

A Comparative Evaluation of 'Safe Routes to School' Implementation

Final Report

16 September 1999

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Title:	A Comparative Evaluation of Safe Routes to School Implementation					
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Date:	16 September 1999					
Abstract:	This report compares and contrasts experience in different Australian states with the implementation of Safe Routes to School.					
Keywords:	Pedestrian, cyclist. road safety, school travel					

EXECUTIVE SUMMARY

'Safe Routes to School' (SRTS) is a road safety program focused on travel to and from school. While there are differences in the programs operated in different States they generally involves four stages:

- planning and establishing the program at the school level,
- investigation of local issues and needs often through a combination of a travel survey and observation surveys,
- developing and implementing an action plan which may comprise engineering, education, enforcement and encouragement dimensions, and finally,
- maintaining, monitoring and evaluating the program.

In this study, a comparative evaluation of the implementation of SRTS in Australia has been undertaken by comparing and contrasting State-based SRTS initiatives. The study proceeded in two phases. The first phase focused on program level evaluation and involved reviewing printed program material from different states and conducting telephone or face to face interviews with individuals in each state who were involved in the delivery of the statewide SRTS program. The second phase of the study focused on issues at the individual school level which were explored by conducting case studies in two states (Victoria and NSW).

Differences are already emerging in the approach taken at a program level to SRTS implementation in different states. In some cases there is no explicit SRTS program in operation and in others the programs are quite mature or are undergoing refinement/reorientation after initial trials. The most mature programs are operating in Western Australia and Victoria with the South Australian program, which is heavily based on the Victorian model, gathering momentum. The NSW program is unique for its commitment to run the program at all primary schools in the state and for the exclusion of engineering treatments as an explicit component of the program.

Differences exist in relation to the refinement of program objectives, the balance between Engineering, Education, Enforcement and Encouragement dimensions of the programs, the manner in which schools are selected, the extent to which program delivery is undertaken by consultants and the extent to which maintenance issues are considered in the program.

The consideration of SRTS projects at the school level highlighted the importance of the engineering dimension of the program, the need to manage expectations (on the part of schools) about the time frame over which the program would deliver results and the role which SRTS plays in making traffic safety education more localised and made relevant to local issues. SRTS programs are also an ideal opportunity to build links between schools and other organisations such as local government and the Police.

It was clear from this project that there is much to be gained from greater exchange between individuals involved in SRTS programs. Valuable lessons can be learned from the experiences gained in different states. It is recommended that FORS convene a National Workshop on SRTS to facilitate ongoing exchange about this important road safety initiative. That national workshop would also be an ideal opportunity to begin to discuss the scope for outcome evaluation projects to complement the process evaluations which been initiated in a number of states.

ACKNOWLEDGEMENTS

The assistance of individual's from local and state government organisations as well as principals and teachers from the schools visited is gratefully acknowledged and appreciated.

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1. INTRODUCTION

Children and young people have a high involvement in road crashes particularly when they are walking or riding a bicycle. Victorian data highlights that the number of accidents involving child pedestrians and cyclists tends to increase with age (Vic Roads, 1999) with cycling accidents outnumbering pedestrian accidents above about 9 years of age. Between 1990 and 1996, primary and secondary school age children accounted for about 30 per cent of pedestrian accidents in Victoria (MacKenzie, 1999). For the 4 to 12 year old age group in Victoria, about 65 % of pedestrian accidents occur immediately before or after school (7:30 AM to 9 AM and 3 PM to 5 PM) while for the 13 to 18 year old group the comparable figure is 49 %. It is not surprising therefore that road safety initiatives have been developed to target school travel in an effort to reduce children's involvement in road accidents.

'Safe Routes to School' (SRTS) is a road safety program focused on travel to and from school. While there are differences across States (which are described later in the report) it is possible to outline the common features of a SRTS program. It tends to be delivered by a state road authority in conjunction with local government, the school community and the police. In general, the program involves four stages:

- planning and establishing the program which encompasses selecting schools for involvement, establishing links with the municipality and schools concerned,
- investigation of local issues and needs often through a travel survey which is used to establish the routes used by children to access the school and observation surveys to examine behaviour patterns,
- developing and implementing an action plan which may comprise engineering, education, enforcement and encouragement dimensions, and finally,
- maintaining, monitoring and evaluating the program.

Vic Roads established 'Safe Routes to School' (SRTS) as a local community-based program which aimed to 'reduce the incidence and severity of injuries to primary school-aged children as pedestrians, bicyclists and passengers' (Vic Roads, 1994). In 1994, the Australian Transport Advisory Committee recommended that SRTS be adopted nationally based on the Victorian model.

As part of the 1997-98 Road Safety Research Grants program, funding was approved by the Federal Office of Road Safety (FORS) for this project which focuses on evaluating the Australian experience with implementation of SRTS. Dr Geoff Rose, Head of the Institute of Transport Studies at Monash University undertook the project as chief investigator. The project began in July 1998 and this report reflects the completion of the project in June 1999.

1.2 STUDY OBJECTIVES

The primary objective of this study is to:

• undertake a comparative evaluation of the implementation of SRTS in Australia by comparing and contrasting State-based SRTS initiatives.

The project focuses on two levels: the program level and the project level. At the program level the study aims to :

• identify similarities and differences in program structure, emphasis, issues governing tailoring to specific local considerations, resourcing, administration, support materials, methods of delivery etc.,

while at the project level the aim is to :

• identify the extent of similarities/differences at the level of individual projects focussing on differences in underlying safety issues, countermeasures, typical expenditure, timing, etc.

It is important to highlight that the thrust of this project is essentially on 'process' evaluation rather than 'outcome' evaluation. Clearly, outcome evaluation is also important in the context of SRTS. An outcome evaluation would consider the impacts of these programs in terms of injury reductions and other objective achievements and would examine the extent to which benefits outweigh costs.

1.2 OVERVIEW OF THE STUDY METHODOLOGY

The study proceeded in two phases. The first phase focused on the program level evaluation and involved reviewing printed program material from different states and conducting telephone or face to face interviews with individuals in each state who were involved in the delivery of the statewide SRTS program. These were predominantly representatives of the State Road or Transport Authority which tended to have responsibility in most states while in one State it was a local government organisation. Through the reviews of the printed literature, and the subsequent discussions, the different SRTS programs were compared and contrasted.

The second phase of the study focused on issues at the individual school level. Consistent with the initial proposal these issues were explored by conducting case studies in two states. Victoria and NSW were selected because of the nature of their respective programs and the geographic convenience which made it possible to include country NSW schools in this part of the study. For Victoria, two prior studies (one conducted under the supervision of Dr Rose) had examined issues at the school level and these were reviewed in detail. In the NSW case, visits were made to six schools in city and country areas where discussions were held with principals and staff representatives. Telephone interviews were also conducted with other staff who were involved in the delivery of the program.

1.3 STRUCTURE OF THIS REPORT

The structure of this report is as follows. The following section (Section 2) discusses the program level evaluation. Consideration is given to comparable international initiatives (Section 2.1) before the status of SRTS in each Australian state is considered (Section 2.2). A number of issues, highlighted by the program level evaluation, are then discussed in detail (Section 2.3). The project level evaluation is considered in Section 3. The Victorian and NSW case studies are considered separately (in Section 3.1 and 3.2 respectively) before overriding issues are highlighted (Section 3.3). The recommendations and conclusion of the study are then presented in Sections 4 and 5.

2. PROGRAM LEVEL EVALUATION

The first component of this study examined issues at the program level. This involved examining the scale and characteristics of the SRTS program in each state to identify similarities and differences in program structure, emphasis, issues governing tailoring to specific local considerations, resourcing, administration, support materials, methods of delivery etc. Before reviewing the Australian programs, it is appropriate to begin by outlining overseas SRTS initiatives so that the Australian SRTS programs can be placed into perspective.

2.1 SRTS PROGRAMS: AN OVERVIEW OF INTERNATIONAL INITIATIVES

Denmark initiated a SRTS program about 20 years ago in Odense (Nielsen, 1990). The program aimed to increase the number and safety of children walking and cycling to school. The structure of the program is similar to SRTS initiatives in Australia. It begins with a questionnaire survey of school students, about routes to school and social activities and dangerous places, the development of proposals in conjunction with teachers, parents and the police as well as the implementation and evaluation of the project. Road safety education is part of the curriculum (independent of SRTS) while the engineering treatments included in the program are similar to those employed in Australia and include speed limit reductions, road narrowings and traffic islands (Nielsen, 1990). The evaluation efforts reported in the English literature are limited with claims that the engineering treatments have been a success, that accident frequency has been reduced by 85 % in reduced speed areas and correspondingly the accident severity is reduced (Nielsen, 1990).

The major SRTS initiative in the UK is based on the Denmark model. Sustrans, a civil engineering charity. launched, administers and partly funds the SRTS program in the UK (Sustrans, 1998). Sustrans is responsible for the development of the National Cycle Network in the UK. The SRTS project was devised to:

enable the independent mobility of children, by developing cycling and walking within their communities in such a way as would command public support and also help to reduce traffic (Clarke, 1997).

The education component of the UK program is diverse covering environment, health and bike education as well as safety education. Teachers resource folders have been prepared by Sustrans and additional educational support includes a quarterly SRTS Newsletter and the SRTS homepage (Sustrans, 1998). Engineering treatments are an integral component of the British SRTS program with measures including reduced speed limits near schools (linked to school start and finish times). traffic calming, intersection improvements cycle paths, crossing facilities and enhanced signing (Osborne and Davis, 1996).

The requirement for project funding from the local councils caused problems for the UK program (Clarke, 1997) with shortages of funds contributing to the slow progress on the ground in some areas. The motivation for the local authorities involved in the program include traffic reduction and road safety. There is a desire to see evidence of modal shift, accidents reductions and attitude changes identified in later evaluations for the scheme to be judged a success at the local level.

The published literature suggests that less consideration is being given to walking and cycling to school in the USA where a major emphasis tends to be on safety issues associated with bus transport to and from school. In Palo Alto, California, a Citywide School Commute Safety Study has similar characteristics to international SRTS initiatives. Safety issues are identified using surveys, data are collected and possible improvements are identified and evaluated prior to selection and implementation (Daisa, 1997). The education component of the program includes consistent education materials for all the schools, publicising the impact of school related vehicle trips and bike training sessions (Daisa, 1997). Traffic engineering treatments included in the program are evaluated on the basis of their cost, effectiveness, physical feasibility and impacts on traffic flow with high ranked treatments including increased maintenance, speed reductions through enforcement, improving sight distances, installing bike loop detectors at intersections and provision of adult crossing guards (Daisa, 1997).

Common features of these overseas SRTS initiatives include explicit incorporation of engineering treatments as part of the program and, perhaps with the exception of Denmark which has a separate compulsory road safety education program, an integrated education component.

2.2 OVERVIEW OF CURRENT AUSTRALIAN SRTS PROGRAMS

Discussions with representatives from the authorities running the SRTS program in each state along with reviews of the printed program material obtained from each state has provided a basis for assessing the current status of SRTS programs across Australia.

Table 1 provides a snap shot of the status of SRTS in different states with an emphasis on implementation at the program level. More detailed examination of the various elements of the programs is undertaken in the following section. The focus here is on the profile of the SRTS program in each State and some of the macroscopic differences across State programs.

Differences are already emerging in the approach taken at a program level to SRTS implementation in different states. In some cases there is no explicit SRTS program and in others the program is undergoing refinement/re-orientation after initial trials. A coarse three level categorisation can be used. First, there are three States/Territories where SRTS programs have a fairly low profile or where little is limited initiative in terms of SRTS. The Northern Territory, ACT and Tasmania fit into this category. The second category is at the other extreme, and includes the mature programs operating in Western Australia and Victoria. In between these two extremes is the third category which includes South Australia, Queensland and New South Wales. The South Australian program is gathering momentum and is heavily based on the Victorian model. Queensland is undertaking a reassessment/redefinition of the program as walking and cycling issues begin to be considered more explicitly as part of the strategic transport planning process and as Queensland Transport packages its programs which relate to school travel. The NSW program is unique for its commitment to run the program at all primary schools in the state and for the exclusion of engineering treatments as an explicit component of the program.

The Victorian Program has provided a model for other States with the programs in South Australia, and to a lesser extent Queensland, drawing on the Victorian model. It is now a mature program which is going through a review stage with an update of the implementation guidelines being written and the program being extended into secondary schools.

State/Territory	Comments on SRTS Implementation at the program			
-	level			
Victoria	 Original model for national adoption of SRTS and operational as a mature road safety initiative in this state Well established program which has now been running for about five years Some evaluation work already being done 			
Western Australia	 SRTS Program run under the RoadWise banner and it is a mature road safety initiative in this state Unlike all other States this program is run through local government rather that at a state government level 			
South Australia	 Using the Vic Roads guidelines and following the Vic Roads model for implementation undertaking some pre-implementation evaluation 			
New South Wales	 Established SRTS program with considerable momentum gathered in 1998 and further major implementation planned for 1999 Aiming to deliver the program to all primary schools throughout the state Program stands out against initiatives in all other states because engineering treatments are excluded as a major component of the program The emphasis is on child behaviour and improving the level of adult supervision of travel to school for children under 10 years of age Initially trialed a program based on the Vic Roads SRTS model Currently undergoing a transition as SRTS becomes an 			
	• Cullently undergoing a transition as SK15 becomes an explicit part of the Safe School Travel (SAFEST) collection of programs, schemes and initiatives designed to improve travel safety for school students. SAFEST includes the school crossing scheme, school bus routes program etc.			
ACT	 Distributing information to the schools but funding/resource limitations mean that no promotion is being undertaken Relies on schools taking the initiative rather than an explicit program of involving schools 			
Tasmania	 No formal SRTS program operating Do have Road Safety Officers who work on road safety education programs with schools 			
Northern Territory	 No formal SRTS program operating Do have Road Safety Officers who work on road safety education programs with schools 			

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The West Australian program has developed independently and appears to be well received in that state. It is unique in that it is being delivered directly as a local government initiative rather than through a state government organisation. This may have advantages where a state-wide local government delivery organisation exists since it is likely to ensure that local government has ownership and involvement in the program. While obtaining local government involvement has certainly not been a problem in all states it has been an issue in Queensland and NSW.

It has not been possible to obtain details from each state on the level of resourcing being devoted to SRTS programs. However, given the statewide coverage of the program, it is likely that the NSW program is the attracting the greatest resources with budgets on the order of \$11 per annum over a five year period. That resourcing commitment is required given the commitment to run the program in all primary schools in the state. The West Australian program is unique in that it is funded through the Road Trauma Trust Fund. This fund allocates income from speed and red light cameras to road safety initiatives. Currently six officers service the whole state with the program delivered through Road Wise, a local government road safety strategy.

There is evidence in some states of SRTS becoming part of broader health and wellbeing programs and being linked to the Health Promoting Schools Framework. Of particular note is the case in Queensland where the development of Integrated Regional Transport Plans (IRTP's) is highlighting the need to increase the levels of walking and cycling to schools.

The above discussion highlights some of the broad similarities and differences across states. The following subsections examine individual states in greater detail before a range of overall issues at the program level are discussed in the following section (Section 2.3)

2.2.1 Victoria

The Victorian program was introduced in the early 1990's and the guidelines are currently being rewritten to strengthen the program for delivery to primary schools and to extend the program into high schools.

The program is delivered by Vic Roads through its various regions. As noted in the introduction, the program involves four stages:

- Planning and establishing the program: Encompasses selecting schools for involvement on the basis of road accident statistics, establishing links with the municipality and schools concerned.
- Investigation of local issues and needs: A travel survey is completed by children and their parents. The results of the survey are analysed to establish the routes used by children to access the school and any particular safety issues or locations of concern to parents. This information is supplemented by observation surveys to examine behaviour patterns and identify other concerns such as patterns of use of crossing points, extent of bicycle helmet wearing or other bicycle use issues, incidence of children alighting from cars on the roadside rather then on the footpath side, etc.
- Developing and implementing an action plan which may comprise engineering, education, enforcement and encouragement dimensions: The engineering treatments include signage and new crossings, pedestrian refuge islands and curb extensions. The signage includes SRTS recommended crossing points and 'Stop, Look, Listen and Think' (SLLT) signage. The SLLT signs are located on fences at school gates (Figure 1) and also as painted signs

on the footpath at crossing points (Figure 2). The education component is in addition to the normal road safety education curriculum and involves taking children on-site after completion of the engineering treatments for on-road practice in the use of these new treatments. The encouragement and enforcement dimensions could involve targeted campaigns to reduce speeding in the area of the school or programs aimed at parent behaviour (eg. reducing the incidence of parents calling children across the road to the car when being picked up rather than using a designated crossing).

• maintaining, monitoring and evaluating the program. Vic Roads has already undertaken some evaluation work (Eclipse Consulting, 1997) and is committed to maintaining the program through the redevelopment of the program guidelines as mentioned earlier.

In Victoria, consideration is given to 4 to 16 year old pedestrians and cyclists crashes as a basis for selecting schools for the program. Greater than 0.6 crashes/km²/year in a 4 square kilometre areas over the last 5 years is required for a school to be included in the program. This targeting on the basis of accident numbers determines the number of schools which qualify for the program. Consequently only a moderate number of schools (fewer than 100) have completed the Victorian program.



Figure 1: SLLT Signage near school gates



Figure 2: SLLT Footpath Signage and Recommended Crossing Point Signage

2.2.2 South Australia

The South Australian program is being delivered through the Department of Transport. The Vic Roads guidelines are being used and South Australia is largely following the Vic Roads model for implementation.

Pedestrian crash statistics are not being used as a prioritisation measure for school selection. This is in part because of a perception that pedestrian crashes are highly random. It is also because councils are expressing strong interest to participate in the program and the constraint at present is the number of Transport SA staff involved in the program which limits how many councils can be accommodated. The program is regarded as essentially preventative and so it is considered that targeting on the basis of accident statistics would change it to a reactive emphasis. The program benefits primarily come from the linkage to the Transport SA corporate goals.

There is some initial priority to implementation in the Metropolitan area with 21 schools having completed or being part way through the program. Ten schools have completed the program and another six are half way through the program (as of May 1999). Another area, covering five schools, is being prepared for implementation in the 1999-2000 period. In addition four country schools are currently involved in the program.

There has been some changes made to the processing of the travel surveys. This is not done centrally by Transport SA, as is the case in Victoria by Vic Roads, but at the school by Transport SA staff with assistance from school staff and parents. This change was made because it is regarded as an excellent community building opportunity.

The program is delivered by Transport SA staff in conjunction with local council staff. Transport SA undertakes engineering treatments on their roads and council does the treatments on local roads. There is a strong desire to ensure a clear linkage with the government department delivering the program. This desire was expressed by the desire to be able to go to the school and say 'We are from Transport SA and the Council and we are here to help you'. As such there was strong resistance to move to an outsourced model for program delivery.

A study has been commissioned to evaluate the initial implementation experience. That study is looking at the process of delivering the program to schools and outcomes as related to corporate goals.

One issue which has been apparent from the initial experience is the expectation of schools for treatments to be implemented quickly. Schools often have difficult with the 12 to 18 month implementation period which may be involved particularly for engineering treatments.

2.2.3 Western Australia

SRTS in Western Australia is delivered through RoadWise, a partnership of local government and the community to reduce road crashes in the state. The program evolved from the City of Melvyl's 'Designated Safe Routes to Schools' program which focused on designating the safest feeder routes to school. It was found that while the City of Melvyl's program worked well in urban areas with appropriate infrastructure, it did not transfer to rural areas and that the majority of road safety problems around schools could not be addressed through the identification of safer pedestrian/cyclist routes (Parsons, 1998).

The SRTS program in WA is similar to that developed in Victoria. It includes a survey designed to cover congestion, parking problems and any road safety danger spots in the area of the school on the regular routes to and from school. RoadWise staff analyse the survey results and develop action plans for the schools. The action plans cover all road safety issues identified in the survey including the identification of the most appropriate engineering interventions and the mapping of safer routes (Parsons, 1998).

Mirroring the experience in South Australia, one of the issues which surfaced in Western Australia is school's expectations that problems would be solved overnight.

Currently there are six RoadWise officers servicing the whole state with over 300 schools participating in the program. Funding for the program comes from the Road Trauma Trust fund which allocated funding from red light and speeding fines collected in the state.

The West Australian experience is that SRTS has worked well in the country. There is also an attitude that it is a 'forever' program for the school with re-surveying of the schools undertaken every three years.

2.2.4 New South Wales

The NSW program is run under the title of Safer Routes to School, and emphasises behavioural rather than engineering interventions. Some of the program elements are similar to other states in that it relies on a travel survey to identify the routes used by children to reach their school and to highlight locations where there are road safety concerns. The program is run through the Roads and Traffic Authority. The delivery of the program has been outsourced with individual firms winning contracts to deal with a number of schools. Those firms have hired staff to undertake the project in terms of the contact with schools. In many instances these staff have a teaching background. Each contract staff member deals with a number of schools. This is typically in the order of 10 to 15 schools but the number depends on the distances between schools with obvious differences in the number of schools handled by each consultant in city and country locations.

While there is a curriculum based road safety program in NSW there is no explicit education component as part of SRTS.

When initially conceived, the intention was to produce a tailored map for each NSW primary school student which would indicate their 'safer' route to school. This approach not only presented challenges in production but brought to light serious liability issues for the RTA. Concerns included the problems which could arise if paedophiles got access to the maps which indicated the routes children should use to travel to and from school as well as the liability if a child was injured when following the advice of the route to use. This resulted in a change to produce a map which highlighted road safety dangers in the vicinity of the school which children and parents should be mindful of when planning there access to school.

Engineering treatments were explicitly excluded from the SRTS program. When being rolled out, this handicap was addressed by bringing to the attention of the relevant RTA group instances where engineering treatments were needed and requesting priority treatment.

As part of the NSW program an action plan is prepared. It tends to focus on education and some enforcement actions required to address the road safety concerns at the school.

The NSW program is to be offered to all schools on a directive from the Minister. This means that 2100 schools are eligible for the program and a budget of \$54M over five years is required to deliver the program to those schools. Over 650 schools completed the program in 1998 and it is likely that the total number of schools which have completed the program will more than double by the end of 1999.

2.2.5 Queensland

SRTS to school is undergoing redefinition in Queensland. It was initially trialed based on the Victorian model but difficulties were experienced in obtaining effective local government involvement. The program is now being incorporated under the umbrella of the SafeST (Safe School Travel) concept. SafeST includes the following modules as part of an integrated program:

- SafeST subsidy scheme which provides a 50 per cent subsidy from the State Roads Program to Queensland local governments for approved school transport related infrastructure works
- School Crossing Supervisor Scheme
- Educational Resources
- Safe School Bus Routes program
- Safe Routes to School program
- Speed awareness at Schools program
- SafeST Public Information

• and other SafeST initiatives including the trial of school bus identification markings and a consistent colour scheme for school-related signs.

Queensland Transport's Road Safety Consultants will serve as the contact point for the SafeST program.

As part of the transport planning process, Integrated Regional Transport Plans (IRTPs) are being prepared. These are now providing a thrust for SRTS because of a desire to increase the amount of cycling and walking to address transport and sustainability issues. As part of the IRTPs, targets are being set including boosting cycling to 8 per cent of all trips in the state by 2011. SRTS is seen as an important initiative which could assist in defining actions needed to achieve these targets.

2.3 PROGRAM LEVEL ISSUES

The previous section has provided an overview of the status of SRTS programs in different States. This section explores in more detail a number of issues which are relevant at the program level and compares experiences across different states in relation to those issues. Consideration is given to program objectives, program elements, resourcing, school selection/targeting, managing expectations, method of delivery and maintenance issues.

Program Objectives

Clearly the nature of any particular program will be influenced by its overall objectives. While improving safety has been a primary objective to date, health, environmental and social objectives have the potential to influence the future development of SRTS in Australia.

The prevailing safety objective is clearly stated in the Vic Roads program which aims to:

"reduce the incidence and severity of injuries to school-age children as pedestrians, bicyclists and passengers" (Vic Roads, 1994).

It is important to include the 'passengers' dimension here because one way of eliminating pedestrian and cyclist accidents would be to ensure that all children travel to school by motorised transport. However, that would expose children to the risks of road vehicle crashes when travelling in a car.

The Vic Roads program objective contrasts with the UK program which aims to:

enable the independent mobility of children, by developing cycling and walking within their communities in such a way as would command public support and also help to reduce traffic (Clarke, 1997).

The UK objective is primarily environmental and possibly social with the emphasis on 'independent' mobility. In contrast, the NSW program (RTA, undated) implies a need for 'dependent' mobility by emphasising the need to 'improve the level of adult supervision on the journey to and from school particularly for children under ten years of age.'

The overall objectives of the program are important and it is likely that there will be increasing emphasis on STRS as part of the Health Promoting Schools Framework. The importance of increased physical activity for health would support the increases in safe walking and cycling to school. Increasing emphasis on environmental considerations would support a move away from motorised access to school or at the very least more efficient use of vehicular access through car pooling use of bus services. Where there is a link to these broader environment and transport planing issues then there may be a need for other aspects to be bought into the program. For example, bus service planning may be an explicit component for the program if more efficient and convenient public transport is required to reduce use of motor vehicles for access to school.

It is also important to recognise the this broad range of objectives is important when considering the benefits attributable to the program. While it may be difficult to quantify the impact of the program on road crash or pedestrian accident numbers, changes in mode usage and exposure (eg. duration of walking or bicycle activity) provide an opportunity to quantify benefits in terms of emissions reductions and improvements to health and fitness.

Program Elements (the 4 E's)

The Geelong Bike Plan (Sach, 1984) pioneered the development of comprehensive bike planning on the basis of the 4 E's:

- Engineering,
- Encouragement,
- Education and
- Enforcement.

Important differences have emerged in Australia in terms of the balance of these elements in SRTS programs. The NSW program is unique for its focus on behavioural issues and exclusion of engineering treatments as an explicit component of program. This issue will be explored later in this report however it is worth emphasising that one primary outcome of the NSW program is a map highlighting road safety concerns near the school. The WA experience was that the majority of road safety problems around schools could not be addressed through the identification of safer pedestrian/cyclist routes (Parsons, 1998).

In principle, all four E's are part of the SRTS programs in other states. However the balance between the program elements also reflects the objectives of the program. Where there is a desire to increase the use of sustainable modes of transport there may be a need for greater 'Encouragement' as part of the program. One example of an action on the encouragement theme is the formation of bicycle trains (lines of kids on bikes with a volunteer adult at each end. These are part of the Queensland government's strategies of reduce car use, traffic congestion, stranger danger, obesity and pollution. Likewise, 'Engineering' may need to be interpreted more broadly to include transport engineering so that it is not just traffic engineering treatments which are included but also better design of bus routes etc.

There is also a difference regarding the extent to which these elements are explicitly linked. For example, road safety education may be undertaken as part of the curriculum at the school but the education element may not be run simultaneously with the roll out of the SRTS program. In the Victorian and South Australian programs, there is an explicit education component of SRTS where children are given practical instruction in the use of new crossing facilities or other engineering treatments installed as part of the SRTS program (Figure 3). In contrast, in NSW there is no direct link between road safety education and the SRTS program. Other States, for example, WA require the school to demonstrate their commitment to the education component to get access to the SRTS program.



Figure 3: Road Safety Education is an integral part of SRTS in the Victorian and South Australian Programs

The issues here are which elements of the four E's are included, what is the balance across those elements and to what extent are they run as part of a coordinated program. While the potential impact of the program would most likely be greatest when they are run in parallel this issue could be explored further in subsequent research.

As noted in the previous section there is potential for change in SRTS programs as the objectives broaden. It is unclear what level of say engineering treatments would be required to significantly shift mode usage to walk and bike modes.

School Selection

The basis on which schools are selected reflects the objectives of the program and the overall policy or level of resourcing. To a certain extent this depends on whether SRTS is regarded as a proactive program which aims at prevention, or a reactive program which is trying to treat a problem at school accident blackspots.

In Victoria, crash statistics are used to select schools for inclusion in the program. In contrast, in NSW a decision was made offer the STRS program to all primary schools. In that case the program is available to both city and country schools while in Victoria there is much less chance that a school in a rural area would qualify for the program.

There is also an issue of whether the program is targeting primary schools only (as in most states) or whether high schools are included. Traditionally, SRTS has had a primary school emphasis and yet there are important issues associated with school travel when children make the transition to secondary school. For many children this can mean travelling further to school and possible using a different mode. Victoria is expanding its SRTS program to include secondary schools and this is an important new dimension for these programs.

Method of Delivery

In recent years many organisations, public and private alike, have reviewed their activities and decided that some can be undertaken in an outsourced mode. All states expect NSW run SRTS as an in-house program. While the program resides within the Roads and Traffic Authority in NSW the program is essentially delivered in an outsourced mode through consultants. Only in WA is it run through a local government organisation while in all other States it rests with a State Government organisation. At the State Government level this varies between the road authority in Victoria (Vic Roads) to transport departments (Queensland Transport and Transport SA).

While there appears to be fairly strong preference in the states where it is an in-house program for continuing to operate it that way there is also an interest in the outsourcing model. This interest can be because of a perception that outsourcing may reduce the costs of program delivery and make it possible to cater for peaks in demand to roll out the program. The commitment to in-house delivery often stems from a desire to maintain ongoing links with the school.

These issues are explored further in the project level section of the report because interviews were conducted at a number of NSW schools and that highlighted a number of issues in relation to the outsourced mode of delivery.

Managing Expectations

It is difficult to know where to discuss this issue and to a large extent it arose as part of the discussions with the schools as part of the project level component of this study. It is mentioned here because of its relevance to the program level since STRS is a potentially unique interaction between road/transport authorities and schools. This is particularly important in relation to the engineering aspect of the program. Schools have limited experience in dealing with road/transport authorities for the provision of infrastructure or traffic engineering treatments. Discussions with a number of people as part of this study have highlighted that it is not unusual for schools to expect that engineering treatments can be delivered very quickly once their need has been established as part of a SRTS program. Schools may not appreciate the extent to which capital works programs may already be locked in for the coming year. This can lead to frustration when the treatments are not delivered quickly. There is a need for these expectations to be explicitly managed as part of the SRTS program. Where dedicated funding is not available as part of the SRTS program, but relies on regular programming by the local or State government agency, this should be clearly explained to schools at the start of the program.

Maintenance Issues

The issue of ongoing maintenance has only been explicitly mentioned in the context of the Western Australian program in that schools are re-surveyed every three years. The issue of on-going maintenance is important for two reasons. First because the school population changes over time and so there is a need to maintain the educational component. Second because the engineering treatments undertaken as part of SRTS require maintenance over time. A study undertaken in Melbourne (Henwood, 1998) highlighted that some treatments installed as part of a SRTS program were in a poor state of repair due to a lack of ongoing maintenance. These engineering maintenance issues are highlighted again in the project level evaluation component of this report (Section 3.1.2).

Evaluation

There is an issue of the overall evaluation of SRTS programs. This presents many challenges. It would take considerable effort to link individual pedestrian or cyclist crashes back to SRTS. For example, an area could experience an increase in pedestrian or cyclists fatalities following SRTS but these could all be children who had recently moved into the area and had not participated in the education component of program.

To date there has been effort to undertake process evaluations in some states Vic, NSW and SA have undertaken process evaluations. The results are available for Victoria (Eclipse Consulting, 1997), the study is still underway in South Australia and the study report is yet to be released in NSW.

3. PROJECT LEVEL EVALUATION

As noted in the introduction, the aim of the project level evaluation was to identify the extent of similarities/differences at the level of individual SRTS projects. This has been achieved by examining experiences at the individual school level in two states: Victoria and New South Wales. The Victorian program was chosen because it is relatively mature and project level evaluations have been undertaken which provide a good basis for identifying underlying issues. The NSW program was chosen to provide a contrast because of its exclusion of engineering treatments and emphasis on the behavioural dimension. The following sections deal first with Victoria, then NSW and finally overall points from the project level evaluation are highlighted.

3.1 VICTORIAN PROJECT LEVEL EVALUATION

The maturity of the Victorian program means that some efforts have already been directed at evaluating the implementation of SRTS in that state. Two studies were of particular relevance to this project. The first was undertaken for Vic Roads by Eclipse Consulting (1997) and it focused on a review of the experiences of six schools in the Dandenong area which had participated in the pilot of SRTS. The second study (Henwood, 1998) examined the experience of four schools in the St Kilda/Elwood area. That study was undertaken as part of a final year civil engineering thesis under the supervision of Dr G. Rose, the principal These two Victorian studies represent valuable data points to investigator for this project. assist in understanding SRTS implementation because they both involved schools which had completed the program some two to four years earlier and were therefore in a position to provide a broader and longer term perspective on the program. The studies employed similar methodology in that contact was made with each school and interviews conducted with the school principal or staff representatives involved in SRTS. The Eclipse study included a fairly detailed questionnaire with questions covering each stage of the SRTS process. That questionnaire was completed by each school prior to the detailed interviews.

3.1.1 School Characteristics

As noted earlier the Victorian SRTS program is targeted on the basis of accident statistics. Therefore the Dandenong and St Kilda schools are representative of the types of schools treated in Victoria in that they are in major built-up areas.

The St Kilda/Elwood area is an located just over five kilometres south of the Melbourne CBD in the City of Port Phillip. Dandenong is located approximately 30 kilometres south east of the Melbourne CBD in the City of Casey.

The Eclipse study (1997) targeted six state primary schools that participated in the Dandenong SRTS Pilot Program 1991-1992, namely, Oakwood Park, Dandenong North, Dendenong West, Wooranna Park, Greenslopes and Lyndale Primary Schools. Henwood's (1998) study included two Roman Catholic Independent Schools (St. Mary's and St Columba's) and two State primary schools (Elwood and St Kilda Park). All the schools considered in the Dandenong and Port Philip case studies are in suburban communities. There is a heavy emphasis on walking and car access to school with the level of public transport usage varying across schools.

3.1.2 VIC Project Level Issues

Henwood's (1998) work highlighted that when a follow-up study of SRTS is undertaken it is not easy to determine which engineering treatments around the school were installed prior to SRTS or as part of the program. She used interviews with council and documentary searches of council records to identify the engineering treatments implemented as part of the SRTS program (Table 2).

Treatment Type	St Mary's Roman Catholic School	Elwood Primary School	St Kilda Park Pimary School	St Columba's Roman Catholic School
Road Closures	×	×	\checkmark	×
Pick Up/Drop Off Points	×	✓		\checkmark
Installation of new crossing points	×	×	✓	×
Installation of bicycle lane	×	×	×	✓
Review of Parking Signage	\checkmark	\checkmark	\checkmark	\checkmark
School crossing improvements	✓	\checkmark	√	×
Roundabout improvements	×	\checkmark	×	×
Speed humps	\checkmark	\checkmark	×	×
SRTS Signage	\checkmark	~	\checkmark	×
Fencing	\checkmark	×	×	\checkmark

(Source: Henwood, 1998)

As Table 2 highlights that reviews of parking signage, installation of new SRTS signage, crossing improvements, pick up/drop off points and speed control devices (humps) were the most common engineering treatments installed as part of SRTS. The SRTS signage focuses on the Stop, Look, Listen and Think (SLLT) theme near school gates and crossing points and signs to indicate recommended crossing points. Crossing improvements included new crossings, provision of pedestrian refuge islands and flashing lights (Henwood, 1998).

Maintenance issues arise some time after the SRTS program treatments are installed. These problems include:

- failure of sign mountings (Figure 4)
- damage to fencing at crossing points (Figure 5)
- removal of 'Recommended Crossing Point' signage, and
- obliteration of footpath signage (STTL signs) when a new asphalt section are completed on footpaths (Figure 6) after some work on underground pipes or cables.



Figure 4: SLLT sign fence mounting failure



Figure 5: Fence damage at crossing points



Figure 6: SLLT Footpath signage obliterated by asphalt works



Figure 7: Kerb extension and new crossing outside St Columba's

In that case of the crossing outside St Columba's, a new kerb extension and crossing was constructed. As part of these works, a safety fence which had been installed on the roadside adjacent to the main exit from the school had been removed (Figure7). The asphalt works associated with the kerb extension had also obliterated the SLLT pavement signage at the crossing (Figure 6). Despite repeated requests from the school crossing guard to the council over an 18 month period following the new works, these problems had not been corrected. Since there is no periodic review, or maintenance, dimension to SRTS there is no mechanism for these problems to be automatically identified.

Henwood also found that only half the schools she contacted had continued the education component of the program. Interestingly it was the two Roman Catholic Independent schools which had continued the education component while it had been dropped at the state schools.

A number of other issues were identified in the Eclipse (1997) study as summarised below.:

- There was strong school support for the accident map provided at the early stage of the process. This was regarded as making 'road and traffic safety more 'personal' to their area than a larger scale accident colour-coded Municipality map'. This highlights an important emotional dimension where schools feel that the program is more tailored to their needs and concerns when it has an identifiable 'local' feel.
- The community consultation process, particularly the completion of the school travel surveys by families was seen as not only raising parent awareness of road safety but also contributing to positive change in parent behaviour, especially parking behaviour. One principal felt that an important aim of SRTS was to 'sell safety to parents' and he felt that was achieved. The community consultation was seen by parents as an 'empowering' experience. They valued being asked to identify local safety issues, knew their comments would be considered by the Council/Vic Roads staff and gained satisfaction which came from seeing physical changes around the school as the engineering treatments which formed part of the program were implemented.
- Importantly none of the schools felt there was an increase in the number of children driven to school, or fewer children walking. as a result of the increased awareness of road safety issues which comes from the SRTS program. Unfortunately there was no mechanism, or more critically resourcing, to repeat the travel surveys to determine whether there had been a change in mode choice to the school.
- The local road safety audit was highlighted as a valuable component of the program. The involvement of 'outside' experts in the on site investigation team was seen as critical. It was suggested that students should be involved in this task in the future to provide the 'all important kid's perspective'.
- The value of the program for raising the awareness of council officers of the issues affecting school communities was also highlighted.
- Schools particularly praised the local area traffic management and engineering treatments that resulted from the program with these features described as 'the carrot' by some schools. It was also noted that not all engineering treatments were installed because they did not always meet the warrants. Maintenance issues were again highlighted: 'Once the

barriers became mangled and signs were vandalised, the school felt their impact and importance was undermined by overlooked maintenance needs'.

• There was an integral education component of the SRTS program.

As part of the Safe Routes to Schools education, students were walked along the local SRTS identified routes and as a result were able to recognise safe and dangerous places to cross. Students were taken on-site after completion of the engineering treatment phase for on-road crossing practice at these new SRTS treatments. This ensured children learnt to recognise new crossing facilities and treatments and more importantly used new crossing facilities correctly. (Eclipse Consulting, 1997, pp14)

- As a result, the schools felt that traffic safety education became more SRTS concept driven with 'teaching of traffic safety (becoming) more localised and made relevant to local issues and dangers identified through the SRTS Travel surveys'.
- The need for the program to be repeated was highlighted with periods from one to three or five years identified as a desirable return period. It was felt that this would not need to be as intensive as the initial SRTS program and that although ' some new dangers would arise, this could present the opportunity to review initial (engineering) works, conduct maintenance required and re-educate school children and parents on local environment issues via the traffic safety education curriculum, school newsletters etc'. The study drew attention to the need 'to recognise ongoing change in schools with respect to students, parents, even staff turnover all of which have implications for continuity of a SRTS process.'

Overall the Victorian program has been positively received. Schools have indicated that they are pleased with the results. Now that a few years have elapsed since the program was run in some areas, maintenance issues are beginning to surface. These maintenance issues relate to both the engineering treatments and the education component of SRTS. School closures could impact on the catchment for individual schools and mean that some students are travelling greater distances to access particular schools. For this reason there could be justification in running SRTS in areas where there have been school closures.

3.2 NSW PROJECT LEVEL EVALUATION

As noted in the earlier section, the NSW SRTS program is different from other state programs in terms of its explicit exclusion of engineering treatments and for it being offered throughout the state to urban and rural schools. For these reasons there is scope to learn a great deal from the NSW experience.

3.2.1 School Selection

Since it is a statewide program it was considered that there would be merit in including both city and country schools in this study. However, given that the NSW program is still being rolled out, it was necessary to target those schools where the program was complete. Contact with the RTA enabled the list of fast tracked schools to be identified. These were schools which had pioneered the program and had therefore completed it by the time this study was

being undertaken. Ten schools were included in this fast track category. These schools were all in major urban areas: Sydney, Gosford, Newcastle, Orange and Wollongong. Since it was felt that the issues would be similar for schools in large urban areas a decision was made to focus on two Sydney public schools (Alford's Point and Arncliffe) from the list of fast tracked schools.

The selection of the country schools focused on an area which was fairly accessible from Melbourne but contained a number of candidate schools in close proximity. Details were obtained from the RTA of the status of schools in the South West Region (centred around Albury). A total of 16 schools in this area had completed the SRTS program. These schools were stratified on the basis of number of students enrolled (less than 100 versus more than 100) and this resulted in eight schools being in each category. Two schools were sampled from each category with consideration given to the proximity of the schools to make it feasible to visit the group of schools in one trip. Blightly Public School and Burrumbottock Public School were selected from the small size category (both had less than 50 enrolments) while in the larger size category. Corowa Public School and St. Mary's Primary were selected (with enrolments of 300 and 150 respectively).

3.2.2 School Characteristics

The schools selected for project level evaluation in NSW were of varying sizes and were located in very different local areas with greatly different traffic conditions. Alford's Point Public School is located just over 20 kilometres south west of the Sydney CDB within a residential area with an outer suburban character. In contrast, Arncliffe Public School is an inner city school, located adjacent to the Princess Highway, overlooking Kingsford Smith Airport. It is surrounded by a mixture of single family and medium-density housing as well as retail and light industrial activities.

Corowa Public School and St. Mary's Primary are located close to the main street of Corowa in a built up area and surrounded by low density, single family housing. These two schools are located on the same road which provides the main link between the town and the Riverina Highway and is therefore a reasonably busy road which attracts large commercial vehicles. The two small country schools (Blightly and Burrumbottock) were located in fundamentally different areas from the ones mentioned above. Burrumbottock Primary School is located in a very small (one shop) town adjacent to a very small, low density residential area. Blighty Public School is located in a purely rural setting with no dwellings or buildings in sight. It is located on a 100 kph rural road a few kilometres away from the township of Blighty on land apparently donated to the education department by a farmer. The road outside the school has a speed limit of 100 kph which is reduced to 60 kph in the before and after school hours. The road carries light volumes of traffic except at harvest time truck traffic volumes increase substantially.

All of the NSW schools considered in this study had a school speed limit zone on the streets adjacent to the school. Those speed zones were installed prior to the SRTS program.

3.2.3 NSW Project Level Issues

At each school interviews were conducted with the principal or teacher representative who had primary responsibility for the SRTS program. The views expressed by these ranged from

strong support for the program to great disappointment, with one representative referring to it as a 'very expensive public relations exercise'.

Issues which arose from the NSW school case studies are as follows:

• Engineering Issues are central to many SRTS projects

It was apparent that traffic engineering issues were of a major concern to many school. Where this was the case there was a belief that the SRTS program had not delivered real benefits to the school. In one case a new crossing was obtained but this was only because the school had lobbied the local council. The school believed the same outcome would have been achieved regardless of the SRTS program. At another school the school was located across the street from the school hall and church. This meant that class groups frequently needed to cross the road. There were concerns about a line of trees (Figure 8) which meant that motorists could not see children until they were literally on the crossing, a relatively high speed slip lane which allowed motorists to make a left hand turn onto the crossing (also shown in Figure 8) and a need for a storage device at the crossing to allow the crossing flags to be stored at the crossing because they were used regularly throughout the day. At another school parents regularly went the wrong way up a one way street to get access to the school grounds and this could have been stopped by some minor intersection modifications or enforcement (see the next section for consideration of Police involvement).



Figure 8: School crossing obscured by roadside vegetation (right) and located adjacent to a left turn slip lane

- The Program model does not ensure participation by all key stakeholders
 - It was rare to have any involvement from the Police and at a number of schools there was no effective local government involvement. This means that the opportunity presented by the program for each school to build effective links with these key stakeholders can be lost. The link with local government is important where engineering treatments are required on local roads.
- Viewed as a 'Once Off' exercise by most participants
 - Most representatives perceived that the program was a 'Once Off' exercise and that they had now 'done' SRTS. There was no expectation of ongoing monitoring or maintenance. This is in sharp contrast to say the WA program which aims to establish a link with the school forever. It is acknowledged however that one school was happy that it was a once off program since their problems were mainly behavioural and had been addressed by the program.
- No Explicit link to the Road Safety Education Program
 - At none of the schools was a direct link established between the road safety education program and the safe routes to school program. This means that the opportunity for synergy between these two education dimensions was not an explicit part of the program.
- Responsibility for implementation rests heavily on the school rep
 - In many of the action plans produced for individual schools as a result of the program, the responsibility for most tasks rested with the School Staff representative. The nature of the program meant that there was no on-going support from the RTA. Since the program had in many cases failed to achieve involvement by the local council or Police, it was up to the school rep to establish that link and then work to implement actions identified in the program. Effective follow up can become more difficult when the school staff or their responsibilities change over time.
- Outsourcing program delivery needs to be carefully considered
 - Without exception the school representatives spoke highly of the (consulting) staff who helped deliver the program through the school. These people were all highly regarded for their professionalism, approachability and organisation skills. Concerns were expressed that these contract staff did not at first understand what the SRTS program was going to be able to deliver and so their comments became more and more cautious over time as they attempted to lower the expectations. These staff were also seen as failing to have a breadth and depth of understanding of the RTA's various programs which is not surprising given that they were not RTA staff. These people were essentially representing the RTA but lacked a breadth of knowledge of the RTA's activities - something which it would be very difficult to achieve with contract staff. The very nature of the outsourced model means that there is no expectation of continuity of a relationship with the school and this is in sharp contrast to say the WA experience where the program aims to establish a link with the school 'forever'. It is also a challenge to ensure some degree of standardisation across the contract staff in terms of the information they have and the expectations they create The individuals who were recruited for the positions about the SRTS program. tended to have an education background, certainly not a technical or road safety

background and therefore had limited experience on which to draw when traffic engineering issues were raised.

• Broad involvement is Excellent but more consideration required for the needs of country issues

One of the great things about the NSW program is that it is offered to all schools and this provides an opportunity for country schools to participate in the program which does not exist under programs which are targeted on the basis of accident statistics. However, it is important to go beyond the level of simply offering the program in the country, the program needs to reflect and respond to the needs of families living in the county. At a superficial level, this means ensuring that the maps distributed as part of the program cover a broad enough area to include country family residences. There were cases where the urban community around the school was picked up by the map but country areas were excluded. In one extreme case the initial map was so localised that it contained none of the residences of the schoolchildren and only covered the surrounding farmland. It is also important for the questionnaires to reflect the travel patterns and needs of country children, for example, safety issues at pick up points for country school buses.

• SRTS can highlight a broad range of issues

At one school a major issue relating getting to school is that the existing school bus route does not serve one quarter of the students at the school. This problem has arisen over time reflecting changes in the demographics of the area. The only option for the children not served by the bus is for their parents to drive them to school – walk and bicycle access are not really options for students at this country school. Unfortunately repeated attempts by the school principal to have this issue addressed by the appropriate government authority have failed to produce even an acknowledgement of the correspondence. This particular issue highlights the potential benefits of the Queensland model where a variety of school travel issues are picked up under the umbrella of the SafeST package.

• The program highlights issues and introduces new perspectives

A number of schools commented positively that the program had raised their awareness of the organisations which they could approach for help. The program had also provided the basis for subsequent action and publicity by the school staff rep or principal because they were now armed with facts and figures which could, for example, be used as part of an item for a local paper.

• Behavioural dimension is important

While the lack of an engineering dimension is a fundamental omission in the NSW program, the behavioural dimension is clearly important. At a number of schools it was highlighted that parent as well as children's behaviour was a concern. At some schools where the behavioural area was the most important the SRTS program has met their needs.

3.3 CONCLUSIONS FROM THE PROJECT LEVEL EVALUATION

The project level evaluation has highlighted a number of important issues and demonstrates the value of being able to learn from the experience of programs operating in different states. There is strong evidence that a comprehensive SRTS program needs to incorporate all four E's (Engineering, Education, Enforcement and Encouragement) and that the balance across these areas and the extent to which they are operated in parallel are also important.

SRTS can be viewed as more of a preventative program where it is able to be offered at many schools. Where engineering treatments are not required or are not warranted, the program can focus on behavioural aspects. Any decision to roll out a SRTS program to all schools requires a major resourcing commitment and at least an implicit assessment that benefits outweigh costs for the exercise.

Maintenance issues need to be kept in mind for both the education and engineering dimensions of the SRTS progam. Changes in the school population, the surrounding traffic system and deterioration of signs and engineering treatments necessitate ongoing maintenance.

4. RECOMMENDATIONS

This project has highlighted that a great deal can be learned from the experience of different State organisations in the running of their SRTS programs. It is recommended that FORS convene a National SRTS Workshop with the aim of sharing information about existing SRTS programs and identifying areas where States can collaborate to strengthen existing SRTS programs.

There is a need to ensure that road safety issues are considered at the school design stage so that future road safety problems are not being 'built in' at that stage.

There could be merit in development of a National SRTS web site which provided links to each State's own SRTS web site. This could provide an effective mechanism for individual schools or other organisations to obtain information about SRTS programs.

There is clearly a need for greater consideration of outcome evaluation in the context of SRTS. This project complements process evaluation studies conducted in some states. It is recognised that undertaking outcome evaluation in the SRTS context is not a simple task and that a starting point would be greater discussion of underlying issues from an outcome evaluation perspective.

Maintenance needs to be explicitly considered in the context of SRTS programs. This is particularly important in the context of both engineering and education components but it is also relevant to the other two E's as well (Enforcement and Encouragement).

If the objectives of SRTS programs broaden to include health and environmental dimensions, there is a need for further work to identify the level of infrastructure needed to encourage more walking and cycling to school and to examine the broader constraints may limit the reductions in motor vehicle access which could ever be achieved.

5. CONCLUSIONS

There is a great deal of activity occurring around Australia in relation to SRTS programs. It is clear that these programs are well received by schools and have been designed to address a genuine road safety concern. The programs operating in each state will be strengthened by sharing information on initiatives in other states. This project provides one such basis for that information sharing.

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