Chapter 3. School Travel Strategies

3.1 School Travel Strategies background

There is global and local concern about road safety and congestion in urban areas. In order to improve the present situation many kinds of plans on traffic demand management and travel demand management have been carried out by local administrations and have been encouraged by Governments.

As the European studies results show, a good mobility management plan for the urban environment must involve the creation of partnerships between stakeholders (including transport operators, community groups, local councils and local businesses) and target efforts at selected users such as companies or young people, rather than spreading it across a wide range of user groups.[10]

Some of these plans deal with school travel patterns, due to the fact that school travel contributes to increase congestion in the morning peak hour. The most quoted statistic is that 18% of the cars on the road in urban areas at the morning peak of ten minutes to nine is taking children to school[11]. In general these strategies are known as School Travel Plans (STP). The STP concept is still relatively new, but it has generated considerable interest on the European Community. There are other mobility management plans that focus on travel to work, which is the other big contributor to morning peak hour congestion.

There are many reasons for present trends on school travel patterns, amongst the most obvious are:

- Increases in car ownership and use, particularly in relation to second cars in a household
- Greater parental choice, school closures and other factors resulting in longer journeys
- Parent's fears about their children's involvement in road traffic accidents if they walk or cycle to school
- Parent's fears about the personal safety of their children if they travel to school unaccompanied

The consequences of the change are far-reaching:

- Increase in peak hour congestion
- Increase in atmospheric pollution around schools
- Children with less opportunity to develop road safety and personal safety skills
- Reduced children's independence and social development
- Travel habits developed early in life which are difficult to change

[10] From the European Commission Transport Research Programme study: *Momentum: mobility management for the urban environment, 1999*.
http//europa.eu.int/comm./transport/extra/res_urban_transport.html
[11] From the UK Government White Paper: *A new deal for transport: better for everyone*.

School Travel Plans try to stop the vicious circle that has been created on school travel patterns: fears over road safety, caused by increased traffic levels and higher speed, lead to less walking and cycling and more driving, which in turn increase traffic levels, see figure 3.1.1.

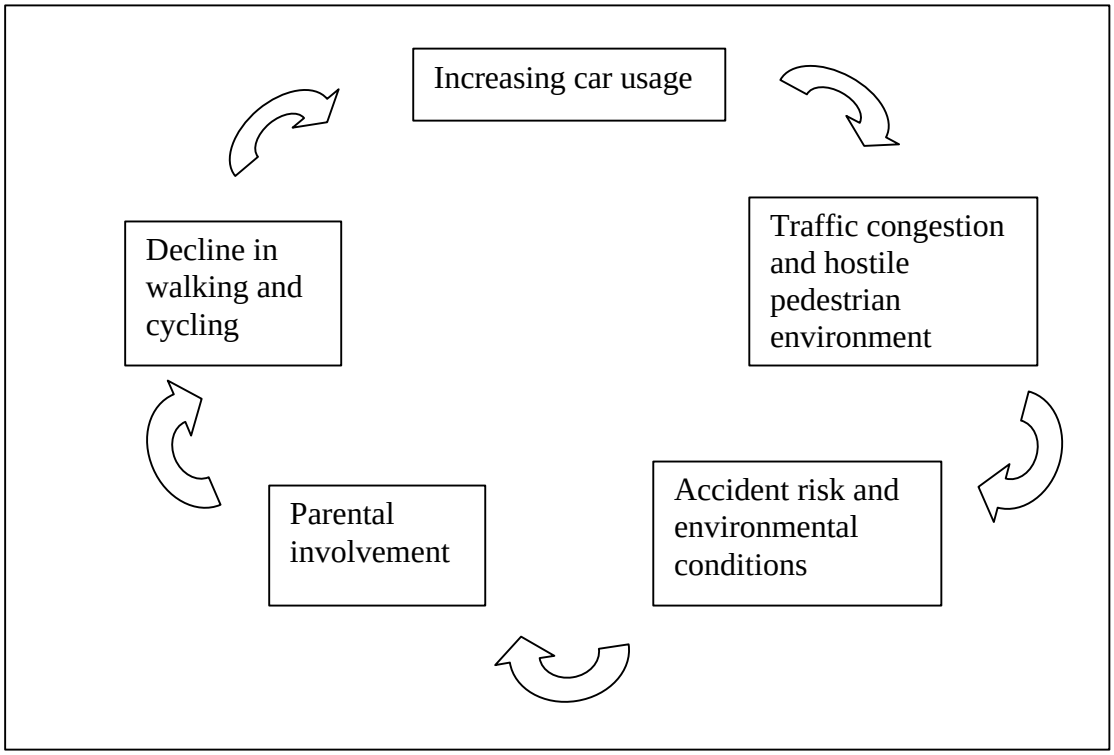

Figure 3.1.1. Vicious circle on school travel patterns.

3.2 School Travel Plan (STP) and Safe Routes To School (SRTS) schemes

A School Travel Plan (STP) puts forward a package of measures to improve children's safety and reduce car use en route to school, backed by a partnership involving the school, education and transport officers from the local authority, the police and the health authority. It is based on consultation with teachers, parents, pupils and governors and other local people.

A STP may apply to a single school, a cluster or a school in its planning stage, and it is likely to include as a minimum:

- Local transport policy objectives concerning the journey to school
- Consultation with children, parents, school staff, governors and the wider community
- Description of the school and summary of its transport and road safetu problems
- Proposed initiatives
- Proposals for monitoring and reviewing of the plan

This initiative has been developed in some European countries under different names, but with similar main objectives, see table 3.2.1.

Among these initiatives, some are focused on improving safety on the routes to school and they are known as "Safe Routes to School" (SRTS). As the relation between increasing traffic levels and increasing accident rates has been proved, one of the measures in SRTS programs is to decrease traffic levels, while it was one of the main objectives in STP. See figure 3.2.2. for objectives and measures in the different School Travel Initiatives.

Country	**School Travel Initiative**
Ireland	Safe Routes to School
Denmark	School route studies and other special measures
Catalunya	School Routes (Camins Escolars)
England	School Travel Plan
Scotland	Safe Routes to School

Table 3.2.1. School Travel Initiatives in European countries.

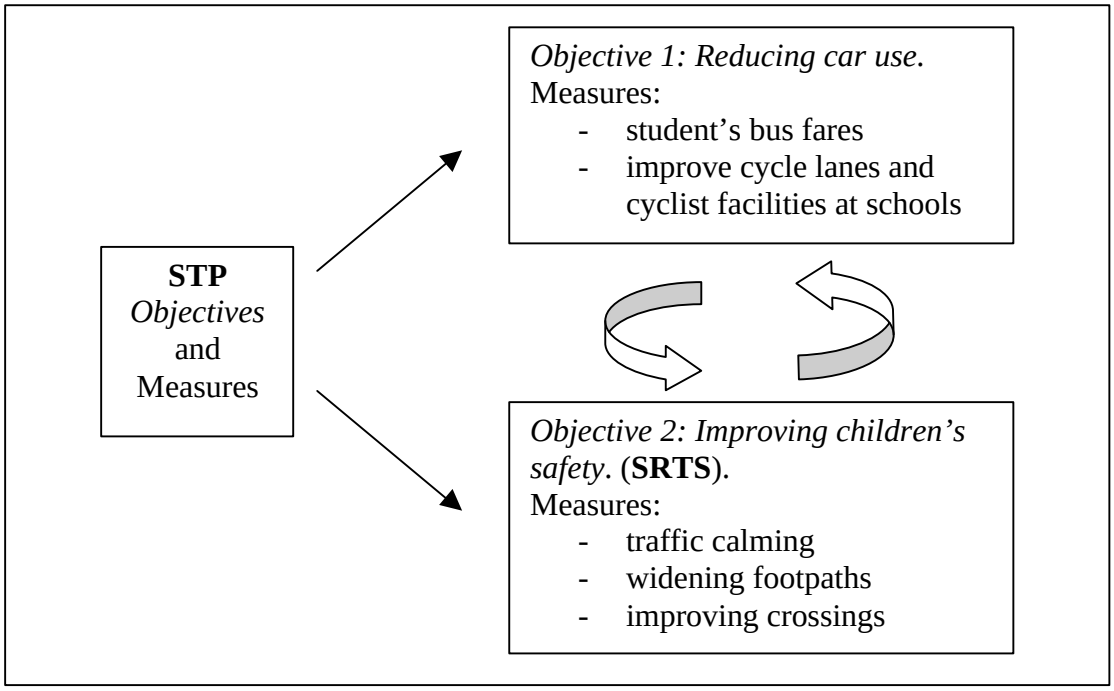

Figure 3.2.2 School Travel Plans objectives and measures

The physical aspects offered by a SRTS are: measures for speed reduction in the surroundings of the schools -see figure 3.2.3-; improvements to visibility; assessment of demand and requirements for parking and drop off points; the creation and improvement of cycle paths, pedestrian paths and crossing points.

Figure 3.2.3. Measures to reduce vehicle speeds in Odense, Denmark.

A more accurate description of the main activities within a SRTS scheme, divided in three categories was included in David McGuigan's study (1999)[12], and it is reproduced in the table 3.2.4.

[12] From the study: *Review of Safer Routes to School in Scotland.*

Objective	**Activity**
1. Measures which improve safety and accessibility for those who choose to walk and cycle to school.	• Map based exercise plotting and preferred route to aid safer route choice. • Engineering measures to improve facilities for walkers and cyclists such as secure cycle parking, land lockers in school. • Installation of new pedestrian facilities, road markings, traffic calming, traffic management changes, etc. • Identification of enforcement measures to improve safety. • New speed cameras, additional parking enforcement, etc. • Walking buses providing an escort for children, see figure 3.3.2.2.
2. Measures which enhance the personal skills of children to walk or cycle safely to and from school.	• Pedestrian and cycle skills training on and off road. • Cycle maintenance training. • Appropriate curricular activities targeting road safety for which there is a wide selection of material already available for art, language, maths, drama, etc.
3. Measures which enhance the willingness of children, parents and schools to participate in and encourage walking and cycling to school.	• Publicity and encouragement for walking and cycling e.g., appreciation of wider health benefits for parents / carers and children circulation of information about the project, e.g. newsletter. • Community involvement in the promotion and implementation of the project. • Junior Road Safety Officers where school children are given responsible roles in implementing schemes. • Campaign targeted at parents / carers who drive children to school. • Walk / cycle to school weeks / days. • Development of an agreed safe routes or safe travel policy for the school within the context of the education department's traffic safety policy. • Pre and post project reports on the local road accident history and pre and post project survey of travel modes to and from school.

Table 3.2.4. Activities within Safe Routes to School schemes.

3.3 Reference School Travel Strategies developed in Europe

3.3.1 Denmark

3.3.1.1 First Danish SRTS[13]

Odense, the third largest city in Denmark, has been the inspiration to many Safe Routes to School programmes around the world. The city's project started 20 years ago, when Denmark had the highest rate of child mortality due to road accidents in Western Europe. This promoted investment into SRTS programs.

The SRTS project included all 45 schools in the city and took account of routes to and from school and to and from organized activities for all the students. The main works carried out have been:

- Aerial photographs were used for mapping each child's routes.
- For each school, maps of the area were drawn, showing where the children actually moved around and the places which they considered dangerous.
- Based on the study, proposals to improve the traffic environment for children were worked out.
- All results and proposals for each school were included in a report.

Since 1981, a total of around 200 projects have been implemented. The most common measures have been slow-speed areas, traffic islands and separate foot and bicycle paths.

Some impacts of SRTS in Odense are:

- Present day statistics show that the percentage of children cycling to school in Odense today varies between 24% and 73 % at different schools. Cycling is the most common mode of children's transport and the use of bicycles increases with age.
- Speed registration on twelve 30-km/h roads showed a decrease in speeds from 45 to 31 km/h.
- The effect on the total number of accidents has been a reduction of 82 %, and they are now less serious. Looking at the traffic accidents involving children there has been a drop of 24% from 1994 to 1999, even though there has been some fluctuation in the meanwhile.

Future improvements for the SRTS programs in Odense:

- In cooperation with the school department a yearly transport investigation is starting this year (2002). Every year the class teacher will collect, in a certain day, the number of children in the class who: walked, cycled, went on a moped, went by bus, went by taxi, or were driven by car or motorcycle. The school secretary will then type in all data in the central database on the

[13] Based on the article: *Safe routes give healthy cycling children*, by Andersen, Troels, Civil Engineer and Project Manager, City of Odense, Nørregade 36-38, DK-5000 Odense C, Denmark

Internet. This procedure will take place in one certain week every year. This is an easy operation, which will increase the schools' participation rates. After a few days all data will be ready for the use in the planning department, so that press releases can be made etc. Private schools won't take part in this work, as only 13,5 % of the school children attend private schools and most of them are driven by buses and cars due to higher distances from home to school.

- In the coming years it will be possible to follow the mode of transport for every school class to see if certain generations take effect from the changes made in this field.

3.3.1.2 Danish implemented SRTS results[14]

The methodology used to evaluate impacts of SRTS implemented in Denmark follows the next scheme:

- In 2001 the Danish Transport Research Institute carried out an enquiry on SRTS among all Danish municipalities. 181 out the 275 municipalities answered the enquiry and described their SRTS measures and efforts to change children's transport mode choice to and from schools in the period 1995-2000.
- On the other hand, the study analysed the development in accidents and travel among 6 to 16-year-olds in Denmark in the same period.
- The municipalities that did not carry out other physical special measures, such as pedestrian crossings improvements, footpaths widening, etc., were used as control group in order to estimate the effect of school route studies and other special measures.

The results are:

a) 41% of the municipalities made school route studies during the period 1995-2000. In school route studies, children and parents answer questions about route choice, road safety, perceived risk and transport mode choice regarding the school journey. Some municipalities make the questionnaire surveys on all schools and in every class, whereas others select e.g. 3rd, 6th and 9th classes on one or few schools. Afterwards the municipality suggests several physical measures based on the answers and analyses of accident data.

b) The number of children per school that are driven by car on school journeys seem to have doubled from 1993 to 1998-2000. The share of children cycling to school seems to have decreased almost 30% in the same period, while use of public transport and walking increased. The changes in travel can be explained by changes in demography, school closures, increased car ownership and changed attitudes among children and parents. On all journeys, the 6 to 10-year-olds have doubled their car trips and reduced their walking trips by 40% from 1978 to 1998-2000, while 11 to 15-year-olds have tripled their car trips.

[14] From the forthcoming study: *Safer Routes to Danish schools*, by Soren Underlien Jensen.

c) The number of injuries in the 6 to 16 age group dropped by 46% in the period 1985-2000. About 25% of the reduction in injuries occurred due to decreasing number of children and average age among children. Increased use of safety belts and cycle helmets can explain roughly 30% of the fall in injuries and is the primary cause to a significant reduction in accident severity.

The conclusion is:

- The evaluation indicates that school route studies do not have a significant direct effect on child safety. But school route studies nearly always result in other special measures[15]. The best estimate from analyses is that other special measures have improved child safety by 10-15% during the period 1995-2000 corresponding to a two to three per cent traffic injury reduction per year. This conclusion is close to the 95% significance level. It is not possible to state a precise level of measures needed to obtain this injury reduction in a given municipality.

3.3.2 United Kingdom

3.3.2.1 U.K.'s early initiatives

The transport charity Sustainable Transport (Sustrans) was an early pioneer in the area of SRTS and it aimed to enable more children to walk and cycle to school in the United Kingdom, by making changes to highway design, by building better facilities at schools and by raising awareness of transport, sustainability and health. Sustran's SRTS pilot project was started in 1995. The scheme has grown and now is supported by central and local Governments.

3.3.2.2 U.K.'s Government initiatives

More recently, in 1998, the Department for Transport and Local Regions (DTLR) in the UK established the School Travel Advisory Group (STAG) to spread best practice and identify practical ways of reducing car use whilst at the same time improving safety on the journey to school. The STAG members include representatives of parents, teachers and governors; public transport operators; businesses; road safety, child health and school transport experts; and a range of local authorities from around the country.

The main conclusions that the STAG found out, looking at school travel patterns in the years between 1988 and 1998 were:

1) The proportion of journeys to school by car had nearly doubled, from 16% to 29%.

[15] In this study "SRTS measures" are equivalent to Danish "other special measures", see table 3.2.1.

2) In 1998, at 8.50 in the morning in term time, one in five cars on urban roads was taking children to school.
3) Only one in eleven primary pupils was going to school unaccompanied in 1998, while only ten years before, one in five did.
4) Over the same period, the average length of the journey to school for secondary pupils had gone up by a third, so that even more pupils now lived too far away to walk to school.

Looking at schools in particular, the STAG found out that a number of individual schools had also undertaken initiatives, with impressive results:

- Pupils walking increased by 30% after the introduction of walking buses - these are groups escorted on foot by volunteers- (Wheatfields Junior School, St Albans), see figure 3.3.2.2.
- 61% increase of pupils now cycling to school following investment in safe cycle and pedestrian routes, better school timetable planning and the provision of lockers and secure cycle parking (Kesgrave School, Suffolk).
- 40 additional pupils using the bus after introduction of improved services and reduced fares (Imberhorne School, West Sussex).
- The number of cars travelling to the school reduced by 24% after introduction of car-sharing scheme (Royal School, Hampstead).[16]

Figure 3.3.2.2. A Walking Bus in Kent, U.K.

3.3.2.3 U.K.'s best practice STPs[17]

Recent studies of the DTLR show as best practice STPs:

- Holmer Green First School, Buckinghamshire has achieved a 58% reduction in car use since its school travel plan was introduced in 2000. The main measure adopted is *Go for Gold*, a park and walk incentive scheme which is being promoted across Buckinghamshire by the county council. Under this scheme pupils receive a *Go for Gold* card which is stamped on each day that they walk to school from outside an agreed exclusion zone. Once they have collected sufficient stamps they are given a

[16] School Travel Advisory Group. *Report 1998 –1999*, paragraph 2.2.15.
[17] Information facilitated by Sustrans, got from DTLR.

small prize such as pencils or a free swimming lesson. The county council also invites schools to bid for school travel plan awards: Holmer Green First won the money to build a sheltered area where parents can wait for the children after school.

- Royal School, Camden. Travel plan measures were required as a condition of planning permission. Following introduction of these measures (promotion of car-sharing, minibus services and better public transport information) the number of cars being driven to the site was reduced by 24% and the number of children being driven to school by 21%. The proportion of children using public transport increased from 11% to 33%. Further travel plan measures have been required as a result of a second planning application, with a specific new target to increase the level of walking.

- City of York. The council has recently signed a public service agreement which includes a target to increase cycling to school (for all schools years 6-9) from 5.8% (1999) to 10.3% (2005) in return for additional ring-fenced investment in promoting cycling to school.

The report published by the U.K. Department of Transport, in 2001, "Levels of activity relating to school travel plans and initiatives", says:

a) 79 County Council's authorities stated that School Travel Initiatives -STP or SRTS- had been implemented at one or more of their schools.
b) The majority of these authorities believe that it is too soon to tell if STPs are having an effect on modal shift.
c) Five said that STPs had resulted in a reduction in car use including Hertfordshire indicating 30% and Derby City Council indicating 20% reduction in the last year.[18]

3.3.2.4. Review of Safer Routes to School in Scotland[19]

A survey carried out in 1999 of Scottish local authorities identified that 16 of the 32 Councils had active projects and that 89 projects were underway.

The schemes generally included three types of measures: to improve safety and accessibility for walkers and cyclists; to enhance the willingness of parents, children and schools to participate in, and encourage, walking and cycling to school.
A more detailed survey was undertaken of SRTS practitioners to identify their perceptions of projects, and to learn from their experiences. Overall, practitioners considered that the presence of vehicles in the vicinity of the school, particularly those of parents of school children, is the major concern, and that improving safety and accessibility for walkers was the main aim, particularly for children crossing busy roads. There was a very wide range of approaches to the management of projects. Tensions between organisations were evident but there was a high degree of

[18] *Levels of activity relating to school travel plans and initiatives (2001).* Department for Transport of the U.K.
[19] From David McGuigan's study: *Review of Safer Routes to School in Scotland (1999).* Scottish Executive Research Unit.

ownership amongst all the key players on schemes which were successfully moving forward.

Practitioners were asked what they would do differently based upon their experiences. The five main issues raised were:

1) The need of better corporate working at the outset
2) Ensuring that projects could sustain momentum after the initial enthusiasm
3) Greater effort at overcoming doubts within the local community, there were significant doubts within the community that their efforts could make a difference
4) Building a better awareness of the different aims of the project partners
5) Developing a better understanding of the affordability of improvements

Based upon the responses to the practitioner survey seven schools were selected as detailed case studies. These studies emphasised that there is no single model for the SRTS project. However, all successful projects have had a champion who has been prepared to tackle obstacles in order to make a progress. A general lack of staff and financial resources was also widely reported, as was the difficulty in getting all parties involved at the outset of the scheme.

3.3.3 Catalunya

In Catalunya the first initiatives have just been started in the city of Barcelona and they are called "Camins Escolars" (school routes). According to the information published by the City Council of Barcelona the "Ajuntament de Barcelona", in September 2002:

> "The Ajuntament de Barcelona has carried out a survey, among 5,000 Secondary school's pupils, aged between 12 and 16. The results show that 73% of the students usually walk to school, 17% use public transport and only 7.5% are driven to school. The Council will encourage the implementation of School Routes -Camins Escolars-, which consist in the improvement of the signalisation, the road's design and coordination of traffic lights in the most frequently used streets for access to the schools. For the moment two routes have been given priority for pedestrians on their way to school; one in the district of Les Corts, facilitating access to the school "Barcelona", and the other one in the Sagrada Familia, en route to the school "Tabor"."

According to the City Council Department for Transport – "Via Pública de l'Ajuntament de Barcelona", only the project involving the school Tabor was fully developed by September 2002[20].

A third project was recently inaugurated on the 11th February 2003 in the neighbourhood of Congrés, in the school "Doctor Ferran i Clua"[21].

[20] From the Barcelona´s City Council document: *El camí escolar*.

In this city the main objectives of the SRTS program are slightly different from the ones in other European countries such as Denmark and the U.K. These are:

- To encourage and facilitate children walking to school
- To make the route safer in order that children may walk to school on their own

The project that has been fully developed started in one school (CEIP Tabor), where 90% of the children already walked to school. The reason behind the development of the program was to improve the access to school and reinforce the pedestrian's rights on the streets, so that these children could walk on their own.

In order to develop the SRTS all the neighbourhood stakeholders were involved; namely the school, the local council, and a new community group (Forum Civic) formed by local private businesses and local public organizations.

The main steps followed in the scheme were:

a) The location on a map of all the students' homes.
b) The development of an educational program for both teachers and parents.
c) The carrying out of a survey on school travel patterns.
d) The determination of the accident rate in the surroundings of the school.
e) The encouragement of the partnership between all concerned parties in order to determine the improvements required on the streets.
f) The development of activities on the streets.
g) The publication of the project to students, parents and neighbours.

No results are available for this project as of yet.

In the three developed projects, the measures concerning road design which have been carried out in the surroundings of the schools include: improvements on vertical and horizontal signalisation, changes in the synchronisation of the traffic lights and the reorganisation of vehicle circulation; all of which have been executed in order that the children's route to school may be easier and safer, see figure 3.3.3.

By the same token all the schools which have implemented the scheme have included amongst the material taught to the students some instruction concerning safety on the roads.

[21] From the newspaper *El Pais*, 24th of February 2003.

Figure 3.3.3. Camins Escolars signalisation in front of the school Tabor.

3.4 Reference School Travel Strategies developed around the world

3.4.1 International Walk To School Day

There are some global strategies such as the International Walk to School Day, the greater aim of which is, more than just getting together with children and going for a walk to school one day a year, to bring forth permanent change in communities across the globe.

This initiative tries to:

- Encourage physical fitness through the easiest-to-do and most enjoyable form of exercise namely walking by teaching children the skills to walk safely and to identify safe routes to school.
- Raise awareness of how walkable a community is and where improvements can be made.
- Raise concern for the environment.
- Reduce crime and take back neighbourhoods for people on foot.
- Share valuable time with local community leaders, parents, and children.

The impacts of this initiative depend on the city where they have been implemented and the cooperation level of the local administration, school principals and parents.

3.4.2 Reference case of implementation of the International Walk To School Day

A reference case to study on the implementation of this initiative is the city of Christchurch in New Zealand where they call this initiative: “Walk A Child To School Day”.

Forty-four primary schools took part in Christchurch City Council's annual "Walk a Child to School Day" (WCSD) on 1 March 2000. The program was a success with many schools reporting over three-quarters of their children walking to school on the day.

Arising from concerns over child health in general and child road safety in particular, WCSD was held to encourage safe and healthy travel to school, as well as the added benefit of saving transport energy. Most schools noted quieter streets, happy children, and seeing many parents.

The numbers of children walking to school increased from 35% beforehand to 73% on WCSD. The numbers of children coming to school by motor vehicle decreased from 55% before to 22% on WCSD. In one school virtually the whole school turned out to walk to school in four walking school buses that were organized. Another had a breakfast at school for parents and children. A group of parents at one school have organized an ongoing Walking School Bus as a result of the event.

Sports people from the Canterbury Crusaders, the Canterbury Rams basketball team, New Zealand women's cricketer Cathy Campbell, walked with the children. Christchurch Mayor, Garry Moore, and Green MP, Rod Donald, acted as guest 'drivers' for walking school buses. To follow up WCSD, a Walking School Bus kit has been developed for schools. The kit includes hats, drink bottles, fridge magnets, contact cards, certificates, stickers and travel cards.

3.4.3 North America school travel strategies background

Travel to school represents 10-15% of peak period motor vehicle trips in typical urban North American areas, although a smaller portion of total mileage since these trips tend to be shorter than other trip categories. Until a few decades ago most grade school students walked or bicycled to school. Now, only a small portion (typically about 20%) walks or uses the bicycle to school.[22]

The Victoria Transport Policy Institute, from Canada, has carried out studies on STPs travel impact and STPs costs and benefits, the results are shown in tables 3.4.3.1 and 3.4.3.2.

Travel Impact of STPs	**Rating**	**Comments**
Reduces total traffic	2	School trips are numerous, but relatively short
Reduces peak period traffic	3	Reduces peak-period vehicle trips
Shifts peak to off-peak periods	0	
Shifts automobile travel to alternative modes	3	Encourages use of alternative modes
Improves access, reduces the need for travel	0	
Increased ridesharing	2	
Increased public transit	1	
Increased cycling	3	
Increased walking	3	

Table 3.4.3.1. Impact of STPs. Rating from 3 (very beneficial) to -3 (very harmful). A 0 indicates no impact or mixed impacts.

[22] From The Victoria Transport Policy Institute, online *Transportation Demand Management Encyclopedia*, www.vtpi.org

Objective	Rating	Comments
Congestion Reduction	2	Reduces peak-period vehicle trips, although largely on local roads.
Road & Parking Savings	3	Reduces total automobile travel and school parking costs
Consumer savings	3	Reduces vehicle costs
Transport choice	3	Increases travel options
Road safety	3	Reduces vehicle travel, traffic around schools, and often includes road safety improvements
Environmental protection	3	Reduces vehicle travel, and non motorized travel habits

Table 3.4.3.2. Costs and benefits of STPs. Rating from 3 (very beneficial) to -3 (very harmful). A 0 indicates no impact or mixed impacts.

3.4.4 Reference cases in North America

3.4.4.1 Canada

The Way to Go! program in British Columbia is a provincial program sponsored by the Insurance Corporation of British Columbia and its brokers, that provides a variety of resources to help schools reduce automobile trips, and create safer pedestrian and bicycling environments around their schools. Way to Go! resources and support are available free to all BC schools.

No results are available on this project.

3.4.4.2 United States

An example of a school travel initiative developed in the U.S. is the "Bronx Safe Routes to School", which is a program managed by Transportation Alternatives and sponsored by school officials, local governments and the state Traffic Safety Committee. It coordinates efforts of parents, teachers and principals and traffic engineers to identify and fix street conditions dangerous to children walking and cycling to school.

Since October 1997 the program has helped create safe walking corridors at 31 elementary schools. To be selected for the program, parents and principals must be actively concerned about dangerous walking conditions and a high number of pedestrian injuries must be documented.

The participating schools are asked to collect several hundred of travel surveys. For these schools Geographic Information System mapping are used to identify problems areas and develop safe walking routes. The State Department of Transport installed speed humps, elevated crosswalks, sidewalk extensions and other measures where needed.[23]

[23] From the online document: *Safe Routes to School* (www.transalt.org/campaigns/school/index.html)

3.5 Safe Routes to School in Ireland

3.5.1 Main reasons to develop SRTS programs in Ireland

There are two main reasons to develop a SRTS program:

1) To increase road safety, particularly children's safety.

Road safety is an issue of great concern for the Irish Government. In 2001, 415 people died in road accidents and there where 12,043 injuries, 22% more than in 1991. According to the Government a road design factor contributes to 25% of all road accidents, therefore engineering measures are an appropriate response to these cases. It has also been proved that where traffic calming, is applied significant reductions in speed and accidents are achieved.[24] So a SRTS program, which identifies where engineering measures will improve safety on the routes to school and is a good answer to improve the safety of children on their way to school.

2) To reduce car use

Car ownership hasn't stopped increasing in Ireland for the last 15 years, see table 3.5.1.1[25]. Therefore, to reduce car use, travel demand policies have to be implemented to persuade car owners not to use their vehicles when unnecessary.

Year	Private cars
1985	709,546
1990	796,408
1995	990,384
2000	1,319,250

Table 3.5.1.1. Ireland's private car ownership evolution

On the other hand, looking at school travel patterns in Ireland[26], we can see that the tendency in the last 20 years is to increase the use of the car, both in primary and secondary school travels, in decrement of more sustainable modes of transport such as walking and cycling, while the use of the bus is almost constant. See table 3.5.1.2.

[24] From the Irish Department of Transport document: *The road to safety, government strategy for road safety 1998-2002*.
[25] From the online web page by the Central Statistics Office.
[26] From Census 96, Volume 6, of the Central Statistics Office Ireland.

Primary schools' Children (5-12)

	1981	1986	1991	1996
Walking	47%	45%	39%	33%
Cycling	4%	4%	4%	2%
Bus	19%	19%	21%	21%
Car	20%	24%	28%	36%

Secondary schools' Children (13-18)

	1981	1986	1991	1996
Walking	30%	31%	29%	28%
Cycling	13%	15%	13%	8%
Bus	37%	34%	36%	38%
Car	8%	11%	14%	20%

Table 3.5.1.2. Travel to school by means of travel in Ireland.

In 1997 a major multi-modal origin and destination survey was carried out by the DTO (Dublin Transportation Office), in the Greater Dublin Area, in order to update the DTO Transportation Model. The results of this survey indicated that 20% of all peak morning trips were school related.

The conclusion, according to all the collected data is that:

- The use of car in the travel to school is increasing in Ireland
- There is increased congestion related to school travel
- Pedestrian and cyclist safety is decreasing

Therefore a vicious circle has been created. Fears over road safety, caused by increased traffic levels and higher speed, lead to less walking and cycling and more driving, which in turn increases traffic levels. Local air quality, journey times and the competitiveness of local business all deteriorate.

Again, a SRTS seems to be the solution to stop this vicious circle.

3.5.2 Main principles and main objectives of a SRTS program

In 1999 the DTO decided what the main principles of a quality SRTS scheme were, based on the Safer Routes to School Conference held in York:

- Surveying the students and their parents directly in order to ensure buy-in throughout the scheme.
- Using their requests and concerns as shown on the questionnaires to design the scheme.
- Using other methods to achieve the objectives i.e. educational or management rather than purely physical measures.

- It is also imperative that a school has a proponent usually the head teacher who is in favour of the principles and aspirations of the safer routes to school objectives.

In 2000 a SRTS Working Group was set up by the DTO, consisting of the Departments of Health, Education, and Environment, National Parents Council, Public transport operators and local authorities in order to determine the objectives of SRTS programs, which are:

- To improve safety by reducing the number of school based accidents by 50%.
- To provide an appropriate front of school environment.
- To improve the levels of fitness amongst students by promoting more active travel patterns.
- To achieve school travel modal shift, at a minimum to the afternoon mode split, as it has been detected that morning modal share in different to the one in the afternoon.

3.5.3 First school travel initiatives

To try to reverse the tendencies on school travel behaviour, in 1998, the first School Travel Initiatives commenced in Ireland. The schemes were varied in their methodology and approach in order to determine best practice:

a) South Dublin County Council

In this County the scheme consisted of a competition held in schools in Tallaght/ Templeogue, Lucan and Clondalkin. Each school was required to survey the students and determine the catchments, mode of travel, route to school including the most dangerous locations and the reason why it is dangerous. The schools produced a report and a list of proposals to improve pedestrian, public transport and cycling facilities. The Council installed some of the physical measures.

The main problems with the scheme were that the questionnaires produced by the schools varied considerably leading to inconsistent results. It is thus difficult to determine the benefits of the measures developed under the program.

b) Dun Loagheaire Rathdown County Council

This scheme was a regional traffic management scheme with a small safer routes to school element. The local authority surveyed the schools and the questionnaires were used to help design a scheme that included a significant amount of cycle track, pedestrian crossing and new footway.

This did not constitute an ideal SRTS program, as it was primarily a traffic management scheme.

c) Bray Urban District Council

The Bray scheme consisted on data collection, consultation, problem identification, and then the formulation of the scheme. Finally the scheme consisted of traffic calming, cycle tracks and footpath widening, and the implementation cost was € 500,000.

This was determined as best practice because of its wide area vision, which permits to solve the problems as a whole and not just focusing on few schools, i.e. it is much more important to determine which footpaths are used by most children in town, even if they attend different schools, than to improve one school entrance. It was also adjudged that all schools in town were consulted, so that the whole town was aware about the SRTS program, and that they answered the same kind of questionnaires, so that the data collection was consistent.

This study will focus in the Bray scheme as it was considered best practice out of the first initiatives carried out in Ireland.