# THE FINANCIAL IMPACT ON GOVERNMENT OF A TRANSFER OF FREIGHT FROM RAIL TO ROAD

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**ABSTRACT**

The paper is based on a study of the financial impact on the South Australian Government of a transfer of freight from rail to road. The financial impact on the Commonwealth Government is also assessed.

Three case studies are undertaken. The results show that a shift from rail to road will not have significant adverse financial impact on the State. In all the cases studied, the Commonwealth Government is financially advantaged.

The results also indicate, for all the case studies, that when account is taken of all taxes and charges, the revenue to governments exceed their costs.

The methodology used in the study has possible applications for similar studies interstate and overseas.

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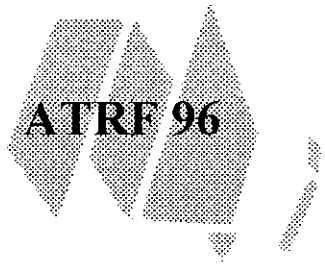


# THE FINANCIAL IMPACT ON GOVERNMENT OF A TRANSFER OF FREIGHT FROM RAIL TO ROAD

## 1. INTRODUCTION.

This paper is based on a study undertaken by the South Australian Transport Policy Unit (Transport Policy Unit, 1995). The purpose of the study was to make an assessment of the financial impact on the South Australian Government of a transfer of freight from rail to road. The methodology used may also have application in the analysis of the financial impact on government of the withdrawal of rail services in other States and possibly overseas.

Three Case Studies of rail to road transfers were examined:

Case Study 1: Grain traffic from the Murray Mallee.
Case Study 2: Freight from the South East.
Case Study 3: Containers between Melbourne and Perth.

The impact on the State Government's finances was the key issue. However, results were provided of the impact on the Commonwealth Government.

## 2. BASE DATA.

A map showing the location of the three case studies is given in Appendix 1.

### Case Studies

### Case Study 1: Carting Grain from the Murray Mallee to Port Adelaide

Because of the large area covered by the Murray Mallee region, Lameroo was selected as a particular case study for the region. Lameroo is on the Tailem Bend to Pinnaroo rail line. In an effort to model the impact of closure of the entire line as opposed to the isolated impact on a particular centre, it was assumed that the entire Pinnaroo line tonnage is carted from Lameroo. It was assumed that no back loading takes place as grain is the only rail traffic. Because grain is a seasonal commodity, it was further assumed that the task needs to be completed within a 5 month period.

### Case Study 2: Transporting Freight Between Mount Gambier and Adelaide

Mount Gambier was selected as the focal point for freight cartage from the South East to Adelaide. Case Study 2 assessed the transport of freight between Mount Gambier and Adelaide (again, Port Adelaide was chosen as a convenient focal point). From the State Government's perspective, the impact on the State's finances would be worst if the freight is carried by truck from Mount Gambier to Wolseley or Bordertown and then transferred to rail (examined as Case Study 2A). This is because all of the truck movements will be on State roads and none on Commonwealth funded roads. The State

therefore incurs all of the road costs without benefiting from revenues otherwise obtained from trucks using Commonwealth funded roads.

**Case Study 3: Transporting Containers between Melbourne and Perth**

This case study involved assessing the financial costs to the South Australian Government associated with the road cartage of containers currently transported on the Melbourne to Perth rail line. Only the portion between Adelaide and the Western Australian and Victorian borders was considered. Table 1 provides estimates of rail freight traffic in the corridor

**TABLE 1**
**CASE STUDY 3: RAIL FREIGHT TRAFFIC**
**Melbourne/Adelaide/Perth Corridor**

| | Adelaide to Melbourne Tonnes ('000) | Melbourne to Adelaide Tonnes ('000) | Melbourne to Perth Tonnes ('000) | Perth to Melbourne Tonnes ('000) |
|---|---|---|---|---|
| Freight forwarder containers | 165 | 194 | 174 | 74 |
| Overseas containers | 314 | 192 | 15 | 0 |
| Total | 479 | 386 | 189 | 74 |

Source: Australian National Railways Commission.

## 3. ROAD TRANSPORT.

For the purposes of the Case Studies, it was assumed that the relevant road transport vehicle types and specifications are as provided in Table 2.

Average road speed was estimated for each case study which, together with distance and tonnage to be transported, determines the number of vehicles required.

On the basis of the 1991 Survey of Motor Vehicle Usage (SMVU), 6 axle articulated vehicles and higher combination vehicles travel on average 104,200 kilometres and 145,300 kilometres per year respectively. Because of the intensive nature of the task, for the purposes of the study annual distances of 250,000 kilometres were assumed for six axle articulated trucks and B-doubles, with 200,000 kilometres assumed for double trailer road trains. The assumed annual distance impacts on the size of the derived average fixed charges (c/km) - the higher the assumed distance the lower the implied charge per kilometre

It was assumed that a truck transporting the freight displaced from rail in one direction also transports the back haul, if there is any. That is, overall an excess of trucks does

not emerge as a result of the transfer from rail to road. As a result, revenues and costs are based on the exact number of road vehicles required to perform the task, as if one freight operator had the ability to organise the entire operation.

**TABLE 2**
**HEAVY VEHICLE DETAILS**

| Vehicle Type | Market Value[1] ($) | Gross Tonnage (tonnes) | Payload (tonnes) | Average Distance Travelled (km pa)[2] | Fuel Consumption (litres/100km)[3] |
|---|---|---|---|---|---|
| 6 axle articulated truck | $257,500 | 42.5 | 27.1 | 250,000 | 40 to 55 |
| B-double | $276,500 | 59.0 | 38.3 | 250,000 | 44 to 62 |
| Double trailer road train | $348,800 | 79.0 | 52.4 | 200,000 | 60 to 75 |

Notes:
(1): Based on the value of a grain truck for 6 axle artic and road train, and a flat top for B-double. Estimate provided from Austway Truck Costing Model.
(2): Industry sources and ISC (1990, Vol 2 , p123)
(3): Source: ATN magazine (28 October 1994, p36) and industry sources

## 4. REVENUES.

Taxes and charges excluded from the study were:

- Superannuation Levy and Training Guarantee Levy.
- Drivers' Licence Fees.
- Compulsory Third Party Insurance.
- Company and Personal Income Taxes

It was assumed that these taxes and charges balance the costs incurred

### State Levies

The following State levies were included as road related revenues:

- Vehicle registration charges.
- Fuel franchise fee.
- Stamp duty.

### Vehicle Registration Charges

NRTC fixed annual registration charges for the selected vehicle types are provided in Table 3.

**TABLE 3**
**HEAVY VEHICLE REGISTRATION CHARGES**
(as of 1 July 1994)

| Vehicle Type | ($) |
|---|---|
| 6 axle articulated truck | $4,000 |
| B-double | $5,750 |
| Double trailer road train | $6,750 |

On the basis of estimates of distance travelled per year, registration charge estimates per kilometre travelled are provided in Table 4

**TABLE 4**
**REGISTRATION CHARGES**

| Vehicle Type | Registration Charge ($) | Selected Annual Distance (km) | Average Charge per kilometre (c/km) |
|---|---|---|---|
| 6 axle articulated truck | $4,000 | 250,000 | 1.6 |
| B-double | $5,750 | 250,000 | 2.3 |
| Double trailer road train | $6,750 | 200,000 | 3.0 |

**Fuel Franchise Fee**

State fuel franchise fees are provided in Table 5.

**TABLE 5**
**SA FUEL FRANCHISE LEVY RATES**
(as at 1 July 1994)

| Fuel | Zone 1 (cents/litre) | Zone 2 (cents/litre) | Zone 3 (cents/litre) |
|---|---|---|---|
| Petrol | | | |
| -Unleaded | 9.12 | 6.75 | 4.42 |
| -Leaded | 9.28 | 6.90 | 4.57 |
| Distillate | 10.41 | 8.09 | 5.71 |

Zone 1 encompasses an area within a radius of 50km from the Adelaide GPO, Zone 2 a radius of 100km from the Adelaide GPO excluding Zone 1 and Yorke Peninsula, and Zone 3 all parts of South Australia that lie outside Zones 1 and 2

As can be seen from Table 5, the franchise rate varies markedly between Zone 1 and Zone 3. On first consideration, because of the location of the Case Study areas, it could be thought that operators would choose to purchase fuel in Zone 3. Against this the pump price of fuel is generally much higher in country areas. Nevertheless, after discussions with operators, it is understood that the bulk of fuel purchases would be made in Zone 3

Using the fuel consumption rates provided in Table 2, the fuel franchise rates in Table 6 have been recast in terms of cents /kilometre for the relevant vehicle types, with the results provided in Table 6.

**TABLE 6**
**HEAVY VEHICLE STATE FUEL CHARGES**
(as of 1 July 1994)

| Vehicle Type | Zone 1 (c/km) | Zone 2 (c/km) | Zone 3 (c/km) |
|---|---|---|---|
| 6 axle articulated truck | 4.68 | 3.64 | 2.57 |
| B-double | 5.21 | 4.05 | 2.86 |
| Double trailer road train | 6.77 | 5.26 | 3.71 |

Notes: Fuel consumption rates of 45, 50 and 65 l/100km used for 6 axle articulated, B-double and road trains respectively. These compare with class averages of 50.9 and 65.4 for 6 axle articulated trucks and higher combination vehicles respectively (1991 SMVU). It was assumed that newer, fuel efficient vehicles would be used on the line haul operations associated with the Case Studies.

**Stamp Duty**

The South Australian stamp duty rate for commercial vehicles is $408 + 3% of market value in excess of $14,600. On the basis of the market values given in Table 2, stamp duty collections for each new 6 axle articulated vehicle, B-double and road train are $7,695, $8,265 and $10,434 respectively.

Assuming a five year average vehicle ownership, the stamp duty collections would be equivalent to 0.62 c/km, 0.66 c/km and 1.04 c/km for 6 axle articulated truck, B-double and double trailer road train respectively. In practice a vehicle may generate a number of stamp duty collections during its life as the vehicle changes ownership. Hence these estimates understate actual potential collections.

### Total State Revenues

Table 7 provides estimates of total State revenues for the selected vehicle type.

**TABLE 7**
**SA HEAVY VEHICLE COLLECTIONS (CENTS/KM)**
(as of 1 July 1994)

| Vehicle Type | Registration (c/km) | Fuel Franchise (c/km) | Stamp Duty (c/km) | Total (c/km) |
|---|---|---|---|---|
| 6 axle articulated truck | 1 6 | 2 57 | 0 62 | 4 79 |
| B-double | 2 3 | 2 86 | 0 66 | 5 82 |
| Double trailer road train | 3.0 | 3.71 | 1.04 | 7.75 |

### Commonwealth Levies

The following Commonwealth levies were included as road related revenues:

- Fuel excise.
- Sales tax and customs duty.

### Fuel Excise

The national uniform Commonwealth fuel excise was 30.75 cents/litre as at 1 July 1994. Table 8 derives the Commonwealth fuel excise for the relevant vehicle classes.

**TABLE 8**
**HEAVY VEHICLE COMMONWEALTH FUEL CHARGES**
(as of 1 July 1994)

| Vehicle Type | Current Commonwealth Excise (cents/litre) | Fuel Consumption (litres/100km) | Average Charge per kilometre (c/km) |
|---|---|---|---|
| 6 axle articulated truck | 30.75 | 45 | 13.84 |
| B-double | 30.75 | 50 | 15.38 |
| Double trailer road train | 30.75 | 65 | 19.99 |

Source: Commonwealth Budget Papers.

### Sales Tax & Customs Duty

In 1994 the Commonwealth Government levied sales tax on vehicles and parts at the rate of 20%. Table 9 shows the sales tax on the purchase of the selected vehicle types.

**TABLE 9**
**HEAVY VEHICLE COMMONWEALTH SALES TAX**
(as of 1 July 1994)

| Vehicle Type | Market Value ($) | Sales Tax ($) | Annual Distance (km) | Average Sales Tax per kilometre (c/km) |
|---|---|---|---|---|
| 6 axle articulated truck | $257,500 | $42,917 | 250,000 | 3.43 |
| B-double | $276,500 | $46,083 | 250,000 | 3.69 |
| Double trailer road train | $348,800 | $58,133 | 200,000 | 5.81 |

Note: Sales Tax levied at a rate of 20%.
Assumes sales tax amortised over 5 year vehicle life.

Because of the uniformity of Commonwealth taxes, the SCOT Taxes and Charges Working Group estimates for Customs Duty and Sales Tax were used. The rates that have been used are 5.39 c/km, 7.11 c/km and 7.02 c/km for 6 axle articulated trucks, B-doubles and double trailer road trains respectively.

### Total Commonwealth Revenues

Table 10 provides estimates of total Commonwealth revenues for the selected vehicle types.

### Revenue Beneficiaries

Revenues raised by State charges are retained within the State. However, in relation to Commonwealth levies on vehicles registered in South Australia (sales tax) or operating within South Australia (fuel excise), the disposition of revenues raised is not clear. As a result, for the purposes of the Case Studies, it was assumed that South Australian receipts from road transport are confined to that gained from the levying of State charges alone, although this may be a conservative estimate.

**TABLE 10**
**COMMONWEALTH HEAVY VEHICLE COLLECTIONS (CENTS/KM)**
(as of 1 July 1994)

| Vehicle Type | Fuel Excise (c/km) | Customs Duty & Sales Tax (c/km) | Total (c/km) |
|---|---|---|---|
| 6 axle articulated truck | 13.84 | 5.39 | 19.23 |
| B-double | 15.38 | 7.11 | 22.49 |
| Double trailer road train | 19.99 | 7.02 | 27.01 |

## 5. COSTS.

Costs considered for the purposes of the study were:

- Road track costs.
- Enforcement costs.
- Road safety costs

External costs such as congestion, air and noise pollution costs were not considered. Reliable estimates for such costs are still some way off and the analysis was to concentrate on the potential **financial** costs faced by the State.

### Road Track Costs

Road track costs relate to costs involved in constructing and maintaining the road infrastructure. Table 11 provides estimates of South Australian road track costs for a range of heavy vehicle types, derived from the NRTC cost allocation model. For the vehicle types relevant to this exercise, road track costs range from 11.9 c/km to 13.2 c/km

### Enforcement Costs

Enforcement costs are incurred in regulating the operations of road transport for both safety and asset preservation purposes (for example, overweight enforcement). Travers Morgan (1990, p37) reports total policing costs of $34.758m. This figure indexed and divided by total kilometres travelled (all vehicles) results in policing costs of 0.35 c/km.

### Accident Costs

Travers Morgan (1990, p38) estimated road related medical costs for articulated vehicles at $122,000 per vehicle ($1987/88). These costs indexed and divided by relevant distance travelled produced a medical cost estimate for articulated vehicles of

0.04 c/km The South Australian Department of Transport also expends resources in this area, with expenditures of $23.240 million spent on road safety, equivalent to 0.16 c/km (all vehicle classes), resulting in a total accident cost estimate of 0.20 c/km.

For the purposes of the study it was assumed that third party and comprehensive insurance costs are covered by the relevant premiums.

**TABLE 11**
**HEAVY VEHICLE ROAD TRACK COSTS**
**SOUTH AUSTRALIAN REGISTERED VEHICLES 1992/93**

| Vehicle Type | Separable Expenditure (c/km) | Non-separable Expenditure (c/km) | Fully Allocated Expenditure (c/km) |
|---|---|---|---|
| 2 axle rigid trucks | | | |
| 4.5 to 7.0 tonnes | 0.9 | 2.1 | 2.9 |
| 7.0 to 12.0 tonnes | 1.8 | 2.1 | 3.8 |
| over 12 tonnes | 3.1 | 2.1 | 5.1 |
| 3 axle rigid trucks | | | |
| up to 18 tonnes | 1.8 | 2.1 | 3.9 |
| over 18 tonnes | 4.7 | 2.1 | 6.7 |
| 4 axle rigid trucks | | | |
| up to 25 tonnes | 2.1 | 2.1 | 4.2 |
| over 25 tonnes | 5.9 | 2.1 | 8.0 |
| 5 axle trucks (including truck and trailer) | 5.5 | 2.1 | 7.6 |
| Articulated trucks | | | |
| 3 axle | 5.6 | 2.1 | 7.7 |
| 4 axle | 6.3 | 2.1 | 8.4 |
| 5 axle | 7.6 | 2.1 | 9.6 |
| **6 axle** | 9.8 | 2.1 | **11.9** |
| **7 or more axles** | 11.1 | 2.1 | **13.2** |
| 2 axle buses | | | |
| 2.7 to 3.5 tonnes | 0.4 | 2.1 | 2.4 |
| 3.5 to 5.0 tonnes | 0.4 | 2.1 | 2.5 |
| 5.0 to 10.0 tonnes | 1.2 | 2.1 | 3.2 |
| over 10 tonnes | 3.5 | 2.1 | 5.6 |
| 3 axle buses | 5.0 | 2.1 | 7.1 |

Source: NRTC special request.

### Total Costs

Table 12 summarises the total road costs.

**TABLE 12**
**HEAVY VEHICLE COST (CENTS/KM)**
(as of 1 July 1994)

| Vehicle Type | Road Track (c/km) | Enforcement (c/km) | Accident (c/km) | Total (c/km) |
|---|---|---|---|---|
| 6 axle articulated truck | 11.9 | 0.35 | 0.20 | 12.45 |
| B-double | 13.2 | 0.35 | 0.20 | 13.75 |
| Double trailer road train | 13.2 | 0.35 | 0.20 | 13.75 |

## 6. REVENUES AND COSTS.

Revenues and costs from the preceding tables are summarised in Table 13.

**TABLE 13**
**HEAVY VEHICLE REVENUES AND COSTS (CENTS/KM)**

| Vehicle Type | State Revenue c/km | Commonwealth Revenue c/km | Total Revenue c/km | All Costs c/km |
|---|---|---|---|---|
| 6 axle articulated truck | 4.79 | 19.23 | 24.02 | 12.45 |
| B-double | 5.82 | 22.49 | 28.31 | 13.75 |
| Double trailer road train | 7.75 | 27.01 | 34.76 | 13.75 |

## 7. RESULTS.

The results are summarised in Appendices 2 to 6.

Due to the fiscal imbalance between levels of government (often referred to as Vertical Fiscal Imbalance) the State Government has the potential to incur a net financial cost as

a result of any transfer of freight from rail, in the order of 7 7 c/km over State funded roads for a six axle articulated truck. The cost is, however, offset by any travel over Commonwealth funded roads, in which case the State receives revenues without incurring costs.

From a State Government financial viewpoint, a key factor therefore is the proportion of any additional travel which takes place over State funded roads as opposed to roads funded by other levels of government. It is possible that for Case Studies where the greatest proportion of travel is over Commonwealth funded roads, the State Government may not be financially disadvantaged from a major shift from road to rail. However, in relation to the cartage of grain from the Mallee, where a significant portion of the road transport task is over State and Local Government roads, the State Government is likely to be financially disadvantaged; although even here a significant portion of the task takes place over Commonwealth funded roads.

It is important that the results only be used to interpret broad orders of magnitude, given the many assumptions made in deriving the figures. For example, the "profitable" result for double trailer road trains no doubt is heavily influence by the use of the same road cost estimates as that used for B-doubles.

In general, it appears that for the Case Studies selected a shift of freight from rail to road would **not** have a significant adverse financial impact on the State Government. The Commonwealth Government gains financially in all cases.

In addition, because of the extent to which truck charges and taxes overall exceed relevant costs (in the order of 12 c/km for a six axle articulated truck), there is no strong case for either increasing road transport charges or subsidising rail freight transport.

## 8. REFERENCES.

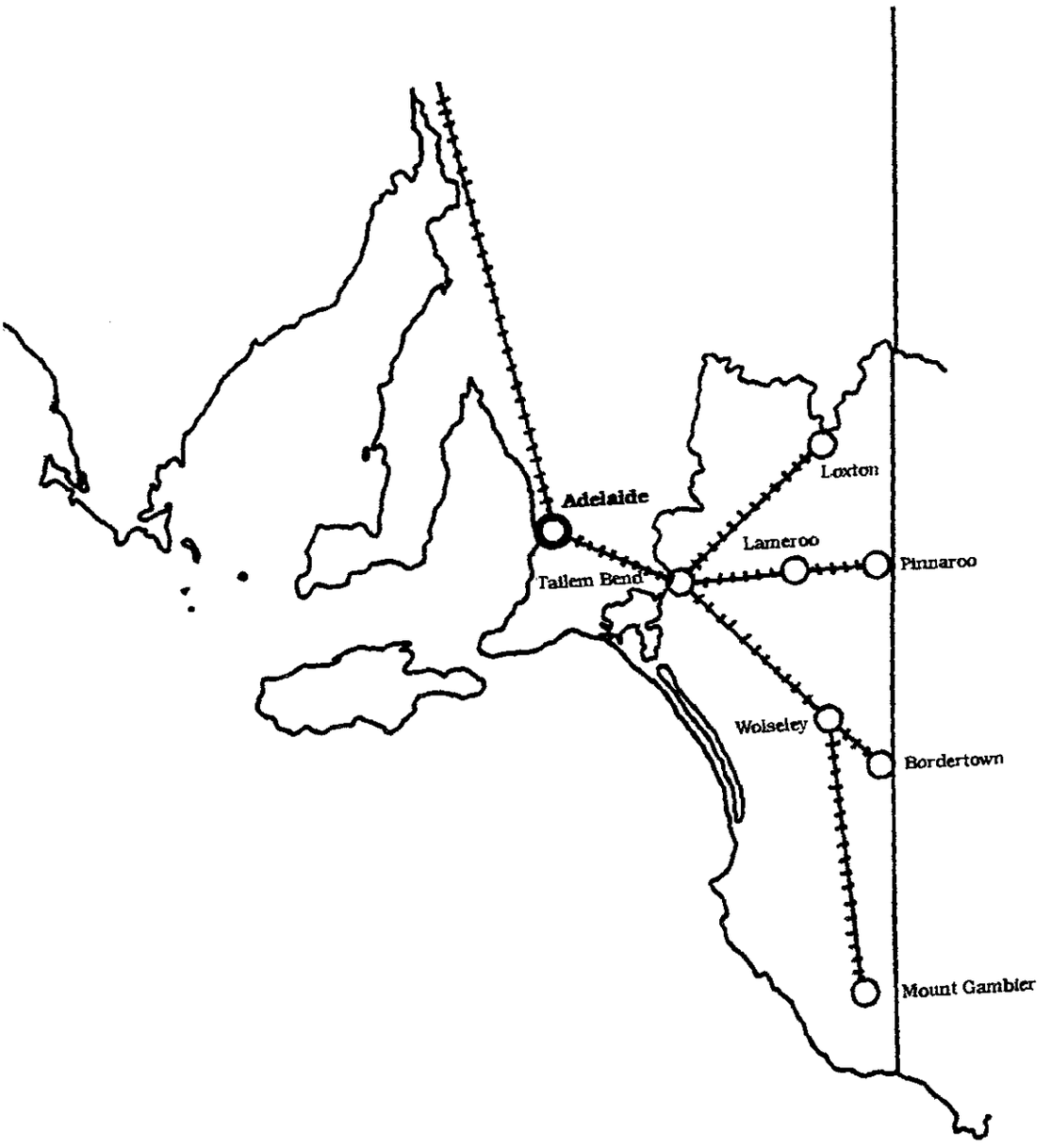
National Road Transport Commission (1993), Cost Allocation and Charging.

SCOT Working Group (1994), Study on Taxes and Charges Paid by the Road Transport Industry, yet to be released.

Transport Policy Unit (1995), Report on the Financial Impact on the South Australian Government of a Shift from Rail to Road Transport.

Travers Morgan (1990), Road Cost Recovery in South Australia, report prepared fro the South Australian Director-General of Transport.

**APPENDIX 1**


Adelaide
Loxton
Lameroo
Pinnaroo
Tailem Bend
Wolseley
Bordertown
Mount Gambier

**APPENDIX 2**
**Financial impact of a transfer of freight from rail to road**
**Case Study 1: Grain traffic from the Mallee**

**Data**

| | |
|---|---|
| Tonnage | 111,190 tonnes |
| Round trip distance | 446 km |
| Distance on State roads | 212 km |
| Distance on Commonwealth roads | 234 km |
| Average speed | 92 km/h |
| Hours/trip | 4.85 |
| Trips/day | 2 |
| Days worked/week | 6 |
| Special factors | Seasonal task to be completed in 5 months |

**Total distance travelled by trucks**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| Payload/truck (tonnes) | 27.1 | 38.3 | 52.4 |
| Number of truck movements | 4103 | 2903 | 2122 |
| Total travel distance (km) | 1,829,917 | 1,294,797 | 946,388 |
| State roads | 869,826 | 615,464 | 449,853 |
| Commonwealth roads | 960,091 | 679,333 | 496,535 |

**Truck movements**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| Distance/truck/day | 892 | 892 | 892 |
| Distance/season | 107,040 | 107,040 | 107,040 |
| Number of trucks | 17 | 12 | 9 |

**Financial impact**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| **State** | | | |
| Revenue ($) | 87,653 | 75,357 | 73,345 |
| Cost ($) | 108,293 | 84,626 | 61,855 |
| **Gain (loss)** | **(20,640)** | **(9,269)** | **11,490** |
| **Commonwealth** | | | |
| Revenue ($) | 351,893 | 291,200 | 255,619 |
| Cost ($) | 119,531 | 93,408 | 68,274 |
| **Gain (loss)** | **232,362** | **197,792** | **187,346** |
| **Net impact ($)** | **211,721** | **188,522** | **198,836** |

**APPENDIX 3**
**Financial impact of a transfer of freight from rail to road**
**Case Study 2: Mount Gambier to Adelaide**

**Data**

| | |
|---|---|
| Tonnage | 63,000 tonnes |
| Round trip distance | 910 km |
| Distance on State roads | 432 km |
| Distance on Commonwealth roads | 478 km |
| Average speed | 96 km/h |
| Hours/trip | 9 48 |
| Trips/day | 1 |
| Days worked/week | 6 |
| Special factors | Work 42 weeks/year |

**Total distance travelled by trucks**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| Payload/truck (tonnes) | 27.1 | 38 3 | 52 4 |
| Number of truck movements | 2325 | 1645 | 1202 |
| Total travel distance (km) | 2,115,498 | 1,496,867 | 1,094,084 |
| State roads | 1,004,280 | 710,601 | 519,389 |
| Commonwealth roads | 1,111,218 | 782,266 | 574,695 |

**Truck movements**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| Distance/truck/day | 910 | 910 | 910 |
| Distance/season | 229,320 | 229,320 | 229,320 |
| Number of trucks | 9 | 7 | 5 |

**Financial impact**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| **State** | | | |
| Revenue ($) | 101,332 | 87,118 | 84,792 |
| Cost ($) | 125,033 | 97,708 | 71,416 |
| **Gain (loss)** | **(23,701)** | **(10,590)** | **13,375** |
| **Commonwealth** | | | |
| Revenue ($) | 406,810 | 336,645 | 295,512 |
| Cost ($) | 138,347 | 108,112 | 79,021 |
| **Gain (loss)** | **268,464** | **228,534** | **216,492** |
| **Net impact ($)** | **244,763** | **217,944** | **229,867** |

**APPENDIX 4**
**Financial impact of a transfer of freight from rail to road**
**Case Study 2A: Mount Gambier to Bordertown**

**Data**

| | |
|---|---|
| Tonnage | 63,000 tonnes |
| Round trip distance | 372 km |
| Distance on State roads | 372 km |
| Distance on Commonwealth roads | 0 km |
| Average speed | 96 km/h |
| Hours/trip | 3.88 |
| Trips/day | 2 |
| Days worked/week | 6 |
| Special factors | Work 42 weeks per year |

**Total distance travelled by trucks**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| Payload/truck (tonnes) | 27.1 | 38.3 | 52.4 |
| Number of truck movements | 2325 | 1645 | 1202 |
| Total travel distance (km) | 864,797 | 611,906 | 447,252 |
| State roads | 864,797 | 611,906 | 447,252 |
| Commonwealth roads | 0 | 0 | 0 |

**Truck movements**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| Distance/truck/day | 744 | 744 | 744 |
| Distance/season | 187,488 | 187,488 | 187,488 |
| Number of trucks | 5 | 3 | 2 |

**Financial impact**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| **State** | | | |
| Revenue ($) | 41,424 | 35,613 | 34,662 |
| Cost ($) | 107,667 | 84,137 | 61,497 |
| **Gain (loss)** | **(66,243)** | **(48,524)** | **(26,835)** |
| **Commonwealth** | | | |
| Revenue ($) | 166,300 | 137,618 | 120,803 |
| Cost ($) | 0 | 0 | 0 |
| **Gain (loss)** | **166,300** | **137,618** | **120,803** |
| **Net impact ($)** | **100,057** | **89,094** | **93,968** |

**APPENDIX 5**
**Financial impact of a transfer of freight from rail to road**
**Case Study 3: Victorian border to Adelaide**

**Data**

| | |
|---|---|
| Tonnage | 575,000 tonnes |
| Round trip distance | 620 km |
| Distance on State roads | 12 km |
| Distance on Commonwealth roads | 608 km |
| Average speed | 95 km/h |
| Hours/trip | 6.53 |
| Trips/day | 2 |
| Days worked/week | 6 |
| Special factors | Work 48 weeks per year |

**Total distance travelled by trucks**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| Payload/truck (tonnes) | 27.1 | 38.3 | 52.4 |
| Number of truck movements | 21,218 | 15,013 | 10,973 |
| Total travel distance (km) | 13,154,982 | 9,308,094 | 6,803,435 |
| State roads | 254,613 | 180,157 | 131,679 |
| Commonwealth roads | 12,900,369 | 9,127,937 | 6,671,756 |

**Truck movements**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| Distance/truck/day | 1240 | 1240 | 1240 |
| Distance/season | 357,120 | 357,120 | 357,120 |
| Number of trucks | 53 | 37 | 34 |

**Financial impact**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| **State** | | | |
| Revenue ($) | 630,124 | 541,731 | 527,266 |
| Cost ($) | 31,699 | 24,772 | 18,106 |
| **Gain (loss)** | **598,424** | **516,960** | **509,160** |
| **Commonwealth** | | | |
| Revenue ($) | 2,529,703 | 2,093,390 | 1,837,608 |
| Cost ($) | 1,606,096 | 1,255,091 | 917,366 |
| **Gain (loss)** | **923,607** | **838,299** | **920,241** |
| **Net impact ($)** | **1,522,031** | **1,355,258** | **1,429,402** |

**APPENDIX 6**
**Financial impact of a transfer of freight from rail to road**
**Case Study 3: Adelaide to Western Australian border**

**Data**

| | |
|---|---|
| Tonnage | 189,000 tonnes |
| Round trip distance | 2470 km |
| Distance on State roads | 20 km |
| Distance on Commonwealth roads | 2450 km |
| Average speed | 100 km/h |
| Hours/trip | 24.70 |
| Trips/day | 0.5 |
| Days worked/week | 6 |
| Special factors | Work 48 weeks per year |

**Total distance travelled by trucks**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| Payload/truck (tonnes) | 27.1 | 38.3 | 52.4 |
| Number of truck movements | 6974 | 4935 | 3607 |
| Total travel distance (km) | 17,226,199 | 12,188,773 | 8,908,969 |
| State roads | 139,483 | 98,695 | 72,137 |
| Commonwealth roads | 17,086,716 | 12,090,078 | 8,836,832 |

**Truck movements**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| Distance/truck/day | 1235 | 1235 | 1235 |
| Distance/season | 355,680 | 355,680 | 355,680 |
| Number of trucks | 69 | 49 | 45 |

**Financial impact**

| | 6 axle | B-double | Road train |
|---|---|---|---|
| **State** | | | |
| Revenue ($) | 825,135 | 709,387 | 690,445 |
| Cost ($) | 17,366 | 13,570 | 9,919 |
| **Gain (loss)** | **807,769** | **695,816** | **680,526** |
| **Commonwealth** | | | |
| Revenue ($) | 3,312,598 | 2,741,255 | 2,406,313 |
| Cost ($) | 2,127,296 | 1,662,386 | 1,215,064 |
| **Gain (loss)** | **1,993,071** | **1,774,685** | **1,871,774** |
| **Net impact ($)** | **1,522,031** | **1,355,258** | **1,429,402** |