Bus Safety Technical Advisory Committee (BUSSTAC)

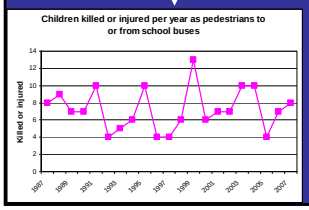
- Ministry of Education
- Ministry of Transport
- NZTA
- NZ Police
- Bus and Coach Association
- TERNZ

Research funded by NZTA

Modes used to travel to school (2003 to 2005)

- 40% by car
- 26% walk
- 23% by bus
- 10% cycle

	As pedestrians to/from bus (1987-2008)	As passengers in bus	
		1987-2008 (total)	Single event 1987
Fatal	23	7	5
Serious	47	46	22
Minor	92	143	14



Crashes

Approach

Pedestrians to/from bus

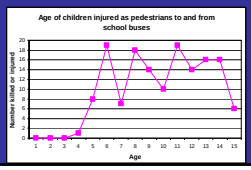
1. Eliminate need for children to cross road
2. Isolate by preventing children from running heedlessly across road
3. Minimise the consequences by slowing traffic down when children may be crossing

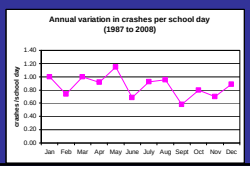
Passengers on bus

1. Reduce risk
   a. fleet management practices (vehicle maintenance, speeding, driver training etc)
2. Reduce consequences
   a. Compartmentalisation
   b. seatbelts

Incidents involving pedestrians to/from school buses

- "Running heedless of traffic" Police reports
- 85% in afternoon on way home from school
- Primary and secondary equally involved
- 61% of crashes in 50km/hr zone
- 86% of fatalities on high speed roads
- Equal number appear from front and rear of bus
- No reported incidents on unsealed roads



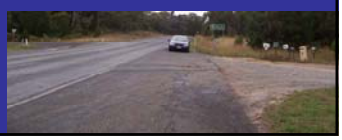


Present situation

- Virtually no motorists comply with 20km/hr speed limit
  - Average speeds of 84km/hr on SH27 north of Matamata and 83km/hr in Central Otago surveys
- Most children taught how to cross the road
- Various awareness campaigns: Rural Women, NZSTA, PTAs, schools, local authorities, Police. Largely local initiatives

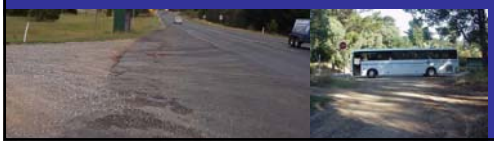
Eliminate need to cross road

- Rearrange bus runs
- Encourage caregivers to meet children at bus stop
- Improve bus stops



School bus stop and turning point safety guide

- Includes on-road and school gate bus stops
- Provides a rational basis for deciding which stops, interchanges to focus on first
- Provides guidance on level of treatment required
- Encourages continuous improvements of bus stops



Examples of bus stop evaluation

Conditions	Design Criteria	Treatment type
• Medium – high speed zone • Medium – high traffic volume • Medium – high proportion of large vehicles • Medium – high crash statistics • Good sight distances • Low student numbers • Transient – semi permanent route • Low service frequency	• Lane and shoulder widths meet standards • Sealed or unsealed shoulder • Good condition of road and shoulder surface	• No treatment required - buses stop in shoulder, located mid block or at least 50m from an intersection

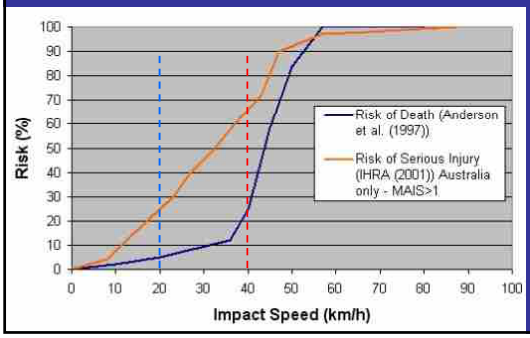
Conditions	Design criteria	Treatment type	Possible works
• Medium – high speed environment • Medium – high traffic volumes • Medium – high proportion of large vehicles • Medium – high crash statistics • Medium – poor sight distances • Medium – high student numbers • Semi permanent– permanent route • Medium – high service frequency	• Lane widths below or meet standards • Shoulder widths below standards • Unsealed shoulder surface poor – adequate road surface condition • Poor – adequate shoulder surface condition	Middle level treatment required – buses stop in shoulder located mid block or at least 50m from an intersection	• Medium upgrade to road and shoulder surface with suitable material for all weather conditions • Widen shoulder if appropriate • Provide designated area for parents waiting in cars • Appropriate vegetation clearance • Provide bus stop warning signage

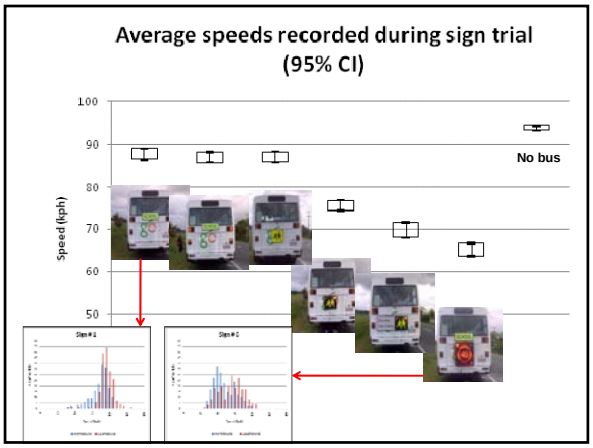
Prevent children running heedlessly across road

- Supervision of children when crossing road
- Road safety education in schools
- On-going reminders to cross safely

Schools, Police, road safety coordinators, Rural Women, PTAs, Safekids and other groups already do as much as they can

Minimising the consequences by slowing down the traffic





Predictability

Support road user expectations through consistency and continuity of design by:

- Same speed limits at schools and school buses
- Similar treatments at school zones and on buses
- Work towards common speed limit where there is high risk to vulnerable road users e.g.
  - high streets
  - engineered residential streets
  - roadworks

What should the speed limit be?

- Currently 20km/hr
- Sweden and UK adopting:
  - 30km/hr when vulnerable road users present: school zones, high streets, school buses, engineered residential roads
  - 50km/hr when risk of side impact: intersections

20 or 30 or 40

Recommended measures

- Encourage caregivers to meet their children at bus stop
- Rearrange bus routes to reduce the need to cross (on-going but limited scope)
- Implement school bus stop and turning point safety guide
- Slow the traffic down with active signs and enforcement
- Continue with incremental improvements in bus fleet safety

Thank you

For more information:

Download the School bus safety report (NZTA research report 408) from:
http://www.nzta.govt.nz/resources/research/reports/408/

Contact Peter Baas: p.baas@ternz.co.nz

TERNZ
TRANSPORT RESEARCH