Presentation to the Parliamentary Road Safety Committee Inquiry into Improving Safety at Level Crossings

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OUTLINE

- Strategic framework
- Context/Nature of problem
- Safety management governance
- Current program and initiatives
- Existing technology
- New technology
- Conclusion

Strategic framework

- **Growing Victoria Together**
  - Growing & linking all of Victoria
- *Meeting our Transport Challenges*
  - Building a safer, more secure network
- *arrive alive 2008-2017*
  - Aims to reduce deaths and serious injuries by 30 per cent
  - Strategy & first action plan contains initiatives to improve rail level crossing safety

National approach

- Austroads
- SCOT/TACE
- Roads and Rail Modal Groups
- NTC

Context

- **Level Crossings are a compromise to achieve joint use by road and rail of the same space**
- **Rail's greatest benefit is also its greatest weakness - low rolling resistance!**

Typical Braking Rates of Trains

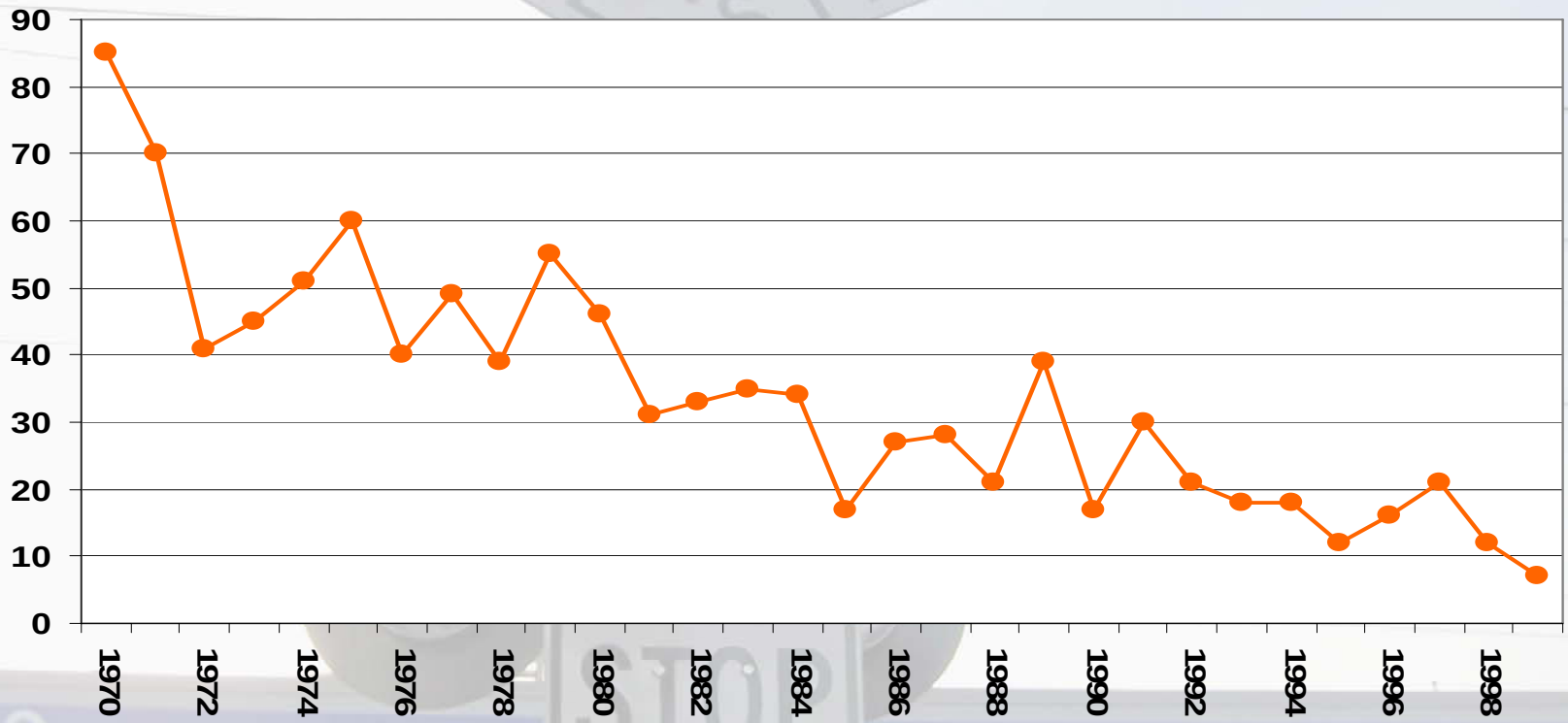
- **Electric Passenger Train**
  - Service 0.73 m/s2
  - Emergency 0.83 m/s2
- **Freight Train**
  - Service 0.2 m/s2
  - Emergency at about 0.54m/s2
- **This has serious implications for level crossings**

- **As a consequence:**
  - Trains of any variety take a long time and a far greater distance to come to a stop
  - Crossing design is predicated on the train not having to stop at a crossing.
  - Train drivers therefore are trained not to be prepared to stop at level crossings.

Level Crossing Dimensions - Victoria

Active - booms metro	181
Active - booms regional	180
Active - lights only regional	463
Active - light rail	8
Manual - hand gate	1
Total Active	833
Passive protection - country only	1,433
Total public level crossings	2,266

Motor Vehicle Occupant Deaths at Railroad Crossings in Australia 1970 - 1999



Source:MUARC/QUT Proposal To Undertake Research Into Reducing The Risk of Crashes At Railway Level Crossings in Australia 2002

Vehicle Occupant and Pedestrian Fatalities Victoria

Table 1
Fatalities at railway crossings in Victoria by category of road user; 1969-76 and 1994 – 2001

Period	Vehicle occupants		Pedestrians	Total
1969-1976	174		25	199
1994-2001	26*	**= 85%reduction**	59	91

* plus three bicycle fatalities plus three wheelchair fatalities

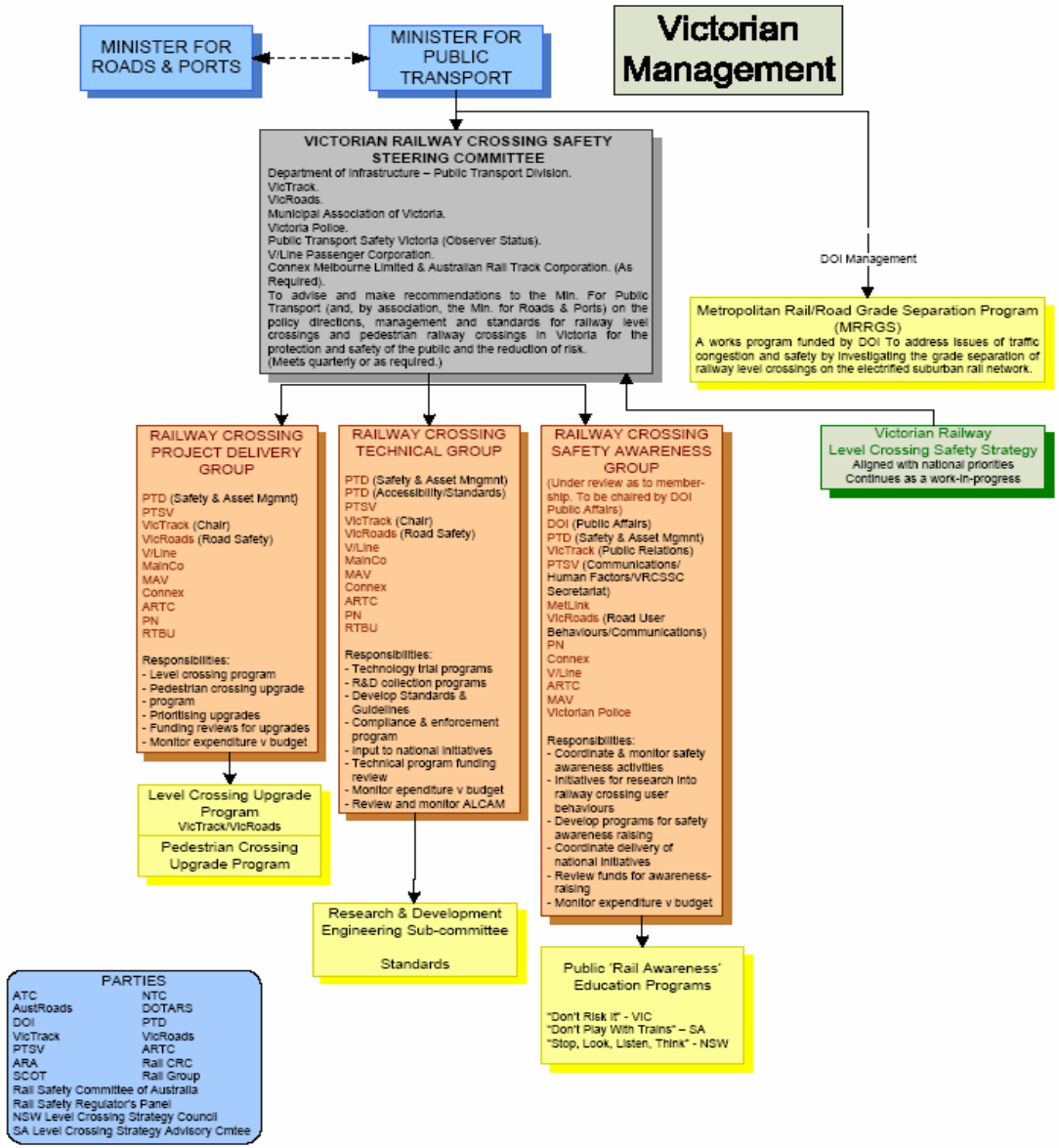
2000-2007	**26**	**28**	**48**

Sources: Wigglesworth, Graham & Routley: Rail Related Fatal Accidents in Victoria Australia: 1990 2002. – March 2005, Road & Transport Research, DOI

Management of Level Crossing Safety

- The Victorian Railway Crossing Safety Steering Committee (VRCSSC)
  - Membership:
    - DoI (PTD) – Chair and secretariat
    - VicRoads
    - VicTrack
    - MAV
    - Victoria Police
    - V/Line
    - DoI (PTSV)

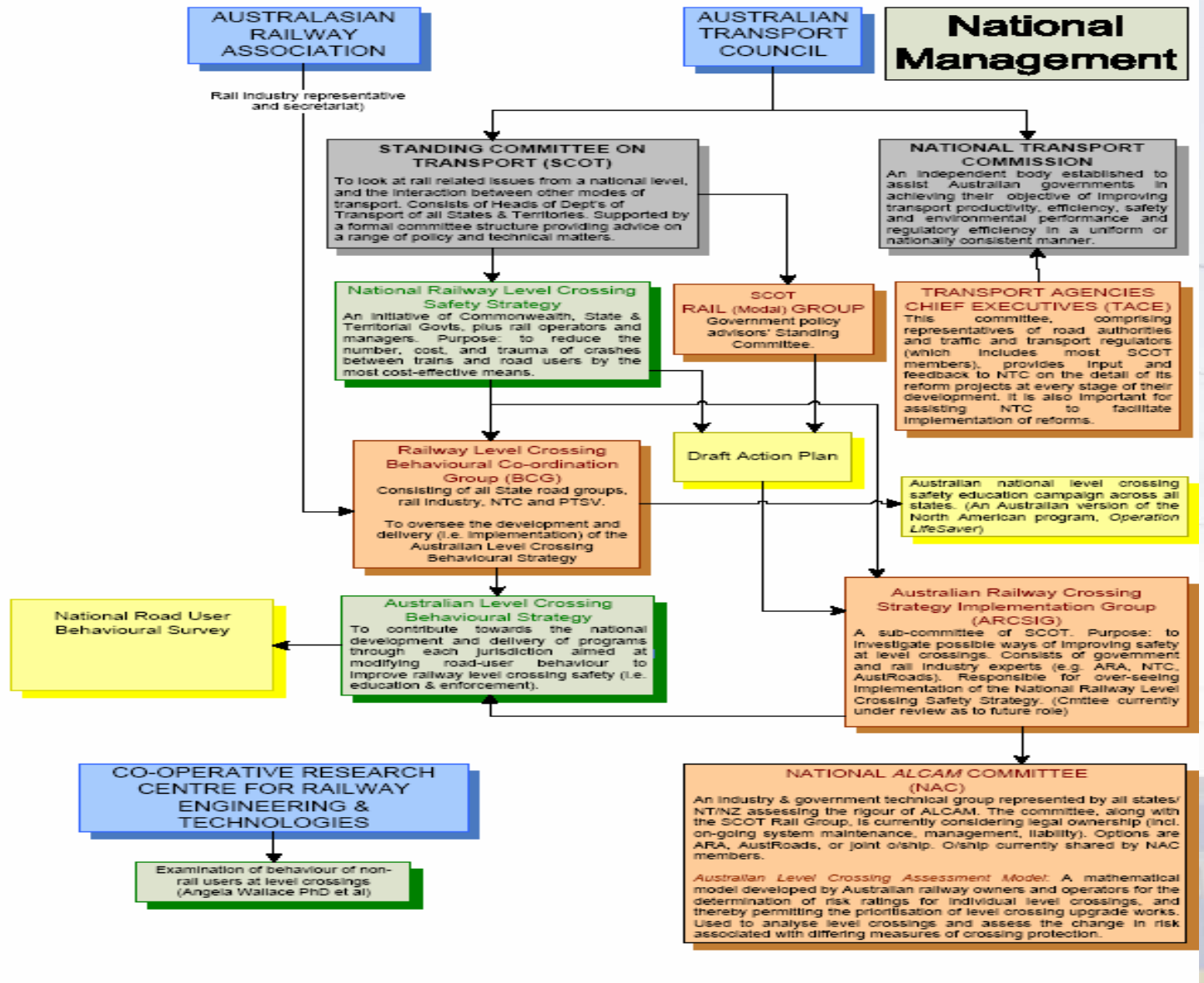
The Victorian RLX Safety Management Structure



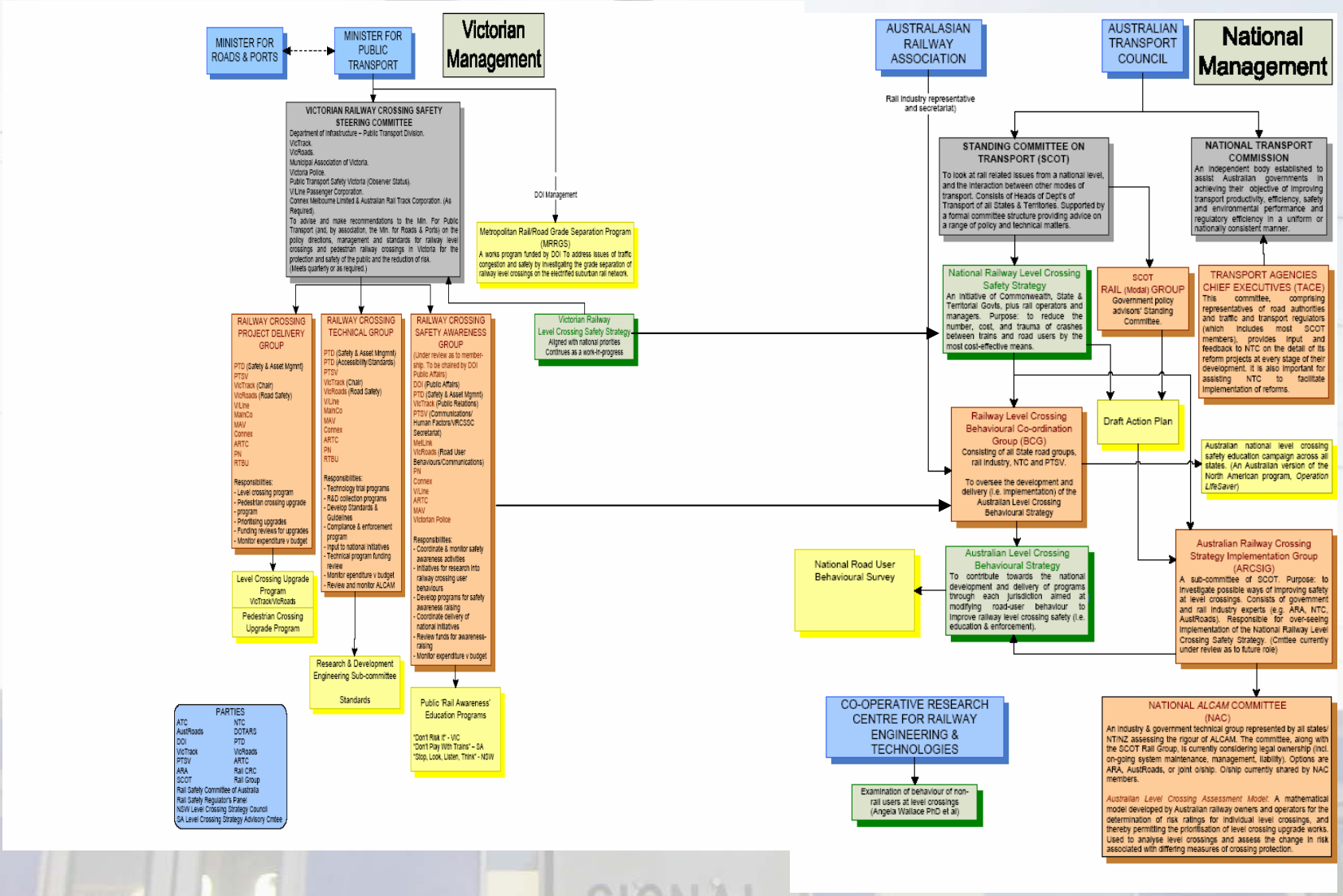
VRCSSC Sub Committees

- Program Delivery Group
- Technical Group
- Safety Awareness Group

The National RLX Safety Management Structure



The Total RLX Safety Management Structure



Current Technology Implementation

- Railway Crossing Upgrade Programme
- Since 1999
  - **Over 200 RLX Upgrades in control have been completed**
  - **Averaging almost 25 Per Annum**
  - **More than four times the annual average in previous periods.**

Ongoing Programs

Summary of upgrade performance

Year	2006/7	2007/8	2008/9
No. of Upgrades	37 (plus 20 RFR)	45 (target)	45 (target)

Further initiatives introduced in 2007:

- 53 sites for Active Advance Warning Signs
- 200 sites for rumble strips
- Continuation of the Don't Risk it Campaign
- 2 trial sites for enforcement cameras
- Modifications to legislation with new offences and tougher penalties

arrive alive 2008-2017 First Action Plan

- **Review all level crossings to ensure they accommodate the safety requirements of heavy vehicles.**
- **Implement hazard warning systems**
- **Public education campaigns**
- **Increase penalties for level crossing infringements and introduce new offences**

Other Initiatives

- **Pedestrian Crossings**
  - Upgrade from passive to active control
    - 10 to 20 crossings per annum
  - DDA compliance
    - Making crossings safer for the disabled community
    - Upgrading and average of 10 crossings per annum
- **ALCAM**
  - Survey of all crossings complete
  - Another tool to better guide upgrade program into the future

Other Initiatives

- **Research**
  - FM Broadcasts to road vehicle mounted equipment such as GPS
  - Behavioural studies with ARA and other jurisdictions
  - Centre Road Bentleigh
- **Grade separations**

Existing Technology Used at Crossings

- **Two types**
  - Active (flashing lights and bells with or without booms)
  - Passive (stop signs or give way signs)

Existing Technology Used at Crossings

- **Other Aides**
  - Advance Road Signage
    - Provides advance warning to road users of impending crossing
  - Active Advance Warning signage
    - Provides advance notice to motorists of the activation of crossing protection equipment
    - Is limited to being used at actively protected crossings

Existing Technology Used at Crossings

- **Other Aides (cont)**
  - Rumble Strips
    - Provides audible, tactile and visual warning to motorist that they are approaching a crossing
  - Traffic Signal protection
    - Provides additional advice to road users

Opportunities for New Technology

- **Obstacle Detection**
- **Low Cost Level Crossing Warning Device**
- **The Controlled Area System**
- **Proxy (Wayside) Horn**
- **Motorist Warning Technologies**
  - Intelligent Speed Adaptation
  - Radio Transponder Based Warning Systems
  - Intelligent Road Studs

Conclusion

- **Railway Level Crossing crashes are a relatively small proportion of all road crashes but they are of concern**
- **Active in improving safety at level crossings**
- **There is a role for new technology as part of overall treatment**