Development of outcomes-based national road and rail performance measures

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July 2011

Overview

- Australian land transport policy context
- **Scope:**
  - outcomes-based, national, road and rail, performance measures
- Performance management
- Performance measure criteria
- Performance measure specifications
- Issues and conclusions

*You can’t manage what you can’t measure*
Australian National Transport Policy Context

- Transport Governance Structure
  - National (Commonwealth), State, Local Government
  - State and National road and rail transport agencies
  - Public and private ownership of infrastructure and operations
  - Different ownership, regulation, etc for road and rail

- Co-ordination
  - Meeting of Ministers
    - Standing Committee on Transport and Infrastructure (SCOTI) formerly Australian Transport Council (ATC)
  - National Transport Commission (NTC)
  - Intergovernmental relations (formal and informal)

National Transport Commission

- Role
  - Commonwealth and State Government
  - Independent recommendations to Governments

- Responsibilities
  - Road and rail
  - Regulatory and operational reform
Project Origins

➢ COAG
  ▪ The lack of consistent data “impedes the ability to optimise performance across modes and throughout the entire system”

➢ NTC Review
  ▪ The NTC review recommended changes to requiring governments to provide information
  ▪ *The overarching objective of the current IGA is to improve transport productivity, efficiency, safety and environmental performance, and regulatory efficiency in a uniform or nationally consistent manner. Therefore the NTC’s performance must ultimately be assessed in terms of its impact against these indicators.*

What and where to measure

Input
  ➡ Activity
  ➡ Output
  ➡ Utilisation
  ➡ Intermediate
  ➡ Outcome
“Performance Measurement”

- **Activity measures**
  - How much was done

- **Output indicators**
  - How much was produced or delivered

- **Outcomes**
  - "intended results, impacts or consequences of actions by the Government on the Australian community. Agencies deliver programs which are the Government actions taken to deliver the stated outcomes."

Multi-faceted outcome-based performance measures

**Performance Measures:**
- Transport productivity
- Environmental
- Safety
- Regulatory efficiency
- Organisational strategies

Relevant, valid, valuable

Done before ✓  Easy ✓
### Australian safety performance measures

<table>
<thead>
<tr>
<th>Road Transport</th>
<th>Rail Transport</th>
<th>Public Transport (both road and rail)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatalities and serious injuries</td>
<td>Number of deaths (non-suicide)</td>
<td>Percentage of people who perceive public transport is safe,</td>
</tr>
<tr>
<td>Fatalities and serious injuries involving cyclists and pedestrians</td>
<td>Number of serious injuries</td>
<td>Passenger fatalities,</td>
</tr>
<tr>
<td>Reduction in fatalities, serious injuries</td>
<td>Number of derailments</td>
<td>Passenger serious injuries,</td>
</tr>
<tr>
<td>Percentage of vehicle examinations completed in accordance with Australian Design Rules (ADR's) for vehicles</td>
<td>Number of collisions</td>
<td>Satisfaction with personal safety,</td>
</tr>
<tr>
<td>Percentage of driver licences issued that comply with the GDT&amp;L driver licensing system</td>
<td>Number of level crossing collisions</td>
<td>Passenger fatalities and serious injuries,</td>
</tr>
<tr>
<td>Community satisfaction of road safety</td>
<td>Number of loading irregularities</td>
<td>Passenger incidents,</td>
</tr>
<tr>
<td>Blackspot location indicator</td>
<td>Number of track/infrastructure irregularities</td>
<td>Employee incidents: passenger assaults,</td>
</tr>
<tr>
<td>Customer perception of safety</td>
<td>Alcohol or drugs test results</td>
<td>Driver suspensions: number of drivers suspended annually,</td>
</tr>
<tr>
<td>Percentage of fatalities where speed was a factor</td>
<td>Number of collisions on running line</td>
<td>Drug and alcohol testing: total tests conducted,</td>
</tr>
<tr>
<td>Percentage of fatalities where illegal levels of alcohol was a factor</td>
<td>Number of fires</td>
<td>total positive tests recorded</td>
</tr>
<tr>
<td>Percentage of vehicle occupant fatalities who were not wearing a restraint</td>
<td>Number of load irregularities</td>
<td></td>
</tr>
<tr>
<td>Percentage of fatalities where driver fatigue was a factor</td>
<td>Number of rollingstock irregularities</td>
<td></td>
</tr>
<tr>
<td>Drivers aged 25 years or under involved in fatal crashes</td>
<td>Number of safeworking rule or procedure breaches</td>
<td></td>
</tr>
<tr>
<td>Number of heavy vehicle inspections and defect free vehicles</td>
<td>Number of trespasses</td>
<td></td>
</tr>
<tr>
<td>Safety of state-controlled road network in line with national targets</td>
<td>Passenger incidents: fall rate</td>
<td></td>
</tr>
<tr>
<td>Fatal crashes involving heavy trucks</td>
<td>Driver incidents: passenger assaults</td>
<td></td>
</tr>
<tr>
<td>Number of vehicle examinations completed in accordance with ADR's</td>
<td>Rail safety audits conducted satisfactorily</td>
<td></td>
</tr>
<tr>
<td>Percentage of cycling network within agreed standards</td>
<td>Rail safety inspections conducted satisfactorily</td>
<td></td>
</tr>
<tr>
<td>Fatalities and serious injuries involving cyclists and pedestrians</td>
<td>Percentage of people who perceive public transport is safe</td>
<td></td>
</tr>
<tr>
<td>Reduction in fatalities, serious injuries</td>
<td>Lost time injuries rate</td>
<td></td>
</tr>
<tr>
<td>Percentage of vehicle examinations completed in accordance with GDT&amp;L driver licensing system</td>
<td>Lost time injury severity rate</td>
<td></td>
</tr>
<tr>
<td>Community satisfaction of road safety</td>
<td>Signals Passed at Danger (SPAD's) rate</td>
<td></td>
</tr>
<tr>
<td>Blackspot location indicator</td>
<td>Reported crimes against the person</td>
<td></td>
</tr>
<tr>
<td>Customer perception of safety</td>
<td>Customer incidents</td>
<td></td>
</tr>
<tr>
<td>Percentage of fatalities where speed was a factor</td>
<td>Rate of serious rail accidents</td>
<td></td>
</tr>
<tr>
<td>Percentage of fatalities where illegal levels of alcohol was a factor</td>
<td>Level of notifiable safety incidents</td>
<td></td>
</tr>
<tr>
<td>Percentage of vehicle occupant fatalities not wearing an available restraint</td>
<td>Safety incidents per million passengers decrease</td>
<td></td>
</tr>
<tr>
<td>Percentage of fatalities where driver fatigue was a factor</td>
<td>Number of notifiable occurrences</td>
<td></td>
</tr>
<tr>
<td>Fatal crashes involving heavy trucks</td>
<td>Return-to-work rate</td>
<td></td>
</tr>
<tr>
<td>Number of heavy vehicle inspections and defect free vehicles</td>
<td>Percentage of managers trained in OSH and injury-management responsibilities</td>
<td></td>
</tr>
<tr>
<td>Safety of state-controlled road network in line with national targets</td>
<td></td>
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</tbody>
</table>

### Performance measure criteria

- **Policy relevance**
- **Accessibility**
- **Representativeness and validity**
- **Reliability**
- **Simplification**
- **Outcomes-focus**

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*Measuring the value of what can be managed*
C-MARC

Performance measure specifications

- Title of the indicator
- Purpose
- Object of measurement
- Metric and direction
- Data requirements
- Data collection methods
- Timing
- Ownership
- Reliability
- Relationships links
- Future developments
- Other relevant information

Efficiency / Productivity performance measures

1. Passenger and freight costs
2. Transport system competitiveness
3. Network and vehicle efficiency
4. Service quality
5. Social inclusion
6. Capital city population density
7. Adoption of lower carbon transport modes
8. Fuel efficiency of passenger (car) fleet
9. Fuel efficiency of freight task
### Environment performance measures

<table>
<thead>
<tr>
<th>1. National direct passenger (car) greenhouse gas emissions</th>
<th>1.1 Passenger (car) greenhouse gas emissions</th>
</tr>
</thead>
</table>
| 2. National direct freight (road and rail) greenhouse gas emissions | 2.1 Road freight (rigid/articulated truck) greenhouse gas emissions  
2.2 Road freight (light commercial vehicle) greenhouse gas emissions  
2.3 Rail freight greenhouse gas emissions |
| 3. Adoption of lower carbon passenger transport modes | 3.1 Public transport proportion of total metropolitan passenger travel  
3.2 Growth in cycling or walking to work  
3.3 Passenger motor vehicle registrations  
3.4 Bicycle sales |
| 4. Adoption of lower carbon freight transport modes | 4.1 Freight movements by mode |
| 5. Fuel efficiency of passenger (car) vehicles | 5.1 Passenger (car) fuel efficiency  
5.2 Passenger (car) energy efficiency  
5.3 Passenger (car) greenhouse efficiency |
| 6. Fuel efficiency of freight task (road and rail) | 6.1 Road freight (rigid/articulated trucks) fuel efficiency  
6.2 Road freight (rigid/articulated trucks) energy efficiency  
6.3 Road freight (rigid/articulated trucks) greenhouse efficiency  
6.4 Rail freight fuel efficiency  
6.5 Rail freight energy efficiency  
6.6 Rail freight greenhouse efficiency |
| 7. Exposure to traffic noise (cities) | 7.1 Population exposed to adverse noise level threshold |
| 8. Exposure to poor air quality (cities) | 8.1 Level of compliance with Ambient Air Quality NEPM across all jurisdictions |
| 9. Environmental incidents (road transport) | 9.1 Number of environmental incidents (road transport) |

### Safety performance measures

| 1. Fatalities and Serious Injuries | 1.1 Road  
1.2 Rail |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Safe Road Vehicles</td>
<td>2.1 New cars meeting 5★ANCAP crash ratings</td>
</tr>
<tr>
<td>3. Safe Roads</td>
<td>3.1 Roads meeting AusRAP road standards</td>
</tr>
</tbody>
</table>
| 4. Safe Drivers | 4.1 Seatbelt use  
4.2 Alcohol and drugs (road drivers)  
4.3 Alcohol and drugs (train drivers) |
| 5. Safe Speeds | 5.1 Vehicles complying with speed limit |
| 6. Fatality and Serious Injury Rates for Passenger Travel | 6.1 Road vehicle occupants  
6.2 Rail passengers |
| 7. Fatality and Serious Injury Rates for Freight Travel | 7.1 Road freight  
7.2 Rail freight |
| 8. Social Costs of Transport Crashes | 8.1 Road  
8.2 Rail |
| 9. Signal Violations | 9.1 Rail Signals Passed at Danger (SPAD)  
9.2 Traffic control signal violations  
9.3 Railway level crossing signal violations |
Regulatory Reform performance measures

1. The value of transport regulation
2. Cost of regulatory compliance
3. Reducing the existing stock of regulation in the rail and road industry
4. Improving the quality of new regulation
5. Age of regulation, based on an average time since last review
6. Time to legislate

Organisation performance measures

1. Proportion of annual objectives achieved successfully
2. Multifaceted survey of customers, stakeholders and employees
3. Proportion of transport reforms that align with clients’ priorities
Performance Measure Issues

- **Consistency**
  - between States, owners, operators
  - between road and rail

- **Definitions**

- **Cost**

- **Meeting conflicting objectives, different needs**

- **Reasonable**

- **Strategic or detailed?**

- **Practical**

- **Acceptable**

Conclusion

- **Method**
  - Transport and management literature review
  - Review current practice
  - Described selection criteria
  - Described specification
  - Proposed performance measures

- **Result**
  - 39 key performance measures
  - 58 specific measures
  - Complementary for road and rail
  - Meet the requirements (generally)
  - Many alternative measures not included
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