



Road Safety 2011

School Transport: Assessing and Managing School Safety

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What we need to consider in relation to school transport

INTRODUCTION

- ❑ What do we understand by school transportation?
- ❑ What are the transport trends in relation to school transport?

ISSUES IN SCHOOL TRANSPORTATION

- ❑ Are there issues with school transportation that can and should be addressed?
- ❑ What are the most common issues?
- ❑ Under what criteria do we say they are issues?

ASSESSMENT OF ISSUES

- ❑ How do we assess or measure these issues (criteria, parameters, measurements or what qualitative conclusions if they are not measurable, affecting which stakeholders)

SOLUTIONS, OPTIONS AND CHOICES

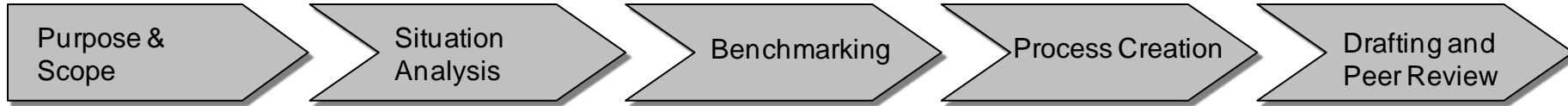
- ❑ Are changes required to improve safety in school transport?
- ❑ What options, practical choices present themselves?
- ❑ How do we address the issues and better manage or even totally resolve them?
- ❑ Are there practical solutions (even partial) available in relation to school transportation?

CONCLUSIONS AND RECOMMENDATIONS

Objectives

- ❑ To begin a community centred dialogue and to redefine and readdress the issues reviewing them with new perspectives and thinking
- ❑ To inspire you the professionals to:
 - Take a fresh look at school transport in a more holistic way
 - Review current issues and approaches to dealing with them
 - Consider a relook at existing processes and situations from fresh perspectives
 - Develop and support trials for changes at some schools
 - If successful then to consider broader implementation with national guidelines to achieve significant shared community effort toward a new future for school transport that is safe, healthy and sustainable
- ❑ At the very least we will have identified the ramifications of not taking more action

Methodology and Approach



- Overview:
 - Purpose & drivers
 - Objectives
 - Outcomes/outputs
 - Deliverables
 - Resourcing
 - Stakeholders
 - Governance
- Scope:
 - Organisational
 - Geographic
 - Functional interfaces
 - Temporal
- Constraints:
 - Time
 - Risks
 - Resources / Budget
 - Sponsorship
- Statistics
 - School travel
 - Road Safety
- Issues capture
- Stakeholder analysis
 - Requirements
 - Concerns
- Current practice (from studies and journal articles)
- Benchmarking and comparison with trends and approaches in other countries similar projects:
- Best-in-class benchmarking – identification of a best practice examples
- Discipline expert views:
 - Publications
 - SME's (Subject Matter Experts)
 - Key thinkers
 - Consultants
 - Policy specialists
- Development of draft process
- Testing
- Documentation
- First Cut Peer Review
- Meeting to agree and sign off
- Endorsement by Warren Centre
- Client Review
- Final Peer Review
- Completion of document

School Transport – Introduction

- ❑ Definition - School transportation could be referred to as a collection of home based/school (partly controlled) travel events that mostly occur in AM and PM school peak periods and event school days
- ❑ The definition can vary depending on **stakeholder** perspectives:
 - Residents
 - Commuters
 - Schools and teachers
 - Parents
 - Children
 - Public transport providers
 - Traffic managers
 - Government Authorities
 - Transport user representative groups (e.g. Pedestrian Council, Bicycle NSW)
 - Other relevant groups and individuals

Assessing School Transport Trends - 1

- ❑ In a 30 year period car usage for school transport has almost doubled and in some cases has more then doubled – almost incomprehensible???
- ❑ Where are our buses?

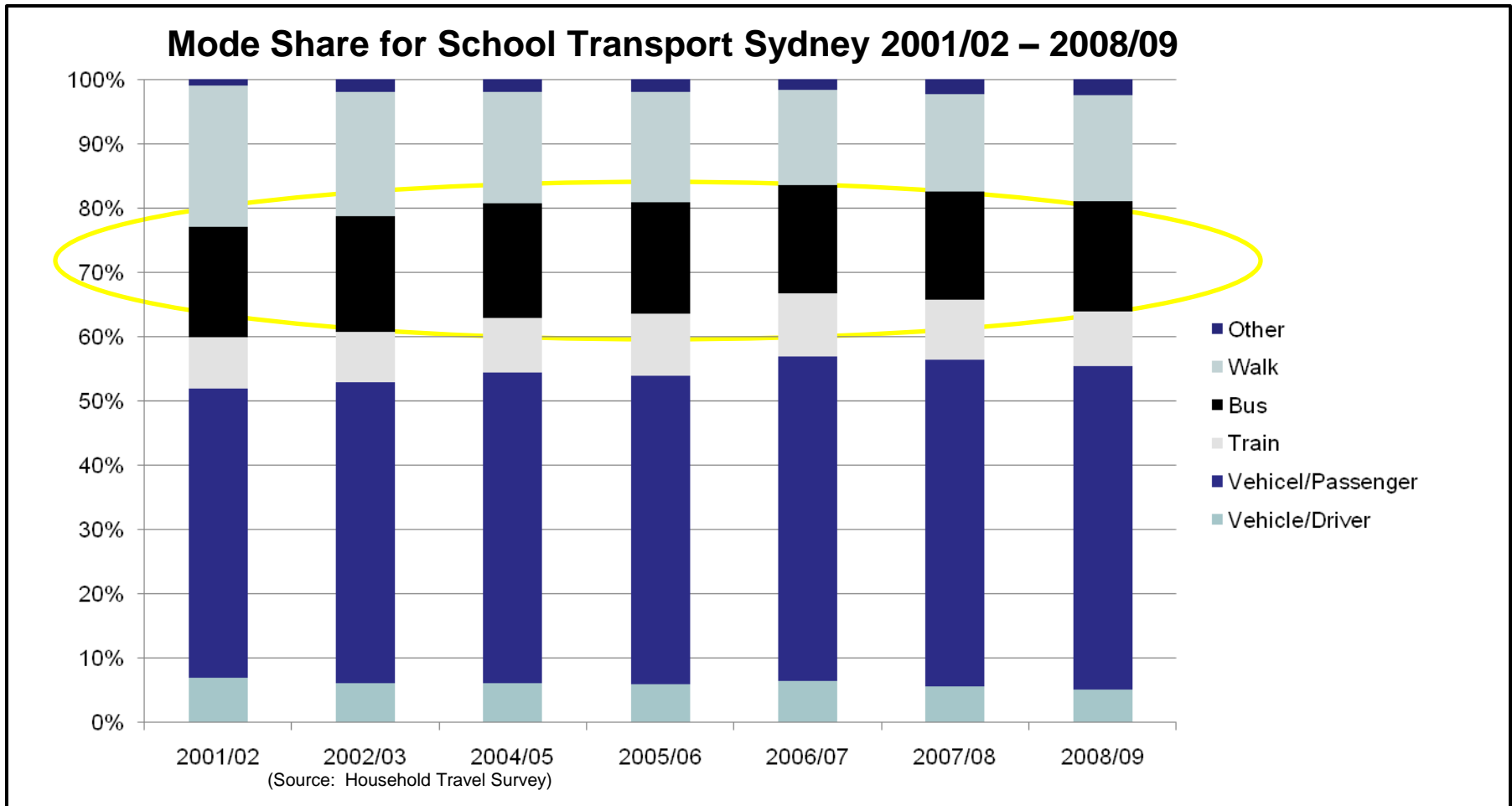
Mode Share for School Transport Sydney 1971 – 2003

Year	Age	Walk To	Walk From	Car To	Car From	Bus To	Bus From	Train To	Train From
1971	5 - 9	57.7	62.6	22.8	19.1	18.4	17.1	0.4	0.5
	10 -14	44.2	49.5	12.2	6.7	31.7	31.7	8.3	8.6
1981	5 - 9	44.5	48.2	37.3	31.8	16.6	18.2	0.5	0.5
	10 -14	39.4	44.1	18.6	11.1	31.3	33.3	6.7	7.6
1991	5 - 9	35.3	39.8	53.9	46.5	9.1	12.2	0	0
	10 -14	33.1	37.9	32.7	24.3	22.6	27.3	8.9	8.9
1999-2003	5 - 9	25.6	29.4	66.6	63.4	6.2	5.6	0.5	0.5
	10 -14	21.1	32.7	47.8	31.8	19.8	25.0	8.6	8.4

(Source: Hidde, et. al., 2008)

Assessing School Transport Trends - 2

- More recent statistics confirm the trend - Extraordinary to think that we can't get bus mode share to be better



Assessing School Transport Trends - 3

- ❑ School transport contributes a significant share of the motorised morning peak

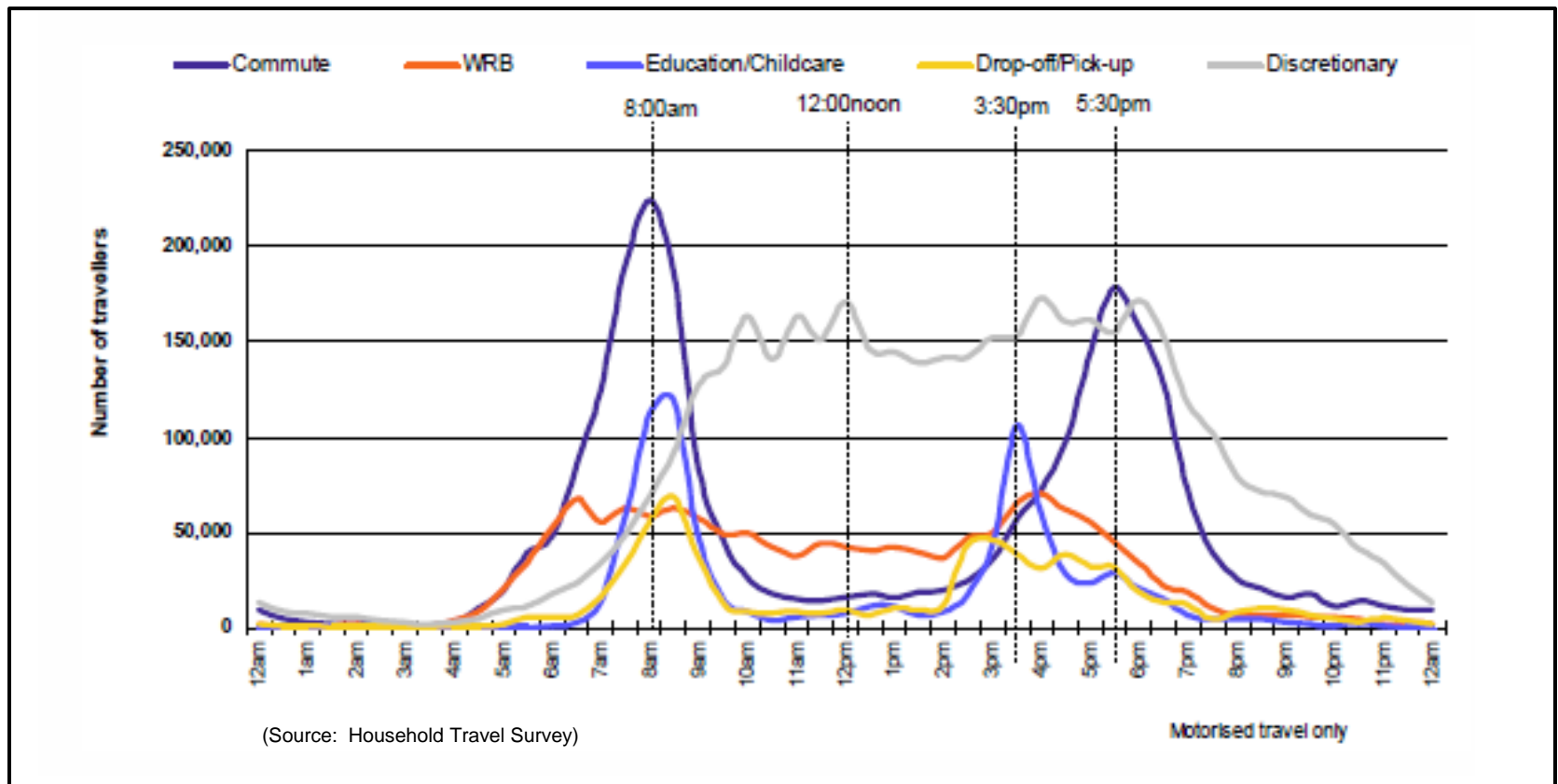
Purpose of Travel in the AM Peak Sydney 2001/02 – 2008/09

Purpose	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Commute	26.8	27.5	27.3	27.1	26.8	26.9	27.0	27.1
Work Related Business	11.2	10.3	9.7	9.3	9.1	9.2	9.9	9.6
Education/Childcare	18.1	17.7	17.6	17.9	17.9	18.0	18.0	18.0
Shopping	7.1	7.3	7.5	7.5	7.6	7.0	6.7	6.6
Personal/Business	4.7	4.6	4.9	4.8	4.7	4.2	4.2	4.2
Social/Recreational	8.9	9.8	10.1	9.9	9.5	9.5	9.1	9.9
Serve Passenger	23.0	22.4	22.6	23.0	23.8	24.7	24.5	24.1
Other	0.3	0.4	0.4	0.5	0.6	0.5	0.5	0.5
Total	100	100	100	100	100	100	100	100

(Source: Household Travel Survey)

Assessing School Transport Trends - 4

- ❑ The am peak in Sydney is dominated by travel for commuting, education and to drop off or pick up someone
- ❑ If more children were in buses what would this mean for the morning peak and for safety?



Assessing School Transport Trends - 5

- ❑ These trends mirror what has been happening elsewhere for example:
 - In the USA a decline from over 40% of children walking and cycling in 1969 to less than 15 % in 2001 (McDonald, 2007)
 - In the UK 48% of 5 – 10 year olds walked to school in 2008 which was 5 % lower than in 1995. In the same time period the percentage of car trip to school increased by 5 % (National Travel Survey, Dept for Transport)
- ❑ However, there is evidence from countries with less car focused more active transport friendly environments that these types of declines have not occurred. Examples include France, Germany, the Netherlands and Denmark where active transport mode use maintains a significant share of total trips and of school trips
- ❑ The majority of children in all age ranges walk to school in Great Britain and in France
- ❑ In the Netherlands over 60% in all age ranges walk or cycle to school

Issues - overview

- ❑ Are there school transport issues at most schools?
- ❑ Rarely is the answer 'No'. The issues can be viewed from a range of criteria and can be measured
- ❑ In general the direction of the overall trend for safety in school transport has been good supported by significant and important initiatives but there remain issues that need to be addressed

Criteria	Issue	Can we define and measure it?
Public health	Physical Activity, Obesity, Air Quality, Increased Incidence of Specific Diseases and Illnesses	YES
Road, vehicular and pedestrian safety	Conflict, Rage, Speed, Accidents, Other Risks	YES
Security	Physical Security from Harm by Persons Travelling to and from School	YES
Environment	Air Quality, Noise, Air Temperature	YES
Energy conservation	Fossil Fuels, Energy Wastage	YES
Transport efficiency	Congestion, Delay, Operational Time and Financial Cost	YES
Time management	Individuals Time and Costs	YES
Local amenity	Residential , Business	YES
Child development	Independence, Decision Making, Life Skills, Knowledge of Local Area, Ability to Use Public Transport	
Others		Probably YES

Specific Issues -1

❑ Road, vehicular and pedestrian safety –

- Once the infancy period has passed, injury deaths emerge as the leading cause of death for children under 15
- Children who die from injuries are more likely to die from transport accidents than anything else (about 40%)
- In most deaths that are the result of a transport accident the child was either the occupant of a motor vehicle (44%) or a pedestrian (35%)
- Children are much more likely than adults to have been a pedestrian in an accident
- National research estimates that, relative to school bus travel, a child's risk of death or injury is 7 times greater if travelling by private car, 31 times greater if walking and 228 times greater if cycling
- Bus travel is by far the safest mode of school transport in Australia
- Many parents may have chosen the car mode based on their perception of safety and security for their child, but the comparative risk assessments of various school transport modes and arrangements are not simple, and parents may not be aware of or fully understand these risks

Specific Issues -2

❑ Road, vehicular and pedestrian safety continued –

- The risk exposure of children to school transport related accidents may have been increased by changes in the mode of travel
- Have some of the more recent changes in NSW which require children to walk more to catch a bus (in the absence of local traffic calming measures) increased the exposure of children to transport accidents during the school journey?
- Was this possible (and there are no doubt others) unintended consequence of a policy change adequately considered prior to implementation?
- We use 40 kph in school zones but we know EVEN that is too fast to prevent serious injury should an accident occur. Whilst this speed may be realistic on major roads, it may not be on local street systems near schools during peak periods. UK experience has shown that even speed limits of 20 kph have proven to have adverse safety outcomes in the absence of traffic calming measures
- The use of speed calming device at schools is critical - devices such as raised platforms, marked foot crossings, pavement markings and speed cushions for speed calming

Specific Issues - 3

❑ Road, vehicular and pedestrian safety continued –

- A number of schools are now using their own buses and drivers to transport children to school with anecdotal reports of schools operating up to 28 bus routes. Are schools best placed to operate and manage school bus transport?
- Schools are increasingly faced with managing congested traffic (cars, buses, cycles, pedestrians, skate boards) situations in peak periods. Do they really have the skills to do this effectively especially as traffic situations become more difficult?
- Have we relocated (where possible) school access off the arterial road system? If not do we need to give special consideration to reduced speed limits (below the current 40kph) on these busy arterials?
- Some schools have invested heavily in car parks (multi storey car parks are now appearing in some schools) at least in part to accommodate older students driving their own cars. Have we prepared with adequate education, children and parents for this increased exposure to transport accidents?
- The Northern Territory is looking at mandatory inclusion of such education in the high school curriculum. Should it be considered at the national level?

Specific Issues - 4

❑ Road, vehicular and pedestrian safety continued –

- South Australia is moving on the mandatory inclusion of seat belts in school buses. Should this be considered nationally?
- The draft National Road Safety Strategy is silent on the issue of school transport. Are we missing a valuable opportunity to move nationally to improve safety outcomes for our children?

❑ Security -

- Parental concerns about security always feature in studies as a reason why parents restrict children's independent mobility
- Have we fully leveraged the institutions that exist at the micro scale (the street in which we live, local neighbourhood, school class, school community) to support increased security for our children during travel to and from school?
- Would more active school transport choices (including bus) that involve parental and carer support increase levels of security for children? (perhaps pooling and supervision)

Specific Issues - 5

☐ Public health –

- Physical inactivity is a major contributor to the increased disease and reduced health
- In children, physical activity is associated with improved cardiovascular risk factors, better bone health, and enhanced psychosocial well-being
- Children who walk to school have higher energy expenditure, are more physically active and are more likely to meet physical activity guidelines than children who travel to school by car

☐ Environment and energy conservation –

- Transport is a significant contributor to harmful particulates and other emissions in Australia
- Transport is currently the third highest contributor to greenhouse gas emissions in Australia but it is the fastest growing
- Buses are far more energy efficient than cars and increasingly so as we upgrade the vehicle fleet to move toward more environmentally friendly buses

Specific Issues - 6

❑ Transport Efficiency –

- A significant proportion of the am peak is school transport
- School transport is a significant part of local road congestion
- Much (including arguably) unnecessary investment by schools is in building car parks and off road kiss and drop zones, buying and operating buses and managing car based transport at or near the school in peak periods

❑ Time Management -

- Parents can create significant financial savings annually (**at least \$3000 per year**) by their children using a bus (this includes consideration of the minimum value of time, fares and vehicle operating costs)
- The time saving is significant in relation to older children, who do not require any supervision on the bus journey and is greater again for longer journeys

Specific Issues - 7

- ❑ Local Amenity- Typical neighbourhood amenity impacts include –
 - On street vehicle congestion
 - Kerb side parking overload, illegal/dangerous parking, double parking
 - Congestion, obstruction, queuing and delay
 - Queuing by private cars and buses from the school street entry point back along the local road, and sometimes into the regional road network links
 - Conflict between local residents and drivers of private vehicles in relation to vehicular movement, parking, obstructed roadways and access issues

- ❑ Child Development –
 - Parental restrictions on children's independent mobility and the consequent loss of all the associated learning opportunities including self management

The Challenge

- ❑ How do we gain the benefits of active transport (including that associated with public transport) while managing the associated and real accident risks (especially that relating to pedestrians and cyclists)?
- ❑ Other countries have succeeded. For example, in the Netherlands and Germany:
 - There is a culture of active transport and participation rates in active transport are higher
 - Education programs for children around active transport and traffic safety are compulsory
 - Obesity, diabetes and hypertension rates are much lower
 - Strategies to increase active transport and improve safety have seen fatalities decline and urban environments changed to improve conditions for active transport participants

Predictors of Active Transport - 1

- ❑ A recent study (Leslie et, al., 2010) of almost 3000 Australian year 6 and 8 students who lived within 2 kms of the school they attended in 30 communities in 3 states found:
 - Gender was a predictor of active transport choice - girls were more likely to walk or be driven
 - Enjoyment of physical activity and support of physical activity was higher for boys
 - Predictors of active travel common to boys and girls included higher perceived safety and the proximity of recreational facilities close to home
 - Programs need to be develop that target both parents and children

- ❑ A NSW study (Booth et, al., 2007) of 500 students in years 6, 8 and 10 similarly found there was scope to increase active transport for primary school students but less so for secondary school students

Predictors of Active Transport - 2

- ❑ A study (2004) by Deakin University and the Department of Education and Training Victoria of 235 children aged 5 to 6 years and 677 children aged 10 to 12 years from 19 elementary schools in Melbourne reviewed a broad range of factors and identified the following factors that inhibit children's active commuting:
 - Distance
 - Busy intersections
 - Poor access to lights/crossings
 - Hilly routes prohibit
- ❑ The researchers suggested that to increase children's active commuting to school, it may be important to:
 - Create child friendly communities
 - Provide skills to safely negotiate the environment
 - Address parental perceptions of few other children in the neighbourhood

Predictors of Active Transport - 3

- ❑ A longitudinal study (“Children Living in Active Neighbourhoods” see Carver, et. al., 2009) examined associations between safety-related features of the neighbourhood road environment (present at the start of the study) and changes in active transport and physical activity among children and adolescents over a 2 year period
- ❑ For all participants, positive associations were demonstrated between road environment variables and change in active transport or physical activity
- ❑ These associations differed by age group and sex. In particular, the road environment was associated most with change in active transport among girls in both age groups. Designated walking tracks in their neighbourhoods may be important to encourage active transport among girls
- ❑ The aspects of physical infrastructure which appeared to have the most impact on physical activity behaviours were traffic-calming measures
- ❑ Hence, this research supports the extensive body of research on the importance of quieter local streets with a speed limit of 50 kph or less

Predictors of Active Transport - 4

- ❑ We know from the research that the following factors are important in relation to increasing active transport among school children:
 - Car ownership
 - Attending private schools
 - Parents fears about safety and security
 - Parental perceptions of the need to cross several roads
 - Lack of traffic lights or crossings
 - Presence of an adult at home
 - Gender
 - Age
 - Socio-economic status
 - Population density
- ❑ We also have examples of how it has been done successfully especially in the Netherlands and Germany

Solutions - Barriers to Improvement - 1

- ❑ Recent research in Queensland (Cole, et.al., 2010) reviewed the institutional barriers to improvements in school transport decisions and found that key themes emerged relating to:
 - Infrastructure delivery
 - Public Transport Services
 - Walk- And Cycle-friendly Community Attributes
 - Political leadership and government coordination
 - Societal travel norms and culture
 - Limited resources and relevant technical expertise
 - Institutional and practitioner cultures
 - Agencies not identifying with their roles in active transport

- ❑ Key recommendations to achieve results were policies and cross-government initiatives including: economic incentives and built environment guidelines, campaigns addressing public attitudes, **CULTURES** and opinions, and community participation in policy-making

Solutions - Barriers to Improvement - 2

- ❑ Perceptions of costs and ineffectiveness of programs emerge from reviews of program outcomes
- ❑ A recent cost effectiveness review of a walking bus program in Victoria for example (Moodie, et,al., 2009) which assessed from a societal perspective the incremental cost-effectiveness of the Walking School Bus (WSB) program for Australian primary school children as an obesity prevention measure found that the WSB program is not an effective or cost-effective measure to reduce childhood obesity
- ❑ However 63% of costs in that program related to the employment of local government project officers and the review was partial in that it left unquantified a range of variables that could have been included
- ❑ This outcome would support other work that has pointed to the importance of community involvement for success
- ❑ In this case increased community involvement would greatly reduce the 'project officer' costs associated with the scheme

Solutions - Barriers to Improvement - 3

- ❑ STAYSAFE (STAYSAFE 53, 2002) reviewed traffic control and safety in the vicinity of schools. It found that, “The traffic environment around schools is one of the most complex road transport environments normally encountered by the majority of motorists, and is easily the most complex traffic environment normally encountered by children”. The principles applied and the recommendations would seem to remain relevant
- ❑ Principles:
 - School safety issues are "low probability - high consequence" events
 - Local solutions need to be found for local problems
 - Solutions need to be based on a universal (generic) policy framework
 - Community ownership and involvement in solutions
- ❑ Recommendations related to:
 - Institutional arrangements and policy frameworks
 - Local road infrastructure (safer routes to schools)
 - Traffic management around schools
 - Education
- ❑ Is there a need to revisit this issue and consider it in the same depth again?

Options for the future – Critical Questions - 1

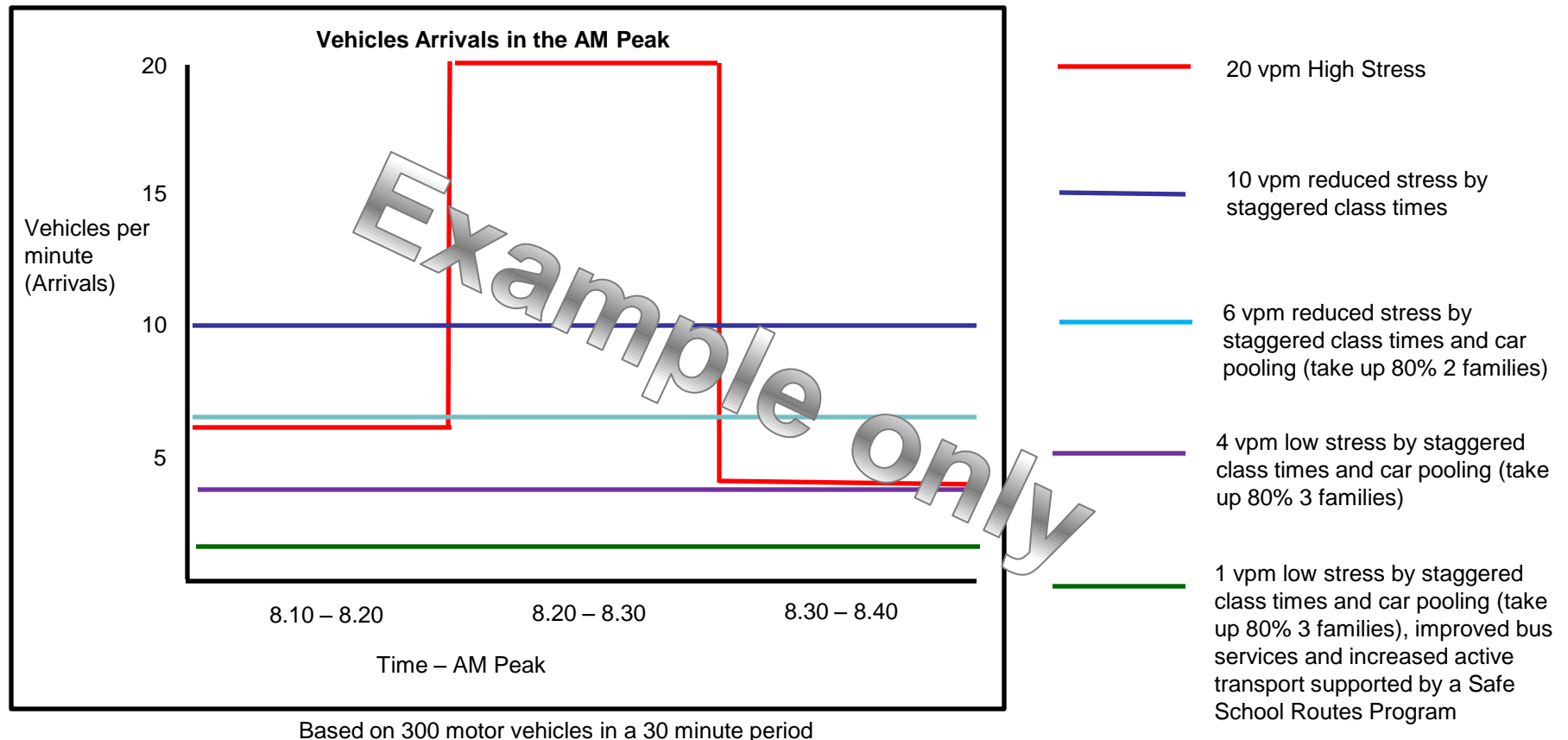
- ❑ Are there problems with School Transport - Have we heard it all before, we know the issues and we have done most of what we can ?
- ❑ Can safety /security be improved or has enough been done at any school in question?
- ❑ Can little more possibly be done short of high cost changes to school or transport infrastructure or drastic and unrealistic changes to individual and community habits?
- ❑ Are we happy with the safety process management that applies to school bus decisions?
- ❑ Are we content with the current 'complain and patch' piecemeal process often via the local traffic committee and Council
- ❑ Is there scope for improvement still on how we deal with the issues and their management ?
- ❑ Can we structure Traffic Committee responsibilities to reflect the reality that traffic is more than cars?

Options for the future – Critical Questions - 2

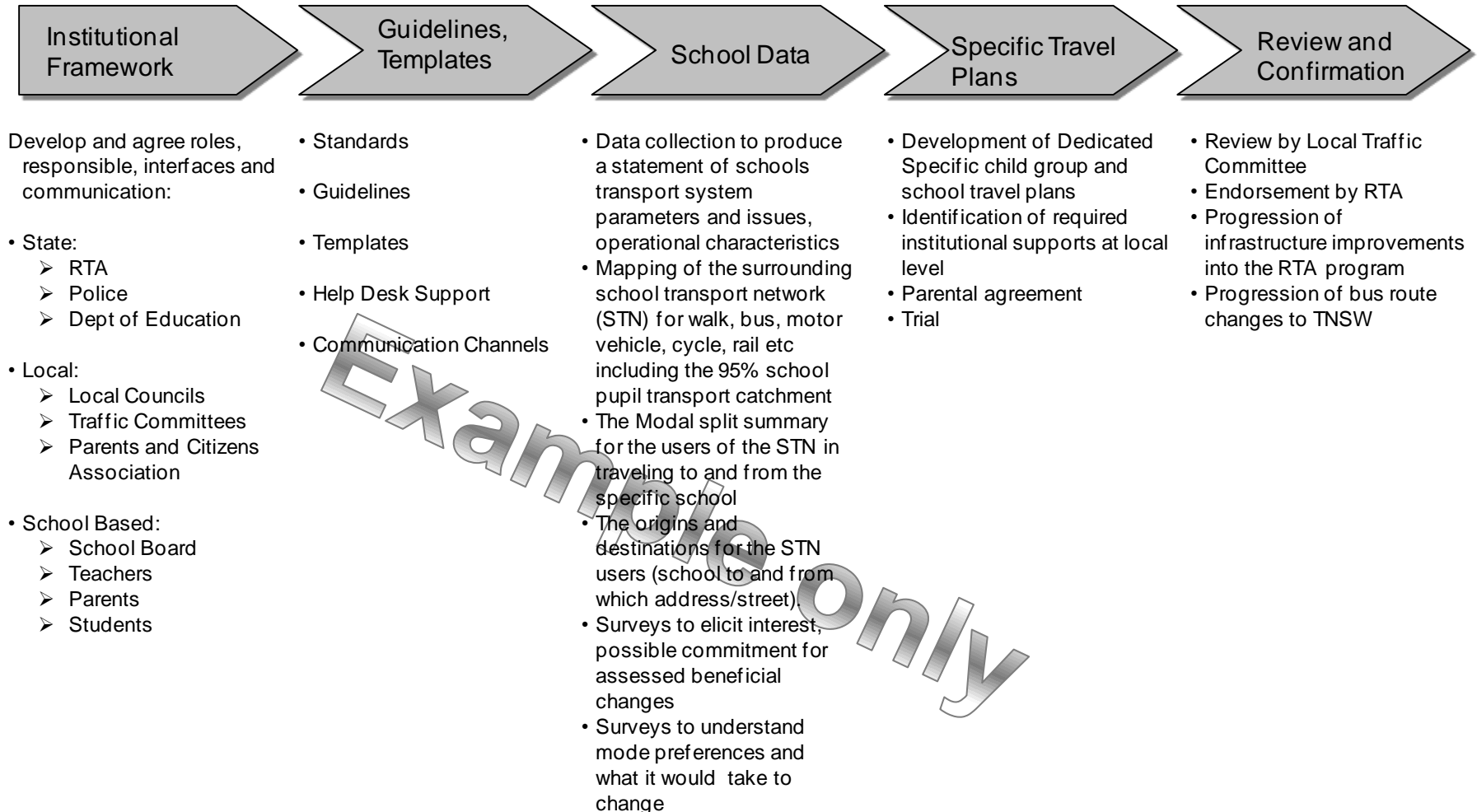
- Can we improve school transport choice by applying the concept that those responsible for generating the traffic need to be at least partly responsible for its management?
- Can we use the resources in the local school /community supported by the institutional framework to deliver significantly improved outcomes?
- Could we develop and apply a generic process so that each school community develops its own school transport plan to address local needs, issues and aspirations so that the community creates its own social, economic and ecological environment?
- Can we use web based technology to deliver guidelines, simple planning packages and training to local school communities?
- Can we use social media to support a range of active transport options for small groups of school children?
- Can we empower and resource critical volunteers (Parents and Citizens, School Councils, Parent Groups)?
- Can we start to rebuild the social fabric of local communities that is basic to the provision of safety and security for our children?

Conclusions and Recommendations – practical and gradual improvements within each school community

- Support each school community to improve its transport environment and deliver improved safety, security and sustainability outcomes by the application of a range of simple measures toward a calmer street environment



Conclusions and Recommendations – revised framework to deliver grass roots support to school communities



Conclusions and Recommendations – commitment to stretch targets supported by a strategic plan developed with stakeholders

- ❑ Outcome: Children travelling to school using safe, secure sustainable transport in supportive, connected local communities
- ❑ Objective: To achieve international best practice **proportion** of travel by children to school using public transport and active transport.
- ❑ KPIs:

% of children travelling to school by:

- Bus - at least double current levels
 - Train - at least a 10% improvement
 - Bicycle - to increase (but only if proper total safety management is in place)
 - Walking - to increase (if distances are appropriate and only if proper total safety management is in place)
 - Private Vehicle – reductions of at least 25% in arrivals and departure in vpm
- ❑ KPI Targets: Set to achieve **best practice** in stages aligned to the strategic plan

Conclusions and Recommendations – mode and institutional changes

- ❑ School transportation solutions mean school transportation changes that may consist of:
 - Mode change - bus route changes or additional buses, and community involvement in changes to active transport
 - Demand Management changes - car pooling, staggered school start and end times, community involvement
 - TRANSPORT Infrastructure - design changes (especially traffic calming measures and safer school routes programs)
 - SCHOOL Infrastructure design changes - set down pick up zones on site and off arterial roads
 - Transport management changes - Traffic Management Plan, Traffic Control Plan design changes where appropriate
 - School staff, volunteers, Council staff – process review and reengineering
 - Institutional change – review role and structure of the local traffic committees, review current support from central agencies

- ❑ Finally we recognise that we are here to support parents as it is the responsibility of the parent to ensure that their children’s security and safety is appropriately risk managed, regardless of the mode of school transport described here or ultimately chosen

Thank You

Many thanks to all those who provided assistance and advice:

- The Board of 10000 Friends of Greater Sydney
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- Chris Stapleton
- Ian Faulks
- John Gilbert, Transport & Logistics Industry Skills Council

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