



Multispecies Livestock Transshipping Hub:

Improving safety, efficiency and profitability in the Australian Livestock Industry.

Prepared on behalf of the Outback Communities Authority and
Regional Development Australia Far North

April 2018





Disclaimer

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Executive Summary

Australia is the largest global exporter of beef; the second largest global exporter of sheep meat; and the largest global exporter of goat meat.

A burgeoning camel industry is also providing opportunities for enterprising pastoralists and Aboriginal corporations across Northern Australia.

The Outback regions of South Australia, Western Australia, Northern Territory and Queensland produce an estimated 3.53 billion worth of meat and livestock per year.

Transportation of this important commodity is time sensitive and producers are seeking optimal routes to market.

More than 50% of Australia's cattle can be found in Northern Australia with most livestock journeys exceeding 500 km. Journeys of 2,000-3,000 km often occur and require livestock spelling (unloading, watering, feeding and resting) once or twice during the journey.

Livestock industries, in association with Local, State and Federal governments are working towards establishing least cost logistics pathways to improve economic viability. One method of optimising livestock transportation is the establishment of functional nodes along livestock pathways. These nodes, commonly referred to as "transshipping hubs" consist of strategically located saleyards, spelling yards and cross loading facilities.

Port Augusta in South Australia is considered by producers and carriers to be a strategic node in the meat and livestock supply chain due to its proximity to National transportation routes, Northern source areas and Southern markets.

It is estimated 2,000 trailers or 90,000 head of cattle move through Port Augusta from North to South each year alone. At least two-thirds of the animal transportation vehicles that arrive in Port Augusta from the North are road trains which, due to vehicle regulations, cannot proceed past Port Augusta. These vehicles are required to be 'broken down' or cross-loaded into smaller configurations before travelling further South.

For trucks carrying stock through Port Augusta from Northern or North West SA, WA, NT or QLD there is no one location where animals can spell, be fed, watered, weighed and health checked or where trucks can be cross-loaded safely and drivers can rest.

This report provides justification for the consolidation of spelling yards, cross-loading and driver rest areas into one publicly-available location in Port Augusta. Consultation with industry stakeholders in South Australia and interstate has revealed the preference for an "industry owned and operated" facility which could be operated by a not-for-profit/industry association, private consortia or a cooperative structure.

The development of a multispecies transshipping hub at Port Augusta, it is estimated, would require an initial investment of approximately \$1.3 million. Stakeholders identified three possible locations for the facility with the Carrierwerloo (option 3 in the report) and Yorkey's Crossing Pastoral Property (option 2) the most favourable.

The consultant estimates an investment of \$1.3 million in the development of the transshipping hub would yield a multiplied value of \$1.6 million to the South Australian economy. This does not take into account ongoing efficiency and productivity benefits to the transport and livestock industries. Income generation, through a user pays system, will be an important aspect of the facility's business model in order to re-coup the investment and to cover operational and future asset management costs.

Employment outcomes from the project are estimated at six (6) full time equivalent (FTE) positions during manufacturing and construction and 1.5 FTEs for the ongoing management of the facility.

Regional Development Australia Far North (RDAFN) and the Outback Communities Authority (OCA) are commended on their proactive approach to scoping the transshipping hub project and will play an important role in coordinating stakeholder involvement in the initial stages of development. The degree of interest and commitment by the livestock industry will ultimately drive the success of the project.



1. Project Background

In August of 2017 Regional Development Australia Far North (RDAFN) and the Outback Communities Authority (OCA) contracted Local People Local Solutions (herein referred to as “the consultant”) to investigate and report on the feasibility of establishing a Multispecies Livestock Transshipping Hub (“the hub”) North of Port Augusta.

According to RDAFN *“The potential for a multispecies livestock transshipping hub near Port Augusta has been an ongoing discussion for many years. The need to rest animals being transported across Australia has always been a challenge in the Far North region with no suitable facilities enabling this.*

For pastoralists and livestock transporters the aim is to get livestock to their end destination as stress-free as possible so they have a good product at the end; moving livestock as quickly and efficiently as possible and for the process to be undertaken safely without risk to life, be that human or livestock.”¹

In consultation with stakeholders identified by RDAFN & OCA, the consultant has determined there are three distinct aspects to the hub, namely:

- Multispecies spelling yards,
- A rest area for truck drivers and their vehicles; and
- A truck cross loading facility or module.

Regional Development Australia Far North

Regional Development Australia Far North (RDAFN) is a not for profit economic development organisation funded through a tripartite agreement between Federal, State and Local Governments. RDAFN’s charter is to provide strategic and targeted responses to economic, environmental and social issues affecting the Far North region of SA.

Outback Communities Authority

The Outback Communities Authority (OCA) represents the communities located outside of local government areas and operates under the Outback Communities (Administration and Management) Act 2009. OCA’s purpose is to manage the provision of, and promote improvements in, public services and facilities for outback communities.

¹ RDAFN Project Brief, Port Augusta Economic Growth & Investment Strategy

2. Project Scope & Objectives

RDAFN and OCA, through the project brief, sought the following information with respect to the potential establishment of a multispecies transshipping hub in Port Augusta.

1. Determine the immediate, medium and/or long term economic benefit for the following areas;
 - a. Pastoral Industry
 - b. Transport, Freight and Logistics
 - c. Bio-security
 - d. Community
2. Provide evidence to the extent that the project will contribute to strategic priorities, goals, targets and objectives of the government and other stakeholders.
3. Identify the need for such a facility.
4. Include a broad freight and logistics infrastructure demand and supply analysis.
5. Broad scope of a range of options for the facility (including investigating similar facilities in other states), best location, best management model and if possible, estimate costings.



3. The Livestock Industry

In order to investigate the feasibility of establishing a Multispecies Livestock Transshipping Hub it is first necessary to consider nature and performance of the industries that will benefit from the facility. This will help to determine future growth areas and demand for logistics solutions (such as the hub). Meat and Livestock Australia (MLA) publishes annual statistics on the red meat and livestock industry including domestic and international market performance.²

Australia is a key player in the global market and is the largest global exporter of beef and goat meat as well as being the second largest global exporter of sheep meat. The graphic provides an overview of the livestock industry's performance data.

More information regarding the livestock industry, including species profiles, is contained in Appendix (2).



INDUSTRY TURNOVER

\$62 billion.
Up 11% on the previous year

INDUSTRY VALUE ADD

\$18 billion.
Up 304% on the previous year.



VALUE OF EXPORTS

\$15 billion per year.

NUMBER OF BUSINESSES

75,400.
Up 5% on the previous year.



EMPLOYMENT

178,900 direct jobs
16,649 (9%) are in SA

² State of the Industry Report, Australia's Red Meat and Livestock Industry, Meat & Livestock Australia prepared by Ernst & Young, October 2017

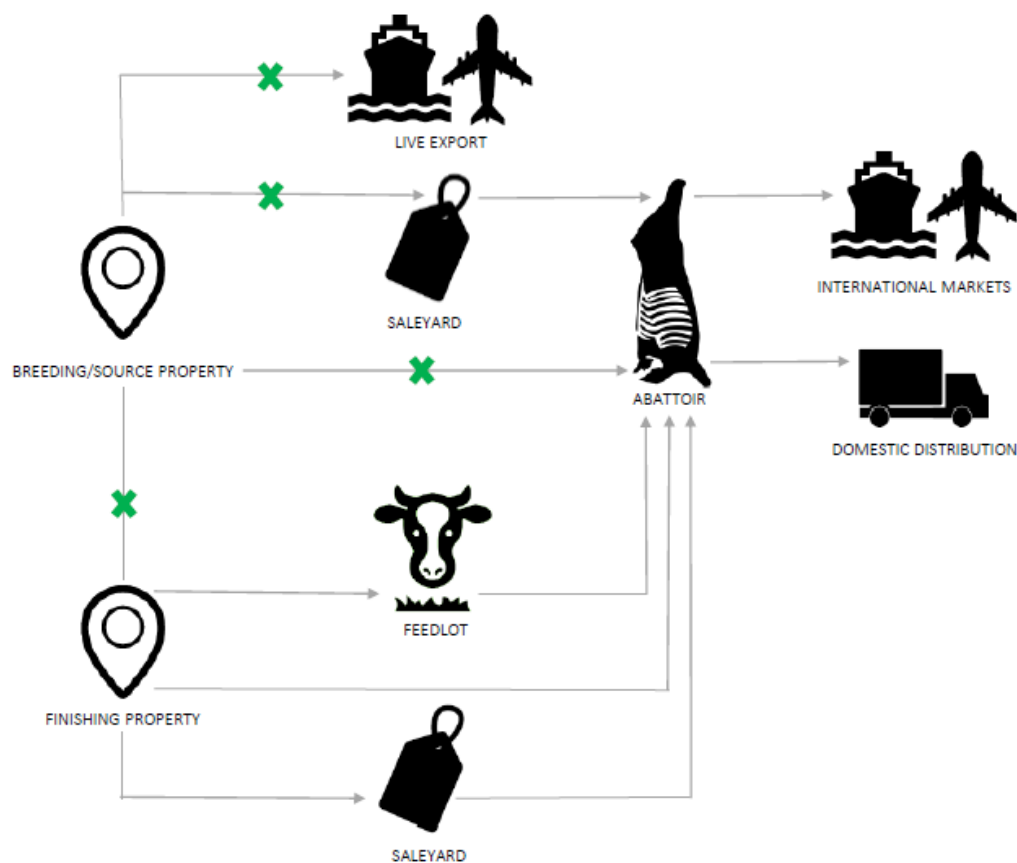
4. The Livestock Industry Supply Chain

The supply chain for cattle, sheep, goats and camels (livestock and meat) begins at the source property where animals are raised (cattle and sheep) or harvested (in the case of goats and camels). From the source property they can be transported directly to international markets as live exports, sold through on-farm sales or through a sale yard then transported to an abattoir for processing where meat and animal products are then sold to domestic or international markets directly or via a wholesaler.

Alternatively, livestock can be transported from the source property to be 'finished' at another location. From the finishing property stock is then either transferred to a feedlot (predominately cattle), sold direct to the abattoir or via sale yards and on to market.

This supply chain is represented schematically below. The green crosses **✕** represent points in time when a livestock transshipping hub could potentially be required for the transporting of livestock through Port Augusta and on to their end destination(s).

Adapted from A Modelling Framework for Optimising Investment for the Australian Livestock Industry, CSIRO.



5. The Livestock Industry Freight Task

5.1 Transport Mode

Each year thousands of head of cattle and sheep originating from the Northern areas of Australia are transported through Port Augusta in South Australia. There are often vast distances between source properties and processing plants necessitating long-haul transportation.

According to the Queensland Government's Department of Agriculture and Fisheries:³

More than 50% of Australia's cattle can be found in northern Australia with most livestock journeys exceeding 500 km. Journeys of 2,000-3,000 km occur and require livestock spelling (unloading, watering, feeding and resting) once or twice during the journey. Due to lengthy distances, climate, heat and dust, careful planning is required prior to departure.

Transporting animals over long distances in remote areas of northern Australia is usually performed using multi-deck stock crates and road trains of multiple trailers towed by an engine unit or prime mover. Smaller numbers of animals may also be transported over shorter distances by body trucks (i.e. non-articulated trucks) or single-deck semitrailers. Body trucks are a variation on the usual truck without a trailer and may be multi-deck for carrying small animals, such as calves, sheep, goats and pigs.

Some of the vehicle transport combinations used in Australia are:

- single trailer - one double-deck stock crate
- road train type 1 - two trailers with double-deck stock crates hitched together
- road train type 2 - three trailers with double-deck stock crates hitched together
- B-double - a prime mover and trailers that provides space equivalent to three 12.2 m-long decks; usually a 6.1 m-long double-deck trailer behind the prime mover followed by a 12.2 m double-deck trailer; a less common combination comprises a prime mover with two 9.1 m-long double-deck trailers
- B-AB-quad - a combination of two B-doubles hitched together with a double-axle dolly (non-fixed articulated trailer support consisting of two axles and a load sharing suspension) supporting the second B-double trailer.

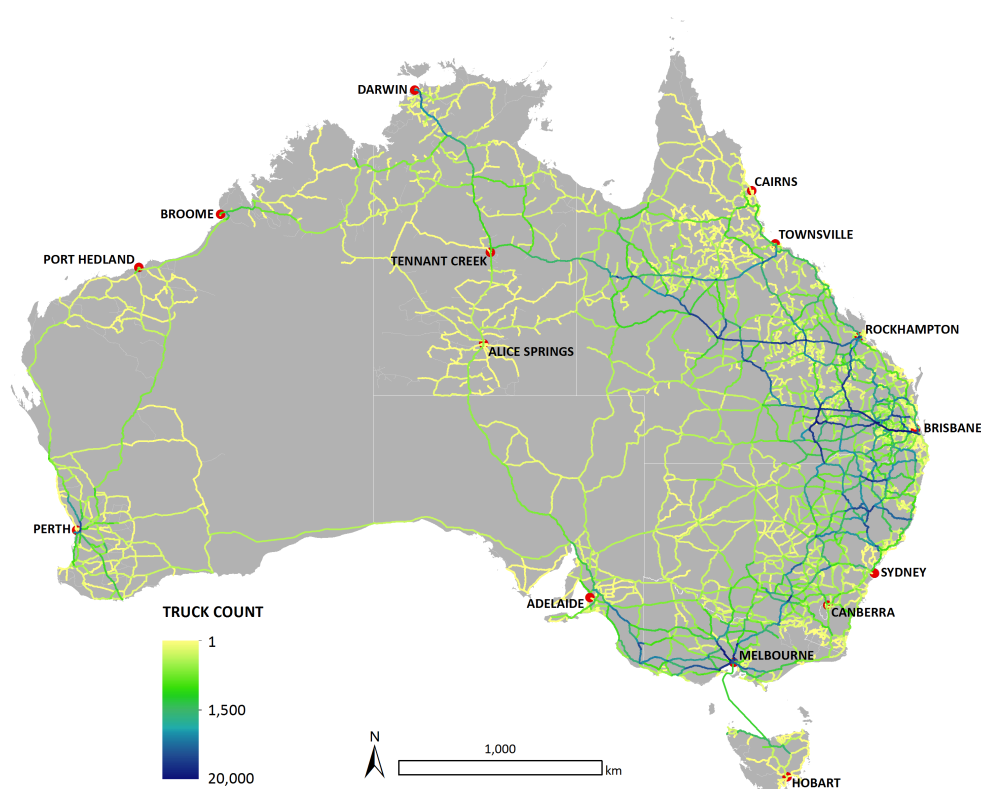
³ <https://www.daf.qld.gov.au/animal-industries/beef/logistics-and-infrastructure/transport-vehicle-design>

5.2 Routes & Volume

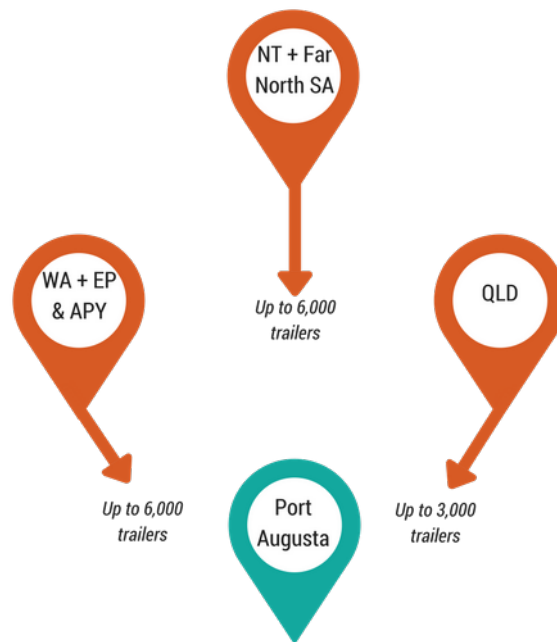
The exact head of cattle, sheep, goats and camels moving through Port Augusta from North to South is unknown. MLA, through the NLIS and PIC systems maintain records detailing livestock movements between properties and to end destinations, this information however is not publicly available. Recent studies into freight optimisation in the cattle industry have provided some useful information with respect to the quantum of livestock moving through South Australia.

The cattle industry, in collaboration with the CSIRO, has conducted detailed assessments cattle transport infrastructure requirements in Australia (particularly in the NT and QLD) through the development of the TRAnsport Network Strategic Investment Tool (TraNSIT).

The following map, developed by the CSIRO, represents Australia's cattle freight task in summary form. Port Augusta's location on the map is identified by a red circle.



The CSIRO estimates the approximate number of trailers carrying cattle and moving through Port Augusta from The West Australian Outback, APY Lands and Eyre Peninsula; The Northern Territory Outback and Far North South Australia; and The Queensland Outback to be:



The Northern Territory Cattlemen's Association (NTCA) are utilising the CSIRO's traNSIT and have provided detailed information on the volume and trucking configuration for NT cattle moving through Port Augusta on an annual basis.

According to the NTCA 100% of livestock combinations travelling to South Australia and Victoria from the NT are in either Road Train (3 trailer/6 deck) or B-Double/B-Double formation when they reach Port Augusta.

The traNSIT estimates there are 2020 trailers or 90,000 head that travel south from Port Augusta annually. Using these figures (10,000kg/deck, average 450kg/head, 22 x head/deck) approximately 674 road train and B-Double quad configurations (Type 2) arrive at Port Augusta from the NT each year.

5.3 Livestock Destinations

Livestock moving through Port Augusta is generally bound for:

- Grazing properties or feedlots where animals can be finished before being sold;
- Sale yards;
- Meat processors; or
- International shipment.

The main sale and processing points in South Australia are as follows:

Facility			Location & Distance from Port Augusta	Processing
South Australian Livestock Exchange (sale yards)			Dublin SA – 251km	N/A
SAMEX Company	Australian	Meat	Peterborough – 130km	Beef, mutton, lamb, goat and camel.
Prime Valley Pastoral			Two Wells – 273km	Beef, mutton, lamb, goat and camel.
Thomas Foods International			Murray Bridge – 364km	Beef, mutton, lamb and goat.
Tey's Australia			Naracoorte – 635km	Beef.



6. The Issue

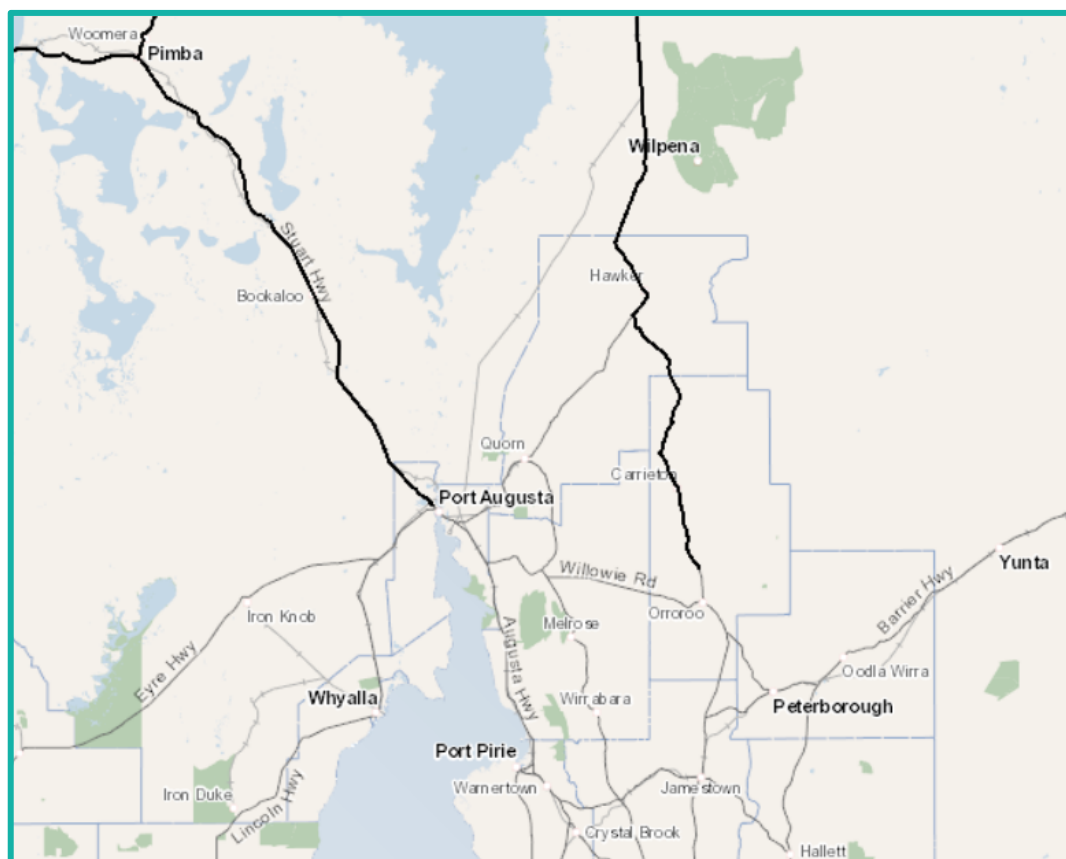
Current legislation requires drivers to rest at specific intervals giving rise to the need for driver rest areas with catering and amenities (these regulations are discussed further in Appendix (4)).

A common mode of transport for livestock in Northern Australia is via btriple or road trains. Heavy vehicle restrictions in South Australia are such that 53m road trains are not permitted to travel further south than Port Augusta, Quorn or just north of Orroroo.

This restriction necessitates the cross loading of stock from the restricted carrier to smaller or differently configured vehicles prior to entering from the North.

As an example, the NTCA estimates conservatively that two thirds of the truck combinations carrying cattle through to Port Augusta are classified as road trains and approximately 449 combinations or 60,000 head need to cross-load at Port Augusta. The remainder are broken down in to smaller combinations and proceed as separate loads.

The black line in the following map shows the road rain termination points at Port Augusta and Orroroo.



South Australian Heavy Vehicle Routes.
Source: Department of Planning, Transport & Infrastructure

For transport through Port Augusta from the North, cross-loading is often conducted in dangerous conditions on the side of the road or in truck stops on the outskirts of the city. According to Worksafe QLD¹: transferring cattle between road trains is considered one of the most dangerous activities along the cattle transport supply chain, exposing workers to risks such as injury from falls from heights, crush injuries when working in tight spaces with unpredictable and large livestock and driver fatigue.

Following two deaths in recent years and numerous injuries caused by cross-loading the cattle and trucking industry have developed a number of award winning solutions to improve the stock transfer process. One solution (described in more detail in section 13.3) is a construction called a cross-loading module which safely and efficiently transfers cattle from crate to crate on separate vehicles.

Animal welfare guidelines also provide for the safe loading, transportation and unloading of livestock and include recommendations regarding transit times and length of time off water or food (described in more detail in Appendices 4 & 5).

For trucks carrying stock through Port Augusta from Northern or North West SA, WA, NT or QLD there is no one location where animals can spell, be fed, watered, weighed and health checked or where trucks can be cross-loaded and drivers can rest.

Presently these tasks are carried out separately:

- Livestock can be spelled on grazing land by private arrangement in the hinterland to the West, North or East of Port Augusta;
- Drivers can rest at various truck stops around the city; and
- Trucks can be cross-loaded unsafely on the roadside or safely using a transfer module installed at the IOR Petroleum re-fuelling yards at the intersection of the Stuart Highway and Yorkeys Crossing. This facility is available to IOR customers only.

Consolidation of these facilities into one publicly available location close to Port Augusta would provide great benefit to the livestock and transportation industries.

Land Transport of Livestock, Standards & Guidelines 2012:

A spell is the provision of water, food and space to lie down to rest for the minimum time periods defined by standards for each species and class of animal and is a mandatory requirement when maximum time off water is reached, before starting a further journey.

During a voluntary water stop, livestock should be unloaded, allowed access to water and space to lie down, if this is not able to be provided on the vehicle. Feeding is not recommended during short water stops of less than 12 hours. Livestock must be inspected for fitness for the remainder of the intended journey before reloading.

Driver rest stops are different from voluntary water stops. During a driver rest stop, livestock are generally not unloaded. No water provision time credit is given for a driver rest stop. Livestock are inspected on the vehicle. Weather conditions during any stop or spell can have an important impact on livestock welfare.

7. Port Augusta – A Solution & Strategic Location

Port Augusta, in the Far North region of South Australia is the common-sense location for a multispecies transshipping hub.

The city is central to Australia's most significant livestock producing regions: The South Australian Outback including Far North, Eyre Peninsula and Anangu Pitjantjatjara Yankunytjatjara (APY) Lands; the Northern Territory Outback; the Queensland Outback; and the Western Australia Outback. This catchment area consists of 1,513 farms producing a combined livestock value of \$3.5 billion annually (ABARES 2016).

Port Augusta is the largest city in the Upper Spencer Gulf Economic Zone and is the major service centre for the vast Far North and North West areas of South Australia. Importantly, the city provides commercial and human services to the mining, agriculture and tourism industries.

Often referred to as the “cross roads of Australia”, Port Augusta is at the junction of Australia's major road and rail links placing the City at the nucleus of freight and passenger movements through South Australia.

The following map shows the proximity of Port Augusta to the intersection of the major North-South and West-East rail and road freight routes:

Port Augusta Fast Facts

Population: 13,808 (2016 Census)
Location: 322 km from Adelaide via A1
960km from WA border via A1
and 1,227km from Alice Springs via A87.

LGA: City of Port Augusta
State Electorate: Stuart
Federal Division: Grey



Source: Department of Infrastructure & Regional Development

8. Key Considerations for Establishing a Multispecies Transshipping Hub

In 2015 the Australian Livestock Markets' Association (ALMA) released an Australian Model Code of Practice for Livestock Saleyards and Lairages. According to their website the (ALMA) is the peak national advocacy body working to improve the long-term sustainability of the saleyard and lairage industry in Australia.

Lairages – are a facility for the holding, spelling or aggregating stock and excludes holding or spelling yards at an abattoir.

The Code of Practice provides guidance on the regulatory aspects of operating livestock yards in a commercial environment.

The document is also useful for determining infrastructure specifications for the establishment of a multi species transshipping hub. Relevant excerpts and adaptations from the Code of Practice are provided below.

Location

The yard located and provided with essential services to facilitate safe, efficient and environmentally friendly operation.

Adhering to this principle includes choosing land that:

- Is not subject to flooding;
- Is large enough for appropriate infrastructure and expansion;
- Has safe access and egress for vehicles (loading, unloading, turning, parking, repairs etc.);
- Has access to water, electricity and telecommunications;
- Has access to waste disposal mechanisms and services; and
- Is located and managed so as to minimise pollution or interference (noise, dust, traffic, waste).

Livestock Movements

The yard is designed, constructed and maintained to facilitate efficient flow and visibility of livestock whilst providing for human safety and animal welfare.

Adhering to this principle includes ensuring animals;

- Have access to feed and water;
- Are adequately shaded or protected from the weather;
- Are unloaded and loaded safely and efficiently; and
- Traffic and loading/unloading areas are well lit.

Truck Wash Bays

Transport wash areas that enable effective cleaning of vehicles, prevent environmental contamination and eliminate any other animal welfare and biosecurity risks.

This can be achieved through:

- Concrete paving;
- Ensuring the bay is large enough to cater for all sizes of trucks and configurations.
- Installation of a drainage inlet and wastewater management disposal unit (to comply with local and state regulations).

Associated Amenities

Suitable amenities are provided for workers and visitors to the yards.

This could include:

- Toilets and showers;
- Basic kitchen facilities; and
- Food/coffee vending machines.

Animal Welfare

Management of livestock at the yards is conducted to ensure animal welfare is a primary consideration.

Adhering to this principle includes ensuring:

- All relevant national and state-based legislation and guidelines are followed;
- Animals are fit for loading;
- Injured, diseased or moribund stock should be humanely destroyed by nominated and trained personnel;
- Dead stock should be disposed of in accordance with local regulations and does not allow for the spread of any disease;
- Stock density should allow for animal movement and access to food and water (the recommended space per animal is contained in A Model Code of Practice for the Welfare of Animals – Animals at Sale yards (see page xxx for a link to this document));
- Site planning and development considers internal quarantine issues such as the need to separate sick stock and different animal species;
- Infrastructure such as ramps and yards comply with industry standards. For example: Ramps should be constructed from non-slip materials and walls should 'blanked in' to ensure animals are not baulked, distracted or disturbed by activities outside the ramp;
- The facility is available 24 hours a day for emergency unloading and/or biosecurity checks; and
- Livestock held outside of normal business hours are safe and secure.

Business Rules for the Movement of Livestock

Ensure movement of animals are recorded within the legislative framework stated in the relevant Business Rules for the species.

Adhering to this principle includes ensuring:

- Reading in and recording transfer of livestock through the NLIS;
- LPD NVA/Waybills are transcribed and processed correctly (where applicable); and
- Accurate, regularly calibrated weigh scales are available on-site.

Service Agreements

The yard operator should have a formal, written service agreement or equivalent documentation with each individual agency that uses the facility.

Self-explanatory.

Biosecurity Risk Management

Site specific, up to date, coordinated emergency risk management and response management plans are in place for the prevention and control of an emergency animal disease within the yard complex.

Adherence to this principle would involve developing and implementing a site-specific biosecurity risk management plan. This plan should be developed in consultation with the AUSVETPLAN Enterprise Sale yards and Transport Manual and Biosecurity SA's OneBiosecurity Program.

What is OneBiosecurity?

Commencing in 2018 One Biosecurity is a new state-wide approach to managing, protecting, and promoting biosecurity across South Australia's Livestock Industry.

Developed in collaboration with the livestock industry, OneBiosecurity is a voluntary program where producers and livestock managers are assisted to develop a biosecurity plan (to MLA and LPA standards) for their property or facility.

9. Multispecies Transshipping Hub Proposed Locations

As discussed in section 6, due to current heavy vehicle restrictions in place in South Australia the transshipping hub would need to be located in an area north of Port Augusta. The northern location would allow for the cross-loading of stock from restricted vehicles to smaller carriers that are then allowed to travel south or south east to their end destination.

Consultations with stakeholders based in Port Augusta and in the Far North of South Australia have revealed three possible locations for the transshipping hub. These locations are shown on the map overleaf.

Land Services Group

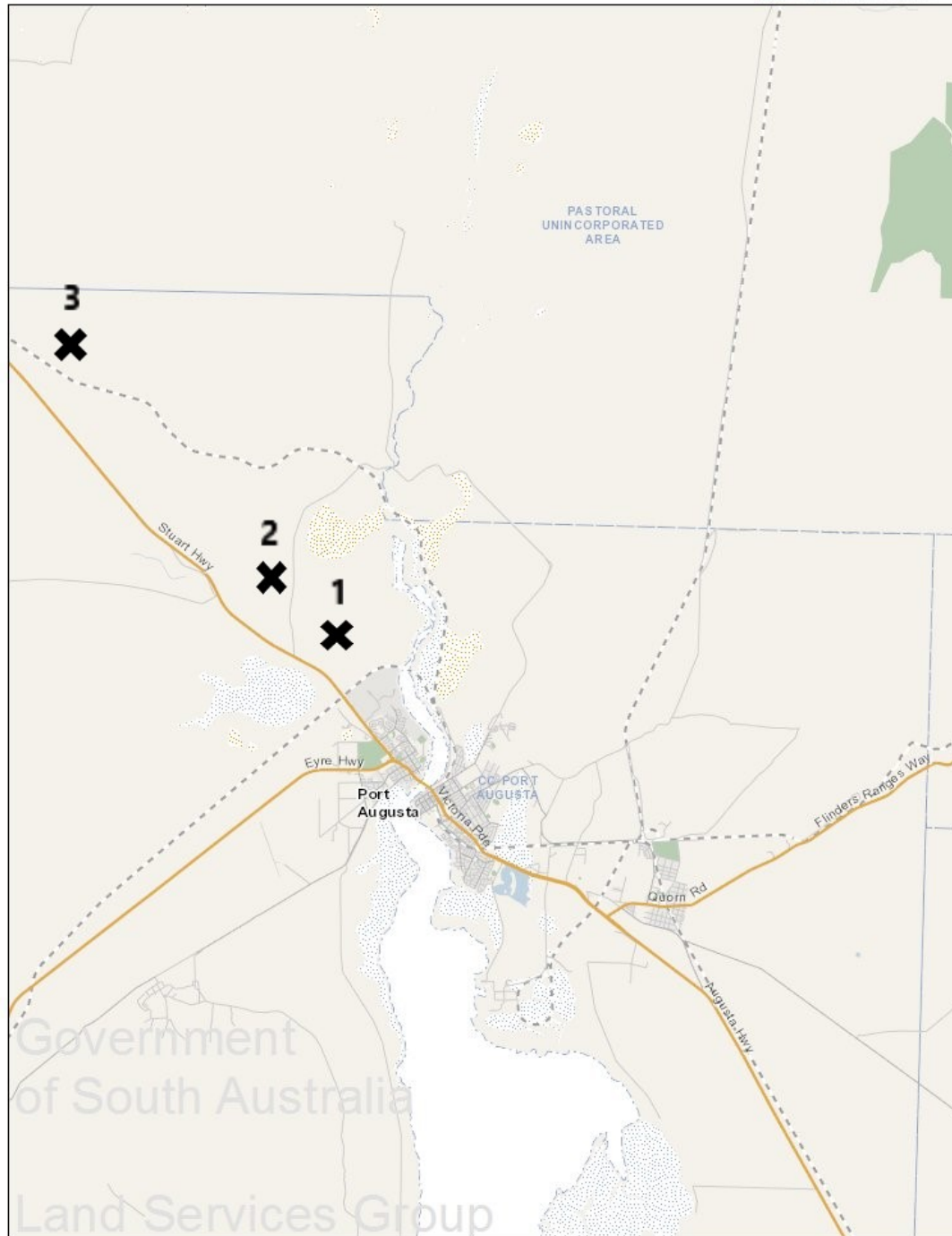
The Property Location Browser is available on the Land Services Group Website: www.sa.gov.au/landservices

Multispecies Transshipping Hub Location Overview

Date created:
February 15, 2018



Government of South Australia
Department of Planning,
Transport and Infrastructure



Disclaimer: The information provided above, is not represented to be accurate, current or complete at the time of printing this report. The Government of South Australia accepts no liability for the use of this data, or any reliance placed on it.

Site (1) Adjacent to IOR's Cross Loading Facility, Yorkeys Crossing

Through recent communication with RDAFN, IOR has indicated they would be interested in discussing the possibility of a third party owned and operated spelling yard adjacent to their re-fuelling and cross loading facility at Yorkeys Crossing, Port Augusta West.

Property details:

Address	2047 Yorkeys Crossing, Port Augusta West
Certificate of Title Ref No	CR5438/430
Parcel	D36449 Q86
Approximate size	313 ha
Council District	Port Augusta
Zoning	Primary Industry
Owner	The Crown
Custodian	Minister for Environment, Water & Natural Resources
Leases & Licenses	In addition to IOR there are three organisations who lease land from the Crown within this parcel. These are the Port Augusta Motorcycle Club Inc., The Port Augusta Speedway Club Inc. and the Port Augusta Model Aero Club Inc. All of these clubs carry out activities relevant to the purpose of their lease.

Considerations:

Following is a list of considerations for the establishment of a multispecies transshipping hub in this location. Note: this list is not exhaustive and assistance from a planning and building professional should be sought.

1. Per IOR's suggestion, development at this site would be for the spelling yards only. The 'hub' therefore would consist of the IOR owned cross loading facility, fuel yards and truck rest stop with an independently operated spelling yards adjacent to their site.
2. Access to IOR's cross-loading module should ideally be provided/negotiated for all livestock carriers, not just those who are a customer of IOR.
3. Lease of the land next to IOR is subject to approval by the Crown.
4. The area is zoned for Primary Industry which is congruent with the proposed use, Council advice and approval would be required, particularly given the lessees other activities (and their close proximity) occurring in the area. Drainage or flooding in the area impede development.
5. Access to electricity and water would need to be confirmed. Note: the green line in the following map indicates electricity transmission lines and the continuous blue line indicates water infrastructure.
6. DPTI advice and approval (if required) would need to be sought regarding the safe movement of trucks and other vehicles in the area.
7. EPA requirements with respect to waste, noise and dust will be important in determining the suitability of this location for the proposed use.

Land Services Group

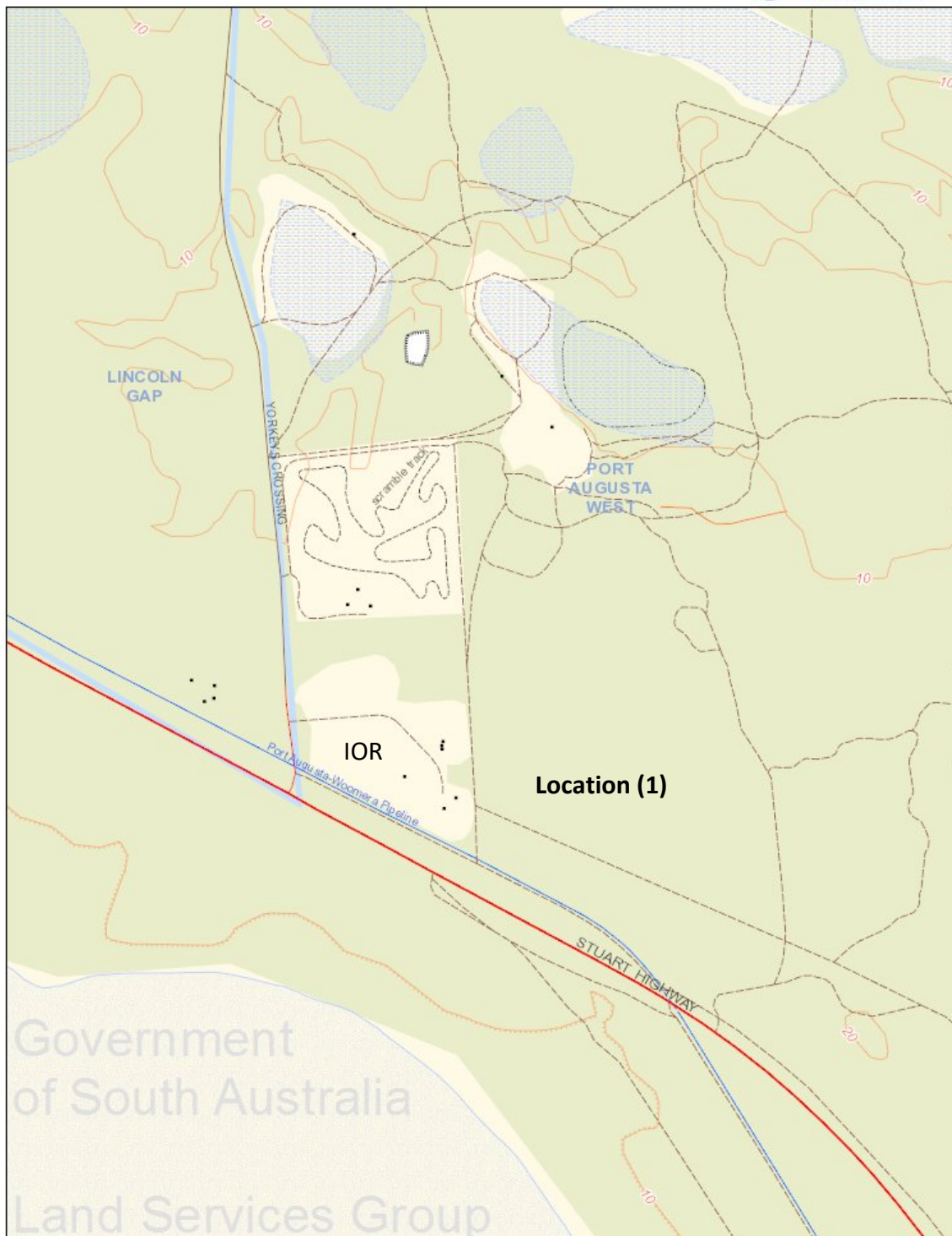
The Property Location Browser is available on the Land Services Group Website: www.sa.gov.au/land-services

Proposed Location (1) Adjacent to IOR, Yorkeys Crossing

Date created:
February 15, 2018



Government of South Australia
Department of Planning,
Transport and Infrastructure



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Site (2) Yorkeys Crossing – Pastoral Property

Site two is located across the road from the IOR refuelling and cross loading facility. It is a pastoral property with a house and associated buildings in the south east corner of the parcel.

Property details:

Address	2068 Yorkeys Crossing, Port Augusta West
Certificate of Title Ref No	CL6196/839
Parcel	D77182A32
Approximate size	286 ha
Council District	Port Augusta
Zoning	Primary Industry
Crown Lessee	Details withheld.
Other	Subject to easements for gas pipeline and railway.

Considerations:

Following is a list of considerations for the establishment of a multispecies transshipping hub in this location. Note: this list is not exhaustive and assistance from a planning and building professional should be sought.

1. A lease arrangement would need to be established with the lessee with approval from the Crown.
2. The area is zoned for Primary Industry which is congruent with the proposed use, Council advice and approval would be required.
3. Access to electricity and water would need to be confirmed. Note: the green line in the following map indicates electricity transmission lines and the continuous blue line indicates water infrastructure.
4. DPTI advice and approval (if required) would need to be sought regarding the safe movement of trucks and other vehicles in the area.
5. EPA requirements with respect to waste, noise and dust will be important in determining the suitability of this location for the proposed use.

Land Services Group

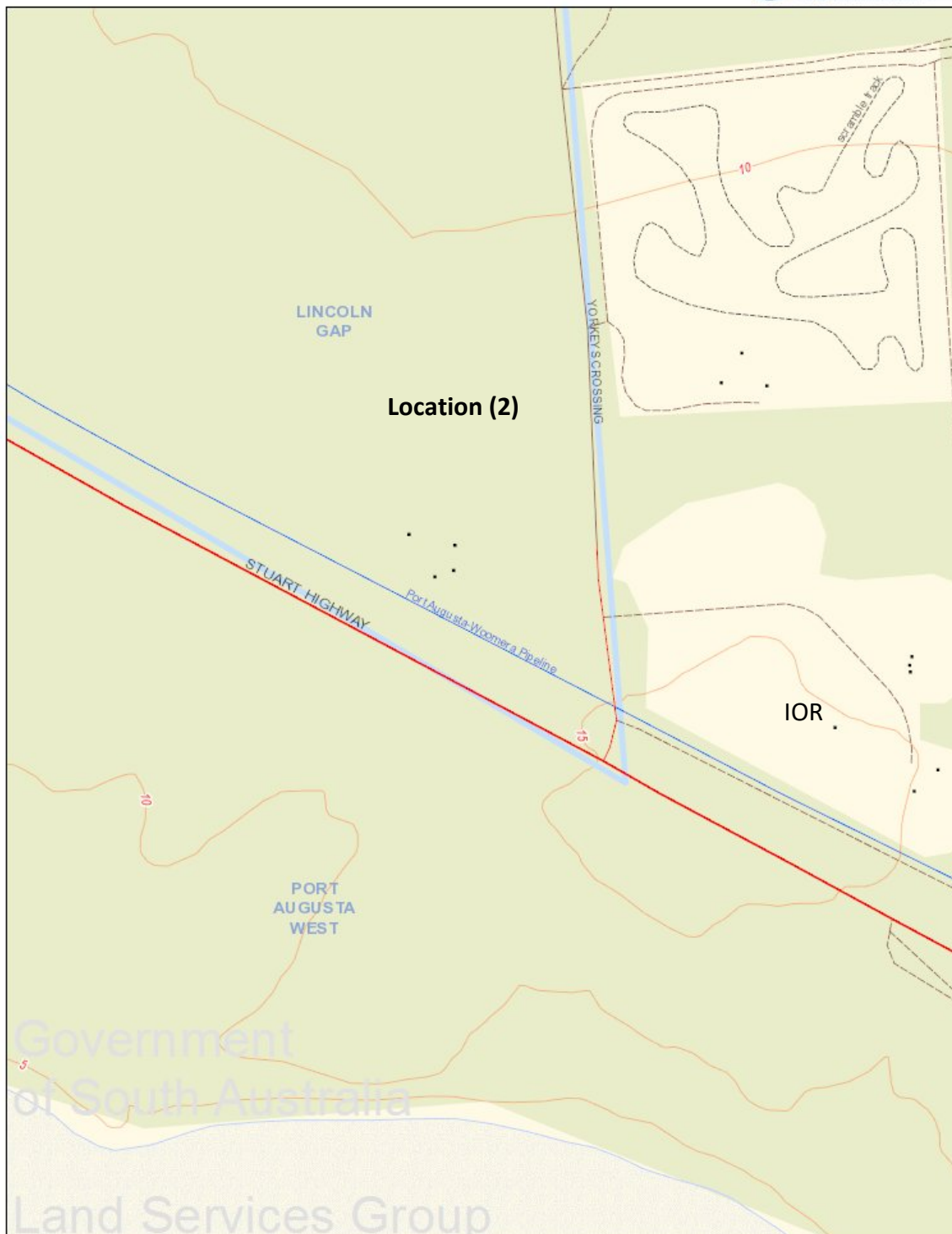
The Property Location Browser is available on the Land Services Group Website: www.sa.gov.au/land-services

Proposed Location (2) Pastoral Property, Yorkeys Crossing

Date created:
February 15, 2018



Government of South Australia
Department of Planning,
Transport and Infrastructure



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Site (3) Stuart Highway – Carriewerloo

Site three is situated approximately 18 kilometres north the CBD on the Stuart Highway. This location features an unsealed truck rest area next to the highway that is utilised by south-bound vehicles. Immediately adjacent to the rest area is a fenced property with unsealed road access via a culvert over the water pipeline. Just inside of the property fence line are existing livestock yards.

Property details

Address	Lot 222 Stuart Highway, Port Augusta West
Certificate of Title Ref No	CL656/34
Parcel	H540200S223
Approximate size	Unknown
Council District	Port Augusta
Zoning	Primary Industry
Lessee	Details withheld.
Other	Easements unknown

Considerations:

Following is a list of considerations for the establishment of a multispecies transshipping hub in this location. Note: this list is not exhaustive and assistance from a planning and building professional should be sought.

1. A lease arrangement would need to be established with the lessee with approval from the Crown.
2. The area is zoned for Primary Industry which is congruent with the proposed use, Council advice and approval would be required.
3. Access to electricity and water would need to be confirmed.
4. DPTI advice and approval (if required) would need to be sought regarding the safe movement of trucks and other vehicles in the area.
5. EPA requirements with respect to waste, noise and dust will be important in determining the suitability of this location for the proposed use.

Land Services Group

The Property Location Browser is available on the Land Services Group Website: www.sa.gov.au/land-services

Proposed Location (3) Carriwerloo, Stuart Highway

Date created:
February 15, 2018



Government of South Australia
Department of Planning,
Transport and Infrastructure



Disclaimer: The information provided above, is not represented to be accurate, current or complete at the time of printing this report.
The Government of South Australia accepts no liability for the use of this data, or any reliance placed on it.

10. Evaluation of Proposed Sites

The three proposed locations for the transshipping hub were selected based on suggestions raised in consultation with project stakeholders.

A preliminary evaluation of each site's suitability is provided below. Sites are rated against a set of criteria developed from the Australian Model Code of Practice for Livestock Sale yards and Lairages.

Scoring: 1 = unsuitable
5 = suitable

Criteria	Site (1)	Site (2)	Site (3)	Notes
Ownership	3	3	3	<i>All sites are subject to lessee/Crown approval.</i>
Zoning	5	5	5	<i>All sites are zoned primary production.</i>
Land size	3	4	5	<i>Site 3 appears to have the largest area of land available for development and buffers.</i>
Existing Infrastructure	3	2	4	<i>Site 1 has potential full or limited access to IOR's cross-loader (subject to negotiation), site 2 has fencing and site 3 has some existing yards (in need of repair), an existing truck bay and fencing.</i>
Safe access & egress	4	4	4	<i>All sites appear to allow heavy vehicle access. Further activity subject to DPTI approval.</i>
Access to mains water	4	4	2	<i>Site 3 is the least likely to have ready access to mains water.</i>
Access to electricity	4	4	2	<i>Site 3 is the least likely to have ready access to SAPN.</i>
Waste management/removal	3	4	4	<i>Waste removal (private contractor or Council) is available. Sites 2&3 are likely to have more room available for waste water treatment.</i>
Potential for dust pollution (complaints)	2	2	4	<i>Sites 1 & 2 are closest to the township and other activity areas. Dust control measures may be required at all sites.</i>
Potential for odour issues (complaints)	2	2	5	<i>Sites 1 & 2 are closest to the township and other activity areas.</i>
Potential for noise pollution (complaints)	2	2	5	<i>Sites 1 & 2 are closest to the township and other activity areas. Noise complaints are unlikely at site 3.</i>
TOTAL	35	36	43	

Until Local, State and lessee approval is explored this assessment should be treated as speculative. Based on the above evaluation, site three is the most suitable location for the transshipping hub. This is providing mains water and power can be delivered to the site.

Should site 3 be unavailable or deemed unsuitable, sites 1 and 2 could be considered of equal merit. Favouring site 1 is the potential for access to the current cross loading facility. Land size however is a limiting factor for site 1 and site 2 may present a better option for the scalability of the facility.

11. Facility Ownership & Management Models

The livestock supply chain in Australia consists of spelling yards and loading facilities of varying sizes. The scope of services and facilities available at each yard is determined by demand. Some larger capacity spelling yards are co-located with regional sale yards or livestock exchange facilities. Other spelling yards operate as a stand-alone business providing a service at a strategic location between livestock origin and end-market.

The table on the next page provides a description of the ownership, management and facilities at three different yards across Australia.



Bohning Yards, Alice Springs



Clermont Saleyards, Clermont QLD



Uaroo Station, Minderoo WA

11.1 Existing Facility Ownership & Management Models

	UAROO STATION SPELLING YARDS	BOHNING SALEYARDS	CLERMONT SALEYARDS
Location	South of Minderoo, WA	Alice Springs, NT	Clermont, QLD
Ownership	Privately Owned Privately owned and operated by the Minderoo Group – Andrew and Nicola Forrest who hold the pastoral lease at Uaroo Station.	Industry Owned Owned and operated by the Northern Territory Cattlemen's Association (NTCA)	Local Government Owned Owned by the Isaac Regional Council.
Management	The Minderoo Group employ a manager and staff.	The NTCA employs one full time manager and additional casual staff when required. A yard management committee including local livestock agents has oversight for the facility.	The Council employs a full-time manager and up to two other staff and contractors as required. Council appoints a sale yards management committee which includes local livestock agents. A schedule of fees exists for the various services provided at the yards including feeding, weighing, spelling and sales.
Facilities/Capacity	Capacity: 3,000 head of mature cattle Facilities available for cattle: Spelling Rehydrating and feeding Drafting Weighing (public weighbridge 20 tonne capacity) Yard area = 4,000 sqm as well as 1,000 sqm of feeding pens.	Spelling yards capacity of up to 2,500 head and sale yards up to 3,000 head of cattle. The yards provide feed (chemical-free hay) and watering system that assists cattle to quickly recover after mustering and transport, advanced radio frequency identification scanning capacity, European Union accreditation and a weighbridge.	Spelling yards capacity of 3,000 head. Facilities include: Double-decker access Full deck weighbridge Triple trailer access from the north All-weather access Water troughs in all yards Upgraded herringbone yard Upgraded Bull ring Onsite truck-wash and wash-down bay for weed control Dipping and spelling facilities 108 Sale Pens
Other information	The yards are located close to the North West Coastal Highway and are a strategic half-way point between pastoral areas in the North and the Harvey Beef Abattoir in the South West of the State.	The Bohning yards recently became the first saleyard in Australia to be certified under both the National Certified Organic (NCO) and USDA National Organic programs (NOP)	Clermont is currently the only EU Accredited Sale yard in the Isaac Region. The facility is used extensively for spelling cattle when they transition from road trains to smaller configurations to travel south of Clermont.

12. Governance & Business Structures

There are five potential governance models that may be considered when developing the Port Augusta transshipping hub:

Governance & Business Structure	Description	Considerations
Not for Profit Organisation incorporated under the Associations Incorporation Act SA 1985.	<ul style="list-style-type: none"> A not-for-profit group can incorporate to set up a legal identity separate to its members. Affairs of the association are usually run by a committee. Refer to: www.business.gov.au for more information on business structures and types. 	<ul style="list-style-type: none"> An incorporated association can sue and be sued which gives some protection for individual members. The association can also enter into contracts. A constitution or “rules” of the association would need to be devised and a committee appointed to manage the association and the transshipping hub. Some government funds are available for not-for-profit organisations. See Appendix (7) for more information. Funding guidelines often stipulate the organisation needs to have been established for a certain period of time (e.g. two years) to be eligible.
A Business Cooperative – owned and run by local pastoralists.	<ul style="list-style-type: none"> A co-operative is a voluntary trading organisation owned and managed by its members for a common benefit. There are two different types of co-operatives: <ul style="list-style-type: none"> Distributing – can distribute surplus funds to its members; and Non-distributing – the organisation uses surplus funds to support its activities and can’t distribute funds to members. 	<ul style="list-style-type: none"> Co-operatives are: <ul style="list-style-type: none"> a company – can be formed by at least five people or are registered corporations; open to people who use its services and are willing to be active members; and democratic – members have equal voting rights and share in making policies and decisions. A cooperative would allow a group of interested people to co-develop and manage the transshipping hub for their benefit and that of others who may use the facility. Further information regarding Government assistance for establishing a cooperative is contained in Appendix (7). Information on starting a cooperative is available in the following publication prepared by RDA Mid North Coast for the Co-operatives Federation of New South Wales: http://agworks.com.au/wp-content/uploads/2017/04/coopsaus.pdf
A For Profit Business – run by an individual or consortia.	<ul style="list-style-type: none"> There are three main options for establishing a for-profit business, these are as a sole trader, partnership or company. A sole trader or partnership business structure is a person or people trading as the individual(s) legally responsible for all aspects of the business. This includes any debts and losses, which can't be shared with others. These are the simplest business structures. A company is a separate legal entity, unlike a sole trader or a partnership structure. This means the company has the same rights as a natural person and can incur debt, sue and be sued. A company is a complex business structure, with higher set-up and administrative costs because of additional reporting requirements. Refer to: www.business.gov.au for more information on business structures and types. 	<ul style="list-style-type: none"> Both a sole trader and partnership are relatively easy to set up and do not include onerous reporting requirements. They are not however separate entities and the business owner(s) are personally liable for the debts of the business and can be sued. A company's owners (the shareholders) can limit their personal liability and are generally not liable for company debts. In the case of the proposed transshipping hub the person/people who set up the business are responsible for the development costs, the ongoing running and maintenance and whether the facility makes a profit. Some Government funding programmes encourage applications from for-profit organisations. See Appendix (7) for more information.
An Industry Organisation Subcommittee – auspiced by an industry association eg: Livestock SA – owned by LSA, operated under agreement by local board of pastoralists.	<ul style="list-style-type: none"> Please refer to the case study example on in section 11.1 - Bohning Yards in Alice Springs, NT. 	<ul style="list-style-type: none"> As is the case with a cooperative, an industry owned and managed facility would be owned and run for the benefit of those involved in the livestock industry. The industry association may be able to access funding options for the development and maintenance costs of the spelling yards. Administration (such as insurance) and the cost of finance may be less under the auspices of an Industry Association.

Governance & Business Structure	Description	Considerations
Auspicied by Local Government – A Section 41 Committee of Council or a Regional Subsidiary under the Local Government Act 1999.	<ul style="list-style-type: none"> For an example of this type of operation please refer to the case study example in section 11.1 - Clermont Saleyards, Clermont, QLD. According to the Local Government Act 1999 Council may establish committees (called “section 41 committees”) to manage or administer property, facilities or activities on behalf of the council and to oversee works on behalf of the council. Under the Act Councils may also form regional subsidiaries whereby two or more councils establish a subsidiary to provide a specified service or services or to carry out a specified activity or activities. There are precedents in South Australia where Local Government has collaborated with the livestock industry to manage projects and infrastructure. These include the Naracoorte Regional Livestock Exchange (https://www.naracoortelucindale.sa.gov.au/NRLE) and the Limestone Coast Red Meat Cluster (http://limestonecoastredmeat.com.au/) 	<ul style="list-style-type: none"> The formation of a Section 41 Committee, associated purpose and Local Government resource allocation requires the commitment and approval of Council. Terms of reference of the committee and board composition would be at the discretion of Council. The formation of a regional subsidiary would require the approval of the Minister for Local Government. Information on the types of funding available for Council owned and operated business units or infrastructure are discussed in Appendix (7).

12.1 Preferred Structure

The chosen structure will depend on the requirements of the party that commits to developing the facility. Producers consulted in the development of this document expressed a clear preference for the facility to be “industry owned and operated”. In this case the relevant structures are: not for profit, industry organisation or a cooperative.

13. Key Infrastructure Costs

Establishing a Multispecies Transshipping Hub at Port Augusta will require a significant capital investment. Prior to committing funds, it is recommended the project proponents prepare a business plan including fully costed capital and operating expenditure. This will ensure the venture will reach the cost recovery or profit goals of the facility managers and owners.

Key infrastructure costs include the purchase and installation of:

- Spelling yards and associated equipment;
- Water storage;
- Driver amenities;
- Weighbridge; and
- Livestock cross-loading module

Additional costs (outside the scope of this project as the chosen site is unknown) include:

- Land development (earthworks, foundations and hard-stand);
- Electricity, water connection and plumbing;
- Entry and exit road works (if applicable);
- Lighting;
- Waste management – domestic waste, solid waste effluent, storm water etc; and
- Animal shelters or yard covers.

Development of the transshipping hub should be staged in-line with demand for the facility. Site selection should allow for the ability to increase the size of the spelling yards and truck cross-loading area. The following infrastructure options are presented with this in-mind.

13.1 Animal Yards

Stakeholder consultations did not yield a firm estimate as to the preferred capacity of the yards and the size, scope and facilities available will ultimately depend on the developer's budget.

There are various resources available to assist the developer to select the most appropriate yard configuration once the capacity is known. One example is the Queensland Government publication: Cattleyards: design, materials and construction written by Evan Powell and John Lapworth. The guide is available here to download from: https://futurebeef.com.au/wp-content/uploads/Cattle_yards_third_edition.pdf

For the purpose of this report the following scalable options and different price points are presented for consideration:

Yard Type	Capacity (head)	Supply + GST	Installation + GST	Total Cost
Sheep & Goat	500	\$18,600	\$4,750	\$23,350
Sheep & Goat	1000	\$30,140	\$6,900	\$37,040
Cattle*	70	\$40,000	\$9,000	\$49,000
Cattle	120	\$50,000	\$12,000	\$62,000

These quotes exclude site preparation, shelters, feeders, water troughs, scales, crush and scanner equipment.

As a guide and based on the figures provided, it is possible to work on an approximate cost of between \$35 - 50/head to develop or 'scale up' a sheep yard. For cattle it could be between \$500-\$700. This 'rule of thumb' should be used carefully as there are many factors that come into play when developing animal yards, including scope and economies of scale.



120 head cattle yards



1000 head sheep yards

13.2 Associated Infrastructure

There is a broad range of equipment and infrastructure that would be required to support the transshipping hub. Approximate costs for a basic development is as follows:

“Atco Hut” including toilet, shower and kitchen facilities = \$15,000 (second hand, Graysonline)

Weighbridge (not including installation and calibration) = \$160,000 (actual cost, TE Storage & Logistics, Naracoorte)

Water tank (160,000 L including installation and base) \$20,000 (actual cost, TE Storage & Logistics, Naracoorte)

Truck wash - there are a number of options available depending on the frequency of use and type of wash. A wheel and under chassis wash system can cost between \$25,000 and \$40,000 for the unit, not including connection, site preparation and drainage (Autowash Australia). Fully automated roll-over truck washing facilities range in cost from \$100,000 - \$300,000 installed (Autowash Australia).



Truck wash – Dalby QLD

13.3 Cross-Loading Module

Rytrans Australia “Livestock Exchange Unit”

Rytrans Australia manufacture a livestock exchange unit for cross loading livestock. According to Rytrans the unit was developed for the Exchange of livestock from one trailer to another trailer without putting the operators and drivers at any safety risk and to eliminate the risk of livestock stress and bruising.

Key Features Include

- bruise free access from both ends of the unit;
- safety slam shut block gates and sliding gates incorporated at both levels for blocking off livestock;
- sure-Foot matting floors fitted to stainless sheeting to eliminate slipping and foot soreness from cattle stepping through from trailer to trailer;
- solar powered lighting;
- LED safety and Loading lights;
- all Step ladders and platforms designed and manufactured to AS 1657-1992
- spring loaded reversing points; and
- overhead catwalk for easy access from trailer to trailer with a clearance of 4.7m.

Estimated Cost

Price: \$56,355.00 plus GST

Plus approximately \$20,000 for freight, earthworks and footings.



Rytrans Livestock Exchange Unit

14. Regional Economic Impact

The economic impacts of the capital expenditure associated with the proposed project will be wide, benefiting different industries, regions and generating employment.

14.1 Project Costs

In order to conduct an analysis of the project the consultant has applied some assumptions with respect to direct capital costs, material and labour sources. Listed as follows:

Material & Labour Source	Items	Expenditure (ex. GST)	Manufacturing	Electricity, Gas, Water & Waste	Construction	Transport	Professional Scientific
Mid Murray Region SA	Sheep & Goat Yards capacity 1,000 head	40,000	32,000		6,000	2,000	
Mid Murray Region SA	Cattle Yards 2 x 120 head	125,000	100,000		18,750	6,250	
Mid Murray Region SA	Camel Yards capacity 70 head (cattle yard cost + 10% for modification)	55,000	44,000		8,250	2,750	
Mid Murray Region SA	Feeding, watering, weighing, crush equipment	100,000	85,000				15,000
Augusta	Shade over yards	200,000	160,000		30,000	10,000	
Interstate	Aleis Scanner Single File Race System (Inc. installation)	12,000					12,000
Interstate	Hand held scanner	3,000					3,000
Interstate	Truck Wash	200,000	160,000		30,000	10,000	
Mid Murray Region SA	Driver amenities building (toilet, shower, kitchen)	17,000			15,000	2,000	
Port Augusta	Weighbridge (Inc. installation)	160,000					160,000
Port Augusta	Water tanks						
Augusta	160,000L x2	40,000	32,000		6,000	2,000	
Interstate	RyTrans Cross loading Module	80,000	56,500		18,000	5,500	
Port Augusta	Site Preparation (Inc. truck stands/bays & animal yards)	60,000			60,000		
Port Augusta	Electricity and water connection (Inc. infrastructure)	150,000		150,000			
Port Augusta	Waste compliance (water, refuse, animal waste)	80,000		80,000			
	Total	1,322,000	669,500	230,000	192,000	40,500	190,000

Total expenditure for each source area is as follows:

Interstate	455,000
Port Augusta	547,000
Mid Murray Region	320,000
Total	\$1,322,000

The approximate capital cost of a moderate transshipping hub is \$1.322 million. It is important to note this figure could vary greatly (upwards or downwards) depending on the size of the facility, the scope of infrastructure required and corresponding legislative requirements.

As discussed in section 6 approximately 60,000 head of cattle need to cross-load at Port Augusta each year. This demand for the cross-loading module coupled with use of the multispecies spelling yards means there is real potential to recover capital and operating costs through user charges and industry contributions.

Installation of a scalable facility and government funding assistance would further reduce start-up costs for the proponent.

14.2 Project Benefits

Animal Welfare

Animal health is the primary objective and benefit of the transshipping hub providing a safe and effective space to rest, feed, water and cross-load livestock during inter or intrastate trips.

Employment

Using the University of Adelaide's Economic Impact Analysis Tool (EIAT) - an input-output model it is possible to estimate the following conservative employment outcomes in South Australia.

Mid Murray SA (location of livestock yard manufacturer): two (2) FTES, one (1) direct and one (1) indirect during manufacturing and installation.

Port Augusta (location of the transshipping hub and source of labour and materials for local construction and works): four (4) FTEs, two (2) direct and two (2) indirect during construction.

Ongoing employment is expected at the transshipping hub and is estimated to be 1.5FTEs i.e. one full time manager to oversee the running of the facility and one-part time cleaner/grounds person.

Regional Economies

Using the EIAT it is also possible to estimate the economic impact of the project in monetary terms using a multiplier effect calculation. The multiplier effect reflects movement or "flow-on" effects of infrastructure investment in a particular region.

For South Australia the multiplied value of the project is estimated to be \$1,667,000 calculated thus:

Mid Murray SA (location of livestock yard manufacturer):

Initial investment: 320,000

Type (1) multiplier (production induced): 100,000

Type (2) multiplier (consumption induced): 100,000

Total multiplied value to the local economy: **\$520,000**

Port Augusta (location of the transshipping hub and source of labour and materials for local construction and works):

Initial investment: 547,000

Type (1) multiplier (production induced): 300,000

Type (2) multiplier (consumption induced): 300,000

Total multiplied value to the local economy: **\$1,147,000**

Environmental

Compliance with environmental protection legislation will be a key factor to the success of the transshipping hub. It is possible for the development to benefit the environment by:

- Providing a consolidated and controlled site for the spelling of animals and truck washing;
- Ensuring animal waste (including deceased stock) is treated and disposed of properly;
- Designing a facility that contains, uses or disposes of waste water appropriately; and
- Employing design features to reduce environmental impact and utilise alternative energy supplies such as solar power.

Biosecurity & Traceability

A well-run facility with a South Australian government approved biosecurity plan would be a strategic asset to the State.

Currently there are no dedicated large-scale animal containment facilities around Port Augusta that could be used for routine or emergency treatment of pests and diseases. The transshipping hub could be used by PIRSA and local vets as training facility and incident response centre.

The inclusion of NLIS approved scanners at the transshipping hub will augment the facility as an official link in the livestock supply chain.

Community

The installation and operation of a transshipping hub in the Port Augusta area would provide an opportunity for the community learn about the livestock supply chain. Engaging the community in the development of the facility could potentially dispel some misconceptions regarding the transport and handling of live animals.

The potential for the spelling yards to provide an aggregation point for feral animals such as goats and camels will also provide promotional or educational opportunities for the Natural Resources Management Board.

Driver Safety & Transport Compliance

The benefits of the transshipping hub for driver safety are two-fold:

- The facility will provide a place for drivers to rest in accordance with fatigue management rules; and
- The cross-loading module will provide a safe and efficient method of transferring livestock from one vehicle configuration to another.

Supply Chain Optimisation

Transporting livestock from source to market is a time sensitive task and requires careful planning to ensure the product is delivered in optimum condition.

The industry works on a 'just in time' logistics model. As such well-maintained road networks are essential for transport efficiency. Spelling yards and cross-loading facilities are important links in the supply chain and further enhance the functionality of transport networks by meeting the needs of long-haul freight companies.

Greater Returns for the Producer

Transport efficiency and animal handling can 'make or break' the profitability of a transshipment because animal stress during long-haul transit affects the saleability of livestock.

The proposed spelling yards at Port Augusta would provide producers with the opportunity to feed, water and rest their animals so they can regain condition prior to commencing the last leg of their journey.

Spelling and transshipment facilities in Port Augusta would also open up new markets for producers in Northern Australia by improving accessibility to buyers and processors as well as finishing properties in South Australia. In turn generating flow-on benefits to the South Australian economy by increasing through-put at abattoirs and sale yards.

Finally, the ability to trade livestock through the spelling yards, that is to weigh them and set a price prior to transport to the abattoir, would further minimise risks for the producer.



Appendix 1: Regional Overview

As discussed Port Augusta is central to the Northern and West grazing areas of SA, the Northern Territory, Queensland and Western Australia outback grazing areas. The significance of these regions in terms of livestock production is described below:

South Australian Outback

The Outback region of South Australia covers the north of the state, plus the Eyre Peninsula.

The region covers a total area of around 877,753 square kilometres or 89 per cent of South Australia's total area and is home to approximately 85,800 people (ABS 2017).

Agricultural land in the Outback region occupies about 437,500 square kilometres, or 50 per cent of the region. The most common land use by area is grazing native vegetation, which occupies 403,200 square kilometres or 46 per cent of the Outback region.

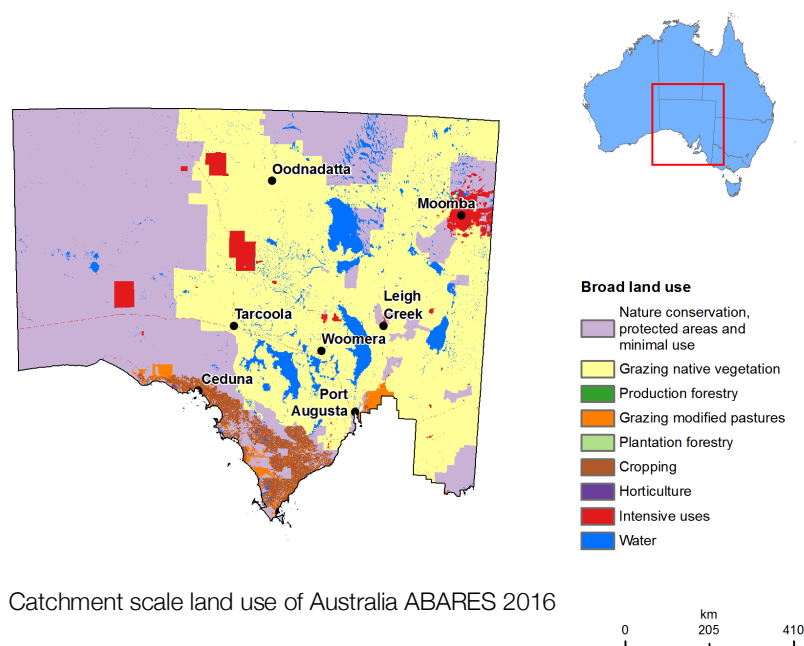
Value of agricultural production

In 2015–16, the gross value of agricultural production in the South

Australia – Outback region was \$956 million, the most important commodities in the region based on the gross value of agricultural production were wheat (\$378 million), sheep and lambs (\$132 million) and cattle and calves (\$122 million).

Number and type of farms

ABS data indicate that in 2014–15 there were 1,314 farms in the South Australia – Outback region with an estimated value of agricultural operations of \$5,000 or more. The region contains 12 per cent of all farm businesses in South Australia. Of these 503 were mixed livestock/grain or dedicated livestock farming enterprises.



Northern Territory Outback

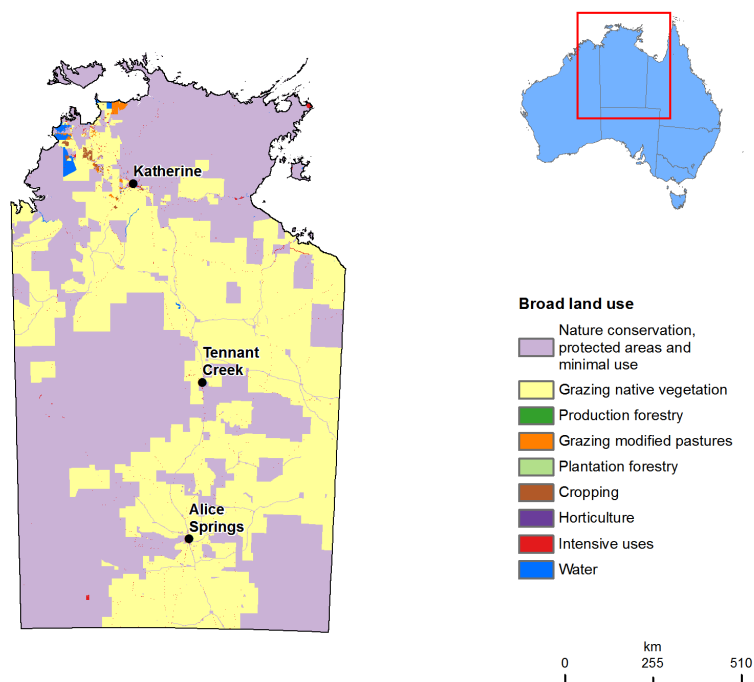
The Northern Territory – Outback region covers the whole of the Northern Territory excluding the greater Darwin region. It includes the towns of Alice Springs, Katherine and Tennant Creek.

Agricultural land in the Northern Territory – Outback region occupies 614,500 square kilometres, or 46 per cent of the region. The most common land use by area is grazing native vegetation, which occupies 611,200 square kilometres or 45 per cent of the Northern Territory – Outback region.

In 2015–16, the gross value of agricultural production in the Northern Territory – Outback region was \$633 million. The most important commodity in the region based on the gross value of agricultural production was cattle and calves (\$567 million) accounting for 90 per cent of the total value of agricultural production in the region.

Number and type of farms

ABS data indicate that in 2014–15 there were 244 farms in the Northern Territory – Outback region with an estimated value of agricultural operations of \$5,000 or more. Of these farms 168 or 69% were primarily beef producers.



West Australian Outback

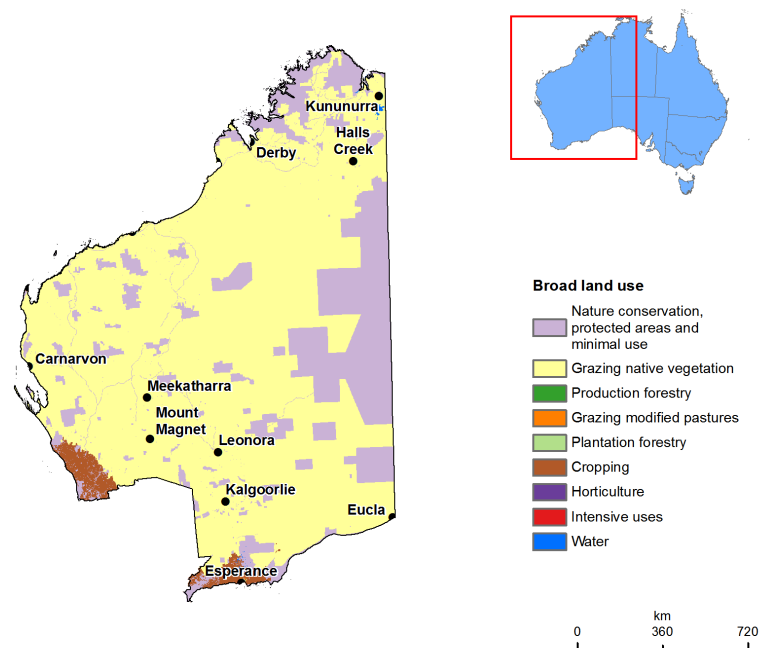
The Western Australia – Outback region incorporates all of Western Australia, excluding the high rainfall south-west corner of the state. The region covers a total area of around 2,298,053 square kilometres or 91 per cent of Western Australia's total area and is home to approximately 219, 300 people (ABS 2017).

Agricultural land in the Western Australia – Outback region occupies 931,326 square kilometres, or 41 per cent of the region. The most common land use by area is grazing native vegetation, which occupies 888,598 square kilometres or 39 per cent of the Western Australia – Outback region.

Value of agricultural production

In 2015–16, the gross value of agricultural production in the Western Australia – Outback region was \$2.4 billion. Cattle and calf production was the second largest important commodity in the region after wheat with a value of \$559 million.

ABS data indicate that in 2014–15 there were 1,525 farms in the Western Australia – Outback region with an estimated value of agricultural operations of \$5,000 or more. The region contains 15 per cent of all farm businesses in Western Australia. Of these 549 were mixed livestock/grain or dedicated livestock farming enterprises.



Source: Catchment scale land use of Australia ABARES 2016

Queensland Outback

The Queensland – Outback region includes in the west and the far north of the state, and spans from the tip of Cape York to the borders of the Northern Territory and New South Wales. The region covers a total area of around 1,183,042 square kilometres, or 68 per cent of Queensland's total area, and is home to approximately 82,500 people (ABS 2017).

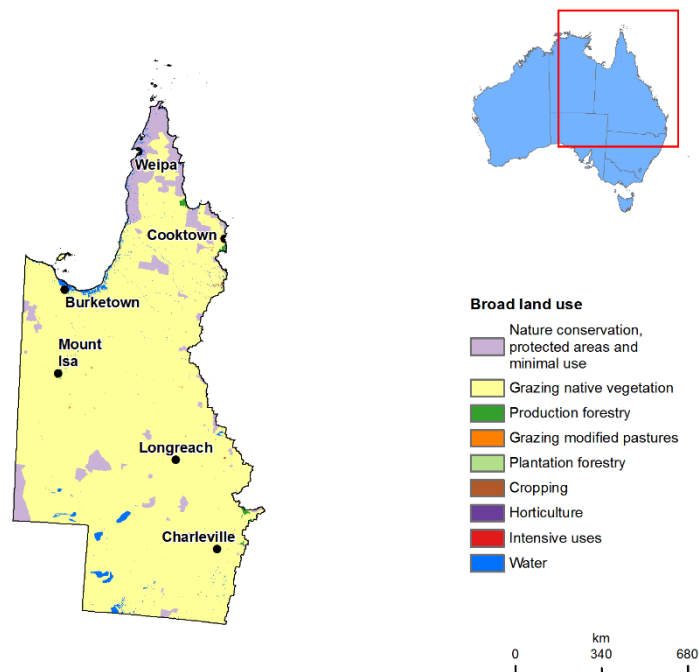
Agricultural land in the Queensland – Outback region occupies 1,044,290 square kilometres, or 88 per cent of the region. The most common land use by area is grazing native vegetation, which occupies 965,731 square kilometres or 82 per cent of the Queensland – Outback region.

Value of agricultural production

In 2015–16, the gross value of agricultural production in the Queensland – Outback region was \$2.4 billion. The most important commodity in the region based on the gross value of agricultural production was cattle and calves (\$2.1 billion) which contributed 88 per cent of the total value of agricultural production in the region. Other important commodities in the region were mangoes (\$42 million) followed by sheep and lambs (\$33 million).

Number and type of farms

ABS data indicate that in 2014–15 there were 1,944 farms in the Queensland - Outback region with an estimated value of agricultural operations of \$5,000 or more. Of this 300 were considered to be beef, sheep or sheep/beef mixed farms.



Source: Catchment scale land use of Australia ABARES 2016

Appendix 2: Industry Performance

Performance of key species is as follows:

Beef Cattle

- Australia's herd size declined by 6% between 2014 and 2015 to 27.4 million head.
- Producer's share of retail dollar in 2016 increased to 47%
- Between 1996 and 2015 saleyard prices increased by 129% while retail prices increased by 75%
- The rate of return for cattle producers in the Northern region increased to 3.5% and 2.4% for those in the southern region in 2016/2017

Sheep meat

- Between 1996 and 2015 saleyard prices increased by 180% while retail prices increased by 126%
- Producers share of retail dollar decreased to 55% in 2016
- Australian sheep farm cash income increased by 37% between 2014 and 2017.

Goat meat

- Between 2013 and 2015 goat prices increased by 117%
- Production of goat meat expanded by 88% over the ten-year period ending 2016.
- Between 2006 and 2015, Australian goat slaughter increased by 78%
- Between 2012 and 2016, Australian goat meat exports decreased by 8%

Appendix 3: Species Profiles

Performance of key species is as follows:

Beef Cattle Farming

Industry Snapshot⁴

Revenue: \$13.4bn

Profit: \$5.1bn

Annual Growth: 6.0% 2012-2017

Annual growth: 17-22 3.4%

Exports: \$1.5bn

Businesses: 37,100

Industry Performance Summary

Operators in the Beef Cattle Farming industry have been greatly affected by external factors over the past five years. Fluctuating rainfall, volatile operating costs and government trade policies have influenced industry earnings. Despite these challenges, operators have largely posted strong revenue growth over the period.

⁴ Adapted from IBISWorld Industry Report A0142 Beef Cattle Farming in Australia January 2017

The industry has recovered from sharp revenue declines over the two years through 2012-13, with strong revenue growth displayed since then. In particular, rising beef prices resulting from strong demand for Australian cattle and beef in export markets have helped boost farmer earnings.

Issues:

Government Policy

Australian livestock producers are exposed to risks associated with government trade policy. This issue was particularly evident in the last decade where Indonesian import quotas and trade tensions between Australia and Indonesia created uncertainty for beef exporters.

Varying degrees of import quota restrictions imposed by the Indonesian Government have now been replaced by live cattle restrictions. Under the new restrictions, between 10% and 20% of total livestock shipped to Indonesia must be for breeding purposes.

Despite the disruption to live exports and a decrease in the number of head sold, revenue for the industry increased over the last five years due to restricted supply, subsequent high demand and higher than average beef cattle prices.

Climate

Prolonged low rainfall and adverse weather events in some areas prevented some producers from carrying out their breeding and restocking programs. Many pastoralists were forced to turn off their cattle at less than optimum prices.

Additionally, dry conditions decreased the availability and quality of pasture feed and increased producers' reliance on purchased stock feed leading to higher input costs and lowering profitability.

Opportunities:

International Demand

High personal wealth in overseas markets is driving consumer demand for premium protein sources. The volume of live cattle exports is expected to increase in correlation with growing demand in Asian and Middle Eastern Markets. Exports will be further aided by a depreciation in the trade-weighted index and low Australian dollar which will make Australian cattle more affordable to overseas buyers and more competitive against other exporters respectively.

Domestic Price of Beef

The domestic price of beef is forecast to continue to rise which will enable higher production in meat processing and encourage pastoralists to improve stocking, breeding and turn off rates.

Sale yard Beef Cattle Prices

Year	Price	(% change)
2011-12	337	N/C
2012-13	318	-5.6

2013-14	304	-4.4
2014-15	383	26
2015-16*	508	32.6
2016-17*	554	9.1

*Estimate. Source: ABARES

Improvements to Transport Infrastructure

In 2015 the Australian Government released its Agricultural Competitiveness White Paper. Described as a “roadmap of practical actions to grow our agriculture sector” the paper features a section on Efficient Transport for Agriculture which addresses the need for better roads and rail access as well as better decision making around strategic infrastructure investment.

Key outcomes from the paper include the introduction of the Building Better Regions Fund, increase in funding for road/rail development and an expansion of the CSIRO’s TRANsport Network Strategic Investment Tool (TRANSIT). TRANSIT analyses freight flows, routes and costs so that decision makers can better plan and prioritise investment in transport infrastructure.

A recent application of the TRANSIT tool was through CSIRO’s Beef Roads Project which informed the Australian Government’s \$100 million Northern Australia Beef Roads Programme. The TRANSIT tool was used to estimate cost savings to cattle transport for a range of road infrastructure scenarios across northern Australia.

Closer to home the South Australian Government has also commenced a collaborative project with Primary Producers SA (PPSA) called A Modern Transport System for Agriculture. The project aims to apply a partnership approach to planning a road transport system to meet the existing and the future needs of agricultural industries.

Industry Outlook

The Beef Cattle Farming industry is expected to remain in a strong position over the next five years. Domestic meat prices are projected to remain high at the retail level, largely due to strong demand for Australian beef in export markets. As an increasing share of domestic beef is sold to overseas markets, local supplies will be limited, pushing up domestic beef prices. Furthermore, an anticipated shift in consumer preferences towards organic beef, which carries a price premium, will also help lift domestic retail beef prices.

Both the value and volume of live cattle exports are projected to grow over the next five years, aided by an expected low Australian dollar and growing demand from Asian and Middle Eastern markets. However, export growth is expected to be subdued relative to the past five years. Industry revenue is forecast to grow at an annualised 3.4% over the five years through 2021-22, to reach \$15.9 billion.

Industry Key Performance Indicators

Predicted % change 2017 to 2021	
Cattle Numbers (percentage change)	6%
Slaughterings	14%
Average Carcass Weight	1%

Cattle Exports	25%
Beef Exports	21%
Domestic Utilisation total carcass weight	5%
Domestic Utilisation kg/head	-1%

Source: MLA Forecast

Sheep Industry Farming

Industry Snapshot

Revenue: \$3.7bn

Annual Growth 2012-2017: 3.5%

Predicted Annual Growth 2017 – 2022: 2.0%

Profit: 796.7m

Exports: 3.0bn

Businesses: 11,710

Sheep Numbers by State

SA: 11.1m

WA: 14.2m

QLD: 2.0m

NSW: 27.0m

VIC: 13.8m

TAS: 2.1m

Industry Performance Summary

Price movements and shifting production have contributed to revenue volatility for the Sheep Farming industry over the past five years. The Industry however has managed to post growth over most of the five-year period.

Industry revenue has grown approximately 3.5% over the five years through 2016-17 and was forecast to rise by 5.4% during 2016-17, to reach \$3.7 billion. Anticipated strong wool and lamb price growth in the future is expected to boost revenue.

Issues

Rising Costs of Production

Farmers will contend with rising input costs over the next five years due to a predicted increase in stock feed prices and rising fuel costs (due to rising world crude oil prices and the low Australian dollar).

Opportunities:

Domestic price of wool

Domestic wool prices, which are influenced by global wool prices, heavily affect revenue for sheep farmers that focus on wool production. The domestic price of wool is expected to continue to rise encouraging farmers to allocate more resources to raising sheep for this purpose.

Domestic price of lamb

The domestic price for lamb is also rising which has both a positive and negative effect on production and profitability. Higher prices mean an increase in return per animal for the farmer. The red meat market however is price sensitive and a rise in the domestic price of lamb may encourage consumers to purchase another less costly meat protein source.

Export Markets

Rising disposable incomes overseas, particularly in the Middle East and Asia, will help lift demand for Australian lamb and mutton exports, boosting demand for Australian livestock.

Furthermore, the industry is anticipated to benefit from free trade agreements (FTAs) signed by the Australian Government and overseas governments during 2013-14. For example, the FTA with Japan will eliminate tariffs on Australian wool and lamb exports over the next five years. The FTA with China includes a duty-free quota for Australian wool exports, which came into effect in 2016. Resulting increased demand and higher prices are forecast to help farmers cover rising input costs and maintain profit margins.

Technology & Innovation

Technological advancements in herd management (GPS tracking), weather forecasting and data management via online tools and applications will further assist farmers to improve efficiency and productivity.

Product enhancements through breeding and scientific research may also assist the industry 'stay ahead of the game' when it comes to consumer preferences.

Goat Industry

Industry Performance Summary^{5 6}

Goat meat is one of the most widely consumed meat protein sources in the world and Australia accounts for around 50% of the world's trade in this commodity. Goat meat is an important part of many Hindu, Muslim and Jewish traditions and rituals.

⁵ <http://www.agrifutures.com.au/farm-diversity/meat-goats/>

⁶ MLA's Market information & Industry insights – Australian goat industry summary 2016, https://www.mla.com.au/globalassets/mla_australian-goat-industry-summary-20162.pdf

In 2016 goat meat exports totalled 26,794 tonnes with an approximate value of \$200.5 million. Domestic consumption of goat meat is low and exports account for approximately 88% of Australian goat meat sales.

Over the past decade the average goat price has increased by 232% and at the end of June 2017 was sitting at \$6.82 per kilogram (over the hook).

The biggest market for Australian goat meat is in the US. 98% of all goat meat imports in the US are sourced from Australia and this market represents approximately 66% of our total exports for this commodity. In 2016 17,807 tonnes of product was distributed to the US at an estimated value of 138.4million. According to MLA, US goat meat imports have doubled in the last decade.

Taiwan is Australia's second-biggest export destination for goat meat, last year accounting for 3140 tonnes valued at \$18.1 million.

Goat producers vary from extensive rangeland farmers to those with small herds on 'lifestyle' properties. Goat meat is also produced as a by-product of fibre and dairy production.

Most goats used in meat production are raised in the rangeland areas of Australia. Feral goats are commonly referred to as 'Rangeland goats' and have historically been unmanaged and harvested through 'wild capture', but many producers are now moving away from a purely opportunistic system to one in which the goat population is partially managed. This includes growing out smaller, unmarketable stock and reducing the number of bucks within the mob to only retain or introduce quality bucks to improve genetic quality.

Issues:

Predation & Disease

Predation and disease transfer is a significant problem in some areas with wild dogs, foxes and dingoes posing a threat to goat herds. Exclusion fences, baiting and trapping resources are necessary where dogs are present.

Feral Goat Policy⁷

The policy treatment of Rangeland goats varies between States and this has implications for producers. Due to excessive grazing pressures caused by goats in arid zones South Australia has a Declared Animal Policy under the Natural Resources Act 2004. The policy effectively prohibits the grazing and 'growing out' of goats. The policy states:

- Landholders are responsible for the satisfactory control of the numbers of feral goats on their properties;
- It is an offence to release goats into the wild;
- If a landholder fails to adequately control feral goats on their property, the NRM board can institute control operation; and
- It is illegal to release captured feral goats back into the wild. All captured feral goats must be either destroyed on the property, or disposed of for slaughter, destruction, or re-domestication elsewhere. Under this policy, captured feral goats can be held on their property of origin for no more than 14 days to give the landholder an opportunity to capture more or to make up a truckload.

⁷ http://www.pir.sa.gov.au/__data/assets/pdf_file/0015/232044/Goat_policy_endorsed_26th_March_2015.pdf

Availability of Agvet Chemicals

The rangeland status of South Australian goats means less agvet chemicals are applied to the animal to control pests and diseases than other livestock industries. Consequently, there is little choice in the range of agvet chemicals that are registered for use on goats.

The goat industry is concerned about the development of parasite resistance to agvet chemicals and are lobbying for a broader range of applications to be registered for use.

Opportunities

Consolidation of goat herds in South Australia

South Australian pastoralists are considering measures that would enable them to consolidate goat herds into marketable quantities without breaching the state-wide feral goat management policy.

A compromise being presented to the South Australian Government is the establishment of temporary district depots. These depots could be set up in strategic locations along stock freight routes and would act as holding and drafting yards. Pastoralists in the region could truck in small mobs as they are captured and these herds could be added to other stock to build a load to take to market.

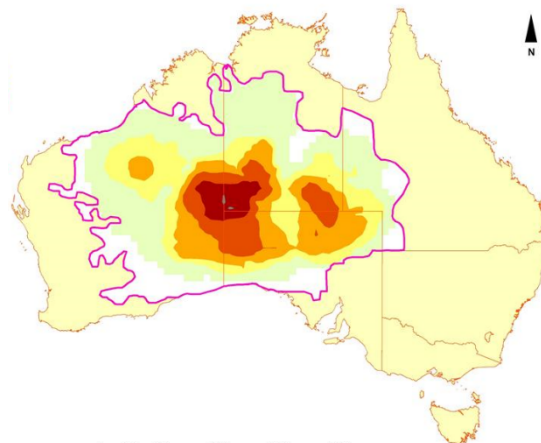
The practice of holding goats in district depots would operate under the standards of the NLIS and could provide pastoralists with transport efficiencies and access to new markets.

Camel Industry

Camels were introduced to Australia in the mid to late 1800's to assist with transportation and exploration of the Country's central regions. Eventually superseded by motor vehicles, the camels were released and they established free-ranging herds in the semi-arid desert areas of Australia.

Location of rangeland camels in Australia.

Source: CamelScan.



Nowadays the majority of the country's camel population is considered to be feral and is subject to various control measures instigated by natural resource management agencies and landholders.

The exact population of Australian feral camels is not known. In 2008 the number of feral camels was estimated to be more than one million, with the capability of doubling in number every 8 to 10

years. In 2013, this estimate was revised to a population of 600,000 prior to culling operations, and around 300,000 camels after culling, and increasing 10% per year.⁸

Rangeland camels have some value as a resource and they are caught or farmed (NT and WA) for human consumption (dairy and meat), products (oil and leather) live exports and tourism ventures.

Compared to other livestock camels have a relatively small recorded global trade of between 5-10,000 head per year. It is estimated that Australian exports constitute 4-5,000 head annually.

Camel meat is predominately consumed by populations with a Muslim faith and Australian exports of camel meat (fresh, chilled or frozen meat and offal) have grown in recent years. In 2012 Australia exported 1,136 tonnes with an export value of A\$4.84 million (ABS 2013) and in 2014 this grew by 270 tonnes with a value of US 5.598 million. The top four destinations were Morocco, Canada, Libya and the US.⁹ Trade to Morocco is based on a supply contract between an Australian producer/processor and the Moroccan Army.

Australian live camels are viewed favourably in other countries due to their hardy nature and disease-free status. Exporting camels as breeding stock to Middle Eastern countries is seen as a burgeoning niche market.

The domestic market for camel meat and products is small with approximately 500 head used for human consumption and 1,250 for pet food.

South Australia is fortunate to have one of three main abattoirs that process camels; SAMEX located at Peterborough in the State's North. The company works closely with aboriginal camel companies run by the Ngaanyatjarra Council on the Ngaanyatjarra Lands on the WA/NT/SA border and the Anangu Pitjantjatjara Yankunytjatjara Lands (APY Lands) in South Australia.

In 2010 the Australian Government released a National Feral Camel Action Plan.¹⁰ The plan acknowledges the commercial potential of camel trade and was instigated to address two major challenges:

1. the rapid reduction of the currently over-abundant feral camel population, and
2. building a legacy that will sustain on-going protection of assets and values of the rangelands.

⁸ Managing the Impacts of Feral Camels across Remote Australia" (PDF). Ninti One. 2013. pp. 59–60

⁹ http://www.territorystories.nt.gov.au/bitstream/10070/262110/2/Giles-150516-Blueprint_released_for_commercial_camel_meat_industry_attachment.pdf

¹⁰ National Feral Camel Action Plan: A national strategy for the management of feral camels in Australia, Natural Resource Management Ministerial Council, Developed by the Vertebrate Pests Committee 2010

Opportunities:

Export¹¹

Opportunities for Australian export are in small volume higher value niches breeding stock in the Middle East (approximate sales of 150 head per annum) and slaughter stock in Malaysia where Australia has an advantage in relative proximity and a professional approach to supply (approximate sales of 150 head per annum). Other potential markets, including the US milking sector, may account for a further 50 head per annum if an appropriate supply chain can be established. Live export of Australian camels is a limited opportunity of around 350 head per annum at current supply costs.

Challenges:

Access

Rangeland camels are often found in remote locations and there is a lack of infrastructure or access to enable the capture and transportation of animals to market.

Camel Farming Restrictions

In South Australia the ability to hold camels as stock is subject to land tenure. On pastoral lease properties camels constitute a change of livestock species from the approved cattle and sheep and is considered a form of land clearance under the Native Vegetation Act (1991). The 'farming' of camels on pastoral leases must be approved by the South Australian Pastoral Board and the Natural Resources Management Board.

Land owners are responsible for the control of feral camels on their property and once caught are not allowed to be released.

Subject to livestock and land management requirements, Camels can be run as livestock on free hold and perpetual lease land. Property Identification Code (PIC) and NLIS registration is required for the holding and transfer of camels between properties.

The South Australian Government is currently considering measures that would allow for the farming or pasture of camels under controlled conditions. As is the case with rangeland goats, a business opportunity would be created if landowners were able to muster, contain and 'grow-out' camel stock.

¹¹ <https://www.mla.com.au/Research-and-development/Search-RD-reports/RD-report-details/Live-Export/Camel-live-export-Supply-chain-and-benefit-cost-analysis/789>

Appendix 4: Legislation, Regulations, Guidelines & Codes of Practice for Livestock Transport & Animal Handling

The operation of a cross loading facility and spelling yards is subject to Local, State & Federal legislation. Activities associated with the facility must also give consideration to industry guidelines and codes of practice.

Each party along the supply chain is responsible for ensuring relevant laws and guidelines are followed, this includes: the producer, transporter, stock agent and receiver of stock.

The Commonwealth Government is working with State and Territory Governments as well as industry organisations such as Meat and Livestock Australia to develop nationally consistent and enforceable guidelines and legislation. Codes of practice, guidelines and regulations are based on current scientific knowledge, recommended industry practice and community expectations.

Key legislation guidelines and codes of practice for operating a spelling yard and cross-loading facility are shown on the following page. Please note this list is not exhaustive and is intended to provide key references only.

Instrument	Area of Operation	Name	Web Link	Owner/Author/Jurisdiction
Code of Practice	Animal Welfare	Model Code of Practice for the Welfare of Animals: Animals at Saleyards	http://www.publish.csiro.au/book/367	Commonwealth of Australia in conjunction with States and Territories.
Code of Practice	Animal Welfare	Model Code of Practice for the Welfare of Animals: Feral Livestock Animals	http://www.publish.csiro.au/book/370	Commonwealth of Australia in conjunction with States and Territories.
Code of Practice	Animal Welfare	Model Code of Practice for the Welfare of Animals: The Goat	http://www.publish.csiro.au/book/368	Commonwealth of Australia in conjunction with States and Territories.
Code of Practice	Animal Welfare	Model Code of Practice for the Welfare of Animals: The Camel	http://www.publish.csiro.au/book/5204	Commonwealth of Australia in conjunction with States and Territories.
Guidelines	Animal Welfare	Animal Husbandry Guidelines & Toolkits - Cattle, Sheep & Goats	www.mla.com.au	Meat & Livestock Australia
Industry Policy	Animal Welfare	National Animal Welfare Policy - Livestock Transporting	http://alrta.org.au/wp-content/uploads/2016/11/RL14108-ALRTA-National-Animal-Welfare-Policy-October-2016.pdf	Australian Livestock & Rural Transporters Association
Legislation	Animal Welfare	Animal Welfare Act 1985 & Regulations 2012	https://www.legislation.southaust.gov.au/lz/c/a/animal%20welfare%20act%201985/current/1985.106.auth.pdf	South Australian Government
Legislation	Animal Welfare	Livestock Act 1997 & Regulations 2013	https://www.legislation.southaust.gov.au/lz/c/a/livestock%20act%201997/current/1997.6.auth.pdf	South Australian Government

Instrument	Area of Operation	Name	Web Link	Owner/Author/Jurisdiction
Legislation	Animal Welfare	Veterinary Practice Act 2003 & Regulations 2017	https://www.legislation.southaustralia.gov.au/lz/c/a/veterinary%20practice%20act%202003/current/2003.41.un.pdf	South Australian Government
Standards	Animal Welfare	Australian Animal Welfare Standards and Guidelines - Cattle	http://www.animalwelfarestandards.net.au/files/2011/01/Cattle-Standards-and-Guidelines-Endorsed-Jan-2016-061017_.pdf	Animal Health Australia
Standards	Animal Welfare	Australian Animal Welfare Standards and Guidelines - Sheep	http://www.animalwelfarestandards.net.au/files/2011/01/Cattle-Standards-and-Guidelines-Endorsed-Jan-2016-061017_.pdf	Animal Health Australia
Standards	Animal Welfare	Australian Industry Welfare Standards and Guidelines - Goats (voluntary)	http://www.animalwelfarestandards.net.au/files/2016/08/Standards-Guidelines-Goats_FA.pdf	Animal Health Australia & Goat Industry Association of Australia
Standards	Animal Welfare	Australian Animal Welfare Standards and Guidelines - Land Transport of Livestock	http://www.animalwelfarestandards.net.au/files/2015/12/Land-transport-of-livestock-Standards-and-Guidelines-Version-1.-1-21-September-2012.pdf	Written into SA Law and legally enforceable
Standards	Animal Welfare	Australian Animal Welfare Standards and Guidelines - Livestock at Saleyards and Depots (proposed)	http://www.animalwelfarestandards.net.au/files/2016/03/AAW-SG_Livestock-at-Saleyards-and-Depots_21-Dec-2015_For-endorsement.pdf	Proposed, to be endorsed by State & Territories
Policy	Biosecurity	South Australian Biosecurity Policy 2017-2021	http://www.pir.sa.gov.au/_data/assets/pdf_file/0008/188189/South_Australia_Biosecurity_Policy_2017-2021.pdf	South Australian Government - Primary Industries & Regions SA
Legislation	Governance	Associations Incorporation Act 1985	https://www.legislation.southaustralia.gov.au/LZ/C/A/ASSOCIATIONS%20INCORPORATION%20ACT%201985/CURRENT/1985.30.AUTH.PDF	South Australian Government - Consumer & Business Services SA
Legislation	Heavy Vehicles	Heavy Vehicle National Law - General Regulations	https://www.legislation.qld.gov.au/view/pdf/info/rce/current/sl-2013-0079	National Heavy Vehicle Regulator. Nationally consistent state-based instruments (except WA and NT at this stage).
Legislation	Heavy Vehicles	Heavy Vehicle National Law - Mass, Dimension & Loading	https://www.legislation.qld.gov.au/view/pdf/info/rce/current/sl-2013-0077	National Heavy Vehicle Regulator. Nationally consistent state-based instruments (except WA and NT at this stage).

Instrument	Area of Operation	Name	Web Link	Owner/Author/Jurisdiction
Legislation	Heavy Vehicles	Heavy Vehicle National Law - Vehicle Standards	https://www.legislation.qld.gov.au/view/pdf/info/rce/current/sl-2013-0076	National Heavy Vehicle Regulator. Nationally consistent state-based instruments (except WA and NT at this stage).
Legislation	Heavy Vehicles	Heavy Vehicle National Law (South Australia) Act 2013	https://www.legislation.sa.gov.au/lz/c/a/heavy%20vehicle%20national%20law%20(south%20australia)%20act%202013/current/2013.36.auth.pdf	South Australian Government
Legislation	Land Management	Crown Land Management Act 2009	https://www.legislation.sa.gov.au/LZ/C/A/CROWN%20LAND%20MANAGEMENT%20ACT%202009/CURRENT/2009.20.AUTH.PDF	South Australian Government
Legislation	Land Management	Environment Protection Act 1993	https://www.legislation.sa.gov.au/lz/c/a/environment%20protection%20act%201993/current/1993.76.un.pdf	South Australian Government
Legislation	Land Management	Planning, Development & Infrastructure Act 2016 & Regulations 2017	https://www.legislation.sa.gov.au/LZ/C/A/PLANNING%20DEVELOPMENT%20AND%20INFRASTRUCTURE%20ACT%202016/CURRENT/2016.14.AUTH.PDF	South Australian Government
Legislation	Land Management	Port Augusta Development Plan	https://www.portaugusta.sa.gov.au/page.aspx?u=1082	South Australian Government/Port Augusta City Council
Guidelines	OHS&W	Livestock Transport - Yards, ramps and gates guidelines	https://www.safework.sa.gov.au/uploaded_files/YardsRampsGates.pdf	South Australian Government - SafeWork SA
Legislation	OHS&W	Heavy Vehicle National Law - Fatigue Management Regulations 2014	https://www.legislation.qld.gov.au/view/pdf/info/rce/current/sl-2013-0078	National Heavy Vehicle Regulator. Nationally consistent state-based instruments (except WA and NT at this stage).
Legislation	OHS&W	Work Health & Safety Act 2012 & Regulations 2012	https://www.legislation.sa.gov.au/lz/c/a/heavy%20vehicle%20national%20law%20(south%20australia)%20act%202013/current/2013.36.auth.pdf	South Australian Government

Appendix 5: Examination of Heavy Vehicle Fatigue Management Regulations & Livestock Welfare Standards

An examination of the Heavy Vehicle National Law - Fatigue Management Regulations and the Land Transport of Livestock Standards and Guidelines reveals a firm justification for the establishment of spelling and cross-loading facilities along the livestock supply chain.

Without strategically placed driver rest and livestock spelling facilities long-haul stock transport cannot be efficient, safe or importantly; legal.

Distance, driver rest times (fatigue management) livestock condition and time off water are key determinants for the successful transport of animals across Australia.

Time Off Water¹²

Time off water is calculated as the total time that livestock are not provided with water. The elements of this calculation may include:

- mustering (away from water);
- assembly in holding areas and yards (where water is not provided);
- curfews;
- time on the vehicle, either moving or stationary (where water is not provided); and
- time for unloading into new holding areas at the destination until water is provided.

A pre-transport spell period is recommended for the best welfare of the livestock and may be required to ensure periods for water provision are not exceeded.

A minimum acceptable spell period is defined as four hours of access to water with space to lie down and rest. Food and shelter should also be considered.

The *Australian Animal Welfare Standards and Guidelines - Land Transport of Livestock* provides specific information on acceptable spelling periods and time of water. The following table is summary of this information (note this is a guide only and should not be used for decision making purposes, please consult the guidelines for detailed information):

Species	Age/status	Max time off water	Min spell period after max time off water
Cattle	Adult > 6 months	48 hours	36 hours
Sheep	Adult > 4 months	48 hours	36 hours
Goats	Adult > 6 months	48 hours	36 hours
Camels	Adult > 6 months	48 hours	36 hours

¹² <http://www.animalwelfarestandards.net.au/files/2015/12/Land-transport-of-livestock-Standards-and-Guidelines-Version-1.-1-21-September-2012.pdf>

Driver Fatigue Management

The National Heavy Vehicle Fatigue Management Regulations 2014 provide information on maximum allowable drive times and minimum rest times. The following table is sample of the regulations for solo heavy vehicle drivers:

Total period	Maximum work time	Minimum rest time	Category of breach	
			Circumstance of contravention	Risk category
In any period of a driver must not work for more than a driver must not rest for less than ...	If in that period a driver has ...	the following category of breach is committed...
5½ hours	5¼ hours work time	15 continuous minutes rest time	> 5¼ hours work time	minor risk breach
8 hours	7½ hours work time	30 minutes rest time, in blocks of at least 15 continuous minutes	> 7½ hours work time	minor risk breach
11 hours	10 hours work time	60 minutes rest time, in blocks of at least 15 continuous minutes	≤ 10¾ hours work time	minor risk breach
			> 10¾ hours work time	substantial risk breach

Standard hours and risk categories for contraventions of standard hours - solo driver of fatigue-regulated heavy vehicle

In addition to regulations surrounding the rest of animals and drivers there are unforeseen or uncontrollable circumstance which may contribute to the length of time that livestock spend in transit. Examples include:

- weather;
- damaged or substandard road infrastructure;
- biosecurity or animal health issues; and
- mechanical failures.

Having a publicly available driver rest area, spelling yards and cross loading facility located at Port Augusta would cater for planned and unplanned stops for transport operations travelling from Northern pastoral areas through to markets in the South and East of Australia.

For example, the trip from Alice Springs to Tey's Naracoorte Abattoir is at least 22 hours on-road time. This doesn't take into account any unforeseen circumstances, the time it would take to split or cross-load prior to reaching Port Augusta or driver rest time.

The ability to rest, cross-load and spell at Port Augusta would remove any risks of non-compliance with animal welfare or heavy vehicle regulations.

Appendix 6: Strategic Importance of the Project

The Multispecies Livestock Transshipping Hub is congruent with the following industry, local, state and national strategies or policies:

Industry Plans

Meat Industry Strategic Plan 2020

¹³ <https://www.legislation.qld.gov.au/view/pdf/inforce/current/sl-2013-0078>

The Meat Industry Strategic Plan (MISP) is a collaborative plan developed by MLA and the Red Meat Advisory Council (RMAC) with assistance from producers, Federal, State and Territory Governments, the CSIRO, Universities and the Agribusiness sector.

The MISP lists the following strategic priorities for Australia's red meat and livestock industry:

- Trade and market access growth;
- Optimised meat statutory business;
- Relevant and responsible regulation;
- World class transport and infrastructure;
- Driving improvement in livestock wellbeing;
- People and productivity;
- Red meat for an innovation nation; and
- Contemporary meat trading languages.

Livestock SA - South Australian Sheep Industry Blueprint 2016

The Blueprint was launched in April 2016 with an overarching aim to increase productivity by 20% by 2020. There are five key objectives contained in the plan:

1. Growing - Grow the South Australian sheep industry's production and value from \$1.48 billion in 2015 to \$1.80 billion in 2020 while maintaining international competitiveness.
2. Uniting - Develop a united value chain workforce plan from 2015 to 2020 that attracts new and energetic people to the industry.
3. Engaging - Support a 20% increase in the engagement of quality consultants and advisers with increased use of business decision-support tools.
4. Innovating - Act as a conduit for greater research, development and extension collaboration along the value chain at the regional, state and national level and develop a measure of greater adoption and uptake.
5. Sharing - Develop a proactive and progressive industry communication plan that, through advocacy and champions, gives greater consumer confidence to increase their demand and engages the whole value chain.

Livestock SA - Beef Industry Blueprint

This plan is currently under development and will align with the Meat Industry Strategic Plan (MISP 2020). It will also be strongly aligned with state government priorities on Premium Food and Wine from our Clean Environment.

Local Plans

Port Augusta Structure Plan

The Structure Plan aims to ensure that Port Augusta will have a supply of well-located, market-ready and affordable industrial, commercial and residential land.

Part 5 of the plan, Infrastructure and Service Provision, describes the need for access structures to be developed to ensure effective performance (efficiency and safety) is maintained on the National Land Transport Network corridors.

Development Plan Port Augusta (City) Consolidated – 7 July 2016

The development plan details a range of policies with respect to development control in the Port Augusta City Local Government area.

Application for development of a transshipping hub will take into account Council wide objectives and principles as well as those that apply in the specific Primary Industry Zone where the proposed developments are located. For example, the principles of development control for intensive animal keeping include:

182 Intensive animal keeping operations and their associated components, including holding yards, temporary feeding areas, movement lanes and similar, should not be located on land within any of the following areas:

- a) 800 metres of a public water supply reservoir;
- b) the 1 in 100-year average return interval flood event area of any watercourse;
- c) 200 metres of a major watercourse (third order or higher stream);
- d) 100 metres of any other watercourse, bore or well used for domestic or stock water supplies;
- e) 2000 metres of a defined and zoned township, settlement or urban area (except for land based aquaculture);
- f) 500 metres of a dwelling (except for a dwelling directly associated with the intensive animal keeping facility).
- g) 183 Intensive animal keeping operations in uncovered situations should incorporate:
- h) a controlled drainage system which:
 - i) diverts runoff from external areas; and
 - j) (ii) directs surface runoff into an effluent management system that has sufficient capacity to hold run off from the controlled drainage area; Consolidated
- k) (c) ensure satisfactory removal and disposal of litter, disused material, shells, debris, detritus, faecal matter and dead animals from the development;
- l) (d) prevent the build-up of waste (except where waste can be removed).

Port Augusta Community Vision and Strategic Plan 2013-2017

The Port Augusta City Council's Community Vision and Strategic Plan encourages "effective infrastructure connections that support economic and social development" under the Outcomes and Strategies for a Thriving Community section of the plan.

Outback Communities Authority Region Economic Growth & Investment Strategy - September 2016

OCA and RDAFN's Economic Growth and Investment Strategy provides the following commentary on the importance of transport infrastructure to the region's agricultural industries:

Transport Infrastructure

Freight transport infrastructure is of strategic importance to primary industries generally, and critical to the outback pastoral industry in accessing supply chain nodes. The majority of the region's stock is transported by road train to either Murray Bridge or Naracoorte for slaughter, or to the sale yards at Dublin, approximately 1,000 kilometres to the south.

A recently released Productivity Commission report found a lack of significant transport, overall infrastructure inefficiencies and ineffective regulation is damaging the competitiveness of Australia's beef industry. The report recommended that Australian, State and Territory governments pursue road reforms to improve the efficiency of road infrastructure investment and use. While improvements to the Outback's

road network is an ongoing opportunity to increase industry efficiency, a current impediment to the timely, safe and effective access to markets is the absence of cross-loading facilities at Port Augusta to transfer cattle from road trains to trucks.

Currently, stock begin their journey in a triple road train but have to be transferred to B-doubles at Port Augusta to complete the trip. This is carried out in unsafe circumstances on the side of the road, sometimes in the middle of the night and in all weather conditions. This part of the journey could be accomplished safely and efficiently with the construction of cross-load facilities. At a minimum, safe ramp facilities are required. Ideally, the facility would incorporate a spelling yard, with hay and water facilities, and facilities for drivers to shower and make a coffee.

The publication also lists the following strategy that directly supports the development of the Multispecies Transshipping Hub:

3.1 Support the Growth of a Sustainable Pastoral Industry

1.2 Collaborate with industry stakeholders, Port Augusta City Council and the State Government to progress the opportunity to establish cross-loading facilities at Port Augusta.

State Plans & Projects

A Modern Transport System for Agriculture – A New Partnership Approach

This project is a collaboration between the Department of Planning Transport and Infrastructure (DPTI) and Primary Producers SA (PPSA) and aims to address road network issues to improve agricultural transport efficiency.

The project has addressed ongoing limitations and restrictions to the agriculture, food and wine industries and identified solutions such as regulatory changes or capital works. The introduction of quad road trains between Port Augusta and the Northern Territory border was one key initiative. Allowing quad road trains alone is boosting the productivity of livestock transport in the north of the state by around 8 per cent.

South Australia's Strategic Plan (2011 Update)

South Australia's Strategic Plan lists a number of goals and targets with respect to infrastructure and economic development. The following excerpts are relevant to the transshipping hub:

Vision:

South Australia plans and delivers the right infrastructure

Goal:

South Australia's transport network enables efficient movement by industry and the community.

Target 56: Strategic infrastructure

Ensure the provision of key economic and social infrastructure accommodates population growth

Vision:

We are safe in our homes, community and at work.

Goal: We are safe and protected at work and on the roads

Target 21: Greater safety at work - Achieve a 40% reduction in injury by 2012 and a further 50% reduction by 2022 (baseline: 2001-02)

To this end, Safework SA has embarked on a Livestock Industry Engagement Project through visiting stockyards and abattoirs to remind stock handlers and transporters of the risk of falls from livestock crates, trailers and ramps as well as available solutions.

South Australian Government's Economic Priorities

Optimising the livestock supply chain in South Australia is compatible with the following economic priority of the South Australian Government:

Premium Food and Wine produced in our Clean Environment and Exported to the World.

The premium food and wine economic priority aims to capitalise on opportunities and identify ways to increase our market share and profit margin by maximising the production of differentiated and processed food and wine and realising increased value for our premium products.

Far North Region Plan – A Volume of the South Australian Planning Strategy

The following principles contained in the Far North Region Plan relate to the establishment of a transshipping hub:

Principle 7 - Protect and build on the region's strategic infrastructure

7.1 Cluster, and provide for the future expansion of, production, processing and storage activities in strategic locations such as key freight transport nodes to maximise transport efficiencies.

7.8 Protect the transport functionality of road and rail corridors through planning policy in Development Plans

7.9 Designate and protect strategic freight corridors.

Principle 12 - Retain and strengthen the economic potential of pastoral lands

National Plans & Projects

Infrastructure Australia

In July 2017 the RDAFN provided a submission to Infrastructure Australia informing the National Freight and Supply Chain Inquiry. The submission contained the following narrative on the need for a transshipping hub:

Spelling Facilities

In May 2017 it was announced that the intersection of the Stuart Highway and Yorkeys Crossing would be upgraded and a "pod" system by which to safely transfer cattle from truck to truck would also be constructed. This is a positive move forward for a much-needed facility such as this.

However, the broader issue of there being no infrastructure to allow transport companies to unload and 'rest' animals still remains. RDAFN is once again working with the Outback Communities Authority to invest in undertaking a business case for multispecies livestock transshipping hub. RDAFN is also working with pastoralists in the far north of SA to assist with this project and to look at viable options.

The Australian Government's Agricultural Competitiveness White Paper

Released in 2015, the White Paper described issues and opportunities for Australia's agricultural industry, including transport infrastructure. The paper provided the impetus for new or revised policies for agricultural industries including:

- The introduction of the National Stronger Regions Fund which supported priority economic and infrastructure projects in regions across Australia;
- A \$700 million commitment in Northern Australia, including \$100 million specifically for roads in the cattle supply chain; and
- A \$1 million investment to expand the CSIRO TRANsport Network Strategic Investment Tool (TRANSIT) to cover a broad range of agriculture industries. TRANSIT analyses freight flows, routes and costs, and finds transport bottlenecks and pinch points. It will also look at first and last mile issues.

Appendix 7: Government Funding Opportunities

There are currently some government funds available for infrastructure, supply chain facilitation and business development. Programme eligibility would depend on the facility's ownership and management model.

Following is a list of relevant funding opportunities, eligible organisations and business structure are described in the 'proponent' column:

Fund Name	Source	Web Link	Overview	Proponent
Farming Together – Farm Cooperatives & Collaboration	Australian Government – Department of Agriculture & Water Resources	https://agworks.com.au/	Advice and financial assistance to set up cooperative business models with a focus on primary production.	A collective of primary producers.
Regional Jobs & Investment Package (Upper Spencer Gulf)	Australian Government – Department of Industry Innovation & Science	https://www.business.gov.au/Assistance/Regional-Jobs-and-Investment-Packages/Upper-Spencer-Gulf-South-Australia	Currently closed. This was a pilot programme. Availability of future rounds is unknown. Funding is available across three streams. 1. Local infrastructure 2. Business innovation 3. Skills and training	Local Government. Not for Profit For profit (incorporated companies).
Regional Development Fund – Major Projects Stream	South Australian Government – Primary Industries & Regions SA	http://www.pir.sa.gov.au/regions/grants/regional_development_fund/major_projects_program	Currently closed. Investment in economic projects designed to strengthen regional industries and support local economies.	For profit.
AusIndustry Entrepreneurs' Programme	Australian Government Department of Industry Innovation & Science	https://www.business.gov.au/assistance/supply-chain-facilitation	Advice and funding for supply chain optimisation.	For profit, incorporated companies.
Building Better Regions Fund –	Australian Government -	https://www.business.gov.au/assistance/	Currently closed.	Local Government.

Infrastructure Stream	Department Infrastructure & Regional Development	building-better-regions-fund	Next round in 2018 to be announced. The Infrastructure Projects Stream supports projects which involve the construction of new infrastructure, or the upgrade or extension of existing infrastructure that provide economic and social benefits to regional and remote areas.	Not for profit.
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Appendix 8: A Changing Operating Environment

Changes in the operating environment, particularly economic or political issues, should be taken into consideration when progressing the Multispecies Transshipping Hub Project.

There are a number of projects and policies 'in the pipeline' that will affect the delivery of the transshipping hub including:

The Strzelecki Track

Sealing of the Strzelecki Track between Lyndhurst and Innamincka as well as the Adventure Way link from Innamincka to the Queensland border will greatly benefit pastoralists in the Far North of South Australia and facilitate greater movement of stock from across the Queensland border and into South Australia.

Sealing of the Yorkeys Crossing Bypass Route

Yorkeys Crossing is currently unsealed, is prone to flooding and requires frequent maintenance. Sealing of the roadway will provide for the safe and efficient movement of heavy vehicles around the top of the Spencer Gulf, avoiding traffic congestion across the Joy Baluch AM bridge.

Should the transshipping hub be located at Yorkeys Crossing (per options discussed in section 9, the sealing of the crossing will provide efficiency gains (time), improve safety and reduce dust pollution.

Duplication of the Joy Baluch AM Bridge

In November 2017 the South Australian Government provided a commitment to part-fund the duplication of the Joy Baluch AM bridge across the Spencer Gulf in Port Augusta. This bridge is a critical link in the National Land Transport Network.

The State Government is seeking a contribution (80% of the project costs) from the Federal Government toward the estimated \$200 million project.

The duplication will include widening the approach roads to allow for two lanes in both directions and will improve freight efficiency and safety.

Appendix 9: Consultations

The following individuals and organisations, identified by OCA and RDAFN, were consulted in the development of this report:

Name	Organisation
Andrew Curtis	Livestock SA
Hon Rob Kerin	Primary Producers SA
Jim Rothwell	Meat & Livestock Australia
Stephen Crisp	Sheepmeat Council of Australia
Rick Gates	Goat Industry Council of Australia
Tom Ryan	Northern Territory Cattlemen's Association
David Anderson	Port Augusta Veterinary Clinic
Roger Absalom	Redgum Vet and Pet Boarding (submission received)
Tung Pham	Port Augusta City Council
John Banks	Port Augusta City Council
Gillian Fennell	Lambina Station / Morestone Contracting
Colin Greenfield	Billa Kalina Station
Andrew Clarke	Allandale Station
Mark Sutton	Outback Communities Authority
Angela Ruddenklau	Primary Industries and Regions SA
Michael Blake	Primary Industries and Regions SA
Roger Paskin	Biosecurity SA
Trent Scholz	Biosecurity SA
Mike Wilde	Department of Planning Transport and Infrastructure
Grant Parker	Biosecurity QLD
Mark Crossling	Department of Planning Transport and Infrastructure
Lorrene Rogers	Tanami Transport NT
Jo McKay	Birdsville Transport
Paula Osborn	RDA Far North
Claire Wiseman	RDA Far North

These consultations were conducted either face to face or over the phone using a qualitative survey method.

Feedback from livestock industry, transport stakeholders, biosecurity and animal health experts indicated strong support for a multi-species transshipping facility in Port Augusta. Benefits identified included improved animal welfare conditions, improved driver safety, more efficient transport of livestock to market and increased ability to comply with legislation, guidelines and codes of practice.

Improved marketability of stock was also considered to be a positive outcome from the development of the spelling yards. Producers felt the opportunity for stock to gain condition prior to market and the possibility to weigh and set the price for each load would reduce risk and improve financial returns. Another benefit of the facility would be for the aggregation of camel stock into a marketable quantity.

The possibilities with respect to biosecurity were of particular interest to the State Government and vet industry. Two respondents indicated the facility could be used to manage pest or disease outbreaks, conduct training exercises, inspections and administration.

Transport companies were particularly interested in a safe way to cross load livestock from road trains to smaller configurations. The safety of both drivers and livestock was of paramount importance and could be achieved with a pod structure. All producer, transport and livestock industry respondents were strongly of the opinion that the current situation where livestock are cross loaded by the side of the road at all hours and in all conditions, was not safe or satisfactory. One respondent went further to say that they believe "it is only a matter of time before someone is hurt or worse".

Producer and transport industry respondents highlighted that they felt increased scrutiny around animal welfare and a spelling facility would ensure that livestock could be unloaded and spelled to arrive at their destination in the best condition. One transport company respondent gave specific examples of cattle having to wait on trucks by the side of the road if the b-double collecting them was delayed and not being able to unload "downers", weak or injured animals as there was nowhere for them to go.

While there was consensus on the need for the hub, views on the location, ownership structure and specific requirements were mixed. There was no consensus regarding the capacity of the spelling yards construction nor was there a clear set of instructions with respect to features eg: weighbridge, roofing, scales etc.

Some respondents identified a commercial opportunity in the spelling yards but saw the cross-loading facility as primarily a requirement to meet driver safety and animal welfare above the need to deliver profits.

Local Government indicated their willingness to support the project and when asked whether they would develop and/or manage such a facility they “wouldn’t rule it out” noting the project would need to be self-funding or income generating. Pastoralist respondents expressed a strong desire for the facility to be owned and operated by “the industry” preferring this over a publicly managed asset or public/private operational partnership. One-off or project-based government grant funding would be welcomed by the industry. State Government respondents indicated a preference for an “industry run” facility.

