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ABSTRACT

A recent travel study showed that 76% of personal travel in Melbourne is undertaken by private vehicle, with only 16% by walking, 6% by public transport and 2% by bicycle.¹ This love affair with the motorcar and dependence upon personalised motorised travel is having an enormous impact on personal, community and environmental health.

There is evidence that vehicle exhaust emissions are contributing to an enhanced greenhouse effect, resulting in climate changes and other environmental impacts.² From a personal and community health perspective being a frequent passenger in a car is translating into a population with significant levels of obesity, diabetes, asthma and cardiovascular diseases. Health behaviours adopted in childhood are often carried through to adulthood.³

The complexity of traffic, particularly around school zones at drop off and pick up times elevates the risk of road trauma occurring.

Health behaviour change programs, such as anti smoking programs, have demonstrated the positive influences children can have on the behaviour of other family members, and the *TravelSMART* Schools program combines some elements of these health promoting programs to bring about changes in travel. The *TravelSMART* Schools program aims to reduce the negative impacts of car travel through a reduction in vehicle trips and kilometres travelled, achieved through voluntary behaviour changes by individuals and households.

This paper will outline both the process for implementing a school based program and the content of the Victorian *TravelSMART* Schools Program. The evaluation, both process and impact, of the program will also be highlighted.

¹ Victorian Greenhouse Gas Inventory 1999

² Australian Greenhouse Office, 1998

³ Australian Diabetes, Obesity and Lifestyle Study 2000

1. INTRODUCTION

1.1 BACKGROUND

The Victorian Government initiated the *TravelSMART* program in 2001. The program has three components – *TravelSMART Communities*, *TravelSMART Workplaces* and *TravelSMART Schools*. Each program component targets a particular cohort or community to share information, develop and implement strategies to rethink the over-dependence we have on individualised motorised transport – in particular the car. The objective of the Victorian *TravelSMART* Program is:

To reduce the negative impacts of car travel through a reduction in vehicle trips and kilometres travelled, achieved through voluntary changes by individuals, households and organisations.

Work on the *TravelSMART* Schools pilot program commenced with six primary schools in Term 4 2002 and was completed at the end of Term 2 2003. schools were in locations across metropolitan Melbourne.

1.2 THE OBJECTIVES OF TRAVELSMART SCHOOLS

The *TravelSMART Schools* pilot program was designed to:

- Raise awareness of the impacts of car use on the environment, the community and the individual.
- Establish travel behaviour change and strategies to effect and maintain change.
- Promote the positive benefits of seeking and implementing travel alternatives to the car.

More specifically the *TravelSMART Schools* pilot program sought to:

- Raise awareness of travel behaviour change, and to facilitate a greater understanding of travel behaviour change, and to encourage positive attitudes towards travel behaviour change by the school community, including students, students families, teachers, administration staff, and local and state government staff, and politicians.
- Develop a successful voluntary travel behaviour change methodology for students in years 5 and 6 and their families, that is capable of being delivered across Victoria in a broad range of settings.
- Achieve a reduction in car trips and car kilometres, across the target population without restricting personal activity, or invoking adverse community or political reaction.

1.3 OVERVIEW OF THE TRAVELSMART SCHOOLS

The *TravelSMART Schools* pilot program targeted students in years 5 and 6 at primary school, but it encouraged a whole school approach. It intended to raise awareness about the impacts of car use on the health and safety of the environment, communities and the people within it. *TravelSMART Schools* promotes walking, cycling, public transport and identifies alternative and more efficient ways to use the car.

The program was designed to complement the *Middle Years of Schooling* initiatives and approaches currently being adopted by Victorian schools. The *Middle Years of Schooling* is based on the concept that schools should provide opportunities for all young people to learn and grow in ways that acknowledge and respect the unique and special phase of their development when they have particular physical, emotional and cultural needs to be addressed.

The *TravelSMART Schools* program has the potential to achieve significant positive outcomes for school communities, in particular:

- Addressing the health concerns about the low levels of physical activity by children.
- Less traffic congestion at the start and end of the school day – improving road safety for students and reducing noise and air pollution around the school.
- Community building as families work together to plan and share responsibility for children using more active ways of getting to and from school.

The pilot program involved a number of key components designed to engage all members of the school community – school councils, administrators, teachers, students, parents/carers and other family members. The key components of the program were:

- Meetings and information sessions with school councils, school administrators, teaching staff and parents/carers.
- Professional development program for teachers.
- Classroom activities for year 5 and 6 students – approximately 20 hours.
- Whole school activities and events designed to engage the whole school community.
- Involvement of parents/carers and families through activities linked to the classroom program.
- Promotion of the program within the local community.

2. REVIEW OF BEHAVIOUR CHANGE THEORIES

The implementation of a *TravelSMART Schools* pilot program was based on several assumptions, amongst which are that school communities needed to change their current patterns of travel, and that too many journeys were made in cars. In the absence of a mandate to reduce car travel and in a context where car ownership is high and a car dependent culture exists, a *TravelSMART Schools* pilot program needed to draw heavily on behaviour change theories and frameworks, and on health promoting and environmental programs already in existence.

2.1 TARGET POPULATIONS

The *TravelSMART Schools pilot* program was directed at three distinct groups:

- young people in their middle years of schooling (and early adolescence)
- their families
- their broader school community.

Each of these groups may have a different, yet connected, agenda or motivation for bringing about a change in travel behaviours. For example:

- The young people may be future focused and be concerned about clean air and the general environment. Also, given their developmental stage and a pre-occupation with body image, fitness and health, alternatives to motorised travel may appeal to the students.
- Parents, and families, may be focussed on the present and what is most expedient. They may be motivated by possible gains in dollar savings from decreased use of the car or the freeing up of time when their child doesn't require transporting to and from school.
- Broader school communities may wish to adopt a *TravelSMART* program as a marketing/public relations exercise, or to partially resolve a common problem of many primary schools – the confusion and danger at drop off and pick up times in and around schools.

Of course schools and communities in different localities will also have different (and some similar) barriers to changing travel behaviours of their communities – such as:

- the availability of alternative forms of transport
- general perceptions of safety this alternative transport
- presence of pedestrian and cycling friendly environments
- the local geography and climate; time available (or lack of)
- distance to travel; an acceptance that personal motorised travel is the most socially acceptable mode of transport
- issues relating to duty of care and perceptions associated with responsible parenting.

School communities and individuals within them may be well intentioned about newly adopted travel behaviours, but relapses back into 'old habits' will occur. Relapses may be initiated by unexpected events, such as inclement weather, or a stressful incident in the local community, such as a pedestrian fatality or child molestation.

Materials developed for the *TravelSMART Schools* pilot program needed to be cognisant of the motivations and barriers of all key stakeholders and the likelihood of,

and triggers for, relapse. Understanding, and targeting, those motivations, whilst at the same time recognising the barriers, helped determine the content and processes embedded in the curriculum materials and whole school guidelines.

2.3 STAGE THEORIES OF BEHAVIOUR CHANGE

Mounting evidence suggests that behaviour change occurs in stages or steps and that movement through these stages is neither unitary or linear, but rather, cyclical, involving a pattern of adoption, maintenance, relapse, and re-adoption over time.

The *TravelSMART Schools* team investigated a number of behaviour change theories and frameworks, but adopted that of Prochaska and DiClemente (1986)⁴.

The work of Prochaska and DiClemente and their colleagues have formally identified the dynamics and structure of staged behaviour change.

In attempting to explain these patterns of behaviour, Prochaska and DiClemente developed a transtheoretical model of behavioural change, which proposes that behaviour change occurs in five distinct stages through which people move in a cyclical or spiral pattern - see Diagram 1.

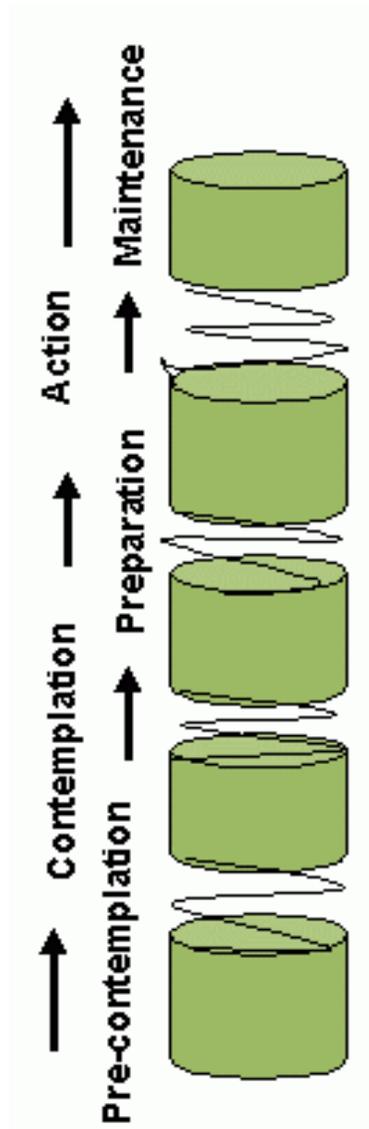
Each of these stages of behaviour change was linked to the curriculum materials outlined later in this paper.

The first of these stages is termed *precontemplation*. In this stage, there is no intent on the part of the individual to change his or her behaviour in the foreseeable future. The second stage is called *contemplation*, where people are aware that a problem exists and are seriously considering taking some action to address the problem. However, at this stage, they have not made a commitment to undertake action. The third stage is described as *preparation*, and involves both intention to change and some behaviour, usually minor, and often meeting with limited success.

Action is the fourth stage where individuals actually modify their behaviour, experiences, or environment in order to overcome their problems or to meet their goals. The fifth and final stage, *maintenance*, is where people work to prevent relapse and consolidate the gains attained in the action stage. The stabilization of behaviour change and the avoidance of relapse are characteristic of the maintenance stage.

⁴ Prochaska, J.O. and Di Clemente, C.C. (1986). Towards a comprehensive model of change. In: W.R. Miller and N. Heather (Eds), *Treating addictive behaviours: Processes of change*. New York: Plenum Press.

Diagram 1: The Behavioural Change Spiral – Key Stages of Behaviour Change



MAINTENANCE: practice required for the new behaviour to be consistently maintained, incorporated into the repertoire of behaviours available to a person at any one time.

ACTION: people make changes, acting on previous decisions, experience, information, new skills, and motivations for making the change.

PREPARATION: person prepares to undertake the desired change - requires gathering information, finding out how to achieve the change, ascertaining skills necessary, deciding when change should take place - may include talking with others to see how they feel about the likely change, considering impact change will have and who will be affected.

CONTEMPLATION: something happens to prompt the person to start thinking about change - perhaps hearing that someone has made changes - or something else has changed - resulting in the need for further change.

PRECONTEMPLATION: changing a behaviour has not been considered; person might not realise that change is possible or that it might be of interest to them.

Source: The Behavior Change Spiral from "What do they want us to do now?" AFAO 1996

3. THE VICTORIAN *TRAVELSMART* SCHOOLS PROGRAM

3.1 FRAMEWORK FOR THE PROGRAM

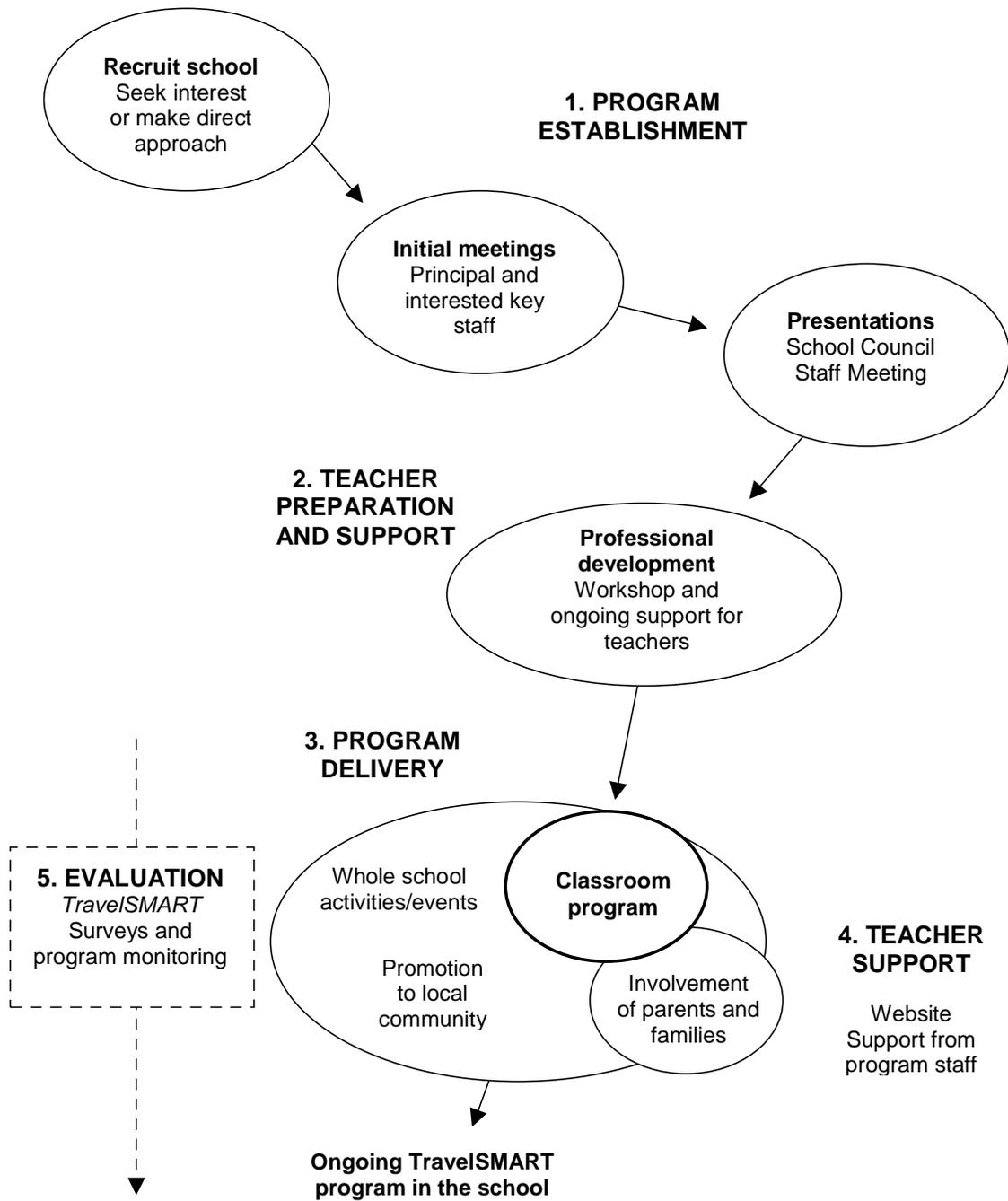
The *TravelSMART Schools* pilot program was designed around the importance of engaging all members of the school community – school councils, administrators, teachers, students, parents/carers and other family members. As a result the process for establishing the program in school, which targeted teachers and school administration, was as essential as the delivery of the classroom program to students, and through them parents and families. Without real commitment to and understanding of the program by key personnel in schools, the likelihood of success in terms of a reduction in car use could be limited.

The curriculum developers for the *TravelSMART Schools* used the work of Prochaska and DiClemente (1986), to form the basis for the scope and sequence of classroom units, topics and activities, and also for the approach to implementing the program in schools. The five key phases in the implementation of the program in schools were matched against Prochaska and DiClemente's (1986) key stages in behaviour change.

1. Program establishment - Pre-contemplation & Contemplation
2. Teacher preparation – Preparation
3. Program delivery – Action & Maintenance
4. Teacher support – Maintenance
5. Evaluation – Maintenance.

School administrations, including school councils and principals, and teaching staff were moved through the phases of the program, and provided with relevant encouragement, information and support to be able to make a commitment to the program and implement it effectively in their school – see Diagram 2. The classroom program focused on engaging students, their parents and families.

Diagram 2: Process for implementing the *TravelSMART* Schools program



3.2 PROGRAM ESTABLISHMENT

The process for effectively establishing the program in schools determined the success of the program. The *TravelSMART Schools* team placed a key emphasis on engaging all members of the school community, starting with school councils, school administrators (principals and assistant principals) and then teaching staff. Students and parents followed later.

3.3 TIMING

A key consideration when engaging schools to adopt a new classroom based program was to assess the ideal time for implementation and to provide sufficient lead time for the staff and administration to undertake the required planning. A number of issues arose when negotiating with schools to implement the *TravelSMART Schools* program. For example:

- Schools often work their learning themes across a two-year whole school cyclical program. The reasons for this include that the children in a combined year level do not face the same topic two years in a row. A cyclical whole school plan also means that limited library and other resources are not in demand by a number of year levels at any time. As children progress through their primary years a cyclical program also sequentially builds learning knowledge and skills by drawing upon earlier learning.
- Most schools need a long lead time to implement new programs and themes.
- Year 6 students usually become involved in a transition to secondary school program in the final term of their primary years. Combine this with the achievement and judgement of learning outcomes and other traditional or closure activities such as graduations and concerts, many schools find the timetable is too busy in term four, and sometime term three, to introduce a new theme or topic.
- Many schools rarely have time to implement a comprehensive additional program in term 3 or 4 of the school year.
- Staffing and social issues can change in the school year, so it is important appoint a *TravelSMART* co-ordinator who has an ongoing commitment to the school and is in a position with responsibility with some influence on the leadership team, key committees or parent groups. This person can then induct late appointees to the school and take the program from one year to the next. They can also mentor or empower inexperienced people to deliver the program and speak on the program's behalf in influential decision-making meetings.
- School Council and staff meetings are often timetabled with a particular purpose from the beginning of the school year. To speak at one of these meetings requires negotiation and no expectation to take up more than 10-15 minutes of the scheduled meeting. With a long lead time the *TravelSMART* presentation can be scheduled into the meetings and have a higher priority than if squeezed into an existing schedule.

3.4 TEACHER PREPARATION

The professional development workshop for teachers was held in the term before the program was to commence. The purpose of the workshop was to build an understanding of the underpinning *TravelSMART* concepts, orient teachers to the materials and identify where in the daily program *TravelSMART* could be imbedded. It also provided a valuable opportunity for teachers from different schools to exchange ideas, and formed the basis for ongoing networking opportunities available via the program website.

The first part of the workshop was quite didactic, with the presenter providing background information and relevant research. This was followed with interactive activities to explore pedagogy and a range of useful resources. Finally, time was provided for school groups to commence planning for the implementation of *TravelSMART* in their school.

Provision of a small funding grant to offset costs for teacher release to attend the professional development and also to support any whole school activities/events was an important way of encouraging the involvement of schools. This recognised the tight budgets that most schools operate under, and is a practical way of ensuring participation in key program components – especially the professional development workshop.

3.5 PROGRAM DELIVERY

The program is promoted to schools as something that needs to be built into the year 5 and 6 curriculum program with a long term view. Many schools have curriculum programs that operate over a two-year period in years 5 and 6, which ensures that all students participate in *TravelSMART* at some time over the two years. An ideal whole school approach would schedule age appropriate activities from prep to year 6. An holistic approach should widen the sphere of influence, and acknowledge that many families have children at different ages and stages and will need to cater for these differences as a family. In addition to these publications teachers and schools are also have access to

- The *TravelSMART* website – www.travelsmart.vic.gov.au
- Student bulletins designed to provide additional stimulus material for teachers to use during the program.
- A parent/family brochure with information about the program and how families can get involved.
- A series of items promoting key messages for placement in the regular school newsletter sent home to parents.
- Media releases for use by the school to promote the program in the local community.

Whole school activities and events were encouraged, such as Walk to School Days.

Many of the classroom activities involve students carrying out tasks at home designed to engage parents and families.

4. TRAVELSMART SCHOOLS CLASSROOM PROGRAM

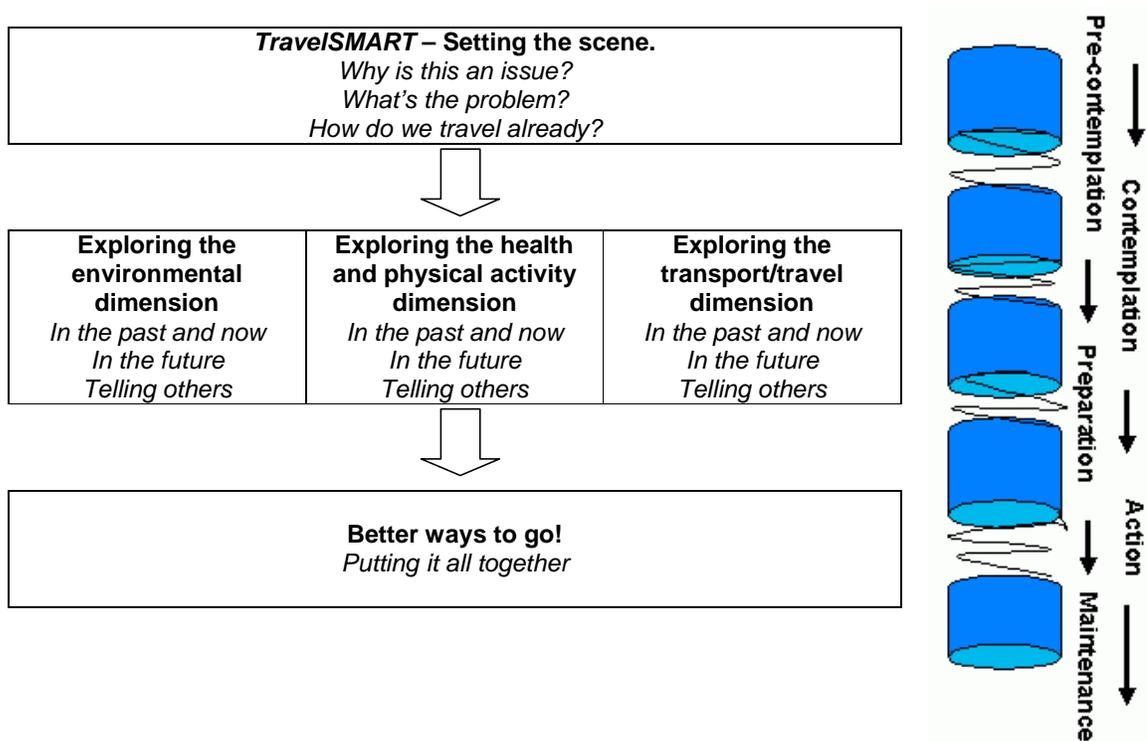
4.1 FRAMEWORK FOR THE TRAVELSMART SCHOOLS CLASSROOM PROGRAM

The development of the *TravelSMART Schools* classroom pilot program took into consideration a number initiatives and programs which underpin contemporary Victorian curriculum:

- The *Middle Years of Schooling*
- The *Victorian Curriculum and Standards Framework II (CSF II)*
- The *Thinking Oriented Curriculum*
- Howard Gardner's *Multiple Intelligences*.

The *TravelSMART Schools* classroom program consists of five major units sequenced to lead the students to understand why the issue is important, to understand how the issue impacts upon their environment, their travel choices and their health. The final unit assists the students to learn, rehearse and adopt strategies that will help them to travel smarter in the future.

Diagram 3: Framework for the *TravelSMART* classroom program



5. EVALUATION

In order to measure the effectiveness of the pilot program key evaluation activities were built into the classroom program as activities that students, families and teachers were to undertake. The key evaluation tools were the *TravelSMART* Surveys and Family Cars Survey. Each were designed with a specific focus:

- *TravelSMART* Surveys – to record travel behaviour of students and their families for one week at the commencement and the end of the classroom program.
- Family Cars Survey – to record odometer readings for a 3 week period at the commencement of the program and following the classroom program.

Both these surveys collected data that could be used by program staff to identify shifts in travel behaviour. However, they also provided useful information that is analysed by students and forms the basis of class activities and discussion. It also provided an opportunity for the school community to see the extent of positive impacts of the program and to use this as the basis for further development. It also served to help maintain the program in the school in the future.

Other evaluation tools are:

- Examination of current school programs and auditing of school documentation of programs and policies that might relate to or impact upon *TravelSMART*.
- Semi-structured interviews with key school personnel – teachers and school administrators.
- Surveys of parents.
- Focus group discussions with students.
- Annotated teacher workbooks.

Case studies of each school were documented as part of the evaluation.

6. KEY FINDINGS

Two key surveys were used to evaluate the impact of the TravelSMART Schools Pilot Program on the travel behaviour of students and their families. These were:

1. Travel surveys for one week at the start of the program and one week at the end of the term, conducted by the students of their own travel (both to/from school and other) and their parents' travel. These surveys collected the number of trips taken using different travel modes – counting a “short” trip as less than 15 minutes, a “medium” trip as 15-30 minutes and a “long” trip as more than 30 minutes in duration. Travel surveys from 238 students across 4 of the pilot schools were analysed – 5.5% from School 1, 13.0% from School 2, 32.4% from School 3 and 49.2% from School 4. 238 surveys represents about 35% of the grade 5/6 students who participated in the pilot. Not all travel surveys could be included because of delayed finish of the program in two schools, students only doing survey 1 and some surveys being incorrectly completed. Travel details of 238 students were given, but only the travel details of 200 mothers and 175 fathers were collected.
2. Surveys of parents following the program on their perceptions of the impact of the program on the way their child and the family travel. 206 surveys were returned from the same 4 schools that provided completed travel surveys, and represented about a 30% response rate. 12.1% of responses were from School 1, 19.4% from School 2, 17.5% from School 3 and 51.0% from School 4.

Because identification of any shift in travel behaviour was based on self-reported data, the two surveys helped to provide some verification of any changes that were observed.

The results of both surveys indicate there has been some reduction in travel by car across students and also parents. The travel surveys for students show a 7.7% increase in walking, a 7.8% increase in cycling and a 158.9% increase in public transport use. There was also a 12.9% reduction in the number of trips taken by car – see Table 1.

Table 1: Number of trips taken by students over one week before and after the TravelSMART Schools program

Student	Survey 1	Survey 2	% Change
WALK	1408	1517	7.7
CYCLE	844	910	7.8
PUBLIC TRANSPORT	158	409	158.9
CAR PASSENGER	2658	2315	-12.9

The dramatic increase in public transport use seems to have come mainly from one school (Balwyn Primary School) that included the public transport safety program, Travel On (Department of Infrastructure), as a part of the *TravelSMART Schools* pilot program. Similarly one other school (Bellbridge Primary School) made the Bike Ed (VicRoads) bicycle safety program a key focus within their *TravelSMART Schools* pilot program, and this appears to have been a significant influence on the increase in cycling.

The apparent link between increasing use of alternative methods of travel and use of other relevant programs as part of the *TravelSMART Schools* program, should be considered in the ongoing development of *TravelSMART Schools*.

In the surveys of parents, when asked about the usual journey to and from school, there was a modest increase in walking and the number of students reported to be cycling increased by 12.1%. The number of students travelling by car reduced by 10.2% for travel to school and 8.7% for travel from school – see Table 2.

Table 2: How students usually travel to and from school as reported by parents before and after the TravelSMART Schools program

STUDENT TRAVEL	BEFORE To School	AFTER To School	Change %	BEFORE From School	AFTER From School	Change %
Walk	38.8	37.4	-1.5	41.3	43.7	2.4
Bicycle	13.6	25.7	12.1	13.1	25.2	12.1
Car	54.9	44.7	-10.2	50.0	41.3	-8.7
Car Pool	3.4	3.4	0.0	2.9	2.9	0.0
Combination Car & Walk	15.1	18.5	3.4	17.0	18.0	1.0
Public Transport	1.5	1.5	0.0	3.4	2.9	-0.5
Other	1.0	1.0	0.0	1.0	1.0	0.0

While changes in the way students travelled to and from school were relatively modest, parents were also asked to indicate the extent to which the *TravelSMART Schools* program had impacted on the way their family travelled. 21.8% of parents responded that there had been a change, as indicated in the following comments:

- *We walk more to places than before.*
- *If we can walk we do. It is good for our health and the environment*
- *We consider how we use the car and what we use it for.*
- *There has been a change, now if we are going somewhere short, we walk instead of using the car.*
- *Yes because we are trying to stay fit and healthy.*
- *Walking for short distances instead of driving.*
- *We are more aware of the environment and now car pool to work.*
- *We were mindful of the numerous trips. We try to make less trips. One way is to combine the trips if possible.*
- *Using telephone; pooling reasons for travel.*
- *(Our daughter) brought it to our attention that reducing car use is cheaper, healthier and environmentally safe.*

Comments from parents from 4 of *TravelSMART Schools* Pilot Programs

The indicated impact of the program on family travel reported through the parent surveys was reinforced by changes also shown in the travel surveys.

Travel by car by mums showed a reduction of 14.5% and 11.1% for dads.

There were also reported increases in walking, cycling, and use of public transport by both mums and dads.

Generally there was a positive response to the program from parents as indicated in the following comments:

- *A big thankyou for reminding us that we don't always need to use the car.*
- *We found the TravelSMART booklet to be very informative We think this program encourages our children to be aware of travel options available and how they affect the environment.*
- *I think the program was excellent!! Both our child and us as parents learned a lot, it is about time our children get this information at school as well as at home- they need it for a safe future.*
- *Great programme- Moulding children for the future to think twice before using a car. Also made for some interesting conversations at the dinner table.*
- *TravelSMART materials have had some really interesting information and has made him more aware of health and environmental issues.*
- *My son was really interested, he has encouraged the family to be TravelSMART.*

Comments from parents from 4 of TravelSMART Schools Pilot Programs

7. CONCLUSION

The evaluation findings showed a very positive response overall to the program from school communities. There is an indication of a degree of change in travel behaviour, showing that children and their families can be persuaded to reduce their dependence on the motorcar.

Teachers across the pilot schools had a wide range of teaching experience yet all embraced, adapted and implemented the *TravelSMART Schools* materials with integrity and success.

Overall students and their parents were co-operative and enthusiastic about the concepts within *TravelSMART Schools*.

Indications of success are:

- All pilot schools remained with the pilot program for more than the expected and agreed time period.
- Schools took the provided materials, and were able to deliver and further enhance them to meet their local needs.
- The theoretical framework and teaching and learning approaches were welcomed by the schools.
- Schools in the pilot program intend to continue delivering the curriculum program even though the pilot is finished.
- Requests for the *TravelSMART* program are coming from schools outside the pilot.

A well-structured, empowering and respectful school curriculum program can help school populations to recognise there really is a better way to go!



better ways to go!