Australia’s Road Transport Experiences in Public Works Planning and Projects

International Workshop on Governance in the Transport Sector

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Chief Executive Officer
Transport Certification Australia
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Overview

- Australia / Brazil comparisons
- Australia’s federation
- Australia’s challenges
- Infrastructure Australia
- Public private partnerships (PPPs)
- Rehabilitation and maintenance
- Transport Certification Australia
Australia / Brazil Comparisons
Australia / Brazil comparison (1)

- Area

7.7 million km\(^2\)  8.5 million km\(^2\)
Australia / Brazil comparison (2)

- Population

22 million  193 million (est.)
Australia / Brazil comparison (3)

- Road network (km)

<table>
<thead>
<tr>
<th>Australia</th>
<th>Brazil</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.85 million km</td>
<td>1.75 million km</td>
</tr>
</tbody>
</table>
Australia / Brazil comparison (4)

- Sealed road network

<table>
<thead>
<tr>
<th></th>
<th>Australia</th>
<th>Brazil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>326,000 km</td>
<td>240,000 km (est.)</td>
</tr>
</tbody>
</table>
Australia / Brazil comparison (5)

- GDP by sector (2011 est.)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Australia</th>
<th>Brazil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>4%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Industry</td>
<td>25.6%</td>
<td>26.9%</td>
</tr>
<tr>
<td>Services</td>
<td>70.4%</td>
<td>67.3%</td>
</tr>
</tbody>
</table>

$917.7 billion*          $2,282 billion*

*2011 est.
Australia’s Federation
Australia’s federal system

• Australia has a federal system of government

• Legislative and executive powers are divided between the:
  - Australian government, and
  - six State and two Territory governments

• Local governments responsible for their roads
Taxes and Charges

• Australian government
  - petroleum products excise  ($9,686m)
  - Federal Interstate Registration Scheme  ($55m)

• State & Territory governments
  - vehicle registration  ($3,052m)
  - stamp duty - vehicle registration  ($2,026m)
  - driver license fees  ($305m)

• Other
  - Tolls  ($1,462m)
  - Goods and Services Tax (GST) - NA
  - Fringe Benefits Tax (FBT)  ($1,700m)

Source: BITRE Information Sheet 40 issued February 2011
National government based organisations

1959

Austroads

1960

1991

National Road Transport Commission

2005

Australian Government Infrastructure Australia

2008

Transport Certification Australia
Key institutional reforms

• The COAG Road Reform Plan (CRRP)
  – In April 2007 the Council of Australian Governments (COAG) set out a three-phase COAG Road Reform Plan (CRRP) to consider alternative models of heavy vehicle road pricing and funding.

• National Rail, Heavy Vehicle and Marine Regulators
  – Aims to achieve a common set of laws for rail, heavy vehicles and marine regulation for all Australian states and territories
Australia’s Challenges
Conflicting problems

• Australian road network is facing problems that are increasingly in conflict including:
  – a growing population, transport and freight task
  – constrained road budgets
  – increasing freight task
  – pressure from the road transport industry to permit operation of larger and heavier vehicles to meet freight task demand
  – community expectations about the safety of the road network
Australia’s infrastructure task

Source: Infrastructure Australia - *Financing Australia’s Infrastructure* (Nov 2011)
Australia’s infrastructure spend

5 Year Cumulative Allocation = $132 billion = $26.4 billion/year

Source: Infrastructure Australia - Financing Australia’s Infrastructure (Nov 2011)
The growing freight challenge

Australia’s total road freight is expected to grow from 191.5 billion tkm in 2008 to 342.0 billion tkm in 2030.
Growth in more productive Vehicles

• From 2006 to 2011, the number of registrations of Articulated trucks with a GCM over 20 to 40 tonnes has increased by 21.7%, while the number of Articulated trucks with GCM over 60 to 100 tonnes and greater than 100 tonnes has increased by 44.5% and 51.8% respectively.
A Doubles
Infrastructure Australia (1)

- Established by the *Infrastructure Australia Act 2008*
- Comprises twelve members (including the Chair)
- Membership reflects Australia’s federal system of government:
  - 9 members nominated by the Australian Government
  - 3 members nominated by State & Territory governments
  - 5 members must have private sector knowledge & experience
  - 1 member must have local government knowledge & experience
- Reports to the Council of Australian Governments (COAG) (through the Australian Government Transport Minister)
Infrastructure Australia (2)

- Provides advice to the Australian, State, Territory and local governments, investors in infrastructure and owners of infrastructure on matters relating to infrastructure, including advice in relation to:
  - Australia’s current and future needs and priorities relating to nationally significant infrastructure
  - Policy, pricing and regulatory issues that may impact on the utilisation of infrastructure
  - Impediments to the efficient utilisation of national infrastructure networks
  - Options and reforms, including regulatory reforms, to make the utilisation of national infrastructure networks more efficient
  - The needs of users of infrastructure
  - Mechanisms for financing investment in infrastructure
Infrastructure Australia (3)

- Aim of Infrastructure Australia is to shift decisions about infrastructure from traditional project-by-project and jurisdiction-by-jurisdiction approaches to a much broader and deeper focus on national objectives and priorities.

- Infrastructure Australia assesses and prioritises proposed projects for inclusion in the **National Infrastructure Pipeline** and possible budget considerations (as part of its annual report to the Council of Australian Governments (COAG)).
Investment Framework (1)

- Infrastructure Australia has issued *Guidelines for making submissions to Infrastructure Australia’s infrastructure planning process, through Infrastructure Australia's Reform and Investment Framework*

- Infrastructure Australia’s Reform and Investment Framework is a top-down approach to infrastructure decision-making with seven distinct stages

- Transparent Approach
The sequential stages are structured to ensure that decisions are taken in an objective and systematic way, thus leading to the adoption of the most effective and efficient policy solutions.

Stages in the Reform and Investment Framework are:
- Stage 1: Goal Definition
- Stage 2: Problem Identification
- Stage 3: Problem Assessment
- Stage 4: Problem Analysis
- Stage 5: Options Generation
- Stage 6: Options Assessment
- Stage 7: Solution Prioritisation
State/Territory Submissions

- States and Territories lodge submissions for proposed projects with Infrastructure Australia (eg. Victorian Government Submission to Infrastructure Australia)

- Transparent reporting
Public private partnerships
PPPs Status

- Sydney, Melbourne and Brisbane (free flow tolling – about 200 kms in urban area)
- Early PPPs mostly successful
- Scarce Government funds freed-up to deliver other high priority programs.
- A number of recent projects have resulted in a loss of equity and reduction in investor confidence.
- With GFC very difficult to get equity and debt from private sector to support large scale projects.
Characteristics of traditional PPP model (1)

• Proponents buying right to operate a business over long term on behalf of Government delivering a service to the public.
• Identification of risk and its transfer from public to private sector has developed over time with greater precision with an increase in risk allocation to the private sector.
• Risk allocation can result in conflict or a master servant relationship rather than partnership.

• The concession period and price escalation generally fixed at contract closure – ‘set and forget’ whereby arrangements are generally locked in for length of the concession period, unless renegotiated.
• Further improvements and upgrades over time to service provision outside contract are subject to negotiations between Government and proponent.

Source: Paul Forward and Rod Aldis (2009)
Characteristics of traditional PPP model (2)

- Projects can require considerable urban amenity and public good improvements often funded by the concessionaire and ultimately by the users.
- Projects have become more complex and bigger in scale.
- Bid costs have escalated and have cost up to $40M per bidder for large scale projects.

- Complexity and risk allocation associated with the delivery of PPPs in Australia are a barrier to entry for overseas firms attempting to enter the market.
- PPPs are essentially about service provision, yet proponents’ track record in service provision plays a minor role in the assessment of bids by Government.
- Many recent motorway tollway projects characterised by optimism bias in forecasting patronage levels resulted in loss of shareholders’ equity.

Source: Paul Forward and Rod Aldis (2009)
Rehabilitation and maintenance
## Rehabilitation and maintenance 2009/2010 (1)

<table>
<thead>
<tr>
<th>Pavement &amp; shoulder maintenance</th>
<th>Rural ($M)</th>
<th>Urban ($M)</th>
<th>Total ($M)</th>
<th>Local roads ($M)</th>
<th>Private toll roads ($M)</th>
<th>Total ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine maintenance</td>
<td>427.9</td>
<td>94.5</td>
<td>522.5</td>
<td>670.5</td>
<td>18.1</td>
<td>1211.1</td>
</tr>
<tr>
<td>Periodic maintenance</td>
<td>323.6</td>
<td>126.5</td>
<td>450.1</td>
<td>534.7</td>
<td>12.0</td>
<td>996.8</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>503.5</td>
<td>211.8</td>
<td>715.3</td>
<td>639.0</td>
<td>13.7</td>
<td>1368.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1889.8</td>
<td>1072.5</td>
<td>2962.3</td>
<td>2639.1</td>
<td>68.6</td>
<td>5670.0</td>
</tr>
</tbody>
</table>

Source: BIS Shrapnel - *Road Maintenance in Australia 2011-2026*
## Rehabilitation and maintenance 2009/2010 (2)

<table>
<thead>
<tr>
<th></th>
<th>Total Maintenance ($M)</th>
<th>Contract Maintenance ($M)</th>
<th>Contract (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>1454.2</td>
<td>288.1</td>
<td>20%</td>
</tr>
<tr>
<td>Victoria</td>
<td>1080.5</td>
<td>810.4</td>
<td>75%</td>
</tr>
<tr>
<td>Queensland</td>
<td>1887.7</td>
<td>250.7</td>
<td>13%</td>
</tr>
<tr>
<td>South Australia</td>
<td>280.8</td>
<td>98.2</td>
<td>35%</td>
</tr>
<tr>
<td>Western Australia</td>
<td>673.2</td>
<td>450.7</td>
<td>67%</td>
</tr>
<tr>
<td>Tasmania</td>
<td>137.6</td>
<td>85.1</td>
<td>62%</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>121.8</td>
<td>114.5</td>
<td>94%</td>
</tr>
<tr>
<td>Australian Capital Territory</td>
<td>34.2</td>
<td>28.8</td>
<td>84%</td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td><strong>5670.0</strong></td>
<td><strong>2126.2</strong></td>
<td><strong>38%</strong></td>
</tr>
</tbody>
</table>

Source: BIS Shrapnel - *Road Maintenance in Australia 2011-2026*
Rehabilitation and maintenance

• There is a multi-billion dollar annual lifecycle funding gap across the road network

Source: Michael Deegan, National Infrastructure Coordinator
Roads Australia AGM 3 November 2011

• Better understanding of asset management is needed
  - mandatory national reporting of road asset data
  - road condition analysis
  - depreciation cost tracking
  - uniform asset valuations
  - safe asset life estimates
  - prioritised preventative maintenance targets
Transport Certification Australia
Transport Certification Australia (TCA)

- TCA was established in 2005
- A fully government-owned organization (owned by Australian, State & Territory governments )
- TCA’s purpose is the provision of high quality:
  - Advice founded on a demonstrated capability to design and deploy operational systems as enablers for reform
  - Accreditation in the type-approval and certification of telematics and intelligent technologies and services that give confidence to all stakeholders for their consideration of use
  - Administration of programs, such as the Intelligent Access Program (IAP) underpinned by a rigorous certification and auditing program of in-vehicle and information systems
National Telematics Framework

• Provides a **Nationally Agreed** sustainable environment:
  – Policy and regulatory framework
  – Functional and technical platform
  – Operational environment
  – Commercial setting
The Intelligent Access Program (IAP) is a new approach to road management.

Uses the Global Navigational Satellite System (i.e. GPS) to monitor heavy vehicles’ compliance with access conditions (where, when, how much and how fast).

Gives transport operators flexible access to Australian roads to suit their business and operational needs.

Increases regulators’ confidence heavy vehicles are complying with agreed access conditions.
Regulatory settings and safeguards for access

• The IAP was developed in recognition of the variability of road infrastructure quality across Australia

• Public dollars aren’t available to fix all problems

• The need to manage risk is something road owners and transport operators have in common
Managing risk

• The effective use of technology provides a negotiating platform with transport operators

• There are opportunities to ‘squeeze’ more access from vulnerable infrastructure…..

……so long as road managers and transport operators work in partnership to manage risk

• There are strong examples of how reforms are being driven through the IAP
IAP

- Parameters (withstand the test of the court system)
  - Vehicle Identification
  - Vehicle position (spatial/route compliance)
  - Time (temporal compliance)
  - Vehicle speed (gross speed compliance)
  - Tamper evident
  - **Trailer Identification**
  - **Vehicle Configuration**
  - **Periodic and Dynamic Mass by Axle Group**

- Functions (supportive evidence/information)
  - Self-Declaration Function (eg. Comments)

- Extensible Model – add new parameters or functions as required
Example (1)

Allowed on main highway
- Single Steer – 6 tonnes
- Tandem Axle – 17 tonnes
- Quad Axle – 27 tonnes

Not allowed off highway
- Any axle group over nominated mass
Example (2)

Recorded mass
- Single Steer <6 tonnes
- Tandem Axle <17 tonnes
- Quad Axle > 27 tonnes

A non-compliance is recorded and reported to the Road Authority
Moving productivity & safety forward through the IAP

• 30 m B-doubles are used at the Port of Melbourne and Sydney
THANK YOU