
# Smart infrastructure investments and regulatory reform policies to support the rural freight task:

## 'Some thoughts and case studies'

**A formal industry submission to *Infrastructure Australia***
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**Intent of this submission**

This submission looks to provide some thoughts to influence *Infrastructure Australia*'s thinking on the following questions:

- In freight transport terms, what is meant by 'nationally significant infrastructure'? Is there a place in this concept for small rural and regional infrastructure issues?
- How would such infrastructure issues be identified? Are there basic principles that could apply to any rural industry in this respect?
- How do the needs of users of rural road freight infrastructure get a hearing in the investment and regulatory reform process? Leaving *Infrastructure Australia* aside, are all the other structures of Government adequate to achieve efficient improvement of rural road freight infrastructure? What wider Government reforms would be useful for achieving suitable industry involvement in rural infrastructure planning and investment?

This submission intends to discuss each of these issues and offer a way forward. Three case studies are offered to illustrate a preferred approach to examining the benefits of rural and regional freight infrastructure investment and complementary regulatory reform.

**Setting a context**

As the nation's peak body for rural and regional freight industry policy, the ALTA has already published several documents on this subject. While the ALTA believes that this submission stands on its own merits, it does recommend that at least two of its previous publications be considered by *Infrastructure Australia* in forming a view on rural and regional infrastructure investment and regulatory reform issues.

1. (*A New Approach to Investment: An Industry Perspective: 'Better freight outcomes for productivity, safety, skills and the environment'*. ALTA's contribution to the National Transport Plan National Transport Commission, March 2008 pp. 19-32 ; and
2. *Carrying a Competitive Economy – Getting Road Freight Pricing, Investment in Roads and Regulations Right for Australia's Future* ALTA submission to the Productivity Commission Inquiry into Road and Rail Freight Infrastructure Pricing May 2006

**Complementary Submission**

One crucial aspect of making productive investment and regulatory reform decisions is in understanding the technological possibilities available to the Government owners of freight networks. The ALTA suggests that this submission and its case studies therefore be read in conjunction with a submission from the Warren Centre at Sydney University entitled: *Rural and Regional Transport Infrastructure Project. Establishing productivity gains for regional industry from technological improvements and innovative funding solutions.*

**In freight transport terms, what is meant by 'nationally significant infrastructure'? Is there a place in this concept for small rural and regional infrastructure issues?**
Language is always important; the ALTA would guess that when it comes to thinking about infrastructure renewal, in the minds of most people (including many of those working in transport agencies), it very likely that 'nationally significant infrastructure' will be considered a proxy term for 'large, complex and expensive'. In this event, the problem for regional and rural road freight infrastructure is that very often it will not qualify for attention. Such a misunderstanding stems from a failure to appreciate the nature of logistics for rural commodities. Typically, rural freight moves in multiple journeys. It may move across freight transport modes. Most typically, due to its rural origins, it will encounter multiple 'smaller' infrastructure bottlenecks on the way to its final destination. Many of these bottlenecks are small, subtle and therefore quite often don't command attention from decision-makers.

The core industry policy areas for the ALTA are the meat and livestock and grain sectors. These rural industries conform to this profile: typically, it is not a single major infrastructure bottleneck holding back optimal productivity in these sectors. This may well stand in contrast to the logistics patterns of other industry sectors: a much-quoted example of the 'big problem, big fix' phenomenon might be the coal industry's port bottleneck at Dalrymple Bay – where millions of dollars can be lost by delays caused by a single major logistics bottleneck.

Most rural commodity bottlenecks are smaller, more numerous and therefore less likely to draw attention to themselves. Typically, they involve an aggregation of dozens of small barriers to efficiency: old wooden bridges that are not capable of carrying modern efficient road freight vehicles, forcing lengthy detours; sections of road that have never been upgraded to manage the freight frequency and type of the 21st century, again causing freight to follow a less efficient path to its destination; outdated blanket regulations that hobble the freight task of specific industries, as can be seen in the lack of livestock loading regulations in New South Wales *(See attachment C to this submission for a more detailed discussion of what this bad 'blanket regulation has cost this industry sector and how it can be resolved through industry and government cooperating in practical ways).*

Despite being less obvious than Dalrymple Bay's 'bottleneck', these many small obstacles do significant damage to the productivity levels of the industries they support. The good news is that they *can* be identified and fixing them often involves only a relatively minor outlay of funds, which would soon pay for themselves in terms of net wealth created by the removal of the bottlenecks; this is easily demonstrated through net present value and internal rate of return calculations over the life of the investment, employing agreed social utility interest rates. However, almost always, rural infrastructure bottlenecks will not be fixed by funding alone, but will require complementary regulatory reform, to address regulatory mismatches between freight vehicles and their networks. Most importantly, the efficient way to examine rural infrastructure bottlenecks is in aggregate; the best means to achieve this is by taking a network approach at the industry sector level.

*Are there any other risks to be aware of?*
The other possible temptation that might be caused by a sole focus on pursuing 'nationally significant infrastructure' –is that the term may tend to push thinking towards the new, rather than an examination of where spare or underutilized capacity may exist on current freight networks, across modes. By matching the most modern and efficient freight vehicles – a field in which major Australian advances are being made every year - with the most effective infrastructure – again, an area that is constantly producing new efficiencies - the existing capacity of Australia's rural and regional freight networks can be significantly improved without the need for any 'brand new' major projects. As a simple rule of thumb, the ALTA believes that it is worth *Infrastructure Australia*'s while to consider creating cost effective productivity gains within the latent capacity of current freight networks before becoming too preoccupied with planning 'the next big thing'.

**How would such infrastructure issues be identified? Are there basic principles that could apply to any rural industry in this respect?**

Infrastructure and regulatory bottlenecks facing rural road freight industries can be identified and analysed in a way that demonstrates the benefits of fixing the problems, in terms of bottom-line financial, safety and environmental dividends. Furthermore, the ALTA believes that these principles are generic and could be applied to all sectors.

*How are rural freight bottlenecks best assessed?*

The ALTA believes that for rural freight, the best means of dealing with what are often multiple small bottlenecks (as discussed above) is to consider all of the bottlenecks at the network level, with the focus on an industry sector. This approach allows individual infrastructure bottlenecks across a wide area to be grouped together in terms of their effects on industry. The reasoning behind isolating an industry as the common denominator of the investigation is practicality: by grouping the investigation around a single industry, such as livestock or grain, (in a certain region, for example), it is relatively easy to identify the major stakeholders to the issue and start the process of consulting with transport companies, producers and processors and local councils and transport agencies on where the significant problems might lie and how they might be best addressed by a mixture of technological innovation, fixed infrastructure investment and complementary regulatory reform.

*Does such a' network approach' to analysis work?*

The ALTA offers two case studies in support of this approach. The first (Attachment A) s a comprehensive assessment of the livestock transport network in the Rockhampton region of Queensland – Australia's largest meat processing centre. The second (Attachment B) examines the potential latent capacity available for exploitation in livestock transport network that services the south-east Queensland meat processing sector. This case study examines the added issue of the value of this approach for anticipating modal shifts in the freight task.

Both of these case studies have been developed after extensive consultation with the industry stakeholders concerned, using accurate industry data. This approach allows a picture to emerge of the likely net financial, road safety and environmental benefits that would flow from addressing these bottlenecks and poor regulations.

*Further potential for analysis*

It is worth noting that neither of these case studies has identified the cost of infrastructure upgrades required to create these net benefits. This is in part due to a lack of time available for consulting with relevant road agencies and examining each problem from an engineering perspective. However, it is equally true that both of these case studies were chosen because it was felt that there were no significant infrastructure investments involved. Certainly once the net recurring annual benefits of these studies are examined against a 30-40 year life of infrastructure upgrade, the benefits are certain to outweigh the costs many times over. *The ALTA would be pleased to follow up this work by examining the infrastructure upgrade costs involved in these case studies in consultation with Infrastructure Australia and the relevant road agencies with a view to expressing the likely cost-benefit as net present values and rates of return using acceptable social utility inflators. This will confirm the viability of these projects.*

**How do the needs of users of rural road freight infrastructure get a hearing in the investment and regulatory reform process? Leaving *Infrastructure Australia* aside, are all the other structures of Government adequate to achieve efficient improvement of rural road freight infrastructure? What wider Government reforms would be useful for achieving suitable industry involvement in rural infrastructure planning and investment?**

Unfortunately, the system of infrastructure planning and investment that Australia inherits in 2008 remains flawed, to the extent that under this system, the case studies offered in this submission by the ALTA do not find any easy path to a fair hearing. Outside the advances made by establishing *Infrastructure Australia*, there is an urgent need for supporting processes in government transport agencies at all levels to be established. The major problems with the current infrastructure planning and investment system in Australia are in essence threefold:

1. Public servants (understandably) focus on costs of investment, not potential benefits

In the ALTA's experience, planning for infrastructure investment remains cost-driven rather than being balanced by a sound appreciation of potential benefits. Under programs such as Auslink (whatever the original intentions of this program) Government-employed engineers and policy makers are almost the sole arbiters of investment decisions. Naturally, as these groups have no access to the wealth creation potential of competing investments, the focus will turn to spending scant Government resources as efficiently as possible – without considering that if the benefits of some investments are higher than others, investing in the right projects soon pays for itself and adds net wealth to the economy. Unfortunately, this means that opportunities for infrastructure efficiency growth 'at the margins' will be missed, as those who can see the opportunities – freight operators, their customers in industry and transport technology experts who can advise on the latest complementary efficiencies – are largely locked out of the process.

2. The role of regulatory reform on infrastructure investment not appreciated

As the two major case studies attached to this submission reveal, complementary regulatory reforms in road freight have as large a role to play as the infrastructure investment itself in opening up spare capacity on freight networks. It is regulatory reforms that allow the most efficient vehicles to be matched to upgraded road networks. Traditionally this has been poorly understood by Government; often Governments will split their transport agencies and road agencies, thereby creating disconnects between infrastructure owners and the regulators of the freight that uses these networks. This in turn makes direct industry involvement in the planning process incredibly difficult to achieve.

3. No clear definition of desired infrastructure reform 'benefits' by Governments

Part of the challenge for transport agencies across the country is that Governments have not agreed a set of clear principles about what quantifiable benefits they expect to see from their investment in infrastructure and regulatory reform. This only exacerbates the first problem raised: without the need to deliver a set of generally-agreed and quantified benefits, asset owners and regulators are let 'off the hook' to consider only the efficient expenditure of scant resources; potential growth and innovation opportunities across the freight network are therefore lost; in turn, industry finds itself not required in the process.

The ALTA case studies attached to this submission show that clear and quantifiable benefits *can* be derived for infrastructure investments and regulatory reforms. It would be useful for all agencies to adopt principles along these lines, so that infrastructure investments and complementary regulatory reforms comes complete with assessments of the net financial, safety and emissions dividends. Political decisions about funding competing projects become more transparent and subject to clearer community scrutiny when net financial, safety and environmental benefits are implicit in all projects.

*Rural infrastructure investment faces an added complication*
To these three problems, it might be added that in rural and regional infrastructure terms, despite the fact that somewhere above 70% of the capital value of the road stock in Australia is the responsibility of local government to maintain and upgrade, local government has very little access to the process for determining infrastructure upgrade requirements. Rural communities and their councils have even less access to the decision-making process about complementary regulatory reforms and almost no reliable exposure to the latest trends in road freight technology and fixed infrastructure technology innovations that could lead to better decisions about how local road networks are planned and resourced into the future to be safer, greener and more productive.

*Infrastructure Australia and Auslink – Moving forward effectively*
For all of the reasons discussed above, the ALTA views the establishment of *Infrastructure Australia* as a progressive step. However, it appears that existing transport agencies of Government remain largely unaligned to this process, in terms of the matters raised above. In the first instance, this appears to be a matter for the Australian Transport Council Ministers to resolve; the ALTA would hope that the suggestions above assist such a process.

Beyond this, there remains the matter of how the Federal Government's Auslink program interacts with the advances in project assessment and industry and community involvement made by *Infrastructure Australia*. On this front, the ALTA recommends strongly that the Federal Government imbue the Auslink program with the ability to involve industry directly in assessing future infrastructure investments and regulatory reforms. To achieve this, the ALTA offers the following model, which attempts to reform Auslink to allow industry innovation to play an appropriate role. In the past, the ALTA's experience has been that the Federal custodians of Auslink have been by far the least accessible of any agency in terms of being open to considering industry perspectives on productive infrastructure and regulatory reforms. This situation must change if optimal reforms are to occur into the future. The table on the following page suggests some concepts for achieving this at the organisational level.

*NSW livestock loading reforms: a genuine partnership approach?*
In addition to the following table, the ALTA advances case study C as an excellent example of industry working with Government to look at specific sectoral impediments to industry freight productivity. This approach has been an excellent first step to addressing long-overdue infrastructure bottlenecks in the NSW meat and livestock sector, where clear benefits can be compared with the likely costs of infrastructure investment and regulatory reform. The ALTA believes that this approach has genuine merit for other networks supporting other industries across Australia.

## A POTENTIAL MODEL FOR AUSLINK REFORM

| PRIVATE SECTOR ROLES | PUBLIC SECTOR ROLES |
|---|---|
| **Syndicate** Form industry alliances to pursue better infrastructure investments and reforms (ie freight providers and freight innovators working with freight users) | **Set parameters for (industry's) project proposals** Agree the deliverables and format that industry will be expected to identify and conform to when presenting infrastructure investment and reform proposals to Governments. |
| **Build project proposals** Identify priority infrastructure investments and linked regulatory reform targets, based on customer (industry) growth requirements, leading edge logistics innovations and freight operator advice. | **Build shopfront for project proposals** Develop a vehicle for industry to present proposals to Government. |
| **Project Revenue and Dividends** Develop quantified costings of the likely opportunities that the investments and reforms would bring in terms of productivity savings, freight safety, skilled labour and emissions dividends. | **SHARED** → **Project Expenditure and Compliance** Direct agencies to respond to industry proposals by providing accurate cost estimates of infrastructure investments and regulatory reforms (costed engineering reports, freight compliance implications, etc.). |
| **Project Rate of Return Analysis** Receive accurate costing and compliance implications from road agencies for nominated projects –develop a net rate of return and dividends for the project, in consultation with road agencies. | **SHARED** → **Project Rate of Return Analysis** Direct road agencies to deliver accurate costing and compliance implications to allow a net rate of return and dividends to be calculated for each industry project. |
| | **Prioritise Investments and Reforms** Agree a process for receiving completed rate of return business cases, then for ranking projects based on the rate and/or *quantum* of returns. |
| | **'Fast-track' the best for delivery** Establish a clear hurdle rate and *quantum* of return, above which level all eligible projects (ie the best of the best) must be priority-funded. |
| **Fund** Examine a range of funding opportunities, where rates of return can be established over the life of the investment. | **SHARED** → **Fund** Examine a range of funding opportunities, where rates of return can be established over the life of the investment. |
| | **Reflect Project Growth in Revenue Projections** Where robust rates of return exist, funds are released and project begins, reflect such projects' productivity growth and values in Treasury forward revenue estimates. Amongst other things, this step will allow a more accurate Treasury revenue base to be generated for future infrastructure investments. |


Rockhampton Livestock Industry
Strategic Freight Infrastructure Improvement Package

'How productive regulatory reforms and minor infrastructure investments can deliver profit, road safety and reduced carbon emissions to a major rural industry'

**Attachment A to the ALTA's *Infrastructure Australia* Submission**

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**Purpose of this case study**

- To improve the productivity of Australia's largest cattle production and processing region through advocating small but significant, targeted and practical freight infrastructure efficiency improvements.

- To use case studies and indicative data to illustrate the great value of analyzing freight infrastructure and freight regulatory issues in the context of an 'industry freight network' – rather than as roads or regulations in isolation from their industry context.

- To illustrate that even small-scale investments and targeted regulatory reforms can have significant and quantifiable financial, safety and environmental effects, due to the latent spare capacity of the freight network being identified and accessed.

**Background - Rockhampton's livestock transport task**

- Rockhampton is the cattle processing centre of Australia. It is home to two major abattoirs:
    - Lakes Creek processing plant (Teys Bros) is one of the largest processing plants in the southern hemisphere, employing 3,500 full-time staff and processes 415,000 cattle *per annum*.
    - Fitzroy River processing plant (JBS Swift) employs 500 staff and processes over 150,000 cattle *per annum*
    - In addition to these numbers, it is estimated that a further 500,000 cattle are moved on this freight network annually (ie to points further south for fattening).
    - Further additional cattle movements on the freight network (ie to and from farms and saleyards) have not been estimated due to the complexity of the task.

- Abattoirs rely heavily on livestock transport efficiency for their competitiveness. Statistics reveal that for every $100 of 'ex-works' meat and meat products produced, road transport accounts for around $9 of input cost.

- This makes meat the most expensive agricultural commodity in transport terms. Meat is also the leading Australian agricultural export commodity in terms of value.

- The efficiency of the Rockhampton livestock freight network is at present sub-optimal. This relates largely to infrastructure and regulatory barriers that prevent the most efficient vehicles from accessing certain roads to complete the Rockhampton processing plants' freight task efficiently.

- These inefficiencies represent more than lost profit: they have negative safety implications as they require greater numbers of truck movements to complete the task and this in turn leads to higher carbon emissions than would be generated by a smarter solution. Every additional litre of diesel fuel burnt through inefficient freight networks creates an unwanted 2.9 kilograms of carbon emissions (source: *National Greenhouse Account Factors*)

**Exposing the problem – creating a compelling case for change**

By examining each infrastructure bottleneck and calculating the current cost of doing business in a sub-optimal way, a clear picture emerges of the net financial, environmental and safety benefits that are foregone for the local industry and community for so long as these problems are not addressed. The following table summarises these network problems. Each discrete problem on the network that contributes to this total is then examined in more detail (overleaf).

**Aggregate savings to Rockhampton meat and livestock industry and community of making efficiency improvements to the livestock freight network**

| | Task (now) | Task (preferred outcome) |
|---|---|---|
| Total annual cattle delivered | 1,300,000 head | 1,300,000 head |
| Total annual cost of task | $29.491m | $17.205m |
| Total annual movements req'd | 14,409 trucks | 9,221 trucks |
| Total annual emissions | 8,792 tonnes | 5,180 tonnes |
| **Annual financial saving** | | **$12.286m *per annum*** |
| **Annual road safety dividend** | | **5,759 less truck mv'ts *per annum*** |
| **Annual emissions saving** | | **3,612 tonnes *per annum*** |

**Summary**

- For the most part, the reforms in this productivity package relate to capacity building on an existing network - that is, improving network access to higher productivity vehicle combinations to complete the freight task on the existing livestock transport network servicing Rockhampton's meat processing sector.
- There are very few physical infrastructure upgrades required in any of these discrete projects. The final cost of these physical infrastructure investments, which would be built with a 30-year life span in mind, are in all likelihood far outweighed by the annual $12 million dollar savings recurring over that 30-year period.
- Examining the strategic needs of the Rockhampton region's livestock transport task reveals significant road safety and environmental benefits also flow from taking these cost-effective infrastructure and regulatory reform decisions. Communities deserve to be aware of these benefits.
- This strategic analysis is advanced as an example of what can be achieved when a freight task is examined in detail by a mixture of transporters, their customers and with an eye to the possibilities available through advances in road freight technology.
- It is worth noting that prior to *Infrastructure Australia* and the associated National Transport Framework being agreed by Governments around Australia – and notwithstanding the original *intent* of Auslink - there existed no practical mechanism wherein a study such as this could find a fair and comprehensive hearing that would lead to action. It is therefore vital that the decision-making system behind *Infrastructure Australia* and facilitating agencies continues to be refined to encourage this sort of industry analysis to be put forward.

**NB: Each of the discrete reforms that make up to the total reform package are analysed individually in the 6 route upgrade studies that follow.**

**Route Upgrade 1**

Marlborough to Lakes Creek and Fitzroy River (Rockhampton) Abattoirs (167kms)


**Marlborough to Rockhampton: blue line reveals more direct and efficient route**

**Requirement:**

Upgrade access from B-double to Type-1 Road Train from Marlborough to Rockhampton (*via* Bruce Highway).

**Current Situation**

At present, the 2 Rockhampton abattoirs source around 450,000 cattle *per annum* from the northern regions west of Mackay. The Bruce Hwy between Marlborough and Rockhampton is already intermittently rated for Type-1 road train use (ie for carriers of drought affected stock), but for most work this freight task remains forced on to a longer, less efficient route (73kms further) using a B-double combination, which creates the following inefficiencies:

| | Task (now) | Task (preferred) |
|---|---|---|
| Total annual cattle delivered | 450,000 head | 450,000 head |
| Vehicle used | B-double | Type 1 road train |
| Cattle capacity per vehicle, | 67 head | 90 head |
| Freight rate per km (indicative) | $6.00 | $7.00 |
| Total kms per trip | 240 km | 167 km |
| Total kms annual task | 1.611m km | 0.835m km |
| Fuel efficiency (vehicle type) | 1.6 litres per km | 1.4 litres per km |
| Total annual movements req'd | 6,716 | 5000 |
| Total annual cost of task | $9.671m | $5.845m |
| Total annual emissions | 2,921 tonnes | 1,729 tonnes |
| **Annual financial saving** | | **$3.826m *per annum*** |
| **Annual road safety dividend** | | **1,716 less movements *per annum*** |
| **Annual emissions saving** | | **1,192 tonnes *per annum*** |

**Route Upgrade 2:**

Tambo to Emerald Saleyards (311 kms)


**Tambo to Emerald saleyards: blue line reveals a major efficiency in waiting**

**Requirement:**

Upgrade access from Type 1 Road Train to Type 2 Road Train on this major livestock route to create freight efficiencies, reduce the fatigue and safety issues related to road train trailer 'break-ups', reduce truck movements numbers and lower vehicle emissions.

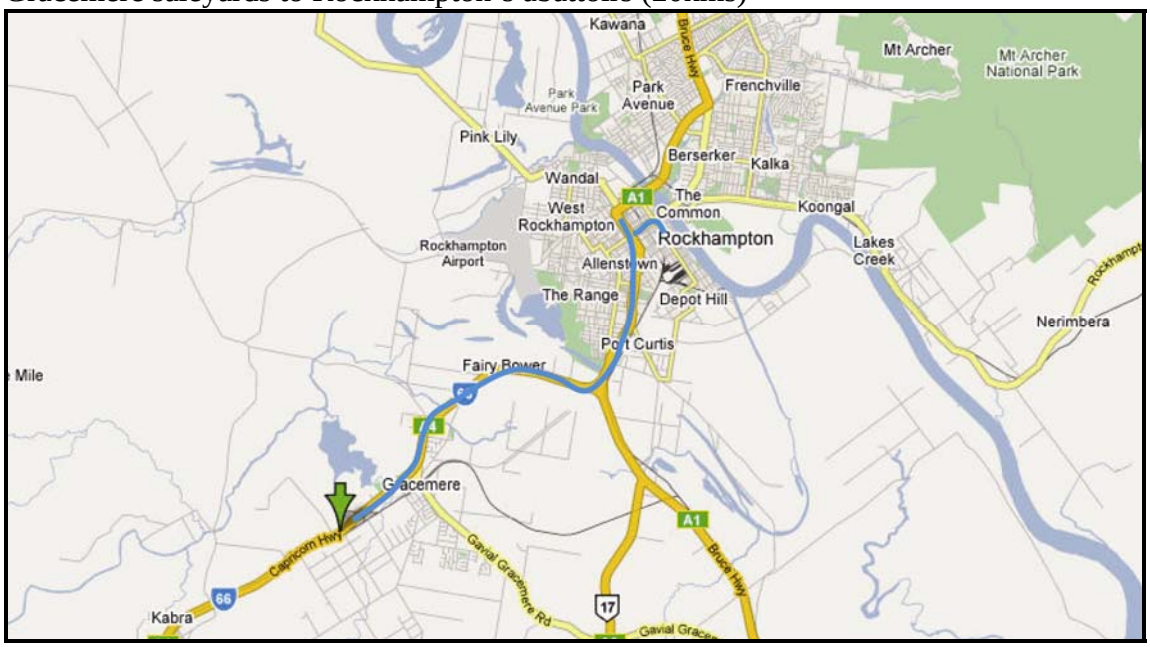
**Background:**

At present, the Rockhampton abattoirs source a significant portion of their cattle from the western regions of QLD. Significant store cattle numbers are sourced from these western regions. Much of this work aggregates *via* Tambo, heading east. A more efficient route could be achieved with some upgrade to the alternative route *via* Springsure.

| | **Task (now)** | **Task (preferred)** |
|---|---|---|
| Total annual cattle delivered | 450,000 head | 450,000 head |
| Vehicle used | Type 1 road train | Type 2 road train |
| Cattle capacity per vehicle | 90 head | 135 head |
| Freight rate per km (indicative) | $7.00 | $8.00 |
| Total kms per trip | 450 kms | 311 kms |
| Total kms annual task | 2,250,000 | 1,036,000 |
| Fuel efficiency (vehicle type) | 1.4 litres per km | 1.2 litres per km |
| Total annual movements req'd | 5,000 | 3,333 |
| Total annual cost of task | $15.750m | $8.288m |
| Total annual emissions | 4,660 tonnes | 2503 tonnes |
| **Annual financial saving** | | **$7.462 *per annum*** |
| **Annual road safety dividend** | | **1,667 less movements *per annum*** |
| **Annual emissions saving** | | **2,157 tonnes *per annum*** |

**Route Upgrade 3:**

Gracemere saleyards to Rockhampton's abattoirs (20kms)




**Blue line fixes a 'last-mile' bottleneck - a major road safety dividend and more efficient for industry**

**Requirement:**

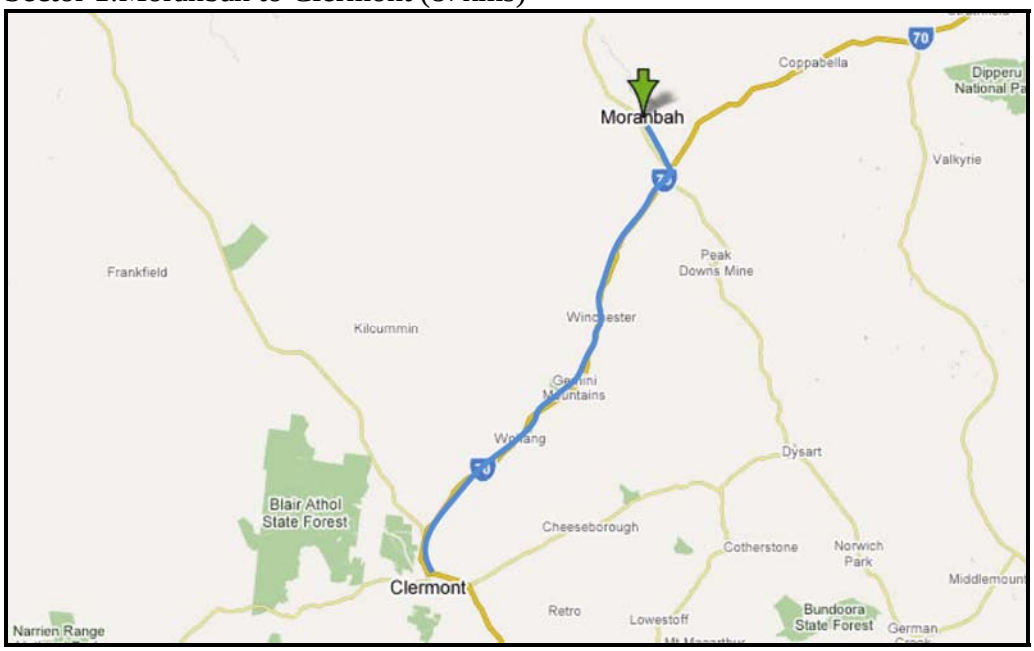
Upgrade access from B-double to Type-1 Road Train on this route to create freight efficiencies, reduce the fatigue and safety issues, remove 1,333 truck movements from Rockhampton's streets annually and lower vehicle emissions associated with this task.

Rockhampton abattoirs source cattle from the Gracemere saleyards. Cattle are brought to the saleyards by Type-I road train, but the abattoirs must then transport the purchased cattle to the processing facilities in Rockhampton. Currently Type-1 road trains do not have access to complete this 20km task, so that the final leg of the journey requires each road train to be 'broken up' into twice the number of single semi-trailer movements.

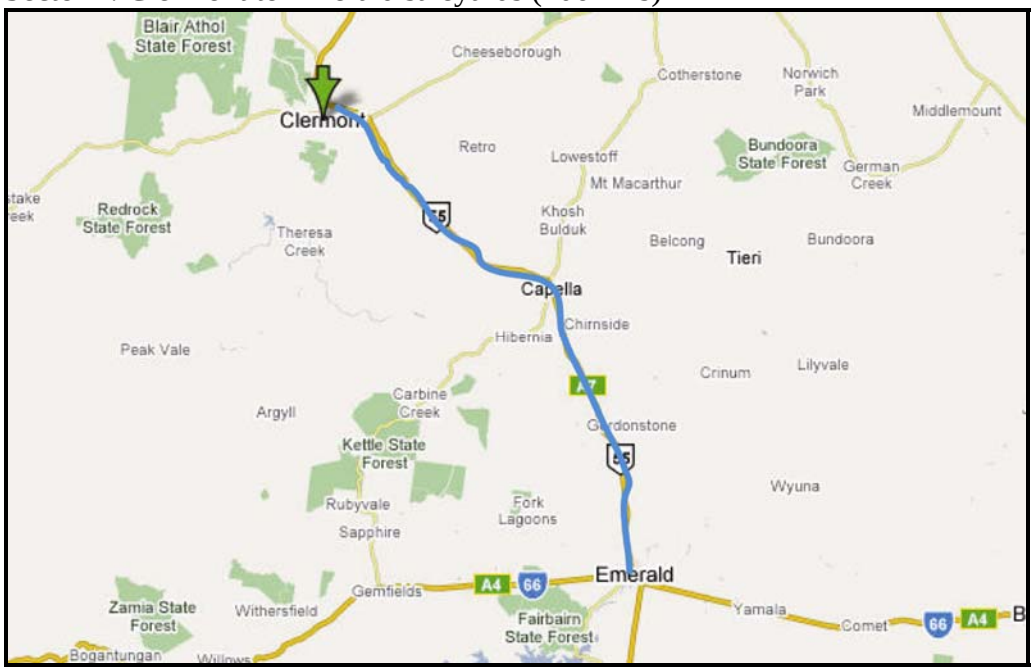
| | **Task (now)** | **Task (preferred)** |
|---|---|---|
| Total annual cattle delivered | 120,000 head | 120,000 head |
| Vehicle used | B-double | Type 1 road train |
| Cattle capacity per vehicle, | 45 head | 90 head |
| Freight rate per km (indicative) | $5.30 | $7.00 |
| Total kms per trip | 20 km | 20 km |
| Total kms annual task | 53,333km | 26,660km |
| Fuel efficiency (vehicle type) | 1.7 litres per km | 1.4 litres per km |
| Total annual movements req'd | 2,666 | 1,333 |
| Total annual cost of task | $0.283m | $0.187m |
| Total annual emissions | 91 tonnes | 77 tonnes |
| **Annual financial saving** | | **$96,000 *per annum*** |
| **Annual road safety dividend** | | **458 less movements *per annum*** |
| **Annual emissions saving** | | **14 tonnes *per annum*** |

**Route Upgrade 5 Moranbah to Emerald:**

Sector 1:Moranbah to Clermont (87kms)




Sector 2: Clermont to Emerald saleyards (106 kms)




**Blue Line greatly improves productivity and reduces driver fatigue on a major cattle transport route**

## Requirement:

Upgrade access from Type 1 Road Train to Type 2 Road Train on this major cattle route to create freight efficiencies, reduce the fatigue and safety issues related to road train break ups, reduce the number of truck movements for the task and lower vehicle emissions associated with this task. At present, the Rockhampton abattoirs source a significant portion of their cattle from the regions north west of Mackay. This route also carries a significant amount of 'store' cattle, being transported to points further south for

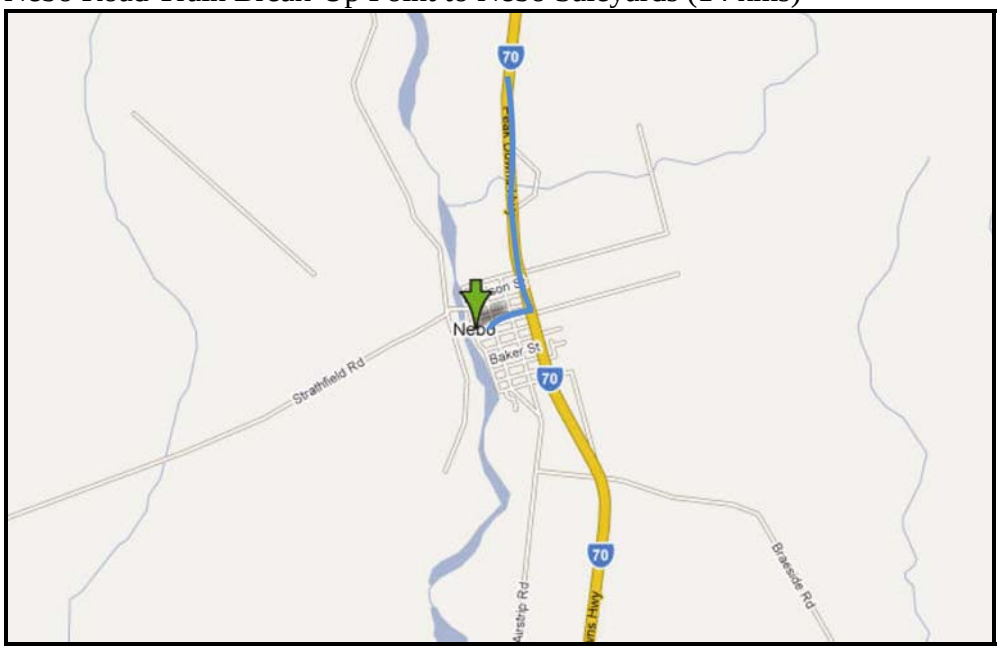
preparation in feedlots. Much of this work aggregates *via* the Peak Valley Highway and Gregory Development Road, heading south-east *via* Moranbah, Clermont and Emerald.

The Moranbah to Emerald sections are already intermittently rated for Type 2 road train use (ie for carriers of drought affected stock), but for the majority of work this freight task is forced on to a less efficient vehicle combination – the type 1 road train  The effects of the proposed upgrade are displayed in the following table:

| | **Task (now)** | **Task (preferred)** |
|---|---|---|
| Total annual cattle delivered | 250,000 head | 250,000 head |
| Vehicle used | Type 1 road train | Type 2 road train |
| Cattle capacity per vehicle | 90 head | 135 head |
| Freight rate per km (indicative) | $7.00 | $8.00 |
| Total kms per trip | 193 kms | 193 kms |
| Total kms annual task | 535,961 kms | 357,436 kms |
| Fuel efficiency (vehicle type) | 1.4 litres per km | 1.2 litres per km |
| Total annual movements req'd | 2,777 | 1,852 |
| Total annual cost of task | $3.752m | $2.859m |
| Total annual emissions | 1,110 tonnes | 863 tonnes |
| **Annual financial saving** | | **$893,000 *per annum*** |
| **Annual road safety dividend** | | **925 less movements *per annum*** |
| **Annual emissions saving** | | **247 tonnes *per annum*** |

**Route Upgrade 6:**

Nebo Road Train Break-Up Point to Nebo Saleyards (14 kms)




**Blue line reveals a classic 'last mile' problem: less safety and significant extra work and delay.**

**Requirement:**

Upgrade access from Type 1 Road Train to Type 2 Road Train on this route. At present, the Rockhampton meat and livestock sector relies on the Nebo saleyards as key infrastructure for the northern product source region. Unfortunately, current regulations mean that efficient, type 2 road train access ends 14 kms short of the saleyards – meaning that trailer combinations must be laboriously broken up into Type 1 combinations and then driven the final 14 kms to the sales, causing significant delays, fatigue and safety risks. This bottleneck places far more truck movements annually on this stretch of road. *The most important dividend here is driver safety and fatigue. Each round trip process to hook and unhook extra trailers costs 2 additional working hours.*

| | **Task (now)** | **Task (preferred)** |
|---|---|---|
| Total annual cattle delivered | 32,000 head | 32,000 head |
| Vehicle used | Type 1 road train | Type 2 road train |
| Cattle capacity per vehicle | 90 head | 135 head |
| Freight rate per km (indicative) | $7.00 | $8.00 |
| Total kms per trip | 14 kms | 14 kms |
| Total kms annual task | 4,970 kms | 3,318 kms |
| Fuel efficiency (vehicle type) | 1.4 litres per km | 1.2 litres per km |
| Total annual movements req'd | 355 | 237 |
| Total annual cost of task | $34,844.00 | $26,548.00 |
| Total annual emissions | 10 tonnes | 8 tonnes |
| **Annual financial saving** | | **$8,296.00 *per annum*** |
| **Annual road safety dividend** | | **118 less movements *per annum*** |
| **Annual emissions saving** | | **2 tonnes *per annum*** |
| **Annual driver fatigue saving** | | **474 hours per year** |


Moving with the times - how smart infrastructure investment and regulatory reform can overcome *emerging* freight inefficiencies

Smart infrastructure solutions and regulatory reforms to cope with potential modal shifts in the Queensland livestock transport industry

**Attachment B to the ALTA's *Infrastructure Australia* Submission**

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**Background – South-east Queensland meat industry**
Currently a significant portion of the cattle processed in south eastern Queensland transit from south and central western Queensland through Roma, either directly or *via* consignment in the Roma saleyards –Australia's largest cattle selling centre. Reliable estimates suggest that approximately 300,000 head of cattle enter Roma saleyards from this region annually. A further approximately 100,000 are transported from this region to *via* Roma by rail; finally, a further 100,000 head above this are consigned by road from this region directly to eastern processing plants (ie not consigned through saleyards).

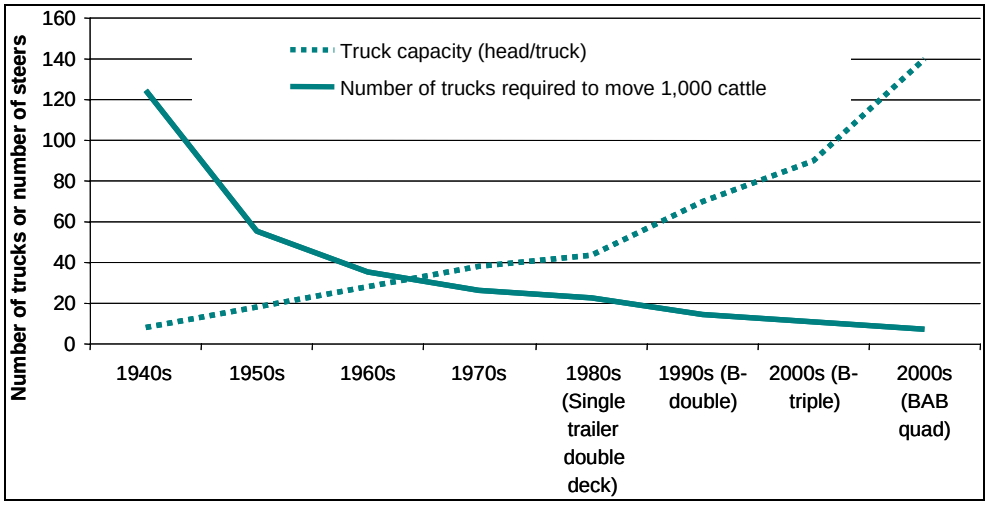
This total figure of 500,000 head of cattle per year makes the work from west/south/west Queensland probably the most intensive cattle transport task in Australia. As such, even marginal transport efficiency gains will reap large productivity, safety and emissions benefits – as the tables below reveal.

**Where do the cattle go?**
South-eastern Queensland is a major meat processing centre for Australia. In addition to being a major processor for domestic meat and meat product sales, in 2007 the port of Brisbane accounted for 37% of all meat and meat products exported from Australia (source: *Meat and Livestock Australia Statistical Review 2007*). For this reason, efficient freight networks are vital to the ongoing success of this sector.

**The changing roles of road and rail in livestock transport**
To date, a minority of the livestock transport task for this region has remained on rail - the only part of the Australian livestock transport industry to do so.

The rail transport of livestock has fallen dramatically from the 1940s onwards through to the present day. Parts of Queensland are the only place where rail remains as a transport option for livestock in Australia. This modal shift has occurred – and continues to occur - due to a combination of increasingly better road networks, but perhaps the largest influence has been the increasing efficiency of road freight vehicles over this time, as the table below reveals:

**Efficiency gains in livestock transport design—1940s to present**




Source: ALTA calculations.

In addition, the rail industry has in recent years increased its commitment to servicing growing mining resource interests across Queensland and this in turn has impacted on the resource and infrastructure levels available to livestock transport.

**NB** It is important to recognize that this study does not intend to make predictions or recommendations about matters that are appropriately commercial decisions for the rail service operators involved. The case study merely uses this example to highlight the contention that modal shifts that might otherwise threaten industry productivity can be managed successfully if suitable infrastructure planning and investment and regulatory reform are considered *in advance* of any major modal shift decision.

**Anticipating Modal Shift: Increasing Road Freight Capacity in Western Qld**

It is worth considering how the over 1/3$^{rd}$ of Australian meat exports is to be processed in south east Queensland if the rail supply of livestock further diminishes through the impact of commercial rail operator decisions. This scenario represents an opportunity for smart infrastructure planning to look more broadly at other modal efficiency gains to anticipate and 'cover' any loss in existing services, thereby helping the meat industry that relies on efficient livestock transport to remain price-competitive in overseas markets. Road freight presents opportunities to adapt to meet further reductions in rail freight services, but only if productivity enhancing regulatory reforms and infrastructure investment decisions are made.

**Converting from rail to road in livestock transport**

To date, rail has performed a role in bringing part of the industry's livestock requirement from south west Queensland (Quilpie railhead) through to Roma, Toowoomba and ultimately to processing plants in the Brisbane region. These weekly rail transports total around 100,000 head of cattle a year. By examining the parallel road freight task for livestock, opportunities emerge to create efficiencies in road freight across this same network. Specific opportunities revolve around two key road freight arteries from western Queensland into the processing centres in the south east. These are revealed in the following two studies. An aggregate table of dividends follows each case study.

**1. Upgrade of Mitchell to Roma saleyards road from Type-1 road train to Type-2 road train access (90kms): allow stock from west to arrive by road more efficiently**


**Blue line reveals upgrade access to take 741 movements a year off the network for the same task and reduce driver working time by nearly 9,000 hours per year.**

**Sub-total A: Cattle Mitchell to Roma *via* Blackall - road freight task – alternatives**

| | Task (now) | Task (preferred) |
|---|---|---|
| Total annual cattle delivered | 200,000 | 200,000 head |
| Vehicle used | Type 1 road train | Type 2 road train |
| Cattle capacity per vehicle | 90 head | 135 head |
| Freight rate per km (indicative) | $7.00 | $8.00 |
| Total kms per trip | 90 kms | 90 kms |
| Total kms annual task | 199,980 kms | 133,290 kms |
| Fuel efficiency (vehicle type) | 1.4 litres per km | 1.2 litres per km |
| Total annual movements req'd | 2,222 | 1,481 |
| Total annual cost of task | $1.399m | $1.066m |
| Total annual emissions | 414 tonnes | 322 tonnes |
| **Annual financial saving** | | **$0.333m *per annum*** |
| **Annual road safety dividend** | | **741 less movements *per annum*** |
| **Annual emissions saving** | | **92 tonnes *per annum*** |
| **Annual fatigue saving*** | | **8,888 hours per year** |

*Breaking up trailers at Mitchell involves a further 4 working hours per trip for each driver

**2. Upgrade Charleville to Morven highway from Type-1 road train to type-2 road train (89kms) removing the current 85 km detour for Type-2 road trains, allowing the most efficient vehicles to absorb the rail network task from Quilpie to Roma.**


**West of Charleville to Roma – opening road freight capacity to anticipate industry change: blue line reveals the efficient route to Roma when coming from Charleville (currently efficient vehicles from Charleville must detour north via Augathella). Access for type 2 road trains is extended from Mitchell through to the Roma saleyards, avoiding trailer break ups. Opening this route allows south east Queensland's meat industry to manage a potential exit of rail freight.**

**Sub total B: Mitchell to Roma *via* Charleville - road freight task – alternatives**

| | Task (now) | Task (preferred) |
|---|---|---|
| Total annual cattle delivered | 300,000 | 300,000 head |
| Vehicle used | Type 1 road train | Type 2 road train |
| Cattle capacity per vehicle | 90 head | 135 head |
| Freight rate per km (indicative) | $7.00 | $8.00 |
| Total kms per trip | 180 kms | 90 kms |
| Total kms annual task | 599,940 kms | 199,980 kms |
| Fuel efficiency (vehicle type) | 1.4 litres per km | 1.2 litres per km |
| Total annual movements req'd | 3,333 | 2,222 |
| Total annual cost of task | $4.199m | $1.599m |
| Total annual emissions | 1,243 tonnes | 483 tonnes |
| **Annual financial saving** | | **$2.600m *per annum*** |
| **Annual road safety dividend** | | **1,111 less movements *per annum*** |
| **Annual emissions saving** | | **760 tonnes *per annum*** |
| **Annual fatigue saving*** | | **13,312 hours per year** |

*Breaking up trailers at Mitchell involves a further 4 working hours per trip for the driver

**Summary: Livestock road freight efficiency gains from both reforms**

| | Task (now) | Task (preferred outcome) |
|---|---|---|
| Total annual cattle delivered | 500,000 head | 500,000 head |
| Total annual cost of task | $5.598m | $2.665m |
| Total annual movements req'd | 5,555 trucks | 3,703trucks |
| Total annual emissions | 1,657 tonnes | 805 tonnes |
| **Annual financial saving** | | **$2.933m *per annum*** |
| **Annual road safety dividend** | | **1,852 less truck mv'ts *per annum*** |
| **Annual emissions saving** | | **852 tonnes *per annum*** |
| **Annual fatigue saving*** | | **22,200 hours per year** |

**Summary**

- Industry's awareness of latent efficiencies and spare capacity in the existing freight network and the relationship of these things to technological innovation should not be underestimated.

- Modal shift trends should be acknowledged early in the infrastructure planning process. Where alternative freight modes exist, early engagement can lead to valuable solutions being presented.

- Notwithstanding the potential for additional funds being available to address such opportunities in future (through the *Building Australia Fund* or elsewhere), success rates will be low for initiatives like the one above if clear infrastructure investment and regulatory reform principles are not also agreed *via* the Australian Transport Council; it is vital that road agencies at State and Federal level embrace an empirical approach to assessing the dividends of infrastructure investment and regulatory reforms.


Non-complementary road freight regulations and the damage they cause to economic and road safety outcomes

Livestock transport regulatory restrictions in New South Wales

**Attachment C to the ALTA's *Infrastructure Australia* Submission**

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**Background**
For around 20 years livestock transport heavy vehicles in every state in Australia except NSW have been subject to a loading regulation which, for animal welfare reasons, allows livestock trucks to be loaded slightly more heavily than other heavy vehicles, as this creates more humane 'penning densities' which allow the livestock to travel in better condition. In return for this concession and to avoid adverse overloading outcomes on roads, livestock transport trailers are in turn regulated to remain shorter than all other trailers in the heavy vehicle sector.

For over 20 years New South Wales refused to adopt this regulation, citing many old bridges across the road network as barriers to progress. In reality, the value created by the regulatory reform would have generated the wealth to pay for these bridges to be strengthened.

**Calculating the true cost of bad regulations**
In 2006, the ALTA carried out a case study of the effect of New South Wales Government's regulatory decision by examining the 'bottom-line' effects on Fletcher International Pty Ltd, Australia's largest sheep meat processor, based in Dubbo NSW and directly employing almost 1,000 people. When the annual livestock freight task for this plant was calculated, the cost of the NSW Government's decision to reject this livestock transport regulation became apparent:

- A 14% loss of productivity for every livestock truck in NSW on every journey, compared to their equivalent livestock transport trucks in all other states;
- An extra annual cost of $400,000 to the Dubbo processor in higher transport bills;
- 844 more trucks on the roads to complete this processor's livestock freight task;
- A 1% increase in the ex-works cost of products from this plant, which in turn translates to a 12% reduction in net exports from the plant (*derived through standard Econtech modelling – source data available on request).*

In 2007, in the face of this and other case studies completed by the ALTA and its state member associations, the Minister for Roads in NSW agreed in principle to the introduction of livestock loading regulations, subject to a pilot program to identify specific infrastructure barriers on the networks that livestock carriers use to transit between saleyards, feedlots and processing facilities. Much progress is being made in identifying these infrastructure barriers and fixing them (see below).

This issue highlights the danger of dismissing the real impact of bad regulations on industry and the community. As discussed in the body of the ALTA submission, it is vital that changes occur to decision-making structures to force Governments to take these aspects of regulations into account when pursuing regulatory reform and infrastructure investments.

**Making real progress – a *partnered* approach between industry and Government**
To its credit, the NSW Government has recognized the damage that this existing regulatory stance has caused to the State's meat and livestock industry. As a result, the ALTA's NSW membership and the NSW Road Traffic Authority have begun to work together to identify what specific infrastructure bottlenecks remain as obstacles to removing this regulation to allow NSW livestock transport loads to come into line with loading regulations in all other States.

The approach is a good example of making the effort to address multiple small infrastructure bottlenecks across a rural industry freight network. It is an approach that is worth replicating across a range of rural and regional freight networks where local industries are faced with less than efficient infrastructure and freight regulations.

The following reports are examples of the systematic approach that the NSW government is now taking across all of the major fixed infrastructure in the State's meat and livestock industry to assess where the regulations are causing the greatest damage. This approach allows clear, monetized cost benefit analysis to be derived for the upgrades to each site, allowing rational decisions to be made about infrastructure investment and regulatory reform in a way that is in turn lends itself to community scrutiny and assessment.

**NB: The following document is a NSW Road Traffic Authority publication.**

# Meat Centre Summary – Higher Mass Limit (HML) Assessment Status and Known Bottlenecks

This document contains tables detailing relevant information for each of the top 20 saleyards and feedlots, and their top destinations. This information may be used to plan HML route assessment and upgrades, and provides an overview of the factors effecting HML access for each centre.It is not necessarily a complete list of all problematic issues as there are many assessments yet to be undertaken which could reveal additional structural problems. Further, new assessments for HML suitability are happening continuously which may deliver more HML routes, or reveal more sections that are unsuitable. Information below is current as at March 2008.

| **DUBBO SALEYARD**<br>Boothenba Road, Dubbo 2830 | | |
|---|---|---|
| RANK #1 Saleyard | Throughput = 230,000 head | HML Assessment Status: **YEL** |
| **Known Structural Issues - Local** | •Railway bridge 4148 (work underway, completion date uncertain, possibly end of June 08) on the Mitchell Hwy in Dubbo is unsuitable for HML however there is a by-pass route on the Golden Hwy (Dunedoo Rd) and Wheeler's Lane | |
| **Known Structural Issues – Regional (effecting connections)** | •Bridge 3509 Oxley Hwy from Henry St to Anzac Pde in Gunnedah (~100 m) however there is a by-pass route to be assessed.<br>•Bridge 4114 on the Mitchell Hwy near Molong effects travel southeast, but is expected to be completed by June 09.<br>•Bridges 2948 , 2949 3655 3656 , 3661, 3665 , 3670 ,<br>•Bridge 1904 on Oxley Hwy east of Pacific Hwy.<br>•Bridge 3487 on Oxley Hwy east of Pacific Hwy.<br>•Bridge 1575 Golden Hwy at Denham.<br>•Bridge 1588 Golden Hwy west of Singleton | |
| **Known Council Issues** | Dubbo City Council has approved 9 roads for HML to date. | |
| **Roads Requiring HML Assessment** | Boothenba Rd from Newell Hwy to Yarrandale Rd<br>Yarrandale Rd from Golden Hwy to Boothenba Rd<br>Purvis Lane from Newell Hwy to Yarrandale Rd<br>Wheelers Lane from Golden Hwy to Mitchell Hwy | |
| **Alternative Routes** | *Gunnedah*: From Kamilaroi Hwy to Oxley Hwy via Boundary Rd, Bloomsfield St, Warrabungle St, New St<br>*Heavy Vehicle bridge By-pass:* Golden Hwy (Dunedoo Rd) to Wheelers Lane to Mitchell Hwy | |

| **Top Destinations and their HML Assessment Status** | | | |
|---|---|---|---|
| Myola Feedlot **RED** | Killara Feedlot **YEL** | Caroona Feedlot **YEL** | Inverell Abattoir **YEL** |
| Queensland **GRE** | Scone Abattoir **YEL** | Wagga Feedlot **YEL** | Victoria **GRE** |
| Wingham Abattoir **RED** | | | |

| YANCO FEEDLOT<br>Rockdale Beef, 205 Narrandera Rd, Yanco 2703 | | |
|---|---|---|
| RANK #1 Feedlot | Capacity = 53,333 head | HML Assessment Status: **N/A** |
| **Known Structural Issues - Local** | •Two sections of Irrigation Way are denied HML access (do not have bridge information at this time). One section from Newell to Aerodrome, and from Bartholomew Rd to Burley Griffin Way. | |
| **Known Structural Issues – Regional (effecting connections)** | None significant as not a top destination or origin. | |
| **Known Council Issues** | Narandera Shire Council has had 8 HML requests in total - 3 approved and 5 pending. | |
| **Roads Requiring HML Assessment** | Narrandera Barellan Rd from Newell Hwy to number 205 | |
| **Top Destinations and their HML Assessment Status:** None | | |

| TAMWORTH ABATTOIR<br>Phoenix St, Tamworth 2340 | | |
|---|---|---|
| RANK #2 Abattoir | Estimated Avg Kills/day = 850 | HML Assessment Status: **YEL** |
| **Known Structural Issues - Local** | •Bridge works on the N.Eng Hwy are expected to be completed by end 2009. | |
| **Known Structural Issues – Regional (effecting connections)** | •Bridges 2948, 2949, 3655, 3656, 3661, 3665, 3670,<br>•Bridges 2759 2767 Gwydir Hwy west to Newell.<br>•Bridge 1904 on Oxley Hwy east of Pacific Hwy.<br>•Bridge 3487 on Oxley Hwy east of Pacific Hwy.<br>•The Pacific Hwy may be made available for HML progressively as bridges are upgraded and dual carriageways are constructed. | |
| **Known Council Issues** | Tamworth Regional Council (or Tamworth City Council) is outside the current HML zone, therefore they have not yet been approached about road assessments for HML. | |
| **Policy Issues** | At present, HML is not permitted in this area. | |
| **Roads Requiring HML Assessment** | Peel St from Darling St to Jewry St<br>Jewry St from Peel St to Dempier St<br>Dempier St from Jewry St to Wallamore Rd<br>Phoenix St - all | |