SAFETY, ENVIRONMENT AND AMENITY

Regulating Heavy Vehicles for Safety and Amenity: Australia as a Case Study

Paris

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SAFETY, ENVIRONMENT AND AMENITY

- Current Australian road safety situation
- Community concerns on heavy vehicles
- International Benchmarking
  - National Road Safety Strategy
- Regulatory responses to improve safety and environmental performance
  - Fatigue Management
  - Speed and Braking
  - Engine Brake Noise

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Australia's road toll

- In 2006
  - 1456 fatal crashes
  - 1601 deaths
- Deaths have fallen
  - by 12% since 2000
  - by 45% since 1986
- Heavy vehicles (over 4.5 tonne)
  - Involved in 14% of fatal crashes

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Australia's road toll

- **Heavy vehicles (over 4.5 tonne)**
  - **Involved in 14% of fatal crashes**
- **Articulated heavy vehicles**
  - **9.4% of fatal crashes**
  - **9.8% of all fatalities**
- **Rigid heavy vehicles**
  - **4.8% of fatal crashes**
  - **5.1% of all fatalities**

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Australia's road toll

- **5% of all heavy vehicles crashes result in at least one fatality**
- **9% of articulated heavy vehicles crashes result in at least one fatality**

Australia's road toll

- **68% of fatal articulated heavy vehicles crashes occur on roads with speed limits of 80 km/h or more**
- **18% of rigid heavy vehicles and 45% of light vehicle fatal crashes occur in these high speed zones**

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Australia's road toll

- **Only 27% of fatalities are heavy vehicles occupants**
- **44% of heavy vehicles occupant fatalities did not wear a seatbelt**
- **7% of heavy vehicles occupant survivors did not wear a seatbelt**

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Australia's Road Fleet 2005

- **13 946 362 Vehicles**
- **68 509 Articulated Trucks (over 4.5 tonne)**
- **366 875 Rigid Trucks (over 4.5 tonne)**

- **206 383 million Kilometres travelled**
- **6 308 million Kilometres travelled by Articulated Trucks**
- **7 671 million Kilometres travelled by Rigid Trucks**

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Annual average vehicle usage

	Articulated Trucks	Rigid Trucks
Kilometres per vehicle per year	92,100	20,900
Tonne-kilometres per vehicle per year	2,015,900	98,000

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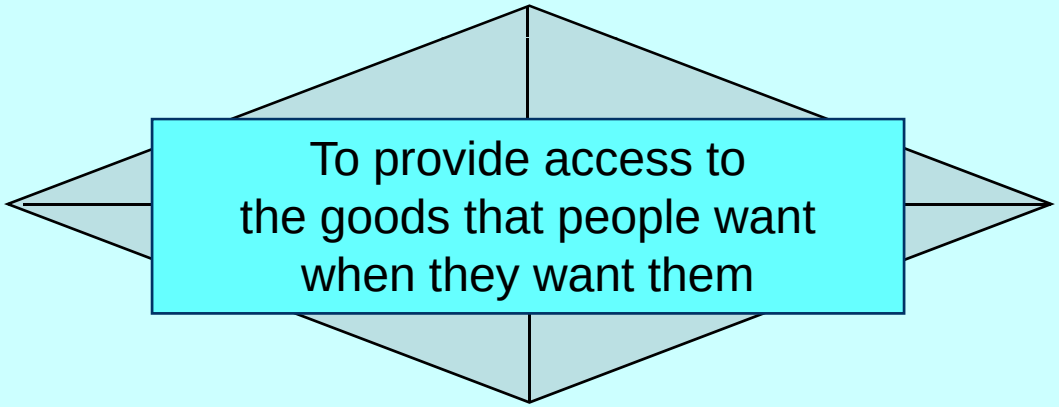
AR1



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Slide 10

AR1 Added Diamind to encompass temporal considerations

Anya Richards, 21/06/2005

AR2

While protecting the
health and safety of
transport system users
and others

To provide access to
the goods that people want
when they want them

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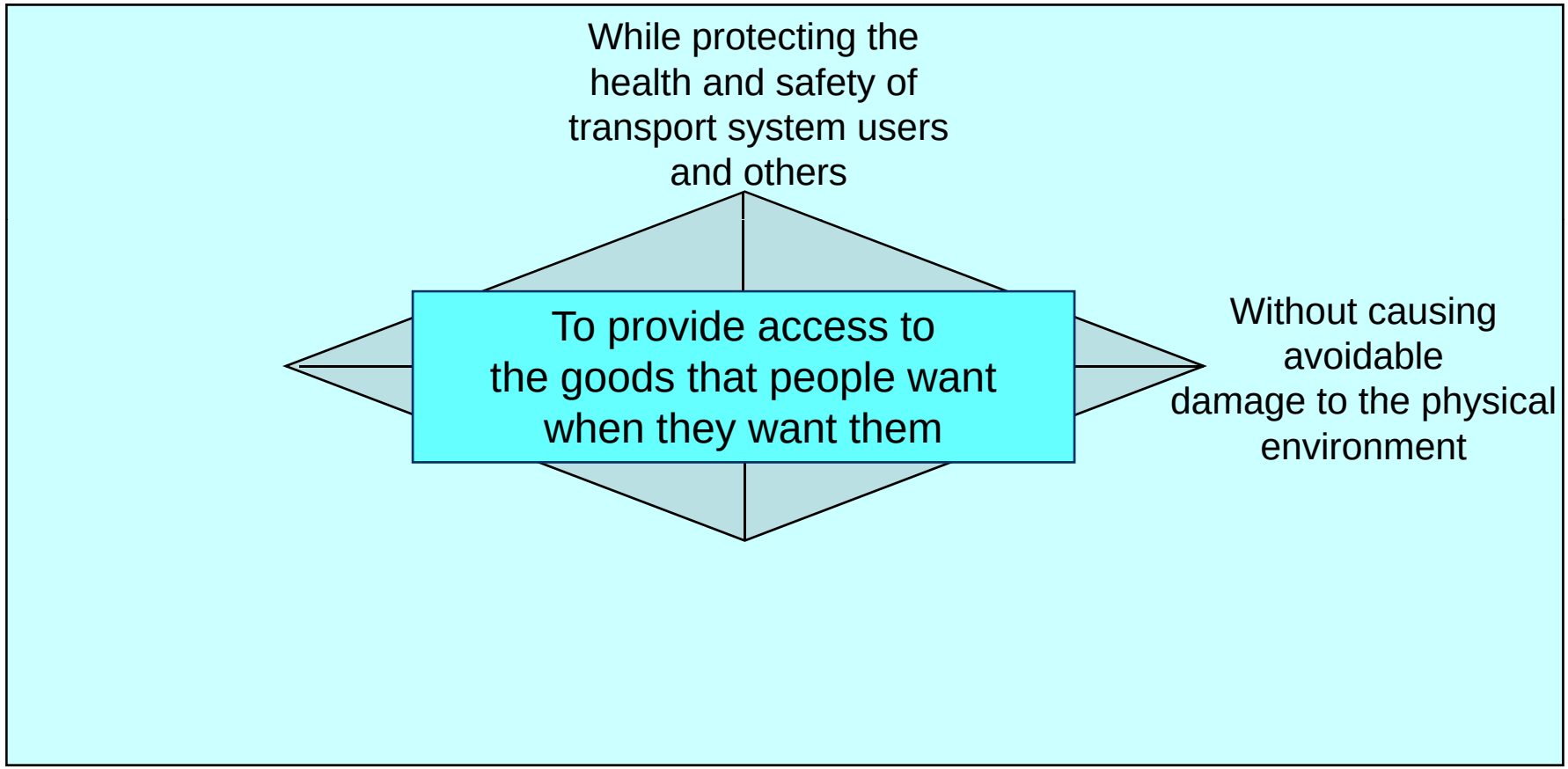
Slide 11

AR2 Added Diamind to encompass temporal considerations

Anya Richards, 21/06/2005

AR3



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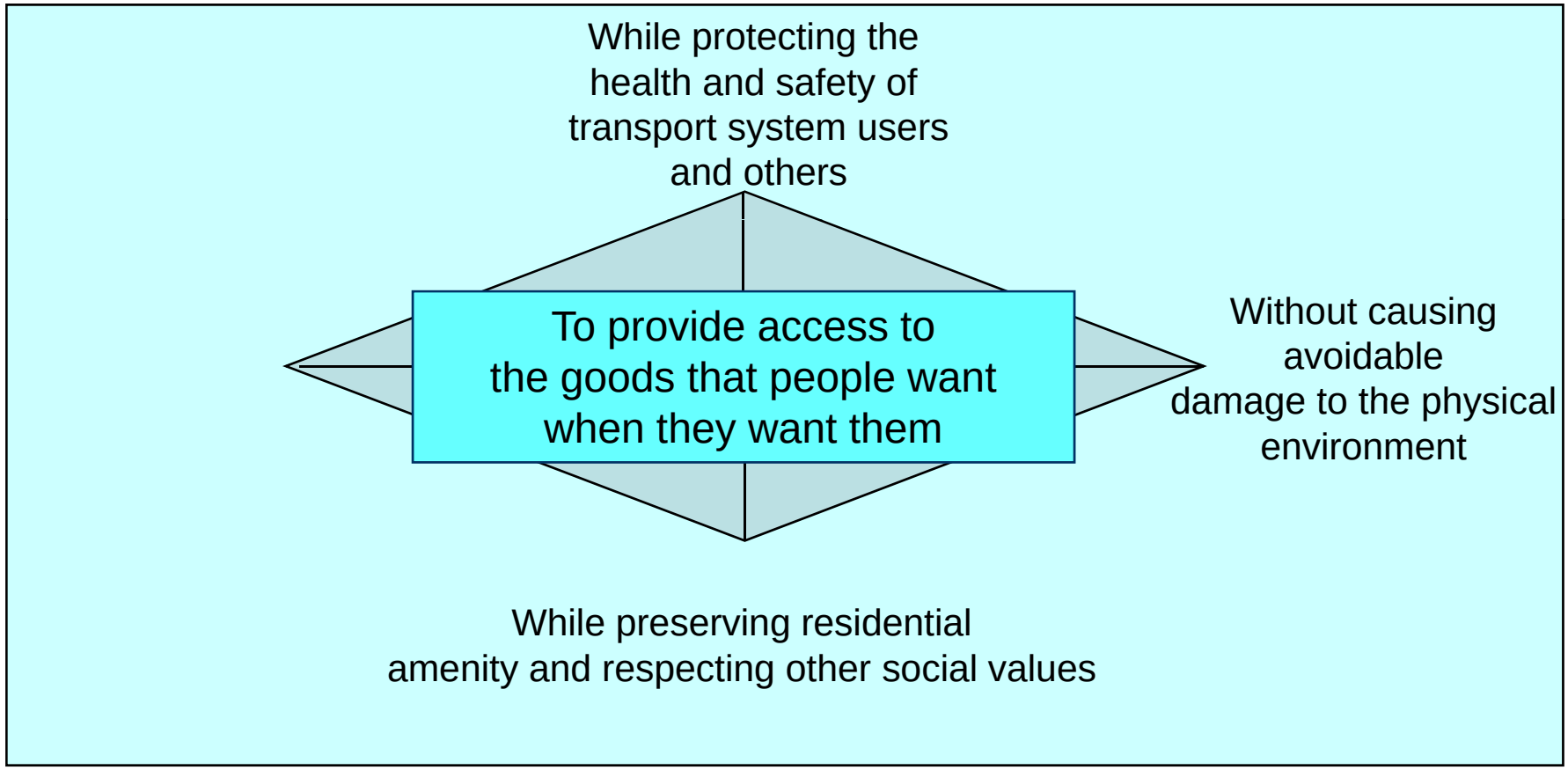
AR3 Added Diamind to encompass temporal considerations

Anya Richards, 21/06/2005

AR4



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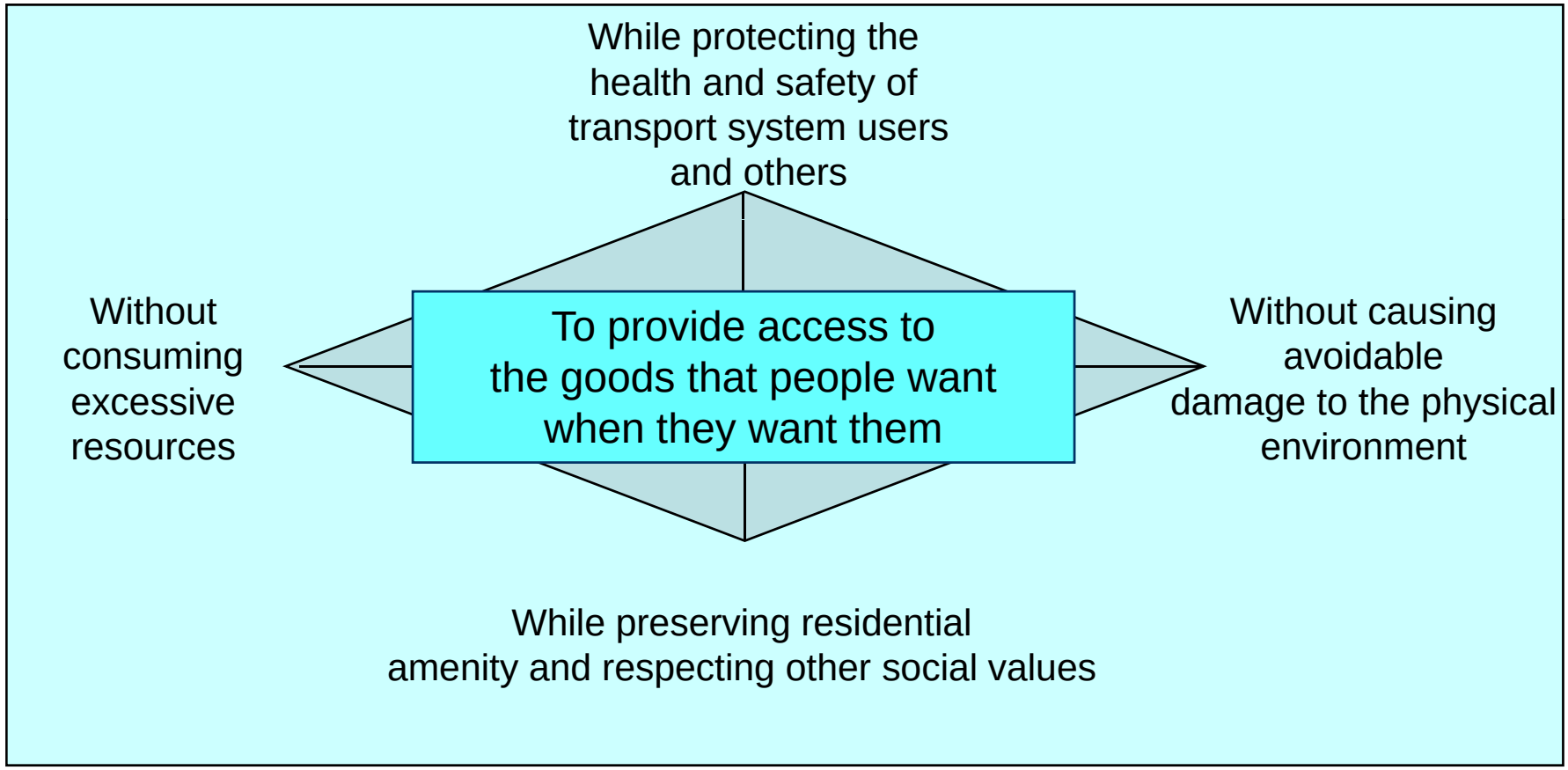
Slide 13

AR4 Added Diamind to encompass temporal considerations
Anya Richards, 21/06/2005

AR5



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Slide 14

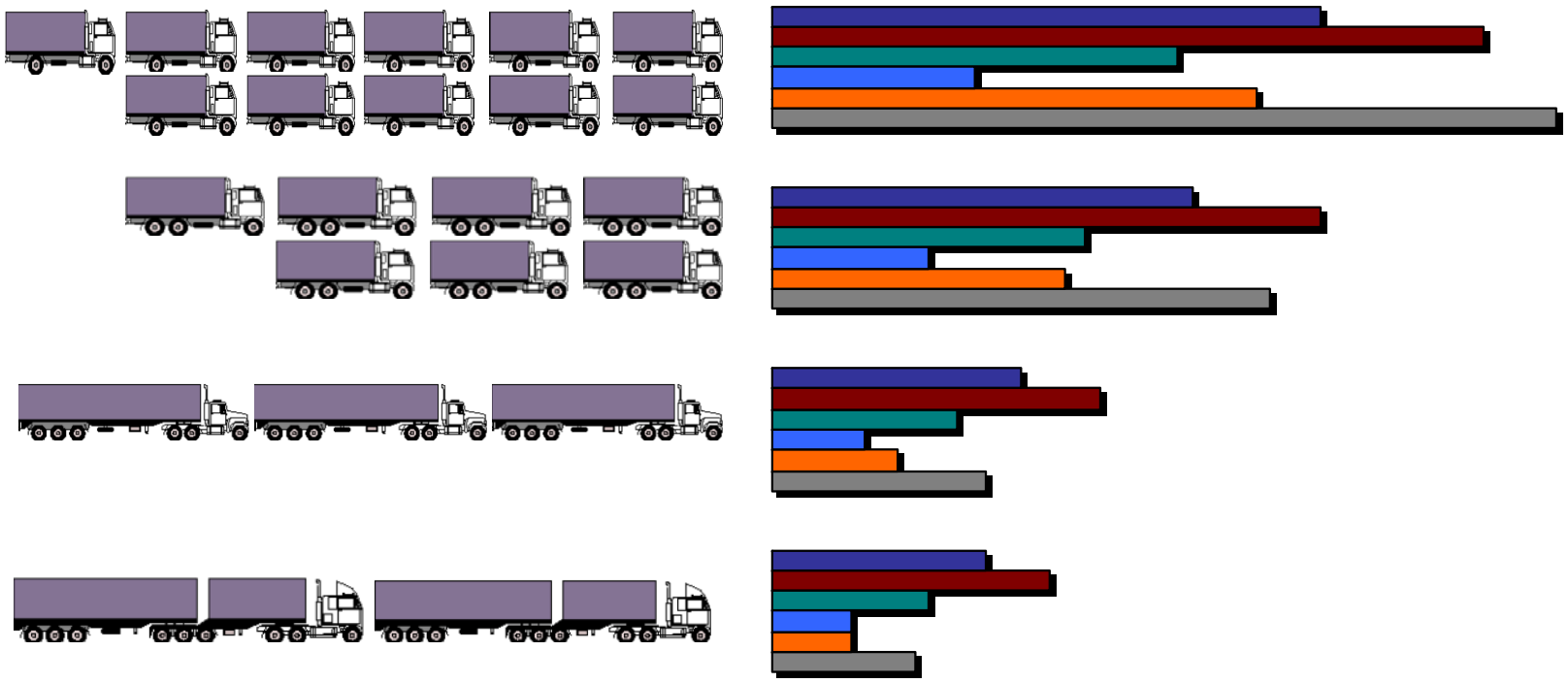
AR5 Added Diamind to encompass temporal considerations
Anya Richards, 21/06/2005

Future transport constraints

- **Community demands for**
  - **amenity/quality of life**
  - **access**
  - **noise**
  - **air quality**

- **Community concern over heavy vehicles on road**

Meeting the Freight Task



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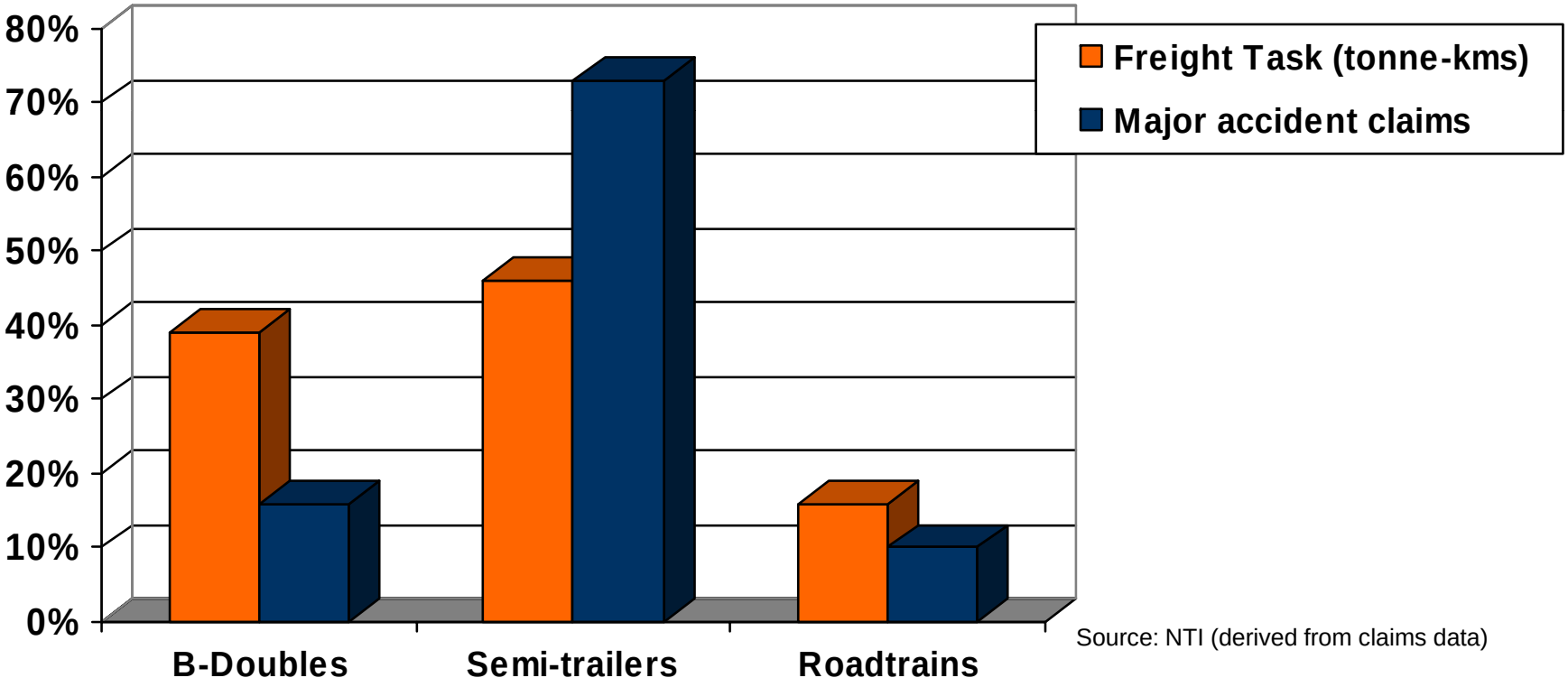
B-Double Safety Record



Source: NTI (derived from claims data)

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Bigger trucks for safer roads?

- **Banning artics could increase truck vs car crashes 18% by 2010**
  - **Assumes continued improving trends in crash rates**

(Source: MUARC 2007)

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PUBLIC PERCEPTIONS VS REALITY

B-DOUBLES (1988)

‘ROAD MONSTERS ARE HEADING OUR WAY!’

B-TRIPLES (2006)

‘OVERSIZED TRUCKS TO ENTER CITIES!’

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Sustainable urban freight

- ‘Best practice’ environmental standards
- Accreditation requirements
- operating conditions
- route compliance (GPS tracking)
- Demonstrable safety gains

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Identifying priorities for safety improvement

- **Benchmarking heavy vehicle safety 2002**

"To benchmark the performance of Australia's heavy vehicle industry against the safety performance of similar industries in a range of OECD countries."

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Benchmarking heavy vehicle safety 2002

- Comparisons of fatality rates for trucks above 4.5 tonnes GVM
- Both rigid trucks & articulated trucks
- Buses excluded
- Injury data were not used because of different reporting criteria & incomplete data

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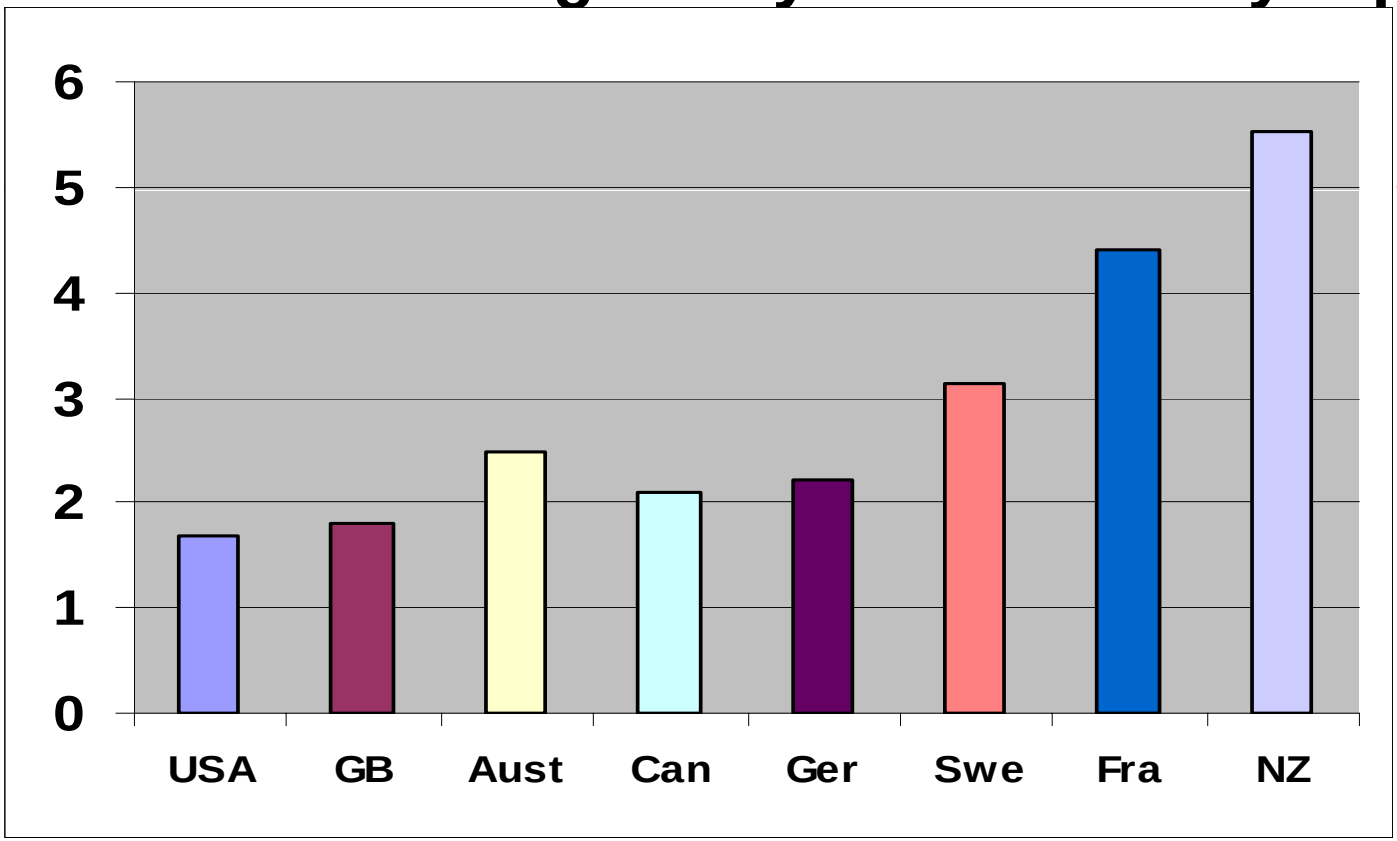
Benchmarking heavy vehicle safety report 2002



Heavy vehicle fatalities per 100 million km

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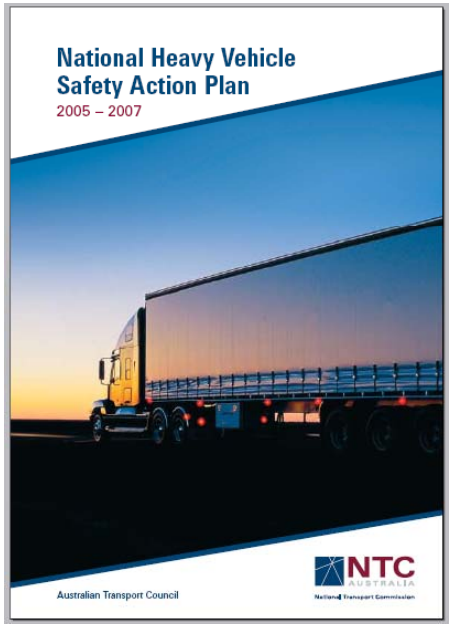
National Heavy Vehicle Safety Strategy 2003-2010

- **Developed from findings of 2002 Benchmarking Study**
- **Complements Australian National Road Safety Strategy**
- **Targets safety improvements in heavy vehicle operations**



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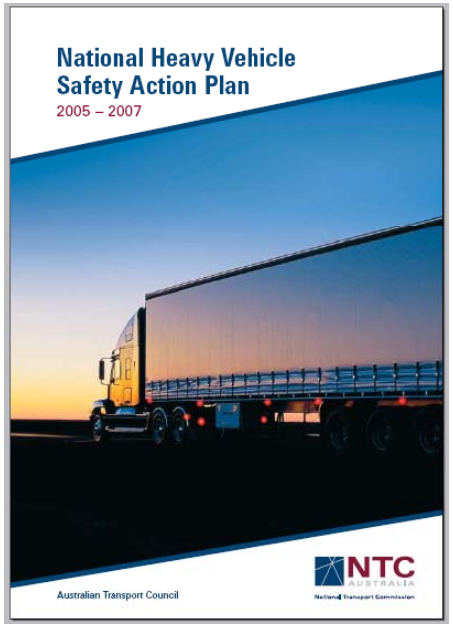
National Heavy Vehicle Safety Strategy 2003-2010

- **2005-07 Action Plan – 5 strategic objectives**
  - **increased seatbelt use by heavy vehicle drivers**
  - **safer roads**
  - **more effective speed management**
  - **reduced driver impairment**
  - **safer heavy vehicles**



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Reduced Driver Impairment

- **Fatigue Management Reform**
  - **Implementation from September 2008**
- **Roadside rest areas**
  - **Guidelines, audit, construction**
- **Reduce use of stimulants and other drugs**
  - **Roadside screening**
  - **Driver Well-being Pilot**

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Fatigue Management Reform

- System developed on expert safety advice
  - Overlay with pragmatic approach
- Recognise that fatigue is not just an issue for the driver
  - Assign responsibilities to all parties
- Provide reward for effort
  - Better fatigue management = more flexibility

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Fatigue Management Reform

A three-option approach –

- **increased flexibility linked to increased responsibility** by operators **to manage fatigue:**
- **a general duty to manage fatigue to minimise road safety risk**
- **much greater consistency with occupational health and safety requirements**

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Fatigue Management Reform

- **3 options**
  - **Tier 1 - standard hours**
    - up to 12 hours of work per day or 72 hours per week
  - **Tier 2 - basic fatigue management - BFM**
    - up to 14 hours of work per day or 72 hours per week, on average for accredited operators (night/long hours bank)
  - **Tier 3 - advanced fatigue management - AFM**
    - for accredited operators who can demonstrate the effective management of all factors which affect fatigue

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Fatigue Management Reform

- **Not just working hour limits**
  - **general duty to manage fatigue to minimise road safety risk**
  - **chain of responsibility for off-road parties**
  - **Need to demonstrate reasonable steps**
  - **guidelines and codes**

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Fatigue Management Reform

- **Strengthened record keeping provisions**
  - **Option of electronic record keeping**
- **A revised range of sanctions**
- **Enhanced enforcement powers for police and transport inspectors**
- **Applies to trucks over 12 tonnes and buses with more than 12 seats.**

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Safer Heavy Vehicles

- **Front under-run protection / axle mass package**
- **Alternative to mandatory regulation**
  - **Faster implementation**
- **Increase steer axle mass limit by 500kg if**
  - **Front under-run (ECE R93) and**
  - **Minimum cab strength (ECE R29) and**
  - **Euro 4 engines (required from 2008**
- **Similar package applied to allow 26m B-double trucks**

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Speed Compliance

- **If all heavy vehicles comply with all speed limits**
  - **estimated 29 per cent reduction in heavy vehicle crashes**
- **Heavy vehicles over 12 tonne speed limited to 100km/h**

BUT

- **10 to 15 per cent of articulated trucks exceed 100km/h by 5 km/h or more**

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Speed Compliance

- **Three-Strikes Policy**
  - **Registration cancelled for vehicles detected for third time at 115km/h or more**
  - **Currently under review**
- **Extending chain of responsibility to speed and speed limiter maintenance**
- **Requires reasonable steps from operator, consignor, customer, schedulers and loading managers**

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Speed Compliance

Extending chain of responsibility to speed compliance

- **Requires reasonable steps to ensure compliance from**
  - **Operator**
  - **Consignor**
  - **Customer**
  - **schedulers and**
  - **loading managers**
- **Doesn't reduce driver's responsibility to obey speed limit**

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Speed Compliance

- **Extending chain of responsibility to speed limiter maintenance**
- **Requires reasonable steps from operator and maintenance provider/mechanic to ensure speed limiter works correctly**

- **Doesn’t reduce driver’s responsibility to obey speed limit**

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Heavy vehicle braking

- Braking system compatibility is a significant safety issue
- Combinations of prime-movers and trailers adopt a variety of braking systems including non-ABS, ABS and EBS with load sensing
- Ensuring compatibility with internationally sourced prime-movers (mostly from Europe, US and Japan) and locally built trailers is a challenge
- Industry Guide on Braking Compatibility

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Engine Brake Noise

- Major source of community complaints
- Not a problem for some engine brake designs
- Curable with efficient muffler

BUT

- Not apparent in static testing
- Hard to define in regulation
- Modulation pattern – not decibel level – is critical

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Modulation characteristic

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Engine Brake Noise

- Engage experts to design methodology
- Pick a reasonable threshold during public consultation
- Put it in a camera and run a trial

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