr>
<td><strong>SB4.5</strong></td>
<td>Transporters and livestock owners</td>
</tr>
<tr>
<td><strong>SB4.7</strong></td>
<td>Transporters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>B5: Deer</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SB5.4</strong></td>
<td>Transporters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>B6: Ratites</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SB6.2</strong></td>
<td>Transporters</td>
</tr>
<tr>
<td><strong>SB6.3</strong></td>
<td>Transporters</td>
</tr>
<tr>
<td><strong>SB6.5</strong></td>
<td>Transporters</td>
</tr>
<tr>
<td>SB6.6</td>
<td>Transporters and livestock owners</td>
</tr>
<tr>
<td>SB6.7</td>
<td>Transporters</td>
</tr>
<tr>
<td>SB6.8</td>
<td>Livestock owners</td>
</tr>
</tbody>
</table>

**B7: Goats**

| SB7.3 | Transporters | Minor one-off training cost with regards to methods for exsanguination and blunt trauma. |

**B8: Horses**

| SB8.12 | Transporters | Minimal additional time cost in terms of loading for horse transport (most likely relevant to the slaughter category) by forbidding the use of electric prodders. |
| SB8.14 | Transporters | Minor additional costs of space for horses travelling across Bass Strait. Specifically horses would have to be individually stalled - except for mares with foals at foot which would have to be stalled together. Most of current movements across Bass Strait comply with this requirement as part of existing local requirements not in the MCOP. |

**B9: Pigs**

| SB9.4 | Transporters | Minimal additional time costs in terms of loading for transport by restricting the use of electric prodders on pigs |

**B10: Poultry**

| SB10.2 | Livestock owners | Minimal cost in terms of the reduction of water the time within which poultry need to have access to food before assembly for transport from 24 hours under the ‘base case’ to 12 hours. Current compliance with the 12hrs feed curfew is 99.95%. |

**B11: Sheep**

| SB11.3 | Transporters | Minor one-off training cost with regards to methods for exsanguination and blunt trauma. |

**General**

| All standards | Governments | Verification, auditing and enforcement costs will be incurred by the relevant government agencies and industry associations, depending upon the mix of compliance mechanisms eventually selected. However, most states and territories have advised that the proposed standards are unlikely to impose any significant enforcement costs relative to the base case. |

No costs to livestock welfare (i.e. reductions of livestock welfare) have been identified relative to the base case. The proposed standards are either neutral or a likely improvement to livestock welfare in each case, in terms of minimising risks to livestock welfare.

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Some industry associations may choose to develop their own quality assurance programs to encourage compliance with the proposed standards. However, any such costs would be voluntarily incurred, rather than imposed by the proposed standards.

**Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock**
Expected benefits

The proposed standards are expected to result in the following benefits:

- improved livestock welfare outcomes – no species or class will be worse off and risks to welfare will be minimised;
- greater national consistency in the setting of standards;
- clear standards, differentiated from guidelines, that are capable of being incorporated into regulations;
- the gaps that exist in the current model codes of practice will be filled in, including coverage of all livestock transported by land;
- updates to current model codes of practice, in the light of new knowledge and circumstances, including industry best practice;
- standards have been reviewed to ensure that their benefits justify their costs, and that they meet the expectations of the Australian community, which is likely to improve community confidence and implementation of the standards; and
- enhanced international reputation (from providing clear statements of Australia’s livestock welfare standards to the international community, especially our trading partners).

5.3.3 Option B1: the proposed standards and guidelines with a variation on the minimum age of calves for slaughter

The expected costs/cost savings (quantifiable and unquantifiable) and benefits of Option B1 are the same as the proposed standards and guidelines (Option B), except in relation to standard SB4.4 where the minimum age for transport of calves for slaughter would be changed to 8 days rather than 5 days.

Expected net cost

The estimated average number of slaughter calves slaughtered in Australia per year is 860,000. The estimated cost of keeping a calf for slaughter for an extra 3 days, in terms of feed, and labour is $14.79. The total estimated cost to the Australian dairy industry of keeping calves for slaughter an additional 3 days is 860,000 x $14.79 = $12,719,400 per annum. Over 5 years and in present value terms (2008 dollars) this additional cost would equal approximately $59.4m. The net cost of Option B1 is calculated by taking the costs under Option B as

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110 Including a minimum voluntary spell of 4 hours to earn an equivalent time-off-water credit.
111 This is calculated as $4.39 which is the per-day feed and labour cost per calf x 3 days.
112 See section A7.1 of Appendix 7 of this RIS for a more detailed discussion and derivation of costs.
discussed in Table 8 and adding back the incremental cost of $12.7m per annum or $59.4m over 5 years. This would make the annual net cost of Option B1 equal to between \$43.7m and \$46.2m per annum or between \$204.4m and \$215.8m \(^{113}\) over 5 years in present value terms, as compared to the ‘base case’.

The quantifiable cost (in present value terms), over 5 years, represents between 6.87% and 7.21% of the total cost of livestock transport of \$2.84b and \$3.14b.\(^{114}\) The estimated change in retail meat prices (if costs are passed on to consumers) would be approximately an increase of 1% for beef, an increase in the price of veal\(^{115}\), a reduction of 12% for lamb, a reduction of 0.3% for pork and an increase of 4.8% for chicken, (see discussion in Appendix 7.1.4).

**Expected benefits**

Anecdotal observations of calves for slaughter suggest that those over one week of age are more robust and able to withstand the stresses of transportation.\(^{116}\) However, there is a lack of scientific evidence on this issue and further research is needed before the expenditure of $12.7m per annum or $59.4m (in present value terms) over five years could be justified. (The increase in carcass value from three days additional feeding is assumed to be negligible).

**5.3.4 Option C: more outcome-based and less prescriptive standards**

This Option would entail rewording most, if not all, of the proposed standards in a more outcome-based and less prescriptive form. For example, the proposed standards regarding water deprivation times\(^{117}\) would be expressed in terms of ensuring that livestock do not arrive at their destination in a dehydrated state.

**Expected costs**

While outcome-based standards specify the desired outcome, they are not suitable in all circumstances. They are most suitable where flexibility and choice in compliance strategies is possible, but such choices are not always appropriate in animal welfare matters. By their nature, outcome-based standards focus on the resulting impact of an activity, rather than on taking action necessary to avoid or prevent such impacts. The failure to take appropriate preventative action can have serious consequences, resulting in injury, suffering or death of animals. Outcome-based standards can also sometimes be more difficult to verify and thus more difficult or expensive to enforce than prescriptive standards.

Using the above water deprivation example, the verification of an outcome-based standard regarding dehydration of animals would require veterinary examination of at least a representative sample of the livestock consignment, possibly including expensive pathological

\(^{113}\) This is calculated as $144,979,263 + $59,438,764 = $204,418,027 and $156,383,745 + $59,438,764 = $215,822,509.

\(^{114}\) See Appendix 6, section A6.2.5 for derivation of these cost figures

\(^{115}\) Magnitude of price increase is unknown due to lack of data on the price sensitivity regarding supply or demand of veal.

\(^{116}\) Shiel and Cave, unpublished.

\(^{117}\) Refer to SA5.1 and the various specific requirements for different species and classes of livestock.
tests. Such a standard would be likely to be much more expensive to enforce than a standard prescribing water deprivation times. The costs of Option C are not quantifiable but are likely to be higher than for Option B (the proposed standards).

Expected benefits

Outcome-based standards have the advantage of allowing more flexibility, innovation and efficiency in compliance than prescriptive standards. However, they also have disadvantages as discussed above. If effective, outcome-based standards are likely to achieve similar animal welfare benefits as prescriptive standards, but at a higher cost. There is a need to strike the right balance of outcome-based versus prescriptive standards, depending upon the circumstances of each case.

5.3.5 Option D: less expensive standards e.g. the most costly standards to become guidelines

Option D would result in the same additional unquantifiable costs as shown in Table 9 under Option B and B1, as compared to the ‘base case’. However, the most expensive of the quantifiable costs, as shown in Table 8 under Option B, would be removed by replacing the associated high-cost standards with guidelines. The criteria for removal under Option D, is simply those standards which impose an annual incremental cost of close to $1m or more. These include general standards SA1.2 (relating to responsibilities and planning), SA4.2 (relating to pre-transport preparation) SA5.10 and SA5.14 (relating to loading, transport and unloading) and specific standards SB4.1 in conjunction with SB4.2 and SB4.3 (relating to cattle).

Expected net cost

As shown in Table 10, the proposed standards would result in an incremental cost savings to the livestock industry, relative to the base case, of between approximately $1.1m and $1.3m per annum or approximately $5.3m and $6.3m over 5 years, in present value terms (2008 dollars). The expected net incremental quantifiable costs of each of the proposed standards are summarised in Table 10. The basis of the cost estimates in Table 10, are all provided for in Appendix 6 of this RIS.

Table 10 – Calculation of estimated quantifiable net incremental costs of Option D

<table>
<thead>
<tr>
<th>Standard No.</th>
<th>Costs imposed on/benefits for</th>
<th>Reference Appendix 6</th>
<th>Annual $ net cost or saving 119</th>
<th>Discounted 5-year $ net cost or saving (2008 dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Between +$31,024,354 and +$33,464,818</td>
<td>Between +$144,979,263 and +$156,383,745</td>
</tr>
<tr>
<td><strong>Total net incremental cost of general and specific standards under Option B</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Responsibilities and planning</strong></td>
<td>SA1.2</td>
<td>Transporters 121</td>
<td>Table A6.11</td>
<td>Between +$1,466,294 and +$1,691,068</td>
</tr>
</tbody>
</table>

118 Present value is calculated using a real discount rate of 3.5%.
119 All figures are rounded to the nearest dollar.
120 All figures are rounded to the nearest dollar.
121 Does not include cattle, calves, horses, pigs, poultry and ratites.
The quantifiable net cost savings over 5 years (in present value terms) represents between 0.19% and 0.2% of the total cost of livestock transport of $2.84b and $3.14b.124. The estimated change in retail meat prices (if costs/cost savings are passed on to consumers) would be approximately an increase of 0.001% for beef, a reduction of 0.2% for lamb, a reduction of 0.3% for pork and no change in the price of chicken, (see Table A7.3 of Appendix 7).

Expected benefits

Option D is expected to result in the same incremental benefits as Option B or B1, as compared to the base case, except for the following:

- the replacement of standard SA1.2 with guidelines would mean that in regards to roughly 5%125 of journeys exceeding 24 hours – transporters would only need to carry documentation accompanying livestock on a voluntary basis. Under this circumstance ensuring that information regarding emergency contacts; last access to food or water; or welfare concerns/risks to welfare – would not be enforceable as guidelines can not be incorporated into regulations. Therefore, it is expected that the benefits to livestock welfare as compared to the ‘base case’, would be lower than under Option B or B1 in this regard.

- the replacement of standard SA4.2 with guidelines would mean that in regards to roughly 0.01%126 of livestock (excluding horses, pigs and poultry) where livestock are assessed to be unfit for the intended journey before loading – consignors would only need to make

<table>
<thead>
<tr>
<th>Standard No.</th>
<th>Costs imposed on/benefits for</th>
<th>Reference Appendix 6</th>
<th>Annual $ net cost or saving119</th>
<th>Discounted 5-year $ net cost or saving (2008 dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA4.2</td>
<td>Transporters</td>
<td>Table A6.17</td>
<td>+$1,353,865</td>
<td>+$6,326,717</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Loading, transport and unloading</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA5.10</td>
<td>Transporters122</td>
<td>Section A6.8.3 + rail estimates</td>
<td>Between +$14,886,740</td>
<td>Between +$69,566,917 and +$75,401,117</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Section A6.9.3 + rail estimates</td>
<td>and +$16,135,211</td>
<td></td>
</tr>
<tr>
<td>SA5.14</td>
<td>Transporters123</td>
<td>Section A6.9.3 + rail estimates</td>
<td>Between +$10,347,901</td>
<td>Between +$48,361,236 and +$52,004,167</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and +$11,128,458</td>
<td>and +$16,135,211</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>B4: Cattle</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB4.1&amp;SB4.2</td>
<td>Livestock owners</td>
<td>Section A6.23</td>
<td>Between +$2,818,324 and +$3,222,692</td>
<td>Between +$13,170,250 and +$15,059,894</td>
</tr>
<tr>
<td>SB4.3</td>
<td>Transporters</td>
<td>Section A6.24</td>
<td>Between +$2,818,324 and +$3,222,692</td>
<td>Between +$13,170,250 and +$15,059,894</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total net incremental cost of general and specific standards being removed under Option D</strong></td>
<td>Between +$32,155,218 and +$34,812,386</td>
<td>Between +$150,263,879 and +$162,681,038</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total net incremental cost of general and specific standards under Option B less total net incremental cost of general and specific standards being removed under Option D</strong></td>
<td>Between -$1,130,864 and -$1,347,568</td>
<td>Between -$5,284,616 and -$6,297,292</td>
</tr>
</tbody>
</table>

122 Does not include horses and pigs.
123 Does not include cattle, calves for rearing, horses for sale and major events and pigs.
124 See Appendix 6, section A6.2.5 for derivation of these cost figures.
125 Proposed by AHA.
126 Proposed by AHA.
effective arrangements for the care, appropriate treatment of or humane destruction of weak, ill or injured livestock on a voluntary basis. Under this circumstance, ensuring any effective arrangements for exceptional movement under veterinary approval – would not be enforceable as guidelines cannot be incorporated into regulations. Therefore, it is expected that the benefits to livestock welfare as compared to the ‘base case’, would be lower than under Option B or B1 in this regard as animals could not be moved for treatment and would need to be treated or humanely destroyed at the origin.

- the replacement of standard SA5.10 with guidelines would mean that prior inspection of facilities by drivers prior to loading or inspection of receiving yard before unloading - would only be voluntarily\(^{127}\) adhered to for horses and pigs whether under current codes of practice or guidelines. Moreover, although there may be some additional adherence to this as a ‘guideline’ for other species/classes of livestock, as compared to the base case, it would not be enforceable\(^{128}\) and the additional benefits to livestock welfare would not be expected to be as large as under Option B or B1;

- the replacement of standard SA5.14 with guidelines would mean that drivers would only ‘voluntarily’ choose to take action during extreme hot or cold conditions to minimise the risk to the welfare of livestock. Although the guidelines would be deemed to be of a higher status than those under the base case (e.g. Truckcare) – the incremental benefit for the welfare of livestock would be less than under Option B or B1;

- the replacement of standard SA4.1 in conjunction with SA4.2 with guidelines would mean that cattle over 6 months, in having reached their voluntary maximum time off water of 48 hours, would only be spelled for 24 hours on a voluntary basis. By recommending a maximum time off water of 48hrs and increasing the spelling period recommended by the guideline from 18 hours (as is under the current code) to 24 hours it is envisaged that there would be some incremental benefit as compared to the base case. However, such an improvement would be less than under Option B or B1. Also it would mean that pregnant cows (in their 3\(^{rd}\) trimester), lactating cows and calves, in having reached their voluntary maximum time off water of 24 hours, would only be spelled for 12 hours on a voluntary basis. By recommending a maximum time off water and associated spelling period, the guideline would provide some incremental benefit as compared to the base case, depending on the level of adherence. However, this would not be similar to a clear standard which is capable of being incorporated into regulations and therefore any improvement in welfare would be less than under Option B or B1;

- the replacement of standard SB4.3 with guidelines would mean that for journey over 4 hours, cattle known to be in the last 4 weeks of pregnancy would only be transported under veterinary advice on a voluntary basis by transporters and livestock owners. Depending on the degree of voluntary compliance it is expected that there would be some improvement of welfare outcomes as compared to the ‘base case’. However, the degree of ‘voluntary’ compliance would not be expected to be as large as in the case of Option B

\(^{127}\) Voluntary codes of practice would mean only limited reprimands or possible expulsion from the association for repeated breaches of a particular code.

\(^{128}\) Guidelines will not be incorporated into regulations.
or B1 where compliance is ‘mandatory’. As such, any improvement in the welfare of pregnant cattle in transport is likely to be smaller than under Option B or B1;

- the overall level of welfare standards would not be expected to meet the expectations of the Australian community as fully as under Option B or B1 and therefore would not be expected to improve community confidence and implementation of standards by as much;

- the level of enhancement of Australia’s international reputation regarding livestock welfare standards to the international community, especially to our trading partners, as compared to the base case, would be mitigated by replacing the aforementioned standards with guidelines.

5.3.6 Option E: the proposed standards and guidelines with higher standards relating to maximum time off water for particular species/class of species - and a minimum voluntary spell of 6 hours to earn an equivalent time-off-water credit

Under Option E the maximum water deprivation times for a group of species/class of species would be reduced in comparison with the Option B (the proposed standards), as shown in Table 11. Moreover the voluntary spell is increased from 4 hours (under Option B) to 6 hours in order to allow recognition of the spell period as a credit in the total water deprivation time calculation. This would apply to all species except commercial poultry that are transported in small cages and for whom spelling during transport is not relevant. The categories of species selected were those where an intermediate water deprivation threshold was identified in a MCOP.

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Relevant standard</th>
<th>Maximum time off water Option B</th>
<th>Maximum time off water Option E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpaca wether</td>
<td>SB1.1</td>
<td>36 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td>Buffalo</td>
<td>SB2.1</td>
<td>36 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td>Cattle older than 6 months</td>
<td>SB4.1</td>
<td>48 hours</td>
<td>36 hours</td>
</tr>
<tr>
<td>Calves 5 to 30 day old travelling without their mothers</td>
<td>SB4.1</td>
<td>24 hours</td>
<td>12 hours</td>
</tr>
<tr>
<td>Deer</td>
<td>SB5.1</td>
<td>48 hours</td>
<td>36 hours</td>
</tr>
<tr>
<td>Goats</td>
<td>SB7.1</td>
<td>48 hours</td>
<td>36 hours</td>
</tr>
<tr>
<td>Goats in their 3rd trimester of pregnancy</td>
<td>SB7.1</td>
<td>24 hours</td>
<td>12 hours</td>
</tr>
<tr>
<td>Lactating mares</td>
<td>SB8.1</td>
<td>12 hours</td>
<td>8 hours</td>
</tr>
<tr>
<td>Sheep</td>
<td>SB11.1</td>
<td>48 hours</td>
<td>36 hours</td>
</tr>
<tr>
<td>Sheep in their 3rd trimester of pregnancy</td>
<td>SB11.1</td>
<td>24 hours</td>
<td>12 hours</td>
</tr>
</tbody>
</table>

Due to the higher requirements for voluntary spelling, the costs incurred when trucks are idle would be 13.5 hours (or 25.5 hours)\(^{129}\) 50% of the time and 7.5 hours for 50% of the time (i.e. the time when voluntary spelling is undertaken). Equally the cost savings would be 13.5 hours

\(^{129}\) Depending on whether the mandatory spell period is 12 or 24 hours
(or 25.5 hours) 50% of the time and 7.5 hours for 50% of the time (i.e. the time when voluntary spelling is avoided). Given that the number of journeys with costs is greater than the number of journeys with cost savings, the net result would be an increase in costs under this option.

**Expected net cost**

Option E would result in the same additional unquantifiable costs/cost savings as shown in Table 9 under Option B, B1 and D – as compared to the ‘base case’. Moreover, the costs of the *general standards* are identical to Option B and B1, as shown in Table 12. However, some of the quantifiable costs/cost savings relating to *specific standards* would be affected by both the reduction in the maximum time-off-water and the increase in the minimum voluntary spelling period of 6 hours associated with Option E.

The expected net incremental quantifiable costs/cost savings of each of Option E are summarised in Table 12. The basis of the cost estimates in Table 12, are all provided for in Appendix 6 and 7 of this RIS. As shown in Table 12, the proposed higher standards would result in an incremental cost saving to the livestock industry, relative to the base case, of between approximately **$118.1m** and **$132.2m** per annum or approximately **$552.1m** and **$617.9m** over 5 years, in present value terms (2008 dollars)\(^{130}\).

### Table 12 – List of estimated quantifiable net incremental costs/cost savings under Option E

<table>
<thead>
<tr>
<th>Standard No.</th>
<th>Costs imposed on/cost savings for</th>
<th>Reference Appendices 6 and 7</th>
<th>Annual $ net cost or saving(^{131})</th>
<th>Discounted 5-year $ net cost(^{132}) or saving (2008 dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Responsibilities and planning</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA1.1</td>
<td>Transporters(^{133})</td>
<td>Table A6.6</td>
<td>+$364,317</td>
<td>+$1,702,482</td>
</tr>
<tr>
<td>SA1.2</td>
<td>Transporters(^{134})</td>
<td>Table A6.11</td>
<td>Between +$1,466,294 and +$1,691,068</td>
<td>Between +$6,852,109 and +$7,902,494</td>
</tr>
<tr>
<td><strong>Pre-transport preparation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA4.2</td>
<td>Livestock owners(^{135})</td>
<td>Table A6.17</td>
<td>+$1,353,865</td>
<td>+$6,326,717</td>
</tr>
<tr>
<td><strong>Loading, transport and unloading</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA5.10</td>
<td>Transporters(^{136})</td>
<td>Section A6.8.3 + rail estimates</td>
<td>Between +$14,886,740 and +$16,135,211</td>
<td>Between +$69,566,917 and +$75,401,117</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Transporters(^{137})</td>
<td>Section A6.9.3 + rail estimates</td>
<td>Between +$10,347,901 and +$11,128,458</td>
<td>Between +$48,361,236 and +$52,004,167</td>
</tr>
<tr>
<td><strong>B1: Alpacas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB1.1 &amp; SB1.3(^{138})</td>
<td>Transporters</td>
<td>Section A7.3.1</td>
<td>+$14,917</td>
<td>+$69,708</td>
</tr>
</tbody>
</table>

---

\(^{130}\) Present value is calculated using a real discount rate of 3.5%.

\(^{131}\) All figures are rounded to the nearest dollar.

\(^{132}\) All figures are rounded to the nearest dollar.

\(^{133}\) Does not include cattle, horses, pigs, poultry, or rail transport

\(^{134}\) Does not include cattle, calves, horses, pigs, poultry and ratites

\(^{135}\) Does not include horses, pigs and poultry

\(^{136}\) Does not include horses and pigs

\(^{137}\) Does not include cattle, calves for rearing, horses for sale and major events and pigs

\(^{138}\) Standards relating to maximum time off water and spelling periods are treated together as one standard always works in conjunction with the other.

---

Source: Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock
<table>
<thead>
<tr>
<th>Standard No.</th>
<th>Costs imposed on/cost savings</th>
<th>Reference Appendices 6 and 7</th>
<th>Annual $ net cost or saving</th>
<th>Discounted 5-year $ net cost or saving (2008 dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB1.2</td>
<td>Transporters</td>
<td>Section A7.3.2</td>
<td>-$12,190</td>
<td>-$56,963</td>
</tr>
<tr>
<td>SB1.4</td>
<td>Livestock owners</td>
<td>Section A7.3.3</td>
<td>+$65,838</td>
<td>+$307,665</td>
</tr>
<tr>
<td><strong>B2: Buffalo</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB2.1 &amp; SB2.2</td>
<td>Transporters</td>
<td>Section A7.3.5</td>
<td>Between +$73,162 and +$76,916</td>
<td>Between +$341,890 and +$359,433</td>
</tr>
<tr>
<td>SB2.3</td>
<td>Livestock owners</td>
<td>Section A7.3.6</td>
<td>+$3,767</td>
<td>+$17,605</td>
</tr>
<tr>
<td>SB2.6</td>
<td>Transporters</td>
<td>Section A7.3.8</td>
<td>Between +$375 and +$395</td>
<td>Between +$1,754 and +$1,844</td>
</tr>
<tr>
<td><strong>B3: Camels</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>SB3.1 &amp; SB3.3</td>
<td>Transporters</td>
<td>Section A7.3.9</td>
<td>+$34,334</td>
<td>+$160,443</td>
</tr>
<tr>
<td>SB3.4</td>
<td>Livestock owners</td>
<td>Section A7.3.10</td>
<td>+$1,031</td>
<td>+$4,819</td>
</tr>
<tr>
<td><strong>B4: Cattle</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB4.1 &amp; SB4.2</td>
<td>Transporters</td>
<td>Section A7.3.12</td>
<td>Between +$49,230,931 and +$55,464,751</td>
<td>Between +$230,060,041 and +$259,191,172</td>
</tr>
<tr>
<td>SB4.3</td>
<td>Livestock owners</td>
<td>Section A7.3.13</td>
<td>+$1,280,906</td>
<td>+$5,985,775</td>
</tr>
<tr>
<td><strong>B5: Deer</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB5.1 &amp; SB5.2</td>
<td>Transporters</td>
<td>Section A7.3.17</td>
<td>Between +$30,062 and +$30,600</td>
<td>Between +$140,482 and +$142,994</td>
</tr>
<tr>
<td>SB5.3</td>
<td>Transporters</td>
<td>Section A7.3.18</td>
<td>+$50,280</td>
<td>+$234,963</td>
</tr>
<tr>
<td><strong>B6: Rattites</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB6.1 &amp; SB6.4</td>
<td>Transporters</td>
<td>Section A7.3.20</td>
<td>+$38,576</td>
<td>+$180,269</td>
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<tr>
<td><strong>B7: Goats</strong></td>
<td></td>
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</tr>
<tr>
<td>SB7.1 &amp; SB7.2</td>
<td>Transporters</td>
<td>Section A7.3.22</td>
<td>Between +$3,769,151 and +$4,349,345</td>
<td>Between +$17,613,540 and +$20,324,831</td>
</tr>
<tr>
<td><strong>B8: Horses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB8.1 &amp; SB8.3</td>
<td>Transporters</td>
<td>Section A7.3.24</td>
<td>+$44,690</td>
<td>+$208,840</td>
</tr>
<tr>
<td>SB8.2</td>
<td>Transporters</td>
<td>Section A7.3.25</td>
<td>+$23,982</td>
<td>+$112,071</td>
</tr>
<tr>
<td>SB8.4</td>
<td>Livestock owners</td>
<td>Section A7.3.26</td>
<td>+$847</td>
<td>+$3,958</td>
</tr>
<tr>
<td>SB8.8</td>
<td>Transporters</td>
<td>Section A7.3.27</td>
<td>+$8,398</td>
<td>+$39,242</td>
</tr>
<tr>
<td>SB8.10</td>
<td>Livestock owners</td>
<td>Section A7.3.28</td>
<td>+$6,042</td>
<td>+$28,234</td>
</tr>
<tr>
<td>SB8.11</td>
<td>Transporters</td>
<td>Section A7.3.29</td>
<td>+$84,875</td>
<td>+$396,628</td>
</tr>
<tr>
<td><strong>B9: Pigs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB9.1 &amp; SB9.3</td>
<td>Transporters</td>
<td>Section A7.3.32</td>
<td>Between +$1,210 and +$1,404</td>
<td>Between +$5,653 and +$6,560</td>
</tr>
<tr>
<td>SB9.2</td>
<td>Transporters</td>
<td>Section A7.3.33</td>
<td>Between -$120,972 and -$140,385</td>
<td>Between -$565,313 and -$656,032</td>
</tr>
<tr>
<td><strong>B11: Sheep</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB11.1 &amp; SB11.2</td>
<td>Transporters</td>
<td>Section A7.3.36</td>
<td>Between +$35,084,473 and +$40,121,638</td>
<td>Between +$163,952,521 and +$187,491,591</td>
</tr>
</tbody>
</table>

The quantifiable net cost over 5 years (in present value terms) represents between 19.47% and 19.65% of the total cost of livestock transport of $2.84b and $3.14b\textsuperscript{139}. The estimated change in retail meat prices (if costs are passed on to consumers) would be approximately an increase of

\textsuperscript{139} See Appendix 6, section A6.2.5 for derivation of these cost figures
5.2% for beef, an increase of 9.9% for lamb, a reduction of 0.33% for pork and a 4.8% increase in the price of chicken, (see Table A7.6 of Appendix 7).

Expected benefits

Option E is expected to result in slightly higher incremental benefits as Option B or B1 - as compared to the base case. There remains no scientific evidence to date to suggest that the particular reduction in water deprivation times under Option E would provide specifically higher livestock welfare benefits than Options B or B1. For example, a study by MLA has shown that mature healthy sheep can tolerate journeys of up to 48 hours without any major compromise to their welfare.140 However, it is acknowledged that any reduction in maximum time off water would reduce risk to the welfare of livestock in general terms.

5.3.7 Option E1: the proposed standards and guidelines with higher standards relating to maximum time off water for particular species/class of species - and a minimum voluntary spell of 12 hours to earn an equivalent time-off-water credit

Under Option E1 the maximum water deprivation times for a group of species/class of species is identical to Option E (see Table 11). However, the voluntary spell is increased from 4 hours (under the proposed standards under Option B) to 12 hours in order to allow recognition of the spell period as a credit in the total water deprivation time calculation. This would apply to all species except commercial poultry that are transported in small cages and for whom spelling during transport is not relevant. Under Option E1, any increase in voluntary spelling to 12 hours would increase the additional costs of voluntary spelling as compared to the minimums of 4 hours under Option B and 6 hours under Option E. However, by the same token, this would also increase the level of cost savings that transporters have to gain.141

Due to the higher voluntary spelling requirements under Option E1, the costs incurred when trucks are idle would be 13.5 hours (or 25.5 hours)142 for 50% of the time and 13.5 hours for the remaining 50% of the time (the time when voluntary spelling would be undertaken). Equally, the cost savings would be 13.5 hours (or 25.5 hours) 50% of the time and 13.5 hours for 50% of the time (the time when voluntary spelling would be avoided). Consequently, the cost/cost savings under Option E1 would be larger than the cost/cost savings under Option E due to the higher amount of voluntary spelling involved. Because the frequency and volume of journeys where costs are incurred under both E and E1 is greater than the frequency and volume of any savings, this implies that the net cost under Option E1 would be greater than the net cost under Option E.

Expected net cost

Option E1 would result in the same additional unquantifiable costs/cost savings as shown in Table 9 under Option B, B1, D and E – as compared to the ‘base case’. Moreover, the costs of

---

141 This is because the opportunity cost of spelling in terms of time which is being avoided has increased – leading to greater cost savings.
142 Depending on whether the mandatory spell period is 12 or 24 hours.
the general standards are identical to Option B and B1, as shown in Table 13. However, some of the quantifiable costs/cost savings relating to specific standards would be affected by both the reduction in the maximum time-off-water and the increase in the minimum voluntary spelling period of 12 hours associated with Option E1. The expected net incremental quantifiable costs/cost savings of each standard under Option E1 are summarised in Table 13. The basis of the cost estimates in Table 13, are all provided for in Appendix 6 and 7 of this RIS. As shown in Table 13, the proposed higher standards would result in an incremental cost to the livestock industry, relative to the base case, of between approximately $133.9m and $150.2m per annum or approximately $625.8m and $701.8m over 5 years, in present value terms (2008 dollars)\(^{143}\).

Table 13 – List of estimated quantifiable net incremental costs/cost savings under Option E1

<table>
<thead>
<tr>
<th>Standard No.</th>
<th>Costs imposed on/cost savings for</th>
<th>Reference Appendices 6 and 7</th>
<th>Annual $ net cost or saving(^{144})</th>
<th>Discounted 5-year $ net cost(^{145}) or saving (2008 dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Responsibilities and planning</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA1.1</td>
<td>Transporters(^{146})</td>
<td>Table A6.6</td>
<td>$+364,317</td>
<td>$+1,702,482</td>
</tr>
<tr>
<td>SA1.2</td>
<td>Transporters(^{147})</td>
<td>Table A6.11</td>
<td>Between +$1,466,294 and +$1,691,068</td>
<td>Between +$6,852,109 and +$7,902,494</td>
</tr>
<tr>
<td><strong>Pre-transport preparation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA4.2</td>
<td>Livestock owners(^{148})</td>
<td>Table A6.17</td>
<td>+$1,353,865</td>
<td>+$6,326,717</td>
</tr>
<tr>
<td><strong>Loading, transport and unloading</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA5.10</td>
<td>Transporters(^{149})</td>
<td>Section A6.8.3 + rail estimates</td>
<td>Between +$14,886,740 and +$16,135,211</td>
<td>Between +$69,566,917 and +$75,401,117</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Transporters(^{150})</td>
<td>Section A6.9.3 + rail estimates</td>
<td>Between +$10,347,901 and +$11,128,458</td>
<td>Between +$48,361,236 and +$52,004,167</td>
</tr>
<tr>
<td><strong>B1: Alpacas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB1.1 &amp; SB1.3(^{151})</td>
<td>Transporters</td>
<td>Section A7.4.1</td>
<td>+$17,697</td>
<td>+$82,701</td>
</tr>
<tr>
<td>SB1.2</td>
<td>Transporters</td>
<td>Section A7.4.2</td>
<td>-$14,970</td>
<td>-$69,956</td>
</tr>
<tr>
<td>SB1.4</td>
<td>Livestock owners</td>
<td>Section A7.4.3</td>
<td>+$65,838</td>
<td>+$307,665</td>
</tr>
<tr>
<td><strong>B2: Buffalo</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB2.1 &amp; SB2.2</td>
<td>Transporters</td>
<td>Section A7.4.5</td>
<td>Between +$93,704 and +$98,513</td>
<td>Between +$437,889 and +$460,358</td>
</tr>
<tr>
<td>SB2.3</td>
<td>Livestock owners</td>
<td>Section A7.4.6</td>
<td>+$3,767</td>
<td>+$17,605</td>
</tr>
<tr>
<td>SB2.6</td>
<td>Transporters</td>
<td>Section A7.4.8</td>
<td>Between +$375 and +$395</td>
<td>Between +$1,754 and +$1,844</td>
</tr>
<tr>
<td><strong>B3: Camels</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB3.1 &amp; SB3.3</td>
<td>Transporters</td>
<td>Section A7.4.9</td>
<td>+$43,974</td>
<td>+$205,493</td>
</tr>
<tr>
<td>SB3.4</td>
<td>Livestock owners</td>
<td>Section A7.4.10</td>
<td>+$1,031</td>
<td>+$4,819</td>
</tr>
<tr>
<td><strong>B4: Cattle</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{143}\) Present value is calculated using a real discount rate of 3.5%.
\(^{144}\) All figures are rounded to the nearest dollar.
\(^{145}\) All figures are rounded to the nearest dollar.
\(^{146}\) Does not include cattle, horses, pigs, poultry, or rail transport.
\(^{147}\) Does not include cattle, calves, horses, pigs, poultry and ratites.
\(^{148}\) Does not include horses, pigs and poultry.
\(^{149}\) Does not include horses and pigs.
\(^{150}\) Does not include cattle, calves for rearing, horses for sale and major events and pigs.
\(^{151}\) Standards relating to maximum time off water and spelling periods are treated together as one standard always works in conjunction with the other.
### Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock

<table>
<thead>
<tr>
<th>Standard No.</th>
<th>Costs imposed on/cost savings for</th>
<th>Reference Appendices 6 and 7</th>
<th>Annual $ net cost or saving</th>
<th>Discounted 5-year $ net cost or saving (2008 dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB4.1 &amp; SB4.2</td>
<td>Transporters</td>
<td>Section A7.4.12</td>
<td>Between +$58,463,767 and +$65,868,107</td>
<td>Between +$273,205,813 and +$307,806,882</td>
</tr>
<tr>
<td>SB4.3</td>
<td>Livestock owners</td>
<td>Section A7.4.13</td>
<td>+$1,280,906</td>
<td>+$5,985,775</td>
</tr>
<tr>
<td><strong>B5: Deer</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB5.1 &amp; SB5.2</td>
<td>Transporters</td>
<td>Section A7.4.17</td>
<td>Between +$34,811 and +$35,426</td>
<td>Between +$162,673 and +$165,548</td>
</tr>
<tr>
<td>SB5.3</td>
<td>Transporters</td>
<td>Section A7.4.18</td>
<td>+$50,280</td>
<td>+$234,963</td>
</tr>
<tr>
<td>SB6.1 &amp; SB6.4</td>
<td>Transporters</td>
<td>Section A7.4.20</td>
<td>+$49,352</td>
<td>+$230,626</td>
</tr>
<tr>
<td><strong>B7: Goats</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB7.1 &amp; SB7.2</td>
<td>Transporters</td>
<td>Section A7.4.22</td>
<td>Between +$4,396,951 and +$5,073,784</td>
<td>Between +$20,547,302 and +$23,710,195</td>
</tr>
<tr>
<td><strong>B8: Horses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB8.1 &amp; SB8.3</td>
<td>Transporters</td>
<td>Section A7.4.24</td>
<td>+$52,148</td>
<td>+$243,690</td>
</tr>
<tr>
<td>SB8.2</td>
<td>Transporters</td>
<td>Section A7.4.25</td>
<td>+$28,342</td>
<td>+$132,447</td>
</tr>
<tr>
<td>SB8.4</td>
<td>Livestock owners</td>
<td>Section A7.4.26</td>
<td>+$847</td>
<td>+$3,958</td>
</tr>
<tr>
<td>SB8.8</td>
<td>Transporters</td>
<td>Section A7.4.27</td>
<td>+$8,398</td>
<td>+$39,242</td>
</tr>
<tr>
<td>SB8.10</td>
<td>Livestock owners</td>
<td>Section A7.4.28</td>
<td>+$6,042</td>
<td>+$28,234</td>
</tr>
<tr>
<td>SB8.11</td>
<td>Transporters</td>
<td>Section A7.4.29</td>
<td>+$84,875</td>
<td>+$396,628</td>
</tr>
<tr>
<td><strong>B9: Pigs</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SB9.1 &amp; SB9.3</td>
<td>Transporters</td>
<td>Section A7.4.32</td>
<td>Between -$1,613 and +$1,872</td>
<td>Between -$7,538 and +$8,747</td>
</tr>
<tr>
<td>SB9.2</td>
<td>Transporters</td>
<td>Section A7.4.33</td>
<td>Between -$161,296 and -$187,181</td>
<td>Between -$753,751 and -$874,709</td>
</tr>
<tr>
<td><strong>B11: Sheep</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB11.1 &amp; SB11.2</td>
<td>Transporters</td>
<td>Section A7.4.36</td>
<td>Between +$4,984,891 and +$4,693,320</td>
<td>Between +$191,525,640 and +$219,309,102</td>
</tr>
<tr>
<td><strong>Total net incremental cost of general and specific standards under Option B</strong></td>
<td></td>
<td></td>
<td>Between +$133,913,648 and +$150,172,868</td>
<td>Between +$625,789,083 and +$701,769,707</td>
</tr>
</tbody>
</table>

The quantifiable net costs over 5 years (in present value terms) represents between 22.07% and 22.32% of the total cost of livestock transport of $2.84b and $3.14b. The estimated change in retail meat prices (if costs are passed on to consumers) would be approximately an increase of 6% for beef, an increase of 11.1% for lamb, a reduction of 0.5% for pork and an increase of 4.8% for chicken, (see Table A7.9 of Appendix 7).

**Expected benefits**

Again, as with Option E, Option E1 is expected to result in slightly higher incremental benefits as Option B or B1 - as compared to the base case. There remains no scientific evidence to date to show that the particular reduction in water deprivation times under Option E1 would provide specifically higher livestock welfare benefits than Options B or B1, but it would be likely to reduce risks to the welfare of livestock in general terms. Moreover, the higher mandatory time for voluntary spells under Option E1 in order to get time-off-water credits (as compared to Option E) is likely to further reduce the risk to the welfare of livestock.

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152 See Appendix 6, section A6.2.5 for derivation of these cost figures.
5.4 Selection of preferred option

The purpose of this part of the RIS is to select a preferred option, on the basis of the preceding assessment of the various options in Part 5.3. To do this, we need a method of ranking the costs and benefits of the options, so as to identify the optimum combination of costs and benefits.

Table 14 summarises the net costs (+) or savings (-) for each of the options discussed in section 5.3 in this RIS.

### Table 14 – A comparison of annual and 5 year incremental costs or savings for all options

<table>
<thead>
<tr>
<th>Option</th>
<th>Annual value min</th>
<th>Annual value max</th>
<th>Present value over 5 years min</th>
<th>Present value over 5 years max</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>+$0.9m</td>
<td>+$0.9m</td>
<td>+$0.9m</td>
<td>+$0.9m</td>
</tr>
<tr>
<td>B</td>
<td>+$31m</td>
<td>+$33.5m</td>
<td>+$145m</td>
<td>+$156.4m</td>
</tr>
<tr>
<td>B1</td>
<td>+$43.7m</td>
<td>+$46.2m</td>
<td>+$204.4m</td>
<td>+$215.8m</td>
</tr>
<tr>
<td>C</td>
<td>Not quantifiable but likely more costly than Option B</td>
<td>Not quantifiable but likely more costly than Option B</td>
<td>Not quantifiable but likely more costly than Option B</td>
<td>Not quantifiable but likely more costly than Option B</td>
</tr>
<tr>
<td>D</td>
<td>-$1.1m</td>
<td>-$1.3m</td>
<td>-$5.3m</td>
<td>-$6.3m</td>
</tr>
<tr>
<td>E</td>
<td>+$118.1m</td>
<td>+$132.2m</td>
<td>+$552m</td>
<td>+$617.9m</td>
</tr>
<tr>
<td>E1</td>
<td>+$133.9m</td>
<td>+$150.2m</td>
<td>+$652.8m</td>
<td>+$701.8m</td>
</tr>
</tbody>
</table>

Table 15 summarises the impact of all options on beef, lamb, pork and chicken prices, except for Option A, where no price impact would be expected, and Option C, where costs are unquantifiable.

### Table 15 - Comparison of the % change in meat prices and demand for Options B, D, E and E1

<table>
<thead>
<tr>
<th>Option</th>
<th>%Change in Beef</th>
<th>%Change in lamb</th>
<th>%Change in Pork</th>
<th>%Change in Chicken</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Price</td>
<td>Demand</td>
<td>Price</td>
<td>Demand</td>
</tr>
<tr>
<td>B</td>
<td>0.96% to 0.98%</td>
<td>-1.16% to -1.18%</td>
<td>1.99% to 2.03%</td>
<td>-2.79% to -2.85%</td>
</tr>
<tr>
<td>B1</td>
<td>As with B + unknown increase in veal prices</td>
<td>As with B + unknown reduction in veal demand</td>
<td>1.99% to 2.03%</td>
<td>-2.79% to -2.85%</td>
</tr>
<tr>
<td>D</td>
<td>0.001%</td>
<td>-0.001%</td>
<td>-0.19% to -0.2%</td>
<td>0.27% to 0.28%</td>
</tr>
<tr>
<td>E</td>
<td>5.154% to 5.17%</td>
<td>-6.18% to -6.20%</td>
<td>9.836% to 9.943%</td>
<td>-13.77% to -13.92%</td>
</tr>
<tr>
<td>E1</td>
<td>5.987% to 6%</td>
<td>-7.18% to -7.20%</td>
<td>11.12% to 11.23%</td>
<td>-15.57% to -15.72%</td>
</tr>
</tbody>
</table>

Whilst the expected costs of all options except Option C can largely be quantified, the benefits cannot. However, both the costs and the benefits of the various options can be ranked against each other. Table 16 ranks the various options in terms of both costs and benefits using a

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153 This represents a one-off cost only.
weighted decision criteria analysis. This is an accepted technique for ranking options and selecting a preferred option in an RIS.\textsuperscript{154}

The three evaluation criteria used in this analysis are:

1. Livestock welfare benefits;
2. Net compliance costs to industry and government; and
3. Promotion of national consistency.

The relative weightings of these criteria are 40%, 40% and 20% respectively. Having regard to the main purpose of the animal welfare legislation being to prevent cruelty to animals and the importance the community places on animal welfare (see Part 1.2.2 of this RIS), a relatively high weighting (40%) should be given to the livestock welfare benefits each option. An equal weighting has been to the net costs of the proposed standards. For reasons discussed in Part 2.1 of the RIS, the promotion of national consistency is a third criterion, although of a lower weighting than the costs and benefits.

The rationale for the different scores in Table 16 may be summarised as follows. For each of the aforementioned criteria, scores are assigned to each option on an ordinal scale of -5 to +5, based on the assessments of costs, benefits and equity given in the preceding Part 5.3 of the RIS, relative to the ‘base case’. The ‘base case’ is assigned a score of zero for each of the criteria. If the option is superior to the ‘base case’ for a particular criterion, it is assigned a positive score, and if it is inferior to the base case, it is assigned a negative score. It is emphasised that the different scores are assigned on an ordinal rather than a linear scale, as the purpose of the exercise is simply to rank the options. In other words, an option with a score of +3 is not necessarily 3 times better than an option with a score of +1. The method simply means that an option with a score of +3 is superior to an option with a score of +2, which in turn is superior to one with a score of +1.

For example, the options that would be likely to promote the highest level of livestock welfare benefits relative to the ‘base case’ (\textbf{Options E and E1}) are assigned a score of +4 and +4.5, respectively. Those that would be likely to promote lower levels of livestock welfare benefits are assigned lower scores accordingly. The assigned scores are then multiplied by the relevant weightings for each criterion, as discussed above, to calculate the weighted score for each option.

Similarly, the option that would impose the greatest incremental cost relative to the ‘base case’ (\textbf{Option E1}) is assigned a score of -4.5. Those that would impose lesser incremental cost are assigned higher scores accordingly (refer to Table 14).

\textsuperscript{154} State Government of Victoria, 2007.
## Table 16 – Weighted criteria decision analysis

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Type of score</th>
<th>Livestock welfare benefits</th>
<th>Net cost to industry and government</th>
<th>National consistency</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighting</td>
<td>%</td>
<td>40</td>
<td>40</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Base case</td>
<td>Assigned</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Assigned</td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Weighted</td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Option A</td>
<td>Assigned</td>
<td>+0.5</td>
<td>-0.5</td>
<td>+1</td>
<td></td>
</tr>
<tr>
<td>Weighted</td>
<td>+0.2</td>
<td>-0.2</td>
<td>+0.2</td>
<td>+0.2</td>
<td></td>
</tr>
<tr>
<td>Option B</td>
<td>Assigned</td>
<td>+3</td>
<td>-2</td>
<td>+5</td>
<td></td>
</tr>
<tr>
<td>Weighted</td>
<td>+1.2</td>
<td>-0.8</td>
<td>+1.0</td>
<td>+1.4</td>
<td></td>
</tr>
<tr>
<td>Option B1</td>
<td>Assigned</td>
<td>+3</td>
<td>-3</td>
<td>+5</td>
<td></td>
</tr>
<tr>
<td>Weighted</td>
<td>+1.2</td>
<td>-1.2</td>
<td>+1</td>
<td>+1.0</td>
<td></td>
</tr>
<tr>
<td>Option C</td>
<td>Assigned</td>
<td>+1</td>
<td>-3</td>
<td>+2</td>
<td></td>
</tr>
<tr>
<td>Weighted</td>
<td>+0.4</td>
<td>-1.2</td>
<td>+0.4</td>
<td>-0.4</td>
<td></td>
</tr>
<tr>
<td>Option D</td>
<td>Assigned</td>
<td>+1</td>
<td>+0.5</td>
<td>+1</td>
<td></td>
</tr>
<tr>
<td>Weighted</td>
<td>+0.4</td>
<td>+0.2</td>
<td>+0.2</td>
<td>+0.8</td>
<td></td>
</tr>
<tr>
<td>Option E</td>
<td>Assigned</td>
<td>+4</td>
<td>-4</td>
<td>+5</td>
<td></td>
</tr>
<tr>
<td>Weighted</td>
<td>+1.6</td>
<td>-1.6</td>
<td>+1.0</td>
<td>+1.0</td>
<td></td>
</tr>
<tr>
<td>Option E1</td>
<td>Assigned</td>
<td>+4.5</td>
<td>-4.5</td>
<td>+5</td>
<td></td>
</tr>
<tr>
<td>Weighted</td>
<td>+1.8</td>
<td>-1.8</td>
<td>+1.0</td>
<td>+1.0</td>
<td></td>
</tr>
</tbody>
</table>

Based on Table 16, Option B (the proposed standards) provides the highest weighted score of +1.4 with Option C (more outcome-based and less prescriptive standards) providing the lowest weighted score of -0.4. The proposed standards are therefore the preferred option, in which the expected costs are considered to be outweighed by the expected benefits.
6.0 National Competition Policy tests

6.1 Competition principles and guidelines

At the Council of Australian Governments (COAG) meeting in April 1995, all Australian governments agreed to implement the National Competition Policy (NCP). As part of the Competition Principles Agreement, all governments, including Victoria, agreed to review all legislation containing restrictions on competition under the following principle:

‘Legislation should not restrict competition unless it can be demonstrated that:

- the benefits of the restriction to the community as a whole outweigh the costs; and
- the objectives of the legislation can only be achieved by restricting competition.’

To successfully pass the competition and cost-benefit tests, for each proposed regulation it is necessary to:

- Step 1: Identify the restriction on competition, if any;
- Step 2: Show that the restriction, if any exists, is necessary to achieve the objective;
- Step 3: Assess the costs to the community caused by the restriction;
- Step 4: Assess the community benefits; and
- Step 5: Assess whether benefits outweigh the costs.

If no restriction on competition is found in the course of Step 1, it is not necessary to complete the remaining steps (i.e. Steps 2 to 5). Issues to be discussed in the NCP assessment relate to whether or not the proposed regulations restrict competition in the relevant market by one or more of various means such as:

- allowing only one company or person to supply a good or service (monopoly);
- requiring producers to sell to a single company or person (monophony);
- limiting the number of producers of goods and services to less than four (duopoly or oligopoly);
- limiting the output of an industry or individual producers; or
- limiting the number of persons engaged in an occupation.

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156 State Government of Victoria, 2005
157 Ibid.
6.2 NCP assessment

The market affected by the proposed standards is the market for land transport of livestock. NCP applies to businesses rather than to individuals engaging in non-business activities.

To the extent that they impact on businesses, namely livestock transporters, such businesses would be equally affected by the same regulatory environment. The likely costs of the proposed standards are not so high as to constitute a barrier to entry for such businesses. Thus the proposed regulations are unlikely to restrict competition.

7.0 Evaluation and review strategy

The effectiveness of the proposed standards in achieving the policy objective (refer Part 2.2) and any unintended consequences will be evaluated over time by using indicators which will include the extent to which the standards have been:

- officially adopted by the various government jurisdictions;
- implemented by the livestock transport industry;
- accepted by the Australian community.

8.0 Conclusions

The main conclusions and findings of the RIS are as follows:

1. Transportation is potentially a major stressor for farm animals and might have deleterious effects on health, well-being, productivity and ultimately, product quality.

2. Animals being transported by road and rail are subject to a number of stress factors throughout the journey, including handling, loading, transporting, mixing of unfamiliar animals, unloading and total time without water. These risk factors can be cumulative and apply across all phases of land transport, from assembly and handling before the journey, to unloading at the destination.

3. Animal welfare is now recognised as a characteristic of product quality and customer requirements in some industry sectors. There is increasing recognition by livestock industries that animal welfare is an integral part of good animal husbandry. In the past few years, several food safety-based quality assurance schemes have been implemented either within companies or within industries.
4. Extensive consultation has taken place with government agencies, researchers, industry and animal welfare organisations in the development of the proposed standards and their predecessors.

5. The problems that the proposed standards are endeavouring to address include the needs:
   - for greater national consistency in livestock welfare standards
   - to ‘fill in gaps’ in current standards;
   - to update current model codes of practice;
   - for clear and verifiable standards;
   - to minimise risks to livestock welfare;
   - to ensure that the benefits justify the costs of standards;
   - for standards to be considered within an international context; and
   - to meet community expectations.

6. Market forces alone would not be expected to solve these problems and intervention in the form of regulated standards is necessary.

7. In relation to the proposed standards and possible alternatives, the following overarching policy objective is identified:

   To ensure that the conditions under which livestock are transported on land are consistent with reasonable animal welfare outcomes.

8. Because compliance with the guidelines is voluntary, costs are imposed by the proposed standards rather than by the guidelines. Most of the proposed standards are consistent with existing standards in national model codes of practice, as listed under the base case in Part 5.2 of the RIS. The main overall difference is that proposed standards are not explicitly stated in the existing model codes. In many cases they make more verifiable the unverifiable guidelines in the existing model codes, to facilitate incorporation into state and territory regulations and the auditing of compliance with such regulations.

9. The proposed standards would impose minimal to minor costs per journey in the following areas:
   - transport costs and savings
   - training costs
10. No costs to livestock welfare have been identified. In other words, no species or class of animal is likely to incur a reduction in its welfare, compared to the existing codes of practice. On the contrary, there is likely to be a net benefit to livestock welfare as a result of the implementation of the proposed standards.

11. Veterinary and pathology costs will be directly incurred by the relevant livestock owners. The transport costs/savings and the training costs will be initially incurred by livestock transporters, but costs are likely in most cases to passed on to livestock owners and possibly meat consumers, depending on whether or not stock are auctioned and on consumer price sensitivities.

12. Verification, auditing and enforcement costs will be incurred by the relevant government agencies. However, most state and territory departments advise that there is unlikely to be any significant increase in enforcement costs of the proposed standards relative to the base case.

13. A comparison of the proposed standards with the relevant World Organisation for Animal Health (OIE) guidelines shows that there are no significant differences between the proposed Australian standards and the relevant equivalent international standards, except in relation to only a few proposed standards as discussed in Part 3.3 of the RIS. These differences are considered reasonable and justified.

14. The estimated total annual cost of transporting livestock for slaughter, export/import and other purposes by road (excluding the cost of horse transport for recreational purposes) is between approximately $606.8m and $672.7m (refer to Part A6.2 of Appendix 6).

15. As shown in Table 8, the proposed standards would result in a net incremental cost to the livestock industry, relative to the base case, estimated to be between approximately $31.0m and $33.5m per annum or approximately $145.0m and $156.4m over 5 years, in present value terms (2008 dollars). The expected net incremental quantifiable costs/cost savings of each of the proposed standards are summarised in Table 8. The basis of the cost estimates in Table 8 are all provided in Appendix 6 of this RIS. All unquantifiable costs/cost savings are summarised in Table 9.

16. The quantifiable cost over 5 years (in present value terms) represents between 4.97% and 5.11% of the total cost of livestock transport of approximately $2.84b and $3.14b. The estimated change in retail meat prices (if costs are passed on to consumers) would be approximately an increase of 1% for beef, an increase of 2% for lamb, a reduction of 0.3% for pork and an increase of 4.8% for chicken, (see Appendix 6, section A6.54).

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158 Other purposes include: mustering; management; companionship; non-event recreation; breeding/breeder replacement; growing out or finishing; racing; show/exhibition and sale.
159 See Appendix 6, section A6.2.5 for derivation of these cost figures.
17. A comparison of the quantifiable annual and 5 year incremental costs or savings for all options is shown in the following table.

<table>
<thead>
<tr>
<th>Option</th>
<th>Annual value min</th>
<th>Annual value max</th>
<th>Present value over 5 years min</th>
<th>Present value over 5 years max</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>+$0.9m</td>
<td>+$0.9m</td>
<td>+$0.9m</td>
<td>+$0.9m</td>
</tr>
<tr>
<td>B</td>
<td>+$31m</td>
<td>+$33.5m</td>
<td>+$145m</td>
<td>+$156.4m</td>
</tr>
<tr>
<td>B1</td>
<td>+$43.7m</td>
<td>+$46.2m</td>
<td>+$204.4m</td>
<td>+$215.8m</td>
</tr>
<tr>
<td>C</td>
<td>Not quantifiable but likely more costly than Option B</td>
<td>Not quantifiable but likely more costly than Option B</td>
<td>Not quantifiable but likely more costly than Option B</td>
<td>Not quantifiable but likely more costly than Option B</td>
</tr>
<tr>
<td>D</td>
<td>-$1.1m</td>
<td>-$1.3m</td>
<td>-$5.3m</td>
<td>-$6.3m</td>
</tr>
<tr>
<td>E</td>
<td>+$118.1m</td>
<td>+$132.2m</td>
<td>+$552m</td>
<td>+$617.9m</td>
</tr>
<tr>
<td>E1</td>
<td>+$133.9m</td>
<td>+$150.2m</td>
<td>+$652.8m</td>
<td>+$701.8m</td>
</tr>
</tbody>
</table>

18. The proposed standards are expected to result in the following benefits:

- improved livestock welfare outcomes – no species or class will be worse off and risks to welfare will be minimised;
- greater national consistency in the setting of standards;
- clear standards, differentiated from guidelines, that are capable of being incorporated into regulations;
- the gaps that exist in the current model codes of practice will be filled in, including coverage of all livestock transported by land;
- updates to current model codes of practice, in the light of new knowledge and circumstances, including industry best practice;
- standards have been reviewed to ensure that their benefits justify their costs, and that they meet the expectations of the Australian community, which is likely to improve community confidence and implementation of the standards, and
- enhanced international reputation (from providing clear statements of Australia’s livestock welfare standards to the international community, especially our trading partners).

19. A weighted criteria decision an analysis was used to compare the relative costs of various options. Option B (the proposed standards) provides the highest weighted score of +1.4 with Option C (more outcome-based and less prescriptive standards) providing the lowest

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160 This represents a one-off cost only.
weighted score of only -0.4. The proposed standards are therefore the preferred option, in which the expected costs are considered to be outweighed by the expected benefits.

20. To the extent that they impact on livestock transporters and other businesses, such businesses would be equally affected by the same regulatory environment. The likely costs of the proposed standards are not so high as to constitute a barrier to entry for such businesses. Thus the proposed regulations are unlikely to restrict competition.

21. All jurisdictions can make regulations to require compliance with the proposed standards, and all regulations except those in New South Wales and the Northern Territory can adopt the standards by reference. (New South Wales and the Northern Territory would have to make regulations using similar wordings as the standards).
## Glossary of terms and acronyms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS</td>
<td>Australian Bureau of Statistics</td>
</tr>
<tr>
<td>ABARE</td>
<td>Australian Bureau of Agricultural and Resource Economics</td>
</tr>
<tr>
<td>access to water</td>
<td>a reasonable opportunity for livestock to be able to drink water of a suitable quality and quantity to maintain their hydration.</td>
</tr>
<tr>
<td>agent</td>
<td>means a person involved in the buying and selling of livestock for production, sale or slaughter. A person who acts on behalf of someone else. Includes a livestock buyer.</td>
</tr>
<tr>
<td>animal</td>
<td>synonymous with livestock. Specifically for this standard all classes of; cattle, sheep, goats, pig, horses, poultry, emus, ostrich, alpaca, deer, camel, and buffalo</td>
</tr>
<tr>
<td>AFFA</td>
<td>Australian Government Department of Agriculture, Fisheries and Forestry</td>
</tr>
<tr>
<td>AHA</td>
<td>Animal Health Australia</td>
</tr>
<tr>
<td>ALTA</td>
<td>Australian Livestock Transporters Association</td>
</tr>
<tr>
<td>ARMCANZ</td>
<td>the former Agriculture and Resource Management Council of Australia and New Zealand (since replaced by PIMC- the Primary Industries Ministerial Council)</td>
</tr>
<tr>
<td>AVA</td>
<td>Australian Veterinary Association.</td>
</tr>
<tr>
<td>AWWWG</td>
<td>Animal Welfare Working Group</td>
</tr>
<tr>
<td>assembly</td>
<td>the process of drawing livestock together in a yard or cage prior to loading for transport. It includes mustering or capture, handling, drafting or selection, restraint and all procedures on livestock that might take place in preparation for transport</td>
</tr>
<tr>
<td>base case</td>
<td>means the situation that would exist if the proposed standards were not adopted.</td>
</tr>
<tr>
<td>blunt trauma</td>
<td>a single blow to the forehead causing immediate loss of consciousness.</td>
</tr>
<tr>
<td>bobby calf</td>
<td>A calf not accompanied by its mother, less than 30 days old, weighing less than 80 kg liveweight, and usually a dairy breed or cross.</td>
</tr>
<tr>
<td>calf</td>
<td>cattle less than 6 months old.</td>
</tr>
</tbody>
</table>
category: in relation to livestock, means the same as ‘class’.
buck: a mature, entire male goat
captive bolt: a captive-bolt pistol is an alterative to firearms. It fires a bolt into the skull of an animal to rapidly render the animal unconscious and to allow the animal to be killed before regaining consciousness.
carrier: means an individual that is contracted to transport livestock for another operator (operator may be primary production, feedlot or processor)
chicks: poultry under 72 hours of age, commonly known as ‘day old chicks’
class: a group of a livestock species defined by age, size or sex. Lactating livestock with young at foot are considered as a single class.
COAG: Council of Australian Governments
competent: persons are deemed competent when they can demonstrate an ability to comply with the provisions specified in these standards.
consignors: consignors of livestock are usually the owners of the livestock but may also include; agents, drivers and transport companies, poultry pick-up crews and personnel from properties, saleyards, feedlots, depots and livestock-processing plants, who handle livestock to be transported.
container(s): means crates, boxes or cages for transporting poultry
cria: young alpaca under 6 months old.
CSIRO: Commonwealth Scientific and Industrial Research Organisation
curfew: prevention of livestock access to water prior to another procedure such as weighing, sale, or transport. Will form part of the total water deprivation time unless stock are given adequate access to water prior to further deprivation.
DAFF: Department of Agriculture, Fisheries and Forestry
document: A document for livestock movements is any written record. It may be, but is not restricted to:
- an existing document, such as a consignment sheet, health certificate, national vendor declaration or equivalent, an invoice, a waybill, a diary entry or other
documentation

- another record that shows the person(s) in charge responsible for livestock during transport.

driver: a person who transports livestock on a vehicle and is self employed, employed by a livestock transport company or another business including a livestock business. Any operator of a livestock transport vehicle.

economic efficiency: when an output of goods and services is produced making the most efficient use of scarce resources and when that output best meets the needs and wants and consumers and is priced at a price that fairly reflects the value of resources used up in production

exsanguination: bleeding out

externality: means the cost or benefit related to a good or service that accrues to persons other than the buyer or the seller of that good or service.

fawn: young deer under 6 months of age, also known as a calf.

foal: a young unweaned horse under the age of 6 months.

FOB: Free On Board

Free On Board: a shipping term which indicates that the supplier pays the shipping costs (and usually also the insurance costs) from the point of manufacture to a specified destination (e.g. on board the ship) at which point the buyer takes responsibility.

guidelines: the recommended practices to achieve desirable animal welfare outcomes. The guidelines complement the standards. They should be used as guidance. Guidelines use the word ‘should’. Non-compliance with one or more guidelines will not in itself constitute an offence under law.

Compare with Standards.

EU: European Union

humane destruction: the activity that results in immediate loss of consciousness and then death of the animal. The primary consideration is to prevent the animal from suffering further pain or distress.

husbandry: care and management practices in animal keeping.

journey: the movement of livestock from loading to unloading at a destination.
kid: young, unweaned goat under 6 months old.
lairage: processing establishment holding yard and facilities.
lamb: young sheep under 4 months old.
lethal injection: an overdose of a recognised anaesthetic or analgesic agent delivered by a veterinarian or a person approved to do so, leading to a loss of consciousness and or death. An injection of an agent to cause death in an unconscious animal.
livestock: means species as defined in scope.
market: means an area of close competition between firms, or the field of rivalry in which firms operate.
market failure: means the situation which occurs when freely functioning markets, operating without government intervention, fail to deliver an efficient or optimal allocation of resources.
MCOP: model code of practice
merit goods underprovided goods/services in a market economy which are determined by government to be good for society whether or not consumers desire them.
MLA: Meat & Livestock Australia.
monopoly: means a market structure such that only one firm supplies the entire market.
moribund means an animal that is unable to stand, exhibits signs of distress or insensitivity, such as panting, or glassy eye, and with little chance of recovery.
NAWAC National Animal Welfare Advisory Committee
NCCAW: National Consultative Committee on Animal Welfare.
over the hooks: refers to the marketing of cattle/sheep/lambs directly from the farm to a processing establishment where a producer is paid for the value of the carcass based on a sliding grid.
OIE: World Organisation for Animal Health
owner: a person or company who owns livestock.
person in charge: the person who is responsible for the welfare of the livestock at the times they are in charge for each stage of each journey, including before loading and after unloading. Responsibility for duty of care for livestock welfare may extend to the person’s employer.
piglet: young unweaned pig.
PIMC: Primary Industries Ministerial Council
pithing: the process of destroying nervous tissue in and around the brainstem to ensure death by either inserting a rod into the hole created by a projectile or transecting the spinal cord at the foramen magnum.
poultry: domestic fowls, turkeys, geese, ducks, guinea fowls, quails, pigeons and pheasants and partridges reared or kept in captivity for breeding; and the production of meat or eggs for consumption or for restocking supplies of game park enterprises.
prescribed: specified by regulations made under an Act.
producer: a farmer of livestock
PSE: Pale Soft Exudative Pork, caused by a combination of factors which stress the animal and cause a rapid decline in meat pH.
public good: a good or service that will not be produced in private markets because there is no way for the producer to keep those who do not pay for the good or service from using it.
ratite: any bird species that cannot fly because its smooth or raftlike sternum (breastbone) lacks a keel to which flight muscles can be anchored. In these standards, ratites refer to the emu and ostrich.
rest: refer to ‘spell’.
restriction of competition: means something that prevents firms in a market or potential entrants to a market from undertaking the process of economic rivalry.
RIRDC Rural Industries Research and Development Corporation
RIS: regulatory impact statement.
QA: Quality Assurance.
sale yard means premises where livestock are gathered and ownership of livestock is exchanged; livestock are bought and sold
SCARM: Standing Committee of Agriculture and Resources Ministers
social cost: the total of all costs of a particular economic activity borne by all economic agents in society, including consumers, producers and government.

sow: an adult female pig which has had one or more litters.

spell: a spell is a mandatory requirement when maximum time off-water is reached before starting a further journey, as defined by standards for each species.

A mandatory spell is where a standard requires an animal to be spelled.

Water, food and space to lie down must be provided to all livestock, on a stationary vehicle or off a vehicle.

Where animals are unloaded, a spell starts from the time all animals are unloaded and ends when animals are handled for reloading.

standards: the acceptable animal welfare requirements designated in the proposed standards document. The requirements that must be met under law for livestock welfare purposes. The standards are intended to be clear, essential and verifiable statements; however, not all issues are able to be well defined by scientific research or are able to be quantified. Standards use the word ‘must’.

stock handler: a person who undertakes the immediate day-to-day husbandry tasks associated with looking after animals.

stock handling: putting into practice the skills, knowledge, experience, attributes and empathy necessary to manage stock.

stun: to make an animal unconscious.

stress: means a response by animals that activates their behavioural, physiological or psychological coping mechanisms.

supply chain: a group of businesses linked together for mutual benefit to supply products to customers.

TSR: travelling stock reserve

UK: United Kingdom.

water deprivation time: the total time animals are deprived of water, including during mustering away from water, yarding and water curfew time before transport, loading, time on the vehicle whether moving or stationary unless reasonable access to water is provided, and time during unloading and holding at the destination until reasonable access to
water is provided.

Where a voluntary spell exceeds four hours, the time that water is provided to livestock during the spell can be added to extend the total time of the trip if the livestock meet the fitness requirements.

See Time off-water

**waybill**

a document issued by a transporter giving details and instructions relating to the transport of a consignment of animals. Typically it will show the names of the consignor and consignee, the point of origin of the consignment, its destination, route, and other details, together with the amount charged for carriage.

**weaner pig:**

a pig that has been weaned from the sow up to 30 kilograms liveweight.

**weaning:**

separating young animals from their mothers so that the offspring can no longer suckle.

**WTP:**

Willingness to Pay.
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### Appendices


2. Summary of proposed changes to relevant existing model codes of practice.

3. Comparison with relevant international animal welfare standards.

4. Summary of relevant state and territory legislation.

5. Livestock transportation data.

6. Calculations of estimated costs and benefits of the proposed standards (Option B).

7. Cost and cost saving estimate calculations for Options B1, D, E and E1.

8. Unresolved SRG issues.

Appendix 1 - Guide to the Australian Animal Welfare Standards for the Land Transport of Livestock.\(^{161}\)

**Scope**

The standards and guidelines cover the transport of livestock by road, rail and livestock transport vehicle aboard a ship. They apply to the major commercial livestock industries in Australia; that is, to alpacas, buffalo, camels, cattle, deer, emus, goats, horses, ostriches, pigs, poultry (broilers, ducks, geese, guinea fowl, layers, partridge, pheasants, pigeons, quail and turkeys) and sheep.

The document contains general standards that apply to all species (Part A), and standards for each industry (Part B).

The standards apply to all those responsible for the care and management of transported livestock. Those responsible include drivers; transport companies; owners; agents; and livestock handlers at farming enterprises, depots, saleyards, feedlots and livestock-processing plants.

Livestock transport begins when livestock is loaded into a container or onto a vehicle, and ends when the livestock is unloaded at the final destination. The chain of responsibility for the welfare of livestock begins with the owner or their agent, and extends to the final receiver of the livestock.

Water provision is an important consideration in livestock welfare. From a livestock welfare perspective, the whole process of moving livestock includes activities from the time that animals are first mustered and deprived of water before loading, until the time that livestock have access to water at the final completion of the journey. Activities important in the three phases of the movement process and those primarily responsible for livestock welfare include:

- mustering, assembly;
- handling and waiting periods before loading (consignor);
- loading, transport, and unloading including spelling periods (transporter)\(^{162}\); and
- holding time after unloading (receiver).

The standards attempt to cover most ordinary situations and contingencies. There are unusual circumstances (including accidents) that are not directly mentioned in the document but are addressed by standards in part A.

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\(^{161}\) Prepared by Dr. Kevin De Witte, Animal Health Australia.

\(^{162}\) The term spell defines a period when livestock have access to water and space for all livestock to lie down, on or off the vehicle (SA5.1, SA5.2 and Part B standards) for their recovery.
The standards and guidelines should be considered in conjunction with other requirements for the transport of livestock, and with related Commonwealth, state and territory legislation, including:

- for transport — the *Australian Standards for the Export of Livestock*\(^{163}\), animal health and biosecurity requirements, regulated livestock loading schemes and driver regulations
- for other enterprises — model codes of practice or future standards and guidelines for livestock species, saleyards, livestock processing (slaughter) establishments and the *Australian Standards for the Export of Livestock*.

Where other legislation requires a higher standard than this standard, the higher standard will apply. Where there is a conflict with another standard in meeting the animal welfare standards, the welfare of animals must be the first consideration, unless there is an occupational health and safety requirement.

The standards document has two parts:

- **Part A** — six chapters of standards and guidelines that apply to all livestock species
- **Part B** — eleven chapters of standards and guidelines, each of which applies to a particular livestock industry (also referred to as the ‘species chapters’); the standards in Part B apply in addition to, or by exception to, the Part A standards.

The standards aim to make the key requirements consistent between species, where appropriate. For example, some key requirements that occur in both Parts A and B, and that have been made consistent between species are; water provision times, spelling (resting) arrangements or times, and pregnancy provisions. Definitions that are relied upon are defined in the glossary.

### Comparison of standards and guidelines and intended use.

Although often referred to as a single entity — ‘the standards’ — each chapter of the document contains both standards and guidelines. Both the standards and the guidelines are intended to achieve good outcomes for livestock welfare, but they have different functions:

From the pre-public consultation version of the document:

**Standards** — The acceptable animal welfare requirements designated in this document. The requirements that must be met under law for livestock welfare purposes. The standards are intended to be clear, essential and verifiable statements; however, not all issues are able to be well defined by scientific research or are able to be quantified. Standards use the word ‘must’.

**Guidelines** — The recommended practices to achieve desirable animal welfare outcomes. The guidelines complement the standards. They should be used as guidance. Guidelines use the word ‘should’. Non-compliance with one or more guidelines will not in itself constitute an offence under law.

The guidelines are not written to be underpinning, compliance guidelines that serve to explain the standards. The relative welfare position presented by the guidelines does vary and is not meant to be ‘best practice’. This relationship is open to debate but the guidelines are regarded to be a better welfare position than described by the standards. The standards represent the accepted minimum level of welfare to be provided. Compliance with the relevant guidelines will serve as a defence against a charge of non-compliance with a standard. Conversely, non-compliance with one or more guidelines will not in itself constitute an offence under law, remembering that the standards must be achieved. This concept in relation to regulation is an important principal in the document.

**Types of standards**

Where possible, the standards are supported by scientific research or are based on industry-recommended practice. However, some issues are not well defined by scientific research, cannot be defined clearly or are not measurable. As a result, simple written standards that focus on broad outcomes are necessary for some of the important livestock welfare issues in Part A.

Standards can be classified as follows:

- prescriptive or non-prescriptive
- proactive or reactive
- related to inputs or to outputs.

Each of these types of classification is discussed below. The classification of standards does not suggest anything about their intended use by governments — all standards are to be adopted. Thus all standards are considered equal, despite their different constructions and issues associated with interpretation. The land transport standards document does not make any distinction based on categories of standards. The standards are written in plain English, which is appropriate for contemporary legislative use, but have not been subjected to expert legal analysis.

**Prescriptive or non-prescriptive standards**

**Prescriptive standards**

Prescriptive standards are narrowly focused on a specific issue, and meet the characteristics of being clear, essential and verifiable. Examples of these are all standards found in the species chapters of Part B.

**Non-prescriptive standards**

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Non-prescriptive standards are more broadly focused on a wider issue, and are subject to interpretation in everyday use and by the regulatory legal system. They are more difficult than prescriptive standards to verify, they allow some flexibility and they require judgements to be made in everyday use by persons involved in livestock movement and by regulators. For example, the general standards that seek to “minimise the risk to the welfare of livestock” are non-prescriptive, and include those applying to stock handling competency, vehicles and facilities, fitness to load, time off-water, loading density and segregation. These general standards may contain some supporting elements under the standard, but the points are generally not defined in a prescriptive manner.

Risk to welfare of livestock is an important concept that is defined as the potential for a factor to affect the welfare of livestock in a way that causes pain, injury or distress to livestock. The outcome could include sunburn, hypothermia, heat stress, dehydration, exhaustion, abortion, injury, metabolic disease or death. These risks can be managed by undertaking reasonable actions to prevent or reduce the risk.

**Use of prescriptive and non-prescriptive standards**

Both prescriptive and non-prescriptive standards are expected to be used. There are 14 standards in Part A that are classified as wholly or partly non-prescriptive. The general standards may be difficult to regulate efficiently but are regarded as conveying an important welfare message that is difficult to prescribe in detail.

**Proactive and reactive standards**

**Proactive standards**

Proactive standards precede an event; they prevent harm by requiring preventative actions. They may use words such as ‘minimises the risk to the welfare of livestock’. This wording is part of non-prescriptive standards directed towards preventing a number of possible poor outcomes. In general, this type of standard is intended to manage the risk of poor outcomes before they happen.

**Reactive standards**

Reactive standards follow an event; they address livestock welfare issues after they have occurred; for example, directing what must happen to an injured or distressed animal after it has been identified. They are necessary to prevent further suffering, and appear less frequently than lead standards. It is expected that further corrective action to address recognised problems that can be managed will take place as a part of normal good business practice.

**Inputs and outputs**

**Input standards**
Inputs (e.g. requirements) include factors such as water, feed, and inspection requirements. Most standards are directed towards inputs in a risk management, preventative sense.

Output standards

Outputs (e.g. actions to deal with problems) include factors such as documentation and communication requirements (see Chapter 1) and humane destruction (see SA6.1). A further application could be to specify a minimum acceptable level of a problem produced by transportation, such as lameness or bruising. In general, this approach is not used for the land transport standards for livestock welfare, partly because of a lack of consensus about what constitutes an appropriate, measurable welfare measure.

Major topics covered by the standards

Responsibility

Transport usually involves the process of ‘change in ownership’ and the ‘transfer of responsibility’; the chain of responsibility is integral to making sure that outcomes are consistent with livestock welfare. The central idea is that the person in charge is responsible for the welfare of livestock at each stage of the journey and has a duty of care to ensure the welfare of livestock under their control and to communicate vital information (see SA1.1, SA1.2).

Three categories of people are defined as responsible for livestock welfare:

- consignors (most often the owner) at the origin;
- drivers or the transport company; and
- receivers at the destination.

Where the livestock owner or their direct employee is transporting their livestock between home properties, they are the person responsible in the three phases of transport (SA1.1). In most cases the consignor will be the owner. Further discussion is in the sections on fitness assessment and provision of water.

Responsibilities are defined for:

- Person in charge / duty of care – SA1.1
- Documentation for journeys over 24 hours – SA1.2
- Competency – SA2.1
- Fit for the intended journey – SA1.1, SA4.2, SA4.3
- Care, treatment or humane destruction – SA4.4, SA5.12, SA5.13
- Loading density – SA5.4
- Ramp alignment – SA5.8
- Inspections – SA5.10, SA5.11
- Humane destruction – SA6.4

Transport by rail takes place only in Queensland. There are no separate railroad standards for livestock welfare in the standards document because the proposed standards deal adequately with all of the issues for rail transport.

**Stock-handling and competency**

Stock-handling competency is required by SA2.1, and means that any person must be competent in the task that they are performing for livestock transport. These tasks include handling; inspecting; assessing; loading; transporting and unloading; and humane destruction. People must also understand their responsibilities, maintain records, and be able to plan transport and contingency procedures.

People who are not yet competent must be supervised by a competent person. Competency standards are difficult to define at the present time. Like many agricultural sectors, the whole livestock transport industry relies on skills and knowledge gained on the job under appropriate supervision.

The standards detail specific requirements for handling (SA5.6); use of electric prodders (SA5.7); control when using working dogs (SA5.8); inspections (SA5.10, SA5.11); treatments (SA5.12, SA5.13); and humane destruction (Chapter 6). Further references to stock handling and use of dogs and electric prodders are contained in the species chapters. Handling standards (SA5.6 & SBs) are directed against; lifting, throwing, dropping and striking livestock. Dragging is considered to be of a lesser impact and is not covered. Handling of poultry and ratites is further covered by specific standards (SB6.5, SB6.6, SB10.4, & SB10.6).

Whilst mentioned, the competent operation of a vehicle is considered to be appropriately dealt with by transport arrangements. SA5.8 requires accurate alignment of the vehicle and the loading ramp.

**Fitness including care and treatment**

Livestock must be assessed by a competent stockperson to be fit for the intended journey before every loading according to various visible criteria (SA4.1) that are either general or specific. This standard attempts to protect livestock welfare against all the common issues that may cause further risk to the welfare of the animal during transport and is based on the international OIE transport standards.

Any livestock judged as not fit for the intended journey must only be transported under specific veterinary advice (SA4.2). This standard permits a degree of flexibility relating to the ‘intended journey’ and the use of expert advice to manage livestock for the best welfare outcomes under a wide variety of circumstances. The primary responsibility for first selecting livestock to be ‘fit for the intended journey’ lies with the consignor, which will be the owner in most cases. The
driver also has a responsibility for final selection. Additional specific fitness standards exist for horse lameness (SB8.7) and poultry (SB10.5).

Effective arrangements for the care, appropriate treatment or humane destruction of weak, ill or injured livestock must be made at the first opportunity by the person in charge before loading (SA4.4), by the driver during transport (SA5.12), and the receiver after unloading (SA5.13).

**Pregnancy**

A major issue with managing pregnant animals for transport is knowing exactly at what stage of pregnancy livestock might be, especially for livestock from larger pastoral enterprises — hence the inclusion of the words ‘known to be’. It is difficult to match stage of pregnancy with appropriate management strategies. However, the use of the words ‘under specific veterinary advice’ allows appropriate management strategies to be used with a degree of flexibility based on factors such as local knowledge, veterinary competency and responsibility.

The pregnancy issue is complex with a series of species-based, overlapping standards that assume ascendancy based on the increasing risk associated with advancing pregnancy, culminating in SA4.1 vi). This standard permits the transport of livestock for up to four hours during the last two weeks of pregnancy, to allow them to be moved to better circumstances for livestock welfare, including closer supervision of parturition.

Pregnancy standards generally relate to the last trimester of pregnancy and include alpacas (SB1.1), buffalo (SB2.1, SB2.2), camels (SB3.1, SB3.3), cattle (SB4.1, SB4.2), deer (SB5.1, SB5.2), goats (SB7.1, SB7.2), horses (SB8.1, SB8.3) and sheep (SB11.1, SB11.2). Pigs are not included because pregnant sows are moved infrequently or only for short journeys that are less than four hours.

Species that are given a further risk category in addition to the last trimester, if they are known to be in the last month of pregnancy, are; alpacas (SB1.4), buffalo (SB2.3), camels (SB3.4), cattle (SB4.3), deer (SB5.3) and horses (SB8.4). Sheep, goats and pigs are not included due to the shorter gestation periods, as detailed in the relevant appendix. The deer chapter is based on the Sambar species of deer, recognising that there is a large variation among deer species. Pregnancy standards are not relevant for poultry, emus and ostriches.

**Body condition score**

Body condition score (BCS) is only mentioned for horse guidelines. For all other livestock species, the use of BCS is less useful as an indicator of fitness for transport, especially as there are other fitness criteria in the standards that are to be used. In general it was felt that the use of BCS did not help to minimise the risk to the welfare of livestock in transport, partly because of a lack of standardisation.

**Inspections**

Livestock must be inspected before loading, within the first hour of the journey and then every 3 hours and at unloading (SA5.11). Vehicles and facilities must also be inspected before use.
(SA5.10). The driver must provide assistance at the first available opportunity if a distressed animal is identified (SA5.12). The person receiving the livestock must provide an appropriate response to deal with weak, ill or injured livestock (SA5.13). Caged poultry are an exception to the in-transit inspections, because it is usually better to keep travelling for reasons of ventilation and temperature control. Documentation of inspections is required for journeys reasonably expected to exceed 24 hours (SA1.2).

**Journey times**

Journey times are restricted by the times that livestock may be permitted off-water and by the ability to provide water and other requirements on the vehicle. Journey times are directly mentioned for:

- late stages of pregnancy (SA4.1, Part B standards)
- calves (SB4.4, 4.5)
- those species that are commonly catered for:
  - on a specialised, self-contained vehicle, including alpacas (SB1.2), camels (SB3.2), horses (SB8.2) and pigs (SB9.2);
  - in containers, including poultry (SB10.3) and emus or ostriches (SB6.2, SB6.3).

Specialised transports that are self contained and deliver a high standard of livestock welfare are not common, except in the commercial horse transport sector. All mammalian livestock species have a standard that permits a lengthy time off-water if conditions are met for the safe transport of the livestock. Documentation is required for journeys reasonably expected to exceed 24 hours (SA1.2).

Long-distance transport is not defined, but special mention is directed to additional assessments of livestock fitness and transport conditions when extended trips are undertaken (SA1.2, SA5.2, SA5.3, SA5.14). The standards for water provision permit long journeys for some livestock but most trips are far less than these limits. The person in charge (the driver) has a duty of care to assess the fitness of the livestock for the rest of the journey, within the first hour of the journey and then every three hours or at any stop (SA5.11). See the section on spells and rest below.

**Water**

Water provision is a key determinant for the welfare of livestock — it extends across all persons in charge at various times during the movement process. For many livestock it is impractical to provide water on the vehicle during transport. The species that are often given access to water on a specialised vehicle during long trips includes; alpacas, camels, horses and pigs.

Livestock may be subjected to longer periods of water deprivation during transport than those permitted in normal management situations, where the livestock are capable of tolerating this stress. For certain species there are water provision standards that apply to special categories
defined by age, lactation and pregnancy; these include standards in Part B that restrict travel times, as well as a direct restriction for pregnancy (SA4.1 vi). The maximum permissible times that livestock are without water specified in Part B do not diminish the responsibility of the person in charge to assess livestock as being fit for the intended journey at various times (SA4.3, SA5.2 and SBs) and to provide a spell or access to water as considered appropriate to minimise the risk to the welfare of livestock.

Communication of times when water has been provided is an important management issue at all times, but especially for long-distance transport when records must accompany the livestock for journeys reasonable expected to exceed 24 hours (SA1.2). The responsibility for livestock water management begins with the consignor during preparation for transport.

Spells and rest.

The standards refer to ‘spells’ for livestock. This term includes the notion of rest but also food and water. Livestock can travel for a time period up to the limits specified in the species chapters, and then they must be given a spell with access to water, food and sufficient space to all lie down. This is known as a mandatory spell and it may be performed on a stationary vehicle or off a vehicle. When maximum time off-water is reached, a spell is a mandatory requirement before starting a further journey, as defined by standards for each species. Where animals are unloaded, a spell starts from the time all animals are unloaded and ends when animals are handled for reloading. Water and space to lie down are the critical elements of rest that are provided for in a spell. There are no mandatory spells for water deprivation of less than 12 hours. The relationship between time off water and mandatory spell length is as presented in the table below.

<table>
<thead>
<tr>
<th>Maximum permitted time off water</th>
<th>Mandatory spell time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 12 hours</td>
<td>nil</td>
</tr>
<tr>
<td>12 hours</td>
<td>12 hours</td>
</tr>
<tr>
<td>24 hours</td>
<td>12 hours</td>
</tr>
<tr>
<td>36 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td>48 hours</td>
<td>36 hours</td>
</tr>
</tbody>
</table>

The relationship between maximum permitted time off water and the requirement for a mandatory spell and the use of voluntary spelling in transit, governs how a multi sector journey is undertaken in relation to the welfare requirements for the livestock.

Spelling after journeys of less than 24 hours is generally required only for special categories. Emus, ostriches and poultry do not travel longer than 24 hours. Spelling after journeys of less than 24 hours is necessary for defined special categories of livestock, based on age, lactation status and pregnancy status for various species.

The species that are often given water access and space to lie down on a vehicle during long trips include alpacas, camels, horses and pigs. Space allowance must be made for all young stock
travelling with their mothers, so that the animals have space to lie down. All other species are off loaded when a spell is required, which is usually at the end of a journey. Spells are necessary (mandatory) for livestock after they have undertaken long journeys and reached the maximum permitted time off-water.

A spell may occur voluntarily before loading, mid-journey or at the completion of a journey. Unloading en route can be counterproductive to livestock welfare, due to the extra handling, unfamiliar surroundings and new social interactions between livestock. To reinforce this fact, four hours is the minimum time for a non-mandatory spell. This time is necessary to permit livestock to drink and rest. As a contingency measure, spells longer than four hours can be deducted from the total time off-water up to a spell time of 24 hours, after which a new period (journey) can commence. A spell of less than four hours duration is not recommended or recognised for water deprivation time calculation for any species, but can be undertaken as necessary.

During a voluntary spell, water and space to lie down must be provided to all livestock, either on a stationary vehicle or off a vehicle. Food and shelter may also be provided. When the maximum permitted time off-water is reached (chapter B standards), livestock must be spelled for a nominated period as a mandatory requirement, and this spell includes provision of food.

Pre-transport spells are not mandated except for horses (SB8.5) but the consideration arises in the context of managing total time off-water and the fitness of all categories of livestock, particularly the weak, pregnant, recently given birth, lactating or immature (SA5.2iv).

During a driver rest stop, where the vehicle is stationary and animals usually remain on the vehicle, livestock are inspected on the vehicle but it is not recognised as a spell or rest for livestock.

There are no standards for curfews. Curfews are sometimes important for livestock welfare in transport, as indicated in the species guidelines. Time spent in curfew, or on a stationary vehicle when water is not provided, does not count as a spell.

**Food**

Food provision is a lesser consideration than water for the relatively short times involved in transport. The standards for feeding that are proposed are those for:

- calves (SB4.4, SB4.5), emus and ostriches (SB6.2, SB6.3), and poultry (SB10.2, SB10.3).

- species that can be fed on the vehicle, including alpacas (SB1.2), camels (SB3.2), horses (SB8.2) and pigs (SB9.2).

- ratites (SB6.2, SB6.3), horses (SB8.5) and poultry (SB10.2, SB10.3).

When the maximum permitted time off-water is reached, all livestock must be spelled with access to food, water and space to lie down (SA5.1 and standards from Part B). Other
arrangements from livestock welfare codes for saleyards, feedlots and livestock processing establishments also specify the provision of food before or after a journey on a daily basis. There is more discussion on feeding practice in the guidelines.

The issue of bobby calf transport, which is mostly to abattoirs, has received a lot of discussion and has been particularly difficult to write agreed standards for (SB4.5).

**Planning**

Planning is an integral part of the transport of livestock that occurs in the ordinary course of activities and does not require a standard for livestock welfare. Similarly, vehicle maintenance and contingency matters are more appropriately covered by other processes in the ordinary course of transport business. The standard for contingency planning (SA1.2) requires details of appropriate emergency contacts to be carried in the vehicle for journeys in excess of 24 hours.

There is a general guideline (GA5.46) that describes how an unexpected substantial delay should be managed for the best livestock welfare outcome possible and as a defence to a charge of cruelty or exceeding the water deprivation times under these standards.

**Vehicles and facilities**

Vehicles and facilities are covered by the standard SA3.1, which requires construction, maintenance and operation to be conducted in a way that minimises the risk to the welfare of livestock. The non-prescriptive elements relating to containment, ventilation, flooring, internal protrusions and vertical clearance are mentioned in the guidelines.

Additional requirements relating to some of these six elements are given in the species chapters for; camels, cattle (calves), emus, horses, ostriches and poultry. Other considerations relating to vehicle management and design considered to be issues of relevance to livestock welfare — such as container or crate cleaning, exhaust gas pollution, limb protrusion, bedding, partitioning, distractions and ramp design — are mentioned in the general and species guidelines.

The issue of height clearance and ‘normal’ or ‘natural’ positions for head carriage has received some discussion and has been addressed specifically in the standards for the taller species being; camels (SB3.5) and horses (SB8.10).

**Heat and cold stress**

Heat and cold stress are addressed directly by standard SA5.14 and as components of time off-water (SA5.2) and loading density (SA5.3). The actions and arrangements by the driver can include temporary structures or actions to manage hot and cold conditions. Standards that specifically require protection are in place for calves (SB4.4, SB4.5) and chicks (SB6.3, SB10.3). There are also provisions for buffalo (SB2.6) in relation to heat stress. There are guideline provisions that suggest how an extension of time off-water or of journey times under emergency cold conditions for goats (GB7.11) and sheep (GB11.7) should be managed as a defence against prosecution.
Young livestock

Bobby calves and poultry chicks are the only category of young livestock that are transported in large numbers without the protection of their mothers. Additional standards are in place for feeding of calves (SB4.4, SB4.5), poultry chicks (SB 10.3) and also ratite chicks (SB6.3) and foals (SB8.7).

Loading density

The standard (SA5.3) for loading density is a non-prescriptive standard directed to the management of the number of animals that can be loaded for a journey. Material from existing model codes is contained in the guidelines of the species chapters. The difficulty of defining all the factors affecting loading density makes it difficult to construct a meaningful standard without multiple exemptions or variations. Loading rates may be raised or lowered in relation to the elements described in SA5.3. In general terms, overloading can be a more significant risk factor to livestock welfare than under loading, depending on journey length and conditions. The final decision on the loading density rests with the driver under SA5.4, except for poultry, where the decisions are made by the pick-up crew that loads the crates.

The standard for segregation or penning of livestock (SA5.4) is also non-prescriptive, to enable decisions to be made on an individual transport consignment basis. For example, livestock observed to be behaving aggressively must be segregated, or smaller livestock may be segregated from larger livestock. However, this may not be necessary for each journey, and will depend on the species, age, class and condition of livestock to be transported.

Electric prodders

Electric prodders are restricted by SA5.7, which prohibits use on genital, anal or facial areas; on livestock under 3 months old; on livestock that are clearly unable to move away, or excessively on an animal. In the species chapters in Part B, the use of prodders is prohibited on alpacas, horses, pigs, poultry and ratites; consistent with current industry practice. Prodder use is not really a relevant issue for emus, ostriches and poultry. Use on buffalo, camels and deer is an option of last resort.

Dogs

Dog use on livestock is considered in the context of mustering from home ranges and in livestock handling facilities. Dogs must be under control at all times during loading, transport and unloading of livestock, and must not be transported in the same pen as livestock (SA5.8). Dogs must not be used on alpacas, buffalo, camels and horses in livestock handling facilities. Dog that habitually bite deer, goats, pigs, poultry sheep, and ratites are not permitted by industry and must be muzzled or not used. The requirement to be ‘under control at all times’ is thought to achieve a positive result for dogs and livestock without the mandate for a muzzling requirement at all times.
Humane destruction

Humane destruction in the context of transport is an emergency procedure that is not performed routinely for the great majority of journeys. The standards in Chapter Six detail the important requirements that must be met when humane destruction is necessary. However, it is an important issue that must be carried out effectively when required. It is recognised that not all persons will have the expertise or equipment for humane destruction. The standard (SA6.2) requires that a person is competent to conduct humane destruction or seeks the assistance of a competent person at the first available opportunity. Each species chapter has approved methods for humane destruction for that species.

Humane destruction methods for newborn stock are relevant for unexpected births during transport that cannot be cared for adequately. Pithing (see glossary) is mentioned as a secondary technique, along with bleeding out, to cause death in stunned animals.

Firearms

Firearms are the best everyday option for humane destruction of large livestock in rural areas, with captive bolts being a suitable option where livestock can be handled closely. Many factors govern firearms safety and use. Shooting will generally be at close ranges and the only permitted target organ is the brain. There is a large choice of firearm calibres and ammunition, and it is not intended to mandate any particular combination, but a minimum recommendation is made in the guidelines.

Process

After a 60-day period of public consultation, adjustments will be made to the standards by consensus of the Standards Reference Group. The revised standards will then be submitted for endorsement by the Primary Industries Ministerial Council. The final RIS will address the responses to submissions made during public consultation. A parallel process will assess and manage the change required by jurisdictional governments to make animal welfare legal systems more consistent. There is likely to be a further implementation committee process for the land transport standards to deal with issues that are most effectively addressed by an implementation committee.
### Appendix 2 - Summary of proposed material changes to relevant existing model codes of practice
(based upon the draft standards dated 29 February 2008)

<table>
<thead>
<tr>
<th>Proposed Std. No.</th>
<th>Subject matter</th>
<th>Existing model codes of practice</th>
<th>Incremental cost impacts</th>
<th>Reasons for change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Responsibilities and planning</strong></td>
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</tr>
<tr>
<td>SA1.1</td>
<td>Responsibilities for livestock welfare at each stage of journey to be exercised</td>
<td>Road p.3,4,\textsuperscript{164} Rail p.2, 4,\textsuperscript{165} Cattle 2.2, Horses 2.2, Pigs 2.2, Poultry 1. New for other species.</td>
<td>Nil for cattle, horses, pigs and poultry. \textbf{Minimal} cost impact for other species – standard simply clarifies responsibilities</td>
<td>Requested by reference group members, especially ALTA and AWWG to better define where responsibilities for livestock welfare exist.</td>
</tr>
<tr>
<td>SA1.2</td>
<td>For journeys &gt; 24 hours there must be a document that includes times without water, inspection times, other relevant information, and emergency contacts accompanying the livestock. Person transferring responsibility for livestock must communicate relevant information to the next person in charge</td>
<td>Cattle 9.2, 9.5, Horses 10, Pigs 9. New for other species. Poultry N/A.</td>
<td>Information already included in other documents such as waybills. \textbf{Minimal} additional costs recording times = &lt;5 minutes. \textbf{Minor} cost of ticking boxes in the redesigned document. \textbf{Negligible} incremental cost to redesign document as they are reprinted from time to time anyway.</td>
<td>Requested by reference group members, especially, AWWG and RSPCA to protect livestock welfare on longer journeys. By ensuring that critical information for the management of livestock welfare is known and drivers possess the contact details for those who could assist with a contingency response.</td>
</tr>
<tr>
<td><strong>Stock handling competency</strong></td>
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<tr>
<td>SA2.1</td>
<td>All persons involved with livestock to be competent or supervised by a competent person</td>
<td>Cattle 1.4, Horses 2.7.2, 2.8.2, Pigs 2.7.2, Poultry 1.1.1, Road p.2, 7. Rail p.2, 8, 9.</td>
<td>Existing codes require ‘experienced stock handlers’. Possibly some \textbf{minor} training costs. Every state except NSW and NT require such training as part of B-double licence. Induction courses are 3 hours to 2 days, of which about 1/3 is livestock handling. \textbf{Nil} for QRail.</td>
<td>Requested by reference group members to generally specify that animal handlers must be competent and to ensure a basic level of competency in carrying out required tasks.</td>
</tr>
<tr>
<td><strong>Transport vehicles and</strong></td>
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Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock
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<tbody>
<tr>
<td>SA3.1</td>
<td>Vehicles and facilities constructed, maintained and operated to minimise risks.</td>
<td>Cattle 6.3, 7.1, 7.2.2, Horses 6.7.11, 7.2.1, 7.4.1, Pigs 5.4.6, 6.1.8, 6.2, Poultry 4.2, 5.2. Road p5, 6, Rail p5, 7.</td>
<td>Nil – consistent with existing codes on the basis of current interpretation of MCOP.</td>
<td>N/A</td>
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<tr>
<td></td>
<td><strong>Pre-transport preparation</strong></td>
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<tr>
<td>SA4.1</td>
<td>Livestock to be assessed as fit for intended journey at every loading.</td>
<td>Cattle 2.5, 5.6.1, Horses 2.5, 5.6, Pigs 2.5, Road 2, Rail 2.</td>
<td>Nil – consistent with existing codes. Inclusion of criteria clarifies meaning of ‘unfit’ but does not impose additional costs on the basis of current interpretation of MCOP. Minor training cost possibly. Either part of induction training or another short course to recognise disease conditions.</td>
<td>Requested by reference group members. The standard is more detailed than most MCOP and excludes specific conditions of livestock that will cause further risk to welfare during transport. Necessary in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Unfit animals transported only on specific vet advice.</td>
<td>Cattle 5.4.6, Horses 5.4, Pigs 4.4, new sheep and other species.</td>
<td>Vet advice mandatory (cattle code allows experienced personnel if vet unavailable) = some minor incremental veterinary costs for cattle, sheep and other species (av. $100 per consultation plus $1.14/km travel 40km average) but not horses or pigs, or valuable animals. Humane destruction is an alternative, but means loss of carcass.</td>
<td>Requested by reference group members to help define the ‘fit for the intended journey’ issue and appropriate actions for the welfare of livestock. Necessary in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SA4.3</td>
<td>Consigner to provide only animals that are fit to load</td>
<td>Cattle 5.6.1, Horses 2.5, 5.6, Pigs 2.5, Road 2, Rail 2.</td>
<td>Nil – consistent with existing codes. Clarifies responsibilities for SA4.1</td>
<td>N/A</td>
</tr>
<tr>
<td>SA4.4</td>
<td>Where livestock are unfit to load, person in charge must arrange for care, treatment or humane destruction.</td>
<td>New standard related to Road 2, Rail 2, Cattle 5.7.2, Horses 5.7, Pigs 4.5</td>
<td>Nil – clarifies responsibilities.</td>
<td>Requested by reference group members to clarify responsibilities.</td>
</tr>
<tr>
<td></td>
<td><strong>Loading, transport and unloading</strong></td>
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For valuable animals, vet advice would be obtained anyway.
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<tr>
<td>SA5.1</td>
<td>Water, food and rest to be provided if water deprivation times reached (mandatory spell).</td>
<td>See water deprivation standards for individual species chapters below.</td>
<td>Clarifies responsibilities for water deprivation standards for individual species. Plus cost of food and any delay in slaughter.</td>
<td>Requested by reference group members to alert to responsibilities in managing total time off water, food and rest after maximum water deprivation times reached. Necessary in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SA5.2</td>
<td>Time off water to be managed to minimise risks.</td>
<td>New standard related to Cattle 9.1.1 and 9.2.5.</td>
<td>Nil - a general standard which underpins the more prescriptive species water deprivation standards, and is consistent with some existing codes.</td>
<td>Requested by reference group members as a general standard that identifies management of time off water as a key aspect of livestock welfare. Detailed water deprivation limits are further defined in the species chapters. Necessary in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SA5.3</td>
<td>Loading density to be managed to minimise risks</td>
<td>New standard related to Cattle 8.5 and 8.6, Pigs 7.3..</td>
<td>Nil – a general standard which underpins the need to manage loading density for the welfare of livestock.</td>
<td>Requested by reference group members as a general standard that defines the key factors that impact upon the welfare considerations of livestock for loading density.</td>
</tr>
<tr>
<td>SA5.4</td>
<td>Drivers (except trains and poultry) to have final decision on loading density</td>
<td>New standard</td>
<td>Nil – clarifies responsibilities.</td>
<td>Requested by reference group members to clarify responsibilities.</td>
</tr>
<tr>
<td>SA5.5</td>
<td>Segregation of livestock to minimise risks.</td>
<td>Road p.5,7., Rail App. 3. Horses 6.9, Pigs 5.6, 7.2, Partial new standard for cattle.</td>
<td>Nil – consistent with existing codes. Possibly some cost savings, because not all species and classes will need to be segregated.</td>
<td>Requested by reference group members as a general standard that defines the key factors that impact upon the welfare considerations of livestock that may need to be segregated.</td>
</tr>
<tr>
<td>SA5.6</td>
<td>Handling appropriate to species and without pain or injury. Specifically:</td>
<td>Road p.7. Rail p.8</td>
<td>Already unlawful under cruelty legislation = nil extra cost</td>
<td>Requested by reference group members as a prescriptive standard that defines the unacceptable ways</td>
</tr>
<tr>
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</table>
| SA5.7            | Restrictions on use of electric prodders on sensitive animal parts, under 3 months old, unable to move, or excessively on an animal. | Cattle 6.6.1, Pigs 5.7.2. New standard re: livestock under 3 months of age.  
Cattle 6.6.1, Pigs 5.7.2. New standard re: livestock under 3 months of age.  
Cattle 6.6.1, Pigs 5.7.2. New standard re: livestock under 3 months of age.  
Cattle 6.6.1, Pigs 5.7.2. New standard re: livestock under 3 months of age. | Likely to be already unlawful under cruelty legislation = nil extra cost. No cost re: livestock under 3 months of age because prodders are ineffective. | Requested by reference group members as a prescriptive standard that defines the acceptable use of electric stock prodders. |
| SA5.8            | Dogs must be under control at all times and must not travel in same pen as livestock. Dogs that habitually bite to be muzzled. | Road p.8, Cattle 6.6.5. New standard for some species. | Negligible – consistent with some existing codes. Habitual biters already muzzled, or not used. | Requested by reference group members to prevent inappropriate dog worry and biting. Necessary in the expert opinion of AWWG. |
| SA5.9            | Alignment of ramp and vehicle | Cattle 6.3.7, Horses 6.7.11, Pigs 5.4.6, Road p.6. Rail p.7. N/A poultry | Nil – consistent with existing codes. | N/A. |
| SA5.10           | Inspection of facilities by driver:  
- prior to loading  
- of receival yard before unloading | Horses 8.1, Pigs 5.3.1. Otherwise new standard. | Minimal cost of inspections by driver. | Requested by reference group members to avoid mishaps to livestock arising from gates left open, obstructions, or insufficient space. |
| SA5.11           | Inspection of animals (except poultry) by driver:  
- before departing  
- within first hour and every 3 hours or rest stop  
- on unloading | Road p.8 Rail p.8 Cattle 9.6, Horses 9.4, Pigs 8.4 | Nil – consistent with existing codes. | N/A. |
| SA5.12           | Driver to provide assistance to injured or distressed animals at | Road p.8. Rail p. 9. Cattle 9.1.4, Horses 9.1.3, Pigs 8.1.4, Poultry | Nil – consistent with existing codes. | N/A. |

167 Young animals have generally not yet learnt how to avoid pain.
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<tbody>
<tr>
<td>SA5.13</td>
<td>Person receiving the livestock to arrange treatment or destruction of weak, ill or injured animals and disposal of dead stock.</td>
<td>Road p.8. Rail p. 9. Cattle 10.7, Horses 9.1.3, Pigs 8.1.4, Poultry 5.3.2</td>
<td>Nil – consistent with existing codes.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Driver to take action during extreme hot or cold conditions to minimise the risk to the welfare of livestock.</td>
<td>Pigs 4.1.2, 4.1.3, 4.3.1, 7.4, 8.1.2, 8.2.1 New standard for others, but not applicable to cattle. (TruckCare not equivalent status to a model code).</td>
<td>Minor cost of driver installing or removing tarps or altering travel and rest times.</td>
<td>Requested by reference group members to ensure at risk livestock are appropriately protected by the driver during extreme hot or cold weather.</td>
</tr>
<tr>
<td>SA5.15</td>
<td>Actions to be taken following a livestock transport vehicle accident.</td>
<td>New standard.</td>
<td>Very minor cost of driver undertaking actions in a low number of cases per year.</td>
<td>Requested by RSPCA and largely describes agreed reasonable actions in the circumstances.</td>
</tr>
</tbody>
</table>

**Humane destruction**

| SA6.1            | Humane destruction to result in immediate loss of consciousness then death.                                                                                                                                   | Road p.19, Rail p.20.                                                                          | Nil – consistent with existing codes.                                                      | N/A                                                                                                |
| SA6.2            | Humane destruction by competent person using approved method at first opportunity                                                                                                                            | Cattle 11.2, Horses 12, Pigs 11, Poultry 7, Sheep 10168, Road p.19, Rail p.20.                   | Minor training cost. (Rarely necessary on road). Either part of induction training or another short course. | Requested by reference group members. Competency in humane destruction is not absolutely required by all persons in charge but where performed, the person must be competent or seek assistance. |
| SA6.3            | When competent person not available, must be contacted a.s.a.p.                                                                                                                                               | Pigs 12. New standard for other species.                                                       | Very minor cost of contact and engaging competent person.                                  | Requested by reference group members. Competency in humane destruction is not absolutely required by all persons in charge |

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<tr>
<td>SA6.4</td>
<td>Reasonable action required to confirm death</td>
<td>Pigs 11.2. New standard for cattle, horses, sheep and other species. Not relevant to poultry.</td>
<td>Minor training cost. (Rarely necessary on road). Either part of induction training or another short course.</td>
<td>but where performed, the person must be competent or seek assistance.</td>
</tr>
<tr>
<td>SA6.5</td>
<td>Firearm use to be in frontal or poll position, except for cattle and pigs.</td>
<td>Road Appendix 4. Cattle 11, Pigs 11.</td>
<td>Nil – consistent with existing codes. (Rarely necessary).</td>
<td>Requested by reference group members.</td>
</tr>
<tr>
<td>SA6.6</td>
<td>Captive bolt stunning to be followed by effective killing method</td>
<td>Road p.20, Rail p. 21 Pigs 11.7</td>
<td>Nil – consistent with existing codes. (Rarely necessary).</td>
<td>Requested by reference group members.</td>
</tr>
<tr>
<td>SA6.7</td>
<td>Blunt trauma to head to be used only on newborns &lt;24 hours old or &lt;15kg followed by effective killing method</td>
<td>New standard</td>
<td>Minor training cost. (Rarely necessary on road). Either part of induction training or another short course.</td>
<td>Requested by reference group members to ensure that a secondary procedure is carried out to ensure death after use of the captive bolt.</td>
</tr>
<tr>
<td>SA6.8</td>
<td>Pithing to be used only on unconscious animals</td>
<td>New standard</td>
<td>Pithing of conscious animals likely to be already unlawful under cruelty legislation = nil extra cost</td>
<td>Requested by reference group members to ensure that conscious animals are not pithed.</td>
</tr>
<tr>
<td>SA6.9</td>
<td>Lethal injection an approved method if performed by veterinarians or approved persons only.</td>
<td>New standard</td>
<td>Nil – provides another alternative method.</td>
<td>Requested by reference group members to make it clear that lethal injection is an approved method.</td>
</tr>
<tr>
<td>B1</td>
<td>Specific Standards - Alpacas</td>
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<tr>
<td>SB1.1</td>
<td>Water deprivation times</td>
<td>Road p.9. Rail p.10 (refer to Appendix 3 of RIS)</td>
<td>Minor costs savings in going from 24 hours to 36 hours for wethers and minor costs in going from 24</td>
<td>Standards did not exist other than the 1983 MCOP Road Transport</td>
</tr>
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169 Alpacas are mainly transported farm to farm or to shows.

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<tr>
<td>SB1.2</td>
<td>Extensions of water deprivation times (72 hours journey time) if conditions are met.</td>
<td>New standard</td>
<td>Minor cost savings</td>
<td>Requested by Australian Alpaca Association based on successful industry practice.</td>
</tr>
<tr>
<td>SB1.3</td>
<td>Spell periods</td>
<td>New standard&lt;sup&gt;172&lt;/sup&gt;</td>
<td>Minor transport costs</td>
<td>Standards did not exist other than the 1983 MCOP Road Transport of Livestock and in the opinion of AHA these standards are required in line with other species. Spells are not required for journeys causing water deprivation of less than 12 hours.</td>
</tr>
<tr>
<td>SB1.4</td>
<td>Transported in last month of pregnancy only on vet advice unless journey is less than 4 hours duration.</td>
<td>New standard</td>
<td>Minor costs of obtaining vet advice.</td>
<td>Necessary in the opinion of AHA, in line with other species with long gestations to prevent stress induced problems. Complements SA4.1 vi).</td>
</tr>
<tr>
<td>SB1.5</td>
<td>Electric prodders not to be used.</td>
<td>New standard</td>
<td>Nil – assume prodders are not used.</td>
<td>Requested by reference group members to ensure that prodders are not used on alpacas.</td>
</tr>
<tr>
<td>SB1.6</td>
<td>Dogs not to be used to move alpacas</td>
<td>New standard</td>
<td>Nil – assume dogs are not used.</td>
<td>Requested by reference group members to ensure that dogs are not used on alpacas.</td>
</tr>
<tr>
<td>SB1.7</td>
<td>Approved methods of humane</td>
<td>Road p.19. Rail p.20</td>
<td>Nil, except minor training costs for blunt trauma.</td>
<td>Partially derived from</td>
</tr>
</tbody>
</table>

<sup>170</sup> Wether = castrated male.  
<sup>171</sup> Crias = camelids less than one year old.  
<sup>172</sup> Road and rail standards do not apply to spell periods because alpacas are not ruminants.
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<tr>
<td>B2</td>
<td>destruction</td>
<td></td>
<td></td>
<td>AUSVETPLAN. Standards did not exist and are required.</td>
</tr>
<tr>
<td>SB2.1</td>
<td>Specific Standards -Buffalo</td>
<td>Water deprivation times</td>
<td>1983 MCOP Road Transport of Livestock Road p.9. Rail p.10 for adults. (refer to Appendix 3 of RIS)</td>
<td>Minor transport costs in going from 48 hours to 36 hours for adults.</td>
</tr>
<tr>
<td>SB2.2</td>
<td>Spell periods</td>
<td>Road p.9. Rail p.10</td>
<td>Minor transport costs in going from 12 hours to 24 hours spell for adults.</td>
<td>Standards did not exist other than the 1983 MCOP Road Transport of Livestock and these standards are required in line with other species.</td>
</tr>
<tr>
<td>SB2.3</td>
<td>Transported in last 4 weeks of pregnancy only on vet advice unless journey is less than 4 hours.</td>
<td>New standard</td>
<td>Minor costs of obtaining vet advice.</td>
<td>Standards did not exist other than the 1983 MCOP Road Transport of Livestock and these standards are required in line with other species in the opinion of AHA for the last month of pregnancy.</td>
</tr>
<tr>
<td>SB2.4</td>
<td>Electric prodders only to be used after other actions have failed.</td>
<td>New standard</td>
<td>Minimal unquantifiable cost of possible increase in loading times.</td>
<td>Requested by reference group members to ensure that prodders are not used unnecessarily.</td>
</tr>
<tr>
<td>SB2.5</td>
<td>Dogs not to be used to move buffalo</td>
<td>New standard</td>
<td>Nil – assume dogs are not used</td>
<td>Derived from 2003 MCOP Farmed Buffalo.</td>
</tr>
<tr>
<td>SB2.6</td>
<td>Heat stress</td>
<td>New standard</td>
<td>Minimal costs of water spray at first opportunity</td>
<td>Derived from MCOP. Necessary in the opinion of AHA and industry.</td>
</tr>
<tr>
<td>SB2.7</td>
<td>Approved methods of humane destruction</td>
<td>Road p.19. Rail p.20</td>
<td>Nil – consistent with existing codes.</td>
<td>Partially derived from MCOP. Standards did not exist and are required in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>Proposed Std. No.</td>
<td>Subject matter</td>
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<td>Incremental cost impacts</td>
<td>Reasons for change</td>
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</tr>
<tr>
<td>SB3.1</td>
<td>Water deprivation times – 24 hours</td>
<td>Camel(^{173}) 10.2 (refer to Appendix 3 of RIS)</td>
<td>Nil – consistent with existing code.</td>
<td>Standards did not exist other than the 1983 MCOP Road Transport of Livestock and these standards are required in line with other species. 2006 Camel MCOP suggests 24 hours.</td>
</tr>
<tr>
<td>SB3.2</td>
<td>Extensions of water deprivation times if conditions are met.</td>
<td>Camel(^{174}) 10.2</td>
<td>Nil – consistent with existing code.</td>
<td>N/A</td>
</tr>
<tr>
<td>SB3.3</td>
<td>Spell periods</td>
<td>New standard(^{175})</td>
<td>Minor transport costs in spelling camels for 12 hours after 24 hours off water.</td>
<td>Standards did not exist other than the 1983 MCOP Road Transport of Livestock and these standards are required in line with other species in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB3.4</td>
<td>Transported in last 4 weeks of pregnancy only on vet advice unless journey is less than 4 hours.</td>
<td>New standard</td>
<td>Minor costs of obtaining vet advice.</td>
<td>Standards did not exist other than the 1983 MCOP Road Transport of Livestock and these standards are required in line with other species in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB3.5</td>
<td>100mm clearance above hump</td>
<td>Camel 10.1</td>
<td>Nil – consistent with existing codes (150mm clearance above head).(^{176})</td>
<td>Requested by camel industry members to define appropriate vertical clearance.</td>
</tr>
<tr>
<td>SB3.6</td>
<td>Electric prodders only to be used after other actions have failed.</td>
<td>New standard</td>
<td>Minimal unquantifiable cost of possible increase in loading times.</td>
<td>Requested by reference group members to ensure that prodders are not used unnecessarily.</td>
</tr>
</tbody>
</table>


\(^{175}\) Road and rail standards do not apply to spell periods because camels are not ruminants.

\(^{176}\) On the understanding that for camels, the head is the same height as, or lower than the hump.
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<tr>
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</thead>
<tbody>
<tr>
<td>SB3.7</td>
<td>Dogs not to be used to move camels</td>
<td>New standard</td>
<td>Nil – assume dogs are not used</td>
<td>Requested by camel industry members to prevent use of dogs on camels.</td>
</tr>
<tr>
<td>SB3.8</td>
<td>Approved methods of humane destruction</td>
<td>Road p.19, Rail p.20</td>
<td>Nil – consistent with existing codes.</td>
<td>Partially derived from Camel MCOP and other sources. Standards did not exist and are required in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>B4</td>
<td><strong>Specific Standards – Cattle</strong></td>
<td></td>
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</tr>
<tr>
<td>SB4.1</td>
<td>Water deprivation times. Notion of ‘normal’ and ‘extended’ times removed.</td>
<td>2002 MCOP Land Transport of Cattle 9.3 (refer to Appendix 3 of RIS)</td>
<td>Minor costs savings in:</td>
<td>Requested by reference group members to align with established production practices. 10 hours TOW for calves was not achievable and extending to 24 hours is consistent with cattle MCOP 2004.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>- 10 hours going to 18 hours for calves 5-30 days old travelling without mothers</td>
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<td></td>
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<td></td>
<td>- Pregnant cattle in 3rd trimester going from 8 hours to 24 hours. Relates mostly to months 6 and 7 of pregnancy. For month 8 excluding last 4 weeks. See SB4.3 and SA4.1 where the higher standards apply.</td>
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<tr>
<td></td>
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<td></td>
<td>- Gestation = 285 days</td>
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<td></td>
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<td></td>
<td>- Trimester = 95 days177</td>
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</tr>
<tr>
<td>SB4.2</td>
<td>Spell periods</td>
<td>2002 MCOP Land Transport of Cattle 9.5</td>
<td>Nil – consistent with existing code.</td>
<td>N/A</td>
</tr>
<tr>
<td>SB4.3</td>
<td>Transported if known to be in last 4 weeks of pregnancy only on vet advice, unless journey is less than 4 hours.</td>
<td>New standard derived from 2002 MCOP Land Transport of cattle 9.3. and 5.4.1</td>
<td>Minor costs of obtaining vet advice. (Note: could be a net benefit if transport is allowed beyond 8 hours duration). At same standard level of requirement as for SA4.1 for last 4 weeks of pregnancy.</td>
<td>Requested by reference group members to permit reasonable flexibility in the transport of cattle in advanced pregnancy. Standard in line with other species and being necessary in the expert opinion of AWWG. Aligns with</td>
</tr>
<tr>
<td>Proposed Std. No.</td>
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<td>Incremental cost impacts</td>
<td>Reasons for change</td>
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</tr>
<tr>
<td>SB4.4</td>
<td>Bobby calves less than 5 days old travelling without mothers can only be transported to a calf rearing facility and then only under specified conditions.</td>
<td>New standard for cattle</td>
<td>Minor costs – partially already required by NVDs. (These are usually short trips to another property).</td>
<td>Requested by reference group members to permit this type of calf transport. Sufficient for the welfare of calves less than 5 days old in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB4.5</td>
<td>Calves 5-30 days old travelling without mothers must meet specified conditions.</td>
<td>2002 MCOP Land Transport of Cattle 5.4.5</td>
<td>Minimal cost savings by going from 10 hours to 18 hours, as very few calves would travel so far unless for slaughter and this will not significantly decrease processing establishment choice or returns. NVD for calves will require revision. Negligible cost of recording time since last feed.</td>
<td>Requested by reference group members to better regulate this type of calf transport. Derived from Land Transport Cattle MCOP as a simplification. Some previous provisions not required in the expert opinion of AWWG and other members.</td>
</tr>
<tr>
<td>SB4.6</td>
<td>Calves &lt;30days not to be consigned across Bass Strait</td>
<td>New national standard, but consistent with relevant state standards</td>
<td>Nil – consistent with relevant existing state standards.</td>
<td>N/A.</td>
</tr>
<tr>
<td>SB4.7</td>
<td>Dogs not to be used to move bobby calves.</td>
<td>New standard</td>
<td>Minimal unquantifiable cost of possible increase in loading times.</td>
<td>Requested by reference group members</td>
</tr>
<tr>
<td>SB4.8</td>
<td>Approved methods for humane destruction</td>
<td>Cattle 11.5. New standard for blunt trauma.</td>
<td>Nil – consistent with existing code, except that blunt trauma may require training</td>
<td>Partially derived from various MCOP and other sources. Blunt trauma standard did not exist and is required for day old calves in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>B5</td>
<td>Specific Standards - Deer</td>
<td></td>
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</tr>
<tr>
<td>SB5.1</td>
<td>Water deprivation times</td>
<td>1983 MCOP Road p.9. Rail p.10 (refer to Appendix 3 of RIS)</td>
<td>Minor cost savings in going from 24 hours to 28 hours for fawns.</td>
<td>Requested by industry members. Partially derived from Road Transport of Livestock MCOP and other sources. Standards did not exist and are required.</td>
</tr>
<tr>
<td>SB5.2</td>
<td>Spell periods</td>
<td>Road p.9. Rail p.10</td>
<td>Minor costs in spelling adults for .36 hours instead of</td>
<td>Requested by industry members.</td>
</tr>
<tr>
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<tr>
<td>SB5.3</td>
<td>Transported in last 4 weeks of pregnancy only on vet advice unless the journey is less than 4 hours</td>
<td>New standard</td>
<td>Minor costs of obtaining vet advice.</td>
<td>Requested by reference group members to permit reasonable flexibility in the transport of deer in advanced pregnancy. Standard in line with other species.</td>
</tr>
<tr>
<td>SB5.4</td>
<td>Electric prodders only to be used after other actions have failed.</td>
<td>New standard</td>
<td>Minimal unquantifiable cost of possible increase in loading times.</td>
<td>Requested by reference group members to ensure that prodders are not used unnecessarily.</td>
</tr>
<tr>
<td>SB5.5</td>
<td>Approved methods of humane destruction</td>
<td>Road p.19, Rail p.20</td>
<td>Nil – consistent with existing codes</td>
<td>Partially derived from various MCOP and other sources. Blunt trauma standard did not exist and is required for day old calves.</td>
</tr>
<tr>
<td>B6</td>
<td>Specific Standards – Ratites</td>
<td></td>
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</tr>
<tr>
<td>SB6.1</td>
<td>Water deprivation times</td>
<td>1983 MCOP Road p.9, Rail p.10 (refer to Appendix 3 of RIS)</td>
<td>Minor transport costs in going from 24 hours to 12 hours for chicks.</td>
<td>Requested by industry members. Partially derived from Land Transport of Poultry MCOP and other sources. Standards did not exist and are required in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB6.2</td>
<td>Provision of food</td>
<td>Road p.4, Rail p.4</td>
<td>Minor transport costs – consistent with existing codes except chicks require feed every 12 hours.</td>
<td>Requested by industry members. Partially derived from Land Transport of Poultry MCOP and other sources. Standards did not exist and are required in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB6.3</td>
<td>Chicks not held in containers &gt;12 hours unless fed, watered and sheltered.</td>
<td>New standard</td>
<td>Minor transport costs – consistent with existing codes except chicks require feed every 12 hours.</td>
<td>Requested by industry members. Partially derived from Land Transport of Poultry MCOP and other sources. Standards did not exist and are required in the expert opinion of AWWG.</td>
</tr>
<tr>
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</tr>
<tr>
<td>SB6.4</td>
<td>Spell periods</td>
<td>New standard178</td>
<td><strong>Minor</strong> transport costs (but not in practice since spells are rarely necessary).</td>
<td>Requested by industry members. Partially derived from Land Transport of Poultry MCOP and other sources. Standards did not exist and are required to be consistent with other species in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB6.5</td>
<td>Positioning and handling of containers</td>
<td>New standard</td>
<td><strong>Minimal</strong> unquantifiable costs</td>
<td>Requested by industry members. Partially derived from Land Transport of Poultry MCOP and other sources. Standards did not exist and are required in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB6.6</td>
<td>Legs not tied together.</td>
<td>New standard</td>
<td><strong>Minimal cost</strong> – not a common practice according to industry.</td>
<td>Requested by industry members. Partially derived from Land Transport of Poultry MCOP and other sources. Standards did not exist and are required, consistent with poultry, in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB6.7</td>
<td>Electric prodders only to be used after other actions have failed.</td>
<td>New standard</td>
<td><strong>Minimal unquantifiable cost</strong> of possible increase in loading times.</td>
<td>Requested by reference group members to ensure that prodders are not used unnecessarily.</td>
</tr>
<tr>
<td>SB6.8</td>
<td>Approved methods of humane destruction</td>
<td>New standard</td>
<td><strong>Minor</strong> training costs</td>
<td>Partially derived from Land Transport of Poultry MCOP and other sources. Standards did not exist and are required in the expert opinion of AWWG.</td>
</tr>
</tbody>
</table>

178 The road and rail codes do not apply to spell periods because ratites are not ruminants

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**Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock**
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<tr>
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<tr>
<td>B7</td>
<td>Specific Standards - Goats</td>
<td></td>
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</tr>
<tr>
<td>SB7.1</td>
<td>Water deprivation times</td>
<td>1983 MCOP Road p.9. Rail p.10 (refer to Appendix 3 of RIS)</td>
<td>Minor transport savings in going from 24 hours to 28 hours for kids and from 8 hours to 24 hours beyond 14 weeks pregnant (3rd trimester), excluding last 2 weeks of pregnancy. Gestation = 150 days Trimester = 50 days.</td>
<td>Requested by industry members. Partially derived from Road Transport of Livestock MCOP and other sources. Standards did not exist and are required. Not detrimental to welfare in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB7.2</td>
<td>Spell periods</td>
<td>Road p.9 Rail p.10</td>
<td>Minor costs in spelling adults for .36 hours instead of 24 hours after 48 hours off water.</td>
<td>Requested by industry members. Partially derived from Road Transport of Livestock MCOP and other sources. Standards did not exist and are required to be consistent with other species.</td>
</tr>
<tr>
<td>SB7.3</td>
<td>Approved methods of humane destruction</td>
<td>Road p.24, Rail p.20</td>
<td>Nil if using firearm or captive bolt pistol, however minor training costs for exsanguination and blunt trauma. (Exsanguination without stunning is permitted for sheep and goats).</td>
<td>Necessary in the expert opinion of AWWG. Partially derived from various MCOP and other sources. Blunt trauma standard did not exist and is required for day old kids.</td>
</tr>
<tr>
<td>B8</td>
<td>Specific Standards - Horses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB8.1</td>
<td>Water deprivation times</td>
<td>2003 Land Transport of Horses 9.3.1 (refer to Appendix 3 of RIS)</td>
<td>Minor transport savings in going from 8 to 12 hours for lactating mares and foals &lt;6 months and minor costs of going from 36 hours to 24 hours for adults and to 12 hours for mares more than 7.5 months pregnant except last 4 weeks.</td>
<td>Partially derived from Land Transport of Horses MCOP. Standards did not exist and are required to be consistent with other species. Not detrimental to welfare in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB8.2</td>
<td>Extensions of journeys times to 36 hours if conditions are met.</td>
<td>Horses 10.5</td>
<td>Minor cost in 24 hour spell instead of 12 hours after 36 hours travel.</td>
<td>Requested by equine group members based on successful industry practice and based on successful industry practice and based on other sources.</td>
</tr>
</tbody>
</table>

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179 Horses are able to be fed and watered relatively easily on vehicles.

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<tbody>
<tr>
<td>SB8.3</td>
<td>Spell periods</td>
<td>Horses 10.5</td>
<td>Nil – consistent with existing code (refer to standard SB8.1).</td>
<td>N/A</td>
</tr>
<tr>
<td>SB8.4</td>
<td>Transported in last 4 weeks of pregnancy only on vet advice, unless the journey is less than 4 hours.</td>
<td>New standard, previous Land Transport of Horses MCOP limited journeys to 8 hours if over 10 months pregnant.</td>
<td>Minor costs of obtaining vet advice.</td>
<td>Requested by reference group members to permit reasonable flexibility in the transport of horses in advanced pregnancy. Standard in line with other species.</td>
</tr>
<tr>
<td>SB8.5</td>
<td>Food, water and space to lie down after 12 hours kept in yards before loading.</td>
<td>Horses 8.4 (foals) New standard for adults</td>
<td>Minor food and labour costs.</td>
<td>Requested by reference group members to protect horse welfare before long journeys.</td>
</tr>
<tr>
<td>SB8.6</td>
<td>Foals to have space for suckling and lying down after 5 hours</td>
<td>New standard developed from Horses 8.4</td>
<td>Nil – consistent with existing code.</td>
<td>N/A</td>
</tr>
<tr>
<td>SB8.7</td>
<td>Moderate to severely lame horses not transported without vet advice.</td>
<td>Horses 2.7.1</td>
<td>Nil – consistent with existing code. Owner has choice of obtaining vet advice or not loading.</td>
<td>N/A</td>
</tr>
<tr>
<td>SB8.8</td>
<td>Easy access to each horse and non-slip flooring</td>
<td>New standard for access. Horses 7.1.7</td>
<td>Possible minor opportunity costs in fewer horses carried per truck. Flooring consistent with existing code.</td>
<td>Requested equine group members based on successful industry practice.</td>
</tr>
<tr>
<td>SB8.9</td>
<td>Ventilation of fully enclosed vehicles</td>
<td>Horses 7.4</td>
<td>Nil – consistent with existing code.</td>
<td>N/A</td>
</tr>
<tr>
<td>SB8.10</td>
<td>Minimum clearance 2m between decks.</td>
<td>Horses 7.6</td>
<td>Minor transport cost. Existing code specifies 150mm clearance from withers. 2m between decks is new and in effect means a ban on double-deck trucks for horses.</td>
<td>Requested by AWWG and equine group members to avoid injury issues seen with double deck transport.</td>
</tr>
<tr>
<td>SB8.11</td>
<td>Unbroken stallion to be segregated</td>
<td>New standard relates to Horses 6.9.1</td>
<td>Minor transport cost in segregating unbroken stallions.</td>
<td>Requested by reference group members (ALTA, AWWG, and QR) to avoid injury issues based on experience.</td>
</tr>
<tr>
<td>SB8.12</td>
<td>Electric prodders not to be used.</td>
<td>New standard (see Horses 6.10.3)</td>
<td>Nil - assume electric prodders not required to be used on horses</td>
<td>Requested by reference group members. MCOP permits.</td>
</tr>
<tr>
<td>SB8.13</td>
<td>Dogs not to be used to move</td>
<td>Horses 6.10.3</td>
<td>Nil – consistent with existing code.</td>
<td>Derived from MCOP</td>
</tr>
</tbody>
</table>

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<tr>
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<tbody>
<tr>
<td>SB8.14</td>
<td>Horses travelling across Bass Strait to be individually stalled, except mares with foals</td>
<td>New standard.</td>
<td>Unquantifiable costs of additional space</td>
<td>Requested by reference group members.</td>
</tr>
<tr>
<td>SB8.15</td>
<td>Approved methods of humane destruction</td>
<td>Horses 12</td>
<td>Nil – no additional costs from no longer being able to use captive bolt because of OH&amp;S issues (see standard SA6.2) and temporal position only.</td>
<td>Requested by reference group members. Partially derived from various MCOP and other sources.</td>
</tr>
</tbody>
</table>

**B9 Specific Standards - Pigs**

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<tr>
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<th>Existing model codes of practice</th>
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<tbody>
<tr>
<td>SB9.1</td>
<td>Water deprivation times</td>
<td>2003 Land Transport of Pigs 8.3, Pigs 9.6 (refer to Appendix 3 of RIS)</td>
<td>Lower time for lactating sows and weaners (24 hours to 12 hours) = minor transport costs.</td>
<td>Partially derived from Land Transport of Pigs MCOP. Standards did not exist and are required to be consistent with other species. Necessary in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB9.2</td>
<td>Conditions when travelling up to 48 hours</td>
<td>Pigs 7.2, 8.3</td>
<td>Minor cost savings in going from 24 hours to 48 hours.</td>
<td>Requested by reference group members.</td>
</tr>
<tr>
<td>SB9.3</td>
<td>Spell periods</td>
<td>Pigs 9.3</td>
<td>Nil – consistent with existing code.</td>
<td>N/A</td>
</tr>
<tr>
<td>SB9.4</td>
<td>Electric prodders not to be used</td>
<td>New standard related to Pigs 5.7.2</td>
<td>Minimal unquantifiable cost of possible increase in loading times.</td>
<td>Necessary in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB9.5</td>
<td>Approved methods of humane destruction</td>
<td>Pigs 11</td>
<td>Nil if using firearm or captive bolt pistol, however minimal training costs for blunt trauma of piglets.</td>
<td>Requested by reference group members. Partially derived from various MCOP and other sources. Necessary in the expert opinion of AWWG.</td>
</tr>
</tbody>
</table>

**B10 Specific Standards - poultry**

<table>
<thead>
<tr>
<th>Proposed Std. No.</th>
<th>Subject matter</th>
<th>Existing model codes of practice</th>
<th>Incremental cost impacts</th>
<th>Reasons for change</th>
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<tbody>
<tr>
<td>SB10.1</td>
<td>Water deprivation times – poultry, including chicks</td>
<td>2006 Land Transport of Poultry 3.2.1. New standard for chicks (refer to Appendix 3)</td>
<td>Nil – consistent with existing code.</td>
<td>N/A</td>
</tr>
<tr>
<td>SB10.2</td>
<td>Access to food prior to assembly - poultry</td>
<td>Poultry 3.2.2</td>
<td>Minor cost in changing from 24 hours to 12 hours prior to assembly</td>
<td>Derived from Land Transport of Poultry MCOP.</td>
</tr>
<tr>
<td>SB10.3</td>
<td>No holding (excluding chicks) in</td>
<td>Poultry 3.2.1.</td>
<td>Nil – consistent with existing code.</td>
<td>N/A</td>
</tr>
<tr>
<td>Proposed Std. No.</td>
<td>Subject matter</td>
<td>Existing model codes of practice</td>
<td>Incremental cost impacts</td>
<td>Reasons for change</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>SB10.4</td>
<td>No dropping or throwing containers. Positioning and handling of containers</td>
<td>Poultry 4.1, 4.3, 4.5.7</td>
<td>Nil – consistent with existing code.</td>
<td>N/A</td>
</tr>
<tr>
<td>SB10.5</td>
<td>No transport if broken legs or can’t walk</td>
<td>New standard</td>
<td>Nil - not a common practice.</td>
<td>Consistent with general standards for fitness. Requested by reference group members</td>
</tr>
<tr>
<td>SB10.6</td>
<td>Approved methods of lifting poultry</td>
<td>Poultry 4.3.4, 4.5.1. Partial new standard for turkeys, chicken breeder birds and ducks.</td>
<td>Nil – assume consistent with existing code and current practice</td>
<td>Requested by AECL and ACMF.</td>
</tr>
<tr>
<td>SB10.7</td>
<td>Legs not tied together</td>
<td>Poultry 3.6.1</td>
<td>Nil - consistent with existing code.</td>
<td>N/A</td>
</tr>
<tr>
<td>SB10.8</td>
<td>Electric prodders not to be used on poultry</td>
<td>New standard</td>
<td>Nil – assume prodders are not used.</td>
<td>Requested by reference group members.</td>
</tr>
<tr>
<td>SB10.9</td>
<td>Approved methods of humane destruction</td>
<td>Poultry 7</td>
<td>Nil – consistent with existing code.</td>
<td>Requested by reference group members. Partially derived from various MCOP and other sources</td>
</tr>
<tr>
<td>B11</td>
<td>Specific Standards - Sheep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB11.1</td>
<td>Water deprivation times</td>
<td>1983 MCOP Road p.9 Rail p.10</td>
<td>Minor transport savings in going from 24 hours to 28 hours for lambs and minor costs in going from 48 hours to 24 hours for pregnant ewes more than 14 weeks pregnant (3rd trimester), excluding last 2 weeks of pregnancy. Gestation = 150 days Trimester = 50 days)-</td>
<td>Requested by industry members. Partially derived from Road Transport of Livestock MCOP and other sources including the draft Land Transport of Sheep MCOP. Standards are required to be consistent with other species. Necessary in the expert opinion of AWWG.</td>
</tr>
<tr>
<td>SB11.2</td>
<td>Spell periods</td>
<td>Road p.9 Rail p.10 (refer to Appendix 3 of RIS)</td>
<td>Minor costs in spelling adults for 36 hours instead of 24 hours after 48 hours off water.</td>
<td>Requested by industry members. Partially derived from Road Transport of Livestock MCOP and other sources including the draft Land Transport of Sheep MCOP.</td>
</tr>
<tr>
<td>Proposed Std. No.</td>
<td>Subject matter</td>
<td>Existing model codes of practice</td>
<td>Incremental cost impacts</td>
<td>Reasons for change</td>
</tr>
<tr>
<td>------------------</td>
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<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SB11.3</td>
<td>Approved methods of humane destruction</td>
<td>Sheep 10.1, 10.3, 10.4</td>
<td>Nil – consistent with existing code. (Exsanguination without stunning is permissible for sheep and goats).</td>
<td>Partially derived from various MCOP and other sources. Blunt trauma standard did not exist and is required for day old lambs. Necessary in the expert opinion of AWWG.</td>
</tr>
</tbody>
</table>
### Appendix 3 – Comparison of proposed standards for water deprivation times and spell periods with base case

<table>
<thead>
<tr>
<th>Proposed Std. No.</th>
<th>Subject matter</th>
<th>Existing model codes of practice</th>
<th>Class of animal</th>
<th>Base case</th>
<th>Proposed standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Specific Standards – Alpacas&lt;sup&gt;180&lt;/sup&gt;</td>
<td>1983 MCOP. Road p.9. Rail p.10. There are no other relevant codes. Alpacas are not ruminants.</td>
<td>Wethers over 12 months old</td>
<td>Max 24 hours</td>
<td>Max 36 hours</td>
</tr>
<tr>
<td>SB1.1.</td>
<td>Water deprivation times</td>
<td>Road p.9. Rail p.10</td>
<td>Nonpregnant females and males over 12 months old</td>
<td>Max 24 hours</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road p.9. Rail p.10</td>
<td>Alpacas 6 to 12 months old</td>
<td>Max 24 hours</td>
<td>Max 8 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road p.9. Rail p.10</td>
<td>Pregnant females up to 7.5 months pregnant (1st and 2nd trimester)</td>
<td>Max 24 hours</td>
<td>Max 8 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road p.9. Rail p.10</td>
<td>Pregnant Alpacas more than 7.5 months pregnant (3rd trimester) excluding last 4 weeks.</td>
<td>Max 24 hours</td>
<td>Max 4 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road p.9. Rail p.10</td>
<td>Lactating alpacas with crias up to 6 months old</td>
<td>Max 24 hours</td>
<td>Max 2 hours</td>
</tr>
<tr>
<td>SB1.3</td>
<td>Spell periods</td>
<td>New standard&lt;sup&gt;181&lt;/sup&gt;</td>
<td>Wethers over 12 months old</td>
<td>No minimum</td>
<td>Min 24 hours</td>
</tr>
</tbody>
</table>

<sup>180</sup> Alpacas are mainly transported farm to farm or to shows.

<sup>181</sup> Road and rail standards do not apply to spell periods because alpacas are not ruminants.
<table>
<thead>
<tr>
<th>Proposed Std. No.</th>
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<th>Proposed standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>off water for 36 hours</td>
<td>No minimum</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nonpregnant females and males over 12 months old off water for 24 hours</td>
<td>No minimum</td>
<td>No mandatory spells for WDTs less than 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Alpacas 6 to 12 months old</td>
<td>No minimum</td>
<td>No mandatory spells for WDTs less than 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pregnant females up to 7.5 months pregnant (1st and 2nd trimester) excluding last 4 weeks</td>
<td>No minimum</td>
<td>No mandatory spells for WDTs less than 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pregnant Alpacas more than 7.5 months pregnant (3rd trimester)</td>
<td>No minimum</td>
<td>No mandatory spells for WDTs less than 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lactating alpacas with crias up to 6 months old</td>
<td>No minimum</td>
<td>No mandatory spells for WDTs less than 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Crias up to 6 months old</td>
<td>No minimum</td>
<td>No mandatory spells for WDTs less than 12 hours</td>
</tr>
<tr>
<td><strong>B2</strong></td>
<td><strong>Specific Standards - Buffalo</strong></td>
<td></td>
<td>Adult buffalo over 6 months old</td>
<td>Max 48 hours</td>
<td>Max 36 hours</td>
</tr>
<tr>
<td>SB2.1</td>
<td>Water deprivation times</td>
<td>1983 MCOP, Road p.9. Rail p.10 for adults. There are no other relevant codes.</td>
<td>Adult buffalo over 6 months old</td>
<td>Max 48 hours</td>
<td>Max 36 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Buffalo 1–6 months old</td>
<td>Max 24 hours</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Buffalo in more than 7 months pregnant (third trimester of pregnancy) excluding last 4 weeks and lactating buffalo with calves at foot</td>
<td>Max 24 hours</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td>SB2.2</td>
<td>Spell periods</td>
<td>Road p.9. Rail p.10</td>
<td>Adult buffalo over 6 months old off-water for 36 hours</td>
<td>Min 12 hours</td>
<td>Min 24 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Buffalo 1–6 months old off-water for 24 hours</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Buffalo more than 7 months</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td>Proposed Std. No.</td>
<td>Subject matter</td>
<td>Existing model codes of practice</td>
<td>Class of animal</td>
<td>Base case</td>
<td>Proposed standard</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>pregnant (in third trimester of pregnancy) excluding the last 4 weeks and lactating buffalo with calves at foot off-water for 24 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B3</strong></td>
<td><strong>Specific Standards – Camels</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB3.1</td>
<td>Water deprivation times – 24 hours</td>
<td>2006 MCOP The Camel (^{182}) 10.2 Camels are not ruminants.</td>
<td>Camels over 6 months old</td>
<td>Max 24 hours (^{183})</td>
<td>Max 24 hours (^{184})</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pregnant camels more than 9 months pregnant (in third trimester) excluding last 4 weeks.</td>
<td>Max 24 hours</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td>SB3.3</td>
<td>Spell periods</td>
<td>New standard (^{185})</td>
<td>Camels over 6 months old, pregnant camels known to be more than 9 months pregnant (in the third trimester) have been off-water for 24 hours</td>
<td>No minimum</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td><strong>B4</strong></td>
<td><strong>Specific Standards – Cattle</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB4.1</td>
<td>Water deprivation times. Notion of ‘normal’ and ‘extended’ times removed.</td>
<td>2002. Land Transport of Cattle 9.3</td>
<td>Cattle over 6 months old</td>
<td>Max 48 hours</td>
<td>Max 48 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Calves 1–6 months old</td>
<td>Max 24 hours</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lactating cows with calves at foot</td>
<td>Max 24 hours</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Calves 5–30 days old travelling without mothers</td>
<td>Max 10 hours</td>
<td>Max 18 hours</td>
</tr>
</tbody>
</table>


\(^{183}\) 72 hours permitted on transport if food and water provided daily.

\(^{184}\) Under SB3.2, 72 hours permitted on transport if food and water provided daily, there is space to lie down, regular assessments are made and there is a 24 hour spell before starting another journey.

\(^{185}\) Road and rail standards do not apply to spell periods because camels are not ruminants.
<table>
<thead>
<tr>
<th>Proposed Std. No.</th>
<th>Subject matter</th>
<th>Existing model codes of practice</th>
<th>Class of animal</th>
<th>Base case</th>
<th>Proposed standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB4.2</td>
<td>Spell periods</td>
<td>Cattle 9.5</td>
<td>Cattle over 6 months old have been off-water for 48 hours</td>
<td>Min 36 hours</td>
<td>Min 36 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pregnant cows known to be more than 6 months pregnant (in the third trimester) off-water for 24 hours</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lactating cows off-water for 24 hours</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Calves off-water for 24 hours</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td>SB4.3</td>
<td>Max journey time for cattle in last 4 weeks of pregnancy (SA 4.1 vi is also relevant here)</td>
<td>Cattle 5.4.1 and 9.3</td>
<td>Cattle known to be in last 4 weeks of pregnancy — incorporates SA4.1 vi</td>
<td>Max 8 hours journey</td>
<td>Max 4 hours journey unless under vet advice</td>
</tr>
<tr>
<td>B5</td>
<td>Specific Standards - Deer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB5.1</td>
<td>Water deprivation times</td>
<td>1983 MCOP Road p.9. Rail p.10. Deer are ruminants. There are no other relevant codes.</td>
<td>Deer over 6 months old</td>
<td>Max 48 hours</td>
<td>Max 48 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fawns/calves under 6 months old</td>
<td>Max 24 hours</td>
<td>Max 28 hours</td>
</tr>
</tbody>
</table>

186 35/95% of last trimester covered by this old MCOP standard (8 months pregnant – 8 hours). Therefore WDT has reduced from 48-24 for 60/95% and decreased from 8 to 4 + vet advice for 30/95% - in SB4.3.

187 36 hours is allowed only if there is a 24 spell

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Regulatory Impact Statement - Australian standards and guidelines
for the welfare of animals - Land transport of livestock
<table>
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<th>Class of animal</th>
<th>Base case</th>
<th>Proposed standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB5.2</td>
<td>Spell periods</td>
<td>Road p.9, Rail p.10</td>
<td>Deer over 6 months old off-water for 48 hours.</td>
<td>Min 24 hours</td>
<td>Min 36 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fawns or calves off-water of 28 hours.</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pregnant deer known to be more than 5 months pregnant (in the third trimester) off-water of 24 hours.</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td><strong>B6</strong></td>
<td><strong>Specific Standards – Ratites</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB6.1</td>
<td>Water deprivation times</td>
<td>1983 MCOP Road p.9, Rail p.10</td>
<td>Adult birds</td>
<td>Max 24 hours</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chicks or young birds</td>
<td>Max 24 hours</td>
<td>Max 12 hours</td>
</tr>
<tr>
<td>SB6.4</td>
<td>Spell periods</td>
<td>New standard\textsuperscript{188}</td>
<td>Adult birds off-water for 24 hours</td>
<td>No minimum</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chicks or young birds</td>
<td>No minimum</td>
<td>No mandatory spells for WDTs less than 12 hours</td>
</tr>
<tr>
<td><strong>B7</strong></td>
<td><strong>Specific Standards – Goats</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB7.1</td>
<td>Water deprivation times</td>
<td>1983 MCOP Road p.9, Rail p.10</td>
<td>Goats over 6 months old</td>
<td>Max 48 hours</td>
<td>Max 48 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There are no other relevant codes.</td>
<td>Kids under 6 months old</td>
<td>Max 36 hours\textsuperscript{189}</td>
<td>Max 28 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Goats in third trimester of pregnancy (beyond 14 weeks pregnant) except last 2 weeks.</td>
<td>Nil</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nil If more than 4 months pregnant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{188} The road and rail codes do not apply to spell periods because ratites are not ruminants.

\textsuperscript{189} 36 hours is allowed only if there is a 24 spell.
<table>
<thead>
<tr>
<th>Proposed Std. No.</th>
<th>Subject matter</th>
<th>Existing model codes of practice</th>
<th>Class of animal</th>
<th>Base case</th>
<th>Proposed standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB7.2</td>
<td>Spell periods</td>
<td>Road p.9 Rail p.10</td>
<td>Goats over 6 months old off-water for 48 hours.</td>
<td>Min 24 hours</td>
<td>Min 36 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Kids off-water for 28 hours.</td>
<td>Min 24 hours</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Goats known to be more than 14 weeks pregnant (in the third trimester) excluding last 2 weeks, off-water for 24 hours</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td><strong>B8</strong> Specific Standards - Horses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB8.1</td>
<td>Water deprivation times</td>
<td>2003 MCOP Land Transport of Horses 9.3.1</td>
<td>Horses over 6 months old</td>
<td>Max 36 hours</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lactating mares</td>
<td>Max 8 hours</td>
<td>Max 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Foals less than 6 months old</td>
<td>Max 8 hours</td>
<td>Max 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mares more than 7.5 months pregnant (in third trimester) excluding last 4 weeks</td>
<td>Max 36 hours</td>
<td>Max 12 hours</td>
</tr>
<tr>
<td>SB8.3</td>
<td>Spell periods</td>
<td>Horses 10.5</td>
<td>Horses off-water for 24 hours.</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lactating mares, foals and pregnant mares known to be more than 7.5 months pregnant (in the third trimester) excluding last 4</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
</tbody>
</table>

190 Gestation = 150 days, trimester = 50 days, therefore 30/50 % of last trimester covered by this old MCOP standard (4 months pregnant – 8 hours). Therefore WDT has reduced from 48-24 for 20/50% and increased from 8 to 24 for 30/50%.
191 Required if off water for 36 hours (see SB7.1)
192 40/113 % of last trimester covered by old MCOP 62 4.1.5 standard (10 months preg – 8 hours). Therefore WDT has reduced from 36 to 12 hours for 73/113% and increased from 8 to 12 hours for 40/113%
<table>
<thead>
<tr>
<th>Proposed Std. No.</th>
<th>Subject matter</th>
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<th>Class of animal</th>
<th>Base case</th>
<th>Proposed standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>B9</td>
<td>Specific Standards - Pigs</td>
<td>2003 Land Transport of Pigs 8.3, Pigs 9.6</td>
<td>Pigs</td>
<td>Max 24 hours</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lactating sows and piglets</td>
<td>Max 24 hours for sows and 12 hours for piglets</td>
<td>Max 12 hours</td>
</tr>
<tr>
<td>SB9.1</td>
<td>Water deprivation times</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB9.2</td>
<td>Criteria when travelling &gt;24 hours</td>
<td>Pigs 7.2, 8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB9.3</td>
<td>Spell periods</td>
<td>Pigs 9.3</td>
<td>Pigs off-water for the maximum time permitted.</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td></td>
<td>Specific Standards - Poultry</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>B10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB10.1</td>
<td>Water deprivation times</td>
<td>2006 Land Transport of Poultry 3.2.1.</td>
<td>Poultry</td>
<td>Max 24 hours</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td></td>
<td>Poultry 4.6.8.</td>
<td>Chicks</td>
<td>Max 60 hours after hatching</td>
<td>Max 60 hours following take off</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spell periods&lt;sup&gt;193&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Specific Standards - Sheep</th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>B11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB11.1</td>
<td>Water deprivation times</td>
<td>1983 MCOP, Road p.9 Rail p.10. There are no other relevant endorsed codes.</td>
<td>Sheep over 4 months old</td>
<td>Max 48 hours</td>
</tr>
<tr>
<td></td>
<td>Sheep over 4 months old</td>
<td>Lambs under 4 months old</td>
<td>Max 36 hours&lt;sup&gt;194&lt;/sup&gt;</td>
<td>Max 28 hours</td>
</tr>
<tr>
<td></td>
<td>Lambs under 4 months old</td>
<td>Ewes in third trimester of pregnancy (beyond 3 months pregnant) excluding last 2 weeks. Gestation = 150 days Trimester = 50 days)-</td>
<td>Nil If more than 4 months pregnant (last 30 days) = 8 hours&lt;sup&gt;195&lt;/sup&gt;</td>
<td>Max 24 hours</td>
</tr>
<tr>
<td></td>
<td>Spell periods&lt;sup&gt;193&lt;/sup&gt;</td>
<td>Road p.9 Rail p.10</td>
<td>Sheep over 4 months old off-water for 48 hours.</td>
<td>Min 24 hours</td>
</tr>
<tr>
<td></td>
<td>Sheep over 4 months old</td>
<td>Lambs under 4 months old off-water for 28 hours.</td>
<td>Min 24 hours&lt;sup&gt;196&lt;/sup&gt;</td>
<td>Min 12 hours</td>
</tr>
<tr>
<td></td>
<td>Lambs under 4 months old</td>
<td>Pregnant ewes known to be more than 14 weeks pregnant (in the third trimester)</td>
<td>Min 12 hours</td>
<td>Min 12 hours</td>
</tr>
</tbody>
</table>

<sup>193</sup> There are no spell periods for poultry in either the base case or the proposed standards.

<sup>194</sup> 36 hours is allowed only if there is a 24 spell (see SB11.2).

<sup>195</sup> Gestation = 150 days, trimester = 50 days, therefore 30/50 % of last trimester covered by this old MCOP standard (4 months preg – 8 hours). Therefore WDT has reduced from 48-24 for 20/50% and increased from 8 to 24 for 30/50%.

<sup>196</sup> Required if off water for 36 hours (see SB11.1)
| | | excluding last 2 weeks, off-water for 24 hours. | |
## Appendix 4 – Comparison of proposed standards with international standards

<table>
<thead>
<tr>
<th>Proposed Std. No.</th>
<th>Subject matter</th>
<th>Equivalent international standards</th>
<th>Nature of any difference</th>
<th>Reason for difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reponsibilities and planning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA1.1</td>
<td>Responsibilities for livestock welfare at each stage of journey PERSON in charge at each stage of journey has responsibility for animal welfare and compliance with standards.</td>
<td>OIE Article 3.7.3.3.197</td>
<td>No significant differences. Article 3.7.3.3 spells out the responsibilities of different persons at each stage of the journey. There are differences in the detail but not in the overall approach.</td>
<td>It is important that the responsibilities be recognised by those involved.</td>
</tr>
<tr>
<td>SA1.2</td>
<td>For journeys &gt; 24 hours there must be a document that includes times without water, food, inspection times, other relevant information and emergency contacts accompanying the livestock.</td>
<td>OIE Article 3.7.3.5.1 &amp; 3.7.3.6</td>
<td>SA1.3 requires key planning information to be documented but does not extend to loading density.</td>
<td>Documentation of responsibility and water provision are seen as key issues in Australia. Specific loading densities are considered to be more appropriate as guidelines.</td>
</tr>
<tr>
<td></td>
<td>Stock handling competency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA2.1</td>
<td>All persons involved with livestock to be competent or supervised by a competent person</td>
<td>OIE Article 3.7.3.4</td>
<td>Competency requirements are less formal in the proposed standards.</td>
<td>Less formal training is considered sufficient in the often more remote Australian context but competence is defined as part of the standard to be competent for the required task.</td>
</tr>
<tr>
<td></td>
<td>Transport vehicles and facilities</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed Std. No.</th>
<th>Subject matter</th>
<th>Equivalent international standards</th>
<th>Nature of any difference</th>
<th>Reason for difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA3.1</td>
<td>Vehicles and facilities designed to minimise risks.</td>
<td>OIE Article 3.7.3.5.4</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td><strong>Pre-transport preparation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA4.1</td>
<td>Livestock to be assessed as fit for intended journey</td>
<td>OIE Article 3.7.3.7.3c</td>
<td>No greatly significant differences, except proposed standards rely on visual observations.</td>
<td>Proposed standards are detailed for Australian conditions. Notable differences in them are: newborn are permitted to travel with their mothers with conditions, pregnant animals are permitted to travel up to specified periods depending on the stage of pregnancy, females that have recently given birth are permitted to travel. The OIE Article does not specify dehydration as a condition.</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Unfit animals transported only on specific vet advice.</td>
<td>OIE Article 3.7.3.7.3a</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA4.3</td>
<td>Consignor to supply livestock fit for the intended journey.</td>
<td>OIE Article 3.7.3.3</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA4.4</td>
<td>Where livestock are unfit to load, person in charge must arrange for care, treatment or humane destruction.</td>
<td>OIE Article 3.7.3.7.3b</td>
<td>No significant differences</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td><strong>Loading, transport and unloading</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA5.1</td>
<td>Water, food and rest to be provided if water deprivation times reached.</td>
<td>OIE Article 3.7.3.9.5 is general and not specific.</td>
<td>No significant differences.</td>
<td>Australian standards are more prescriptive.</td>
</tr>
<tr>
<td>SA5.2</td>
<td>Time off water to be managed.</td>
<td>OIE Article 3.7.3.5.3</td>
<td>Slightly different approach between the two documents.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA5.3</td>
<td>Loading density to be managed to minimise risks</td>
<td>OIE Article 3.7.3.5.6</td>
<td>Neither document is prescriptive</td>
<td>N/A</td>
</tr>
<tr>
<td>SA5.4</td>
<td>Drivers (except trains and poultry) to have final decision on</td>
<td>OIE Article 3.7.3.3.4.f</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>Proposed Std. No.</td>
<td>Subject matter</td>
<td>Equivalent international standards</td>
<td>Nature of any difference</td>
<td>Reason for difference</td>
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</tr>
<tr>
<td>SA5.5</td>
<td>Segregation of livestock likely to cause injury.</td>
<td>OIE Article 3.7.3.7.2.</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA5.6</td>
<td>Handling appropriate to species and without pain or injury.</td>
<td>OIE Article 3.7.3.8.3.</td>
<td>No significant differences, except that there is no proposed standard against excessive shouting at animals or making loud noises.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA5.7</td>
<td>Restrictions on use of electric prodders on sensitive animal parts, under 3 months old or unable to move.</td>
<td>OIE Article 3.7.3.8.3.</td>
<td>No significant differences, except general ban for animals under 3 months in Australia.</td>
<td>Australian standard is higher. Animals under 3 months of age may not have yet learnt to move away from painful stimuli.</td>
</tr>
<tr>
<td>SA5.8</td>
<td>Dogs must be under control at all times and must not travel in same pen as livestock. Habitual biters to be muzzled.</td>
<td>OIE Article 3.7.3.7.3.f,</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA5.9</td>
<td>Alignment of ramp and vehicle</td>
<td>OIE Article 3.7.3.8.2.</td>
<td>No significant differences. Australian standard interpreted to be within the general OIE clause.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities by driver:</td>
<td>OIE Article 3.7.3.9.1</td>
<td>No significant differences. Australian standard higher and more detailed.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA5.11</td>
<td>Inspection of animals by driver:</td>
<td>OIE Article 3.7.3.9.7</td>
<td>No significant differences. Australian standard higher and more detailed.</td>
<td>Every 3 hours is likely to deliver better animal welfare outcomes at minimal cost.</td>
</tr>
<tr>
<td>SA5.12</td>
<td>Treatment or destruction of weak, ill or injured animals at the</td>
<td>OIE Article 3.7.3.9.4 &amp; 3.7.3.10.2</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>Proposed Std. No.</td>
<td>Subject matter</td>
<td>Equivalent international standards</td>
<td>Nature of any difference</td>
<td>Reason for difference</td>
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</tr>
<tr>
<td>SA5.13</td>
<td>Person receiving the livestock must make arrangements for weak or ill livestock.</td>
<td>OIE Article 3.7.3.10.2</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Driver to take action in extreme hot or cold weather</td>
<td>OIE Article 3.7.3.5.11</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Actions after a vehicle accident</td>
<td>OIE Article 3.7.3.5.10</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td><strong>Humane destruction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA6.1</td>
<td>Humane destruction to result in immediate loss of consciousness then death.</td>
<td>OIE Article 3.7.3.9.4, 3.7.3.10.2, 3.7.6.1.6</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA6.2</td>
<td>Moribund animals to be destroyed (or seek advice from vet or other competent person). Humane destruction by competent person using approved method at first opportunity</td>
<td>OIE Article 3.7.3.9.4, 3.7.3.10.2, 3.7.6.1.1</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA6.3</td>
<td>When competent person not available, must be contacted a.s.a.p.</td>
<td>OIE Article 3.7.3.9.4, 3.7.6.1.1</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA6.4</td>
<td>Reasonable action required to confirm death</td>
<td>OIE Article 3.7.6.3.</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA6.5</td>
<td>Firearm use to be in frontal or poll position, except for cattle and pigs.</td>
<td>OIE Article 3.7.6.6.</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA6.6</td>
<td>Captive bolt stunning to be followed by effective killing method</td>
<td>OIE Article 3.7.6.7.</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA6.7</td>
<td>Blunt trauma to head to be used only on newborns &lt;24 hours old</td>
<td>Not covered</td>
<td>Significant difference.</td>
<td>Only permitted for some species of newborn less than 24 hours old where</td>
</tr>
<tr>
<td>Proposed Std. No.</td>
<td>Subject matter</td>
<td>Equivalent international standards</td>
<td>Nature of any difference</td>
<td>Reason for difference</td>
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</tr>
<tr>
<td></td>
<td>followed by effective killing method</td>
<td></td>
<td></td>
<td>there is no other alternative.</td>
</tr>
<tr>
<td>SA6.8</td>
<td>Pithing to be used only on unconscious animals</td>
<td>OIE Article 3.7.6.18.</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td>SA6.9</td>
<td>Lethal injection an approved method</td>
<td>OIE Article 3.7.6.15.</td>
<td>No significant differences.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Species specific standards</td>
<td>OIE Article 3.7.3.12</td>
<td>The OIE guidelines are less specific, but there are no significant differences. Mostly about behavioural and handling issues covered in the guidelines.</td>
<td>Australian standards are a lot more detailed and prescriptive for each species.</td>
</tr>
</tbody>
</table>
Appendix 5 – Summary of relevant livestock statistics

A5.1 Total gross value of livestock production

Table A5.1 looks at the total gross value of livestock per annum and is broken up according to the total value of slaughter, disposals and exports (roughly 66% of total gross value) and the total value of livestock products (roughly 33% of total gross value). Furthermore, the total gross value of slaughter, disposals and exports is broken up according to species (i.e. cattle and calves; lamb and sheep; pigs; poultry and other198). The total gross value of slaughter, disposal and export is mainly made up of cattle and calves (roughly 63% in 2006-07). The total gross value of livestock products199 is made up of the gross values of wool, milk and eggs.

Table A5.1 – Annual gross value of total livestock slaughter, disposals and exports & livestock products ($m)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Cattle + Calves</td>
<td>6,411.1</td>
<td>6,658.8</td>
<td>7,828.8</td>
<td>7,689.5</td>
<td>7,400</td>
</tr>
<tr>
<td>Lamb + Sheep</td>
<td>2,036.9</td>
<td>2,038.8</td>
<td>1,949</td>
<td>2,113.1</td>
<td>1,934</td>
</tr>
<tr>
<td>Pigs</td>
<td>911.3</td>
<td>878.9</td>
<td>906</td>
<td>888.6</td>
<td>930</td>
</tr>
<tr>
<td>Poultry</td>
<td>1,280.5</td>
<td>1,280.8</td>
<td>1,303.7</td>
<td>1,226</td>
<td>1,414</td>
</tr>
<tr>
<td>Other</td>
<td>36.2</td>
<td>38.7</td>
<td>42.6</td>
<td>49.1</td>
<td>43</td>
</tr>
<tr>
<td>Total gross value slaughter, disposals and exports</td>
<td>10,676</td>
<td>10,896</td>
<td>12,030.1</td>
<td>11,917.2</td>
<td>11,721</td>
</tr>
<tr>
<td>Wool</td>
<td>3,317.8</td>
<td>2,396.5</td>
<td>2,195.5</td>
<td>2,092.5</td>
<td>2,678</td>
</tr>
<tr>
<td>Milk</td>
<td>2,795.2</td>
<td>2,808.7</td>
<td>3,193.8</td>
<td>3,342.5</td>
<td>3,113</td>
</tr>
<tr>
<td>Eggs</td>
<td>294</td>
<td>335.5</td>
<td>327.9</td>
<td>381.5</td>
<td>338</td>
</tr>
<tr>
<td>Total gross value of livestock products</td>
<td>6,412.1</td>
<td>5,540.7</td>
<td>5,717.2</td>
<td>5,816.5</td>
<td>6,130</td>
</tr>
<tr>
<td>Total gross value of livestock slaughter, disposals, exports + livestock products</td>
<td>17,088.1</td>
<td>16,436.7</td>
<td>17,747.3</td>
<td>17,733.7</td>
<td>17,851</td>
</tr>
</tbody>
</table>

A5.2 Determination of the number of animals transported per annum by species

Summary statistics for the total number of animals transported per annum by species is shown in Table A5.8 according to species. Deer species include the Red, Fallow and Rusa deer varieties. For the purpose of this RIS transport of livestock is said to occur when livestock is being moved for slaughter, export or for ‘other’ reasons. For the purpose of this RIS ‘other’ transport includes: transport for the purposes of: mustering; management; companionship; non-event

198 Other includes buffalo; horses; deer; camels; alpacas; goats; emus and ostriches.
199 The annual gross value of honey is not included in the total gross value of livestock products estimates.
200 ABS, 2004-05, Cat. No. 7503.0.
201 Ibid 2004-05.
203 ABS, 2005-06, Cat. No. 7501.0.
204 ABARE (June quarter 2007)
recreation; breeding/breeder replacement; growing out or finishing; racing; show/exhibition and sale.

Apart from alpacas (see section A5.4), the numbers for slaughtered and exported livestock have been derived from government statistical sources, as well as, the Meat and Livestock Association (MLA). However, the number of animals involved in ‘other’ transport is estimated as a proportion of total livestock transported - with such proportions depending on the species of animal involved. Excluding cattle, lamb and sheep, the relevant proportions assumed under ‘other’ transport include: buffalo (20%), calves for rearing (5%), calves for slaughter (i.e. ‘bobby calves’) (10%), pigs (30%), poultry for meat (0%), chicks (100%), horses (99.9), deer (10%), camels (10%), alpacas (99.9%), goats (15%), emus (0%) and ostriches (0%).

A5.3 Estimations of slaughter and export numbers for particular species

Approximately 5% of mammalian species transported are to be covered by the Australian Standard for Export of Livestock (ASEL), which is a consistently higher animal welfare standard that will apply to all export movements. Despite the lack of impact of the Land Transport Standards (LTS) on live export movements, these livestock numbers have been included in the RIS calculations.

Buffalo (Bubalus bubalis)

In order to ascertain the slaughter and export number of particular species of livestock, it was necessary to utilise slaughter and export levy data obtained from the Department of Agriculture, Fisheries and Forestry (DAFF). The estimate for the total number of buffalo slaughtered and exported in Australia (approximately 2,300 head per annum) is obtained by dividing the 2005-06 levy revenue for slaughter and export of buffalo of $24,000 by the per head levy of $10.33. It is believed that most of the 2,300 head of buffalo are exported.

Bobby calves

The ABS statistics puts the number of calves for slaughter for the 2003-04 year at 860,000. In order to check the long term validity of this estimate, the number of calves for slaughter that were slaughtered between the years 2002 and 2006 is derived in the following way and then an average obtained:

Total number of all calves 2003 to 2005 = average 1,013,000 per annum
Total number of calves for slaughter 2003-04 = 860,000
Percentage of calves for slaughter = 85%

---

205 Specifically in relation to horses.
206 This is discussed in more detail under part A5.3 of appendix 5 in this RIS.
207 These proportions have been provided by livestock industry organisations.
208 On advice from AHA.
209 DAFF, 2005-06.
211 On advice from AHA.
212 See glossary for definition of bobby calf.
213 ABS, 2005 Cat. No. 1301.0.
Percentage of calves for rearing = 15%
Average weight of calves for slaughter = 30kg per calf
Average weight of calves for rearing = 50kg per calf

\[
\text{Weighted sum of average weight} = [30\text{kg} \times (0.85)] + [50\text{kg} \times (0.15)] = 33\text{kg per calf}
\]

Total veal produced:\[215\]
2006 = 29,139,000kg
2005 = 27,753,990kg
2004 = 31,561,980kg
2003 = 38,175,000kg
2002 = 34,984,980kg

\[
\text{Average total veal produced 2002 to 2006} = 32,322,990\text{kg}
\]

Average annual total number of calves 2002 to 2006 = average total veal produced 2002 to 2006/weighted sum of average weight = 32,322,990kg/33kg per calf = 979,485 calves (including calves for slaughter). If the proportion of calves for slaughter assumed is 85% then the average annual total number of calves for slaughter 2002 to 2006 = 832,562

Calves for rearing

The 2003-04 number of calves for slaughter - slaughtered (i.e. 860,000) is subtracted from the average total number of calves (including both calves for rearing and calves for slaughter) slaughtered between the years 2003-2005 of 1,013,000 per annum, in order to obtain an estimate for the number of calves for rearing slaughtered of 153,000 per annum.

Goats

The estimate for the total number of goats slaughtered and exported in Australia (approximately 1,305,000 per annum) is obtained by dividing the 2005-06 levy revenue for slaughter and export of goats of $492,000\[217\] by the per head levy of $0.377\[218\]. The total amount of goats slaughtered is calculated by subtracting the total number of goats exported (57,600 per annum\[219\]) from the total amount slaughtered and exported of 1,305,000 head per annum. This provides an estimate of slaughter number for goats of 1,247,390 goats.

Horses

The estimate for the total number of horses slaughtered in Australia (approximately 12,400 per annum) has been calculated by dividing the 2005-06 levy revenue for slaughter of horses of $62,000\[220\] by the per head levy of $5.00\[221\].

Ostriches

\[216\] Veal meat is defined as the product of all calves (rearing and slaughter calves) by the Australian Bureau of Statistics.
\[217\] DAFF, 2005-06.
\[219\] MLA (2006).
\[220\] DAFF, 2005-06.
\[221\] <http://www.daff.gov.au/agriculture-food/levies/livestock>
The estimate for the total number of ostriches slaughtered in Australia (approximately 9,700 per annum) is obtained by first multiplying the total number of emus slaughtered per annum of 4,600\textsuperscript{222} by the per head levy of $2.00\textsuperscript{223} which gives a 2005-06 slaughter levy revenue for emus of $8,900. The amount of $8,900 is then subtracted from the total ratite slaughter levy revenue in 2005-06 of $21,000\textsuperscript{224} which gives a balance of $12,100 of slaughter levy revenue for ostriches. Taking $12,100 and then dividing this by the slaughter levy for ostriches in 2005-06 of $1.25\textsuperscript{225} per head provides an estimate of 9,680 ostriches slaughtered in 2005-06.

A5.4 Estimation of annual transport numbers for alpacas

The calculation of annual alpaca transport numbers was undertaken in the following way and on estimate advice from the Australian Alpacas Association for 2007. Slaughter and export figures for Alpacas in 2007 are given as 100 and 500 head, respectively. In terms of national show events it was estimated that the number of alpacas taken to such events were on average 280 head and were transported 52 weeks a year given a total of 14,560 animals transported. Assuming a trip both to and from the events this would mean a total of 29,120 alpacas are transported for this purpose. For regional auctions it was estimated that 14 regions were responsible for 1 auction per annum of 30 head per auction giving a total of 420 animals annually transported. In terms of annual auctions it was estimated that 50 auctions were held with a sale of 30 alpacas each giving a total of 1,500 animals transported per annum. With regards to show sales it was estimated that there were 2 sales held annually by 14 regions annually which involved 100 alpacas at each event giving a total of 2,800 animals needing transport.

For part-time breeders it was assumed that transport was required approximately 30 times a year and for the following number of studs in each state: NSW (100 studs); VIC (100 studs); Qld (30 studs); SA (60 studs); and WA (70 Studs). Total amounts of animals transported for part-time breeding are summarised in Table A5.3 and assume that each activity involves a trip to and from that activity (i.e. number of times a year x number of respective studs x 2 trips each time). For full-time breeders it was estimated that 30 studs were being transported every fortnight (i.e. 183 times a year) giving a total of 5,475 animals one way and therefore, 10,950 animals being transported two ways (to and from).

Table A5.2 – Summary statistics for annual alpaca transport

<table>
<thead>
<tr>
<th>Alpaca activity</th>
<th>No. of animals transported\textsuperscript{226}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slaughter</td>
<td>100</td>
</tr>
<tr>
<td>Export</td>
<td>500</td>
</tr>
<tr>
<td>National show events</td>
<td>29,120</td>
</tr>
<tr>
<td>Regional auctions</td>
<td>420</td>
</tr>
<tr>
<td>Annual auctions</td>
<td>1,500</td>
</tr>
<tr>
<td>Show sales</td>
<td>2,800</td>
</tr>
</tbody>
</table>

\textsuperscript{222} 2005/2006 estimate taken from Shim-Prydon, G. and Camancho-Barreto, H (March 2007).
\textsuperscript{223} <http://www.daff.gov.au/agriculture-food/levies/livestock> 
\textsuperscript{224} DAFF, 2005-06
\textsuperscript{225} <http://www.daff.gov.au/agriculture-food/levies/livestock> 
\textsuperscript{226} Takes into account 2 trips for Alpaca activities (excluding export, slaughter, auctions and show sales)
A5.5 Estimation of annual number of cattle, lamb and sheep transported

The number of cattle, lamb and sheep both slaughtered and exported live per financial year as shown in Tables A5.3, A5.4 and A5.5, respectively, have been taken from the market statistics database\(^{227}\). All Department of Agriculture, Fisheries, & Forestry (DAFF) transactions, as shown in Tables A5.3, A5.4 and A5.5, have been obtained from the Levies Revenue Service at DAFF via the Sheepmeat Council of Australia.

**A5.5.1 Estimation of annual Cattle transport numbers**

The average number of cattle being transported is estimated as the sum of average annual total levy and non-levy based DAFF transactions (i.e. 19,380,105) plus ‘other’ non transaction based cattle numbers (i.e. 4,500,000\(^{228}\)) = 23,880,105. Non-levy based transactions are transactions where there is simply an exemption from having to pay the levy\(^{229}\).

Table A5.3 – Average annual number of cattle involved in transport by category 2002/03 to 2006/07

<table>
<thead>
<tr>
<th>Year</th>
<th>Slaughter (a)</th>
<th>Live export (b)</th>
<th>DAFF transactions (levy based) (c)</th>
<th>DAFF transactions (non levy) (d)</th>
<th>Total DAFF transactions (e) = (c) + (d)</th>
<th>‘Other’ (transaction based) (f) = (e) − (a) − (b)</th>
<th>‘Other’ (non-transaction based) (g)</th>
<th>Total (h) = (e) + (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002/03</td>
<td>8,082,703</td>
<td>1,007,886</td>
<td>14,172,822</td>
<td>5,685,336</td>
<td>19,858,158</td>
<td>10,767,569</td>
<td>4,500,000</td>
<td>24,358,158</td>
</tr>
<tr>
<td>2003/04</td>
<td>7,752,887</td>
<td>681,930</td>
<td>13,834,178</td>
<td>5,263,435</td>
<td>19,097,613</td>
<td>10,662,796</td>
<td>4,500,000</td>
<td>23,597,613</td>
</tr>
<tr>
<td>2004/05</td>
<td>7,985,577</td>
<td>623,579</td>
<td>14,315,297</td>
<td>5,227,366</td>
<td>19,542,663</td>
<td>10,933,507</td>
<td>4,500,000</td>
<td>24,042,663</td>
</tr>
<tr>
<td>2005/06</td>
<td>7,580,056</td>
<td>577,737</td>
<td>13,845,615</td>
<td>4,719,957</td>
<td>18,565,572</td>
<td>10,407,779</td>
<td>4,500,000</td>
<td>23,065,572</td>
</tr>
<tr>
<td>2006/07</td>
<td>8,161,655</td>
<td>676,877</td>
<td>14,544,681</td>
<td>5,291,839</td>
<td>19,836,520</td>
<td>10,997,988</td>
<td>4,500,000</td>
<td>24,336,520</td>
</tr>
<tr>
<td>5 year average</td>
<td>7,912,576</td>
<td>713,602</td>
<td>14,142,519</td>
<td>5,237,587</td>
<td>19,380,105</td>
<td>10,753,928</td>
<td>4,500,000</td>
<td>23,880,105</td>
</tr>
</tbody>
</table>

---

\(^{228}\) This estimate has been provided by the Cattle Council of Australia on advice from MLA and has been assumed to be a constant number over the years due to lack of consolidated statistics regarding this category of cattle transport.  
\(^{229}\) Description based on recommendation from Levies Revenue Service (DAFF).
A5.5.2 Estimation of annual Lamb (less than 4 months of age) transport numbers

According to DAFF and the Primary Industries (Excise) Levies Act 1999, a lamb is defined as a sheep that has not cut a permanent incisor tooth. According to this definition, the average number of lamb being transported is estimated as the sum of average annual total sale and no-sale based DAFF transactions (i.e. 23,861,167) plus ‘other’ non transaction based lamb numbers which has been calculated as 20%230 of total DAFF transactions (i.e. 4,772,223) = 28,633,400. Sale transactions according to the Levies Revenue Service at DAFF relates to the number of lambs sold (valued over $75), whereas, no-sale, refers to the number of lambs service killed but where there has not been a sale. However, for the purpose of investigating the cost impact of the proposed standards on lambs under 4 months, it has been proposed by the Sheepmeat Council of Australia that slaughter lambs would not be under 4 months and that only 1% of lambs transported for ‘other’ purposes would be under 4 months.

Therefore the total number of lambs under 4 months of age involved in transport per annum is equal to 1% of ‘other’ transaction based and non-transaction based categories (as shown in Table A5.4) or 1% of a 5 year average of 5,943,930 + 4,772,233 = 107,162231. This would make the remaining total annual transport of ‘lamb over 4 months of age’ (classified as sheep under the proposed standards) equal to 28,633,400 less 107,162 = 28,526,238

Table A5.4 – Average annual number of lamb involved in transport by category (2002/03 to 2006/07)

<table>
<thead>
<tr>
<th>Year</th>
<th>Slaughter (sale)</th>
<th>DAFF transactions (sale)</th>
<th>DAFF transactions (no sale)</th>
<th>Total DAFF transactions</th>
<th>‘Other’ (transaction based)</th>
<th>‘Other’ (non-transactions based)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002/03</td>
<td>16,869,826</td>
<td>14,069,574</td>
<td>6,781,452</td>
<td>20,851,026</td>
<td>3,981,200</td>
<td>4,170,205</td>
<td>25,021,231</td>
</tr>
<tr>
<td>2003/04</td>
<td>16,561,782</td>
<td>19,437,039</td>
<td>5,522,139</td>
<td>24,959,178</td>
<td>8,397,396</td>
<td>4,991,836</td>
<td>29,951,014</td>
</tr>
<tr>
<td>2004/05</td>
<td>17,330,610</td>
<td>19,047,136</td>
<td>5,300,297</td>
<td>24,347,433</td>
<td>7,016,823</td>
<td>4,869,487</td>
<td>29,216,920</td>
</tr>
<tr>
<td>2005/06</td>
<td>18,665,621</td>
<td>18,821,213</td>
<td>5,277,487</td>
<td>24,098,700</td>
<td>5,433,079</td>
<td>4,819,740</td>
<td>28,918,440</td>
</tr>
<tr>
<td>2006/07</td>
<td>20,158,344</td>
<td>19,812,042</td>
<td>5,237,456</td>
<td>25,049,498</td>
<td>4,891,154</td>
<td>5,009,900</td>
<td>30,059,398</td>
</tr>
<tr>
<td>5 year average</td>
<td>17,917,237</td>
<td>18,237,401</td>
<td>5,623,766</td>
<td>23,861,167</td>
<td>5,943,930</td>
<td>4,772,233</td>
<td>28,633,400</td>
</tr>
</tbody>
</table>

A5.5.3 Estimation of annual Sheep transport numbers

The average number of sheep, as defined by DAFF, being transported is estimated as the sum of average annual total sale and no-sale based DAFF transactions (i.e. 31,403,276) plus ‘other’ non transaction based cattle numbers which has been calculated as 20%232 of total DAFF transactions (i.e. 6,280,655) = 37,683,931. Sale transactions according to the Levies Revenue Service at

230 20% has been established on advice from the Sheepmeat Council of Australia.
231 This figure has been rounded.
232 20% has been established on advice from the Sheepmeat Council of Australia.
DAFF relates to the number of sheep sold (valued over $10), whereas, no-sale, refers to the number of sheep service killed but where there has not been a sale.

Table A5.5 – Average annual number of sheep involved in transport by category (2002/03 to 2006/07)

<table>
<thead>
<tr>
<th>Year</th>
<th>Slaughter</th>
<th>Live export</th>
<th>DAFF transactions</th>
<th>DAFF transactions</th>
<th>Total DAFF transactions</th>
<th>‘Other’ (transaction based)</th>
<th>‘Other’ (non-transaction based)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(p)</td>
<td>(q)</td>
<td>(r)</td>
<td>(s)</td>
<td>(t) = (r) + (s)</td>
<td>(u) = (t) – (p) - (q)</td>
<td>(v) = (t) x 20%</td>
<td>(w) = (t) + (v)</td>
</tr>
<tr>
<td>2002/03</td>
<td>13,657,335</td>
<td>5,855,897</td>
<td>31,782,032</td>
<td>1,977,076</td>
<td>33,759,108</td>
<td>14,245,876</td>
<td>6,751,822</td>
<td>40,510,930</td>
</tr>
<tr>
<td>2003/04</td>
<td>10,420,739</td>
<td>3,844,589</td>
<td>26,245,465</td>
<td>1,360,811</td>
<td>27,606,276</td>
<td>13,340,948</td>
<td>5,521,255</td>
<td>33,127,531</td>
</tr>
<tr>
<td>2004/05</td>
<td>11,442,596</td>
<td>3,236,415</td>
<td>27,847,860</td>
<td>1,386,812</td>
<td>29,234,672</td>
<td>14,555,661</td>
<td>5,846,934</td>
<td>35,081,606</td>
</tr>
<tr>
<td>2005/06</td>
<td>11,829,689</td>
<td>4,251,184</td>
<td>31,404,797</td>
<td>1,714,696</td>
<td>33,119,493</td>
<td>17,038,620</td>
<td>6,623,899</td>
<td>39,743,392</td>
</tr>
<tr>
<td>2006/07</td>
<td>13,271,161</td>
<td>4,140,069</td>
<td>31,393,989</td>
<td>1,902,841</td>
<td>33,296,830</td>
<td>15,885,600</td>
<td>6,659,366</td>
<td>39,956,196</td>
</tr>
<tr>
<td>5 year average</td>
<td>12,124,304</td>
<td>4,265,631</td>
<td>29,734,829</td>
<td>1,668,447</td>
<td>31,403,276</td>
<td>15,013,341</td>
<td>6,280,655</td>
<td>37,683,931</td>
</tr>
</tbody>
</table>

For the purpose of analysing the cost impact of the proposed standards on sheep (as opposed to lamb under 4 months of age), the total number of sheep transported is defined as the combination of sheep and lamb numbers under sections A5.5.2 and A5.5.3.

Therefore the total 5 year average for sheep numbers for the purpose of the RIS is considered to be the following:
- slaughter number = 12,124,304 + 17,917,237 = 30,041,541;
- live export number = 4,265,631;
- other transaction based = (5,943,930 x 99%) + 15,013,341 = 20,897,832; and
- other non-transaction based = (4,772,233 x 99%) + 6,280,655 = 11,005,166.

This would bring the total estimated number of sheep being transported per annum equal to 66,210,170.

A5.6 Estimation of annual horse transport numbers

The estimation for the number of horses transported per annum takes into account the following occasions: slaughter; export; import/re-import; equestrian events (major and minor); horse sales; thoroughbred racing; and harness racing. Table A5.6 illustrates the break-up of major and minor equestrian events with a break-up according to type of event. The total number of horses transported to and from major and minor equestrian events is estimated to be 2,127,880 per annum (see Table A5.6).

---

233 Excluding 1% of ‘other’ transaction and non-transaction based transport numbers in Table A5.4.
234 Figure has been rounded.
235 Figure has been rounded.
The number of horse sales assumes 150 sale days per year\textsuperscript{236} and 100 horses sold per day\textsuperscript{237} giving a total of \textbf{15,000} horses transported per annum.

The number of thoroughbred racing horses is estimated to be 31,248\textsuperscript{238} and the number of horse race events which each horse participates in per annum is estimated to be an average of 7\textsuperscript{239}. The number of horses transported for thoroughbred racing events per annum is therefore estimated to be 218,736. Assuming transport both to and from racing events this would provide a total figure of \textbf{437,472} horses transported per annum.

The number of harness racing days per annum is estimated to be 1,988\textsuperscript{240} and the number of trotting horses attending a racing day is 78\textsuperscript{241}. The number of horses transported for harness racing events per annum is therefore estimated to be 155,064. Assuming transport both to and from harness racing events this would provide a total figure of \textbf{310,128} horses transported per annum.

The number of horses involved in non-event recreation is estimated to be 327,763\textsuperscript{242}. Assuming that each horse is transported twice a month and assuming two trips per transport, the total number of horses transported annually for non-event recreational purposes is equal to:

\[
327,763 \times 12 \text{months} \times \text{twice a month} \times 2 \text{trips (including a return trip)}
= 15,732,624 \text{horses transported annually for non-event recreational purposes}
\]

Summing the total horses transported for equestrian events, sales, racing and non-event recreation - gives a total of \textbf{18,652,048} horses transported per annum, as shown in Table A5.7.

Recreation horse movements are estimated at 16 million p.a. and are not included in some calculations because the new standards will not have a major cost impact. This is due to an expected short journey length of generally less than 4 hours duration and expected high compliance with the proposed standards in other areas. The standards none-the-less will apply to all horse movements.

\textbf{Table A5.6 – Summary of horses transported annually for major and minor equestrian events}

<table>
<thead>
<tr>
<th>Equestrian events by type</th>
<th>No. of major events</th>
<th>No. of minor events</th>
<th>No. of horses at major events</th>
<th>No. of horses at minor events</th>
<th>No. of horses transported to and from major events\textsuperscript{243}</th>
<th>No. of horses transported to and from minor events\textsuperscript{244}</th>
<th>Total</th>
</tr>
</thead>
</table>
\textsuperscript{236} Estimates are for 2001 (see Gordon, J, June, 2001).
\textsuperscript{237} Ibid (June, 2001).
\textsuperscript{238} CIE, (September, 2007).
\textsuperscript{239} Gordon, J, (June, 2001).
\textsuperscript{240} Ibid (June, 2001).
\textsuperscript{241} Ibid (June, 2001).
\textsuperscript{242} Ibid (June, 2001).
\textsuperscript{243} No. of horses transported at major events is calculated by taking the product of no. of major events per annum and no. of horses at major events per annum and multiplying this product by 2 (1 trip to the event and 1 trip from the event).
\textsuperscript{244} No. of horses transported at minor events is calculated by taking the product of no. of minor events per annum and no. of horses at minor events per annum and multiplying this product by 2 (1 trip to the event and 1 trip from the event).
Table A5.7 – Summary of total number of horses transported annually by activity

<table>
<thead>
<tr>
<th>Horse activity</th>
<th>No. of horses transported annually</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slaughter</td>
<td>12,400</td>
</tr>
<tr>
<td>Export/import/re-import</td>
<td>5,470</td>
</tr>
<tr>
<td>Equestrian events</td>
<td>212,788</td>
</tr>
<tr>
<td>Horse sales</td>
<td>15,000</td>
</tr>
<tr>
<td>Thoroughbred racing</td>
<td>437,472</td>
</tr>
<tr>
<td>Harness racing</td>
<td>310,128</td>
</tr>
<tr>
<td>Non-event recreation</td>
<td>15,732,624</td>
</tr>
<tr>
<td>Total</td>
<td>18,640,974</td>
</tr>
</tbody>
</table>

Finally a projection of estimates for the total number of livestock transported per annum by road and rail per species is summarised in Table A5.8.

Table A5.8 – Projected average estimates of total number of livestock (000’s) transported per annum by species/class of species by road and rail

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Total no. slaughtered (x)</th>
<th>Total no. exported* (y)</th>
<th>Total no. slaughtered and exported* (z) = (x) + (y)</th>
<th>Total no. transported ‘other’(a1)246</th>
<th>Total no. transported (b1) = (z) + (a1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>Unknown</td>
<td>2.3</td>
<td>0.575</td>
<td>2.875</td>
<td></td>
</tr>
<tr>
<td>Cattle</td>
<td>7,912.576247</td>
<td>713.602248</td>
<td>8,626.178</td>
<td>15,253.928249</td>
<td>23,880.105</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>153</td>
<td>N/A</td>
<td>153</td>
<td>8.053</td>
<td>161.053</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>860</td>
<td>N/A</td>
<td>860</td>
<td>95.556</td>
<td>955.556</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>107.162</td>
<td>107.162</td>
</tr>
</tbody>
</table>

245 See glossary.
246 Proportion of livestock moved for ‘other’ purposes is discussed in section A5.2.
247 See Table A5.3 of Appendix 5.
248 See Table A5.3 of Appendix 5.
249 See addition of columns (f) and (g) of Table A5.3 of Appendix 5.
250 See 1% of addition of column (m) and (n) of Table A5.4 of Appendix 5.
251 See addition of column (i) of Table A5.4 and column (p) of Table A5.5 of Appendix 5.
<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Total no. slaughtered (x)</th>
<th>Total no. exported* (y)</th>
<th>Total no. slaughtered and exported* (z) = (x) + (y)</th>
<th>Total no. transported ‘other’ (a1)</th>
<th>Total no. transported (b1) = (z) + (a1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigs</td>
<td>5,410.525</td>
<td>N/A</td>
<td>5,410.5</td>
<td>2,318.786</td>
<td>7,729.286</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>422,333.325</td>
<td>N/A</td>
<td>422,333.3</td>
<td>N/A</td>
<td>422,333.300</td>
</tr>
<tr>
<td>Chicks</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>443,449.965</td>
<td>443,449.965</td>
</tr>
<tr>
<td>Horses (slaughter, export and recreational)</td>
<td>12.4</td>
<td>5.4257</td>
<td>17.87</td>
<td>15,732.624</td>
<td>15,750.494</td>
</tr>
<tr>
<td>Horses (sales + major events258)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>2,890.48</td>
<td>2,890.48</td>
</tr>
<tr>
<td>Deer</td>
<td>44.4259</td>
<td>N/A</td>
<td>44.4</td>
<td>4.933</td>
<td>49.333</td>
</tr>
<tr>
<td>Camels</td>
<td>0.350259</td>
<td>0.358261</td>
<td>0.708</td>
<td>0.079</td>
<td>0.778</td>
</tr>
<tr>
<td>Alpacas</td>
<td>0.10</td>
<td>0.50</td>
<td>0.60</td>
<td>66.390</td>
<td>66.990</td>
</tr>
<tr>
<td>Goats</td>
<td>1,247.39</td>
<td>57.6</td>
<td>1,305</td>
<td>230.294</td>
<td>1,535.294</td>
</tr>
<tr>
<td>Emus</td>
<td>4.60</td>
<td>N/A</td>
<td>4.60</td>
<td>0.511</td>
<td>5.111</td>
</tr>
<tr>
<td>Ostriches</td>
<td>9.70</td>
<td>N/A</td>
<td>9.70</td>
<td>1.078</td>
<td>10.778</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>468,032.161</strong></td>
<td><strong>5,043.167</strong></td>
<td><strong>473,075.327</strong></td>
<td><strong>496,330.787</strong></td>
<td><strong>969,406.114</strong></td>
</tr>
</tbody>
</table>

* Includes imports and re-imports for horses.

A5.7 Estimate of the total number of decks used for road transport by species (excluding rail)

Of the total number of animals transported, roughly 600,000 head of cattle262 and roughly 900 head of horses263 are transported by rail. These amounts are subtracted from the total amount of cattle and horses transported in Table A5.8. Moreover, the number for horses transported for ‘other’ purposes (i.e. 18,652,048 horses) is also subtracted from the total amount of horses transported annually as these animals are transported via horse floats not decks. Furthermore, the average live weight of animals (per species), the stocking density per species264 per deck (12.5m x 2.4m or 30m²) and the estimated total number of equivalent decks (i.e. 2,329,679) involved in road transport per annum by species (excluding rail) are shown in Table A5.9.

---

252 See column (q) of Table A5.5 of Appendix 5.
253 See addition of 99% of columns (m) and (n) of Table A5.4 plus columns (u) and (v) of Table A5.5 of Appendix 5.
256 Number of chicks transported assumes an estimate which is 5% greater than the number of poultry for meat slaughter transported due to a 5% mortality rate of growing chicks on advice from livestock industry organisations.
258 Includes equestrian and racing.
259 This estimate constitutes an average between 1999 to 2002 (see Tuckwell, C, September, 2003).
260 Horsburgh (2001) cited in MacNamara, K., et al, (January 2003). Note that Adams, P (2001) also provides an estimate of about 8 camels slaughtered per week. Figures for camels are relatively very small and indeed the world total slaughter figure for camels was only 1.34million in 2001 (see MacNamara, K., et al, January 2003).
261 2001 estimate (See Northern Territory Government (2002).
262 Estimate provided by Queensland Rail that notes that in 2006 there were 360,000 head of cattle transported by rail, however this was 40% lower than a typical year due to drought
263 Estimate is determined by assuming 5% of horses are transported by rail on advice of Queensland Rail.
264 Stocking densities are taken from the proposed standards.
### Table A5.9 – Estimates of average live weight, stocking densities per deck (12.5m x 2.4m) and total number of equivalent decks (12.5m x 2.4m) used for road transport (excluding rail) per annum by species/class of species

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Assumed typical live weight of species (kg)</th>
<th>Total stocking density/deck (12.5 x 2.4m)</th>
<th>Estimated total no. of equivalent decks used for road transport/annum/species</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(c1)</td>
<td>(d1)</td>
<td>(e1) = (b1)(^{265})((d1) \times 1,000)</td>
</tr>
<tr>
<td>Buffalo</td>
<td>600kg</td>
<td>19</td>
<td>151</td>
</tr>
<tr>
<td>Cattle</td>
<td>600kg</td>
<td>20</td>
<td>1,164,006</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>50kg</td>
<td>111</td>
<td>1,451</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>30kg</td>
<td>130</td>
<td>7,350</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>30kg</td>
<td>157</td>
<td>683</td>
</tr>
<tr>
<td>Sheep</td>
<td>45kg</td>
<td>128</td>
<td>517,267</td>
</tr>
<tr>
<td>Pigs</td>
<td>100kg</td>
<td>86</td>
<td>89,875</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>2.2kg</td>
<td>840</td>
<td>502,778</td>
</tr>
<tr>
<td>Chicks day old chicks</td>
<td></td>
<td>13,650</td>
<td>32,487</td>
</tr>
<tr>
<td>Horses (slaughter and export)</td>
<td>400kg</td>
<td>25</td>
<td>679</td>
</tr>
<tr>
<td>Deer</td>
<td>100kg</td>
<td>75</td>
<td>658</td>
</tr>
<tr>
<td>Camels</td>
<td>300kg</td>
<td>22</td>
<td>36</td>
</tr>
<tr>
<td>Alpacas</td>
<td>60kg</td>
<td>103</td>
<td>650</td>
</tr>
<tr>
<td>Goats</td>
<td>40kg</td>
<td>136</td>
<td>11,289</td>
</tr>
<tr>
<td>Emus</td>
<td>12months</td>
<td>46</td>
<td>111</td>
</tr>
<tr>
<td>Ostriches juvenile</td>
<td></td>
<td>52</td>
<td>207</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>2,445,298</strong></td>
</tr>
</tbody>
</table>

#### A5.8 Calculation of the total distance of livestock transport by vehicle type (excluding rail)

Total distance involved in road transport of livestock per annum for all species of animals (excluding rail transport) is estimated to be **142,024,436km**, as shown in Table A5.10. This figure is derived as a weighted sum and is calculated by taking the amount of livestock freight (tonnes) as a proportion of total freight (tonnes) and then taking the product of this and the total kilometres of transport of total freight - for both articulated vehicles\(^{266}\) and rigid vehicles:

\[
\text{(Livestock freight tonnes by articulated vehicles/total freight tonnes by articulated vehicles)} \times \text{X total km of transport of total freight by articulated vehicles)} + \text{(Livestock freight tonnes by rigid vehicles/total freight tonnes by rigid vehicles)} \times \text{X total km of transport of total freight by rigid vehicles)}
\]

\(^{265}\) Less 600,000 head for cattle and 900 head of horses transported by rail and not including ‘other’ transport for horses.

\(^{266}\) Articulated vehicles are those with 6 axles or greater - including B-doubles and road trains (see Figure A5.1) (Productivity Commission (2006)).
Total livestock freight transported in 2001 by articulated vehicles was 12,043,643 tonnes and constituted 1.73% of total freight transported by articulated vehicles (i.e. 697,000,000 tonnes). Total distance of transport for total freight moved by articulated vehicles in 2001 was 5,321,000,000 km. Therefore, total distance of transport of livestock by articulated vehicles was 91,942,933 km:

\[
\frac{12,043,643 \text{ tonnes by articulated vehicles}}{697,000,000 \text{ tonnes by articulated vehicles}} \times 5,321,000,000 \text{ km by articulated vehicles} = 91,942,933 \text{ km}
\]

Livestock freight data is not available for freight moved by rigid vehicles. Therefore an assumption has been made regarding the proportion of livestock freight carried by articulated vehicles and rigid vehicles of 70% and 30%, respectively. Subsequently, the amount of livestock weight moved by rigid vehicles (30%) is estimated to be 5,161,561 tonnes and constituted 0.76% of total freight transported by rigid vehicles (i.e. 683,000,000 tonnes) in 2001. Total distance of transport for total freight moved by rigid vehicles in 2001 was 6,627,000,000 km. Therefore, total distance of transport of livestock by rigid vehicles was 50,081,503 km:

\[
\frac{5,161,561 \text{ tonnes by rigid vehicles}}{683,000,000 \text{ tonnes by rigid vehicles}} \times 6,627,000,000 \text{ km by rigid vehicles} = 50,081,503 \text{ km}
\]

The total amount of km of transport of livestock by both articulated and rigid vehicles in 2001 was therefore 142,024,436 km. For the purposes of this RIS it is assumed that the distance involved in the transport of livestock is expected to be constant over the next 5 years.

Table A5.10 – Calculation of estimate of total distance of transport (km) (excluding rail) per annum for livestock freight (2001) – by vehicle type

<table>
<thead>
<tr>
<th>Articulated vehicles</th>
<th>Rigid vehicles</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total livestock freight (Tonnes): (f1)</td>
<td>12,043,643</td>
<td>5,161,561</td>
</tr>
<tr>
<td>Total freight (Tonnes): (g1)</td>
<td>697,000,000</td>
<td>683,000,000</td>
</tr>
<tr>
<td>Total distance travelled by vehicle type (km): (h1)</td>
<td>5,321,000,000</td>
<td>6,627,000,000</td>
</tr>
<tr>
<td>Total livestock freight as a % of total freight: (i1) = (f1)/(g1)</td>
<td>1.73%</td>
<td>0.76%</td>
</tr>
<tr>
<td><strong>Total distance travelled by vehicle type (km) x total livestock freight as a % of total freight: (j1) = (h1) x (i1)</strong></td>
<td>91,942,933</td>
<td>50,081,503</td>
</tr>
</tbody>
</table>

As shown in Table A5.11, this total distance involved in the transport of live animals (142,024,436 km) is apportioned amongst the various species by:

---

270 Proportions assumed are based on advice from livestock industry organisations.
273 This estimate does not include distance (km) travelled by horse floats.
274 Assumes that the proportion of total livestock freight transported by rigid trucks is 30%.
1) taking the total number of decks per species per annum (see Table A5.9) as a percentage of the total number of decks used in the transportation of livestock per annum (i.e. 2,445,298 decks); and

2) multiplying this percentage by the total distance involved in livestock transport.

Table A5.11 – Estimate of total distance of road transport (km) (excluding rail) per annum by species/class of species

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Estimated total no. of equivalent decks (12.5m x 2.4m) used for road transport/annum (e₁)</th>
<th>No. of decks per species as a % of total no. of decks used in the transportation of livestock/ annum (k₁)</th>
<th>Estimated total distance (km) travelled by road/ annum (l₁) = 142,024,436km x (k₁)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>151</td>
<td>0.01%</td>
<td>8,789</td>
</tr>
<tr>
<td>Cattle</td>
<td>1,164,006</td>
<td>47.60%</td>
<td>67,606,207</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>1,451</td>
<td>0.06%</td>
<td>84,271</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>7,350</td>
<td>0.30%</td>
<td>426,917</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>683</td>
<td>0.03%</td>
<td>39,644</td>
</tr>
<tr>
<td>Sheep</td>
<td>517,267</td>
<td>21.15%</td>
<td>30,043,190</td>
</tr>
<tr>
<td>Pigs</td>
<td>89,875</td>
<td>3.68%</td>
<td>5,220,021</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>502,778</td>
<td>20.56%</td>
<td>29,201,647</td>
</tr>
<tr>
<td>Chicks</td>
<td>32,487</td>
<td>1.33%</td>
<td>1,886,876</td>
</tr>
<tr>
<td>Horses (slaughter and export)</td>
<td>679</td>
<td>0.03%</td>
<td>39,426</td>
</tr>
<tr>
<td>Horses(sales + major events)</td>
<td>115,619</td>
<td>4.73%</td>
<td>6,715,236</td>
</tr>
<tr>
<td>Deer</td>
<td>658</td>
<td>0.03%</td>
<td>38,204</td>
</tr>
<tr>
<td>Camels</td>
<td>36</td>
<td>0.00%</td>
<td>2,077</td>
</tr>
<tr>
<td>Alpacas</td>
<td>650</td>
<td>0.03%</td>
<td>37,775</td>
</tr>
<tr>
<td>Goats</td>
<td>11,289</td>
<td>0.46%</td>
<td>655,668</td>
</tr>
<tr>
<td>Emus</td>
<td>111</td>
<td>0.005%</td>
<td>6,453</td>
</tr>
<tr>
<td>Ostriches</td>
<td>207</td>
<td>0.01%</td>
<td>12,038</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,445,298</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>142,024,436</strong></td>
</tr>
</tbody>
</table>

A5.9 Calculation of total hours of transport per annum per species

Total weighted hours of transport per annum per species are shown in Table A5.12. The estimates have been calculated by taking the product of total distance travelled by road/annum/species and weighting this product according to the average associated speeds of the following arrangements of decks:

- Single deck (80km/hr);
- Double deck (80km/hr);
- B-double (triple deck) (80km/hr);

---

275 Recreation horse movements are estimated at 16 million p.a. and are not included in calculations because the new standards will not have a major cost impact due to short journey length and expected high compliance with the proposed standards. The standards none-the-less will apply to all livestock movements.

276 Average speeds for transport vehicle types have been provided by the Livestock Transport Association of Queensland (2007).
- 4-Deck road train (70km/hr); and
- 6-Deck road train (55km/hr).

Figure A5.1 provides an illustration of various vehicle types and deck arrangements used for freight transport.

![Figure A5.1 - Multiple vehicle types and sizes](image)


Note, that if the total kilometres involved in the transport of live animals per annum, 142,024,436km, is divided by the total weighted number of hours of road transport per annum, 1,840,017 hours – the average road speed involved in livestock transport per annum is equal to approximately 77km/hr.

### Table A5.12 - Estimate of weighted total hours of road transport (excluding rail)/ annum/species

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>% of deck type arrangements used</th>
<th>Weighted total hrs of transport/annum (r1) = [(I)(I)x(m1)/80km/hr]+ [(I)(I)x(n1)/80km/hr]+ [(I)(I)x(o1)/80km/hr]+ [(I)(I)x(p1)/70km/hr]+ [(I)(I)x(q1)/55km/hr]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single deck</td>
<td>Double deck</td>
</tr>
<tr>
<td></td>
<td>(m1)</td>
<td>(n1)</td>
</tr>
<tr>
<td>Buffalo</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>Cattle</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>15%</td>
<td>25%</td>
</tr>
<tr>
<td>Sheep</td>
<td>15%</td>
<td>25%</td>
</tr>
<tr>
<td>Pigs</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Chicks</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Horses (slaughter and export)</td>
<td>95%</td>
<td>5%</td>
</tr>
<tr>
<td>Horses (sales + major events)</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Species/class of species</td>
<td>% of deck type arrangements used</td>
<td>Weighted total hrs of transport/annum (r1) = (l1)x(m1)/80km/hr+ (l1)x(n1)/80km/hr+ (l1)x(o1)/80km/hr+ (l1)x(p1)/70km/hr+ (l1)x(q1)/55km/hr</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Deer</td>
<td>50% 45% 5% 0% 0%</td>
<td>478</td>
</tr>
<tr>
<td>Camels</td>
<td>90% 10% 0% 0% 0%</td>
<td>26</td>
</tr>
<tr>
<td>Alpacas</td>
<td>100% 0% 0% 0% 0%</td>
<td>472</td>
</tr>
<tr>
<td>Goats</td>
<td>15% 25% 45% 10% 5%</td>
<td>8,499</td>
</tr>
<tr>
<td>Emus</td>
<td>100% 0% 0% 0% 0%</td>
<td>81</td>
</tr>
<tr>
<td>Ostriches</td>
<td>100% 0% 0% 0% 0%</td>
<td>150</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1,840,017</td>
</tr>
</tbody>
</table>

### A5.10 Calculation of total hours of rail transport per annum per species

The rail freight transport industry is oligopolistic in nature made up of four key operators including: Queensland Rail; Pacific National Pty Limited; Australian Rail Track Corporation Limited; and Twentieth Super Pace Nominees Pty Limited. However, the transport of livestock freight by rail is solely undertaken by Queensland Rail. Estimates for rail transport in terms of: number of animals transported per species; total number of decks per species; distance travelled and the total number of hours of transport – are summarised in Table 5.13.

#### Table A5.13 –Estimate of total hours of rail transport per annum by species/class of species

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Total livestock transported / annum 000’s (s1)</th>
<th>Total no. of wagons (12.5m x 2.4m)/annum (t1) = (s1)/(d1) x 1,000</th>
<th>Typical no. of wagons/ journey (u1)</th>
<th>Total no. of laden trips (v1) = (t1)/(u1)</th>
<th>Average hrs/ journey (w1)</th>
<th>Total hrs of transport/ annum (x1) = (v1) x (w1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>599.98</td>
<td>29,999</td>
<td>45</td>
<td>667</td>
<td>22</td>
<td>14,667</td>
</tr>
<tr>
<td>Horses (slaughter + export)</td>
<td>0.900</td>
<td>35.99</td>
<td>1</td>
<td>36</td>
<td>22</td>
<td>792</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15,459</td>
</tr>
</tbody>
</table>

---

277 A market situation in which a product is supplied by a relatively small number of firms whose actions and policies are constrained by the expected reactions of each other. (Macquarie Dictionary)

278 IBISWorld, (August, 2007).

279 Advice provided by livestock industry organisations.

280 These figures have been rounded.

281 Queensland Rail (2007).
Appendix 6 – Cost and cost saving estimate calculations for Option B – the proposed standards

A6.1. Costing methodology

The following important assumptions/observations are made in the costing of livestock transport:

- whilst not all livestock is transported in 12.5m by 2.4m decks - the aggregate number of livestock transported per annum is converted to equivalent decks in order to make costing feasible;
- the proposed standards do not apply to horses being transported by horse float and statistics to the number of kilometres of transport for livestock per annum only apply to articulated and rigid trucks - therefore this category of horses is eliminated from the costing calculations; and
- the percentage of transport of livestock per species/class of species by single deck, double deck, triple deck, 4 deck road train, and 6 deck road train - has been established on advice provided by livestock industry organisations and has a significant implication on cost estimates.

The costing of various general and specific standards for animal transport begins with establishing the number of animals being transported for slaughter and export, as well as, ‘other’. Once these numbers are confirmed, the typical live weight of livestock species/classes plus stocking densities, obtained from the proposed standards, can be used to determine the number of 12.5m by 2.4m equivalent decks required to transport the numbers of livestock. Once the numbers of equivalent decks have been determined, their numbers as a percentage of total decks used for transport can be used to establish how many kilometres per annum that particular number of equivalent decks has been transported per species/class of species. This is done by apportioning the percentages of equivalent decks to total decks to 142,024,436 total kilometres of livestock transport per annum by articulated and rigid trucks (see Table A5.11 in Appendix 5). Total kilometres of transport per livestock species/class of species, is then converted to total hours of travel by weighting the sum of kilometres travelled by the product of:

- the proportions of deck arrangements used (e.g. 20% single deck; 40% 2-deck; and 40% 4-deck road train etc); and
- the typical speeds associated with each of these types of decks (e.g. 80km/hr for single deck and 2-deck and 70km/hr for a 4-deck road train etc).

Once the weighted total hours of travel is established (see Table A5.12 of Appendix 5), then the cost is calculated as a weighted sum of the total hours of travel by the proportion of different hourly rates per arrangement of deck (e.g. $250/hr for single decks, $352/hr for double decks, and between $406/hr and $462/hr for 4 deck road train etc taken from Table A6.2 of Appendix 6). The weighted total cost can then be divided by the total hours to obtain an average hourly rate for a particular livestock species (see Table A6.3) This average hourly rate can then be used to cost spelling, water deprivation, documentation requirement times etc. Therefore, the
implications of general and specific proposed standards are reported, where possible, as incremental time costs (or savings where costs are negative).

In terms of the specific standards relating to particular species or class of species, an important assumption is made regarding the impact of spelling requirements. Firstly, the incremental cost (cost savings) of each of the specific standards is based on the following important proportions in relation to the spelling of livestock:

**The proportion of journeys where changeover is possible during mandatory spells – 5%:**

- The proportion of journeys that vehicles would unload livestock and drive off, thereby requiring another vehicle to come and pick up the livestock and load them. This proportion is assumed to be 5% of journeys only, given that in most cases, organising another vehicle would not be possible due to the remoteness of their location. The time allowance provided for this scenario is 1.5 hours to load and unload livestock plus the changeover time required to bring in another vehicle (2 hours) = 3.5 hours in total; and

**The proportion of journeys where vehicles are idle during mandatory spells – 95%**

- The proportion of journeys that vehicles must remain with livestock is 95% and the time involved is assumed to be either 12 hours or 24 hours (depending on the circumstance). Including the total time to load and unload livestock, the time allowance provided for in this scenario is equal to 13.5 or 25.5 hours in total, respectively. However this would only be representative of half of journeys where vehicles must be idle (due to remoteness of their location or lack of facilities). With regard to the other half of journeys, where vehicles remain idle, it is assumed that vehicles have access to the facilities to provide animals with the minimum voluntary spell thereby extending the water deprivation times by the amount of the minimum voluntary spell (not including loading and unloading). Voluntary spells considered in this RIS are 4 hours (under options B, B1 and D) and 6 hours (under option E) and 12 hours (under option E1) which would provide for a time allowance of 5.5 hours, 7.5 hours and 13.5 hours, respectively.

These proportions will typically give rise to a general formula for estimating the dollar cost/cost savings where mandatory spells are required - made of three components:

<table>
<thead>
<tr>
<th>Component 1</th>
<th>Component 2</th>
<th>Component 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>= 5% x relevant number of journeys x 3.5hrs (where changeover is possible) x hourly rate +</td>
<td>= 95% x 50% x relevant number of journeys x 13.5hrs (or 25.5hrs) (where there are idle vehicles no voluntary spell) x hourly rate +</td>
<td>= 95% x 50% x relevant number of journeys x 5.5hrs (or 7.5hrs under option E or 13.5 hours under option E1) (where there are idle vehicles with voluntary spell) x hourly rate</td>
</tr>
</tbody>
</table>

However in relation to pig transport, it is acknowledged that in practice there is no actual unloading of vehicles during mandatory spells due to bio-security reasons and, therefore, no changeover of vehicles. As such, it is assumed that vehicles remain idle for 12 hours for 50% of the time where no voluntary spelling is involved and 4 hours (or 6 hours under E) for 50% of the time where voluntary spelling is involved.
6.2. Calculation of the range of estimates for the total cost of livestock transport - ‘base case’

A6.2.1 Calculation of hourly road transport charge

Table A6.1 shows the typical rates for road transport of livestock in North Queensland for 2007 for varying types of arrangements of decks. All rates are: per km per deck; GST exclusive; loaded kilometres only; and assume stable fuel prices.

Table A6.1 – per kilometre rates for livestock road transport north Qld 2007 by deck arrangement

<table>
<thead>
<tr>
<th>Kms</th>
<th>Array of decks used in livestock transport</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-deck</td>
</tr>
<tr>
<td>Under 100</td>
<td>$160.00</td>
</tr>
<tr>
<td>100&gt;300</td>
<td>$2.20</td>
</tr>
<tr>
<td>300&gt;500</td>
<td>$2.20</td>
</tr>
<tr>
<td>500+</td>
<td>$2.20</td>
</tr>
</tbody>
</table>


Table A6.2 converts the per km rate per deck for livestock transport into an estimated range for the hourly rate by taking the product of the lower an upper bound km rates per deck and the associated speeds.

Table A6.2 – Estimated range for hourly rates for livestock road transport North QLD 2007 by deck arrangement

<table>
<thead>
<tr>
<th>Array of decks used in livestock transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed (a)</td>
</tr>
<tr>
<td>Upper per km rate per deck (b)</td>
</tr>
<tr>
<td>Lower per km rate per deck (c)</td>
</tr>
<tr>
<td>Estimated range for hourly rates (d) = (a) x (b) – (a) x (c)</td>
</tr>
</tbody>
</table>

A6.2.2 Calculation of road (excluding rail) transport cost by species

The range for the annual weighted transport cost by livestock species is obtained by the following formula:

\[ \sum = WHTA_i \cdot DA_{ij} \cdot HR_j \]

Where:

WHTA\(_i\) = Weighted hours of transport per annum\(^{282}\) for the \(i\)th species: (for \(i = \) buffalo; cattle; calves for rearing; calves for slaughter; lamb; sheep; pigs; poultry for meat; chicks; horses (slaughter and export); horses (sales + major events); deer; camels; alpacas; goats; emus and ostriches);

DA\(_{ij}\) = Proportion of \(j\)th deck arrangement\(^{283}\) for the \(i\)th species\(^{284}\): (for \(j = \) Single deck; double deck; triple deck B-double; 4 deck road train and 6 deck road train); and

\(^{282}\) See column (r1) of Table A5.12 in Appendix 5
This formula provides the following range of cost per species for transport via road (excluding rail), as shown in Table A6.3. However, the estimates do not include transport of horses by horse float as data regarding the kilometres and hours of transport for this category is unavailable. Therefore, the transport cost for horses only represents transport for the purposes of slaughter and export/import (including re-import), sales and major events as an approximation of commercial horse movements affected financially by the standards.

Therefore, the estimated total annual cost of transporting livestock for slaughter, export/import and ‘other’ purposes by road (excluding rail) in the ‘base case’ is between approximately $604.4m and $670.4m. Note that the total annual transport cost for horses participating in racing and recreational events has, on its own, been estimated to be $10m and $115m, respectively in 2001 dollars. In 2007 constant dollars this total transport cost estimate would be equal to $152,951,056. However a significant proportion of this transport cost for horses, namely recreational events, has not been included for analysis purposes in this RIS as the standards would not be relevant for this category.

Table A6.3 – Estimate of the range of annual cost for road transport (excluding rail) by livestock species

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>No. livestock transported/annum 000's</th>
<th>Lower range of annual weighted cost</th>
<th>Upper range of annual weighted cost</th>
<th>Lower range of transport cost/head = (f)/(e)</th>
<th>Upper range of transport cost/head = (g)/(e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>2.875</td>
<td>$37,508</td>
<td>$39,433</td>
<td>$13.05</td>
<td>$13.72</td>
</tr>
<tr>
<td>Cattle</td>
<td>23,280.122</td>
<td>$319,402,450</td>
<td>$359,747,551</td>
<td>$13.72</td>
<td>$15.45</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>161.053</td>
<td>$332,026</td>
<td>$354,779</td>
<td>$2.06</td>
<td>$2.20</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>955.556</td>
<td>$1,682,055</td>
<td>$1,797,322</td>
<td>$1.76</td>
<td>$1.88</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>107.162</td>
<td>$183,676</td>
<td>$211,952</td>
<td>$1.71</td>
<td>$1.98</td>
</tr>
<tr>
<td>Sheep</td>
<td>66,210.170</td>
<td>$139,195,492</td>
<td>$160,624,413</td>
<td>$2.10</td>
<td>$2.43</td>
</tr>
<tr>
<td>Pigs</td>
<td>7,729.286</td>
<td>$21,956,712</td>
<td>$25,480,225</td>
<td>$2.84</td>
<td>$3.30</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>42,333.300</td>
<td>$91,255,147</td>
<td>$91,255,147</td>
<td>$0.22</td>
<td>$0.22</td>
</tr>
<tr>
<td>Chicks</td>
<td>443,449.965</td>
<td>$5,896,486</td>
<td>$5,896,486</td>
<td>$0.01</td>
<td>$0.01</td>
</tr>
<tr>
<td>Horses (slaughter and)</td>
<td>16.970</td>
<td>$125,719</td>
<td>$125,719</td>
<td>$7.41</td>
<td>$7.41</td>
</tr>
</tbody>
</table>

283 Single deck, double deck, triple deck B-double, 4 deck road train and 6 deck road train.
284 See columns (m1) (n1) (o1) (p1) and (q1) of Table A5.12 in Appendix 5.
285 See row (d) of Table A6.2 in Appendix 6.
287 To convert the cost into 2007 constant dollars, 1) the conversion factor is obtained = producer price index for transport in June 2001/producer price index for transport in June 2007 = 104.2/127.5 = 0.817254901 and then 2) $125m is divided by the conversion factor ($125m/0.817254901 = $152,951,056). For producer price indexes see ABS, (June 2007), Cat. No. 6427.0.
288 Cost for horse transport only includes transport by articulated and rigid trucks (i.e. transport for the purposes of slaughter and export/import (including re-import).
289 See column (b1) of Table A5.8 in Appendix 5 (less 599,980 for cattle and 900 for horses which are transported by rail).
<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>No. livestock transported/annum 000's</th>
<th>Lower range of annual weighted cost (f)</th>
<th>Upper range of annual weighted cost (g)</th>
<th>Lower range of transport cost/head (h) = (f)/(e)</th>
<th>Upper range of transport cost/head (i) = (g)/(e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horses (sales + major events)</td>
<td>2,890.48</td>
<td>$20,985,112</td>
<td>$20,985,112</td>
<td>$7.26</td>
<td>$7.26</td>
</tr>
<tr>
<td>Deer</td>
<td>49.333</td>
<td>$144,221</td>
<td>$146,799</td>
<td>$2.92</td>
<td>$2.98</td>
</tr>
<tr>
<td>Camels</td>
<td>0.787</td>
<td>$6,755</td>
<td>$6,755</td>
<td>$8.59</td>
<td>$8.59</td>
</tr>
<tr>
<td>Alpacas</td>
<td>66.990</td>
<td>$118,047</td>
<td>$118,047</td>
<td>$1.76</td>
<td>$1.76</td>
</tr>
<tr>
<td>Goats</td>
<td>1,535.294</td>
<td>$3,037,828</td>
<td>$3,505,496</td>
<td>$1.98</td>
<td>$2.28</td>
</tr>
<tr>
<td>Emus</td>
<td>5.111</td>
<td>$20,167</td>
<td>$20,167</td>
<td>$3.95</td>
<td>$3.95</td>
</tr>
<tr>
<td>Ostriches</td>
<td>10.778</td>
<td>$37,619</td>
<td>$37,619</td>
<td>$3.49</td>
<td>$3.49</td>
</tr>
<tr>
<td>Total</td>
<td>968,805.231</td>
<td>$604,417,018</td>
<td>$670,353,024</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**A6.2.3 Calculation of hourly rail transport charge**

Rail charges are taken from Queensland Rail (2007) and is equal to 76 cents per km per deck and based on the average speed of livestock trains (i.e. 45km/hr) this would give an estimate of **$34.20 per hour** (i.e. $0.76/km x 45km/hr = $34.20/hr). Flat charges also apply for rail transport including: **$60 per deck** for loading and unloading; and **$90 per train** for stock inspections.

**A6.2.4 Calculation of rail transport cost by species**

As shown in Table 5.13 in Appendix 5, the total hours of annual rail transport for cattle and for horses were 14,667 hours and 792 hours, respectively. Furthermore, the number of single decks involved for cattle and horses were 29,999 and 35.99, respectively. Finally the total number of trains (i.e. journeys) associated with cattle and horse transport per annum was 667 and 36, respectively. Therefore, the total **annual rail transport cost for cattle** is calculated as:

\[
\text{Total annual rail transport cost for cattle} = (14,666.7 \text{hrs} \times \text{hourly rate ($34.20/hr)}) + (29,999 \text{ decks} \times \text{charge per deck ($60/deck)}) + (666.7 \times \text{charge per train ($90/train)}) = 2,361,548.60
\]

Furthermore, the total **annual rail transport cost for horses** is calculated as:

\[
\text{Total hrs of rail transport for horses (791.8hrs x hourly rate ($34.20/hr))} + [\text{total number of decks (35.99 decks) x charge per deck ($60/deck)}] + [\text{total number of journeys/trains (35.99) x charge per train ($90/train)}] = 32,477.54
\]

Subsequently, the total annual transport cost for livestock by rail is **$2,394,026.14**.

**A6.2.5 Total road transport cost by species for 5 years**

The total road transport cost of livestock including transport by articulated and rigid vehicles, horse floats and rail - is between approximately **$606.8m** and **$672.7m** per annum (each is...

---

290 Queensland Rail (2007).
292 A train is typically comprised of 45 decks for cattle and 1 deck for horses.
broken up into its basic components, as shown in Table A6.4). Therefore, the present value of total road transport over 5 years in present value terms in the ‘base case’ is between $2,835,669,966 and $3,143,782,478.46.

Table A6.4 – Estimated annual cost for road transport all livestock species including rail transport

<table>
<thead>
<tr>
<th>Type of transport</th>
<th>Lower range of cost</th>
<th>Upper range of cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total non-rail road</td>
<td>$604,417,018</td>
<td>$670,353,024</td>
</tr>
<tr>
<td>Total rail only</td>
<td>$2,394,026</td>
<td>$2,394,026</td>
</tr>
<tr>
<td><strong>Total annual cost of road transport</strong></td>
<td><strong>$606,811,045</strong></td>
<td><strong>$672,747,050</strong></td>
</tr>
</tbody>
</table>

A6.3 Incremental transaction cost of general standard SA1.1 for receivers of livestock

The incremental cost of standard SA1.1 - in outlining the chain of responsibility to livestock handlers for the duty of care regarding the welfare of livestock under their control – applies to all categories of species other than cattle, horses, pigs and poultry as these are covered by existing codes. Moreover, while this standard simply clarifies responsibilities, it would be likely to impose a time cost on the receiver after unloading at a destination in terms of recording delivery of the livestock. It is assumed that an average of 5 minutes is required by the receiver (i.e. the saleyard operator, abattoir operator; livestock owner/farmer etc) to confirm and record the state of livestock in their responsibility.

In order to determine general time cost the proxy of full-time average weekly earnings per person is $866.40 is utilised. Taking the average working hours per week to be 40 hours, the average hourly wage is therefore $21.66 (i.e. the average opportunity cost of an hour). Taking the product of the hourly wage ($21.66/hr) and time required to record the state of the livestock (0.0833 hours) – the logistical cost of standard SA1.1 on receivers would be $1.80 per shipment/trip of livestock. Furthermore, the number of livestock transports/journeys is estimated as the total number of equivalent (12.5m x 2.4m) decks divided by the weighted sum of number of decks involved in a particular transport per species. Based on column (e1) of Table A5.11 of Appendix 5, the following number of journeys per annum is estimated per species affected by standard SA1.1, as shown in Table A6.5.

---

293 Based on lower estimates of weighted annual cost in Table A6.3.
294 Based on upper estimates of weighted annual cost in Table A6.3.
295 Only including cost of transport of slaughter/export/import/re-import horses.
296 Receivers would include livestock owners, operators or staff at properties, feedlots, saleyards, depots and processing plants.
297 Seasonally adjusted estimate, (see ABS, (May 2007), Average Weekly Earnings, Australia, Cat. No. 6302.0).
298 Full-time work is considered to be 35 hours or more per week.
Table A6.5 – Number of journeys per annum per species/class of species affected by standard SA1.1 (excluding cattle/horses/pigs/poultry and rail)

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Estimated total no. of equivalent decks (12.5m x 2.4m) used for road transport/annum&lt;sup&gt;299&lt;/sup&gt; (j)</th>
<th>Weighted sum of average number of decks involved per trip/species (k) = [(m1&lt;sup&gt;300&lt;/sup&gt;)x1deck]+[(n1)x2decks]+[(o1)x3decks]+[(p1)x4decks]+[(q1)x6decks]</th>
<th>No. of journeys per annum/species affected (l) = (j)/(k)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>151</td>
<td>2.2</td>
<td>69&lt;sup&gt;301&lt;/sup&gt;</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>1,451</td>
<td>1.8</td>
<td>806</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>7,350</td>
<td>1.8</td>
<td>4,084</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>683</td>
<td>2.7</td>
<td>253</td>
</tr>
<tr>
<td>Sheep</td>
<td>517,267</td>
<td>2.7</td>
<td>191,580</td>
</tr>
<tr>
<td>Deer</td>
<td>658</td>
<td>1.55</td>
<td>424</td>
</tr>
<tr>
<td>Camels</td>
<td>36</td>
<td>1.1</td>
<td>33</td>
</tr>
<tr>
<td>Alpacas</td>
<td>650</td>
<td>1</td>
<td>650</td>
</tr>
<tr>
<td>Goats</td>
<td>11,289</td>
<td>2.7</td>
<td>4,181</td>
</tr>
<tr>
<td>Emus</td>
<td>111</td>
<td>1</td>
<td>111</td>
</tr>
<tr>
<td>Ostriches</td>
<td>207</td>
<td>1</td>
<td>207</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>539,853</strong></td>
<td><strong>202,398</strong></td>
<td><strong>202,398</strong></td>
</tr>
</tbody>
</table>

Taking the product of column (l) in Table A6.6 and the opportunity cost of 5 minutes of recording time (i.e. $1.80) it can be shown that $364,316.94 per annum would be incurred by receivers of livestock, as shown in Table A6.6. Moreover the majority of additional cost would be imposed on those dealing with lamb, sheep and goats. Over 5 years, and in present value 2008 dollars, this would equal $1,702,481.92.

Table A6.6 – Additional annual transaction cost for receivers of livestock of standard SA1.1 per livestock category

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>No. of journeys per annum/species affected (l)</th>
<th>Additional transaction cost of 5 min/species shipment/annum (m) = (l) x $1.80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>69</td>
<td>$123.80</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>806</td>
<td>$1,450.92</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>4,084</td>
<td>$7,350.43</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>253</td>
<td>$455.04</td>
</tr>
<tr>
<td>Sheep</td>
<td>191,580</td>
<td>$344,844.63</td>
</tr>
<tr>
<td>Deer</td>
<td>424</td>
<td>$763.87</td>
</tr>
<tr>
<td>Camels</td>
<td>33</td>
<td>$58.51</td>
</tr>
<tr>
<td>Alpacas</td>
<td>650</td>
<td>$1,170.70</td>
</tr>
<tr>
<td>Goats</td>
<td>4,181</td>
<td>$7,525.95</td>
</tr>
<tr>
<td>Emus</td>
<td>111</td>
<td>$200.00</td>
</tr>
<tr>
<td>Ostriches</td>
<td>207</td>
<td>$373.08</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>202,398</strong></td>
<td><strong>$364,316.94</strong></td>
</tr>
</tbody>
</table>

<sup>299</sup> See column (e1) in Table A5.11 of Appendix 5.
<sup>300</sup> Figures for m1, n1, o1, p1 and q1 are from corresponding columns in Table A5.12 of Appendix 5.
<sup>301</sup> These figures have been rounded to the nearest whole.
A6.4 Incremental cost of general standard SA1.2 for transporters

Standard SA1.2 requires that for journeys > 24 hours there must be a document that includes times without water, inspection times and emergency contacts accompanying the livestock. In the absence of sufficient documentation via waybills etc, this would take up to 5 minutes to arrange however, this matter is already covered by existing codes for the transport of cattle, horses, and pigs and is not applicable to poultry. Furthermore, this standard does not apply to calves or ratites as journeys relating to these species do not/and are not permitted to be greater than 24 hours. The standard would impose an additional cost for all other species/varieties of livestock where documentation for journeys greater than 24 hours is insufficient (assumed to be 5%\textsuperscript{302} for the purposes of this calculation). Furthermore, it is assumed that 5%\textsuperscript{303} of all decks are involved in journeys which are greater than 24 hours. The procedure for calculating the incremental cost of this standard begins with calculating the hourly rate of transport for the relevant livestock affected (see section A6.4.1). An estimate is then made regarding the number of journeys per annum per livestock affected (see section A6.4.2). Finally, the incremental costs per species affected per annum are then summarised in section A6.4.3.

\textit{A6.4.1 Calculation of the hourly rate of transport for relevant livestock affected reflecting 0.25\% of 12.5 x 2.4 equivalent decks}

Firstly, the estimate for the total kilometres of travel is adjusted from 142,024,436km to that which reflects only 5\% of journeys that are greater than 24 hours, and only for the affected species (i.e. 0.25\% of all decks for transport of relevant livestock). As shown in column (e1) of Table A5.11 in Appendix 5 – 142,024,436km travelled reflects a total 2,445,298 (12.5m x 2.4) equivalent decks being transported per annum. However, this total amount of equivalent decks is adjusted to 134,963 (12.5m x 2.4m) equivalent decks per annum as shown in Table A6.7 - which is associated with only 7,706,336.38km which is calculated as follows:

\[ 142,024,436 \text{km}/2,445,298 \text{decks} \times 132,683 \text{decks} = 7,706,336.38 \text{km} \]

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>0.25% of estimated total no. of equivalent decks (12.5m x 2.4m) used for road transport/annum (n)</th>
<th>No. of decks per species as a % of total no. of decks used in the transportation of livestock/ annum (o)</th>
<th>Total distance (km) travelled by road/ annum by 0.25% of decks (p) = 7,706,336.38km x (o)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>37.8</td>
<td>0.03%</td>
<td>2,197.13</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>170.6</td>
<td>0.13%</td>
<td>9,910.89</td>
</tr>
<tr>
<td>Sheep</td>
<td>129,316.7</td>
<td>97.46%</td>
<td>7,510,797.39</td>
</tr>
<tr>
<td>Deer</td>
<td>164.4</td>
<td>0.12%</td>
<td>9,551.04</td>
</tr>
<tr>
<td>Camels</td>
<td>8.9</td>
<td>0.01%</td>
<td>519.21</td>
</tr>
<tr>
<td>Alpacas</td>
<td>162.6</td>
<td>0.12%</td>
<td>9,443.74</td>
</tr>
<tr>
<td>Goats</td>
<td>2,822.2</td>
<td>2.13%</td>
<td>163,917.00</td>
</tr>
</tbody>
</table>

\textsuperscript{302} Proposed by AHA

\textsuperscript{303} Proportion recommended by AHA
Total weighted hours of transport per annum per species are shown in Table A6.8. The estimates have been calculated by taking the product of total distance travelled by road/annum/species and weighting this product according to the average associated speeds of the following arrangements of decks304:

- Single deck (80km/hr); Double deck (80km/hr); B-double (triple deck) (80km/hr); 4-Deck road train (70km/hr); and 6-Deck road train (55km/hr)

Table A6.8 - Estimate of weighted total hours of road transport of 0.25% of decks (excluding cattle, calves, horses, poultry, pigs and ratites) per annum by species/class of species

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>% of deck arrangement used for transport</th>
<th>Weighted total hrs of road transport/annum for 0.25% of decks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.25% of estimated total no. of equivalent decks (12.5m x 2.4m) for road transport/annum (n)</td>
<td>[p]x(q)/80km/hr + [p]x(r)/80km/hr + [p]x(s)/80km/hr + [p]x(t)/70km/hr + [p]x(u)/55km/hr</td>
</tr>
<tr>
<td></td>
<td>No. of decks per species as a % of total no. of decks used in the transportation of livestock/annum (o)</td>
<td>(p) = 7,706,336.38km x (o)</td>
</tr>
<tr>
<td></td>
<td>Total distance (km) travelled by road/annum by 0.25% of decks (p)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>132,683</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Based on the formula in section A6.2.2 of this RIS, the following lower and upper estimates of annual costs, costs per hour and costs per 5 minutes, are determined for the transport of 0.25% of all 12.5 x 2.4 equivalent decks used to transport livestock, not including cattle, calves, horses, pigs, poultry and ratites (see Table A6.9).

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304 Average speeds for transport vehicle types have been provided by the Livestock Transport Association of Queensland (2007).

Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock
Table A6.9 - Lower and upper estimates of annual costs, costs per hour and costs per 5 minutes for 0.25% of total decks transported for livestock affected by standard SA1.2

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Lower range of annual weighted cost/species (w)</th>
<th>Upper range of annual weighted cost/species (x)</th>
<th>Lower range of cost/hr (y) = (w)/(v)</th>
<th>Upper range of cost/hr (z) = (x)/(v)</th>
<th>Lower range of cost/5min (a1) = (y) x (5/60)</th>
<th>Upper range of cost/5min (b1) = (z) x (5/60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>$9,377.11</td>
<td>$9,858.28</td>
<td>$327.40</td>
<td>$344.20</td>
<td>$27.28</td>
<td>$28.68</td>
</tr>
<tr>
<td>Lamb</td>
<td>$45,918.91</td>
<td>$52,988.06</td>
<td>$357.43</td>
<td>$412.45</td>
<td>$25.17</td>
<td>$26.62</td>
</tr>
<tr>
<td>Sheep</td>
<td>$34,798,873.12</td>
<td>$40,156,103.29</td>
<td>$357.43</td>
<td>$412.45</td>
<td>$25.17</td>
<td>$26.62</td>
</tr>
<tr>
<td>Deer</td>
<td>$36,055.16</td>
<td>$38,699.86</td>
<td>$302.00</td>
<td>$307.40</td>
<td>$21.68</td>
<td>$23.62</td>
</tr>
<tr>
<td>Camels</td>
<td>$1,688.72</td>
<td>$1,688.72</td>
<td>$260.20</td>
<td>$260.20</td>
<td>$21.68</td>
<td>$23.62</td>
</tr>
<tr>
<td>Alpacas</td>
<td>$29,511.69</td>
<td>$29,511.69</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$20.83</td>
<td>$20.83</td>
</tr>
<tr>
<td>Goats</td>
<td>$759,456.89</td>
<td>$876,374.05</td>
<td>$357.43</td>
<td>$412.45</td>
<td>$29.79</td>
<td>$34.37</td>
</tr>
<tr>
<td>Total</td>
<td>$35,680,881.60</td>
<td>$41,163,223.94</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

A6.4.2 Estimates for number of journeys per livestock affected per annum as per 0.25% of decks

The number of journeys per annum is calculated as the total number of equivalent (12.5m x 2.4m) decks divided by the weighted sum of number of decks involved in a particular transport per species. Based on column (n) of Table A6.7 in this appendix, the following numbers of journeys per annum are estimated per species affected by standard SA1.2, as shown in Table A6.10.

Table A6.10 – Number of journeys per annum per species affected by standard SA1.2

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Estimated total no. of equivalent decks (12.5m x 2.4m) used for road transport/annum (n)</th>
<th>Weighted sum of average number of decks involved per trip/species (c1) = [(q)x1deck]+[(r)x2decks]+[(s)x3decks]+[(t)x4decks]+[(u) x 6decks]</th>
<th>No. of journeys/annum affected (d1) = (n)/(c1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>38</td>
<td>2.2</td>
<td>17</td>
</tr>
<tr>
<td>Lamb</td>
<td>171</td>
<td>2.7</td>
<td>63</td>
</tr>
<tr>
<td>Sheep</td>
<td>129,317</td>
<td>2.7</td>
<td>47,895</td>
</tr>
<tr>
<td>Deer</td>
<td>164</td>
<td>1.55</td>
<td>106</td>
</tr>
<tr>
<td>Camels</td>
<td>9</td>
<td>1.1</td>
<td>8</td>
</tr>
<tr>
<td>Alpacas</td>
<td>163</td>
<td>1</td>
<td>163</td>
</tr>
<tr>
<td>Goats</td>
<td>2,822</td>
<td>2.7</td>
<td>1,045</td>
</tr>
<tr>
<td>Total</td>
<td>132,683</td>
<td>49,298</td>
<td>49,298</td>
</tr>
</tbody>
</table>

A6.4.3 Estimate for annual cost of standard SA1.2 per livestock affected as per 0.25% of decks

The range of additional annual cost of standard SA1.2 per livestock affected (as shown in Table A6.11) is calculated by taking the product of column (d1) in Table A6.10 and columns (a1) and (b1) in Table A6.9. Assuming that document preparation would only require up to 5 minutes, standard SA1.2 is estimated to cost the livestock transport industry an additional $1,466,294.23 to $1,691,067.78 per annum (see Table A6.11) with sheep transporters incurring the largest proportion of this cost. Over 5 years, in 2007 present value dollars, this would equal between $6,852,109.08 and $7,902,493.70.
Table A6.11 – Additional annual transport cost of standard SA1.2 per livestock affected

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>No. of journeys/annum/species (d1)</th>
<th>Lower range of cost/5min (a1)</th>
<th>Upper range of cost/5min (b1)</th>
<th>Lower range of cost of SA1.2/species/annum (e1) = (d1) x (a1)</th>
<th>Upper range of cost of SA1.2/species/annum (f1) = (d1) x (b1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>17</td>
<td>$27.28</td>
<td>$28.68</td>
<td>$469.14</td>
<td>$493.21</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>63</td>
<td>$29.79</td>
<td>$34.37</td>
<td>$1,882.44</td>
<td>$2,172.24</td>
</tr>
<tr>
<td>Sheep</td>
<td>47,895</td>
<td>$29.79</td>
<td>$34.37</td>
<td>$1,426,575.16</td>
<td>$1,646,194.09</td>
</tr>
<tr>
<td>Deer</td>
<td>106</td>
<td>$25.17</td>
<td>$25.62</td>
<td>$2,670.01</td>
<td>$2,717.75</td>
</tr>
<tr>
<td>Camels</td>
<td>8</td>
<td>$21.68</td>
<td>$21.68</td>
<td>$176.21</td>
<td>$176.21</td>
</tr>
<tr>
<td>Alpacas</td>
<td>163</td>
<td>$20.83</td>
<td>$20.83</td>
<td>$3,387.44</td>
<td>$3,387.44</td>
</tr>
<tr>
<td>Goats</td>
<td>1045</td>
<td>$29.79</td>
<td>$34.37</td>
<td>$31,133.83</td>
<td>$35,926.84</td>
</tr>
<tr>
<td>Total</td>
<td>49,298</td>
<td>N/A</td>
<td>N/A</td>
<td>$1,466,294.23</td>
<td>$1,691,067.78</td>
</tr>
</tbody>
</table>

A6.5 Incremental unquantifiable cost of general standard SA2.1 for transporters and livestock owners

Since under the ‘base case’ there is already a requirement for stock-handlers to be experienced, it is expected that the only cost that would be incurred as a result of standard SA2.1 is the costs of familiarisation of the stock-handlers with the standards (approximately 1 hour per stock-handler). Given the absence of any consolidated statistics on the number of stock-handlers in Australia, this incremental cost of the standards remains unquantifiable.

A6.6 Incremental unquantifiable cost of general standard SA4.1 for transporters and livestock owners

Standard SA4.1 requires that livestock be assessed as fit for intended journey at every loading. While this is consistent with existing codes and the inclusion of ‘unfit’ does not impose additional costs per se, there may be additional training costs in regards to recognising disease conditions. This standard remains unquantifiable as it is unknown just how many livestock transporters or owner drivers would require additional training in this regard as part of either induction training or a short course.

A6.7 Incremental veterinary consultation cost of general standard SA4.2 for livestock owners (excluding horses and pigs and poultry)

Standard SA4.2 requires that unfit animals be transported only on specific veterinary advice. It is estimated that approximately 0.01% of total livestock transported would typically be affected by this standard. The average consultation fee for a vet to provide advice is $100/hr.

---

305 Every state except NSW and NT require such training as part of a B-double licence.
306 Advice given by Animal Health Australia (2007).
307 This figure has been recommended by the Sheepmeat Council of Australia.
$1.14/km\textsuperscript{308} of travel. Assuming that a vet would travel an average of 40km\textsuperscript{309} to provide consultation, the total average consultation fee would most likely approximate $145.60 per visit.

Based on Table A5.8 of Appendix 5, it has been established there are roughly 966,515,633 animals transported per annum. However, poultry is excluded from the population as the cost of a visit by a vet would definitely exceed the market value of the animal\textsuperscript{310} and, therefore, it is assumed that humane destruction would be the preferred option. Furthermore, horses and pigs are already covered in this manner by existing codes. Subsequently, the total number of relevant animals per species/class of species that are estimated to be unfit for travel (i.e. 92,985,213) are summarised in Table A6.12. Taking the product of the number of animals which are unfit and the average fee of $145.60 per visit gives a cost of $1,353,864.70 per annum for livestock owners. The majority of this cost would be borne by livestock owners of sheep and cattle. The total cost over 5 years to livestock owners in present value terms (2008 dollars) would be $6,326,717.

Table A6.12 – Additional annual veterinary consultation cost for livestock owners as a result of standard SA4.2 per livestock species/class of species

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Total no. transported\textsuperscript{311} (g1)</th>
<th>Total no. of animals unfit (h1) = (g1) x 0.0001</th>
<th>Annual veterinary costs/species (i1) = (h1) x $145.60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>2,875</td>
<td>0.3</td>
<td>$41.86</td>
</tr>
<tr>
<td>Cattle</td>
<td>23,880,105</td>
<td>2,388.0</td>
<td>$347,694.33</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>161,053</td>
<td>16.1</td>
<td>$2,344.93</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>955,556</td>
<td>95.6</td>
<td>$13,912.89</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>107,162</td>
<td>10.7</td>
<td>$1,560.28</td>
</tr>
<tr>
<td>Sheep</td>
<td>66,210,170</td>
<td>6,621.0</td>
<td>$964,020.07</td>
</tr>
<tr>
<td>Deer</td>
<td>49,333</td>
<td>4.9</td>
<td>$718.29</td>
</tr>
<tr>
<td>Camels</td>
<td>787</td>
<td>0.1</td>
<td>$11.45</td>
</tr>
<tr>
<td>Alpacas</td>
<td>66,990</td>
<td>6.7</td>
<td>$975.37</td>
</tr>
<tr>
<td>Goats</td>
<td>1,535,294</td>
<td>153.5</td>
<td>$22,353.88</td>
</tr>
<tr>
<td>Emus</td>
<td>5,111</td>
<td>0.5</td>
<td>$74.42</td>
</tr>
<tr>
<td>Ostriches</td>
<td>10,778</td>
<td>1.1</td>
<td>$156.92</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>92,985,213</strong></td>
<td><strong>9,298.5</strong></td>
<td><strong>$1,353,864.70</strong></td>
</tr>
</tbody>
</table>

A6.8 Incremental cost of general standard SA5.10 for livestock transporters

Standard SA5.10 deals with the inspection of facilities by a driver prior to loading or receival yard before unloading and affects all species other than horses, and pigs, which are covered under existing codes. The formula for calculating the incremental cost of this standard begins with calculating the hourly rate of transport for the relevant livestock affected\textsuperscript{312} (see section A6.8.1). An estimate is then made regarding the number of journeys per annum per livestock affected (see section A6.8.2). Finally, the incremental costs per species affected per annum are then summarised in section A6.8.3, assuming that inspection time is around 2.5 minutes.

\textsuperscript{308} These average rates have been provided by the Australian Veterinary Association.

\textsuperscript{309} This figure has been recommended by the Sheepmeat Council of Australia.

\textsuperscript{310} The retail price of a 2kg chicken is only around $10.00.

\textsuperscript{311} See Table A5.8 of Appendix 5 for estimates (includes ‘other’ transport).

\textsuperscript{312} Existing codes cover horses and pigs regarding this matter.
A6.8.1 Calculation of the hourly rate of transport for relevant livestock affected

Firstly, the estimate for the total kilometres of travel is adjusted from 142,024,436km to that which reflects total ‘relevant’\(^{313}\) transport. As shown in column (e1) of Table A5.8 in Appendix 5 – 142,024,436km travelled reflects 2,445,298 total (12.5m x 2.4) equivalent decks being transported per annum. However, this total amount of equivalent decks is adjusted to remove non-relevant transport and, as shown in Table A6.13, this gives 2,239,124 (12.5m x 2.4m) equivalent decks per annum, which are associated with \(130,049,754\)km and is calculated in the following way:

\[
142,024,436\text{km}/2,445,298\text{decks} \times 2,239,124\text{decks} = 130,049,754\text{km}
\]

Total weighted hours of transport per annum per species are shown in Table A6.14. The estimates have been calculated by taking the product of total distance travelled by road/annum/species and weighting this product according to the average associated speeds of the following arrangements of decks\(^{314}\):

- Single deck (80km/hr); 2-deck (80km/hr); 3-deck B-double (80km/hr); 4-deck road train (70km/hr); and 6-deck road train (55km/hr)

Table A6.13 – Estimate of total distance of road transport (km) per annum by species/class of species (excluding horses, and pigs)

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Estimated total no. of equivalent decks (12.5m x 2.4m) used for road transport/annum (j1)</th>
<th>No. of decks per species as a % of total no. of decks used in the transportation of livestock/annum (k1)</th>
<th>Estimated total distance (km) travelled by road/annum/species (l1) = 130,049,754km x (k1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>151</td>
<td>0.007%</td>
<td>8,789</td>
</tr>
<tr>
<td>Cattle</td>
<td>1,164,006</td>
<td>51.985%</td>
<td>67,606,207</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>1,451</td>
<td>0.065%</td>
<td>84,271</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>7,350</td>
<td>0.328%</td>
<td>426,917</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>683</td>
<td>0.030%</td>
<td>39,644</td>
</tr>
<tr>
<td>Sheep</td>
<td>517,267</td>
<td>23.101%</td>
<td>30,043,190</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>502,778</td>
<td>22.454%</td>
<td>29,201,647</td>
</tr>
<tr>
<td>Chicks</td>
<td>32,487</td>
<td>1.451%</td>
<td>1,886,876</td>
</tr>
<tr>
<td>Deer</td>
<td>658</td>
<td>0.029%</td>
<td>38,204</td>
</tr>
<tr>
<td>Camels</td>
<td>36</td>
<td>0.002%</td>
<td>2,077</td>
</tr>
<tr>
<td>Alpacas</td>
<td>650.39</td>
<td>0.029%</td>
<td>37,775</td>
</tr>
<tr>
<td>Goats</td>
<td>11,289</td>
<td>0.504%</td>
<td>655,668</td>
</tr>
<tr>
<td>Emus</td>
<td>111</td>
<td>0.005%</td>
<td>6,453</td>
</tr>
<tr>
<td>Ostriches</td>
<td>207</td>
<td>0.009%</td>
<td>12,038</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,239,124</strong></td>
<td><strong>100.000%</strong></td>
<td><strong>130,049,754</strong></td>
</tr>
</tbody>
</table>

\(^{313}\) Relevant means all species/class of species except for horses and pigs.

\(^{314}\) Average speeds for transport vehicle types have been provided by the Livestock Transport Association of Queensland (2007).
Table A6.14 - Estimate of weighted total hours of road transport (excluding horses, pigs and rail transport) per annum by species/class of species

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>% of deck arrangement used for transport</th>
<th>Weighted total hrs of road transport/annum (r1) = [(l1)x(m1)/80km/hr]+[(l1)x(n1)/80km/hr]+[(l1)x(o1)/70km/hr]+[(l1)x(p1)/70km/hr]+[(l1)x(q1)/55km/hr]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single deck (m1)</td>
<td>2-deck (n1)</td>
</tr>
<tr>
<td>Buffalo</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>Cattle</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>15%</td>
<td>25%</td>
</tr>
<tr>
<td>Sheep</td>
<td>15%</td>
<td>25%</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Chicks</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Deer</td>
<td>50%</td>
<td>45%</td>
</tr>
<tr>
<td>Camels</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>Alpacas</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Goats</td>
<td>15%</td>
<td>25%</td>
</tr>
<tr>
<td>Emus</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Ostriches</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the formula in section A6.2.2 of this RIS, the following lower and upper estimates of annual costs, costs per hour and costs per 2.5 minutes, are determined for the transport of livestock not including horses, pigs and rail (see Table A6.15).

Table A6.15 - Lower and upper estimates of annual costs, costs per hour and costs per 2.5 minutes for the transport of livestock affected by standard SA5.10

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Lower range of annual weighted cost/species (s1)</th>
<th>Upper range of annual weighted cost/species (t1)</th>
<th>Lower range of cost/hr (u1)= (s1)/(r1)</th>
<th>Upper range of cost/hr (v1)= (t1)/(r1)</th>
<th>Lower range of cost/2.5min (w1)= (u1)x (2.5/60)</th>
<th>Upper range of cost/2.5min (x1) = (v1) x (2.5/60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>$37,508.45</td>
<td>$39,433.13</td>
<td>$327.40</td>
<td>$344.20</td>
<td>$13.64</td>
<td>$14.34</td>
</tr>
<tr>
<td>Cattle</td>
<td>$319,402,450.02</td>
<td>$359,747,551.30</td>
<td>$356.65</td>
<td>$401.70</td>
<td>$14.86</td>
<td>$16.74</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>$332,026.21</td>
<td>$354,779.28</td>
<td>$315.20</td>
<td>$336.80</td>
<td>$13.13</td>
<td>$14.03</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>$1,682,054.71</td>
<td>$1,797,322.42</td>
<td>$315.20</td>
<td>$336.80</td>
<td>$13.13</td>
<td>$14.03</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>$183,675.66</td>
<td>$211,952.22</td>
<td>$357.43</td>
<td>$412.45</td>
<td>$14.89</td>
<td>$17.19</td>
</tr>
</tbody>
</table>
### A6.8.2 Estimate for the number of journeys per livestock affected per annum by SA5.10

The number of journeys per annum is calculated as the total number of equivalent (12.5m x 2.4m) decks divided by the weighted sum of number of decks involved in a particular transport per species. Based on column (j1) of Table A6.13 in this appendix, the following numbers of journeys per annum are estimated per species affected by standard SA5.10, as shown in Table A6.16.

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Estimated total no. of equivalent decks (12.5m x 2.4m) used for road transport/annum (j1)</th>
<th>Weighted sum of average number of decks involved per trip/species (y1)= [(m1)x1deck]+[(n1)x2decks]+[(o1)x3decks]+[(p1)x4decks]+[(q1)x6decks]</th>
<th>No. of journeys per annum/species affected (z1)= (j1)/(y1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>151</td>
<td>2.2</td>
<td>69</td>
</tr>
<tr>
<td>Cattle</td>
<td>1,164,006</td>
<td>2.75</td>
<td>423,275</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>1,451</td>
<td>1.8</td>
<td>806</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>7,350</td>
<td>1.8</td>
<td>4,084</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>683</td>
<td>2.7</td>
<td>253</td>
</tr>
<tr>
<td>Sheep</td>
<td>517,267</td>
<td>2.7</td>
<td>191,580</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>502,778</td>
<td>1</td>
<td>502,778</td>
</tr>
<tr>
<td>Chicks</td>
<td>32,487</td>
<td>1</td>
<td>32,487</td>
</tr>
<tr>
<td>Deer</td>
<td>658</td>
<td>1.55</td>
<td>424</td>
</tr>
<tr>
<td>Camels</td>
<td>36</td>
<td>1.1</td>
<td>33</td>
</tr>
<tr>
<td>Alpacas</td>
<td>650</td>
<td>1</td>
<td>650.39</td>
</tr>
<tr>
<td>Goats</td>
<td>11,289</td>
<td>2.7</td>
<td>4,181</td>
</tr>
<tr>
<td>Emus</td>
<td>111</td>
<td>1</td>
<td>111</td>
</tr>
<tr>
<td>Ostriches</td>
<td>207</td>
<td>1</td>
<td>207</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,239,124</strong></td>
<td><strong>1,160,938</strong></td>
<td><strong>N/A</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Lower range of annual weighted cost/species (s1)</th>
<th>Lower range of annual weighted cost/species (t1)</th>
<th>Lower range of cost/hr (u1) = (s1)/(r1)</th>
<th>Upper range of cost/hr (v1) = (t1)/(r1)</th>
<th>Lower range of cost/2.5min (w1) = (u1) x (2.5/60)</th>
<th>Upper range of cost/2.5min (x1) = (v1) x (2.5/60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheep</td>
<td>$139,195,492.48</td>
<td>$160,624,413.16</td>
<td>$357.43</td>
<td>$412.45</td>
<td>$14.89</td>
<td>$17.19</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>$91,255,146.62</td>
<td>$91,255,146.62</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$10.42</td>
<td>$10.42</td>
</tr>
<tr>
<td>Chicks</td>
<td>$5,896,486.40</td>
<td>$5,896,486.40</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$10.42</td>
<td>$10.42</td>
</tr>
<tr>
<td>Deer</td>
<td>$144,220.65</td>
<td>$146,799.43</td>
<td>$302.00</td>
<td>$307.40</td>
<td>$12.58</td>
<td>$12.81</td>
</tr>
<tr>
<td>Camels</td>
<td>$6,754.87</td>
<td>$6,754.87</td>
<td>$260.20</td>
<td>$260.20</td>
<td>$10.84</td>
<td>$10.84</td>
</tr>
<tr>
<td>Alpacas</td>
<td>$118,046.76</td>
<td>$118,046.76</td>
<td>$357.43</td>
<td>$412.45</td>
<td>$14.89</td>
<td>$17.19</td>
</tr>
<tr>
<td>Goats</td>
<td>$3,037,827.56</td>
<td>$3,505,496.19</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$10.42</td>
<td>$10.42</td>
</tr>
<tr>
<td>Emus</td>
<td>$20,166.88</td>
<td>$20,166.88</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$10.42</td>
<td>$10.42</td>
</tr>
<tr>
<td>Ostriches</td>
<td>$37,619.00</td>
<td>$37,619.00</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$10.42</td>
<td>$10.42</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$561,349,476.26</strong></td>
<td><strong>$623,761,967.67</strong></td>
<td><strong>N/A</strong></td>
<td><strong>N/A</strong></td>
<td><strong>N/A</strong></td>
<td><strong>N/A</strong></td>
</tr>
</tbody>
</table>
A6.8.3 Estimate for the annual cost of standard SA5.10 per livestock affected

The range of additional annual cost of standard SA5.10 per livestock affected (as shown in Table A6.22 (A6.16)) is calculated by taking the product of column (z1) in Table A6.16 and columns (w1) and (x1) in Table A6.15. Assuming that inspection of facilities would require up to 2.5 minutes, standard SA5.10 is estimated to cost the livestock transport industry an additional $14,865,840.49 to $16,114,310.63 per annum (excluding rail) (see Table A6.17) with cattle transporters incurring the largest proportion of this cost.

Table A6.17 – Additional annual transport cost of standard SA5.10 per livestock species/class of species affected (excluding horses, pigs and rail transport)

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>No. of journeys per annum/species (z1)</th>
<th>Lower range of cost/2.5min (w1)</th>
<th>Upper range of cost/2.5min (x1)</th>
<th>Lower range of cost of SA5.10/species/annum (a2) = (z1) x (w1)</th>
<th>Upper range of cost of SA5.10/species/annum (b2) = (z1) x (x1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>69</td>
<td>$13.64</td>
<td>$14.34</td>
<td>$938.27</td>
<td>$986.42</td>
</tr>
<tr>
<td>Cattle</td>
<td>423,275</td>
<td>$14.86</td>
<td>$16.74</td>
<td>$6,290,042.14</td>
<td>$7,084,564.50</td>
</tr>
<tr>
<td>Calves for rearing</td>
<td>806</td>
<td>$13.13</td>
<td>$14.03</td>
<td>$10,586.38</td>
<td>$11,311.84</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>4,084</td>
<td>$13.13</td>
<td>$14.03</td>
<td>$53,630.90</td>
<td>$57,306.11</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>253</td>
<td>$14.89</td>
<td>$17.19</td>
<td>$3,764.88</td>
<td>$4,344.48</td>
</tr>
<tr>
<td>Sheep</td>
<td>191,580</td>
<td>$14.89</td>
<td>$17.19</td>
<td>$2,853,150.31</td>
<td>$3,292,388.18</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>502,778</td>
<td>$10.42</td>
<td>$10.42</td>
<td>$5,237,268.11</td>
<td>$5,237,268.11</td>
</tr>
<tr>
<td>Chicks</td>
<td>32,487</td>
<td>$10.42</td>
<td>$10.42</td>
<td>$338,408.09</td>
<td>$338,408.09</td>
</tr>
<tr>
<td>Deer</td>
<td>424</td>
<td>$12.58</td>
<td>$12.81</td>
<td>$5,340.02</td>
<td>$5,435.51</td>
</tr>
<tr>
<td>Camels</td>
<td>33</td>
<td>$10.84</td>
<td>$10.84</td>
<td>$352.43</td>
<td>$352.43</td>
</tr>
<tr>
<td>Alpacas</td>
<td>650</td>
<td>$10.42</td>
<td>$10.42</td>
<td>$6,774.88</td>
<td>$6,774.88</td>
</tr>
<tr>
<td>Goats</td>
<td>4,181</td>
<td>$14.89</td>
<td>$17.19</td>
<td>$62,267.67</td>
<td>$71,853.67</td>
</tr>
<tr>
<td>Emus</td>
<td>111</td>
<td>$10.42</td>
<td>$10.42</td>
<td>$1,157.41</td>
<td>$1,157.41</td>
</tr>
<tr>
<td>Ostriches</td>
<td>207</td>
<td>$10.42</td>
<td>$10.42</td>
<td>$2,159.01</td>
<td>$2,159.01</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,160,938</strong></td>
<td><strong>N/A</strong></td>
<td><strong>N/A</strong></td>
<td><strong>$14,865,840.49</strong></td>
<td><strong>$16,114,310.63</strong></td>
</tr>
</tbody>
</table>

With regards to rail there are a further 14,667 journeys for cattle affected (see Table A5.10). Also section A6.1.3 notes that the hourly charge for rail transport is $34.20 per hour or $1.43 per 2.5 minutes. The total additional rail transport cost of standard SA5.10 would therefore be **$20,900**. Therefore the total additional cost to the road transport industry would be between **$14,886,740.49** and **$16,135,210.63** per annum. Over 5 years in 2007 present value dollars this would equal between **$69,566,917.48** and **$75,401,117.32**.
A6.9 Incremental cost of general standard SA5.14 for livestock transporters

Standard SA5.14 relates to the requirement that a driver take action during extreme hot or cold conditions to minimise the risk to the welfare of livestock. This would most likely mean spending 60 minutes placing or 30 minutes removing a tarp – giving an average of 45 minutes of additional activity ‘required’ by this standard. This standard would affect all categories of livestock except for cattle (including calves for rearing) which are bred to suit local climatic conditions and are able to withstand weather extremes in their localities. Furthermore, this standard does not relate to pigs as they are covered under existing provisions. Finally, horses transported for sale and major events (e.g. racing) are assumed to be carried in horse floats which are typically insulated from severe temperature and therefore not included in the cost estimation for this standard.

In the case of lamb and sheep, the Sheepmeat Council of Australia has advised that tarps are not commonly used. Rather, it is assumed that in the instance of extreme heat a lamb/sheep transporter would continue on the journey (at no additional cost) and in the event of extreme cold a transporter would stop for an average of 6 hours to minimise the impact of wind-chill (an additional time cost of idle capital).

The formula for calculating the incremental cost of this standard begins with calculating the hourly rate of transport for the relevant livestock affected (see section A6.9.1). An estimate is then made regarding the number of journeys per annum per livestock affected (see section A6.9.2). Finally, the incremental costs per species affected per annum are then summarised in section A6.9.3 assuming an average of 45 minutes of additional activity (6 hours for lamb and sheep) required by Standard SA5.14.

A6.9.1 Calculation of the hourly rate of transport for relevant livestock affected

The estimate for the total kilometres of travel is adjusted from 142,024,436km to that which reflects total ‘relevant’ transport affected under standard SA5.14. As shown in column (e1) of Table A5.8 in Appendix 5, 142,024,436km travelled reflects a total 2,445,298 (12.5m x 2.4) equivalent decks being transported per annum. However, this total amount of equivalent decks is adjusted to remove non-relevant transport (i.e. cattle (including calves for rearing) and pigs) and, as shown in Table A6.18, entails 1,074,346 (12.5m x 2.4m) equivalent decks per annum which are associated with 69,113,938.49km and is calculated in the following way:

\[
142,024,436\text{km}/2,445,298\text{decks} \times 1,074,346\text{decks} = 69,113,938.49\text{km}
\]

---

315 Based on advice from AHA calves for rearing are excluded because they are covered under SB4.4.
316 Cattle has been excluded based on advice from AHA.
317 Based on advice from AHA.
318 Relevant is all species/class of species except for cattle and pigs.
Table A6.18 – Estimate of total distance of road transport (km) per annum by species/class of species (excluding cattle, calves for rearing, horses for sale and major events and pigs)

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Estimated total no. of equivalent decks (12.5m x 2.4m) used for road transport/annum (e1)</th>
<th>No. of decks per species as a % of total no. of decks used in the transportation of livestock/annum (c2)</th>
<th>Estimated total distance (km) travelled by road/annum/species (d2) = 69,113,938.49km x (c2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>151</td>
<td>0.014%</td>
<td>9,734.32</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>7,350</td>
<td>0.684%</td>
<td>472,861.52</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>683</td>
<td>0.064%</td>
<td>43,909.91</td>
</tr>
<tr>
<td>Sheep</td>
<td>517,267</td>
<td>48.147%</td>
<td>33,276,383.38</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>502,778</td>
<td>46.798%</td>
<td>32,344,275.46</td>
</tr>
<tr>
<td>Chicks</td>
<td>32,487</td>
<td>3.024%</td>
<td>2,089,937.80</td>
</tr>
<tr>
<td>Horses (slaughter and export)</td>
<td>679</td>
<td>0.063%</td>
<td>43,668.62</td>
</tr>
<tr>
<td>Deer</td>
<td>658</td>
<td>0.061%</td>
<td>42,315.61</td>
</tr>
<tr>
<td>Camels</td>
<td>36</td>
<td>0.003%</td>
<td>2,300.33</td>
</tr>
<tr>
<td>Alpacas</td>
<td>650</td>
<td>0.061%</td>
<td>41,840.24</td>
</tr>
<tr>
<td>Goats</td>
<td>11,289</td>
<td>1.051%</td>
<td>726,229.80</td>
</tr>
<tr>
<td>Emus</td>
<td>111</td>
<td>0.010%</td>
<td>7,147.91</td>
</tr>
<tr>
<td>Ostriches</td>
<td>207</td>
<td>0.019%</td>
<td>13,333.60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,074,346</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>69,113,938.49</strong></td>
</tr>
</tbody>
</table>

Total weighted hours of transport per annum per species are shown in Table A6.19. The estimates have been calculated by taking the product of total distance travelled by road/annum/species and weighting this product according to the average associated speeds of the following arrangements of decks.\(^{320}\)

*Single deck (80km/hr); 2-deck (80km/hr); 3-deck B-double (80km/hr); 4-deck road train (70km/hr); and 6-deck road train (55km/hr).*

Table A6.19 - Estimate of weighted total hours of road transport per annum by species/class of species (excluding cattle, calves for rearing, horses for sale and major events and pigs)

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>% of deck arrangement used for transport</th>
</tr>
</thead>
</table>

\(^{319}\) Taken from column (e1) in Table A5.11 of Appendix 5.

\(^{320}\) Average speeds for transport vehicle types have been provided by the Livestock Transport Association of Queensland (2007).
Based on the formula in section A6.2.2 of this RIS, the following lower and upper estimates of annual costs, costs per hour and costs per 45 minutes (or cost per 6 hours for lamb and sheep), are determined for the transport of livestock - not including cattle and rail (see Table A6.20).

**Table A6.20 - Lower and upper estimates of annual costs, costs per hour and costs per 45 minutes (or 6 hours time for lamb and sheep) for the transport of livestock affected by standard SA5.14 (excluding cattle, calves for rearing, horses for sale and major events and pigs)**

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Lower range of annual weighted cost/species (k2)</th>
<th>Upper range of annual weighted cost/species (l2)</th>
<th>Lower range of cost/hr (m2) = (k2)/(j2)</th>
<th>Upper range of cost/hr (n2) = (l2)/(j2)</th>
<th>Lower range of cost per 45min or per 6hrs for lamb and sheep (o2) = (m2) x (45/60 or 6 for lamb and sheep)</th>
<th>Upper range of cost per 45min or per 6hrs for lamb and sheep (p2) = (n2) x (45/60 or 6 for lamb and sheep)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>$41,545.04</td>
<td>$43,676.85</td>
<td>$327.40</td>
<td>$344.20</td>
<td>$245.55</td>
<td>$258.15</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>$1,863,074.40</td>
<td>$1,990,747.01</td>
<td>$315.20</td>
<td>$336.80</td>
<td>$236.40</td>
<td>$252.60</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>$203,442.50</td>
<td>$234,762.14</td>
<td>$357.43</td>
<td>$412.45</td>
<td>$2,144.55</td>
<td>$2,474.70</td>
</tr>
<tr>
<td>Sheep</td>
<td>$154,175,460.18</td>
<td>$177,910,522.63</td>
<td>$357.43</td>
<td>$412.45</td>
<td>$2,144.55</td>
<td>$2,474.70</td>
</tr>
</tbody>
</table>

321 Under the ‘base case’ it is acknowledged that there is 5% movement of slaughter and export horses in 2-deck arrangements (double decks) (see Table A5.12 of Appendix 5). However, the proposed standards (specifically SB8.10) effectively ban double decks and therefore standard SA5.14 is analysed by assuming that 100% of slaughter and export horses would be undertaken in single deck arrangements.
<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Lower range of annual weighted cost/species (k2)</th>
<th>Upper range of annual weighted cost/species (l2)</th>
<th>Lower range of cost/hr (m2) = (k2)/(j2)</th>
<th>Upper range of cost/hr (n2) = (l2)/(j2)</th>
<th>Lower range of cost per 45min or per 6hrs for lamb and sheep (o2) = (m2) x (45/60 or 6 for lamb and sheep)</th>
<th>Upper range of cost per 45min or per 6hrs for lamb and sheep (p2) = (n2) x (45/60 or 6 for lamb and sheep)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poultry for meat</td>
<td>$101,075,860.82</td>
<td>$101,075,860.82</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$187.50</td>
<td>$187.50</td>
</tr>
<tr>
<td>Chicks</td>
<td>$6,531,055.62</td>
<td>$6,531,055.62</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$187.50</td>
<td>$187.50</td>
</tr>
<tr>
<td>Horses (Slaughter and export)</td>
<td>$136,464.45</td>
<td>$136,464.45</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$187.50</td>
<td>$187.50</td>
</tr>
<tr>
<td>Deer</td>
<td>$159,741.42</td>
<td>$162,597.72</td>
<td>$302.00</td>
<td>$307.40</td>
<td>$260.20</td>
<td>$260.20</td>
</tr>
<tr>
<td>Camels</td>
<td>$7,481.81</td>
<td>$7,481.81</td>
<td>$260.20</td>
<td>$260.20</td>
<td>$195.15</td>
<td>$195.15</td>
</tr>
<tr>
<td>Alpacas</td>
<td>$130,750.74</td>
<td>$130,750.74</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$187.50</td>
<td>$187.50</td>
</tr>
<tr>
<td>Goats</td>
<td>$3,364,753.08</td>
<td>$3,882,751.36</td>
<td>$357.43</td>
<td>$412.45</td>
<td>$268.07</td>
<td>$309.34</td>
</tr>
<tr>
<td>Emus</td>
<td>$22,337.21</td>
<td>$22,337.21</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$187.50</td>
<td>$187.50</td>
</tr>
<tr>
<td>Ostriches</td>
<td>$41,667.49</td>
<td>$41,667.49</td>
<td>$250.00</td>
<td>$250.00</td>
<td>$187.50</td>
<td>$187.50</td>
</tr>
<tr>
<td>Total</td>
<td>$267,753,634.75</td>
<td>$292,170,675.86</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**A6.9.2 Estimate for the number of journeys per livestock affected per annum by SA5.14**

The number of journeys per annum is calculated as the total number of equivalent (12.5m x 2.4m) decks divided by the weighted sum of number of decks involved in a particular transport per species. Based on column (e1) of Table A5.11 in Appendix 5, the following numbers of journeys per annum are estimated per species affected by standard SA5.14, as shown in Table A6.21.

Table A6.21 – Number of journeys per annum per species/class of species affected by standard SA5.14 (excluding cattle, calves for rearing, horses for sale and major events and pigs)

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>Estimated total no. of equivalent decks (12.5m x 2.4m) used for road transport/annum (e1) 322</th>
<th>Weighted sum of average number of decks involved per trip/species (q2) = [(e2)x1deck] + [(f2)x2decks] + [(g2)x3decks] + [(h2)x4decks] + [(i2)x6decks]</th>
<th>No. of journeys per annum/species affected (r2) = (e1) 323/(q2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>151</td>
<td>2.2</td>
<td>69</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>7,350</td>
<td>1.8</td>
<td>4,084</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>683</td>
<td>2.7</td>
<td>253</td>
</tr>
<tr>
<td>Sheep</td>
<td>517,267</td>
<td>2.7</td>
<td>191,580</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>502,778</td>
<td>1</td>
<td>502,778</td>
</tr>
<tr>
<td>Chicks</td>
<td>32,487</td>
<td>1</td>
<td>32,487</td>
</tr>
</tbody>
</table>

322 Taken from column (e1) in Table A5.11 of Appendix 5.
323 Taken from column (e1) in Table A5.11 of Appendix 5.
The range of additional annual cost of standard SA5.14 per livestock affected (as shown in Table A6.23) is calculated by taking the product of column (r2) in Table A6.21 and columns (o2) and (p2) in Table A6.20 and then multiplying these products by the probability of ‘extreme weather’. The probability of extreme cold or hot days (i.e. 5.216%) for all livestock (except for lamb and sheep) is determined by taking account of the total average number of days per annum in which there are extreme weather conditions, as shown in Table A6.22, and dividing them by the number of days in the year. For lamb and sheep a probability of cold days only is used (i.e. 1.211%).

Table A6.22 – Average extreme weather days per annum, Australia 2000 – 2006

<table>
<thead>
<tr>
<th>Type of extreme weather</th>
<th>Average number of days 2000-06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very hot days</td>
<td>14.62</td>
</tr>
<tr>
<td>Very cold days</td>
<td>4.42</td>
</tr>
<tr>
<td>Total number of days</td>
<td>19.04</td>
</tr>
</tbody>
</table>


Assuming that taking action to minimise temperature extremes (i.e. removal or placement of a tarp) would require up to an average of 45 minutes, and for sheep and lamb the standard would involve a 6 hour stop in extreme cold weather - standard SA5.14 is estimated to cost the livestock transport industry an additional $10,348,047 to $11,127,604 per annum (excluding rail, cattle, calves for rearing, horses for sale and major events and pigs) (see Table A6.23) with poultry transporters incurring the largest proportion of this cost.
Table A6.23 – Additional annual transport cost of standard SA5.14 per livestock affected (excluding rail, cattle, calves for rearing and pigs)

<table>
<thead>
<tr>
<th>Species/class of species</th>
<th>No. of journeys per annum/species (r2)</th>
<th>Lower range of cost per 45min or per 6hrs for lamb and sheep (o2)</th>
<th>Upper range of cost per 45min or per 6hrs for lamb and sheep (p2)</th>
<th>Lower range of cost of SA5.14/species/annum (s2) = (r2) x (o2) x 5.216% (or 1.211% for lamb and sheep)</th>
<th>Upper range of cost of SA5.14/species/annum (t2) = (r2) x (p2) x 5.216% (or 1.211% for lamb and sheep)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>69</td>
<td>$245.55</td>
<td>$258.15</td>
<td>$880.93</td>
<td>$926.13</td>
</tr>
<tr>
<td>Calves for slaughter</td>
<td>4,084</td>
<td>$236.40</td>
<td>$252.60</td>
<td>$50,352.98</td>
<td>$53,803.56</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>253</td>
<td>$2,144.55</td>
<td>$2,474.70</td>
<td>$6,565.35</td>
<td>$7,576.07</td>
</tr>
<tr>
<td>Sheep</td>
<td>191,580</td>
<td>$2,144.55</td>
<td>$2,474.70</td>
<td>$4,975,437.64</td>
<td>$5,741,398.21</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>502,778</td>
<td>$187.50</td>
<td>$187.50</td>
<td>$4,917,166.28</td>
<td>$4,917,166.28</td>
</tr>
<tr>
<td>Chicks</td>
<td>32,487</td>
<td>$187.50</td>
<td>$187.50</td>
<td>$317,724.59</td>
<td>$317,724.59</td>
</tr>
<tr>
<td>Horses (Slaughter and export)</td>
<td>679</td>
<td>$187.50</td>
<td>$187.50</td>
<td>$6,638.76</td>
<td>$6,638.76</td>
</tr>
<tr>
<td>Deer</td>
<td>424</td>
<td>$226.50</td>
<td>$230.55</td>
<td>$5,013.64</td>
<td>$5,103.29</td>
</tr>
<tr>
<td>Camels</td>
<td>33</td>
<td>$195.15</td>
<td>$195.15</td>
<td>$330.89</td>
<td>$330.89</td>
</tr>
<tr>
<td>Alpacas</td>
<td>650</td>
<td>$187.50</td>
<td>$187.50</td>
<td>$6,360.80</td>
<td>$6,360.80</td>
</tr>
<tr>
<td>Goats</td>
<td>4,181</td>
<td>$268.07</td>
<td>$309.34</td>
<td>$58,461.87</td>
<td>$67,461.98</td>
</tr>
<tr>
<td>Emus</td>
<td>111</td>
<td>$187.50</td>
<td>$187.50</td>
<td>$1,086.67</td>
<td>$1,086.67</td>
</tr>
<tr>
<td>Ostriches</td>
<td>207</td>
<td>$187.50</td>
<td>$187.50</td>
<td>$2,027.05</td>
<td>$2,027.05</td>
</tr>
<tr>
<td>Total</td>
<td>737,536</td>
<td>N/A</td>
<td>N/A</td>
<td>$10,348,047.43</td>
<td>$11,127,604.27</td>
</tr>
</tbody>
</table>

With regards to rail, there are a further 36 journeys for horses affected by standard SA5.14 (see Table A5.13) travelling an average of 22 hours per journey. Also section A6.1.3 notes that the hourly charge for rail transport is $34.20 per hour or $25.65 per 45 minutes. The total additional rail transport cost of standard SA5.14 would therefore be 36 journeys x 22 hours x $25.65/journey x the probability of extreme hot or cold days (i.e. 5.216%) = $1,041.05. Therefore the total additional cost to the road transport industry would be between $10,349,088.48 and $11,128,645.32 per annum. Over 5 years in 2007 present value dollars this would equal between $48,362,110.21 and $52,005,041.07.

A6.10 Incremental unquantifiable cost of general standard SA5.15 for livestock transporters

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324 This figure has been rounded
Standard SA5.14, which requires assessment removal, treatment or humane destruction of livestock in the incidence of a road accident involving a transport vehicle, would constitute a very minor cost for transporters in needing to take action. It is assumed that the number of vehicle roll-overs and accidents per annum is likely to be few per annum but the figure is unknown. To this extent the impact of this standard remains unquantifiable in dollar terms.

A6.11 Incremental unquantifiable costs of general standards SA6.3, SA6.4 and SA6.7 for livestock owners

Standard SA6.3, a new standard for all livestock, requires that in relation to destroying an animal a competent person must be contacted as soon as possible if one is not available. Taking reasonable action to confirm death of livestock under standard SA6.4 would involve minor training costs to owner/drivers (except in the case of poultry) who are unfamiliar or have insufficient skills in this regard. Additionally, SA6.7, a new standard for all livestock, specifies that blunt trauma to the head be only used on newborns less than 24 hours old or piglets up to 15kg followed by an effective killing method. Again SA6.7 would impose minor training costs as part of induction training or a short course for owner/drivers who would use blunt trauma and are unfamiliar with effective killing methods. Given that 1) the number of owner/drivers; and 2) the proportion of these owner/drivers that need training - are both unknown these standards remain unquantifiable in a dollar sense.

A6.12 Incremental net cost of alpaca standard SB1.1 in conjunction with SB1.3 for transporters

Standard SB1.3, which sets out the minimum spelling under maximum water deprivation times under SB1.1, would impose additional time costs for transporters. Specifically, wethers over 12 months old would have a maximum water deprivation time of 36 hours with an associated mandatory spell of 24 hours and non-pregnant females and males over 12 months old have a maximum water deprivation time of 24 hours with an associated mandatory spell of 12 hours.

Other classes of alpacas including alpacas 6 to 12 months old and pregnant females up to 7.5 months pregnant (i.e. in their 1st and 2nd trimester) have a maximum water deprivation time of 8 hours. Pregnant alpacas more than 7.5 months pregnant (i.e. in their 3rd trimester) excluding the last 4 weeks have a maximum water deprivation time of 4 hours. Finally, lactating alpacas with crias up to 6 months old have a maximum water deprivation time of 2 hours. While there are no mandatory spelling requirements under standard SB1.3 for these classes of alpaca, it is assumed that a time cost of 10 minutes would be incurred – in terms of additional watering arrangements - for all journeys that go over their associated maximum water deprivation times. While current industry practice is that water is provided on vehicle for most journeys, avoiding the need for spells or additional watering time arrangements, this is assumed to be relevant for 80% of the journeys.

Secondly, as shown in Table A6.24, specific proportions are assumed for the different classes of alpaca (66,990 head) which are transported. Also it is assumed that where spell periods are for

---

325 Wether = castrated male.
326 Crias = camelids less than one year old.
327 Proposed by AHA
12 hours or more that 1 hour loading and 30 minutes unloading time apply, whereas for spell periods under this amount, alpacas remain on the vehicle due to welfare and biosecurity reasons.

Table A6.24 – Proportions and number of alpacas transported – by class

<table>
<thead>
<tr>
<th>Class of species</th>
<th>Proportion of class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wethers over 12 months old</td>
<td>20%</td>
</tr>
<tr>
<td>Non-pregnant females and entire over 12 months old</td>
<td>20%</td>
</tr>
<tr>
<td>Alpacas 6 to 12 months old</td>
<td>20%</td>
</tr>
<tr>
<td>Alpacas up to 7.5 months pregnant (1st and 2nd trimester)</td>
<td>7.5%</td>
</tr>
<tr>
<td>Alpacas more than 7.5 months pregnant (3rd trimester)</td>
<td>7.5%</td>
</tr>
<tr>
<td>Lactating alpacas with crias up to 6 month old</td>
<td>5%</td>
</tr>
<tr>
<td>Crias up to 6 months old</td>
<td>15%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Other assumptions made in order to calculate the cost to transporters include:

- The proportion of journeys that go over 36 hours, 24 hours, 8 hours, 4 hours and 2 hours for the respective classes of alpacas is 5%, 10%, 20%, 90% and 100% respectively;
- 3.5 hours of loading/unloading and changeover time will be incurred for the relevant proportion of journeys 5% of 650.4 journeys for wethers over 12 months and non-pregnant females and males over 12 months;
- 25.5 hours of loading/unloading and stationary vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of the proportion of 650.4 journeys relating to wethers over 12 months);
- 13.5 hours of loading/unloading and stationary vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of the proportion of 650.4 journeys relating to non-pregnant females and males over 12 months);
- 5.5 hours including 1.5 hours loading/unloading and 4 hours minimum voluntary spelling time will be saved for 50% of the time where journeys do not have the ability for changeover for wethers over 12 months and non-pregnant females and males over 12 months.

328 Proposed by AHA.
329 Proposed by AHA.
330 Proposed by AHA.
331 See Table A6.23 of Appendix 6 in this RIS.
Therefore, the additional cost for each of the alpaca classes would be equal to:

**For wethers over 12 months old (where water is not provided on the vehicle):**

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} [5\% \times 5\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 3.5\text{hrs} \times \$250/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} [50\% \times 95\% \times 5\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 25.5\text{hrs} \times \$250/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4hrs voluntary spelling} [50\% \times 95\% \times 5\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 5.5\text{hrs} \times \$250/\text{hr}] = \$4,845.48 \text{ per annum}
\]

**For non-pregnant females and males over 12 months old (where water is not provided on the vehicle):**

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} [5\% \times 10\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 3.5\text{hrs} \times \$250/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} [50\% \times 95\% \times 10\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 13.5\text{hrs} \times \$250/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4hrs voluntary spelling} [50\% \times 95\% \times 10\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 5.5\text{hrs} \times \$250/\text{hr}] = \$5,983.68 \text{ per annum}
\]

**For alpacas – 6 to 12 months old and pregnant females up to 7.5 month pregnant (1st and 2nd trimester) (where water is not provided on the vehicle):**

\[
\text{Time cost for journeys for additional watering time} [20\% \times 20\% \times 27.5\% \times 650.4 \text{ journeys} \times 0.167\text{hrs} \times \$250/\text{hr}] = \$369.64 \text{ per annum}
\]

**For pregnant alpacas more than 7.5 months pregnant (3rd trimester) excluding the last 4 weeks (where water is not provided on the vehicle):**

\[
\text{Time cost for journeys for additional watering time} [90\% \times 20\% \times 7.5\% \times 650.4 \text{ journeys} \times 0.167\text{hrs} \times \$250/\text{hr}] = \$731.70 \text{ per annum}
\]

**For lactating alpacas with crias up to 6 months old (where water is not provided on the vehicle):**

\[
\text{Time cost for journeys for additional watering time} [20\% \times 20\% \times 650.4 \text{ journeys} \times 0.167\text{hrs} \times \$250/\text{hr}] = \$2,168.00 \text{ per annum}
\]

The specification of minimum mandatory spelling periods for all classes of alpaca would impose an incremental cost of **$14,098.50** per annum.

However, standard SB1.1 which increases the water deprivation time from 24 hours to 36 hours for wethers over 12 months old would provide a very minor incremental cost savings in relation to the ‘base case’. The time saved of 10 minutes in not having to provide food and water would
relate to the proportion of journeys that are greater than 24 hours (10%\textsuperscript{332}) and the proportion of journeys where water is not provided on the vehicle (20%).

The cost savings in relation to the ‘base case’ would be calculated in the following way:

\[
\text{For wethers over 12 months old} = [10\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 0.167 \text{hrs} \times $250/\text{hr}] \\
= \$108.40 \text{ per annum}
\]

Therefore the net incremental cost of standard SB1.1 in conjunction with SB1.3 would be equal to $14,098.50 less $108.40 = $13,990.10 per annum. Over 5 years and in present value terms (2008 dollars), this would be equal to $65,376.86.

**A6.13 Incremental cost savings of alpaca standard SB1.2 for transporters**

Standard SB1.2, which allows an extension of journey times to 72 hours if minimum requirements are met, would result in cost savings to alpaca transporters for alpacas over 6 months old and wethers. The cost savings would rely on the following assumptions:

- the proportion of circumstances where minimum requirements for extension of water deprivation times under standard SB1.2 are met (i.e. 80%);
- the number of journeys is 650.4;
- 3.5 hours of loading/unloading and changeover time will be saved for the relevant proportion of journeys (i.e. 5% of the proportion of 650.4 journeys\textsuperscript{333} relating to wethers over 12 months and non-pregnant females and males over 12 months);
- 25.5 hours of loading/unloading and stationary vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of the proportion of 650.4 journeys relating to wethers over 12 months);
- 13.5 hours of loading/unloading and stationary vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of the proportion of 650.4 journeys relating to non-pregnant females and males over 12 months);
- 5.5 hours including 1.5 hours loading/unloading and 4 hours minimum voluntary spelling time will be saved for 50% of the time where journeys do not have the ability for changeover for wethers over 12 months and non-pregnant females and males over 12 months; and
- the proportion of circumstances where journeys are greater than 36 hours (i.e. 5%\textsuperscript{334});
- the proportion of journeys that are greater than 24 hours (i.e. 10%\textsuperscript{335});
- the proportion of journeys that are greater than 8 hours (i.e. 20%\textsuperscript{336}); and
- the transport cost of alpacas is $250/hour.\textsuperscript{337}

\textsuperscript{332} Proposed by AHA.
\textsuperscript{333} See Table A6.23 of Appendix 6 in this RIS.
\textsuperscript{334} Proposed by AHA.
\textsuperscript{335} Proposed by AHA.
\textsuperscript{336} Proposed by AHA.
\textsuperscript{337} Proposed by AHA.
Therefore, the incremental annual cost savings per class of alpaca would be calculated in the following way:

**For wethers over 12 months old:**

- Cost savings for 5% of journeys where there are no idle trucks: 
  \[5\% \times 5\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 3.5\text{hrs} \times \$250/\text{hr}\] +

- Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling: 
  \[50\% \times 95\% \times 5\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 25.5\text{hrs} \times \$250/\text{hr}\] +

- Cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling: 
  \[50\% \times 95\% \times 5\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 5.5\text{hrs} \times \$250/\text{hr}\] = $4,845.48 per annum

**For non-pregnant females and males over 12 months old:**

- Cost savings for 5% of journeys where there are no idle trucks: 
  \[5\% \times 10\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 3.5\text{hrs} \times \$250/\text{hr}\] +

- Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling: 
  \[50\% \times 95\% \times 10\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 13.5\text{hrs} \times \$250/\text{hr}\] +

- Cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling: 
  \[50\% \times 95\% \times 10\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 5.5\text{hrs} \times \$250/\text{hr}\] = $5,983.68 per annum

**For alpacas – 6 to 12 months old:**

- Cost savings for journeys where additional watering time is avoided: 
  \[20\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 0.167\text{hrs} \times \$250/\text{hr}\] = $433.60

The net cost saving of standard SB1.2 for all relevant classes of alpaca would therefore be equal to $11,262.76 per annum. Over 5 years, and in present value terms (2008 dollars), this would equal $52,631.77.

A6.14 Incremental cost of alpaca standard SB1.4 for livestock owners

Standard SB1.4, which requires that alpacas known to be in the last month of pregnancy must be transported under veterinary advice unless the journey is less than 4 hours duration, would result in an incremental cost to livestock owners. The incremental cost would rely on the following assumptions:

- the cost of a consultation by a vet is $145.60 per visit;\(^{338}\)
- the number of alpacas transported per annum is 66,990;\(^{339}\)
- 5%\(^{340}\) of all pregnant alpacas (15% of all alpacas) transported per annum are assumed to be in their last month of pregnancy; and

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\(^{337}\) See Table A6.20 of Appendix 6 in this RIS.

\(^{338}\) See section A6.7 of Appendix 6 in this RIS for source of cost.

\(^{339}\) See Table A5.8 of Appendix 5 in this RIS for estimate.

\(^{340}\) Proposed by AHA.
• 90%\textsuperscript{341} of all alpacas would travel greater than 4 hours duration.

Subsequently, the annual incremental veterinary cost for livestock owners is calculated in the following way:

$$5\% \times 15\% \times 90\% \times 66,990 \times \$145.60/\text{visit} = \$65,837.77 \text{ per annum}$$

Over 5 years, and in present value terms (2008 dollars), this would equal $307,665.12.

A6.15 Incremental unquantifiable one-off cost of alpaca standard SB1.7 for livestock owners

The cost of standard SB1.7 for livestock owners relates to the issue of ensuring humane destruction of alpacas. Recent estimates for the Australian Alpacas Association put the number of owner/driver alpaca transporters at 360 part-time breeders and 30 full-time breeders. However, this does not cover the remaining instances of owner/driver transport including: national show events, regional auctions, annual auctions and show sales (see Table A5.2 of Appendix 5). This is likely to impose minor training costs for blunt trauma techniques for dealing with injured crias. In regards to injured adult alpacas it is highly likely that all livestock owners have either a firearm or captive bolt pistol readily available. However, given that the number of owner/drivers is unknown (including the proportion that would require training in humane destruction) – a lack of such information leaves this standard as unquantifiable in dollar terms.

A6.16 Incremental cost of buffalo standard SB2.1 in conjunction with SB2.2 for livestock transporters

Standard SB2.2, which sets out the minimum spelling, would impose additional time costs for transporters going over the maximum water deprivation time under SB1.1. Specifically, adult buffalo over 6 months old would have a maximum water deprivation time of 36 hours with an associated minimum mandatory spell of 24 hours. The mandatory spell for a maximum water deprivation time of 48 hours under the ‘base case’ is only 12 hours. For the purpose of costing these associated standards it is assumed that 80\%\textsuperscript{342} of buffalo are over 6 months old and that the proportion of 68.8 journeys\textsuperscript{343} which are between 36 hours and 48 hours is 20\%\textsuperscript{344}. The incremental cost would rely additionally on the following assumptions:

• 3.5 hours of loading/unloading and changeover time will be incurred for 5\% of 68.8 journeys after first 36 hours;
• 13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95\% of 68.8 journeys);

\textsuperscript{341} Proposed by AHA.
\textsuperscript{342} Proposed by AHA.
\textsuperscript{343} See Table A6.21 of Appendix 6 in this RIS for this estimate.
\textsuperscript{344} Proposed by AHA.
5.5 hours minimum voluntary spelling time will be incurred (including 1.5 hours loading/unloading) for 50% of the time where journeys do not have the ability for changeover; and

- the cost of buffalo transport is between $327.40/hr and $344.20/hr.\(^{345}\)

Subsequently, the annual incremental cost for livestock transporters is calculated in the following way:

Between:

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \quad [5\% \times 20\% \times 80\% \times 68.8 \text{ journeys} \times 3.5 \text{ hours added} \times $327.40/\text{hr}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \quad [50\% \times 95\% \times 20\% \times 80\% \times 68.8 \text{ journeys} \times 13.5 \text{ hours added} \times $327.40/\text{hr}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} \quad [50\% \times 95\% \times 20\% \times 80\% \times 68.8 \text{ journeys} \times 5.5 \text{ hours added} \times $327.40/\text{hr}]
\]

\[
= $33,156.98 \text{ per annum}
\]

and

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \quad [5\% \times 20\% \times 80\% \times 68.8 \text{ journeys} \times 3.5 \text{ hours added} \times $344.20/\text{hr}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \quad [50\% \times 95\% \times 20\% \times 80\% \times 68.8 \text{ journeys} \times 13.5 \text{ hours added} \times $344.20/\text{hr}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} \quad [50\% \times 95\% \times 20\% \times 80\% \times 68.8 \text{ journeys} \times 5.5 \text{ hours added} \times $344.20/\text{hr}]
\]

\[
= $34,858.37 \text{ per annum}
\]

Over 5 years, and in present value terms (2008 dollars), this would equal between $154,945.18 and $162,895.94.

A6.17 Incremental cost of buffalo standard SB2.3 for livestock owners

Standard SB2.3 requires that buffalo known to be in the last 4 weeks of pregnancy must be transported under veterinary advice unless the journey is less than 4 hours duration and would result in a minor incremental cost to livestock owners. The incremental cost would rely on the following assumptions:

- the cost of a consultation by a vet is $145.60 per visit\(^{346}\); 
- the number of buffalo transported per annum is 2,875\(^{347}\);

\[^{345}\text{See Table A6.20 of Appendix 6 in this RIS for this estimate.}\]

\[^{346}\text{See section A6.7 of Appendix 6 in this RIS for source of cost.}\]
1% of a total buffalo transported per annum are assumed to be in the last 4 weeks of pregnancy; and
90% of all buffalo would travel more than 4 hours distance.

Subsequently, the annual incremental veterinary cost for livestock owners is calculated in the following way:

\[
1\% \times 90\% \times 2,875 \times 145.60/\text{ visit} = \$3,767.40 \text{ per annum}
\]

Over 5 years, and in present value terms (2008 dollars), this would equal \$17,605.36.

A6.18 Incremental unquantifiable cost of buffalo standard SB2.4 for transporters

Standard SB2.4 would result in minimal additional time costs in terms of loading for transport by restricting the use of electric prodders. However this would only be the case in the instance where an electric prodder is used despite the fact that reasonable action to cause movement was sufficient. Given that the instance of this occurring is unknown, this incremental cost remains unquantifiable.

A6.19 Incremental net cost of buffalo standard SB2.6 for transporters

Standard SB2.6, which requires that buffalo suffering from heat stress during transport must be cooled at the first opportunity by water spray, is a new standard which would have minimal costs. The cost would rely on the following assumptions:

- some water + sprayer is carried with the transport vehicle;
- average time cost of spraying heat stressed buffalo (assuming a couple per journey) is approximately 20 minutes;
- the proportion of journeys where a buffalo would suffer from heat stress is 5%;
- the number of buffalo journeys is 68.8 per annum on average; and
- the hourly transport cost of a buffalo journey is between \$327.40 and \$344.20.

Subsequently, the annual incremental net time cost for transporters needing to water spray heat stressed buffalo is calculated in the following way:

\[
\text{Between: } 5\% \times 68.8 \text{ journeys} \times \$327.40/\text{ hr} \times (20/60) = \$375.42 \text{ per annum}
\]

347 See Table A5.8 of Appendix 5 in this RIS for estimate.
348 Proposed by AHA.
349 Proposed by AHA.
350 Proposed by AHA.
351 Proposed by AHA.
352 See Table A6.23 of Appendix 6 in this RIS for estimate.
353 See Table A6.20 of Appendix 6 in this RIS for estimates.
Over 5 years, and in present value terms (2008 dollars), this would equal between $1,754.36 and $1,844.38.

A6.20 Incremental cost of camel standard SB3.1 in conjunction with SB3.3 for livestock transporters

Standard SB3.3 requires that if the maximum time off water of 24 hours is reached, then camels over 6 months old or pregnant camels known to be more than 9 months pregnant (in the third trimester) excluding the last 4 weeks, must be spelled for 12 hours before starting another journey. Spelling under this standard includes the provision of food however, due to lack of information on food requirements, only the time cost of spelling is estimated. The incremental cost would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be incurred for 5% of journeys after first 24 hours;
- 13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) after the first 24 hours;
- 5.5 hours minimum voluntary spelling time will be incurred (including 1.5 hours loading/unloading) for 50% of the time where journeys do not have the ability for changeover; and
- the proportion of camels transported up to 3 days\(^{354}\) (i.e. 5\%\(^{355}\));
- the proportion of camels transported up to 2 days (i.e. 30\%\(^{356}\));
- the proportion of camels transported up to 1 day (i.e. 65\%\(^{357}\));
- the number of journeys per annum involving camel transport is 32.5\(^{358}\); and
- the cost of camel transport is $260.20/hr.\(^{359}\)

Therefore, the additional annual spelling cost would be calculated in the following way:

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \times [5\% \times 3.5 \text{ journeys} \times 3.5 \text{ hours added} \times 2 \times $260.20/hr]^{360} + [5\% \times 30\% \times 3.5 \text{ journeys} \times 3.5 \text{ hours added} \times $260.20/hr]^{361} + \\
\text{Time cost for 30\% of journeys where there are idle trucks} \times [30\% \times 3.5 \text{ journeys} \times 3.5 \text{ hours added} \times $260.20/hr]^{362} + [30\% \times 3.5 \text{ journeys} \times 3.5 \text{ hours added} \times $260.20/hr]^{363} + \\
\]
Time cost for 95% of journeys where there are idle trucks and no voluntary spelling + [50% x 95% x 5% x 32.5 journeys x 13.5 hours added x 2 x $260.20/hr] + [50% x 95% x 5% x 30% x 32.5 journeys x 13.5 hours added x $260.20/hr] + 

Time cost for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling [50% x 95% x 5% x 32.5 journeys x 5.5 hours added x 2 x $260.20/hr] + [50% x 95% x 30% x 32.5 journeys x 5.5 hours added x $260.20/hr] = $31,119.92 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal $145,425.85.

A6.21 Incremental cost of camel standard SB3.4 for livestock owners

Standard SB3.4, which requires that camels known to be in their last 4 weeks of pregnancy must be transported under veterinary advice unless the journey is less than 4 hours duration, would result in an additional cost to livestock owners. This additional cost would rely on the following assumptions:

- the cost of a consultation by a vet is $145.60 per visit\(^{362}\);
- the number of camels transported per annum is 787\(^{363}\);
- 1%\(^{364}\) of a total camels transported per annum are assumed to be in their last 4 weeks of pregnancy; and
- 90%\(^{365}\) of all camels would travel more than 4 hours distance.

Subsequently, the annual incremental veterinary cost for all livestock owners is very minor and is calculated in the following way:

\[
1\% \times 90\% \times 787 \times $145.60/visit = $1,031.28 \text{ per annum}
\]

Over 5 years, and in present value terms (2008 dollars), this would equal only $4,819.28.

A6.22 Incremental unquantifiable cost of camel standard SB3.6 for transporters

Standard SB3.6 would result in minimal additional time costs in terms of loading for camel transport by restricting the use of electric prodders. However this would only be the case in the instance where an electric prodder is used despite the fact that reasonable action to cause movement was sufficient. Given that the instance of this occurring is unknown, this incremental cost remains unquantifiable.

A6.23 Incremental net cost saving of cattle standard SB4.1 in conjunction with SB4.2 for transporters

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\(^{360}\) Proportion of camels transported up to 3 days who would have to be spelled twice.
\(^{361}\) Proportion of camels transported up to 2 days who would have to be spelled once.
\(^{362}\) See section A6.7 of Appendix 6 in this RIS for source of cost.
\(^{363}\) See Table A5.8 of Appendix 5 in this RIS for estimate.
\(^{364}\) Proposed by AHA.
\(^{365}\) Proposed by AHA.
A6.23.1 Incremental cost savings for cattle in their third trimester of pregnancy and more than 8 months pregnant

Standard SB4.1 increases the maximum water deprivation time as compared to the ‘base case’ and provides an incremental cost savings for the following classes of cattle species:

- calves aged 5 to 30 days travelling without their mothers from 10 hours to 18 hours before a mandatory minimum spell of 12 hours is operational under standard SB4.2; and
- cattle more than 8 months pregnant and in their third trimester of pregnancy from 8 hours to 24 hours before a mandatory minimum spell of 12 hours is operational under standard SB4.2.

Each of these incremental cost savings/costs is analysed separately.

A6.23.2 Incremental cost savings for calves aged 5 to 30 days travelling without their mothers

The cost savings for this particular class of cattle would rely on the following assumptions:

- the proportion of circumstances where calves for rearing are transported without their mothers and are aged 5 to 30 days and are sent for slaughter (i.e. 5%366);
- the number of journeys involving calves for rearing per annum (i.e. 806.1367);
- the proportion of circumstances where calves for slaughter are transported without their mothers and are aged 5 to 30 days (i.e. 100%);
- the number of journey involving calves for slaughter per annum (4,083.6368);
- The proportion of journeys for calves between 10 hours and 18 hours (i.e. 7%369);
- 3.5 hours of loading/unloading and changeover time will be saved for the relevant proportion of journeys (i.e. 5%);
- 13.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be saved for 50% of the time where journeys do not have the ability for changeover; and
- the cost of transporting calves for rearing and slaughter is between $315.20/hr and $336.80/hr370.

Therefore, the incremental annual cost savings for this class of livestock would be calculated in the following way:

Between:

\[\text{Cost Savings} = \text{Number of Journeys} \times \text{Proportion of Journeys} \times \text{Time Saved} \times \text{Cost of Transportation} \]

\[= 4,083.6368 \times 0.07 \times 3.5 \times (315.20 + 336.80) \]

\[= 137,273.75 \]

\[\text{Therefore, the incremental annual cost savings for this class of livestock would be calculated in the following way:} \]

\[\text{Between:}\]

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366 Proposed by AHA
367 See Table A6.16 of Appendix 6 in this RIS for estimate.
368 See Table A6.16 of Appendix 6 in this RIS for estimate.
369 Proposed by AHA.
370 See Table A6.15 of Appendix 6 in this RIS for this estimate.
Cost savings for 5% of journeys where there are no idle trucks [5% x 5% x 7% x 806.1 journeys x 3.5 hours saved x $315.20/hr] + [5% x 7% x 4,083.6 journeys x 3.5 hours saved x $315.20/hr] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 5% x 7% x 806.1 journeys x 13.5 hours saved x $315.20/hr] + [50% x 95% x 5% x 7% x 4,083.6 journeys x 13.5 hours saved x $315.20/hr] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling [50% x 95% x 5% x 7% x 806.1 journeys x 5.5 hours saved x $315.20/hr] + [50% x 95% x 5% x 7% x 4,083.6 journeys x 5.5 hours saved x $315.20/hr] = $837,106.53 per annum.

and

Cost savings for 5% of journeys where there are no idle trucks [5% x 5% x 7% x 806.1 journeys x 3.5 hours saved x $336.80/hr] + [5% x 7% x 4,083.6 journeys x 3.5 hours saved x $336.80/hr] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 5% x 7% x 806.1 journeys x 13.5 hours saved x $336.80/hr] + [50% x 95% x 5% x 7% x 4,083.6 journeys x 13.5 hours saved x $336.80/hr] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling [50% x 95% x 5% x 7% x 806.1 journeys x 5.5 hours saved x $336.80/hr] + [50% x 95% x 5% x 7% x 4,083.6 journeys x 5.5 hours saved x $336.80/hr] = $894,471.70 per annum.

A6.23.3 Incremental cost savings for cattle in their third trimester of pregnancy and more than 8 months pregnant

- 3.5 hours of loading/unloading and changeover time will be saved for the relevant proportion of journeys (i.e. 5%);
- 13.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be saved for 50% of the time where journeys do not have the ability for changeover; and
- the proportion of pregnant cows known to be in the third trimester (i.e. 2%) proposed by AHA;
- the proportion of cows in the third trimester that are more than 8 months pregnant (i.e. 36.84%) estimated as 35 days divided by a trimester of 95 days;
- the proportion of cattle journeys between 8 and 24 hours (i.e. 50%) proposed by AHA;
- the number of journeys per annum involving cattle transport is estimated to be 423,274.95; and
- the cost of cattle transport is between $356.65/hr and $401.70/hr.

371 Representing cost savings to non-bobby calf transport
372 Representing cost savings to bobby calf transport
373 Proposed by AHA
374 Estimated as 35 days divided by a trimester of 95 days.
375 Proposed by AHA.
376 See Table A6.16 of Appendix 6 in this RIS for this estimate.
Therefore, the additional annual cost saving would be calculated in the following way:

**Between:**

Cost savings for 5% of journeys where there are no idle trucks

\[5\% \times 36.84\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 3.5 \text{ hours saved} \times $356.65/\text{hr}\] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling

\[50\% \times 95\% \times 36.84\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 13.5 \text{ hours saved} \times $356.65/\text{hr}\] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling

\[50\% \times 95\% \times 36.84\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 5.5 \text{ hours saved} \times $356.65/\text{hr}\] = $5,116,491.35 per annum

and

Cost savings for 5% of journeys where there are no idle trucks

\[5\% \times 36.84\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 3.5 \text{ hours saved} \times $401.70/\text{hr}\] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling

\[50\% \times 95\% \times 36.84\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 13.5 \text{ hours saved} \times $401.70/\text{hr}\] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling

\[50\% \times 95\% \times 36.84\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 5.5 \text{ hours saved} \times $401.70/\text{hr}\] = $5,762,777.44 per annum

**A6.23.4 Incremental costs for cattle in their third trimester of pregnancy and less than 8 months pregnant**

Standard SB4.1 reduces the maximum water deprivation time as compared to the ‘base case’ for cattle in their third trimester of pregnancy and less than 8 months pregnant from 48 hours to 24 hours, thereby leading to an incremental cost. The incremental cost of needing a mandatory spell of 12 hours for journeys (under SB4.2) for cattle less than 8 months pregnant and in their third trimester would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be incurred for the relevant proportion of journeys (i.e. 5%);
- 13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 50% of the time where journeys do not have the ability for changeover; and
- the proportion of pregnant cows known to be in the third trimester (i.e. 2%\(^{378}\))
- the proportion of cows in the third trimester that are less than 8 months pregnant (i.e. 63.16%\(^{379}\))

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\(^{377}\) See Table A6.15 of Appendix 6 in this RIS for this estimate.

\(^{378}\) Proposed by AHA
the proportion of cattle journeys between 24 and 48 hours (i.e. 50\%);\footnote{Proposed by AHA}
the number of journeys per annum involving cattle transport is estimated to be 423,274.95;\footnote{See Table A6.16 of Appendix 6 in this RIS for this estimate.}
and
the cost of cattle transport is between $356.65/hr and $401.70/hr.\footnote{See Table A6.15 of Appendix 6 in this RIS for this estimate.}

Therefore, the additional annual cost would be calculated in the following way:

\begin{align*}
\text{Between:} & \\
\text{Time cost for 5\% of journeys where there are no idle trucks} & = [5\% \times 63.16\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 3.5 \text{ hours} \times $356.65/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} & = [50\% \times 95\% \times 63.16\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 13.5 \text{ hours} \times $356.65/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} & = [50\% \times 95\% \times 63.16\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 5.5 \text{ hours} \times $356.65/\text{hr}] = $8,771,921.65 \text{ per annum}
\end{align*}

and

\begin{align*}
\text{Time cost for 5\% of journeys where there are no idle trucks} & = [5\% \times 63.16\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 3.5 \text{ hours} \times $401.70/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} & = [50\% \times 95\% \times 63.16\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 13.5 \text{ hours} \times $401.70/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} & = [50\% \times 95\% \times 63.16\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 5.5 \text{ hours} \times $401.70/\text{hr}] = $9,879,940.92 \text{ per annum}
\end{align*}

The total annual net incremental cost of standard SB4.1 in conjunction with SB4.2 (i.e. subtracting the total in A6.23.1 and A6.23.2 from A6.23.3) would be between $2,818,323.78 and $3,222,691.78.\footnote{See section A6.7 of Appendix 6 in this RIS for source of cost.} Over 5 years, and in present value terms (2008 dollars), this would equal between $13,170,250.24 and $15,059,893.94.

\subsection*{A6.24 Incremental cost of cattle standard SB4.3 for livestock owners}

Standard SB4.3 requires that cattle known to be in last 4 weeks of pregnancy must be transported under veterinary advice unless the journey is less than 4 hours duration, and would result in an additional cost to livestock owners. This additional cost would rely on the following assumptions:

\begin{itemize}
\item the cost of a consultation by a vet is $145.60 per visit\footnote{Estimated as 60 days divided by a trimester of 95 days};
\item the number of cattle transported per annum is 23,880,105\footnote{See section A6.7 of Appendix 6 in this RIS for source of cost.};
\end{itemize}
• the proportion of cattle in their third trimester (i.e. 2%);
• the proportion of pregnant cattle in their third trimester known to be in the last 4 weeks of pregnancy (i.e. 36.84%\(^385\)); and
• 5\(^%\)\(^386\) of all cattle in the last 4 weeks of pregnancy would travel more than 4 hours distance.

*Subsequently, the* annual incremental veterinary cost for all livestock owners is calculated in the following way:

\[
5\% \times 36.84\% \times 2\% \times 23,880,105 \times \$145.60/visit = \$1,280,905.91 \text{ per annum}
\]

Over 5 years, and in present value terms (2008 dollars), this would equal \$5,985,774.76.

A6.25 Incremental unquantifiable cost of cattle standard SB4.4 for transporters

Standard SB4.4 requires that certain conditions be met when transporting calves under 5 days old without their mothers to a calf rearing facility. These new conditions form an incremental cost in terms of the ‘base case’ and include the requirements for calves to be:

• fed colostrum on the property of origin;
• provided with thick bedding and room to lie down
• protected from cold and heat;
• not consigned through saleyards; and
• not be transported for longer than 6 hours.

Assuming that there are approximately only 8,053\(^387\) calves for rearing which are transported for reasons other than slaughter, and that 5\(^%\)\(^388\) would be less than 5 days old, then this would entail a relevant population affected of approximately 403 calves per annum. However, it is unknown what proportion of these would be travelling without their mothers and what proportion of those travelling without their mothers would be: 1) typically consigned through saleyards; 2) not typically be fed colostrums; 3) not be provided with thick bedding and room to lie down; 4) not protected from cold and heat; and 5) are transported more than 6 hours. Given the small relevant population (403 calves) it is not expected that this would be a large number affected.

Moreover the only cost variable that is determinable in regards to the new conditions under standard SB4.4, is the time cost of 45 minutes on average to place and remove tarps if this was to be used for protection from cold and heat of between $236.40 and $252.60\(^389\) for each journey\(^390\).

The remaining cost variables that would need to be obtained in order to quantify the incremental cost of this standard are the cost of colostrum per calf, as well as, the cost of providing bedding

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384 See Table A5.8 of Appendix 5 in this RIS for estimate.
385 Estimated as 35 days divided by a trimester of 95 days.
386 Proposed by AHA.
387 See Table A5.8 of Appendix 5 in this RIS for estimate.
388 Proposed by AHA.
389 See Table A6.20 of Appendix 6 in this RIS for estimate.
390 Note however, that given the numbers affected is unknown the number of journeys is also unknown.
and room to lie down on the vehicle. Furthermore, the opportunity cost of not consigning a calf through a saleyard, as well as, possible hidden transaction costs, is also unknown.

Given the extent of unknown variables associated with this standard, it is not possible to quantify the incremental costs, however it is expected that such costs would be very minor given the potential number of calves affected (i.e. less than 403 calves per annum).

A6.26 Incremental unquantifiable net cost savings of cattle standard SB4.5 for livestock owners and transporters

Standard SB4.5 requires that certain conditions be met when transporting calves between 5 and 30 days old without their mothers. The condition that they be protected from cold and heat is covered already under general standard SA5.14.

The condition that calves be prepared and transported to ensure not more than 18 hours since last feed\(^{391}\) entails an extension of journey time from the ‘base case’ of 10 hours. This would allow for greater flexibility/availability of processing facilities for livestock owners and an aggregation of slaughter calf transport:

- **Flexibility/availability of processing facilities for livestock owners:** Greater flexibility/availability in terms of processing facilities (abattoirs) in the face of any potential overload at processing facilities, especially during a glut of calves, would result in a higher incidence of slaughter calf transports than otherwise would have been the case (under the ‘base case’). The cost savings for farmers would be in the form of fewer calves needing slaughter on the farm implying both a lower on-farm slaughter cost and a reduction of foregone sales revenue. Given that the frequency and extent to which slaughter calves need to be slaughtered on farms is unknown, this component of cost savings remains unquantifiable.

- **Aggregation of calf transport:** This standard also allows for cost savings in aggregating smaller groups of slaughter calves from different farms into full truck loads - allowing transporters to take advantage of greater scale economies in transport. The extent to which economies of scale under greater aggregation would be exploited and the degree to which this would reduce average transport cost, are both unknown. Therefore, this component of cost savings remains unquantifiable.

The condition to have an auditable and accessible record that identifies the date and time that the calves were last fed involves a negligible cost of recording. Having an auditable and accessible record may involve simply keeping a diary entry however it is also acknowledged that the NVD for calves may require revision to make a provision for this standard. Moreover, it is equally noted that NVDs are typically updated from time to time in the normal course of activity. Therefore, it is difficult to establish if, and to what extent, incremental revision costs in relation to NVD for calves will be purely as a consequence of this standard.

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\(^{391}\) This is liquid feed.
A6.27 Incremental unquantifiable cost of cattle standard SB4.7 for transporters

Standard SB4.7 requires that dogs must not be used to move slaughter calves and would result in minimal additional time costs in terms of loading for transport. However this would only be relevant in the instances where dogs are currently being used. Given that the probability of this remains unknown, this incremental cost remains unquantifiable.

A6.28 Incremental net cost savings of deer standard SB5.1 in conjunction with SB5.2 for transporters

Standard SB5.1 increases the maximum time of water for fawns/calves under 6 months old from 24 hours under the ‘base case’ to 28 hours. This class of deer would be associated with a cost savings in terms of spelling periods required under SB5.2 however deer over 6 months old would be associated with an incremental cost in terms of increased spelling period required under SB5.2 as compared to the ‘base case’ (i.e. from 24 hours to 36 hours).

A6.28.1 Incremental cost savings for fawns/calves less than 6 months old

The incremental time cost saving would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be saved for 5% of the relevant proportion of journeys;
- 13.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for fawns/calves under 6 months;
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be saved for 50% of the time where journeys do not have the ability for changeover;
- the proportion of deer older than 6 months (i.e. 90%);
- the proportion of deer journeys between 24 and 28 hours (i.e. 5%);
- the number of journeys per annum involving deer transport is estimated to be 424.4; and
- the cost of deer transport is between $302/hr and $307.40/hr.

Therefore, the additional annual cost savings would be calculated in the following way:

\[
\text{Cost savings for 5% of journeys where there are no idle trucks} [5\% \times 5\% \times 10\% \times 424.4 \text{ journeys} \times 3.5 \text{ hours saved} \times $302/hr] +
\]

\[\text{See Table A6.23 of Appendix 6 in this RIS for this estimate}\]

\[\text{See Table A6.20 of Appendix 6 in this RIS for this estimate}\]
Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 5% x 10% x 424.4 journeys x 13.5 hours saved x $302/hr] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling [50% x 95% x 5% x 10% x 424.4 journeys x 5.5 hours saved x $302/hr] = $5,895.76 per annum

and

Cost savings for 5% of journeys where there are no idle trucks [5% x 5% x 10% x 424.4 journeys x 3.5 hours saved x $307.40/hr] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 5% x 10% x 424.4 journeys x 13.5 hours saved x $307.40/hr] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling [50% x 95% x 5% x 10% x 424.4 journeys x 5.5 hours saved x $307.40/hr] = $6,001.19 per annum

A6.28.2 Incremental cost for deer over 6 months old

The incremental time cost would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be incurred for 5% of the relevant proportion of journeys;
- 13.5 additional hours loading/unloading and idle vehicle time will be incurred (as compared to the ‘base case’) for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for deer over 6 months;
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 50% of the time where journeys do not have the ability for changeover;
- the proportion of deer older than 6 months (i.e. 90%396);
- the proportion of deer journeys greater than 48 hours (i.e. 2%397);
- the number of journeys per annum involving deer transport is estimated to be 424.4398; and
- the cost of deer transport is between $302/hr and $307.40/hr. 399

Therefore, the additional annual cost would be calculated in the following way:

Between:

Time cost for 5% of journeys where there are no idle trucks [5% x 2% x 90% x 424.4 journeys x 3.5 hours x $302/hr] +

396 Proposed by AHA.
397 Proposed by AHA.
398 See Table A6.23 of Appendix 6 in this RIS for this estimate.
399 See Table A6.20 of Appendix 6 in this RIS for this estimate.
Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 2% x 90% x 424.4 journeys x 13.5 hours x $302/hr] +

Time cost for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling [50% x 95% x 2% x 90% x 424.4 journeys x 5.5 hours x $302/hr] = $21,224.75 per annum

and

Time cost for 5% of journeys where there are no idle trucks [5% x 2% x 90% x 424.4 journeys x 3.5 hours x $307.40/hr] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 2% x 90% x 424.4 journeys x 13.5 hours x $307.40/hr] +

Time cost for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling [50% x 95% x 2% x 90% x 424.4 journeys x 5.5 hours x $307.40/hr] = $21,604.27 per annum

The total annual net incremental cost of standard SB5.1 in conjunction with SB5.2 (i.e. subtracting the total in A6.28.1 from A6.28.2) would be between $15,328.99 and $15,603.08.

Over 5 years, and in present value terms (2008 dollars), this would equal between $71,633.58 and $72,914.44.

A6.29 Incremental cost of deer standard SB5.3 for livestock owners

Standard SB5.3 requires that deer known to be in their last 4 weeks of pregnancy must be transported under veterinary advice unless the journey is less than 4 hours duration and would result in an additional cost to livestock owners. This additional cost would rely on the following assumptions:

- the cost of a consultation by a vet is $145.60 per visit; 
- the number of deer transported per annum is 49,333; 
- 1% of a total deer transported per annum are assumed to be in their last 4 weeks of pregnancy; and 
- 70% of all deer would travel more than 4 hours distance.

Subsequently, the annual incremental veterinary cost for livestock owners is very minor and is calculated in the following way:

$$1% \times 70\% \times 49,333 \times $145.60/visit = $50,280.19 \text{ per annum}$$

Over 5 years, and in present value terms (2008 dollars), this would equal $234,963.33.

A6.30 Incremental unquantifiable cost of deer standard SB5.4 for transporters

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400 See section A6.7 of Appendix 6 in this RIS for source of cost.  
401 See Table A5.8 of Appendix 5 in this RIS for estimate.  
402 Proposed by AHA.  
403 Proposed by AHA.
Standard SB3.6 would result in minimal additional time costs in terms of loading for deer transport by restricting the use of electric prodders. However this would only be the case in the instance where an electric prodder is used despite the fact that reasonable action to cause movement was sufficient. Given that the instance of this occurring is unknown, this incremental cost remains unquantifiable.

A6.31 Incremental cost of ratite standard SB6.1 in conjunction with SB6.4 for transporters

A6.31.1 Adult ratites

Standard SB6.4 in introduces a mandatory minimum spelling time of 12 hours for adult ratites which involve water deprivation times of greater than 24 hours as per standard SB6.1. This incremental time cost will rely on the following assumptions being made:

- 3.5 hours of loading/unloading and changeover time will be incurred for 5% of the relevant proportion of journeys;
- 13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 50% of the time where journeys do not have the ability for changeover;
- the proportion of adult emus (i.e. 95%);
- the proportion of adult ostriches (i.e. 95%);
- the proportion of ratite journeys greater than 24 hours (i.e. 5%);
- the number of journeys per annum involving emu and ostrich transport is estimated to be 111.1 and 207.3, respectively; and
- the cost of ratite transport is $250/hr.

Therefore, the additional annual spelling (time) cost for emu and ostrich transporters would be calculated in the following way:

**Adult emus:**

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = [5\% \times 5\% \times 95\% \times 111.1 \text{ journeys} \times 3.5 \text{ hours added } \times \$250/\text{hr}] + \]

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404 Proposed by AHA.
405 Proposed by AHA.
406 Proposed by AHA.
407 See Table A6.23 of Appendix 6 in this RIS for this estimate.
408 See Table A6.20 of Appendix 6 in this RIS for this estimate.
Time cost for 95% of journeys where there are idle trucks and no voluntary spelling  
\[ 0.5 \times 0.95 \times 0.95 \times 111.1 \text{ journeys} \times 13.5 \text{ hours added} \times $250/\text{hr} \] +

Time cost for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling  
\[ 0.5 \times 0.95 \times 0.95 \times 111.1 \text{ journeys} \times 5.5 \text{ hours added} \times $250/\text{hr} \] = \$12,137.68 per annum

**Adult ostriches:**

Time cost for 5% of journeys where there are no idle trucks  
\[ 0.05 \times 0.30 \times 111.1 \text{ journeys} \times 0.167 \text{ hrs added} \times $250/\text{hr} \] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling  
\[ 0.5 \times 0.95 \times 0.95 \times 111.1 \text{ journeys} \times 13.5 \text{ hours added} \times $250/\text{hr} \] +

Time cost for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling  
\[ 0.5 \times 0.95 \times 0.95 \times 111.1 \text{ journeys} \times 5.5 \text{ hours added} \times $250/\text{hr} \] = \$22,647.53 per annum

A6.31.2 Ratite chicks

Standard SB6.1 reduces the maximum water deprivation time from 24 hours to 12 hours for emu and ostrich chicks. This incremental time cost will rely on the following assumptions being made:

- the proportion of ratite chicks (i.e. 5%);
- the time cost of watering chicks is 10 minutes;
- the proportion of ratite journeys greater than 12 hours (i.e. 30%);
- the number of journeys per annum involving emu and ostrich transport is estimated to be 111.1 and 207.3, respectively; and
- the cost of ratite transport is $250/hr.

Subsequently, the annual incremental cost for emu and ostrich transporters is calculated in the following way:

**Emu chicks**  
\[ 0.05 \times 0.30 \times 111.1 \text{ journeys} \times 0.167 \text{ hrs added} \times $250/\text{hr} = \$69.44 \text{ per annum} \]

**Ostrich chicks**  
\[ 0.05 \times 0.30 \times 207.3 \text{ journeys} \times 0.167 \text{ hrs added} \times $250/\text{hr} = \$129.56 \text{ per annum} \]

The total combined annual cost for adults and chicks as shown in sections A6.31.1 and A6.31.2, of standard SB6.1 in conjunction with SB6.4, would be \$12,207.11 per annum for emu transporters and \$22,777.09 per annum for ostrich transporters. Over 5 years, and in present value terms (2008 dollars), this would equal \$57,044.80 for emu transporters and \$106,439.13 for ostrich transporters.

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409 Proposed by AHA.
410 Proposed by AHA.
411 See Table A6.23 of Appendix 6 in this RIS for this estimate.
412 See Table A6.20 of Appendix 6 in this RIS for this estimate.
A6.32 Incremental unquantifiable cost of ratite standard SB6.2 and SB6.3 for transporters

SB6.2 requires that chicks and young birds be fed every 12 hours during transport. Standard SB6.3 requires that ratite chicks not be held in containers greater than 12 hours without being provided food, water and shelter or fed every 12 hours. These standards are likely to impose a minor cost to address the needs of ratite chicks in the aforementioned situations. Given that the number of emu and ostrich chicks transported is unknown this cost remains unquantifiable.

A6.33 Incremental unquantifiable cost of ratite standard SB6.5 for transporters

Standard SB6.5 specifies that containers of ratite chicks must be suitable and securely attached to the vehicle and specifies how such containers must be handled. This standard is unquantifiable in terms of costs due to lack of information of current suitability of containers and whether or not such containers are currently handled according to the requirement of this new standard. Nonetheless it is assumed, for the purpose of this RIS, that any such costs would be minimal.

A6.34 Incremental unquantifiable cost of ratite standard SB6.6 for livestock transporters/owners

Standard SB6.6 stipulates that legs of ratites must not be tied together. The incremental cost of not tying legs of ratites for livestock transporters/owners is unknown and, as such, the cost of this standard remains unquantifiable. However, since tying of legs is not common practice in the industry, the cost of this standard (which may result in some minimal inconvenience to very few transporters or owners) is assumed to be negligible.

A6.35 Incremental unquantifiable cost of ratite standard SB6.7 for transporters

Standard SB3.6 would result in minimal additional time costs in terms of loading for ratite transport by restricting the use of electric prodders. However this would only be the case in the instance where an electric prodder is used despite the fact that reasonable action to cause movement was sufficient. Given that the instance of this occurring is unknown, this incremental cost remains unquantifiable.

A6.36 Incremental unquantifiable one-off cost of ratite standard SB6.8 for livestock owners

Standard SB6.7 which requires the humane destruction of ratites represents a very minimal one-off training cost to ratite livestock owners. Given that the number of ratite livestock owners and the proportion that would require necessary training is unknown – the impact of this standard remains unquantifiable in dollar terms.

A6.37 Incremental net cost of goat standard SB7.1 in conjunction with SB7.2 for transporters
A6.37.1 Incremental cost savings for goats over 4 months pregnant

Standard SB7.1 increases the maximum time off water of from 8 hours to 24 hours for goats over 4 months pregnant (under which a minimum mandatory spell of 12 hours comes under operation under standard SB7.2). The incremental cost savings would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be saved for 5% of the relevant proportion of journeys;
- 13.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be saved for 50% of the time where journeys do not have the ability for changeover;
- the proportion of pregnant goats known to be over 14 weeks pregnant (i.e. in their third trimester) (i.e. 2%\textsuperscript{413});
- the proportion of the 2% of goats in their third trimester and over 4 months pregnant (i.e. 60%\textsuperscript{414});
- the proportion of journeys between 8 and 24 hours (i.e. 40%\textsuperscript{415});
- the number of journeys per annum involving goat transport is estimated to be 4,181.08\textsuperscript{416}; and
- the cost of goat transport is between $357.43 and $412.45/hr.\textsuperscript{417}

Therefore, the additional annual time cost saving for goat transporters would be calculated in the following way:

**Between:**

\[
\text{Cost savings for 5\% of journeys where there are no idle trucks} \left[5\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours saved} \times $357.43/\text{hr}\right] + \\
\text{Cost savings for 95\% of journeys where there are idle trucks and no voluntary spelling} \left[50\% \times 95\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours saved} \times $357.43/\text{hr}\right] + \\
\text{Cost savings for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} \left[50\% \times 95\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 5.5 \text{ hours saved} \times $357.43/\text{hr}\right] = \\
$65,994.62 \text{ per annum}
\]

and

\[
\text{Cost savings for 5\% of journeys where there are no idle trucks} \left[5\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours saved} \times $412.45/\text{hr}\right] + \\
\]

\textsuperscript{413} Proposed by AHA.
\textsuperscript{414} Estimated as 30 days divided by the total trimester of 50 days.
\textsuperscript{415} Proposed by AHA.
\textsuperscript{416} See Table A6.23 of Appendix 6 in this RIS for this estimate.
\textsuperscript{417} See Table A6.20 of Appendix 6 in this RIS for this estimate.
Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling  
\[ 50\% \times 95\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours saved} \times \$412.45/\text{hr} \] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling  
\[ 50\% \times 95\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 5.5 \text{ hours saved} \times \$412.45/\text{hr} \] =  
$76,153.32 \text{ per annum}

A6.37.2 Incremental cost for goats in their third trimester and less than 4 months pregnant and for kids under 6 months old

Standard SB7.1 reduces the maximum time off water of from 48 hours to 24 hours for goats in their third trimester and less than 4 months pregnant (under which a minimum mandatory spell of 12 hours comes under operation under standard SB7.2). SB7.1 also reduces the maximum time of water from 36 hours to 28 hours for kids less than 6 months of age (under which a minimum mandatory spell of 12 hours comes under operation under standard SB7.2).

The incremental cost would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be incurred for 5% of the relevant proportion of journeys;
- 13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 50% of the time where journeys do not have the ability for changeover;
- the proportion of pregnant goats known to be in their third trimester (i.e. 2%418);
- the proportion of the 2% of goats in their third trimester and less than 4 months pregnant (i.e. 40%419)
- the proportion of journeys between 24 and 48 hours (i.e. 25%420);
- the proportion of kids less than 6 months (i.e. 10%421);
- the proportion of kids where the journey would exceed 28 hours (i.e. 0.01%422);
- the number of journeys per annum involving goat transport is estimated to be 4,181.08423;
- and
- the cost of goat transport is between $357.43 and $412.45/hr 424.

Therefore, the additional annual time cost for goat transporters would be calculated in the following way:

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418 Proposed by AHA.
419 Estimated as 20 days divided by the total trimester of 50 days.
420 Proposed by AHA.
421 Proposed by AHA.
422 Proposed by AHA and Ian Cathles GICA.
423 See Table A6.23 of Appendix 6 in this RIS for this estimate.
424 See Table A6.20 of Appendix 6 in this RIS for this estimate.
Kids under 6 months:

**Between:**

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \ [5\% \times 10\% \times 0.01\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours} \times $357.43/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \ [50\% \times 95\% \times 10\% \times 0.01\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours} \times $357.43/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} \ [50\% \times 95\% \times 10\% \times 0.01\% \times 4,181.08 \text{ journeys} \times 5.5 \text{ hours} \times $357.43/\text{hr}] = \\
$58,661.95 \text{ per annum}
\]

and

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \ [5\% \times 10\% \times 0.01\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours} \times $412.45/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \ [50\% \times 95\% \times 10\% \times 0.01\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours} \times $412.45/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} \ [50\% \times 95\% \times 10\% \times 0.1\% \times 4,181.08 \text{ journeys} \times 5.5 \text{ hours} \times $412.45/\text{hr}] = \\
$67,691.91 \text{ per annum}
\]

Goats less than 4 months pregnant:

**Between:**

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \ [5\% \times 40\% \times 2\% \times 25\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours added} \times $357.43/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \ [50\% \times 95\% \times 40\% \times 2\% \times 25\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours added} \times $357.43/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} \ [50\% \times 95\% \times 40\% \times 2\% \times 25\% \times 4,181.08 \text{ journeys} \times 5.5 \text{ hours added} \times $357.43/\text{hr}] = \\
$27,497.76 \text{ per annum}
\]

and

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \ [5\% \times 40\% \times 2\% \times 25\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours added} \times $412.45/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \ [50\% \times 95\% \times 40\% \times 2\% \times 25\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours added} \times $412.45/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} \ [50\% \times 95\% \times 40\% \times 2\% \times 25\% \times 4,181.08 \text{ journeys} \times 5.5 \text{ hours added} \times $412.45/\text{hr}] = \\
$31,730.55 \text{ per annum}
\]

\text{A6.37.3 Incremental cost for goats over 6 months old off water for 48 hours}

Standard SB7.2 increases the minimum mandatory spell from 24 hours under the ‘base case’ to 36 hours for goats over 6 months and off water for 48 hours. The incremental cost would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be incurred for 5% of the relevant proportion of journeys;
- 13.5 additional hours of loading/unloading and idle vehicle time will be incurred (as compared to the ‘base case’) for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 50% of the time where journeys do not have the ability for changeover;
- the proportion of goats over 6 months (i.e. 90%);
- the proportion of goats for which journeys are over 48 hours (i.e. 0.05%);
- the number of journeys per annum involving goat transport is estimated to be 4,181.08; and
- the cost of goat transport is between $357.43 and $412.45/hr.

Therefore, the additional annual time cost for goat transporters would be calculated in the following way:

**Between:**

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = [5\% \times 0.05\% \times 90\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours added} \times \$357.43/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} = [50\% \times 95\% \times 0.05\% \times 90\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours added} \times \$357.43/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} = [50\% \times 95\% \times 0.05\% \times 90\% \times 4,181.08 \text{ journeys} \times 5.5 \text{ hours added} \times \$357.43/\text{hr}] = \$21,999.14 \text{ per annum}
\]

and

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = [5\% \times 0.05\% \times 90\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours added} \times \$412.45/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} = [50\% \times 95\% \times 0.05\% \times 90\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours added} \times \$412.45/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} = [50\% \times 95\% \times 0.05\% \times 90\% \times 4,181.08 \text{ journeys} \times 5.5 \text{ hours added} \times \$412.45/\text{hr}] = \$25,385.52 \text{ per annum}
\]

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425 Proposed by AHA
426 Proposed by AHA and Ian Cathles GICA.
427 See Table A6.23 of Appendix 6 in this RIS for this estimate
428 See Table A6.20 of Appendix 6 in this RIS for this estimate
Subsequently, the total incremental net cost of standard SB7.1 in conjunction with SB7.2, (subtracting the cost savings in section A6.37.1 from the costs in section A6.37.2 plus costs in section A6.37.3) - would be between $42,164.23 and $48,654.66. Over 5 years, and in present value terms (2008 dollars), this would equal between $197,036.77 and $227,367.08.

A6.38 Incremental unquantifiable one-off cost of goat standard SB7.3 for livestock owners

Standard SB7.3 which requires the humane destruction of goats represents a very minimal one-off training cost to goat livestock owners in terms of methods for exsanguination and blunt trauma. Given that the number of goat livestock owners and the proportion that would require necessary training is unknown – the impact of this standard remains unquantifiable in dollar terms.

A6.39 Incremental net savings of horse standard SB8.1 in conjunction with SB8.3 for transporters

The analysis of the incremental net savings of horse standards SB8.1 in conjunction with SB8.3 for transporters excludes recreational horses from the calculations as it is assumed that most movements will be less than 4 hours duration and not affected by the standards relating to water provision/journey length.

A6.39.1 Incremental cost savings in relation to lactating mares and foals less than 6 months old

Standard SB8.1 increases the maximum water deprivation times for lactating mares and foals less than 6 months old from 8 to 12 hours resulting in a cost savings for transporters in terms of the mandatory minimum spelling time of 12 hours under SB8.3. This incremental cost savings will rely on the following assumptions being made:

- 3.5 hours of loading/unloading and changeover time will be saved for 5% of the relevant proportion of journeys;
- 13.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be saved for 50% of the time where journeys do not have the ability for changeover;
- the proportion of horses which are lactating mares (i.e. 1%429);
- the proportion of horses which are foals less than 6 months old (i.e. 1%430);
- the proportion of horses journeys between 8 and 12 hours (i.e. 10%431);
- the number of journeys per annum involving horses for slaughter and export is estimated to be 116,298;

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429 Proposed by AHA
430 Proposed by AHA
431 Proposed by AHA
The estimated number of annual journeys is calculated in the following way:
- estimated number of (12.5m x 2.4m) decks used for road transport per annum = 679 (for slaughter and export) and 115,619 (for sales and major events)\(^{432}\)
- average number of decks involved per journey = 1 deck
- estimated number of annual journeys = 116,298/1 deck = 116,298 journeys

\[ \text{the cost of horse transport is $250/hr}^{433}. \]

Therefore, the additional cost savings for horse transporters would be calculated in the following way:

\[ \text{Cost savings for 5% of journeys where there are no idle trucks} \]
\[ = [5\% \times 1\% \times 10\% \times 116,298 \text{ journeys} \times 3.5 \text{ hours saved} \times $250/\text{hr}]^{434} + [5\% \times 1\% \times 10\% \times 116,298 \text{ journeys} \times 3.5 \text{ hours saved} \times $250/\text{hr}]^{435} + \]

\[ \text{Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling} \]
\[ = [50\% \times 95\% \times 1\% \times 10\% \times 116,298 \text{ journeys} \times 13.5 \text{ hours saved} \times $250/\text{hr}] + [50\% \times 95\% \times 1\% \times 10\% \times 116,298 \text{ journeys} \times 13.5 \text{ hours saved} \times $250/\text{hr}] = $\text{534,970.80 per annum} \]

\[ \text{A6.39.2 Incremental cost in relation to horses over 6 months and mares over 7.5 months pregnant} \]

A6.39.2 Incremental cost in relation to horses over 6 months and mares over 7.5 months pregnant

Standard SB8.1 reduces the maximum water deprivation times for adult horses over 6 months old from 36 to 24 hours\(^{436}\) and for mares more than 7.5 months pregnant (i.e. in third trimester of pregnancy) from 36 to 12 hours resulting in an incremental cost in terms of the mandatory minimum spelling time 12 hours under SB8.3. Very few horses would be affected by this change in standards and this incremental cost will rely on the following assumptions being made:

\[ \text{3.5 hours of loading/unloading and changeover time will be incurred for 5\% of the relevant proportion of journeys;} \]
\[ \text{13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95\% of journeys);} \]
\[ \text{5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 50\% of the time where journeys do not have the ability for changeover;} \]

\[ ^{432}\text{See Table A5.9 of Appendix 5 in this RIS for this estimate} \]
\[ ^{433}\text{See Table A6.20 of Appendix 6 in this RIS for this estimate. Furthermore, it is acknowledged that the hourly rate} \]
\[ ^{434}\text{for transports of horses destined for sale or major events will vary however all transports have been converted to} \]
\[ ^{435}\text{(12.4m x 2.5m) equivalent decks for the purpose of estimation and the corresponding hourly rate of $250 is applied.} \]
\[ ^{436}\text{Represents the cost savings to lactating mares} \]
\[ ^{437}\text{Represents the cost savings to foals less than 6 months old} \]
\[ ^{438}\text{Note that standard SB8.2 permits extended transport under specific conditions} \]

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the proportion of horses which are in their 3rd trimester of pregnancy (i.e. 1%⁴³⁷);
the proportion of horses in their 3rd trimester where journeys exceed 12 hours (i.e. 0.001%⁴³⁸);
the proportion of horses which are more than 6 months old (i.e. 99%⁴³⁹);
the proportion of horses over 6 months old where journeys exceed 24 hours (i.e. 0.01%⁴⁴⁰) not covered by SB8.2;
the number of journeys per annum involving horses for slaughter and export is estimated to be 116,298⁴⁴¹; and
the cost of horse transport is $250/hr. ⁴⁴²

Therefore, the additional cost for horse transporters would be calculated in the following way:

For mares more than 7.5 months pregnant:

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = \left(0.001\% \times 1\% \times 116,298 \times 3.5 \text{ hours} \times $250/\text{hr}\right) + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} = \left(0.001\% \times 1\% \times 116,298 \times 13.5 \text{ hours} \times $250/\text{hr}\right) + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} = \left(0.001\% \times 1\% \times 116,298 \times 5.5 \text{ hours} \times $250/\text{hr}\right) = \$247.02 \text{ per annum}
\]

For adult horses more than 6 months old:

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = \left(0.01\% \times 99\% \times 116,298 \times 3.5 \text{ hours} \times $250/\text{hr}\right) + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} = \left(0.01\% \times 99\% \times 116,298 \times 13.5 \text{ hours} \times $250/\text{hr}\right) + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} = \left(0.01\% \times 99\% \times 116,298 \times 5.5 \text{ hours} \times $250/\text{hr}\right) = \$27,021.27 \text{ per annum}
\]

The total incremental net savings of standard SB8.1 in conjunction with SB8.3 across all three classes of species, (subtracting the costs in section A6.39.2 from the cost savings in section A6.39.1), would be $507,702.51 per annum. Over 5 years, and in present value terms (2008 dollars), this would equal $2,372,534.03.

A6.40 Incremental cost of horse standard SB8.2 for transporters

⁴³⁷ Proposed by AHA
⁴³⁸ Proposed by AHA
⁴³⁹ Proposed by AHA
⁴⁴⁰ Proposed by AHA.
⁴⁴¹ Refer to section A6.39.1 of this RIS for this estimate.
⁴⁴² See Table A6.20 of Appendix 6 in this RIS for this estimate.
Standard SB8.2 Permits the maximum journey time of 36 hours for horses if specific requirements according to this standard are met. One of these changed requirements is that horses be spelled for 24 hours before starting another journey (an increment of 12 hours from the 'base case') but there would be very few journeys that would exceed 36 hours. The incremental cost would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be incurred for 0.01% of the relevant proportion of journeys;
- 13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 99.99% of journeys);
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be saved for 50% of the time where journeys do not have the ability for changeover;
- the proportion of journeys greater 36 hours (i.e. 0.005%);
- the proportion of circumstances for which requirements under SB8.2 are met (i.e. 99.99%);
- the number of journeys per annum involving horse transport is estimated to be 116,298; and
- the cost of horse transport is $250/hr.

Therefore, the additional annual cost for horse transporters, in terms of time, would be calculated in the following way:

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = [0.01\% \times 0.005\% \times 99.99\% \times 116,298 \text{ journeys} \times 3.5 \text{ hours} \times $250/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} = [50\% \times 99.99\% \times 0.005\% \times 99.99\% \times 116,298 \text{ journeys} \times 13.5 \text{ hours} \times $250/\text{hr}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} = [50\% \times 99.99\% \times 0.005\% \times 99.99\% \times 116,298 \text{ journeys} \times 5.5 \text{ hours} \times $250/\text{hr}] = $13,808.13 \text{ per annum}
\]

Over 5 years, and in present value terms (2008 dollars), this would equal $64,526.51.

A6.41 Incremental cost of horse standard SB8.4 for livestock owners

Standard SB8.4 requires that mares known to be in their last 4 weeks of pregnancy must be transported under veterinary advice unless the journey is less than 4 hours duration. This would result in an additional cost to livestock owners. This additional cost would rely on the following assumptions:

\[443\text{ Proposed by AHA. It is acknowledged that only a few thousand horses would be affected by 36 hours transport or more.}\\
444\text{ Proposed by AHA.}\\
445\text{ Refer to section A6.39.1 of this RIS for this estimate.}\\
446\text{ See Table A6.20 of Appendix 6 in this RIS for this estimate.}\\
\]
the cost of a consultation by a vet is $145.60 per visit\(^{447}\);

- the number of horses transported per annum (for slaughter export sales and major events) is 2,908,350\(^{448}\);
- 0.01\(^{449}\) of total horses transported per annum are assumed to be in their last 4 weeks of pregnancy; and
- 2\(^{450}\) of all horses would travel more than 4 hours distance.

Subsequently, the annual incremental veterinary cost for livestock owners is very minor and is calculated in the following way:

\[
0.01\% \times 2\% \times 2,908,350 \times \$145.60/\text{visit} = \$846.91 \text{ per annum}
\]

Over 5 years, and in present value terms (2008 dollars), this would equal \$3,957.68.

### A6.42 Incremental cost of horse standard SB8.8 for transporters – reducing stocking density by 3 horses/30m\(^2\)

Standard SB8.8 requires easy access to each horse and also non-slip flooring. Whilst non-slip flooring is typically normal practice (99.99\% of occasions), providing easy access would create an additional cost for horse transporters by increasing the number of 12.5m x 2.4m equivalent decks (currently 679\(^{451}\)) required to transport horses annually.

Based on Table A5.8 of Appendix 5, it can be seen that there are 12,400 horses transported for slaughter and roughly 5,470 horses transported for export/import - giving a total of 17,870 transported annually by 12.5m x 2.4m equivalent decks (16,970 by articulated and rigid vehicles and 900 by rail\(^{452}\)). Reducing the stocking density by just 3 horses/30m\(^2\) would increase the number of 12.5m x 2.4m equivalent decks required to 771.4\(^{453}\).

The total kilometres travelled by horse transporters would increase from 39,426.7km\(^{454}\) per annum to 44,800.24km\(^{455}\) per annum. This would increase total weighted hours of transport per annum for horses by 69.5 hours (i.e. from 492.82 hours\(^{456}\) to 560 hours). Assuming that 50\% of transporters are already compliant, then the additional cost of standard SB8.8 would be 0.5\% x 67.18 hours x \$250/hour = \$8,397.50 per annum. This would equal \$39,242.18 over 5 years in present value terms (2008 dollars).

\(^{447}\) See section A6.7 of Appendix 6 in this RIS for source of cost.
\(^{448}\) See Table A5.8 of Appendix 5 in this RIS for estimate.
\(^{449}\) Proposed by AHA.
\(^{450}\) Proposed by AHA.
\(^{451}\) See Table A5.11 of Appendix 5 in this RIS.
\(^{452}\) On advice from Queensland rail it is assumed that about 5\% of all horses for slaughter and export/import are transported by rail.
\(^{453}\) Approximately 771.4 decks = 16,970 horses divided by 22 horses per 12.5m x 2.4m equivalent decks.
\(^{454}\) See Table A5.11 of Appendix 5 in this RIS.
\(^{455}\) This is calculated as: 771.4 horse decks/2,445,390 all livestock decks (i.e. 0.0315\%) x total km travelled by all livestock (i.e. 142,024,436 (see section A5.11 of Appendix 5 for estimate)) = 44,800.24km.
\(^{456}\) See Table A5.12 of Appendix 5 in this RIS.
A6.43 Incremental net cost savings of horse standard SB8.10 for livestock owners

Standard SB8.10 requires the provision of a vertical clearance of 2 metres in any vehicle used for horse transport which effectively results in a ban on the use of double decks for horses. This form of transport is only relevant for the slaughter/export category. Export numbers have been included for convenience and to recognise the potential for a limited number of other occasions where double deck transport may take place.

A total of 17,870 horses⁴⁵⁷ are transported annually for slaughter and export by 12.5m x 2.4m equivalent decks, 16,970 (i.e. 95%) by articulated and rigid vehicles. Of the total horses for slaughter and export transported by rail (i.e. 5%)⁴⁵⁸ all are single decks so the elimination of double decks does not apply to this category. Furthermore, it is assumed that horses transported for racing, sale and events are transported by horse float and that consequently the elimination of double deck transports does not apply to this category.

Total number of 12.5m x 2.4m equivalent decks involved in the transport of slaughter and export/import horses per annum is given as 679, which is calculated in the following way:

1) Average weight of horse is 400kg
2) Minimum space allowance is 25/m²
3) Stocking density is 25 horses per (12.5m x 2.4m) deck

Therefore 16,970 horses/25 horses per deck = 679 decks and represents 0.028% of a total 2,445,298⁴⁵⁹, 12.5m x 2.4m equivalent decks. Apportioning the total number of kilometres of transport per annum (i.e. 142,024,436km⁴⁶⁰) by the % of decks involved in horse transport, it is estimated that slaughter and export/import horses travel 39,426.7km per annum in rigid and articulated trucks.

The Queensland Livestock Association puts the average speed of single and double deck vehicles at 80km/hr. Therefore, 39,426.7km of travel is associated with 492.82 hours of travel per annum. Furthermore, it is assumed that 95% of horses transport on single decks and 5% of horses transported on double decks.⁴⁶¹ Therefore, it is estimated that 95% of 492.82 hours of horse transport involves transport on single decks (i.e. 468.18 hours) with the remaining 5% of involving horse transport on double decks (i.e. 24.64 hours). Taking the product of relevant hours of travel by deck arrangement (single or double) and the corresponding hourly rates in Table A6.2 in Appendix 6 – gives the following total annual costs for single and double deck transport of slaughter/export/import horses:

\[
\text{Single deck transport of horses} = 468.18 \text{ hours} \times \$250 = \$117,045 \\
\text{Double deck transport of horses} = 24.64 \text{hrs} \times \$352 = \$8,673.28
\]

⁴⁵⁷ See Table A5.5 of Appendix 5 in this RIS.
⁴⁵⁸ On advice from Queensland rail it is assumed that about 5% of all horses for slaughter and export/import are transported by rail.
⁴⁵⁹ See Table A5.9 in Appendix 5.
⁴⁶⁰ See Table A5.11 in Appendix 5.
⁴⁶¹ Based on advices from Livestock industry organisations
Total cost for all deck arrangements = $125,718.28

By banning double decks all horses would have to be transported on single decks which would now require 492.82 hours plus an additional 24.64 hours to take account of the 5% of horses which need to be transported twice on single decks rather once on double decks – giving a total of 517.46 hours of transport. Taking the product of 517.46 hours and an assumed hourly rate of $250/hr for single deck arrangements gives a total cost of $129,365. Therefore, the incremental ‘transport’ cost of standard SB8.10 is $3,646.72 per annum. However, two other issues remain: 1) the impact of standard SB8.10 on loading times; and 2) the impact of standard SB8.10 on the demand/hourly price on single deck transport arrangements.

A6.43.1 Impact of standard SB8.10 on loading times

If it can be argued that there are scale economies in loading a transport truck (i.e. it is cheaper to load 60 horses on one truck rather than 30 horses on 2 trucks), then there could be additional time costs/inconvenience costs. Taking 679 decks and assuming that 95% of them belong to single deck arrangements then this would be equal to 645.05 decks. The remaining 5% (i.e. 33.95) would belong to a double deck arrangement. Assuming that it takes 1/2 an hour to load a single deck vehicle and that it takes 45 minutes to load a double deck vehicle (i.e. 22.5 minutes per deck) then the loading times would be:

Single deck = 645.05 decks x 0.5hrs/deck = 322.525hrs
Double deck = 33.95 decks x 0.375hrs/deck = 12.73125hrs

The total time cost would therefore be 335,256 hours. Assuming that this time cost is worth $60/hr462 then the total cost would be equal to $20,115.38. By banning double decks - 679 decks would now have to be loaded at 1/2 an hour a deck at $60/hr – giving a total cost of $20,370. This would create a negligible incremental cost of $254.62 for increased loading times.

A6.43.2 Impact of standard SB8.10 on the demand/hourly price on single deck transport arrangements

Assuming no change in supply of single deck arrangements - so far it has been assumed that the hourly rate for a single deck arrangement in transport ($250/hr) would remain constant or stable even in the face of increased demand for this type of deck arrangement. However, the number of additional single deck arrangements that would be required for horses (i.e. 33.95 decks per annum) is negligible in proportion to the number of single deck arrangements for cattle463 which are assumed to be equivalent to approximately 349,202464. Therefore, it is highly unlikely for there to be any significant demand pressures and therefore any significant impact on the hourly rates for single deck arrangement transports. Furthermore, it can be argued that the demand is seasonal and when demand for cattle consignments is low, that horse consigners can take advantage of such off-peak times. Therefore, the demand for single deck transport arrangements

462 This hourly loading cost is taken from Queensland Rail rates for loading livestock.
463 Assuming that cattle trucks would be the most suitable for horse transport.
464 Calculated as the product of 1,164,06.1 (12.5 x 2.4 equivalent decks see Table A5.9 in Appendix 5) x 30% (the proportion of single decks used for cattle transport).
is likely to remain fairly stable. Even if the hourly rate were to increase by 1% (which is highly unlikely) from $250/hr to $252.50/hr then the cost of transporting horses for slaughter and export would only increase by $2,140.43.

A6.43.3 Total estimated cost of standard SB8.10 for transporters

Based on the findings above, there would be a minor incremental cost to transporting horses if double decks ceased to be used – amounting to $6,041.77 per annum in total for the slaughter/export/import segment of the horse transport industry. In present value terms (2008 dollars) and over 5 years this would be equal to $28,233.67.465

A6.44 Incremental cost of horse standard SB8.11 for transporters

Standard SB8.11 specifies the need to segregate horses from unbroken stallions and the latter from each other. This would lead to additional costs to the horse transport industry however, only in relation to horses transported for slaughter as it is not an issue for handled (broken in) horses. Export numbers have been included for convenience and to recognise the potential for a limited number of other occasions where transport of unbroken stallions may take place. This incremental cost is calculated making the following assumptions:

- average time spent in segregating horses per journey is 30 minutes; 466
- number of journeys unbroken stallions are transported (679)467; and
- the average cost of horse transport is $250/hr.468

Subsequently, the annual incremental cost for horse transporters is calculated in the following way:

\[
679 \text{ journeys} \times 0.5 \text{ hours} \times 250/\text{hr} = 84,875 \text{ per annum}
\]

Over 5 years, and in present value terms (2008 dollars), this would equal $396,627.60.

A6.45 Incremental unquantifiable cost of horse standard SB8.12 for transporters

Standard SB8.12 would result in a minimal additional time cost in terms of loading for horse transport (most likely relevant to the slaughter category) by no longer permitting the use of electric prodders. However this would only be the case in the instance where an electric prodder would normally otherwise be used. Given that the instance of this occurring is unknown, this incremental cost remains unquantifiable.

A6.46 Incremental unquantifiable cost of horse standard SB8.14 for transporters

465 This figure has been discounted at a rate of 3.5%.
466 Proposed by AHA.
467 See Table A6.21 of Appendix 6 in this RIS for estimate.
468 See Table A6.20 of Appendix 6 in this RIS for estimate.
Standard SB8.14 would impose additional costs of space for horses travelling across Bass Strait. Specifically horses would have to be individually stalled - except for mares with foals at foot which would have to be stalled together. The proportion of horses travelling across Bass Strait is unknown as is the proportion of mares with foals at foot. For these reasons, it remains that the incremental cost of standard SB8.14 remains unquantifiable. Finally, it is believed that most of current movements across Bass Strait comply with this requirement as part of existing local requirements not in the MCOP. Therefore the incremental cost is likely to be only minor.

A6.47 Incremental cost of pig standard SB9.1 in conjunction with SB9.3 for transporters

Standard SB9.1 reduces the water deprivation time from 24 hours to 12 hours for lactating sows. This would increase the time cost of transport whilst the lactating sows were watered, fed and rested for a mandatory minimum of 12 hours under standards SB9.3. The cost of food and water is not considered in this calculation due to lack of data. The incremental time cost of mandatory spelling for lactating sows will rely on the following assumptions being made:

- pigs are not loaded or unloaded during spelling for bio-security reasons;
- 12 hours of idle vehicle time will be incurred for 50% of the relevant journeys over 12 hours;
- 4 hours minimum voluntary spelling time will be incurred for 50% of the time;
- The proportion of lactating sows and piglets involved in journeys over 12 hours (i.e. 0.01%;\textsuperscript{469})
- the proportion of pig transport journeys greater than 12 hours (i.e. 10%;\textsuperscript{470}) and
- the number of journeys per annum involving pig transport is estimated to be 39,944.63.

The estimated number of annual journeys is calculated in the following way:
- estimated number of (12.5m x 2.4m) decks used for road transport per annum = 89,875\textsuperscript{471}
- weighted sum of average number of decks involved per trip = 25%*1 deck + 25%*2 decks + 50%*3 decks\textsuperscript{472} = 2.25 decks
- estimated number of annual journeys = 89,875/2.25 = 39,944.63

- the cost of pig transport is between $336.50/hr and $390.50/hour.

The estimated cost of pig transport is calculated in the following way:
- lower and upper range of annual total weighted cost = $23,046,397 and $26,744,779 - respectively\textsuperscript{473}

\textsuperscript{469} Proportion recommended by APL.

\textsuperscript{471} See Table A5.9 of Appendix 5 in this RIS for this estimate.

\textsuperscript{472} See Table A5.12 of Appendix 5 for source of these proportions.

\textsuperscript{473} See Table A6.3 of Appendix 6 in this RIS for these estimates.
- weighted hours of road transport per annum = 68,489
- lower and upper range of hourly cost for pig transport = $23,046,397/68,489 = $336.50/hr and $26,744,779/68,489 = $390.50/hr - respectively.

Subsequently, the annual incremental cost for pig transporters is calculated in the following way:

**Between:**

\[
\text{Time cost for 50% of journeys where there are idle trucks and no voluntary spelling} = 50\% \times 0.01\% \times 10\% \times 39,944.63 \text{ journeys} \times 12 \text{ hours added} \times \$336.50/\text{hr}
\]

\[
\text{Time cost for 50% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} = 50\% \times 0.01\% \times 10\% \times 39,944.63 \text{ journeys} \times 4 \text{ hours added} \times \$336.50/\text{hr} = \$1,075.31
\]

Over 5 years, and in present value terms (2008 dollars), this would equal between $5,025.01 and $5,831.40.

**A6.48 Incremental cost savings of pig standard SB9.2 for transporters**

Standard SB9.2, which allows an extension of journey times from 24 hours to 48 hours if minimum requirements are met, would result in cost savings to pig transporters. Journeys under 24 hours are conducted under the operation of standard SB9.1 in conjunction with SB9.3. The cost savings under SB9.2 would rely on the following assumptions:

- pigs are not loaded or unloaded during spelling for bio-security reasons;
- 12 hours of idle vehicle time will be incurred for 50% of the relevant journeys;
- 4 hours minimum voluntary spelling time will be incurred for 50% of the time;
- the proportion of pigs for which journeys are greater than 24 hours (i.e. 0.1%); 475
- the number of journeys per annum involving pig transport is estimated to be 39,944.63; 476
- the proportion of circumstances where minimum requirements for extension of water deprivation times under standard SB9.2 are met (i.e. 100%); and
- the cost of pig transport is between $336.50/hr and $390.50/hr. 478

---

474 See Table A5.12 of Appendix 5 in this RIS for this estimate.
475 Proposed by AHA.
476 Estimate is taken from Section A6.47 of Appendix 6 in this RIS.
477 Proposed by AHA.
478 Estimate is taken from Section A6.46 of Appendix 6 in this RIS.
Therefore, the incremental annual cost savings would be calculated in the following way:

**Between:**

\[
\begin{align*}
  \text{Cost savings for 50\% of journeys where there are idle trucks and no voluntary spelling} & \; [50\% \times 0.1\% \times 39,944.63 \text{ journeys} \times 12 \text{ hours saved} \times $336.50/\text{hr}] + \\
  \text{Cost savings for 50\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} & \; [50\% \times 0.1\% \times 39,944.63 \text{ journeys} \times 4 \text{ hours saved} \times $336.50/\text{hr}] = $107,530.94 \text{ per annum} \\
\end{align*}
\]

and

\[
\begin{align*}
  \text{Cost savings for 50\% of journeys where there are idle trucks and no voluntary spelling} & \; [50\% \times 0.1\% \times 39,944.63 \text{ journeys} \times 12 \text{ hours saved} \times $390.50/\text{hr}] + \\
  \text{Cost savings for 50\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling} & \; [50\% \times 0.1\% \times 39,944.63 \text{ journeys} \times 4 \text{ hours saved} \times $390.50/\text{hr}] = $124,787.02 \text{ per annum} \\
\end{align*}
\]

Over 5 years, and in present value terms (2008 dollars), the cost savings of SB9.2 would equal between $502,500.62 and $583,139.65.

**A6.49 Incremental unquantifiable cost of pig standard SB9.4 for transporters**

Standard SB9.4 would result in minimal additional time costs in terms of loading for pig transport by restricting the use of electric prodders. However this would only be the case in the instance where an electric prodder would normally otherwise be used. Given that the instance of this occurring is unknown, this incremental cost remains unquantifiable.

**A6.50 Incremental unquantifiable cost of poultry standard SB10.2 for livestock owners**

Standard SB10.2 reduces the time within which poultry need to have access to food before assembly for transport from 24 hours under the ‘base case’ to 12 hours. It has been advised that 99.95% of industry is already compliant with the 12 hour feed curfew limit before assembly for transport.\(^{479}\) Keeping in mind that producers need to balance between feed cost and body weight loss in order to maximise weight gain with the lowest food wastage - the additional contingency cost of having to commence feeding again to avoid going over the 12 curfew is unquantifiable/minimal for the following reasons:

- poultry producers do not ‘in practice’ feed curfew the birds for 24 hours under the ‘base case’ and feeding is timed to run out to allow a feed curfew going to slaughter of at least 6 hours for food safety reasons; and
- there is no saving of half a day’s feed, in that any leftover feed is generally not redistributed (due to being uneconomical) and, therefore, the next crop of birds would start on a new ration.

\(^{479}\) Advice provided by Dr Vivien Kite of Rural Industries Research and Development Corporation (RIRDC).
A6.51 Incremental net cost savings of Sheep standard SB11.1 in conjunction with SB11.2 for transporters

A6.51.1 Incremental cost savings for transporters relating to Ewes in their third trimester where more than 4 months pregnant and lambs under 4 months old

Standard SB11.1 increases the maximum time off water from 8 hours to 24 hours for sheep over 4 months pregnant and in their third trimester with an associated minimum spelling time of 12 hours under standard SB11.2 and increases the maximum time off water from 24 hours to 28 hours for lambs under 4 months with an associated minimum spelling time of 12 hours under standards SB11.2. This would reduce the time cost of transport and feed cost of transport @ $0.20/12hr\(^{480}\). The incremental cost savings will rely on the following assumptions being made:

- 3.5 hours of loading/unloading and changeover time will be saved for 5% of the relevant proportion of journeys;
- 13.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be saved for 50% of the time where journeys do not have the ability for changeover;
- the proportion of sheep journeys between 8 hours and 24 hours (i.e. 38%\(^{481}\));
- the proportion of sheep that are pregnant and known to be in their third trimester (i.e. 1%\(^{482}\));
- the proportion of the 1% of sheep that are in the third trimester and more than 4 months pregnant (i.e. 60%\(^{483}\));
- the proportion of lamb journeys between 24 hours and 28 hours (i.e. 5%\(^{484}\));
- the number of journeys per annum involving sheep transport is estimated to be 191,580\(^{485}\);
- the number of journeys per annum involving lamb transport is estimated to be 252.8\(^{486}\); and
- the cost of sheep and lamb transport is between $357.43/hr and $412.45/hr\(^{487}\).

Consequently, the annual cost savings for transporters is calculated in the following way:

\[
\text{For Sheep in third trimester and more than 4 months pregnant:}
\]

\[\text{\$0.40/24hrs suggested by Sheepmeat Council of Australia.}\]
\[\text{Proposed by AHA.}\]
\[\text{Proposed by AHA.}\]
\[\text{Estimated as 30 days divided by the total days of the third trimester of 50 days.}\]
\[\text{Proposed by AHA.}\]
\[\text{See Table A6.23 of Appendix 6 in this RIS for this estimate.}\]
\[\text{See Table A6.23 of Appendix 6 in this RIS for this estimate.}\]
\[\text{See Table A6.20 of Appendix 6 in this RIS for this estimate.}\]
Between:

Time cost savings for 5% of journeys where there are no idle trucks \([5\% \times 38\% \times 1\% \times 60\% \times 191,580.35 \text{ journeys} \times 3.5 \text{ hours saved} \times $357.43/\text{hr}] +

Time cost savings for 95% of journeys where there are idle trucks and no voluntary spelling \([50\% \times 95\% \times 38\% \times 1\% \times 60\% \times 191,580.35 \text{ journeys} \times 13.5 \text{ hours saved} \times $357.43/\text{hr}] +

Time cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling \([50\% \times 95\% \times 38\% \times 1\% \times 60\% \times 191,580.35 \text{ journeys} \times 5.5 \text{ hours saved} \times $357.43/\text{hr}] +

Food cost savings \([38\% \times 1\% \times 60\% \times 66,210,170 \text{ sheep} \times 12 \text{ hours saved} \times $0.20/12\text{hr/sheep}] = $1,798,666.47 \text{ per annum}

and

Time cost savings for 5% of journeys where there are no idle trucks \([5\% \times 38\% \times 1\% \times 60\% \times 191,580.35 \text{ journeys} \times 3.5 \text{ hours saved} \times $412.45/\text{hr}] +

Time cost savings for 95% of journeys where there are idle trucks and no voluntary spelling \([50\% \times 95\% \times 38\% \times 1\% \times 60\% \times 191,580.35 \text{ journeys} \times 13.5 \text{ hours saved} \times $412.45/\text{hr}] +

Time cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling \([50\% \times 95\% \times 38\% \times 1\% \times 60\% \times 191,580.35 \text{ journeys} \times 5.5 \text{ hours saved} \times $412.45/\text{hr}] +

Food cost savings \([38\% \times 1\% \times 60\% \times 66,210,170 \text{ sheep} \times 12 \text{ hours saved} \times $0.20/12\text{hr/sheep}] = $2,019,769.26 \text{ per annum}

For lamb under 4 months old:

Between:

Time cost savings for 5% of journeys where there are no idle trucks \([5\% \times 5\% \times 252.8 \text{ journeys} \times 3.5 \text{ hours saved} \times $357.43/\text{hr}] +

Time cost savings for 95% of journeys where there are idle trucks and no voluntary spelling \([50\% \times 95\% \times 5\% \times 252.8 \text{ journeys} \times 13.5 \text{ hours saved} \times $357.43/\text{hr}] +

Time cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling \([50\% \times 95\% \times 5\% \times 252.8 \text{ journeys} \times 5.5 \text{ hours saved} \times $357.43/\text{hr}] +

Food cost savings \([5\% \times 107,162 \text{ lambs} \times 12 \text{ hours saved} \times $0.20/12\text{hr/lamb}] = $54,424.26 \text{ per annum}

and

Time cost savings for 5% of journeys where there are no idle trucks \([5\% \times 5\% \times 252.8 \text{ journeys} \times 3.5 \text{ hours saved} \times $412.45/\text{hr}] +

Time cost savings for 95% of journeys where there are idle trucks and no voluntary spelling \([50\% \times 95\% \times 5\% \times 252.8 \text{ journeys} \times 13.5 \text{ hours saved} \times $412.45/\text{hr}] +

Time cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling \([50\% \times 95\% \times 5\% \times 252.8 \text{ journeys} \times 5.5 \text{ hours saved} \times $412.45/\text{hr}] +

Food cost savings \([5\% \times 107,162 \text{ lambs} \times 12 \text{ hours saved} \times $0.20/12\text{hr/lamb}] = $54,424.26 \text{ per annum}

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Food cost savings \[5\% \times 107,162 \text{ lambs} \times 12 \text{ hours saved} \times \$0.20/12\text{hr/lamb}\] = $60,822.43 per annum

A6.51.2 Incremental cost for transporters relating to ewes in third trimester of pregnancy and less than 4 months pregnant

Standard SB11.1 reduces the maximum time off water from 48 hours to 24 hours for ewes in their third trimester and less than 4 months pregnant, with an associated minimum spelling time of 12 hours under standard SB11.2. This would increase the time cost and feed cost of transport @ $0.20/12hr. The incremental time cost will rely on the following assumptions being made:

1. 3.5 hours of loading/unloading and changeover time will be incurred for 5\% of the relevant proportion of journeys;
2. 13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95\% of journeys);
3. 5.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 50\% of the time where journeys do not have the ability for changeover;
4. the proportion of sheep journeys between 24 hours and 48 hours (i.e. 5\%);
5. the proportion of sheep in their 3rd trimester of pregnancy (i.e. 1\%);
6. the proportion of the 1\% of ewes in the third trimester that are less than 4 months pregnant (i.e. 40\%);
7. the number of journeys per annum involving sheep transport is estimated to be 191,580.35; and
8. the cost of sheep and lamb transport is between $357.43/hr and $412.45/hr.

Subsequently, the annual incremental cost for transporters is calculated in the following way:

\[
\text{Between:}
\]

\[
\text{Time cost for 5\% of journeys where there are no idle trucks [5\% \times 5\% \times 1\% \times 40\% \times 191,580.35 journeys \times 3.5 \text{ hours added} \times \$357.43/hr] +}
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling [50\% \times 95\% \times 5\% \times 1\% \times 40\% \times 191,580.35 journeys \times 13.5 \text{ hours added} \times \$357.43/hr] +}
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling [50\% \times 95\% \times 5\% \times 1\% \times 40\% \times 191,580.35 journeys \times 5.5 \text{ hours added} \times \$357.43/hr]} +
\]

\[
\text{Food cost [5\% \times 1\% \times 40\% \times 66,210,170 \text{ sheep} \times 12 \text{ hours} \times \$0.20/12\text{hr/sheep}] = $157,777.76 per annum}
\]

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488 Proposed by AHA
489 Proposed by AHA
490 Estimated as 20 days divided by the total days of the third trimester of 50 days
491 See Table A6.23 of Appendix 6 in this RIS for this estimate
492 See Table A6.20 of Appendix 6 in this RIS for this estimate
and

Time cost for 5% of journeys where there are no idle trucks [5% x 5% x 1% x 40% x 191,580.35 journeys x 3.5 hours added x $412.45/hr] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 5% x 1% x 40% x 191,580.35 journeys x 13.5 hours added x $412.45/hr] +

Time cost for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling [50% x 95% x 5% x 1% x 40% x 191,580.35 journeys x 5.5 hours added x $412.45/hr]+

Food cost [5% x 1% x 40% x 66,210,170 sheep x 12 hours x $0.20/12hr/sheep] = $177,172.74 per annum

A6.5.1.3 Incremental cost for livestock owners as a result of reductions in water deprivation times

Standard SB11.1 would impose an incremental cost on livestock owners from a loss of income from contaminated fleece (dung and urine stain) and reduced price at sale yards due to poorly presented sheep\(^{493}\). It is taken that there is a 1% probability of the full impact of these costs as a result of standard SB11.1. The full impact is calculated in the Table A6.25 below:

Table A6.25 – Approximate cost to livestock owners from contaminated fleece and reduced price at sale yards from full impact of SB11.1

<table>
<thead>
<tr>
<th>Transactions</th>
<th>Slaughter</th>
<th>Live Export</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIS*</td>
<td>31,902,998</td>
<td>30,041,541</td>
<td>4,265,631</td>
</tr>
<tr>
<td>% of total flock</td>
<td>48.2%</td>
<td>45.4%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Journeys &gt; 24h**</td>
<td>5.0%</td>
<td>5.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td>EMI^</td>
<td>1,036 c</td>
<td>1,595,150</td>
<td>1,502,077</td>
</tr>
<tr>
<td>Discount***</td>
<td>50%</td>
<td>$5.18</td>
<td></td>
</tr>
<tr>
<td>WPFC****</td>
<td>4.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss per head</td>
<td>$22</td>
<td>$4****</td>
<td>$4****</td>
</tr>
<tr>
<td></td>
<td>$35,093,300</td>
<td>$6,008,308</td>
<td>$853,128</td>
</tr>
</tbody>
</table>


\(^{493}\) Advice provided by Wool Producers Australia.

Therefore the total cost to livestock owners would be in the order of $419,547.36 per annum.
The total incremental net cost savings of standard SB11.1 in conjunction with SB11.2 across all three classes of species, is calculated by subtracting the costs under section A6.51.2 and costs under section A6.51.3 - from the cost savings under section A6.51.1. This would entail a net cost savings of between **$1,221,341.35** and **$1,423,049.16** per annum. Over 5 years, and in present value terms (2008 dollars), this would equal between **$5,961,753.73** and **$6,934,249.43**.

A6.52 Summary net incremental cost tables by species of general and specific standards (proposed)

The following tables represent the net incremental costs of standards (general and specific), as they apply to each of the livestock species/classes. Negative figures represent cost savings. Costs for general standards for each species/class of livestock are taken from sections A6.3 to A6.9 and associated tables (inclusive). Costs for specific standards are taken from sections A6.12 to A6.51.

### Table A6.26 – Net incremental cost of proposed standards in relation to buffalo

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Min cost</th>
<th>Max cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>Journey documentation</td>
<td>$123.80</td>
<td>$123.80</td>
</tr>
<tr>
<td>SA1.2</td>
<td>Documents for journeys &gt; 24hrs</td>
<td>$469.14</td>
<td>$493.21</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals only on vet advice</td>
<td>$41.86</td>
<td>$41.86</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$938.27</td>
<td>$986.42</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$880.93</td>
<td>$926.13</td>
</tr>
<tr>
<td>SB2.1&amp;SB2.2</td>
<td>Maximum time off water and associated spelling</td>
<td>$33,156.98</td>
<td>$34,858.37</td>
</tr>
<tr>
<td>SB2.3</td>
<td>Pregnancy transport under vet advice</td>
<td>$3,767.40</td>
<td>$3,767.40</td>
</tr>
<tr>
<td>SB2.5</td>
<td>Cooling by water spray</td>
<td>$375.42</td>
<td>$394.68</td>
</tr>
<tr>
<td><strong>Total annual quantitative cost</strong></td>
<td><strong>$39,753.79</strong></td>
<td><strong>$41,591.88</strong></td>
<td></td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td><strong>$185,772.62</strong></td>
<td><strong>$194,362.13</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Table A6.27 – Net incremental cost of proposed standards in relation to cattle (including calves but excluding rail)

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Min cost</th>
<th>Max cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals only on vet advice</td>
<td>$347,694.33</td>
<td>$347,694.33</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$6,290,042.14</td>
<td>$7,084,564.50</td>
</tr>
<tr>
<td><strong>Cattle</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA1.1</td>
<td>Journey documentation</td>
<td>$1,450.92</td>
<td>$1,450.92</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals only on vet advice</td>
<td>$2,344.93</td>
<td>$2,344.93</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$10,586.38</td>
<td>$11,311.84</td>
</tr>
<tr>
<td><strong>Calves for rearing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA1.1</td>
<td>Journey documentation</td>
<td>$7,350.43</td>
<td>$7,350.43</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals only on vet advice</td>
<td>$13,912.89</td>
<td>$13,912.89</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$53,630.90</td>
<td>$57,306.11</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$50,352.98</td>
<td>$53,803.56</td>
</tr>
<tr>
<td><strong>Calves for slaughter</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB4.1&amp;SB4.2</td>
<td>Maximum time of water and associated spelling</td>
<td>$2,818,323.78</td>
<td>$3,222,691.78</td>
</tr>
<tr>
<td>SB4.3</td>
<td>Pregnant animal to be transported under vet advice</td>
<td>$1,280,905.91</td>
<td>$1,280,905.91</td>
</tr>
<tr>
<td><strong>Total annual quantitative cost</strong></td>
<td><strong>$10,876,595.57</strong></td>
<td><strong>$12,083,337.19</strong></td>
<td></td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td><strong>$50,827,192.63</strong></td>
<td><strong>$56,466,391.80</strong></td>
<td></td>
</tr>
</tbody>
</table>

Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock
### Table A6.28 – Net incremental cost of proposed standards in relation to lamb < 4 months old

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Min cost</th>
<th>Max cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>Journey documentation</td>
<td>$455.04</td>
<td>$455.04</td>
</tr>
<tr>
<td>SA1.2</td>
<td>Documents for journeys &gt; 24hrs</td>
<td>$1,882.44</td>
<td>$2,172.24</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals only on vet advice</td>
<td>$1,560.28</td>
<td>$1,560.28</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$3,764.88</td>
<td>$4,344.48</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$6,565.35</td>
<td>$7,576.07</td>
</tr>
<tr>
<td>SB11.1&amp;SB11.2</td>
<td>Maximum time off water and associated spelling</td>
<td>-$54,424.26</td>
<td>-$60,822.43</td>
</tr>
<tr>
<td><strong>Total annual quantitative cost</strong></td>
<td></td>
<td>-$40,196.27</td>
<td>-$44,714.32</td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td></td>
<td>-$187,840.37</td>
<td>-$208,953.56</td>
</tr>
</tbody>
</table>

### Table A6.29 – Net incremental cost of proposed standards in relation to sheep > 4 months old

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Max cost</th>
<th>Min cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>Journey documentation</td>
<td>$344,844.63</td>
<td>$344,844.63</td>
</tr>
<tr>
<td>SA1.2</td>
<td>Documents for journeys &gt; 24hrs</td>
<td>$1,426,575.16</td>
<td>$1,646,194.09</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals only on vet advice</td>
<td>$964,020.07</td>
<td>$964,020.07</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$2,853,150.31</td>
<td>$3,292,388.18</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$4,975,437.64</td>
<td>$5,741,398.21</td>
</tr>
<tr>
<td>SB11.1&amp;SB11.2</td>
<td>Maximum time off water and associated spelling</td>
<td>-$1,221,341.35</td>
<td>-$1,423,049.16</td>
</tr>
<tr>
<td><strong>Total annual quantitative costs</strong></td>
<td></td>
<td>$9,342,686.47</td>
<td>$10,565,796.03</td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td></td>
<td>$43,659,113.87</td>
<td>$49,374,801.75</td>
</tr>
</tbody>
</table>

### Table A6.30 – Net incremental cost of proposed standards in relation to pigs

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Min cost</th>
<th>Max cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB9.1&amp;SB9.3</td>
<td>Maximum time off water and associated spelling</td>
<td>$1,075.31</td>
<td>$1,247.87</td>
</tr>
<tr>
<td>SB9.2</td>
<td>Extension of time-off water</td>
<td>-$107,530.94</td>
<td>-$124,787.02</td>
</tr>
<tr>
<td><strong>Total annual quantitative costs</strong></td>
<td></td>
<td>-$106,455.63</td>
<td>-$123,539.15</td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td></td>
<td>-$497,475.61</td>
<td>-$577,308.25</td>
</tr>
</tbody>
</table>

### Table A6.31 – Net incremental cost of proposed standards in relation to poultry for meat

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$5,237,268.11</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$4,917,166.28</td>
</tr>
<tr>
<td><strong>Total annual quantitative costs</strong></td>
<td></td>
<td>$10,154,434.38</td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td></td>
<td>$47,452,476.19</td>
</tr>
</tbody>
</table>

### Table A6.32 – Net incremental cost of proposed standards in relation to chicks

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$338,408.09</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$317,724.59</td>
</tr>
<tr>
<td><strong>Total annual quantitative costs</strong></td>
<td></td>
<td>$656,132.68</td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td></td>
<td>$3,066,132.68</td>
</tr>
</tbody>
</table>

### Table A6.33 – Net incremental cost of proposed standards in relation to horses (excluding rail)

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB9.1&amp;SB9.3</td>
<td>Maximum time off water and associated spelling</td>
<td>$1,075.31</td>
</tr>
<tr>
<td>SB9.2</td>
<td>Extension of time-off water</td>
<td>-$107,530.94</td>
</tr>
<tr>
<td><strong>Total annual quantitative costs</strong></td>
<td></td>
<td>-$106,455.63</td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td></td>
<td>-$497,475.61</td>
</tr>
</tbody>
</table>
### Table A6.34 – Net incremental cost of proposed standards in relation to deer

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Min Cost</th>
<th>Max Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>Journey documentation</td>
<td>$763.87</td>
<td>$763.87</td>
</tr>
<tr>
<td>SA1.2</td>
<td>Documents for journeys &gt; 24hrs</td>
<td>$2,670.01</td>
<td>$2,717.75</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals only on vet advice</td>
<td>$718.29</td>
<td>$718.29</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$5,340.02</td>
<td>$5,435.51</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$5,013.64</td>
<td>$5,103.29</td>
</tr>
<tr>
<td>SB5.1&amp;SB5.2</td>
<td>Maximum time off water and associated spelling</td>
<td>$15,328.99</td>
<td>$15,603.08</td>
</tr>
<tr>
<td>SB5.3</td>
<td>Pregnant deer to be transported only on vet advice</td>
<td>$50,280.19</td>
<td>$50,280.19</td>
</tr>
<tr>
<td><strong>Total Annual quantitative costs</strong></td>
<td></td>
<td>$80,115.02</td>
<td>$80,621.99</td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td></td>
<td>$374,383.85</td>
<td>$376,752.95</td>
</tr>
</tbody>
</table>

### Table A6.35 – Net incremental cost of proposed standards in relation to camels

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>Journey documentation</td>
<td>$58.51</td>
</tr>
<tr>
<td>SA1.2</td>
<td>Documents for journeys &gt; 24hrs</td>
<td>$176.21</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals only on vet advice</td>
<td>$11.45</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$352.43</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$330.89</td>
</tr>
<tr>
<td>SB3.1&amp;SB3.3</td>
<td>Maximum time off water and associated spelling</td>
<td>$31,119.92</td>
</tr>
<tr>
<td>SB3.4</td>
<td>Pregnant animal transport only under vet advice</td>
<td>$1,031.28</td>
</tr>
<tr>
<td><strong>Total annual quantitative cost</strong></td>
<td></td>
<td>$33,080.70</td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td></td>
<td>$154,588.74</td>
</tr>
</tbody>
</table>

### Table A6.36 – Net incremental cost of proposed standards in relation to alpacas

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>Journey documentation</td>
<td>$1,170.70</td>
</tr>
<tr>
<td>SA1.2</td>
<td>Documents for journeys &gt; 24hrs</td>
<td>$3,387.44</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals only on vet advice</td>
<td>$975.37</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$6,774.88</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$6,360.80</td>
</tr>
<tr>
<td>SB1.1&amp;1.3</td>
<td>Maximum time off water and associated spelling</td>
<td>$13,990.10</td>
</tr>
<tr>
<td>SB1.2</td>
<td>Journey extension</td>
<td>$11,262.76</td>
</tr>
<tr>
<td>SB1.4</td>
<td>Last month of pregnancy transported only on vet advice</td>
<td>$65,837.77</td>
</tr>
<tr>
<td><strong>Total annual quantitative cost</strong></td>
<td></td>
<td>$87,234.31</td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td></td>
<td>$407,652.82</td>
</tr>
</tbody>
</table>
Table A6.37 – Net incremental cost of proposed standards in relation to goats

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Min cost</th>
<th>Max cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>Journey documentation</td>
<td>$7,525.95</td>
<td>$7,525.95</td>
</tr>
<tr>
<td>SA1.2</td>
<td>Documents for journeys &gt; 24hrs</td>
<td>$31,133.83</td>
<td>$35,926.84</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals only on vet advice</td>
<td>$22,353.88</td>
<td>$22,353.88</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$62,267.67</td>
<td>$71,853.67</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$58,461.87</td>
<td>$67,461.98</td>
</tr>
<tr>
<td>SB7.1&amp;SB7.2</td>
<td>Maximum time off water and associated spelling</td>
<td>$42,164.23</td>
<td>$48,654.66</td>
</tr>
<tr>
<td><strong>Total annual quantitative cost</strong></td>
<td><strong>$223,907.43</strong></td>
<td><strong>$253,776.98</strong></td>
<td></td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td><strong>$1,046,337.15</strong></td>
<td><strong>$1,185,919.94</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table A6.38 – Net incremental cost of proposed standards in relation to emus

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>Journey documentation</td>
<td>$200.00</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals only on vet advice</td>
<td>$74.42</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$1,157.41</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$1,086.67</td>
</tr>
<tr>
<td>SB7.1&amp;SB7.2</td>
<td>Maximum time off water and associated spelling</td>
<td>$12,207.11</td>
</tr>
<tr>
<td><strong>Total annual quantitative cost</strong></td>
<td><strong>$14,725.60</strong></td>
<td></td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td><strong>$68,813.92</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table A6.39 – Net incremental cost of proposed standards in relation to ostriches

<table>
<thead>
<tr>
<th>Standard</th>
<th>Brief description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>Journey documentation</td>
<td>$373.08</td>
</tr>
<tr>
<td>SA4.2</td>
<td>Transport of unfit animals on vet advice</td>
<td>$156.92</td>
</tr>
<tr>
<td>SA5.10</td>
<td>Inspection of facilities</td>
<td>$2,159.01</td>
</tr>
<tr>
<td>SA5.14</td>
<td>Minimise hot cold conditions</td>
<td>$2,027.05</td>
</tr>
<tr>
<td>SB7.1&amp;SB7.2</td>
<td>Maximum time off water and associated spelling</td>
<td>$22,777.09</td>
</tr>
<tr>
<td><strong>Total annual quantitative cost</strong></td>
<td><strong>$27,493.15</strong></td>
<td></td>
</tr>
<tr>
<td><strong>5-year present value (2008 dollars)</strong></td>
<td><strong>$128,477.67</strong></td>
<td></td>
</tr>
</tbody>
</table>

A6.53 Total incremental net costs/cost savings of general and specific standards (proposed) by species/class and standard

Finally, Table A6.40 provides the total incremental net maximum and minimum cost of the proposed general and specific standard by species or class of species over 5 years in present value terms (2008 dollars). Minimum and maximum costs are taken from Tables A6.26 to A6.39 for the respective livestock species/class. Table A6.41 provides the total incremental costs/cost savings of the proposed standards by general and specific standard classification.

Table A6.40 – Net incremental cost/cost savings of the proposed standards over 5 years in present value terms (2008 dollars) – by species + rail

<table>
<thead>
<tr>
<th>Livestock Species/Class/mode of travel</th>
<th>Min Cost</th>
<th>Max cost</th>
</tr>
</thead>
</table>

Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock
<table>
<thead>
<tr>
<th>Livestock Species/Class/mode of travel</th>
<th>Min Cost</th>
<th>Max cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>$185,772.62</td>
<td>$194,362.13</td>
</tr>
<tr>
<td>Cattle (including calves)</td>
<td>$50,827,192.63</td>
<td>$56,466,391.80</td>
</tr>
<tr>
<td>Lamb &lt; 4 months old</td>
<td>-$187,840.37</td>
<td>-$208,953.56</td>
</tr>
<tr>
<td>Sheep</td>
<td>$43,659,113.87</td>
<td>$49,374,801.75</td>
</tr>
<tr>
<td>Pigs</td>
<td>-$497,475.61</td>
<td>-$577,308.25</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>$47,452,476.19</td>
<td>$47,452,476.19</td>
</tr>
<tr>
<td>Horses (slaughter/export/sales/major events)</td>
<td>-$1,808,922.94</td>
<td>-$1,808,922.94</td>
</tr>
<tr>
<td>Deer</td>
<td>$374,383.85</td>
<td>$376,752.95</td>
</tr>
<tr>
<td>Camels</td>
<td>$154,588.74</td>
<td>$154,588.74</td>
</tr>
<tr>
<td>Alpacas</td>
<td>$407,652.82</td>
<td>$407,652.82</td>
</tr>
<tr>
<td>Goats</td>
<td>$1,046,337.15</td>
<td>$1,185,919.94</td>
</tr>
<tr>
<td>Emus</td>
<td>$68,813.92</td>
<td>$68,813.92</td>
</tr>
<tr>
<td>Ostriches</td>
<td>$128,477.67</td>
<td>$128,477.67</td>
</tr>
<tr>
<td>Rail</td>
<td>$102,532.28</td>
<td>$102,532.28</td>
</tr>
</tbody>
</table>

| Total 5-year present value (2008 dollars) | $144,979,262.83 | $156,383,745.45 |

Table A6.41 – Summary of net incremental annual cost/cost savings over 5 years in present value terms (2008 dollars) of proposed standards (Option B) – by standard classification

<table>
<thead>
<tr>
<th>Standard</th>
<th>Annual min</th>
<th>Annual max</th>
<th>Present value over 5 years min</th>
<th>Present value over 5 years max</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>$364,317</td>
<td>$364,317</td>
<td>$1,702,482</td>
<td>$1,702,482</td>
</tr>
<tr>
<td>SA1.2</td>
<td>$1,466,294</td>
<td>$1,691,068</td>
<td>$6,852,109</td>
<td>$7,902,494</td>
</tr>
<tr>
<td>SA4.2</td>
<td>$1,353,865</td>
<td>$1,353,865</td>
<td>$6,326,717</td>
<td>$6,326,717</td>
</tr>
<tr>
<td>SA5.10</td>
<td>$14,886,740</td>
<td>$16,135,211</td>
<td>$69,566,917</td>
<td>$75,401,117</td>
</tr>
<tr>
<td>SA5.14</td>
<td>$10,348,901</td>
<td>$11,128,458</td>
<td>$48,361,236</td>
<td>$52,004,167</td>
</tr>
<tr>
<td>SB1.1&amp;SB1.3</td>
<td>$13,990</td>
<td>$13,990</td>
<td>$65,377</td>
<td>$65,377</td>
</tr>
<tr>
<td>SB1.2</td>
<td>-$11,263</td>
<td>-$11,263</td>
<td>-$52,632</td>
<td>-$52,632</td>
</tr>
<tr>
<td>SB1.4</td>
<td>$65,838</td>
<td>$65,838</td>
<td>$307,665</td>
<td>$307,665</td>
</tr>
<tr>
<td>SB2.1&amp;SB2.2</td>
<td>$33,157</td>
<td>$34,858</td>
<td>$154,945</td>
<td>$162,896</td>
</tr>
<tr>
<td>SB2.3</td>
<td>$3,767</td>
<td>$3,767</td>
<td>$17,605</td>
<td>$17,605</td>
</tr>
<tr>
<td>SB2.5</td>
<td>$375</td>
<td>$395</td>
<td>$1,754</td>
<td>$1,844</td>
</tr>
<tr>
<td>SB3.1&amp;SB3.3</td>
<td>$31,119.92</td>
<td>$31,119.92</td>
<td>$145,425,85</td>
<td>$145,426</td>
</tr>
<tr>
<td>SB3.4</td>
<td>$1,031</td>
<td>$1,031</td>
<td>$4,819</td>
<td>$4,819</td>
</tr>
<tr>
<td>SB4.1&amp;SB4.2</td>
<td>$2,818,324</td>
<td>$3,222,692</td>
<td>$13,170,250</td>
<td>$15,059,894</td>
</tr>
<tr>
<td>SB4.3</td>
<td>$1,280,906</td>
<td>$1,280,906</td>
<td>$5,985,775</td>
<td>$5,985,775</td>
</tr>
<tr>
<td>SB5.1&amp;SB5.2</td>
<td>$15,329</td>
<td>$15,603</td>
<td>$71,634</td>
<td>$72,914</td>
</tr>
<tr>
<td>SB5.3</td>
<td>$50,280</td>
<td>$50,280</td>
<td>$234,963</td>
<td>$234,963</td>
</tr>
<tr>
<td>SB6.1&amp;SB6.4</td>
<td>$34,984</td>
<td>$34,984</td>
<td>$163,484</td>
<td>$163,484</td>
</tr>
<tr>
<td>SB7.1&amp;SB7.2</td>
<td>$42,164</td>
<td>$48,655</td>
<td>$197,037</td>
<td>$227,367</td>
</tr>
<tr>
<td>SB8.2</td>
<td>$13,808</td>
<td>$13,808</td>
<td>$64,527</td>
<td>$64,527</td>
</tr>
<tr>
<td>SB8.4</td>
<td>$847</td>
<td>$847</td>
<td>$3,958</td>
<td>$3,958</td>
</tr>
<tr>
<td>SB8.8</td>
<td>$8,398</td>
<td>$8,398</td>
<td>$39,242</td>
<td>$39,242</td>
</tr>
<tr>
<td>SB8.10</td>
<td>$6,042</td>
<td>$6,042</td>
<td>$28,234</td>
<td>$28,234</td>
</tr>
<tr>
<td>SB8.11</td>
<td>$84,875</td>
<td>$84,875</td>
<td>$396,628</td>
<td>$396,628</td>
</tr>
<tr>
<td>SB9.1&amp;SB9.3</td>
<td>$1,075</td>
<td>$1,248</td>
<td>$5,025</td>
<td>$5,831</td>
</tr>
<tr>
<td>SB9.2</td>
<td>-$107,531</td>
<td>-$124,787</td>
<td>-$502,501</td>
<td>-$583,140</td>
</tr>
<tr>
<td>SB11.1&amp;SB11.2</td>
<td>-$1,275,766</td>
<td>-$1,483,872</td>
<td>-$5,961,754</td>
<td>-$6,934,249</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$31,024,354</strong></td>
<td><strong>$33,464,818</strong></td>
<td><strong>$144,979,263</strong></td>
<td><strong>$156,383,745</strong></td>
</tr>
</tbody>
</table>

Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock
A6.54 Estimated increase in retail meat prices

Table A6.42 – Increase in transport cost for major livestock species due to proposed standards

<table>
<thead>
<tr>
<th>Livestock Species 494</th>
<th>Incremental annual cost 495</th>
<th>Annual total cost of livestock transport 496</th>
<th>Incremental annual cost as a % of annual total cost of transport 497(d3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle (+ calves)</td>
<td>$10,876,596 to $12,083,337</td>
<td>$319,390,360 to $359,733,934</td>
<td>3.36% to 3.41%</td>
</tr>
<tr>
<td>Sheep</td>
<td>$9,342,686 to $10,565,796</td>
<td>$139,190,224 to $160,618,333</td>
<td>6.58% to 6.71%</td>
</tr>
<tr>
<td>Pigs</td>
<td>-$106,456 to -$123,539</td>
<td>$21,955,880 to $25,479,261</td>
<td>-0.48%</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>$10,154,434</td>
<td>$91,251,692</td>
<td>11.13%</td>
</tr>
</tbody>
</table>

Table A6.43 - Proportion of transport cost borne by livestock producers and consumers of meat products as a result of proposed standards (Option B)

<table>
<thead>
<tr>
<th>Meat product</th>
<th>Price sensitivity of supply 498 (e3)</th>
<th>Price sensitivity of demand 499 (f3)</th>
<th>% of cost borne by producers (g3) = 1/(e3)/{1/(e3) + 1/(f3) x 500, 501}</th>
<th>% of cost borne by consumers (i3) = 1 - (g3)</th>
<th>% increase in retail price of meat product (j3) = (d3) x (i3)</th>
<th>% change in demand (k3) = (j3) x (f3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef</td>
<td>0.27</td>
<td>-1.2</td>
<td>71.2% 503</td>
<td>28.8%</td>
<td>0.96% to 0.98%</td>
<td>-1.16% to -1.18%</td>
</tr>
<tr>
<td>Lamb</td>
<td>0.17</td>
<td>-1.4</td>
<td>69.7% 505</td>
<td>30.3%</td>
<td>1.99% to 2.03%</td>
<td>-2.79% to -2.85%</td>
</tr>
<tr>
<td>Pork</td>
<td>1.5</td>
<td>-1.59 506</td>
<td>40% 507</td>
<td>60.0%</td>
<td>-0.29%</td>
<td>+0.46%</td>
</tr>
<tr>
<td>Chicken</td>
<td>0.2 508</td>
<td>-0.3</td>
<td>57.3% 509</td>
<td>42.7%</td>
<td>4.75%</td>
<td>-1.43%</td>
</tr>
</tbody>
</table>

494 Species does not include chicks, buffalo, horses, deer, camels, alpacas, goats, emus and ostriches.
495 Cost estimates are rounded to the nearest dollar and taken from Tables A6.26 to A6.39 of Appendix 6 in this RIS.
496 Cost estimates are rounded to the nearest dollar and taken from Table A6.3 of Appendix 6 in this RIS.
497 If all costs are eventually passed on to consumers then it would be expected that the increase in price would roughly equate to the increase in annual cost as a percentage of total annual cost.
500 Retail price divided by production price.
502 Percentages have been rounded to one decimal place.
503 For whole beast farm gate price ($799) and retail price of cattle ($1,438) see Coles Myer Ltd, (August, 2005), Submission to DAFF.
504 Although this meat product is taken from sheep over 4 months of age, it is conventional in the retail market to classify it as lamb.
505 Saleyard price of lamb $3.40/kg and retail price of lamb is $12.16/kg (see ABARE (March quarter 2007), Australian Commodities, Vol.14).
506 ABARE (August, 2004), Economic assessment of pig meat imports on the Australian industry, ABARE report 04.15.
507 For production cost $2.39 per kg and retail cost $3.80 per kg of pork - see ABARE (March quarter 2007), Australian Commodities Vol.14.
508 The price elasticity of supply for chicken meat is based on a UK study by Harling and Thompson (1985) (cited in Alston G.M and Scobie G. M) and it is assumed that chicken meat production systems in Australia and the UK are similar. Other elasticity coefficients reported are 0.35 for Turkey (see Dan F Halil (2005)) and 0.36 for Indonesia (see Fabiosa J.F et al (2004)). However, production systems in these two countries are likely to be dissimilar to Australian systems.
509 Wholesale price of $4.24/ kg is based on advice from Dr Vivien Kite from Rural Industries Research and Development Corporation (RIRDC) and retail price of chicken of $4.80/kg is based on current observation of local retail outlets (shops and outlets).
Appendix 7 – Cost and cost saving estimate calculations for Options B1, D, E and E1

A7.1 – Costing of Option B1

The cost of Option B1 is simply the addition of the incremental cost impact of changing the minimum age for the transport of slaughter calves to 8 days to the cost of Option B. The incremental cost of changing the minimum age for slaughter calf transport is analysed in the next section.

A7.1.1 Costing of Impact of 8-day minimum age for transport of calves for slaughter on feed and labour costs

Based on Table A5.5 in Appendix 5 it is estimated that there are around 860,000 slaughter calves transported for slaughter annually. The increase in the minimum age for transport means that each calf is required to be 3 days older than it otherwise would be. The result of raising the minimum age for transport from 5 to 8 days is that around 860,000 calves per year will require an additional 3 days of feed, labour and housing. The cost of feed (i.e. 4 litres of unprocessed milk per calf per day @ $0.40/litre510) is estimated to be $1.60 per calf per day. Furthermore, the cost of labour (i.e. 5 minutes of feeding per calf twice per day @ $20/hr511 including on-cost) is estimated to be $3.33 per calf per day, making a total estimated cost of $4.93 x 860,000 x 3 days = $12,719,400 per annum or $59,438,764 over 5 years in present value terms discounted at 3.5%. Note that $4.93 represents 12.3% of the average carcass value of calves for slaughter of around $40 dollars.512

The impact of additional feed and labour cost would be partially offset by the proportion of producers with large herds who are able to utilise a higher frequency of consignment thereby achieving scale economies. This would also mean, however, that smaller dairy farmers, who are less frequently able to arrange consignment due to lower numbers of calves for slaughter, would face a higher burden regarding the impact of this proposed standard on feed and labour costs.

A7.1.2 Impact of 8-day minimum age for transport on housing costs

It is estimated that the typical calf shed costs around $15,000. The impact of this proposed standard would be to increase the number of calves needing to be housed at a particular point in time. It is estimated that anywhere between 30 to 60% additional housing space will be required as a consequence.513

The extent of this one-off cost on housing would be mitigated by the number of producers who have typically have herds with 800 cows or less who have usually set aside spare capacity in

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510 Advice from Dr. Sue Hide, Senior Veterinary Officer, Department of Primary Industries, Victoria.
511 Advice from Dr. Sue Hide.
512 It is assumed that any increase in weight over 3 days for bobby calves is negligible and would provide insignificant value to a carcass as compared to the additional cost of feed and labour.
513 Advice obtained from Department of Primary Industries, Victoria
their sheds to cope with peaks in calving. Also, a further mitigation of additional housing costs would be possible in the situation where larger producers utilise a higher frequency of consignments – thereby alleviating some of the bottlenecks of having additional calves at a particular point in time. However, it is expected that both these mitigations will not be able to completely offset any increased requirement for housing space which is likely to be substantial but not able to be calculated in dollar terms without data on the numbers and sizes of calving sheds in Australia, as well as the daily distribution of the numbers of calves born to a herd in a typical calving period.

**A7.1.3 The net cost of Option B1 including the impact of 8-day minimum age for transport**

The incremental cost of Option B1 is calculated by taking the costs under Option B as discussed in Appendix 6 and adding an incremental cost of $12,719,400 per annum or $59,438,764 over 5 years in present value terms discounted at 3.5%. This would make the annual net cost of Option B1 equal to between $43,743,754 and $46,184,218 or between $204,418,027 and $215,822,509 over 5 years in present value terms (2008 dollars).

**A7.1.4 Impact of Option B1 on meat prices**

It is noted that the change in meat prices and demand for lamb, pork and chicken would be identical to Option B (see Table A6.43 of Appendix 6). In relation to the change in beef prices it is assumed that it would be, to some extent, similar to Option B. However, it is acknowledged that the impact of an increase in costs regarding the 8-day minimum age for calf transport would lead to an increase in the price of veal and a reduction in the demand for veal. Moreover, this is unquantifiable due to a lack of data on the price sensitivities of the supply and demand for veal.

**A7.2 Costing of Option D**

Option D involves removing the most expensive standard under Option B (the proposed standards). The criteria used for eliminating standards, is to choose standards which involve an incremental cost of at least $1m dollars and above on the livestock industry. These standards are summarised in table A7.1:

**Table A7.1 – Summary of most expensive standards under Option B to be removed under Option D**

<table>
<thead>
<tr>
<th>Standard</th>
<th>Annual min</th>
<th>Annual max</th>
<th>Present value over 5 years min</th>
<th>Present value over 5 years max</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.2</td>
<td>$1,466,294</td>
<td>$1,691,068</td>
<td>$6,852,109</td>
<td>$7,902,494</td>
</tr>
<tr>
<td>SA4.2</td>
<td>$1,353,865</td>
<td>$1,353,865</td>
<td>$6,326,717</td>
<td>$6,326,717</td>
</tr>
<tr>
<td>SA5.10</td>
<td>$14,886,740</td>
<td>$16,135,211</td>
<td>$69,566,917</td>
<td>$75,401,117</td>
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<tr>
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<td>$10,348,901</td>
<td>$11,128,458</td>
<td>$48,361,236</td>
<td>$52,004,167</td>
</tr>
<tr>
<td>SB4.1&amp;SB4.2</td>
<td>$2,818,324</td>
<td>$3,222,692</td>
<td>$13,170,250</td>
<td>$15,059,894</td>
</tr>
<tr>
<td>SB4.3</td>
<td>$1,280,906</td>
<td>$1,280,906</td>
<td>$5,985,775</td>
<td>$5,985,775</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$32,155,218</td>
<td>$34,812,386</td>
<td>$150,263,879</td>
<td>$162,681,038</td>
</tr>
</tbody>
</table>

Lamb definition in this case is the retail definition and not the one used in the proposed standards.
The net cost savings of Option D is calculated by taking the cost savings under Option B as discussed in Appendix 6 and removing the totals as discussed in Table A7.1. This would make the annual incremental cost savings of Option D equal to between $1,130,864 and $1,347,568 or between $5,284,616 and $6,297,292 over 5 years in present value terms (2008 dollars).

A7.2.1 – Estimated change in retail meat prices under Option D

Removing SA4.2, SA5.10, SA5.14, SB4.1&SB4.2 and SB4.3 from Table A6.27 would make the incremental cost increase for cattle (including calves) equal to $8,801.35 per annum, (see Table A7.2). Removing SA1.2, SA4.2, SA5.10 and SA5.14 from Table A6.29 would provide an incremental annual cost saving for sheep equal to between $876,496.71 and $1,078,204.52 (see Table A7.2). Removing SA5.10 and SA5.14 form Table A6.31 for poultry - would make the cost of the standards to poultry equal to $0 per annum and Option D would have the same impact on pig costs and pork prices as Options B and B1 (see Table A7.2). Finally the change in beef and lamb\footnote{Lamb definition in this case is the retail definition and not the one used in the proposed standards.} prices is summarised in Table A7.3.

Table A7.2 – Increase in transport cost for major livestock species as a result of Option D

<table>
<thead>
<tr>
<th>Livestock Species\footnote{Species does not include chicks, buffalo, horses, deer, camels, alpacas, goats, emus and ostriches.}</th>
<th>Incremental annual cost\footnote{Cost estimates are rounded to the nearest dollar and taken from Tables A6.26 to A6.39 of Appendix 6 in this RIS.}</th>
<th>Annual total cost of livestock transport\footnote{Cost estimates are rounded to the nearest dollar and taken from Table A6.3 of Appendix 6 in this RIS.}</th>
<th>Incremental annual cost as a % of annual total cost of livestock transport\footnote{If all costs are eventually passed on to consumers then it would be expected that the increase in price would roughly equate to the increase in annual cost as a percentage of total annual cost.}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle (+ calves)</td>
<td>$8,801.35</td>
<td>$319,390,360 to $359,733,934</td>
<td>0.002% to 0.003%</td>
</tr>
<tr>
<td>Sheep</td>
<td>-$876,497 to -$1,078,205</td>
<td>$139,190,224 to $160,618,333</td>
<td>-0.63% to -0.67%</td>
</tr>
<tr>
<td>Pigs</td>
<td>-$106,456 to -$123,539</td>
<td>$21,955,880 to $25,479,261</td>
<td>-0.48%</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>$0</td>
<td>$91,251,692</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table A7.3 - Proportion of transport cost borne by livestock producers and consumers of meat products as a result of Option D

<table>
<thead>
<tr>
<th>Meat product</th>
<th>Price sensitivity of supply\footnote{Taken from Table A6.43 of Appendix 6 in this RIS.} (b)</th>
<th>Price sensitivity of demand\footnote{Taken from Table A6.43 of Appendix 6 in this RIS.} (c)</th>
<th>% of cost borne by producers (d) = 1/(b)/(1/(b) + 1/(c)) x -1 \footnote{Retail price divided by production price.}</th>
<th>% of cost borne by consumers (f) = 1 - (d) \footnote{Formula taken from Bureau of Transport Economics, (1982).}</th>
<th>% increase in retail price of meat product (g) = (a) x (f)</th>
<th>% change in demand (h) = (g) x (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef</td>
<td>0.27</td>
<td>-1.2</td>
<td>71.2% \footnote{Percentages have been rounded to one decimal place.}</td>
<td>28.8%</td>
<td>0.001%</td>
<td>-0.001%</td>
</tr>
<tr>
<td>Lamb</td>
<td>0.17</td>
<td>-1.4</td>
<td>69.7%</td>
<td>30.3%</td>
<td>-0.19% to -0.2%</td>
<td>0.27% to 0.28%</td>
</tr>
</tbody>
</table>

\footnotetext{515}{Lamb definition in this case is the retail definition and not the one used in the proposed standards.}
\footnotetext{516}{Species does not include chicks, buffalo, horses, deer, camels, alpacas, goats, emus and ostriches.}
\footnotetext{517}{Cost estimates are rounded to the nearest dollar and taken from Tables A6.26 to A6.39 of Appendix 6 in this RIS.}
\footnotetext{518}{Cost estimates are rounded to the nearest dollar and taken from Table A6.3 of Appendix 6 in this RIS.}
\footnotetext{519}{If all costs are eventually passed on to consumers then it would be expected that the increase in price would roughly equate to the increase in annual cost as a percentage of total annual cost.}
\footnotetext{520}{Taken from Table A6.43 of Appendix 6 in this RIS.}
\footnotetext{521}{Taken from Table A6.43 of Appendix 6 in this RIS.}
\footnotetext{522}{Formula taken from Bureau of Transport Economics, (1982).}
\footnotetext{523}{Retail price divided by production price.}
\footnotetext{524}{Percentages have been rounded to one decimal place.}
\footnotetext{525}{All data in this column is taken from Table A6.43 of Appendix 6 in this RIS.}
A7.3 Costing of Option E

All general standards under Option E are assumed to impose identical incremental costs/cost savings as under Option B and are identified in Table A7.1 in this Appendix. The main difference of Option E lies in:

- the reduction in maximum water deprivation times for alpaca wethers; buffalo; cattle over 6 months; calves 5-30 days old travelling without their mothers; deer; goats; pregnant goats in third trimester of pregnancy; lactating mares; sheep; and sheep in their third trimester of pregnancy. These categories of livestock were chosen on the basis of a longer permitted time off water/journey length and/or a variation that has occurred between the proposed standards and the MCOP. Where relevant, there is also an associated adjustment to spelling periods (what the standards would be in terms of spelling periods if these maximum times of water under Option E were to be adopted); and

- the increase in the minimum voluntary spelling period to 6 hours in order to earn a water deprivation time credit. Increasing the minimum voluntary spell time from 4 to 6 hours will add an additional 2 hours to the third calculation (refer to section A6.1 in Appendix 6 of this RIS).

The specific standards are summarised in the following sections.

A7.3.1 Net incremental cost of alpaca standard SB1.1 in conjunction with SB1.3 with minimum voluntary spelling of 6 hours

For wethers over 12 months old (where water is not provided on the vehicle):

\[
\text{Time cost for 5% of journeys where there are no idle trucks} \quad [5\% \times 5\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 3.5 \text{ hours} \times $250/\text{hour}] +
\]

\[
\text{Time cost for 95% of journeys where there are idle trucks and no voluntary spelling} \quad [50\% \times 95\% \times 5\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 25.5 \text{ hours} \times $250/\text{hour}] +
\]

\[
\text{Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling} \quad [50\% \times 95\% \times 5\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 7.5 \text{ hours} \times $250/\text{hour}] = $5,154.42 \text{ per annum}
\]

For non-pregnant females and males over 12 months old (where water is not provided on the vehicle):

\[
\text{Time cost for 5% of journeys where there are no idle trucks} \quad [5\% \times 10\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 3.5 \text{ hours} \times $250/\text{hour}] +
\]
Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 10% x 20% x 20% x 650.4 journeys x 13.5 hours x $250/hour] +

Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 10% x 20% x 20% x 650.4 journeys x 7.5 hours x $250/hour] = $6,601.56 per annum

For alpacas – 6 to 12 months old and pregnant females up to 7.5 months pregnant (1st and 2nd trimester) (where water is not provided on the vehicle):

As with Option B = $369.64 per annum

For pregnant alpacas more than 7.5 months pregnant (3rd trimester) (where water is not provided on the vehicle):

As with Option B = $731.70 per annum

For lactating alpacas with crias up to 6 months old (where water is not provided on the vehicle):

As with Option B = $2,168.00 per annum

Standard SB1.1 in conjunction with SB1.3 under option E would impose an incremental cost of $14,916.92 per annum. Over 5 years and in present value terms (2008 dollars), this would be equal to $69,707.97.

A7.3.2 Incremental cost savings of alpaca standard SB1.2 for transporters with minimum voluntary spelling of 6 hours

For wethers over 12 months old:

Cost savings for 5% of journeys where there are no idle trucks [5% x 5% x 20% x 20% x 650.4 journeys x 3.5 hours x $250/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 5% x 20% x 20% x 650.4 journeys x 25.5 hrs x $250/hour] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 5% x 20% x 20% x 650.4 journeys x 7.5 hours x $250/hour] = $5,154.42 per annum

For non-pregnant females and males over 12 months old:

Cost savings for 5% of journeys where there are no idle trucks [5% x 10% x 20% x 20% x 650.4 journeys x 3.5 hours x $250/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 10% x 20% x 20% x 650.4 journeys x 13.5 hours x $250/hour] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 10% x 20% x 20% x 650.4 journeys x 7.5 hours x $250/hour] = $6,601.56 per annum
For alpacas – 6 to 12 months old:

As with Option B = $433.60

The incremental cost saving of standard SB1.2 for all relevant classes of alpaca would therefore be equal to $12,189.58 per annum. Over 5 years, and in present value terms (2008 dollars), this would equal $56,962.87.

A7.3.3 Incremental cost of alpaca standard SB1.4 for livestock owners

As with option B = $65,837.77 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal $307,665.12.

A7.3.4 Incremental unquantifiable one-off cost of alpaca standard SB1.7 for livestock owners

As with Option B

A7.3.5 Incremental cost of buffalo standard SB2.1 in conjunction with SB2.2 for livestock transporters with minimum voluntary spelling of 6 hours

Under Option E the maximum time off water would be reduced to half the amount as compared to the base case (i.e. from 48 hours to 24 hours). The assumptions in relation to the estimation of the incremental annual cost would be equivalent to under Option B (see section A6.16), except that the relevant journeys affected would be those between 24 hours and 48 hours (i.e. 40% of journeys). The associated spelling period would be 24 hours (under the proposed standards under SB2.2) and the voluntary spell required for a time-off-water credit would be 6 hours (plus 1.5 hours for loading and unloading)

Between:

\[
\text{Time cost for 5\% of journeys where there are no idle trucks } [5\% \times 40\% \times 80\% \times 68.8 \text{ journeys x 3.5 hours added x }$327.40/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling } [50\% \times 95\% \times 40\% \times 80\% \times 68.8 \text{ journeys x 13.5 hours added x }$327.40/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling } [50\% \times 95\% \times 40\% \times 80\% \times 68.8 \text{ journeys x 7.5 hours added x }$327.40/\text{hour}] = \text{ $73,161.59 per annum}
\]

and

\[
\text{Time cost for 5\% of journeys where there are no idle trucks } [5\% \times 40\% \times 80\% \times 68.8 \text{ journeys x 3.5 hours added x }$344.20/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling } [50\% \times 95\% \times 40\% \times 80\% \times 68.8 \text{ journeys x 13.5 hours added x }$344.20/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling } [50\% \times 95\% \times 40\% \times 80\% \times 68.8 \text{ journeys x 7.5 hours added x }$344.20/\text{hour}]
\]

526 Proposed by AHA.
$76,915.76 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal between $341,889.90 and $359,433.43.

A7.3.6 Incremental cost of buffalo standard SB2.3 for livestock owners

As with Option B = $3,767.40 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal $17,605.36

A7.3.7 Incremental unquantifiable cost of buffalo standard SB2.4 for transporters

As with Option B

A7.3.8 Incremental net cost of buffalo standard SB2.6 for transporters

As with Option B = between $375.42 and $394.68 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal between $1,754.36 and $1,844.38.

A7.3.9 Incremental cost of camel standard SB3.1 in conjunction with SB3.3 for livestock transporters with minimum voluntary spelling of 6 hours

\[ \text{Time cost for 5\% of journeys where there are no idle trucks} \times 5\% \times 3.5 \text{ hours} \times 2 \times \$260.20/\text{hour} + \text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \times 50\% \times 3.5 \times 2 \times \$260.20/\text{hour} + \text{Time cost for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling} \times 50\% \times 3.5 \times 7.5 \times 2 \times \$260.20/\text{hour} \]

\[ = \$34,333.39 \text{ per annum} \]

Over 5 years, and in present value terms (2008 dollars), this would equal $160,442.65.

A7.3.10 Incremental cost of camel standard SB3.4 for livestock owners

As with Option B = $1,031.28 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal only $4,819.28.

A7.3.11 Incremental unquantifiable cost of camel standard SB3.6 for transporters

As with Option B

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527 Proportion of camels transported up to 3 days who would have to be spelled twice.
528 Proportion of camels transported up to 2 days who would have to be spelled once.
A7.3.12 Incremental net cost of cattle standard SB4.1 in conjunction with SB4.2 for transporters - with minimum voluntary spelling of 6 hours

Standard SB4.1 under Option E, increases water deprivation time as compared to the ‘base case’ for the following classes of cattle species:

- calves aged 5 to 30 days travelling without their mothers from 10 hours to 12 hours before a mandatory minimum spell of 12 hours is operational under standard SB4.2 and it is assumed that the proportion of calves travelling between 10 hours and 12 hours is only 2%\(^{529}\) as opposed to 7% between 10 hours and 18 hours (under option B);
- cattle in their third trimester of pregnancy and more than 8 months pregnant from 8 hours to 24 hours before a mandatory minimum spell of 12 hours is operational under standard SB4.2.

For calves 5 to 30 days travelling without their mothers:

Between:

Cost savings for 5% of journeys where there are no idle trucks \([5\% \times 5\% \times 2\% \times 806.1 \text{ journeys} \times 3.5 \text{ hours saved} \times $315.20/\text{hour}]^{530} + [5\% \times 2\% \times 4,083.6 \text{ journeys} \times 3.5 \text{ hours saved} \times $315.20/\text{hour}]^{531} +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling \([50\% \times 95\% \times 5\% \times 2\% \times 806.1 \text{ journeys} \times 13.5 \text{ hours saved} \times $315.20/\text{hour}] + [50\% \times 95\% \times 5\% \times 2\% \times 4,083.6 \text{ journeys} \times 13.5 \text{ hours saved} \times $315.20/\text{hour}] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling \([50\% \times 95\% \times 5\% \times 2\% \times 806.1 \text{ journeys} \times 7.5 \text{ hours saved} \times $315.20/\text{hour}] + [50\% \times 95\% \times 5\% \times 2\% \times 4,083.6 \text{ journeys} \times 7.5 \text{ hours saved} \times $315.20/\text{hour}] = $263,870.54\text{ per annum.}

and

Cost savings for 5% of journeys where there are no idle trucks \([5\% \times 5\% \times 2\% \times 806.1 \text{ journeys} \times 3.5 \text{ hours saved} \times $336.80/\text{hour}] + [5\% \times 2\% \times 4,083.6 \text{ journeys} \times 3.5 \text{ hours saved} \times $336.80/\text{hour}] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling \([50\% \times 95\% \times 5\% \times 2\% \times 806.1 \text{ journeys} \times 13.5 \text{ hours saved} \times $336.80/\text{hour}] + [50\% \times 95\% \times 5\% \times 2\% \times 4,083.6 \text{ journeys} \times 13.5 \text{ hours saved} \times $336.80/\text{hour}] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling \([50\% \times 95\% \times 5\% \times 2\% \times 806.1 \text{ journeys} \times 7.5 \text{ hours saved} \times $336.80/\text{hour}] + [50\% \times 95\% \times 5\% \times 2\% \times 4,083.6 \text{ journeys} \times 7.5 \text{ hours saved} \times $336.80/\text{hour}] = $281,953.03\text{ per annum.}

For cattle in third trimester of pregnancy and more than 8 months pregnant:

\(^{529}\) Proposed by AHA.

\(^{530}\) Representing cost savings to non-bobby calf transport.

\(^{531}\) Representing cost savings to bobby calf transport.
Between:

Cost savings for 5% of journeys where there are no idle trucks [5% x 36.84% x 2% x 50% x 423,274.95 journeys x 3.5 hours saved x $356.65/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 36.84% x 2% x 50% x 423,274.95 journeys x 13.5 hours saved x $356.65/hour] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 36.84% x 2% x 50% x 423,274.95 journeys x 7.5 hours saved x $356.65/hour] = $5,644,824.70 per annum

and

Cost savings for 5% of journeys where there are no idle trucks [5% x 36.84% x 2% x 50% x 423,274.95 journeys x 3.5 hours saved x $401.70/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 36.84% x 2% x 50% x 423,274.95 journeys x 13.5 hours saved x $401.70/hour] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 36.84% x 2% x 50% x 423,274.95 journeys x 7.5 hours saved x $401.70/hour] = $6,357,846.85 per annum

Standard SB4.1 under Option E reduces the maximum water deprivation time as compared to the ‘base case’ for the following classes of cattle species:

- for cattle in their third trimester of pregnancy and less than 8 months pregnant from 48 hours to 24 hours where a mandatory spell of 12 hours becomes mandatory under SB4.2, but with a minimum voluntary spell of 6 hours; and
- for cattle over 6 months from 48 hours to 36 hours, where a mandatory spell of 24 hours becomes mandatory, and a minimum voluntary spell of 6 hours.

For cattle in third trimester of pregnancy and less than 8 months pregnant:

Between:

Time cost for 5% of journeys where there are no idle trucks [5% x 63.16% x 2% x 50% x 423,274.95 journeys x 3.5 hours added x $356.65/hour] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 63.16% x 2% x 50% x 423,274.95 journeys x 13.5 hours added x $356.65/hour] +

Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 63.16% x 2% x 50% x 423,274.95 journeys x 7.5 hours added x $356.65/hour] = $9,677,717.91 per annum

and

SB4.2 requires 36 hours spelling after 48 hours of time of water, however the ‘intent’ for this species is that 24 hours of spelling be conducted for 36 hours of time off water.

Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock
Time cost for 5% of journeys where there are no idle trucks [5% x 63.16% x 2% x 50% x 423,274.95 journeys x 3.5 hours added x $401.70/hour] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 63.16% x 2% x 50% x 423,274.95 journeys x 13.5 hours added x $401.70/hour] +

Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 63.16% x 2% x 50% x 423,274.95 journeys x 7.5 hours added x $401.70/hour] = $10,900,152.21 per annum

For cattle over 6 months old:

The following assumptions are made in order to estimate the incremental cost for this category of cattle:

- the proportion of cattle over 6 months old (i.e. 95%);
- the number of journeys involving cattle per annum (i.e. 423,274.95);
- the proportion of journeys greater than 36 hours (i.e. 2%);
- 3.5 hours of loading/unloading and change over time will be incurred for the relevant proportion of journeys (i.e. 5%);
- 25.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for journeys between 36 hours and 48 hours;
- 7.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 50% of the time where journeys do not have the ability for changeover; and
- the cost of cattle transport is between $356.65/hour and $401.70/hour.

Therefore, the incremental annual cost would be calculated in the following way:

**Between:**

Time cost for 5% of journeys between where there are no idle trucks [5% x 2% x 95% x 423,274.95 journeys x 3.5 hours added x $356.65/hour] +

Time cost for 95% of journeys between where there are idle trucks and no voluntary spelling [50% x 95% x 2% x 95% x 423,274.95 journeys x 25.5 hours added x $356.65/hour] +

Time cost for 95% of journeys between where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 2% x 95% x 423,274.95 journeys x 7.5 hours added x $356.65/hour] = $45,461,908.44 per annum.

and

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533 Proposed by AHA.
534 See Table A6.17 of Appendix 6 in this RIS for estimate.
535 Proposed by AHA.
536 See Table A6.15 of Appendix 6 in this RIS for this estimate.
The total annual net cost of standard SB4.1 in conjunction with SB4.2 would be between $49,230,931.12 and $55,464,750.52. Over 5 years, and in present value terms (2008 dollars), this would equal between $230,060,040.62 and $259,191,172.48.

A7.3.13 Incremental cost of cattle standard SB4.3 for livestock owners

As with Option B = $1,280,905.91 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal $5,985,774.76.

A7.3.14 Incremental unquantifiable cost of cattle standard SB4.4 for transporters

As with Option B

A7.3.15 Incremental unquantifiable cost of cattle standard SB4.5 for transporters

As with Option B

A7.3.16 Incremental unquantifiable cost of cattle standard SB4.7 for transporters

As with Option B

A7.3.17 Incremental net cost of deer standard SB5.1 in conjunction with SB5.2 for transporters involving an increase in maximum time off water for fawns/calves less than 6 months and a reduction of maximum time off water for deer from 48 hours to 36 hours with minimum voluntary spelling of 6 hours

Under Option E, standard SB5.1 increases the maximum time of water for fawns/calves under 6 months old from 24 hours under the ‘base case’ to 28 hours.

For fawns/calves less than 6 months:

Between:

Cost savings for 5% of journeys where there are no idle trucks [5% x 5% x 10% x 424.4 journeys x 3.5 hours saved x $302/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 5% x 10% x 424.4 journeys x 13.5 hours saved x $302/hour] +
Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling \( [50\% \times 95\% \times 5\% \times 10\% \times 424.4 \text{ journeys} \times 7.5 \text{ hours saved} \times $302/\text{hour}] = $6,504.57 \) per annum

and

Cost savings for 5% of journeys where there are no idle trucks \([5\% \times 5\% \times 10\% \times 424.4 \text{ journeys} \times 3.5 \text{ hours saved} \times $307.40/\text{hour}]\)

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling \([50\% \times 95\% \times 5\% \times 10\% \times 424.4 \text{ journeys} \times 13.5 \text{ hours saved} \times $307.40/\text{hour}]\)

Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling \([50\% \times 95\% \times 5\% \times 10\% \times 424.4 \text{ journeys} \times 7.5 \text{ hours saved} \times $307.40/\text{hour}] = $6,620.87 \) per annum

Under Option E, standard SB5.1 reduces the maximum time of water for deer over 6 months old from 48 hours under the ‘base case’ to 36 hours where a mandatory spell of 24 hours is required. The incremental time cost estimate would rely on the following set of assumptions:

- 3.5 hours of loading/unloading and changeover time will be incurred for 5% of the relevant proportion of journeys;
- 25.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for deer over 6 months;
- 7.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 20% of the time where journeys do not have the ability for changeover;
- the proportion of deer older than 6 months (i.e. 90%);
- the proportion of deer journeys greater than 36 hours (i.e. 2%);
- the number of journeys per annum involving deer transport is estimated to be 424.4;
- and
- the cost of deer transport is between $302/hour and $307.40/hour.

Therefore, the additional annual cost would be calculated in the following way:

**For deer over 6 months:**

### Between:

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = [5\% \times 2\% \times 90\% \times 424.4 \text{ journeys} \times 3.5 \text{ hours added} \times $302/\text{hr}] +
\]

537 SB5.2 requires 36 hours spelling after 48 hours of time of water, however the ‘intent’ for this species is that 24 hours of spelling be conducted for 36 hours of time off water.

538 Proposed by AHA.

539 Proposed by AHA.

540 See Table A6.16 of Appendix 6 in this RIS for this estimate.

541 See Table A6.15 of Appendix 6 in this RIS for this estimate.
Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 2% x 90% x 424.4 journeys x 25.5 hours added x $302/hour] +

Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 2% x 90% x 424.4 journeys x 7.5 hours added x $302/hour] =

$36,566.56 per annum

and

Time cost for 5% of journeys where there are no idle trucks [5% x 2% x 90% x 424.4 journeys x 3.5 hours added x $307.40/hour] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 2% x 90% x 424.4 journeys x 25.5 hours added x $307.40/hour] +

Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 2% x 90% x 424.4 journeys x 7.5 hours added x $307.40/hour] =

$37,220.40 per annum

Therefore the incremental net cost of standard SB5.1 in conjunction with standard SB5.2 across both classes of deer would equal between $30,061.99 and $30,599.52 per annum. Over 5 years, and in present value terms (2008 dollars), this would equal between $140,482.07 and $142,994.00.

A7.3.18 Incremental cost of deer standard SB5.3 for livestock owners

As with Option B = $50,280.19 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal $234,963.33.

A7.3.19 Incremental unquantifiable cost of deer standard SB5.4 for transporters

As with Option B

A7.3.20 Incremental cost of ratite standard SB6.1 in conjunction with SB6.4 for transporters with minimum voluntary spelling of 6 hours

For adult emus:

Time cost for 5% of journeys where there are no idle trucks [5% x 5% x 95% x 111.1 journeys x 3.5 hours added x $250/hour] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 5% x 95% x 111.1 journeys x 13.5 hours added x $250/hour] +

Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 5% x 95% x 111.1 journeys x 7.5 hours added x $250/hour] =

$13,391.02 per annum

For adult ostriches:

Time cost for 5% of journeys where there are no idle trucks [5% x 5% x 95% x 207.3 journeys x 3.5 hours added x $250/hour] +
Time cost for 95% of journeys where there are idle trucks and no voluntary spelling  
[50% x 95% x 5% x 95% x 207.3 journeys x 13.5 hours added x $250/hour] +

Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling  
[50% x 95% x 5% x 95% x 207.3 journeys x 7.5 hours added x $250/hour] = $24,986.13 per annum

For emu chicks:
As with Option B = $69.44 per annum

For ostrich chicks:
As with Option B = $129.56 per annum

The total combined annual cost for adults and chicks, of standard SB6.1 in conjunction with SB6.4, would be $13,460.46 per annum for emu transporters and $25,115.69 per annum for ostrich transporters.  Over 5 years, and in present value terms (2008 dollars), this would equal $62,901.79 for emu transporters and $117,367.61 for ostrich transporters.

A7.3.21 Incremental unquantifiable cost of ratite standards SB6.2; SB6.3; SB6.5; SB6.6542 SB6.7543 and SB6.8

As with Option B

A7.3.22 Incremental net cost of goat standard SB7.1 in conjunction with SB7.2 for transporters with minimum voluntary spelling of 6 hours

Standard SB7.1 increases the maximum time off water of from 8 hours to 12 hours for goats over 6 months in their third trimester and over 4 months pregnant (under which a minimum mandatory spell of 12 hours comes under operation under standard SB7.2) and from 24 hours to 28 hours for kids less than 6 months of age (under which a minimum mandatory spell of 12 hours comes under operation under standard SB7.2).  The incremental cost savings would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be saved for 5% of the relevant proportion of journeys;
- 13.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 7.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be saved for 50% of the time where journeys do not have the ability for changeover;
- the proportion of pregnant goats known to be in their third trimester (i.e. 2%544);

542 Affects both livestock transporters and owners.
543 Affects livestock owners only.
544 Proposed by AHA.
the proportion of the 2% of goats in their third trimester and over 4 months pregnant (i.e. 60%545);

- the proportion of kids less than 6 months (i.e. 10%546);

- the proportion of journeys between 8 and 12 hours (i.e. 20%547);

- the proportion of journeys between 24 and 28 hours (i.e. 35%548);

- the number of journeys per annum involving goat transport is estimated to be 4,181.08549; and

- the cost of goat transport is between $357.43 and $412.45/hour.550

Therefore, the additional annual time cost saving for goat transporters would be calculated in the following way:

**For goats in their third trimester and more than 4 months pregnant:**

**Between:**

- Cost savings for 5% of journeys where there are no idle trucks [5% x 20% x 2% x 60% x 4,181.08 journeys x 3.5 hours saved x $357.43/hour] +

- Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 20% x 2% x 60% x 4,181.08 journeys x 13.5 hours saved x $357.43/hour] +

- Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 20% x 2% x 60% x 4,181.08 journeys x 7.5 hours saved x $357.43/hour] = **$36,404.64** per annum

and

- Cost savings for 5% of journeys where there are no idle trucks [5% x 20% x 2% x 60% x 4,181.08 journeys x 3.5 hours saved x $412.45/hour] +

- Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 20% x 2% x 60% x 4,181.08 journeys x 13.5 hours saved x $412.45/hour] +

- Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 20% x 2% x 60% x 4,181.08 journeys x 7.5 hours saved x $412.45/hour] = **$42,008.49** per annum

**For kids under 6 months:**

**Between:**

- Cost savings for 5% of journeys where there are no idle trucks [5% x 35% x 10% x 4,181.08 journeys x 3.5 hours saved x $357.43/hour] +

---

545 Estimated as 30 days divided by the total trimester of 50 days.
546 Proposed by AHA.
547 Proposed by AHA.
548 Proposed by AHA.
549 See Table A6.16 of Appendix 6 in this RIS for this estimate.
550 See Table A6.15 of Appendix 6 in this RIS for this estimate.
Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling \[50\% \times 95\% \times 35\% \times 10\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours saved} \times \$357.43/\text{hour}\] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling \[50\% \times 95\% \times 35\% \times 10\% \times 4,181.08 \text{ journeys} \times 7.5 \text{ hours saved} \times \$357.43/\text{hour}\] = \$530,901.03 per annum

and

Cost savings for 5% of journeys where there are no idle trucks \[5\% \times 35\% \times 10\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours saved} \times \$412.45/\text{hour}\] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling \[50\% \times 95\% \times 35\% \times 10\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours saved} \times \$412.45/\text{hour}\] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 4 hours voluntary spelling \[50\% \times 95\% \times 35\% \times 10\% \times 4,181.08 \text{ journeys} \times 7.5 \text{ hours saved} \times \$412.45/\text{hour}\] = \$612,623.81 per annum

Standard SB7.1 reduces the maximum time off water of from 48 hours to 12 hours for goats in their third trimester and less than 4 months pregnant (under which a minimum mandatory spell of 12 hours comes under operation under standard SB7.2). This standard also reduces the maximum time off water for goats over 6 months old from 48 hours in the ‘base case’ to 36 hours under Option E for which 24 hours551 of spelling applies. The incremental cost would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be incurred for 5% of the relevant proportion of journeys;
- 25.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for goats over 6 months;
- 13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for goats in their third trimester;
- 7.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 50% of the time where journeys do not have the ability for changeover;
- the proportion of goats older than 6 months (i.e. 90\%552);
- the proportion of journeys between 36 and 48 hours (i.e. 20\%553);
- the proportion of pregnant goats known to be in their third trimester (i.e. 2\%554);
- the proportion of the 2\% of goats in their third trimester and less than 4 months pregnant (i.e. 40\%555);

551 SB7.2 requires 36 hours spelling after 48 hours of time of water, however the ‘intent’ for this species is that 24 hours of spelling be conducted for 36 hours of time off water.
552 Proposed by AHA.
553 Proposed by AHA.
554 Proposed by AHA.
555 Estimated as 20 days divided by the total trimester of 50 days.
the proportion of journeys between 12 and 48 hours (i.e. 60%\textsuperscript{556});

the number of journeys per annum involving goat transport is estimated to be 4,181.08\textsuperscript{557}; and

the cost of goat transport is between $357.43 and $412.45/hour.\textsuperscript{558}

Therefore, the additional annual time cost saving for goat transporters would be calculated in the following way:

For goats in their third trimester and less than 4 months pregnant:

Between:

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = [5\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours added} \times $357.43/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} = [50\% \times 95\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours added} \times $357.43/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling} = [50\% \times 95\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 7.5 \text{ hours added} \times $357.43/\text{hour}] = $72,809.28 \text{ per annum}
\]

and

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = [5\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours added} \times $412.45/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} = [50\% \times 95\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours added} \times $412.45/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling} = [50\% \times 95\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 7.5 \text{ hours added} \times $412.45/\text{hour}] = $84,016.98 \text{ per annum}
\]

For goats over 6 months:

Between:

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = [5\% \times 20\% \times 90\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours added} \times $357.43/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} = [50\% \times 95\% \times 20\% \times 90\% \times 4,181.08 \text{ journeys} \times 25.5 \text{ hours added} \times $357.43/\text{hour}] + 
\]

\textsuperscript{556} Proposed by AHA.

\textsuperscript{557} See Table A6.16 of Appendix 6 in this RIS for this estimate.

\textsuperscript{558} See Table A6.15 of Appendix 6 in this RIS for this estimate.
Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 20% x 90% x 4,181.08 journeys x 7.5 hours added x $357.43/hour] = $4,263,647.09 per annum

and

Time cost for 5% of journeys where there are no idle trucks [5% x 20% x 90% x 4,181.08 journeys x 3.5 hours added x $412.45/hour] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 20% x 90% x 4,181.08 journeys x 25.5 hours added x $412.45/hour] +

Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 20% x 90% x 4,181.08 journeys x 7.5 hours added x $412.45/hour] = $4,919,959.83 per annum

Subsequently, the total incremental net cost of standard SB7.1 in conjunction with SB7.2, for goats (summing across the cost savings and costs of all the aforementioned classes) would be between $3,769,150.71 and $4,349,344.51 per annum. Over 5 years, and in present value terms (2008 dollars), this would equal between $17,613,539.79 and $20,324,831.40.

A7.3.23 Incremental unquantifiable cost of goat standard SB7.3 for livestock owners

As with Option B

A7.3.24 Incremental net cost of horse standard SB8.1 in conjunction with SB8.3 for transporters with minimum voluntary spelling of 6 hours

Foals under 6 months old:

Cost savings for 5% of journeys where there are no idle trucks [5% x 1% x 10% x 116,298 journeys x 3.5 hours saved x $250/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 1% x 10% x 116,298 journeys x 13.5 hours saved x $250/hour] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 1% x 10% x 116,298 journeys x 7.5 hours saved x $250/hour] = $295,106.18 per annum

Mares in third trimester of pregnancy:

Time cost for 5% of journeys where there are no idle trucks [5% x 10% x 1% x 116,298 journeys x 3.5 hours added x $250/hour] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 10% x 1% x 116,298 journeys x 13.5 hours added x $250/hour] +

Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 95% x 10% x 1% x 116,298 journeys x 7.5 hours added x $250/hour] = $295,106.18 per annum

Horses over 6 months old:
Time cost for 5% of journeys where there are no idle trucks \([5\% \times 0.01\% \times 99\% \times 116,298 \text{ journeys} \times 3.5 \text{ hours added} \times $250/\text{hour}] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling \([50\% \times 95\% \times 0.01\% \times 99\% \times 116,298 \text{ journeys} \times 25.5 \text{ hours added} \times $250/\text{hour}] +

Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling \([50\% \times 95\% \times 0.01\% \times 99\% \times 116,298 \text{ journeys} \times 7.5 \text{ hours added} \times $250/\text{hour}] = $44,690.05 \text{ per annum}

The total incremental net cost of standard SB8.1 in conjunction with SB8.3 across all three classes of species, would be $44,690.05 \text{ per annum}. Over 5 years, and in present value terms (2008 dollars), this would equal $208,840.15.

A7.3.25 Incremental cost of horse standard SB8.2 for transporters

Time cost for 0.01% of journeys where there are no idle trucks \([0.01\% \times 99.99\% \times 0.005\% \times 116,298 \text{ journeys} \times 3.5 \text{ hours added} \times $250/\text{hour}] +

Time cost for 99.99% of journeys where there are idle trucks and no voluntary spelling \([50\% \times 99.99\% \times 99.99\% \times 0.005\% \times 116,298 \text{ journeys} \times 25.5 \text{ hours added} \times $250/\text{hour}] +

Time cost for 99.99% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling \([50\% \times 99.99\% \times 99.99\% \times 0.005\% \times 116,298 \text{ journeys} \times 7.5 \text{ hours added} \times $250/\text{hour}] = $23,982.17 \text{ per annum}

Over 5 years, and in present value terms (2008 dollars), this would equal $112,070.60.

A7.3.26 Incremental cost of horse standard SB8.4 for livestock owners

As with Option B = $846.91 \text{ per annum}

Over 5 years, and in present value terms (2008 dollars), this would equal $3,957.68.

A7.3.27 Incremental cost of horse standard SB8.8 for transporters – reducing stocking density by 3 horses/30m²

As with Option B = $8,397.50 \text{ per annum}

This would equal $39,242.18 over 5 years in present value terms (2008 dollars).

A7.3.28 Incremental net cost of horse standard SB8.10 for livestock owners

As with Option B = $6,042 \text{ per annum}

In present value terms (2008 dollars) and over 5 years this would be equal to $28,233.67.

A7.3.29 Incremental cost of horse standard SB8.11 for transporters

As with Option B = $84,875 \text{ per annum}
Over 5 years, and in present value terms (2008 dollars), this would equal $396,627.60.

A7.3.30 Incremental unquantifiable cost of horse standard SB8.12 for transporters

As with Option B

A7.3.31 Incremental unquantifiable cost of horse standard SB8.14 for transporters

As with Option B

A7.3.32 Incremental cost of pig standard SB9.1 in conjunction with SB9.3 for transporters and minimum voluntary spelling of 6 hours

Between:

Time cost for 50% of journeys where there are idle trucks and no voluntary spelling [50% x 0.01% x 10% x 39,944.63 journeys x 12 hours added x $336.50/hour] +

Time cost for 50% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% 0.01% x 10% x 39,944.63 journeys x 6 hours added x $336.50/hour] = $1,209.72 per annum

and

Time cost for 50% of journeys where there are idle trucks and no voluntary spelling [50% x 0.01% x 10% x 39,944.63 journeys x 12 hours added x $390.50/hour] +

Time cost for 50% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% 0.01% x 10% x 39,944.63 journeys x 6 hours added x $390.50/hour] = $1,403.85 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal between $5,653.13 and $6,560.32.

A7.3.33 Incremental cost savings of pig standard SB9.2 for transporters and minimum voluntary spelling of 6 hours

Between:

Cost savings for 50% of journeys where there are idle trucks and no voluntary spelling [50% x 0.1% x 39,944.63 journeys x 12 hours saved x $336.50/hour] +

Cost savings for 50% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 0.1% x 39,944.63 journeys x 6 hours saved x $336.50/hour] = $120,972.31 per annum

and

Cost savings for 50% of journeys where there are idle trucks and no voluntary spelling [50% x 0.1% x 39,944.63 journeys x 12 hours saved x $390.50/hour] +

Cost savings for 50% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling [50% x 0.1% x 39,944.63 journeys x 6 hours saved x $390.50/hour] = $140,385.40 per annum
Over 5 years, and in present value terms (2008 dollars), the cost savings of SB9.2 would equal between $565,313.20 and $656,032.10.

A7.3.34 Incremental unquantifiable cost of pig standard SB9.4 for transporters
  As with Option B

A7.3.35 Incremental unquantifiable cost of poultry standard SB10.2 for transporters
  As with Option B

A7.3.36 Incremental net cost of Sheep standard SB11.1 in conjunction with SB11.2 for transporters and minimum voluntary spelling of 6 hours

Standard SB11.1 increases the maximum time off water from 8 hours to 12 hours for sheep over 4 months pregnant and in their third trimester with an associated minimum spelling time of 12 hours under standard SB11.2 and increases the maximum time off water from 24 hours to 28 hours for lambs under 4 months with an associated minimum spelling time of 12 hours under standards SB11.2. This would reduce the time cost of transport. The incremental cost savings will rely on the following assumptions being made:

- 3.5 hours of loading/unloading and changeover time will be saved for 5% of the relevant proportion of journeys;
- 13.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 7.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be saved for 50% of the time where journeys do not have the ability for changeover;
- the proportion of sheep journeys between 8 hours and 12 hours (i.e. 15%);
- the proportion of sheep that are pregnant and known to be in their third trimester (i.e. 1%);
- the proportion of the 1% of ewes that are in the third trimester and more than 4 months pregnant (i.e. 60%);
- the proportion of lamb journeys between 24 hours and 28 hours (i.e. 5%);
- the number of journeys per annum involving sheep transport is estimated to be 191,580.35;
- the number of journeys per annum involving lamb transport is estimated to be 252.8; and

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559 Proposed by AHA.
560 Proposed by AHA.
561 Estimated as 30 days divided by the total days of the third trimester of 50 days.
562 Proposed by AHA.
563 See Table A6.16 of Appendix 6 in this RIS for this estimate.
the cost of sheep and lamb transport is between $357.43/hr and $412.45/hr.\textsuperscript{565}

Consequently, the annual cost savings for transporters is calculated in the following way:

\textit{For lambs under 4 months old:}

\textbf{Between:}

\textit{Time cost savings for 5\% of journeys where there are no idle trucks} [5\% x 5\% x 252.8 journeys x 3.5 hours saved x $357.43/hour] +

\textit{Time cost savings for 95\% of journeys where there are idle trucks and no voluntary spelling} [50\% x 95\% x 5\% x 252.8 journeys x 13.5 hours saved x $357.43/hour] +

\textit{Time cost savings for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling} [50\% x 95\% x 5\% x 252.8 journeys x 7.5 hours saved x $357.43/hour] +

\textit{Food cost savings} [5\% x 107,162 lambs x 12 hours saved x $0.20/12hour/lamb] = $\textbf{58,716.28} per annum

\textbf{and}

\textit{Time cost savings for 5\% of journeys where there are no idle trucks} [5\% x 5\% x 252.8 journeys x 3.5 hours saved x $412.45/hour] +

\textit{Time cost savings for 95\% of journeys where there are idle trucks and no voluntary spelling} [50\% x 95\% x 5\% x 252.8 journeys x 13.5 hours saved x $412.45/hour] +

\textit{Time cost savings for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling} [50\% x 95\% x 5\% x 252.8 journeys x 7.5 hours saved x $412.45/hour] +

\textit{Food cost savings} [5\% x 107,162 lambs x 12 hours saved x $0.20/12hour/lamb] = $\textbf{65,775.13} per annum

\textit{For Sheep in third trimester and more than 4 months pregnant:}

\textbf{Between:}

\textit{Time cost savings for 5\% of journeys where there are no idle trucks} [5\% x 15\% x 1\% x 60\% x 191,580.35 journeys x 3.5 hours saved x $357.43/hour] +

\textit{Time cost savings for 95\% of journeys where there are idle trucks and no voluntary spelling} [50\% x 95\% x 15\% x 1\% x 60\% x 191,580.35 journeys x 13.5 hours saved x $357.43/hour] +

\textit{Time cost savings for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling} [50\% x 95\% x 15\% x 1\% x 60\% x 191,580.35 journeys x 7.5 hours saved x $357.43/hour] +

\textit{Food cost savings} [5\% x 1\% x 60\% x 66,210,170 sheep x 12 hours saved x $0.20/12hour/sheep] = $\textbf{768,547.38} per annum

\textsuperscript{564} See Table A6.16 of Appendix 6 in this RIS for this estimate.

\textsuperscript{565} See Table A6.15 of Appendix 6 in this RIS for this estimate.
Standard SB11.1 reduces the maximum time off water from 48 hours to 12 hours for ewes in their third trimester and less than 4 months pregnant, with an associated minimum spelling time of 12 hours under standard SB11.2. Standard SB11.1 also reduces the maximum time off water from 48 hours to 36 hours for sheep over 4 months old for which 24 hours of spelling applies. This would increase the time cost of transport. The incremental time cost will rely on the following assumptions being made:

- 3.5 hours of loading/unloading and changeover time will be incurred for 5% of the relevant proportion of journeys;
- 25.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for sheep over 4 months old;
- 13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- 7.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 50% of the time where journeys do not have the ability for changeover;
- the proportion of sheep journeys between 12 hours and 48 hours (i.e. 30%);
- the proportion of sheep journeys between 36 hours and 48 hours (i.e. 3%);
- the proportion of sheep in their 3rd trimester of pregnancy (i.e. 1%);
- the proportion of sheep in the third trimester that are less than 4 months pregnant (i.e. 40%);
- the number of journeys per annum involving sheep transport is estimated to be 191,580.35; and

\[\text{Food cost savings} \times 5\% \times 1\% \times 60\% \times 66,210,170 \times 12 \times \$0.20/12\text{hour/sheep} = \$864,837.14 \text{ per annum}\]

\(\text{Time cost savings for 5\% of journeys where there are no idle trucks} \times [5\% \times 15\% \times 1\% \times 60\% \times 191,580.35 \times 3.5 \times \$412.45/\text{hour}] +\)

\(\text{Time cost savings for 95\% of journeys where there are idle trucks and no voluntary spelling} \times [50\% \times 95\% \times 15\% \times 1\% \times 60\% \times 191,580.35 \times 13.5 \times \$412.45/\text{hour}] +\)

\(\text{Time cost savings for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling} \times [50\% \times 95\% \times 15\% \times 1\% \times 60\% \times 191,580.35 \times 7.5 \times \$412.45/\text{hour}] +\)

\[\text{Food cost savings} \times 5\% \times 1\% \times 60\% \times 66,210,170 \times 12 \times \$0.20/12\text{hour/sheep} = \$864,837.14 \text{ per annum}\]

566 SB11.2 requires 36 hours spelling after 48 hours of time of water, however the ‘intent’ for this species is that 24 hours of spelling be conducted for 36 hours of time off water.

567 Proposed by AHA.

568 Proposed by AHA.

569 Proposed by AHA.

570 Estimated as 20 days divided by the total days of the third trimester of 50 days.

571 See Table A6.16 of Appendix 6 in this RIS for this estimate.
the cost of sheep and lamb transport is between $357.43/hour and $412.45/hour\textsuperscript{572}. 

Subsequently, the annual incremental cost for transporters is calculated in the following way:

*For Sheep in third trimester and less than 4 months pregnant:*

**Between:**

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \times [5\% \times 30\% \times 1\% \times 40\% \times 191,580.35 \text{ journeys} \times 3.5 \text{ hours added} \times $357.43/\text{hour}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \times [50\% \times 95\% \times 30\% \times 1\% \times 40\% \times 191,580.35 \text{ journeys} \times 13.5 \text{ hours added} \times $357.43/\text{hour}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling} \times [50\% \times 95\% \times 30\% \times 1\% \times 40\% \times 191,580.35 \text{ journeys} \times 7.5 \text{ hours added} \times $357.43/\text{hour}] +
\]

\[
\text{Food cost} \times [30\% \times 1\% \times 40\% \times 66,210,170 \text{ sheep} \times 12 \text{ hours} \times $0.20/12\text{hour/sheep}] = $1,024,729.85 \text{ per annum}
\]

\[
\text{and}
\]

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \times [5\% \times 30\% \times 1\% \times 40\% \times 191,580.35 \text{ journeys} \times 3.5 \text{ hours added} \times $412.45/\text{hour}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \times [50\% \times 95\% \times 30\% \times 1\% \times 40\% \times 191,580.35 \text{ journeys} \times 13.5 \text{ hours added} \times $412.45/\text{hour}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling} \times [50\% \times 95\% \times 30\% \times 1\% \times 40\% \times 191,580.35 \text{ journeys} \times 7.5 \text{ hours added} \times $412.45/\text{hour}] +
\]

\[
\text{Food cost} \times [30\% \times 1\% \times 40\% \times 66,210,170 \text{ sheep} \times 12 \text{ hours} \times $0.20/12\text{hour/sheep}] = $1,153,116.19 \text{ per annum}
\]

*For Sheep over 4 months old:*

**Between:**

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \times [5\% \times 3\% \times 191,580.35 \text{ journeys} \times 3.5 \text{ hours added} \times $357.43/\text{hour}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \times [50\% \times 95\% \times 3\% \times 191,580.35 \text{ journeys} \times 25.5 \text{ hours added} \times $357.43/\text{hour}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling} \times [50\% \times 95\% \times 3\% \times 191,580.35 \text{ journeys} \times 7.5 \text{ hours added} \times $357.43/\text{hour}] +
\]

\[
\text{Food cost} \times [3\% \times 66,210,170 \text{ sheep} \times 24 \text{ hours} \times $0.40/24\text{hour/sheep}] = $34,467,459.32 \text{ per annum}
\]

\textsuperscript{572} See Table A6.15 of Appendix 6 in this RIS for this estimate.

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and

**Time cost for 5% of journeys where there are no idle trucks** [5% x 3% x 191,580.35 journeys x 3.5 hours added x $412.45/hour] +

**Time cost for 95% of journeys where there are idle trucks and no voluntary spelling** [50% x 95% x 3% x 191,580.35 journeys x 25.5 hours added x $412.45/hour] +

**Time cost for 95% of journeys where there are idle trucks with minimum of 6 hours voluntary spelling** [50% x 95% x 3% x 191,580.35 journeys x 7.5 hours added x $412.45/hour] +

**Food cost** [3% x 66,210,170 sheep x 24 hours x $0.40/24hr/sheep] = $39,479,586.35 per annum

**Loss of income from contaminated fleece and reduced price at sale yards due to poorly presented sheep**

As with Option B = $419,547.36 per annum

The total incremental net cost of standard SB11.1 in conjunction with SB11.2 (including the loss of income from contaminated fleece and reduced price at sale yards due to poorly presented sheep) would be between **$35,084,472.86** and **$40,121,637.63** per annum. Over 5 years, and in present value terms (2008 dollars), this would equal between **$163,952,520.66** and **$187,491,590.63**.

### A7.3.37 Summary of annual and 5 year costs/cost savings under Option E by standard

Table A7.4 summarises the annual and 5 year costs/cost savings under Option E. The annual incremental cost under this more expensive option (than Options B, B1, or D) will equal between **$118,134,989** and **$132,224,059** per annum or between **$552,084,160** and **$617,893,502** in present value terms (in 2008 dollars) over 5 years.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Annual min</th>
<th>Annual max</th>
<th>Present value over 5 years min</th>
<th>Present value over 5 years max</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>$364,317</td>
<td>$364,317</td>
<td>$1,702,482</td>
<td>$1,702,482</td>
</tr>
<tr>
<td>SA1.2</td>
<td>$1,466,294</td>
<td>$1,691,068</td>
<td>$6,852,109</td>
<td>$7,902,494</td>
</tr>
<tr>
<td>SA4.2</td>
<td>$1,353,865</td>
<td>$1,353,865</td>
<td>$6,326,717</td>
<td>$6,326,717</td>
</tr>
<tr>
<td>SA5.10</td>
<td>$14,886,740</td>
<td>$16,135,211</td>
<td>$69,566,917</td>
<td>$75,401,117</td>
</tr>
<tr>
<td>SA5.14</td>
<td>$10,349,088</td>
<td>$11,128,645</td>
<td>$48,362,110</td>
<td>$52,005,041</td>
</tr>
<tr>
<td>SB1.1&amp;SB1.3</td>
<td>$14,917</td>
<td>$14,917</td>
<td>$69,708</td>
<td>$69,708</td>
</tr>
<tr>
<td>SB1.2</td>
<td>-$12,190</td>
<td>-$12,190</td>
<td>-$56,963</td>
<td>-$56,963</td>
</tr>
<tr>
<td>SB1.4</td>
<td>$65,838</td>
<td>$65,838</td>
<td>$307,665</td>
<td>$307,665</td>
</tr>
<tr>
<td>SB2.1&amp;SB2.2</td>
<td>$73,162</td>
<td>$76,916</td>
<td>$341,890</td>
<td>$359,433</td>
</tr>
<tr>
<td>SB2.3</td>
<td>$3,767</td>
<td>$3,767</td>
<td>$17,605</td>
<td>$17,605</td>
</tr>
<tr>
<td>SB2.5</td>
<td>$375</td>
<td>$395</td>
<td>$1,754</td>
<td>$1,844</td>
</tr>
<tr>
<td>SB3.1&amp;SB3.3</td>
<td>$34,333</td>
<td>$34,333</td>
<td>$160,443</td>
<td>$160,443</td>
</tr>
<tr>
<td>SB3.4</td>
<td>$1,031</td>
<td>$1,031</td>
<td>$4,819</td>
<td>$4,819</td>
</tr>
<tr>
<td>SB4.1&amp;SB4.2</td>
<td>$49,230,931</td>
<td>$55,464,751</td>
<td>$230,060,041</td>
<td>$259,191,172</td>
</tr>
<tr>
<td>SB4.3</td>
<td>$1,280,906</td>
<td>$1,280,906</td>
<td>$5,985,775</td>
<td>$5,985,775</td>
</tr>
</tbody>
</table>

573 Advice provided by Wool Producers Australia.

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A7.3.38 – Estimated change in retail meat prices under Option E

Substituting the values for cattle standards SB4.1&4.2 in section A7.3.12 into Table A6.27, would make the incremental cost of Option E in relation to cattle equal to between $57,289,203 and $64,325,396 per annum (see Table A7.5). Substituting the values for sheep under section A7.3.36 for standards SB11.1&SB11.2 into Table A6.29, would make the incremental cost of Option E in relation to sheep equal to between $45,707,217 and $52,176,258 per annum (see Table A7.5). Substituting the value under section A7.3.32 for standards SB9.1&9.3 and the value under section A7.3.33 for SB9.2 into Table A6.30 - would make the incremental cost savings of Option E in relation to pigs equal to between $119,763 and $138,982 per annum (see Table A7.5). The incremental cost of Option E in relation to poultry would remain identical to Option B. Finally, the increases in meat prices under Option E are summarised in Table A7.6.

<table>
<thead>
<tr>
<th>Livestock Species</th>
<th>Incremental annual cost</th>
<th>Annual total cost of livestock transport</th>
<th>Incremental annual cost as a % of annual total cost of livestock transport (a1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle (+calves)</td>
<td>$57,289,203 to $64,325,396</td>
<td>$319,390,360 to $359,733,934</td>
<td>17.88% to 17.94%</td>
</tr>
<tr>
<td>Sheep</td>
<td>$45,707,217 to $52,176,258</td>
<td>$139,190,224 to $160,618,333</td>
<td>32.48% to 32.84%</td>
</tr>
<tr>
<td>Pigs</td>
<td>-$119,763 to -$138,982</td>
<td>$21,955,880 to $25,479,261</td>
<td>-0.55%</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>$10,154,434</td>
<td>$91,251,692</td>
<td>11.13%</td>
</tr>
</tbody>
</table>

Species does not include chicks, buffalo, horses, deer, camels, alpacas, goats, emus and ostriches.
Cost estimates are rounded to the nearest dollar and taken from Tables A6.26 to A6.39 of Appendix 6 in this RIS and adjusted by the relevant specific costs under Option E.
Cost estimates are rounded to the nearest dollar and taken from Table A6.3 of Appendix 6 in this RIS.
If all costs are eventually passed on to consumers then it would be expected that the increase in price would roughly equate to the increase in annual cost as a percentage of total annual cost.
A7.4 Costing of Option E1

The costs of general standards imposed under Option E are identical to those under Option B, B1 and E. However, unlike Option E, Option E1 increases the minimum voluntary spelling period to 12 hours before a water deprivation time credit may be earned. Increasing the minimum voluntary spell time from 4 to 12 hours under Option E1 will add an additional 8 hours to the third calculation (refer to section A6.1 in Appendix 6 of this RIS) This would have an impact on specific standards and is discussed in the next sections.

A7.4.1 Net incremental cost of alpaca standard SB1.1 in conjunction with SB1.3 with minimum voluntary spelling of 12 hours

For wethers over 12 months old (where water is not provided on the vehicle):

- Time cost for 5% of journeys where there are no idle trucks \([5\% \times 5\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 3.5 \text{hrs} \times $250/\text{hour}] +\)

- Time cost for 95% of journeys where there are idle trucks and no voluntary spelling \([50\% \times 95\% \times 5\% \times 20\% \times 20\% \times 650.4 \text{ journeys} \times 25.5 \text{hrs} \times $250/\text{hour}] +\)

---

580 Retail price divided by production price.
582 Percentages have been rounded to one decimal place.
583 For whole beast farm gate price ($799) and retail price of cattle ($1,438) see Coles Myer Ltd, (August, 2005), Submission to DAFF.
584 Saleyard price of lamb $3.40/kg and retail price of lamb is $12.16/kg (see ABARE (March quarter 2007), Australian Commodities, Vol.14).
585 ABARE (August, 2004), Economic assessment of pig meat imports on the Australian industry, ABARE report 04.15
586 For production cost $2.39 per kg and retail cost $3.80 per kg of pork - see ABARE (March quarter 2007), Australian Commodities Vol.14.
587 The price elasticity of supply for chicken meat is based on a UK study by Harling and Thompson (1985) (cited in Alston G.M and Scobie G. M) and it is assumed that chicken meat production systems in Australia and the UK are similar.
588 Wholesale price of $4.24/ kg is based on advice from Dr Vivien Kite from RIRDC and retail price of chicken of $4.80/kg is based on current observation of local retail outlets (shops and outlets).
Time cost for 95% of journeys where there are idle trucks with minimum of 12 hours voluntary spelling [50% x 95% x 5% x 20% x 20% x 650.4 journeys x 13.5hrs x $250/hour] = $6,081.24 per annum

For non-pregnant females and males over 12 months old (where water is not provided on the vehicle):

Time cost for 5% of journeys where there are no idle trucks [5% x 10% x 20% x 20% x 650.4 journeys x 3.5hrs x $250/hour] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 5% x 20% x 20% x 650.4 journeys x 13.5hrs x $250/hour] = $8,455.20 per annum

For alpacas – 6 to 12 months old and pregnant females up to 7.5 months pregnant (1st and 2nd trimester) (where water is not provided on the vehicle):

As with Option B = $369.64 per annum

For pregnant alpacas more than 7.5 months pregnant (3rd trimester) (where water is not provided on the vehicle):

As with Option B = $731.70 per annum

For lactating alpacas with crias up to 6 months old (where water is not provided on the vehicle):

As with Option B = $2,168.00 per annum

Therefore standard SB1.1 in conjunction with SB1.3 would impose an incremental cost of $17,697.38 per annum across the aforementioned classes of alpacas. Over 5 years and in present value terms (2008 dollars), this would be equal to $82,701.28.

A7.4.2 Incremental cost savings of alpaca standard SB1.2 for transporters with minimum voluntary spelling of 12 hours

For wethers over 12 months old:

Cost savings for 5% of journeys where there are no idle trucks [5% x 5% x 20% x 20% x 650.4 journeys x 3.5hrs x $250/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 5% x 20% x 20% x 650.4 journeys x 25.5hrs x $250/hour] +

Cost savings for 95% of journeys where there are idle trucks with minimum of 12 hours voluntary spelling [50% x 95% x 5% x 20% x 20% x 650.4 journeys x 13.5hrs x $250/hour] = $6,081.24 per annum

For non-pregnant females and males over 12 months old:

Cost savings for 5% of journeys where there are no idle trucks [5% x 10% x 20% x 20% x 650.4 journeys x 3.5hrs x $250/hour] +

In this case there is no time difference between voluntary spelling and the time involved if trucks are idle, hence it is assumed that voluntary spelling would be redundant.
Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling\textsuperscript{590} [95% x 10% x 20% x 20% x 650.4 journeys x 13.5 hours x $250/hour] = \$8,455.20 per annum

\textit{For alpacas – 6 to 12 months old:}

As with Option B = \$433.60

The incremental cost saving of standard SB1.2 for all relevant classes of alpaca would therefore be equal to \$14,970.04 per annum. Over 5 years, and in present value terms (2008 dollars), this would equal \$69,956.18.

\textit{A7.4.3 Incremental cost of alpaca standard SB1.4 for livestock owners}

As with option B = \$65,837.77 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal \$307,665.12.

\textit{A7.4.4 Incremental unquantifiable one-off cost of alpaca standard SB1.7 for livestock owners}

As with Option B

\textit{A7.4.5 Incremental cost of buffalo standard SB2.1 in conjunction with SB2.2 for livestock transporters with minimum voluntary spelling of 12 hours}

Under Option E1 the maximum time off water would be reduced to half the amount as compared to the base case (i.e. from 48 hours to 24 hours). The assumptions in relation to the estimation of the incremental annual cost would be equivalent to under Option B (see section A6.16), except that the relevant journeys affected would be those between 24 hours and 48 hours (i.e. 40%\textsuperscript{591} of journeys). The associated spelling period would be 24 hours (under the proposed standards under SB2.2) and the voluntary spell required for a time-off-water credit would be 6 hours (plus 1.5 hours for loading and unloading).

\textbf{Between:}

\[\text{Time cost for 5\% of journeys where there are no idle trucks} \times 5\% \times 40\% \times 80\% \times 68.8 \text{ journeys} \times 3.5 \text{ hours added} \times \$327.40/\text{hour} + \]

\[\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \times 95\% \times 40\% \times 80\% \times 68.8 \text{ journeys} \times 13.5 \text{ hours added} \times \$327.40/\text{hour} = \$93,704.50 \text{ per annum} \]

\text{and}

\[\text{Time cost for 5\% of journeys where there are no idle trucks} \times 5\% \times 40\% \times 80\% \times 68.8 \text{ journeys} \times 3.5 \text{ hours added} \times \$344.20/\text{hour} + \]

\textsuperscript{590} In this case there is no time difference between voluntary spelling and the time involved if trucks are idle, hence it is assumed that voluntary spelling would be redundant.

\textsuperscript{591} Proposed by AHA.

\textsuperscript{592} In this case there is no time difference between voluntary spelling and the time involved if trucks are idle, hence it is assumed that voluntary spelling would be redundant.
Time cost for 95% of journeys where there are idle trucks and no voluntary spelling \( [95\% \times 40\% \times 80\% \times 68.8 \text{ journeys} \times 13.5 \text{ hours added} \times \$344.20/\text{hour}] = \$98,512.79 \) per annum

Over 5 years, and in present value terms (2008 dollars), this would equal between \$437,888.55 and \$460,358.09.

**A7.4.6 Incremental cost of buffalo standard SB2.3 for livestock owners**

As with Option B = \$3,767.40 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal \$17,605.36.

**A7.4.7 Incremental unquantifiable cost of buffalo standard SB2.4 for transporters**

As with Option B

**A7.4.8 Incremental net cost of buffalo standard SB2.6 for transporters**

As with Option B = between \$375.42 and \$394.68 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal between \$1,754.36 and \$1,844.38.

**A7.4.9 Incremental cost of camel standard SB3.1 in conjunction with SB3.3 for livestock transporters with minimum voluntary spelling of 12 hours**

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \, [5\% \times 5\% \times 32.5 \text{ journeys} \times 3.5 \text{ hours added} \times 2 \times \$260.20/\text{hour}] + [5\% \times 30\% \times 32.5 \text{ journeys} \times 3.5 \text{ hours added} \times \$260.20/\text{hour}] = \$43,973.80 \text{ per annum}
\]

Over 5 years, and in present value terms (2008 dollars), this would equal \$205,493.05.

**A7.4.10 Incremental cost of camel standard SB3.4 for livestock owners**

As with Option B = \$1,031.28 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal only \$4,819.28.

**A7.4.11 Incremental unquantifiable cost of camel standard SB3.6 for transporters**

\[593 \text{ Proportion of camels transported up to 3 days who would have to be spelled twice.} \]
\[594 \text{ Proportion of camels transported up to 2 days who would have to be spelled once.} \]
\[595 \text{ In this case there is no time difference between voluntary spelling and the time involved if trucks are idle, hence it is assumed that voluntary spelling would be redundant.} \]
As with Option B

A7.4.12 Incremental net cost of cattle standard SB4.1 in conjunction with SB4.2 for transporters - with minimum voluntary spelling of 12 hours

Standard SB4.1 under Option E1, increases water deprivation time as compared to the ‘base case’ for the following classes of cattle species:

- calves aged 5 to 30 days travelling without their mothers from 10 hours to 12 hours before a mandatory minimum spell of 12 hours is operational under standard SB4.2 and it is assumed that the proportion of calves travelling between 10 hours and 12 hours is only 2% as opposed to 7% between 10 hours and 18 hours (under option B);
- cattle in their third trimester of pregnancy and more than 8 months pregnant from 8 hours to 24 hours before a mandatory minimum spell of 12 hours is operational under standard SB4.2.

For calves 5 to 30 days travelling without their mothers:

Between:

Cost savings for 5% of journeys where there are no idle trucks [5% x 5% x 2% x 806.1 journeys x 3.5 hours saved x $315.20/hour] + [5% x 2% x 4,083.6 journeys x 3.5 hours saved x $315.20/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [95% x 5% x 2% x 806.1 journeys x 13.5 hours saved x $315.20/hour] + [95% x 5% x 2% x 4,083.6 journeys x 13.5 hours saved x $315.20/hour] = $337,962.26 per annum.

and

Cost savings for 5% of journeys where there are no idle trucks [5% x 5% x 2% x 806.1 journeys x 3.5 hours saved x $336.80/hour] + [5% x 2% x 4,083.6 journeys x 3.5 hours saved x $336.80/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [95% x 5% x 2% x 806.1 journeys x 13.5 hours saved x $336.80/hour] + [95% x 5% x 2% x 4,083.6 journeys x 13.5 hours saved x $336.80/hour] = $361,122.11 per annum.

For cattle in third trimester of pregnancy and more than 8 months pregnant:

Between:

Cost savings for 5% of journeys where there are no idle trucks [5% x 36.84% x 2% x 50% x 423,274.95 journeys x 3.5 hours saved x $356.65/hour] +

596 Proposed by AHA.
597 Representing cost savings to non-bobby calf transport.
598 Representing cost savings to bobby calf transport.
599 In this case there is no time difference between voluntary spelling and the time involved if trucks are idle, therefore it is assumed that voluntary spelling would be redundant.
Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling\textsuperscript{600} \[95\% \times 36.84\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 13.5 \text{ hours saved} \times \$356.65/\text{hour}] = \$7,229,824.73 \text{ per annum}

and

Cost savings for 5% of journeys where there are no idle trucks \[5\% \times 36.84\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 3.5 \text{ hours saved} \times \$401.70/\text{hour}] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling \[95\% \times 36.84\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 13.5 \text{ hours saved} \times \$401.70/\text{hour}] = \$8,143,055.08 \text{ per annum}

Standard SB4.1 under Option E1 reduces the maximum water deprivation time as compared to the ‘base case’ for the following classes of cattle species:

- for cattle in their third trimester of pregnancy and less than 8 months pregnant from 48 hours to 24 hours where a mandatory spell of 12 hours becomes mandatory under SB4.2, but with a minimum voluntary spell of 12 hours; and
- for cattle over 6 months from 48 hours to 36 hours, where a mandatory spell of 24\textsuperscript{601} hours becomes mandatory, and a minimum voluntary spell of 12 hours.

For cattle in third trimester of pregnancy and less than 8 months pregnant:

Between:

Time cost for 5% of journeys where there are no idle trucks \[5\% \times 63.16\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 3.5 \text{ hours added} \times \$356.65/\text{hour}] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling\textsuperscript{602} \[95\% \times 63.16\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 13.5 \text{ hours added} \times \$356.65/\text{hour}] = \$12,395,106.68 \text{ per annum}

and

Time cost for 5% of journeys where there are no idle trucks \[5\% \times 63.16\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 3.5 \text{ hours added} \times \$401.70/\text{hour}] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling \[95\% \times 63.16\% \times 2\% \times 50\% \times 423,274.95 \text{ journeys} \times 13.5 \text{ hours added} \times \$401.70/\text{hour}] = \$13,960,786.08 \text{ per annum}

For cattle over 6 months old:

\textsuperscript{600} In this case there is no time difference between voluntary spelling and the time involved if trucks are idle, hence it is assumed that voluntary spelling would be redundant.

\textsuperscript{601} SB4.2 requires 36 hours spelling after 48 hours of time of water, however the ‘intent’ for this species is that 24 hours of spelling be conducted for 36 hours of time off water.

\textsuperscript{602} In this case there is no time difference between voluntary spelling and the time involved if trucks are idle, hence it is assumed that voluntary spelling would be redundant.
The following assumptions are made in order to estimate the incremental cost for this category of cattle:

- the proportion of cattle over 6 months old (i.e. 95%\textsuperscript{603});
- the number of journeys involving cattle per annum (i.e. 423,274.95\textsuperscript{604});
- the proportion of journeys greater than 36 hours (i.e. 2%\textsuperscript{605});
- 3.5 hours of loading/unloading and changeover time will be incurred for the relevant proportion of journeys (i.e. 5%);
- 25.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for journeys between 36 hours and 48 hours;
- 13.5 hours minimum voluntary spelling time (including 1.5 hours loading/unloading) will be incurred for 50% of the time where journeys do not have the ability for changeover; and
- the cost of cattle transport is between $356.45/hr and $401.70/hr.\textsuperscript{606}

Therefore, the incremental annual cost would be calculated in the following way:

**Between:**

\[
\text{Time cost for 5\% of journeys between where there are no idle trucks} \quad \left[ 5\% \times 2\% \times 95\% \times 423,274.95 \text{ journeys} \times 3.5 \text{ hours added} \times \$356.65/\text{hour} \right] + \\
\text{Time cost for 95\% of journeys between where there are idle trucks and no voluntary spelling} \quad \left[ 50\% \times 95\% \times 2\% \times 95\% \times 423,274.95 \text{ journeys} \times 25.5 \text{ hours added} \times \$356.65/\text{hour} \right] + \\
\text{Time cost for 95\% of journeys between where there are idle trucks with minimum of 12 hours voluntary spelling} \quad \left[ 50\% \times 95\% \times 2\% \times 95\% \times 423,274.95 \text{ journeys} \times 13.5 \text{ hours added} \times \$356.65/\text{hour} \right] = \$53,636,447.18 \text{ per annum.} \\
\text{and} \\
\text{Time cost for 5\% of journeys between where there are no idle trucks} \quad \left[ 5\% \times 2\% \times 95\% \times 423,274.95 \text{ journeys} \times 3.5 \text{ hours added} \times \$401.70/\text{hour} \right] + \\
\text{Time cost for 95\% of journeys between where there are idle trucks and no voluntary spelling} \quad \left[ 50\% \times 95\% \times 2\% \times 95\% \times 423,274.95 \text{ journeys} \times 25.5 \text{ hours added} \times \$401.70/\text{hour} \right] + \\
\text{Time cost for 95\% of journeys between where there are idle trucks with minimum of 12 hours voluntary spelling} \quad \left[ 50\% \times 95\% \times 2\% \times 95\% \times 423,274.95 \text{ journeys} \times 13.5 \text{ hours added} \times \$401.70/\text{hour} \right] = \$60,411,498.20 \text{ per annum.}\]

The total annual net cost of standard SB4.1 in conjunction with SB4.2 would be between $58,463,766.87 and $65,868,107.08. Over 5 years, and in present value terms (2008 dollars), this would equal between $273,205,813.40 and $307,806,881.70.

\textsuperscript{603} Proposed by AHA.  
\textsuperscript{604} See Table A6.16 of Appendix 6 in this RIS for estimate.  
\textsuperscript{605} Proposed by AHA.  
\textsuperscript{606} See Table A6.15 of Appendix 6 in this RIS for this estimate.
A7.4.13 Incremental cost of cattle standard SB4.3 for livestock owners

As with Option B = $1,280,905.91 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal $5,985,774.76.

A7.4.14 Incremental unquantifiable cost of cattle standard SB4.4 for transporters

As with Option B

A7.4.15 Incremental unquantifiable cost of cattle standard SB4.5 for transporters

As with Option B

A7.4.16 Incremental unquantifiable cost of cattle standard SB4.7 for transporters

As with Option B

A7.4.17 Incremental net cost of deer standard SB5.1 in conjunction with SB5.2 for transporters involving an increase in maximum time off water for fawns/calves less than 6 months and a reduction of maximum time off water for deer from 48 hours to 36 hours with minimum voluntary spelling of 12 hours

Under Option E1, standard SB5.1 increases the maximum time of water for fawns/calves under 6 months old from 24 hours under the ‘base case’ to 28 hours.

For fawns/calves less than 6 months:

Between:

Cost savings for 5% of journeys where there are no idle trucks [5% x 5% x 10% x 424.4 journeys x 3.5 hours saved x $302/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling \(^{607}\) [95% x 5% x 10% x 424.4 journeys x 13.5 hours saved x $302/hour] = $8,330.97 per annum

and

Cost savings for 5% of journeys where there are no idle trucks [5% x 5% x 10% x 424.4 journeys x 3.5 hours saved x $307.40/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [95% x 5% x 10% x 424.4 journeys x 13.5 hours saved x $307.40/hour] = $8,479.94 per annum

Under Option E1, standard SB5.1 reduces the maximum time of water for deer over 6 months old from 48 hours under the ‘base case’ to 36 hours where a mandatory spell of 24 hours \(^{608}\) is required. The incremental time cost estimate would rely on the following set of assumptions:

\(^{607}\) In this case there is no time difference between voluntary spelling and the time involved if trucks are idle, therefore it is assumed that voluntary spelling would be redundant.
- 3.5 hours of loading/unloading and changeover time will be incurred for 5% of the relevant proportion of journeys;
- 25.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for deer over 6 months;
- 13.5 hours minimum voluntary spelling time in total (including 1.5 hours loading/unloading) will be incurred for 20% of the time where journeys do not have the ability for changeover;
- the proportion of deer older than 6 months (i.e. 90%);  
- the proportion of deer journeys greater than 36 hours (i.e. 2%);  
- the number of journeys per annum involving deer transport is estimated to be 424.4;  
- and  
- the cost of deer transport is between $302/hr and $307.40/hour.

Therefore, the additional annual cost would be calculated in the following way:

For deer over 6 months:

Between:

\[\text{Time cost for 5% of journeys where there are no idle trucks} \times (5\% \times 2\% \times 90\% \times 424.4 \text{ journeys} \times 3.5 \text{ hours added} \times \$302/\text{hour}) + \]

\[\text{Time cost for 95% of journeys where there are idle trucks and no voluntary spelling} \times (50\% \times 95\% \times 2\% \times 90\% \times 424.4 \text{ journeys} \times 25.5 \text{ hours added} \times \$302/\text{hour}) + \]

\[\text{Time cost for 95% of journeys where there are idle trucks with minimum of 12 hours voluntary spelling} \times (50\% \times 95\% \times 2\% \times 90\% \times 424.4 \text{ journeys} \times 13.5 \text{ hours added} \times \$302/\text{hour}) = \$43,141.62 \text{ per annum} \]

\[\text{and} \]

\[\text{Time cost for 5% of journeys where there are no idle trucks} \times (5\% \times 2\% \times 90\% \times 424.4 \text{ journeys} \times 3.5 \text{ hours added} \times \$307.40/\text{hour}) + \]

\[\text{Time cost for 95% of journeys where there are idle trucks and no voluntary spelling} \times (50\% \times 95\% \times 2\% \times 90\% \times 424.4 \text{ journeys} \times 25.5 \text{ hours added} \times \$307.40/\text{hour}) + \]

\[\text{Time cost for 95% of journeys where there are idle trucks with minimum of 12 hours voluntary spelling} \times (50\% \times 95\% \times 2\% \times 90\% \times 424.4 \text{ journeys} \times 13.5 \text{ hours added} \times \$307.40/\text{hour}) = \$43,905.81 \text{ per annum} \]

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608 SB5.2 requires 36 hours spelling after 48 hours of time of water, however the ‘intent’ for this species is that 24 hours of spelling be conducted for 36 hours of time off water.
609 Proposed by AHA.
610 Proposed by AHA.
611 See Table A6.16 of Appendix 6 in this RIS for this estimate.
612 See Table A6.15 of Appendix 6 in this RIS for this estimate.
Therefore the incremental net cost of standard SB5.1 in conjunction with standard SB5.2 across both classes of deer would equal between $34,810.65 and $35,425.87 per annum. Over 5 years, and in present value terms (2008 dollars), this would equal between $162,672.91 and $165,547.89.

\[ \text{A7.4.18 Incremental cost of deer standard SB5.3 for livestock owners} \]

As with Option B = $50,280.19 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal $234,963.33.

\[ \text{A7.4.19 Incremental unquantifiable cost of deer standard SB5.4 for transporters} \]

As with Option B

\[ \text{A7.4.20 Incremental cost of ratite standard SB6.1 in conjunction with SB6.4 for transporters with minimum voluntary spelling of 12 hours} \]

**For adult emus:**

\[ \text{Time cost for 5\% of journeys where there are no idle trucks} \times [5\% \times 5\% \times 95\% \times 111.1 \text{ journeys} \times 3.5 \text{ hours added} \times $250/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \times [95\% \times 5\% \times 95\% \times 111.1 \text{ journeys} \times 13.5 \text{ hours added} \times $250/\text{hour}] = $17,151.06 \text{ per annum} \]

**For adult ostriches:**

\[ \text{Time cost for 5\% of journeys where there are no idle trucks} \times [5\% \times 5\% \times 95\% \times 207.3 \text{ journeys} \times 3.5 \text{ hours added} \times $250/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \times [95\% \times 5\% \times 95\% \times 207.3 \text{ journeys} \times 13.5 \text{ hours added} \times $250/\text{hour}] = $32,001.94 \text{ per annum} \]

**For emu chicks:**

As with Option B = $69.44 per annum

**For ostrich chicks:**

As with Option B = $129.56 per annum

The total combined annual cost for adults and chicks, of standard SB6.1 in conjunction with SB6.4, would be $17,220.50 per annum for emu transporters and $32,131.50 per annum for ostrich transporters. Over 5 years, and in present value terms (2008 dollars), this would equal $80,472.76 for emu transporters and $150,153.04 for ostrich transporters.

\[ \text{A7.4.21 Incremental unquantifiable cost of ratite standards SB6.2; SB6.3; SB6.5; SB6.6}^{6114} \text{ SB6.7}^{6115} \text{ and SB6.8} \]

\[ \text{6113 In this case there is no time difference between voluntary spelling and the time involved if trucks are idle, therefore it is assumed that voluntary spelling would be redundant.} \]
As with Option B

**A7.4.22 Incremental net cost of goat standard SB7.1 in conjunction with SB7.2 for transporters with minimum voluntary spelling of 12 hours**

Standard SB7.1 increases the maximum time off water of from 8 hours to 12 hours for goats over 6 months in their third trimester and over 4 months pregnant (under which a minimum mandatory spell of 12 hours comes under operation under standard SB7.2) and from 24 hours to 28 hours for kids less than 6 months of age (under which a minimum mandatory spell of 12 hours comes under operation under standard SB7.2). The incremental cost savings would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be saved for 5% of the relevant proportion of journeys;
- 13.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- there is no time difference between voluntary spelling and the time involved if trucks are idle, therefore it is assumed that voluntary spelling would be redundant;
- the proportion of pregnant goats known to be in their third trimester (i.e. 2%);
- the proportion of the 2% of goats in their third trimester and over 4 months pregnant (i.e. 60%);
- the proportion of kids less than 6 months (i.e. 10%);
- the proportion of journeys between 8 and 12 hours (i.e. 20%);
- the proportion of journeys between 24 and 28 hours (i.e. 35%);
- the number of journeys per annum involving goat transport is estimated to be 4,181;
- and
- the cost of goat transport is between $357.43 and $412.45/hour.

Therefore, the additional annual time cost saving for goat transporters would be calculated in the following way:

*For goats in their third trimester and more than 4 months pregnant:*

**Between:**

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614 Affects both livestock transporters and owners.
615 Affects livestock owners only.
616 Proposed by AHA.
617 Estimated as 30 days divided by the total trimester of 50 days.
618 Proposed by AHA.
619 Proposed by AHA.
620 Proposed by AHA.
621 See Table A6.16 of Appendix 6 in this RIS for this estimate.
622 See Table A6.15 of Appendix 6 in this RIS for this estimate.
Cost savings for 5% of journeys where there are no idle trucks [5% x 20% x 2% x 60% x 4,181.08 journeys x 3.5 hours saved x $357.43/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [95% x 20% x 2% x 60% x 4,181.08 journeys x 13.5 hours saved x $357.43/hour] = $46,626.63 per annum

and

Cost savings for 5% of journeys where there are no idle trucks [5% x 20% x 2% x 60% x 4,181.08 journeys x 3.5 hours saved x $412.45/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [95% x 20% x 2% x 60% x 4,181.08 journeys x 13.5 hours saved x $412.45/hour] = $53,803.98 per annum

For kids under 6 months:

Between:

Cost savings for 5% of journeys where there are no idle trucks [5% x 35% x 10% x 4,181.08 journeys x 3.5 hours saved x $357.43/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [95% x 35% x 10% x 4,181.08 journeys x 13.5 hours saved x $357.43/hour] = $679,971.76 per annum

and

Cost savings for 5% of journeys where there are no idle trucks [5% x 35% x 10% x 4,181.08 journeys x 3.5 hours saved x $412.45/hour] +

Cost savings for 95% of journeys where there are idle trucks and no voluntary spelling [95% x 35% x 10% x 4,181.08 journeys x 13.5 hours saved x $412.45/hour] = $784,641.33 per annum

Standard SB7.1 reduces the maximum time off water of from 48 hours to 12 hours for goats in their third trimester and less than 4 months pregnant (under which a minimum mandatory spell of 12 hours comes under operation under standard SB7.2). This standard also reduces the maximum time off water for goats over 6 months old from 48 hours in the ‘base case’ to 36 hours under Option E for which 24 hours\(^{623}\) of spelling applies. The incremental cost would rely on the following assumptions:

- 3.5 hours of loading/unloading and changeover time will be incurred for 5% of the relevant proportion of journeys;
- 25.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for goats over 6 months;

---

\(^{623}\) SB7.2 requires 36 hours spelling after 48 hours of time of water, however the ‘intent’ for this species is that 24 hours of spelling be conducted for 36 hours of time off water.
13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for goats in their third trimester;

- there is no time difference between voluntary spelling and the time involved if trucks are idle for 12 hours, therefore it is assumed that voluntary spelling would be redundant in this instance;

- the proportion of goats older than 6 months (i.e. 90%);

- the proportion of journeys between 36 and 48 hours (i.e. 20%);

- the proportion of pregnant goats known to be in their third trimester (i.e. 2%);

- the proportion of the 2% of goats in their third trimester and less than 4 months pregnant (i.e. 40%);

- the proportion of journeys between 12 and 48 hours (i.e. 60%);

- the number of journeys per annum involving goat transport is estimated to be 4,181.08;

- and

- the cost of goat transport is between $357.43 and $412.45/hour.

Therefore, the additional annual time cost saving for goat transporters would be calculated in the following way:

For goats in their third trimester and less than 4 months pregnant:

Between:

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = [5\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours added} \times $357.43/\text{hour}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} = [95\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours added} \times $357.43/\text{hour}] = \$93,253.27 \text{ per annum}
\]

and

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} = [5\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours added} \times $412.45/\text{hour}] +
\]

\[
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} = [95\% \times 40\% \times 2\% \times 60\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours added} \times $412.45/\text{hour}] = \$107,607.95 \text{ per annum}
\]

For goats over 6 months:

\[624\text{ Proposed by AHA.}\]
\[625\text{ Proposed by AHA.}\]
\[626\text{ Proposed by AHA.}\]
\[627\text{ Estimated as 20 days divided by the total trimester of 50 days.}\]
\[628\text{ Proposed by AHA.}\]
\[629\text{ See Table A6.16 of Appendix 6 in this RIS for this estimate.}\]
\[630\text{ See Table A6.15 of Appendix 6 in this RIS for this estimate.}\]
Between:

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \ [5\% \times 20\% \times 90\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours added} \times $357.43/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \ [50\% \times 95\% \times 20\% \times 90\% \times 4,181.08 \text{ journeys} \times 25.5 \text{ hours added} \times $357.43/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 12 hours voluntary spelling} \ [50\% \times 95\% \times 20\% \times 90\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours added} \times $357.43/\text{hour}] = $5,030,296.57 \text{ per annum}
\]

\[
\text{and}
\]

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \ [5\% \times 20\% \times 90\% \times 4,181.08 \text{ journeys} \times 3.5 \text{ hours added} \times $412.45/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \ [50\% \times 95\% \times 20\% \times 90\% \times 4,181.08 \text{ journeys} \times 25.5 \text{ hours added} \times $412.45/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks with minimum of 12 hours voluntary spelling} \ [50\% \times 95\% \times 20\% \times 90\% \times 4,181.08 \text{ journeys} \times 13.5 \text{ hours added} \times $412.45/\text{hour}] = $5,804,621.38 \text{ per annum}
\]

Subsequently, the total incremental net cost of standard SB7.1 in conjunction with SB7.2, for goats (summing across the cost savings and costs of all the aforementioned classes) would be between $4,396,951.44 and $5,073,784.02 per annum. Over 5 years, and in present value terms (2008 dollars), this would equal between $20,547,302.37 and $23,710,194.62.

\textit{A7.4.23 Incremental unquantifiable cost of goat standard SB7.3 for livestock owners}

As with Option B

\textit{A7.4.24 Incremental net cost of horse standard SB8.1 in conjunction with SB8.3 for transporters with minimum voluntary spelling of 12 hours}

\textbf{Foals under 6 months old:}

\[
\text{Cost savings for 5\% of journeys where there are no idle trucks} \ [5\% \times 1\% \times 10\% \times 116,298 \text{ journeys} \times 3.5 \text{ hours saved} \times $250/\text{hour}] + \\
\text{Cost savings for 95\% of journeys where there are idle trucks and no voluntary spelling} \ [95\% \times 1\% \times 10\% \times 116,298 \text{ journeys} \times 13.5 \text{ hours saved} \times $250/\text{hour}] = $377,968.50 \text{ per annum}
\]

\textbf{Mares in third trimester of pregnancy:}

\[
\text{Time cost for 5\% of journeys where there are no idle trucks} \ [5\% \times 10\% \times 1\% \times 116,298 \text{ journeys} \times 3.5 \text{ hours added} \times $250/\text{hour}] + \\
\text{Time cost for 95\% of journeys where there are idle trucks and no voluntary spelling} \ [95\% \times 10\% \times 1\% \times 116,298 \text{ journeys} \times 13.5 \text{ hours added} \times $250/\text{hour}] = $377,968.50 \text{ per annum}
\]

\textbf{Horses over 6 months old:}
Time cost for 5% of journeys where there are no idle trucks [5% x 0.01% x 99% x 116,298 journeys x 3.5 hours added x $250/hour] +

Time cost for 95% of journeys where there are idle trucks and no voluntary spelling [50% x 95% x 0.01% x 99% x 116,298 journeys x 25.5 hours added x $250/hour] +

Time cost for 95% of journeys where there are idle trucks with minimum of 12 hours voluntary spelling [50% x 95% x 0.01% x 99% x 116,298 journeys x 13.5 hours added x $250/hour] = $52,147.66 per annum

The total incremental net cost of standard SB8.1 in conjunction with SB8.3 across all three classes of species, would be $52,147.66 per annum. Over 5 years, and in present value terms (2008 dollars), this would equal $243,690.14.

A7.4.25 Incremental cost of horse standard SB8.2 for transporters

Time cost for 0.01% of journeys where there are no idle trucks [0.01% x 99.99% x 0.005% x 116,298 journeys x 3.5 hours added x $250/hour] +

Time cost for 99.99% of journeys where there are idle trucks and no voluntary spelling [50% x 99.99% x 0.005% x 116,298 journeys x 25.5 hours added x $250/hour] +

Time cost for 99.99% of journeys where there are idle trucks with minimum of 12 hours voluntary spelling [50% x 99.99% x 0.005% x 116,298 journeys x 13.5 hours added x $250/hour] = $28,342.48 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal $132,446.64.

A7.4.26 Incremental cost of horse standard SB8.4 for livestock owners

As with Option B = $846.91 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal $3,957.68.

A7.4.27 Incremental cost of horse standard SB8.8 for transporters – reducing stocking density by 3 horses/30m²

As with Option B = $8,397.50 per annum

This would equal $39,242.18 over 5 years in present value terms (2008 dollars).

A7.4.28 Incremental net cost of horse standard SB8.10 for livestock owners

As with Option B = $6,042 per annum

In present value terms (2008 dollars) and over 5 years this would be equal to $28,233.67.

A7.4.29 Incremental cost of horse standard SB8.7 for transporters

As with Option B = $84,875 per annum
Over 5 years, and in present value terms (2008 dollars), this would equal $396,627.60.

A7.4.30 Incremental unquantifiable cost of horse standard SB8.12 for transporters

As with Option B

A7.4.31 Incremental unquantifiable cost of horse standard SB8.14 for transporters

As with Option B

A7.4.32 Incremental cost of pig standard SB9.1 in conjunction with SB9.3 for transporters and minimum voluntary spelling of 12 hours

Between:

Time cost for 100% of journeys where there are idle trucks and no voluntary spelling \[0.01\% \times 10\% \times 39,944.63 \text{journeys} \times 12 \text{hours} \times \$336.50/\text{hour}\] = $1,612.96 per annum

and

Time cost for 100% of journeys where there are idle trucks and no voluntary spelling \[0.01\% \times 10\% \times 39,944.63 \text{journeys} \times 12 \text{hours} \times \$390.50/\text{hour}\] = $1,871.81 per annum

Over 5 years, and in present value terms (2008 dollars), this would equal between $7,537.51 and $8,747.09.

A7.4.33 Incremental cost savings of pig standard SB9.2 for transporters and minimum voluntary spelling of 12 hours

Between:

Cost savings for 100% of journeys where there are idle trucks and no voluntary spelling \[0.1\% \times 39,944.63 \text{journeys} \times 12 \text{hours} \times \$336.50/\text{hour}\] = $161,296.42 per annum

and

Cost savings for 100% of journeys where there are idle trucks and no voluntary spelling \[0.1\% \times 39,944.63 \text{journeys} \times 12 \text{hours} \times \$390.50/\text{hour}\] = $187,180.54 per annum

Over 5 years, and in present value terms (2008 dollars), the cost savings of SB9.2 would equal between $753,750.93 and $874,709.47.

A7.4.34 Incremental unquantifiable cost of pig standard SB9.4 for transporters

As with Option B

A7.4.35 Incremental unquantifiable cost of poultry standard SB10.2 for transporters

As with Option B

\[631\] In this case there is no time difference between voluntary spelling and the time involved if trucks are idle, therefore it is assumed that voluntary spelling would be redundant.
A7.4.36 Incremental net cost of Sheep standard SB11.1 in conjunction with SB11.2 for transporters and minimum voluntary spelling of 12 hours

Standard SB11.1 increases the maximum time off water from 8 hours to 12 hours for sheep over 4 months pregnant and in their third trimester with an associated minimum spelling time of 12 hours under standard SB11.2, and increases the maximum time off water from 24 hours to 28 hours for lambs under 4 months with an associated minimum spelling time of 12 hours under standards SB11.2. This would reduce the time cost of transport. The incremental cost savings will rely on the following assumptions being made:

- 3.5 hours of loading/unloading and changeover time will be saved for 5% of the relevant proportion of journeys;
- 13.5 hours of loading/unloading and idle vehicle time will be saved for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
- there is no time difference between voluntary spelling and the time involved if trucks are idle, therefore it is assumed that voluntary spelling would be redundant;
- the proportion of sheep journeys between 8 hours and 12 hours (i.e. 15%);
- the proportion of sheep that are pregnant and known to be in their third trimester (i.e. 1%);
- the proportion of the 1% of ewes that are in the third trimester and more than 4 months pregnant (i.e. 60%);
- the proportion of lamb journeys between 24 hours and 28 hours (i.e. 5%);
- the number of journeys per annum involving sheep transport is estimated to be 191,580.3;
- the number of journeys per annum involving lamb transport is estimated to be 252.8; and
- the cost of sheep and lamb transport is between $357.43/hr and $412.45/hour.

Consequently, the annual cost savings for transporters is calculated in the following way:

For lambs under 4 months old:

Between:

\[
\text{Time cost savings for 5\% of journeys where there are no idle trucks} \quad [5\% \times 5\% \times 252.8 \text{ journeys} \\
\times 3.5 \text{ hours saved} \times $357.43/\text{hour}] + \]

\[= \text{Incremental net cost of Sheep standard SB11.1 in conjunction with SB11.2 for transporters and minimum voluntary spelling of 12 hours}\]

632 Proposed by AHA.
633 Proposed by AHA.
634 Estimated as 30 days divided by the total days of the third trimester of 50 days.
635 Proposed by AHA.
636 See Table A6.16 of Appendix 6 in this RIS for this estimate.
637 See Table A6.16 of Appendix 6 in this RIS for this estimate.
638 See Table A6.15 of Appendix 6 in this RIS for this estimate.
Time cost savings for 95% of journeys where there are idle trucks and no voluntary spelling
\[95\% \times 5\% \times 252.8 \text{ journeys} \times 13.5 \text{ hours saved} \times $357.43/\text{hour}\] +

Food cost savings \[5\% \times 107,162 \text{ lambs} \times 12 \text{ hours saved} \times $0.20/12\text{hour/lamb}\] = $71,592.34 per annum

and

Time cost savings for 5% of journeys where there are no idle trucks \[5\% \times 5\% \times 252.8 \text{ journeys} \times 3.5 \text{ hours saved} \times $412.45/\text{hour}\] +

Time cost savings for 95% of journeys where there are idle trucks and no voluntary spelling
\[95\% \times 5\% \times 252.8 \text{ journeys} \times 13.5 \text{ hours saved} \times $412.45/\text{hour}\] +

Food cost savings \[5\% \times 107,162 \text{ lambs} \times 12 \text{ hours saved} \times $0.20/12\text{hour/lamb}\] = $80,633.22 per annum

For Sheep in third trimester and more than 4 months pregnant:

Between:

Time cost savings for 5% of journeys where there are no idle trucks \[5\% \times 15\% \times 1\% \times 60\% \times 191,580.35 \text{ journeys} \times 3.5 \text{ hours saved} \times $357.43/\text{hour}\] +

Time cost savings for 95% of journeys where there are idle trucks and no voluntary spelling
\[95\% \times 15\% \times 1\% \times 60\% \times 191,580.35 \text{ journeys} \times 13.5 \text{ hours saved} \times $357.43/\text{hour}\] +

Food cost savings \[5\% \times 1\% \times 60\% \times 66,210,170 \text{ sheep} \times 12 \text{ hours saved} \times $0.20/12\text{hour/sheep}\] = $944,189.77 per annum

and

Time cost savings for 5% of journeys where there are no idle trucks \[5\% \times 15\% \times 1\% \times 60\% \times 191,580.35 \text{ journeys} \times 3.5 \text{ hours saved} \times $412.45/\text{hour}\] +

Time cost savings for 95% of journeys where there are idle trucks and no voluntary spelling
\[95\% \times 15\% \times 1\% \times 60\% \times 191,580.35 \text{ journeys} \times 13.5 \text{ hours saved} \times $412.45/\text{hour}\] +

Food cost savings \[5\% \times 1\% \times 60\% \times 66,210,170 \text{ sheep} \times 12 \text{ hours saved} \times $0.20/12\text{hour/sheep}\] = $1,067,516.56 per annum

Standard SB11.1 reduces the maximum time off water from 48 hours to 12 hours for ewes in their third trimester and less than 4 months pregnant, with an associated minimum spelling time of 12 hours under standard SB11.2. Standard SB11.1 also reduces the maximum time off water from 48 hours to 36 hours for sheep over 4 months old for which 24 hours\(^{639}\) of spelling applies. This would increase the time cost of transport. The incremental time cost will rely on the following assumptions being made:

- 3.5 hours of loading/unloading and changeover time will be incurred for 5% of the relevant proportion of journeys;

\(^{639}\) SB11.2 requires 36 hours spelling after 48 hours of time of water, however the ‘intent’ for this species is that 24 hours of spelling be conducted for 36 hours of time off water.
• 25.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys) for sheep over 4 months old;
• 13.5 hours of loading/unloading and idle vehicle time will be incurred for the relevant proportion of journeys where vehicles do not have the ability for changeover (i.e. 95% of journeys);
• there is no time difference between voluntary spelling and the time involved where trucks are idle for 12 hours, therefore it is assumed that voluntary spelling would be redundant in this case;
• the proportion of sheep journeys between 12 hours and 48 hours (i.e. 30%\(^640\));
• the proportion of sheep journeys between 36 hours and 48 hours (i.e. 3%\(^641\));
• the proportion of sheep in their 3\(^{rd}\) trimester of pregnancy (i.e. 1%\(^642\));
• the proportion of sheep in the third trimester that are less than 4 months pregnant (i.e. 40%\(^643\));
• the number of journeys per annum involving sheep transport is estimated to be 191,580.35\(^644\); and
• the cost of sheep and lamb transport is between $357.43/hr and $412.45/hour.\(^645\)

Subsequently, the annual incremental cost for transporters is calculated in the following way:

*For Sheep in third trimester and less than 4 months pregnant:*

**Between:**

\[
\text{Time cost for 5% of journeys where there are no idle trucks } [5\% \times 30\% \times 1\% \times 40\% \times 191,580.35 \text{ journeys } \times 3.5 \text{ hours added } \times \$357.43/\text{hour}] + \\
\text{Time cost for 95% of journeys where there are idle trucks and no voluntary spelling } [95\% \times 30\% \times 1\% \times 40\% \times 191,580.35 \text{ journeys } \times 13.5 \text{ hours added } \times \$357.43/\text{hour}] + \\
\text{Food cost } [30\% \times 1\% \times 40\% \times 66,210,170 \text{ sheep } \times 12 \text{ hours } \times \$0.20/12\text{hour/sheep}] = \\
\text{\$1,258,919.70 per annum}
\]

and

\[
\text{Time cost for 5% of journeys where there are no idle trucks } [5\% \times 30\% \times 1\% \times 40\% \times 191,580.35 \text{ journeys } \times 3.5 \text{ hours added } \times \$412.45/\text{hour}] + \\
\text{Time cost for 95% of journeys where there are idle trucks and no voluntary spelling } [95\% \times 30\% \times 1\% \times 40\% \times 191,580.35 \text{ journeys } \times 13.5 \text{ hours added } \times \$412.45/\text{hour}] + \\
\text{Food cost } [30\% \times 1\% \times 40\% \times 66,210,170 \text{ sheep } \times 12 \text{ hours } \times \$0.20/12\text{hour/sheep}] = \\
\text{\$1,423,355.41 per annum}
\]

\(^640\) Proposed by AHA.  
\(^641\) Proposed by AHA.  
\(^642\) Proposed by AHA.  
\(^643\) Estimated as 20 days divided by the total days of the third trimester of 50 days.  
\(^644\) See Table A6.16 of Appendix 6 in this RIS for this estimate.  
\(^645\) See Table A6.15 of Appendix 6 in this RIS for this estimate.
For Sheep over 4 months old:

Between:

- Time cost for 5% of journeys where there are no idle trucks $[5\% \times 3\% \times 191,580.35 \text{ journeys x 3.5 hours added x } $357.43/\text{hour}] +$

- Time cost for 95% of journeys where there are idle trucks and no voluntary spelling $[50\% \times 95\% \times 3\% \times 191,580.35 \text{ journeys x 25.5 hours added x } $357.43/\text{hour}] +$

- Time cost for 95% of journeys where there are idle trucks with minimum of 12 hours voluntary spelling $[50\% \times 95\% \times 3\% \times 191,580.35 \text{ journeys x 13.5 hours added x } $357.43/\text{hour}] +$

- Food cost $[3\% \times 66,210,170 \text{ sheep x 24 hours x } $0.40/24\text{hour/sheep}] = $40,322,205.58 \text{ per annum}$

and

- Time cost for 5% of journeys where there are no idle trucks $[5\% \times 3\% \times 191,580.35 \text{ journeys x 3.5 hours added x } $412.45/\text{hour}] +$

- Time cost for 95% of journeys where there are idle trucks and no voluntary spelling $[50\% \times 95\% \times 3\% \times 191,580.35 \text{ journeys x 25.5 hours added x } $412.45/\text{hour}] +$

- Time cost for 95% of journeys where there are idle trucks with minimum of 12 hours voluntary spelling $[50\% \times 95\% \times 3\% \times 191,580.35 \text{ journeys x 13.5 hours added x } $412.45/\text{hour}] +$

- Food cost $[3\% \times 66,210,170 \text{ sheep x 24 hours x } $0.40/24\text{hour/sheep}] = $46,235,566.81 \text{ per annum}$

- Loss of income from contaminated fleece and reduced price at sale yards due to poorly presented sheep ⁶⁴⁶

As with Option B = $419,547.36 \text{ per annum}$

The total incremental net cost of standard SB11.1 in conjunction with SB11.2 (including the loss of income from contaminated fleece and reduced price at sale yards due to poorly presented sheep) would be between $40,984,890.53 \text{ and } $46,930,319.80 \text{ per annum. Over 5 years, and in present value terms (2008 dollars), this would equal between } $191,525,639.79 \text{ and } $219,309,101.71$.

A7.4.37 Summary of annual and 5 year costs/cost savings under Option E1 by standard

Table A7.7 summarises the annual and 5 year costs/cost savings under Option E1. The annual incremental cost under this more expensive option (i.e. more expensive than Options B, B1, D or E) will equal between $133,913,648 \text{ and } $150,172,868 \text{ per annum or between } $625,789,083 \text{ and } $701,769,707 \text{ in present value terms (in 2008 dollars) over 5 years.}$

Table A7.7 - Summary of annual and 5 year cost/cost savings of standards under Option E1

⁶⁴⁶ Advice provided by Wool Producers Australia.
<table>
<thead>
<tr>
<th>Standard</th>
<th>Annual min</th>
<th>Annual max</th>
<th>Present value over 5 years min</th>
<th>Present value over 5 years max</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA1.1</td>
<td>$364,317</td>
<td>$364,317</td>
<td>$1,702,482</td>
<td>$1,702,482</td>
</tr>
<tr>
<td>SA1.2</td>
<td>$1,466,294</td>
<td>$1,691,068</td>
<td>$6,852,109</td>
<td>$7,902,494</td>
</tr>
<tr>
<td>SA4.2</td>
<td>$1,353,865</td>
<td>$1,353,865</td>
<td>$6,326,717</td>
<td>$6,326,717</td>
</tr>
<tr>
<td>SA5.10</td>
<td>$14,886,740</td>
<td>$16,135,211</td>
<td>$69,566,917</td>
<td>$75,401,117</td>
</tr>
<tr>
<td>SA5.14</td>
<td>$10,349,088</td>
<td>$11,128,645</td>
<td>$48,362,110</td>
<td>$52,005,041</td>
</tr>
<tr>
<td>SB1.1&amp;SB1.3</td>
<td>$17,697</td>
<td>$17,697</td>
<td>$82,701</td>
<td>$82,701</td>
</tr>
<tr>
<td>SB1.2</td>
<td>-$14,970</td>
<td>-$14,970</td>
<td>-$69,956</td>
<td>-$69,956</td>
</tr>
<tr>
<td>SB1.4</td>
<td>$65,838</td>
<td>$65,838</td>
<td>$307,665</td>
<td>$307,665</td>
</tr>
<tr>
<td>SB2.1&amp;SB2.2</td>
<td>$93,704</td>
<td>$98,513</td>
<td>$437,889</td>
<td>$460,358</td>
</tr>
<tr>
<td>SB2.3</td>
<td>$3,767</td>
<td>$3,767</td>
<td>$17,605.36</td>
<td>$17,605.58</td>
</tr>
<tr>
<td>SB2.5</td>
<td>$375</td>
<td>$395</td>
<td>$1,754.36</td>
<td>$1,844.38</td>
</tr>
<tr>
<td>SB3.1&amp;SB3.3</td>
<td>$43,974</td>
<td>$43,974</td>
<td>$205,493</td>
<td>$205,493</td>
</tr>
<tr>
<td>SB3.4</td>
<td>$1,031</td>
<td>$1,031</td>
<td>$4,819</td>
<td>$4,819</td>
</tr>
<tr>
<td>SB4.1&amp;SB4.2</td>
<td>$58,463,767</td>
<td>$65,868,107</td>
<td>$273,205,813</td>
<td>$307,806,882</td>
</tr>
<tr>
<td>SB4.3</td>
<td>$1,280,906</td>
<td>$1,280,906</td>
<td>$5,985,775</td>
<td>$5,985,775</td>
</tr>
<tr>
<td>SB5.1&amp;SB5.2</td>
<td>$33,811</td>
<td>$35,426</td>
<td>$162,673</td>
<td>$165,498</td>
</tr>
<tr>
<td>SB5.3</td>
<td>$50,280</td>
<td>$50,280</td>
<td>$234,963</td>
<td>$234,963</td>
</tr>
<tr>
<td>SB6.1&amp;SB6.4</td>
<td>$49,352</td>
<td>$49,352</td>
<td>$230,626</td>
<td>$230,626</td>
</tr>
<tr>
<td>SB7.1&amp;SB7.2</td>
<td>$4,396,951</td>
<td>$5,073,784</td>
<td>$20,547,302</td>
<td>$23,710,195</td>
</tr>
<tr>
<td>SB8.1&amp;SB8.3</td>
<td>$52,148</td>
<td>$52,148</td>
<td>$243,690</td>
<td>$243,690</td>
</tr>
<tr>
<td>SB8.2</td>
<td>$28,342</td>
<td>$28,342</td>
<td>$132,447</td>
<td>$132,447</td>
</tr>
<tr>
<td>SB8.4</td>
<td>$847</td>
<td>$847</td>
<td>$3,958</td>
<td>$3,958</td>
</tr>
<tr>
<td>SB8.8</td>
<td>$8,398</td>
<td>$8,398</td>
<td>$39,242</td>
<td>$39,242</td>
</tr>
<tr>
<td>SB8.10</td>
<td>$6,042</td>
<td>$6,042</td>
<td>$28,234</td>
<td>$28,234</td>
</tr>
<tr>
<td>SB8.11</td>
<td>$84,875</td>
<td>$84,875</td>
<td>$396,628</td>
<td>$396,628</td>
</tr>
<tr>
<td>SB9.1&amp;SB9.3</td>
<td>$1,613</td>
<td>$1,872</td>
<td>$7,538</td>
<td>$7,847</td>
</tr>
<tr>
<td>SB9.2</td>
<td>-$161,296</td>
<td>-$187,181</td>
<td>-$753,751</td>
<td>-$874,709</td>
</tr>
<tr>
<td>SB11.1&amp;SB11.2</td>
<td>$40,984,891</td>
<td>$46,930,320</td>
<td>$191,552,640</td>
<td>$219,309,102</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$133,913,648</strong></td>
<td><strong>$150,172,868</strong></td>
<td><strong>$625,789,083</strong></td>
<td><strong>$701,769,707</strong></td>
</tr>
</tbody>
</table>

A7.4.38 – Estimated change in retail meat prices under Option E1

Substituting the values under section A7.4.12 for standards SB4.1&SB4.2, into Table A6.27, would make the incremental cost of Option E1 in relation to cattle equal to between $66,522,039 and $74,728,752 per annum (see Table A7.8). Substituting the values for sheep under section A7.4.36 for standards SB11.1&SB11.2 into Table A6.29, would make the incremental cost of Option E1 in relation to sheep transport equal to between $51,620,511 and $58,999,798 per annum (see Table A7.8). Substituting the value under section A7.4.32 for standards SB9.1&9.3 and the value under section A7.4.33 for SB9.2 into Table A6.30 would make the incremental cost savings of Option E1 in relation to pigs equal to between $159,683 and $185,309 per annum (see Table A7.8). The incremental cost of Option E1 in relation to poultry would remain identical to Option B an E. Finally, the increases in meat prices under Option E1 are summarised in Table A7.9.

Regulatory Impact Statement - Australian standards and guidelines for the welfare of animals - Land transport of livestock
Table A7.8 – Increase in transport cost for major livestock species as a result of Option E1

<table>
<thead>
<tr>
<th>Livestock Species</th>
<th>Incremental annual cost 648</th>
<th>Annual total cost of livestock transport 649</th>
<th>Incremental annual cost as a % of annual total cost of livestock transport 650(a2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle (+calves)</td>
<td>$66,522,039 to $74,728,752</td>
<td>$319,390,360 to $359,733,934</td>
<td>20.77% to 20.83%</td>
</tr>
<tr>
<td>Sheep</td>
<td>$51,620,511 to $58,999,798</td>
<td>$139,190,224 to $160,618,333</td>
<td>36.73% to 37.09%</td>
</tr>
<tr>
<td>Pigs</td>
<td>-$159,683 to -$185,309</td>
<td>$21,955,880 to $25,479,261</td>
<td>-0.727%</td>
</tr>
<tr>
<td>Poultry for meat</td>
<td>$10,154,434</td>
<td>$91,251,692</td>
<td>11.13%</td>
</tr>
</tbody>
</table>

Table A7.9 - Proportion of transport cost borne by livestock producers and consumers of meat products as a result of Option E1

<table>
<thead>
<tr>
<th>Meat product</th>
<th>Price sensitivity of supply 651</th>
<th>Price sensitivity of demand 652</th>
<th>% of cost borne by producers (d) = 1/(b)[1/(b) + 1/(c) x - 1 x (e)] 653,654</th>
<th>% of cost borne by consumers (f) 655 = 1 - (d)</th>
<th>% increase in retail price of meat product (g2) = (a2) x (f)</th>
<th>% change in demand (h2) = (g2) x (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef</td>
<td>0.27</td>
<td>-1.2</td>
<td>71.2% 650</td>
<td>28.8%</td>
<td>5.987% to 6%</td>
<td>-7.18% to -7.20%</td>
</tr>
<tr>
<td>Lamb</td>
<td>0.17</td>
<td>-1.4</td>
<td>69.7% 657</td>
<td>30.3%</td>
<td>11.122% to 11.229%</td>
<td>-15.57% to -15.72%</td>
</tr>
<tr>
<td>Pork</td>
<td>1.5</td>
<td>-1.59 655</td>
<td>40% 659</td>
<td>60.0%</td>
<td>-0.463%</td>
<td>0.69%</td>
</tr>
</tbody>
</table>

647 Species does not include chicks, buffalo, horses, deer, camels, alpacas, goats, emus and ostriches.
648 Cost estimates are rounded to the nearest dollar and taken from Tables A6.30 to A6.43 of Appendix 6 in this RIS.
649 Cost estimates are rounded to the nearest dollar and taken from Table A6.3 of Appendix 6 in this RIS.
650 If all costs are eventually passed on to consumers then it would be anticipated that the increase in price would roughly equate to the increase in annual cost as a percentage of total annual cost.
653 Retail price divided by production price
655 Percentages have been rounded to one decimal place
656 For whole beast farm gate price ($799) and retail price of cattle ($1,438) see Coles Myer Ltd, (August, 2005), Submission to DAFF.
657 Saleyard price of lamb $3.40/kg and retail price of lamb is $12.16/kg (see ABARE (March quarter 2007), Australian Commodities, Vol.14).
658 ABARE (August, 2004), Economic assessment of pig meat imports on the Australian industry, ABARE report 04.15
659 For production cost $2.39 per kg and retail cost $3.80 per kg of pork - see ABARE (March quarter 2007), Australian Commodities Vol.14.
A7.5 Comparison of annual and 5 year incremental cost between Options B, B1, D, E and E1

Finally, Table A7.10 below compares the annual and 5 year incremental costs between Options B, B1, D, E and E1 as discussed in Appendices 6 and 7.

Table A7.10 – A comparison of annual and 5 year incremental cost (cost savings) for Options B, B1, D, E and E1

<table>
<thead>
<tr>
<th>Option</th>
<th>Annual value min</th>
<th>Annual value max</th>
<th>Present value over 5 years min</th>
<th>Present value over 5 years max</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>$31,024,354</td>
<td>$33,464,818</td>
<td>$144,979,263</td>
<td>$156,383,745</td>
</tr>
<tr>
<td>B1</td>
<td>$43,743,754</td>
<td>$46,184,218</td>
<td>$204,418,027</td>
<td>$215,822,509</td>
</tr>
<tr>
<td>D</td>
<td>$-1,130,864</td>
<td>$-1,347,568</td>
<td>$-5,284,616</td>
<td>$-6,297,292</td>
</tr>
<tr>
<td>E</td>
<td>$118,134,989</td>
<td>$132,224,059</td>
<td>$552,054,160</td>
<td>$617,893,502</td>
</tr>
<tr>
<td>E1</td>
<td>$133,913,648</td>
<td>$150,172,868</td>
<td>$625,789,083</td>
<td>$701,769,707</td>
</tr>
</tbody>
</table>

A7.6 Comparison of beef, lamb, pork and chicken prices + demand between Options B, D, E and E1

Finally, Table A7.11 below compares the expected impact of Options B, D, E and E1 as discussed in Appendices 6 and 7 on beef, lamb, pork and chicken prices, as well as, demand for these meat products by consumers.

Table A7.11 Comparison of the % Change in meat prices and demand for Options B, B1, D, E and E1

<table>
<thead>
<tr>
<th>Option</th>
<th>%Change in Beef</th>
<th>%Change in lamb</th>
<th>%Change in Pork</th>
<th>%Change in Chicken</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>0.96% to 0.98%</td>
<td>-1.16% to -1.18%</td>
<td>-2.79% to -2.85%</td>
<td>-0.29%</td>
</tr>
<tr>
<td>B1</td>
<td>As with B + unknown increase in veal prices</td>
<td>As with B + unknown reduction in veal demand</td>
<td>1.99% to 2.03%</td>
<td>-2.79% to -2.85%</td>
</tr>
</tbody>
</table>

660 The price elasticity of supply for chicken meat is based on a UK study by Harling and Thompson (1985) (cited in Alston G.M and Scobie G. M) and it is assumed that chicken meat production systems in Australia and the UK are similar.

661 Wholesale price of $4.24/ kg is based on advice from Dr Vivien Kite from RIRDC and retail price of chicken of $4.80/kg is based on current observation of local retail outlets (shops and outlets).
<table>
<thead>
<tr>
<th>Option</th>
<th>%Change in Beef</th>
<th>%Change in lamb</th>
<th>%Change in Pork</th>
<th>%Change in Chicken</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Price</td>
<td>Demand</td>
<td>Price</td>
<td>Demand</td>
</tr>
<tr>
<td>D</td>
<td>0.001%</td>
<td>-0.001%</td>
<td>-0.19% to -0.2%</td>
<td>0.27% to 0.28%</td>
</tr>
<tr>
<td>E</td>
<td>5.154% to 5.17%</td>
<td>-6.18% to -6.20%</td>
<td>9.836% to 9.943%</td>
<td>-13.77% to -13.92%</td>
</tr>
<tr>
<td>E1</td>
<td>5.987% to 6%</td>
<td>-7.18% to -7.20%</td>
<td>11.12% to 11.23%</td>
<td>-15.57% to -15.72%</td>
</tr>
</tbody>
</table>
Appendix 8 – Unresolved issues

At the 6th meeting of the SRG, final preparations for releasing the Draft Land Transport Standards (the Standards) were made. A number of outstanding issues were identified, but for which consensus could not be reached. These issues will be of particular interest to AHA and DAFF when making final revisions to the document after the public consultation process. They are summarised below.

Time off water

Time off water limits the time that most species of livestock can be deprived of water while on a vehicle travelling by land or rail. Currently, some stakeholders believe the specifications in the Standards for the maximum time for livestock to be deprived of water is too long for some types of livestock (see Chapter B in the Standards). In particular, the animal welfare organisations feel that extra recognition is needed of the potential risk to the welfare of livestock on lengthy journeys. The Standards currently have extra planning and documentation requirements for journeys reasonably expected to exceed 24 hours (SA1.2). The vast majority of livestock journeys do not approach the maximum times permitted.

Some livestock industry stakeholders feel that the time permitted to keep livestock off water may be too short for contingency situations, such as when travelling sheep or goats must be delayed to avoid extreme cold. There are Guidelines that describe how these situations should be managed, but there are no standards that permit contingency actions to extend the time off water. The transporter must then rely upon compliance with the guidelines and the concept of ‘reasonableness’ as a defence against a prosecution of exceeding the permitted water deprivation times or cruelty. Some stakeholders are seeking greater certainty that would be provided by having an exemption for situations where there are unexpected, substantial delays.

Transport of Bobby calves

The transport of Bobby calves to abattoirs (SB4.5 which applies in addition to the general fitness standard SA4.1) has raised particular challenges for the protection of calf welfare. There has been a call from the animal welfare organisations and the meat processing industry to extend the minimum age before transport from 5 days to 8 days, but this would result in significant additional cost to livestock producers. Stakeholder concerns from all sectors have included:

- Providing appropriate times between feeds (milk or milk replacement diet) both longer and shorter than the 18 hours proposed;

- Time and distance of transport;

- Reliable indicators of the welfare of bobby calves before welfare problems become apparent;

- Appropriate enforcement measures that are relevant and measureable. Proving age is a particular issue.
Specification for loading density of livestock

**Loading density** refers to the number of animals that can be loaded onto a vehicle travelling by road or rail. This specification is primarily provided for in Part A of the Standards (SA5.3). The more detailed data from the transport model codes is provided in the guidelines section of the Standards. Some industry and welfare organisation stakeholders would prefer to see this data as a standard. Other stakeholders believe that there are too many variable conditions and situations in Australia to develop fixed loading densities specifications that apply for all livestock species. This issue could be further addressed in part if additional guidelines are developed to suit common situations. In the event of a transport operator being charged with loading too many animals on a vehicle, the guidelines and expert industry opinion could be used as a defence against the prosecution. Some stakeholders feel that the final responsibility for determining loading density should be with the consignor and not with the driver.

In addition to the three issues discussed above, there are six further areas where members of the SRG were unable to reach consensus on, which are outlined below. These issues did not generate as much disagreement.

**Appropriate interpretation of the standards and guidelines**
Each chapter of the Draft Land Transport Standards includes objectives (intended outcomes), standards (minimum requirements), and guidelines (recommended practices). Some stakeholders have questioned how the role of the guidelines should be interpreted. Currently the guidelines are not meant to provide compliance specifications for the standards. Some general, non prescriptive standards have been adopted. These seek to ‘minimise the risk to the welfare of livestock’. While they are difficult to verify, some consider that they remain important in lieu of having more prescriptive standards. There is potential for all industries to develop further guidelines that will provide for a range of expected situations. In the event of a transport operating breaching a general standard, compliance with these guidelines and expert industry opinion could be used as defence to a prosecution.

**Humane destruction issues**
Some industry stakeholders have questioned the need for the specific requirement in the Standards for humane destruction and guidelines for transport operators to have a specialist competency in humane destruction. Some stakeholders have also raised concerns about the potential Occupational Health & Safety issues associated with humanely destroying animals while they are still on board the vehicles. There is concern that it would be difficult to demonstrate such competencies in humane destruction, and therefore they should not be included in the current suite of competencies included in the guidelines.

**Competency for operating vehicles**
The need to include vehicle operation competency in the guidelines has been questioned on the basis that these kinds of competencies are already included in current road transport laws and arrangements.

**Definitions of welfare risks**
The ‘risk to the welfare of livestock’ definition currently used in the draft Standards is considered inadequate by animal welfare organisations because it does not explicitly mention
'pain' and 'suffering'. However, it is argued by others that the Standards' require the prevention of breaches of livestock welfare rather than providing action after an event to alleviate pain and suffering.

**Definitions of positions of stance**

There is still debate amongst government and animal welfare stakeholders about an appropriate definition of ‘normal’ or ‘natural’ standing positions of livestock during transport, namely whether an animal’s head is best carried up or down. The optimal standing position for an animal has direct implications for specifying adequate vertical clearance inside vehicles. The Standards currently allow for some species to come in contact with hard structures above their heads and where there is an acknowledged risk to welfare, there is an appropriate standard in place. This allowance remains a concern for some stakeholders.

**Additional issues associated with time-off water**

Some stakeholders are concerned that ‘the Standards’ fail to mandate provision of water in saleyards and transit yards. Some stakeholders are concerned that the Standards fail to secure effective transfer of information on water deprivation for all journeys for the adequate management of the welfare of livestock. Animal welfare organisations consider a recommended 4 hour minimum for voluntary in-transit spells is too short for water provision and rest in a mid journey contingency situation. There are some that feel the threshold for a permitted spell should be 6, 10 or 12 hours as currently specified as Option E and E1 in the Regulatory Impact Statement (RIS). While there are guidelines for pre-transport spelling in part A (GA4.6) and the species chapters of the Standards, some are concerned that there are no specific mandate for these conditions.

**Issues associated with the handling of livestock**

Some are concerned about a number of perceived inadequacies in the specification of handling issues in ‘the Standards’. These issues are as follows:

- There are no standards forbidding the dragging of livestock - offences are restricted to lifting, throwing and dropping. There is a particular issue with moribund, ‘downer’ livestock and the lack of requirements for mechanical lifting prior to humane destruction that has become apparent recently. Government stakeholders are considering further standards.

- The restrictions on the use of electric prodders are considered insufficient by animal welfare organisations and they prefer that they be totally banned from use.

- The restrictions on the use of dogs are considered inadequate by animal welfare organisations, who prefer a total ban on any form of biting and/or putting muzzles on all dogs at all times. Others argue this is unnecessary given market demand for the absence of bite marks on livestock.
Appendix 9 – the proposed standards and guidelines

Australian Standards and Guidelines for the Welfare of Animals
Land Transport of Livestock
Public Consultation Version
Version 29 February 2008

Primary Industries Ministerial Council