

## **Measures to address school transport safety in Queensland**

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### **Abstract**

In 2001 the Queensland government established a School Transport Safety Task Force (the Task Force) and an Interdepartmental Working Group to investigate issues relating to school transport safety, and report back with recommendations.

The Task Force developed a package of initiatives to comprehensively address and improve the safety of travel to and from school.

The initiatives included regulatory changes, vehicle-based improvements (relating to school buses), road engineering measures, tests and trials of a number of concepts, public education, and a substantial focus on community engagement in addressing school transport safety issues.

This paper discusses the background to the investigation and processes for development of the initiatives. It will go on to outline the individual initiatives, their implementation status and results of any trial or policy adoption.

This is possibly one of the most comprehensive and integrated approaches to school transport safety yet undertaken in Australia. Queensland Transport will evaluate the implementation of the package of measures in an effort to identify best practice, and provide evaluation reports to enable other jurisdictions to follow progress.

### **Background**

The Queensland School Transport Safety Task Force (the Task Force) was established in March 2001 as part of the Queensland government's election commitments. The Task Force was established to investigate the issue of school transport safety in Queensland, and report back to the government with recommendations within six months.

The Terms of Reference for the Task Force were to:

- review current research on school transport safety, including the outcomes of recent studies and the effectiveness of current school transport safety programs;
- prepare an interim report analysing interstate, national and international policies and practices on school transport safety including seat belts on school buses;
- consult with stakeholders and community groups and invite public submissions; and
- make recommendations to government within six months on priorities for ensuring the safety of children travelling to and from school and implications for the government and the community.

The Task Force was made up of individuals from a range of backgrounds including education, road safety, and medicine. Members were:

- Dr Cherrell Hirst, Chancellor of Queensland University of Technology
- Graham Cislowski, Queensland Council of Parents and Citizens Associations
- Graham Davis, Brisbane Transport
- Lorraine Douglas-Smith, Queensland Bus Industry Council
- Greg Duck, Education Queensland
- Tony Kursius, Queensland Transport
- Dr Cliff Pollard, Royal Australasian College of Surgeons
- Professor Mary Sheehan, Centre for Accident Research and Road Safety, Queensland
- Renae Moore, Researcher, Queensland Transport
- Colin Edmonston, Researcher, Centre for Accident Research and Road Safety, Queensland

## **Initial findings**

In June 2001 the Task Force released an interim report that included the findings from an examination of international and national research and policies, and Queensland and national crash data (Queensland School Transport Safety Task Force, 2001a).

The study found that school transport casualties in Queensland had reduced over the last 10 years. From 1991-2001 more than 90% of casualties were children in cars, on bicycles and walking. Approximately two thirds of the casualties were children under 12 years of age. There were 147 students killed or seriously injured as passengers or drivers of cars during school travel times from 1991 – 2001. Most of these were older students (13 – 17 years of age) (Queensland School Transport Safety Task Force, 2001a).

The Task Force also found that younger children (under 10 years of age) lacked the perceptual skills needed to judge the distance and speed of approaching vehicles (Queensland School Transport Safety Task Force, 2001a).

The Task Force also looked at the issue of school zones, and noted that in Scandinavian countries and in Western Australia, the school zone speed limit is 25 km/h (Queensland School Transport Safety Task Force, 2001a).

Because of the public interest in school bus safety in Queensland at the time of the Task Force investigation, the Task Force dedicated a significant amount of time to this issue. Fewer students were killed or injured on buses than any other form of road transport. However, the Task Force considered that the rare event of a bus crash could have grave consequences. When looking at school bus travel, the Task Force found that children are most at risk when crossing the road to board or after alighting from a bus (Queensland School Transport Safety Task Force, 2001a).

The Task Force noted that in most crashes involving a bus, the injuries are less severe for bus passengers because the bus is of greater mass than most of the vehicles they collide with. Most injuries in bus crashes are minor head and facial injuries caused by impact with metal seat backs and posts. More severe injuries occur when a bus rolls over and is crushed (Queensland School Transport Safety Task Force, 2001a).

It was also noted that at present no Australian state requires buses carrying children to and from school to be fitted with seat belts. In countries where seat belts are mandated (some US states and in certain buses in the UK), bus drivers are responsible for ensuring that belts are worn. Most Australian states allow three for two seating (three primary school aged children on a bench seat designed for two adults) and the carriage of standing passengers (Queensland School Transport Safety Task Force, 2001a).

## **Recommendations**

In developing their recommendations, the Task Force called for public submissions, and interviewed a range of experts in the field of school transport safety, education and medicine (Queensland School Transport Safety Task Force, 2001b).

The final recommendations related to four key areas:

- Safe School Zones
- Safe Communities
- Safe Buses
- Evaluation and Monitoring

The Task Force provided cost estimates for a number of the recommendations.

### *Safe School Zones*

The Task Force considered that the current school zone speed limit of 40km/h in Queensland may not protect children from serious injury in the event of a crash. They considered that a lower speed limit of 30km/h would result in greater protection for school children.

The Task Force also considered that, because schools are introducing more flexible start and finish times and more extracurricular activities after school and on holidays, children are more likely to be in the road environment outside of traditional school zone times. They reported that a standard school zone time for every school would be less confusing for motorists and allow for the increase in flexibility of school start and finish times.

As a result, the Task Force recommended that **school zone speed limits be reduced to 30km/h from 7am – 5pm, Monday to Friday, year round (including school holidays).**

The Task Force noted that there may be some locations where school zones may not be appropriate. In these cases, they recommended that school crossing supervisors or pedestrian activated signal crossings be installed. The Task Force also suggested that local governments consider installing threshold treatments and traffic calming at schools to encourage compliance with the 30km/h school zone speed limit.

### *Safe Communities*

Many letters from the community about school transport safety suggested that it was important that the government did “something” to ensure that children were safe when travelling to and from school. However, the Task Force considered that it was also important that the community take responsibility for their part in ensuring school transport safety. To facilitate this, the Task Force recommended that a **media campaign be developed** emphasizing that:

- everyone is involved in school transport safety;
- drivers must slow down around schools;
- student drivers and passengers must wear seat belts;
- student cyclists must wear helmets; and
- children under 10 must be accompanied by an adult when walking or cycling (including walking to the bus).

The Task Force also recommended the development of a community partnerships program to encourage community involvement in school transport safety. To support the increased need for funding likely to arise from the partnerships program, the Task Force recommended that the **current funding for school transport safety initiatives such as the Safe School Bus Routes Program, Safe Walking and Pedalling Program, SafeST Subsidy Scheme, and Speed Awareness Program, be increased accordingly.**

The Task Force also recommended that **regular safety reviews** of school road environments be carried out and that **schools should develop school transport policies** which are linked to the school’s own behavioural management policy.

### *Safe Buses*

The Task Force made a number of recommendations aimed at further enhancing the safety of bus travel. In their recommendations, the Task Force separated the operating environments of Queensland school buses according to risk. They noted that school buses operate in urban areas (commercial contract areas), in rural areas with higher speed limits and more heavy vehicle traffic, and in steep and hazardous areas. In recognition of the lower risk of buses operating in urban areas, some of the recommendations made by the Task Force relate only to vehicles operating in non-urban and steep and hazardous areas.

In their investigation the Task Force noted that the average age of Queensland's school bus fleet was very high. This is due in large part to the reducing supply of suitable second hand vehicles. Further, based on the current purchasing practices of many bus operators, the age of the fleet was unlikely to reduce. The Task Force considered that the priority would be to encourage the introduction of newer buses meeting the Australian Design Rule for rollover strength (ADR 59/00) into the school fleet.

To address this, the Task Force recommended that **all buses carrying children to and from school be required to meet ADR 59/00 by 2017 and that at least half comply by 2009.**

When examining the issue of **seat belts on school buses**, the Task Force considered that the priority for the introduction of this initiative should be areas of highest risk, namely **buses on steep and hazardous routes where standees have already been banned and then on buses operating in non-urban areas, beginning with those on major freight routes.**

Following on from this, the Task Force recommended that **standing passengers not be permitted on buses fitted with seat belts operating in non-urban areas, beginning with those on major freight routes.** The Task Force considered that the target of **2017 for no standing passengers on buses operating in non-urban areas** would be appropriate.

Other initiatives for buses carrying children to and from school recommended by the Task Force were as follows:

- **padding on all buses carrying children to and from school by June 2004.**
- **flashing lights and warning signs on all buses carrying children to and from school by June 2004.**
- **banning of advertising that interferes with recognition of the bus as a school bus.**
- **high visibility strips on all buses carrying children to and from school.**
- **provision of information on bus safety features to schools and parents to enable them to make an informed decision when chartering a bus.**
- **compulsory training for bus drivers.**
- **review of employment conditions for bus drivers, to allow for a system of driver accreditation and salary reviews linked to training which would sustain a permanent, credible workforce.**
- **development of an emergency response and action plan for school bus routes, with priority given to rural and isolated areas.**

#### *Monitoring and evaluation*

During their investigation, the Task Force noted that data on school transport related crashes was not readily available under current data collection procedures. In response to this, they recommended that **current data collection and extraction procedures be upgraded to allow for better monitoring of crash trends and the effectiveness of existing programs.**

In order to ensure that the recommendations of the Task Force were implemented, they also suggested that a **body be made accountable to ensure that the recommendations were adopted and that publicly available reports be prepared annually.**

#### **Government response**

When the Task Force final report was handed to government in October 2001, an Interdepartmental Working Group was established to examine the policy, financial and operational implications of the recommendations. The government allocated \$1.67M in December 2001 to undertake or trial several of the recommendations. The working group was tasked with overseeing the delivery of these trials and recommendations, and developing a funding submission for implementation of initiatives in the 2002/03 financial year. Current outcomes under the Task Force recommendation areas are as follows.

### *Safe School Zones*

The government requested that Queensland Transport undertake a trial of the Task Force recommendation for a 30km/h school zone speed limit operating from 7am – 5pm, Monday to Friday, year round. The trial was undertaken at 13 sites (15 schools) in the greater Brisbane area from the beginning of the 2002 school year. Each experimental site was matched with a control site. Residents in the suburbs surrounding the trial sites received direct mail advising of the school's involvement in the trial and advertisements were placed in local newspapers. The trial also received significant coverage from local newspapers and television, particularly once the trial had commenced.

The trial ended on 21 June 2002 and the results of speed and community awareness surveys are currently being analysed. However, the results of some of the initial surveys have been received.

Initial speed surveys have shown much higher compliance with the 30km/h speed limit on roads with a general speed limit of 60km/h, where the expectation (and actual experience) of enforcement is higher. The lowest compliance was seen on school zones with a speed limit of 50km/h outside school zone times.

Surveys of residents in the areas of the trial undertaken in mid-March showed that approximately two thirds of those surveyed (66%) disagreed with the concept of the 30km/h speed limit. Similarly, 79% of respondents believed the new hours of operation were too long. A general survey of 800 Queensland motorists undertaken during the same time period also showed that 70% did not believe that the extended hours of operation were necessary, and 40% did not support the lower speed limit. The higher acceptance of the 30km/h speed limit in areas where the trial was not occurring suggests that while the reduced speed limit is perceived as a good idea to protect children, when encountered regularly as a road user there is much less support.

Queensland Transport also established a database of calls and letters from the community during the trial. This data, as well as information from interviews with local Members of Parliament, will be incorporated in the trial evaluation.

Queensland Transport also undertook a review of existing safety features on roads at all schools in Queensland (approximately 1900) in order to identify those schools that currently do not have a school zone and that may be eligible to have one installed. The survey identified road safety interventions at each school, such as pedestrian crossings, school crossing supervisors and kerb extensions, which have been compiled in a database. The survey results revealed that approximately 200 schools have neither a school zone nor crossing facility on the major pedestrian traffic route. In the future, it is anticipated that this database will be linked with Queensland's Road Crash Database to identify relationships and trends between the road safety interventions and the nature of crashes. Queensland Transport is also investigating linking the database to the Queensland speed limit database currently being developed by the department, so that a record of school zones can be maintained.

### *Safe Communities*

From the beginning of the 2002 school year, the government commenced an extensive community education campaign for Back to School, including TV commercials, brochures, and direct mail. The campaign incorporated the safer communities recommendations from the Task Force final report and has been repeated at each Back to School period in 2002. In June 2002 the government approved \$1M pa ongoing funding for the continuation of this public education campaign.

A trial of a community engagement style program titled Safe School Communities was developed from the beginning of the 2002 school year. The program aims to foster community involvement and ownership of school transport safety, and to facilitate the development of local school transport safety action plans. The trial is being undertaken at 4 clusters of schools across Queensland, namely Tannum Sands, Cairns, Childers, and Caboolture. Initial trial results are expected in December 2002.

## *Safe School Buses*

A detailed analysis of the Task Force recommendations was undertaken to establish their operational feasibility and whether other issues outside the report needed to be taken into account.

This process revealed that the timelines presented by the Task Force did not take into account the current age profile of the school bus fleet. Due to limited available second hand vehicles, the current fleet has a significant number of older vehicles approaching the maximum age allowed in Queensland. Regardless of the Task Force recommendations, approximately 54% of school buses over 5 tonnes in rural areas would have had to be replaced by the Task Force's initial target date anyway. While this equates to the projected statistical outcome by the Task Force (50% by 2009), it does not reflect the intention of the Task Force recommendations to stage replacement based on the risk of the operating environment.

The manufacturing capacity for the construction of new buses in Queensland also conflicts with the targets in the Task Force report. The report estimates that the industry is capable of producing approximately 20 extra buses each year under current arrangements. Estimates utilising existing fleet age profiles and the Task Force prioritisation recommendations indicate an annual requirement in excess of 200 vehicles for the next 7 – 10 years.

The Interdepartmental Working Group noted that the school bus industry in Queensland is diverse and complex. Fleet sizes vary from a single mini-bus to approximately 100 vehicles, with operating environments covering all possible terrains, and the application of the recommendations would need to take this into account.

Similarly, financial circumstances for the 700 individual operators are not uniform. Average school services operate approximately two to three hours per day for 200 days per year. Annual incomes vary from \$30,000 to \$80,000 per bus depending on distance and vehicles utilised. Operators may supplement their income by charter or commuter services or other non-bus business interests.

Vehicles are purchased to match this range of operating and personal economic circumstances and can be any age from new to the maximum of 25 years for large buses and 20 years for light buses. The imposition of a standard compulsory new bus-purchasing regime on such a diverse group of operators was considered likely to cause financial hardship in certain cases, particularly in rural Queensland.

In response to these concerns, the recommendation made by the Interdepartmental Working Group was for the provision of a set amount of seed funding for new vehicles because they are not currently available in the second hand market. The gradual introduction of these vehicles would in turn activate on sale of other vehicles, deletion of some older vehicles, and accelerate the introduction of ADR59/00 compliant vehicles.

The Interdepartmental Working Group noted that the Task Force recommendations in relation to seat belts and standing passengers have not been adopted in any other state or territory. Implementation of these recommendations requires the resolution of a number of practical and legal issues. Examples of these are:

- technical solutions regarding appropriate seat belts for students under 25kg;
- guidelines for operators regarding the use of buses with damaged or defective belts;
- strategies to ensure belts are worn;
- the impact of reduced capacity in light buses (< 5 tonnes) if lap sash seat belts are introduced, because high back seats occupy more space than current seating;
- protocol and guidelines for operators who may be required to leave students behind if standing passengers are not permitted. Extra buses would be required for these students. The current fares income would not support these buses; and
- the impact of cancelled commercial services not funded by government that may become unviable if new higher cash fares are introduced to preclude standing passengers.

In June 2002, the government approved \$3.6M for 2002/03 and \$3M pa ongoing to implement bus initiatives put forward by the interdepartmental working group based on the recommendations of the Task Force final report. The initiatives are currently being discussed with the industry and key stakeholders and are as follows.

1. **School Bus Upgrade Scheme** - \$3M will be made available each year to replace buses used on contracted School Transport Assistance Scheme (STAS) services outside commercial contract areas. From this funding, individual operators can apply for a 40% grant toward the cost of specified school buses less than five years old and meeting the Australian Design Rule for rollover strength (ADR 59/00), up to a maximum of \$100,000. Applications will be prioritised in accordance with Task Force recommendations, beginning with buses on designated long steep or very steep roads and then buses on major freight routes.
2. **Seat belt trial** - \$600,000 has been allocated to trial seat belts on school buses operating on designated long steep or very steep roads where standing passengers are currently not permitted. The trial will begin in Semester 1, 2003. Buses on both contracted STAS services or fare paying fully commercial services will be eligible for the trial, providing they are principally used on school services. The buses must comply with ADR59/00 and will be fitted with ADR68/00 compliant seats and lap sash seat belts. A proportion of the buses will be fitted with the newly approved McConnell Educator 2/3 belts to assess their practicality. An independent transport research organisation will evaluate the trial for Queensland Transport.
3. **School bus warning lights and signs and seat padding** – the current definition for a school bus allows some operators to avoid fitting school bus warning lights and signs if the bus is not used exclusively for the transport of children to and from school. This requirement will be revised so that all buses carrying school children outside urban areas for all or part of a journey to or from a school (other than school excursions) will have to be fitted with warning lights and signs by 1 July 2004. These buses will also be required to meet the standard for padding outlined in the Queensland Transport information bulletin “Safety Padding for Bus Handrails, Seats and Partitions” (VSIR.12.2/01) by 1 July 2004.
4. **Auxiliary brakes** – auxiliary brakes will be mandated on buses carrying children to and from school that are operating on designated long steep or very steep roads. This requirement will apply to buses introduced into service on these roads after 1 January 2003, and for all buses operating on these roads after 20 June 2009.
5. **Rollover requirements** - by 30 June 2009 buses carrying children to and from school on roads designated long steep or very steep will be required to comply with ADR59/00 Omnibus Rollover Strength.
6. **New operating guidelines to improve school bus fleet age and efficiency** – These guidelines will have a number of elements:
  - a. **Voluntary operator rationalisation scheme** – Over recent years, demographics have changed in a number of areas of the state. In some cases, the existing kilometre-based school bus networks could be improved in terms of efficiency and effectiveness by an amalgamation of services. Queensland Transport, in conjunction with operators’ representatives, will be developing guidelines to facilitate amalgamation of services that improve efficiency. This will be an entirely voluntary process that will not be imposed on operators.
  - b. **Fleet average age** – Currently, school service contractors are able to purchase vehicles of any age, provided it meets the maximum age requirements for the vehicle type. It is not proposed to change this policy. However, where an operator has a fleet of four or more vehicles, there will either be limits imposed on the proportion of vehicles greater than 20 years of age, or other similar measures. This will assist in the accelerated introduction of rollover compliant buses and reduce the incidence of older buses in the school fleet.

- c. **Revised policy for standing passengers** – The following enhancements to current policy are to be discussed with the bus industry with a view to being introduced by 31 December 2002:
- i. setting a standard of a minimum one accessible handhold per standing passenger with no more than five standing passengers per square metre of aisle space (eg. 1 square metre = 0.4m aisle width by 2.5m aisle length);
  - ii. putting clearly visible markings on the floors of buses to delineate areas where passengers cannot stand while the bus is in motion;
  - iii. displaying information relating to the number of adult seats and the maximum number of standing passengers that can be carried in each bus;
  - iv. prohibiting buses from carrying standing passengers when using roads where the speed limit is greater than 100 km/h; and
  - v. prohibiting standing passengers on buses when using 100 km/h roads that are unsealed or are one lane, two way (eg. drivers move over the edge of the road to pass).

Queensland Transport, in consultation with Education Queensland and the Queensland Bus Industry Council, has developed a training package for bus drivers to complement the Code of Conduct for School Children Travelling on Buses. Under proposed amendments to legislation, bus operators will be responsible for providing their drivers with training in managing the behaviour of children on buses. Implementation of the training package will begin in September 2002.

The Queensland Bus Industry Council is progressing the recommendations for the introduction of an Emergency Response Plan for bus crashes in Queensland, and the issue of bus driver remuneration, in consultation with the Department of Emergency Services, and the Department of Industrial Relations, respectively.

#### *Evaluation and Monitoring*

In December 2001 the government allocated \$30,000 to begin work on amending the Road Crash Database to allow school transport road crash data to be coded into the database. Once the data has been coded, Queensland school transport related crash information will be able to be extracted as required. In June 2002, the government agreed to fund this data coding and extraction for \$30,000 pa on an ongoing basis.

#### **Conclusion**

The School Transport Safety Task Force and Interdepartmental Working Group have developed a package of initiatives to comprehensively address and improve the safety of travel to and from school in Queensland. The Queensland government has allocated \$4.63M funding in 2002/03 and \$4.6M pa ongoing to help progress these initiatives.

This is possibly one of the most comprehensive and integrated approaches to school transport safety yet undertaken in Australia. Queensland Transport will evaluate the implementation of the package of measures in an effort to identify best practice, and provide evaluation reports to enable other jurisdictions to follow progress.

#### **References**

Queensland School Transport Safety Task Force. 2001a. Overview of Research and Practice.

Queensland School Transport Safety Task Force. 2001b. Final report.