

# TRAVELLING GREEN: A SAFER AND ACTIVE JOURNEY TO SCHOOL PROJECT – HOW IT CAN CHANGE PUPILS' TRAVEL BEHAVIOUR

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## 1. WHY WALK TO SCHOOL?

In recent years, there have been many indications from the Government that less and less children are walking to school. Road safety documents, physical activity strategies, health board reports and walking strategies draw attention to the issue. The creation of new posts such as School Travel Co-ordinator and Active Schools Co-ordinator indicate that a great deal of money has been invested in the attempt to encourage sustainable transport and higher levels of physical activity.

### 1.1 Health

There are several different reasons for encouraging a move from the “school run” to the “school walk”. One reason is health. The recommendation from the Scottish Physical Activity Task Force is that children should accumulate at least one hour of moderate physical activity, on most days.<sup>1</sup> The World Health Organisation supports this guideline. We know that 27% of boys and 40% of girls are not active enough to protect their health, both now and in the future.<sup>2</sup> Inactive children have poorer self-esteem, higher anxiety, higher stress levels, more obesity and they are more likely to smoke, use alcohol and illegal drugs.<sup>3</sup> Inactivity is a higher risk factor for heart disease than smoking, hypertension or obesity.<sup>4</sup> Physical activity has been shown to reduce feelings of depression and anxiety<sup>5</sup>; an important fact when we consider the rising prevalence of mental health problems in children and adolescents<sup>6</sup>.

The Scottish Executive's Physical Activity Strategy has set a target for 80% of children under 16 meeting the aforementioned levels of physical activity by 2020.<sup>7</sup>

If we focus on health statistics for West Dunbartonshire Council, where the Travelling Green project was piloted, walking to school becomes even more important. More than half of West Dunbartonshire Council's population are in the Argyll and Clyde NHS area. Reports from this health board indicate that:

- Less than 40% of people eat 5 or more portions of fruit, vegetables or salad each day.
- Most people do not reach recommended levels of physical activity.
- More than 1 in 3 children are overweight, obese or severely obese.
- 1 in 2 adults are overweight, obese or severely obese.
- 8% of the population are on antidepressants, and
- The rates for coronary heart disease are higher than the rate for Scotland.<sup>8</sup> This is increasingly worrying when taking into account that Scotland's rates for coronary heart disease are high in comparison to other countries in Europe.

## 1.2 Road Safety

Another reason for encouraging walking to school is road safety. The document *Tomorrow's Roads – Safer for Everyone* states the target for a 50% reduction by 2010 in the number of children killed or seriously injured. Although rates are falling, the number of child *pedestrians* killed is still high in comparison to other European countries. The peak age for child pedestrian casualties is approximately 12 years old.<sup>9</sup> A possible reason for this is that, at this age, children begin high school and start to travel to school independently, without having had a chance to practise pedestrian skills. Over one fifth of casualties happen on the school journey.<sup>10</sup> The document emphasises, "Children are more likely to have accidents... if they go out without adults before they have good road sense".<sup>11</sup>

Over a third of primary pupils now travel to school by car.<sup>12</sup> In addition to the health issues already mentioned, children are obviously losing opportunities to learn risk assessment, pedestrian skills and safe behaviour on the road. Children's independence is being restricted, undoubtedly impacting on their self-esteem. This recalls the statistics regarding mental health.

*Tomorrow's Roads – Safer for Everyone* acknowledges that "there are places where there is no alternative to driving", but promotes an active journey to school, saying that "many more children could walk, cycle or travel to school by bus."<sup>13</sup> The document says that the Government wants schools to develop travel plans. It gives this definition:

School travel plans are packages of simple, practical measures to tackle safety concerns and reduce dependence on travelling by car to school.<sup>14</sup>

In 1998, the Government set up a School Travel Advisory Group [STAG] to investigate ways of encouraging walking or taking the bus to school. The Government also wanted STAG to help schools create safe and practical alternatives to the school run. One of STAG's main roles was to identify practical means of influencing behaviour. It was decided that, as Scotland has its own unique set of circumstances, a Scottish group should also be set up. The Scottish School Travel Advisory Group [SSTAG] was established in 2000 and published its report in February 2003. The report made many recommendations, but gave no specific guidance on how these aims and objectives could be achieved. Some of the recommendations were that:

- A new role of school travel co-ordinator should be set up within each local authority.
- School travel teams should be set up and they must produce school travel plans.
- Adequate staff training and teaching resources must be developed to support the work of school travel teams.
- School travel plans should contain short and long term targets to achieve modal shift.<sup>15</sup>

### 1.3 Walking Strategy

Finally, there are many reasons for encouraging walking itself. The consultation document, *A Walking Strategy for Scotland*, emphasises:

Walking has a major role in transport, leisure, health, social inclusion and the local economy. In 2001... 52% of pupils walked to school, but walking as a mode of transport has declined over the years with reductions in both the number and length of trips made on foot.<sup>16</sup>

The walking strategy states that it is vital for a greater number of people to choose:

- To walk for some short journeys even though they have a car available.
- To use public transport in preference to a car for some journeys, with a walk at either end.
- ...
- To walk... to school.
- To walk for pleasure or exercise.<sup>17</sup>

Local authorities such as West Dunbartonshire have their own local transport strategy. According to West Dunbartonshire's Social and Economic profile, 43% of households do not have a car.<sup>18</sup> The local transport strategy stresses that, because almost half of households do not have access to a car, making it easier, safer and more convenient for people to walk is fundamental to improving access to schools and other services.<sup>19</sup> This will have both economic and personal benefits for the whole community.

Walking is the most popular recreational activity in Scotland<sup>20</sup> and has been described as 'the nearest activity to perfect exercise'.<sup>21</sup> The national objectives and targets section of the document states that:

The short term target is to halt the decline in the number of journeys per person made on foot. The longer term target is to achieve an increase of 10% in the number of journeys per person made on foot by 2012.<sup>22</sup>

This should, in theory, be easily accomplished considering the popularity and benefits of walking.

The Scottish Executive have emphasised their commitment to maximising individuals' ability to participate in all aspects of society. The Social Inclusion strategy wants to promote opportunities, tackle barriers to inclusion, promote inclusion among children and build stronger communities. Walking has the potential to contribute to all of these objectives.

### 1.4 Environmental Issues

Climate change is widely acknowledged as a serious environmental threat to our planet. Air quality assessment has been carried out in West Dunbartonshire and in the Local Air Quality Strategy Consultation Draft, a pledge has been made to draw on the existing partnerships with health and

transport and to expand West Dunbartonshire's existing walk to school campaign.<sup>23</sup>

It is obvious from these various strategies that encouraging children to walk to school is important for various reasons. The Government have possessed this knowledge for several years. Their White Paper 'A New Deal for Transport: Better for Everyone' was published in 1998, specifically noting that reductions in the use of the car to take children to school would have marked benefits in reducing peak time congestion. However, there has been little research into which measures successfully reduce car use.

## **2. SCHOOL TRAVEL CO-ORDINATORS**

As mentioned, the Government have created the new post of School Travel Co-ordinator. Research was undertaken by travel consultants in England to determine the effectiveness of school travel co-ordinators. The researchers found that assistance from a school travel co-ordinator *does* increase the production of school travel plans, but did not find any evidence that this changed children's travel patterns or had any effect on parental fears about safety on the journey to school. The researchers also found that schools were unwilling to participate in a non-compulsory transport strategy, even when provided at no extra cost to the school.

Despite evidence to suggest that school travel plans were ineffective in achieving modal shift, the SSTAG recommended the creation of school travel plans and the creation of the School Travel Co-ordinator post. In July 2003, the Scottish Executive allocated Scottish local authorities with a 3 year funding package for the appointment of School Travel Co-ordinators. The Scottish Executive announced an additional 2 years of funding in 2004, and West Dunbartonshire has been granted funding for the post of School Travel Co-ordinator until 2008.

## **3. ORIGINAL PILOT**

In 2003, there was limited research that investigated the effectiveness of various interventions to achieve a modal shift from car to walking on the journey to school, and little or no evidence reporting a modal shift from car to walking as one of the main outcomes of such interventions. Since then, a thesis has been published to investigate:

'Can children be encouraged to walk as part of their journey to school?'

The author, Rosanne McMahon, based her thesis on the Travelling Green project, a sustainable travel project in West Dunbartonshire. The aims of the study were:

- Conduct a number of baseline measures prior to the intervention and repeat the same measures following the intervention to detect effect on a number of outcomes.
- Test an intervention aimed at involving parents and their children in making decisions about how they travelled to school.

- Investigate the impact of an active travel to school curricular package designed to integrate a school travel initiative within the 5-14 curriculum guidelines.
- Investigate children's beliefs about a healthy journey to school.<sup>24</sup>

An interagency project team was established to develop the active travel to school project, consisting of representatives from local authority roads and education departments, and National Health Service health promotion departments. Two primary schools in West Dunbartonshire were selected to take part in the study, both schools being of a similar demographic profile. A control school (which would have no intervention) and intervention school were assigned. Teachers decided that Primary 5 children were at the right stage of maturity for the project, and that the intervention would complement the road safety input in Primary 6.

The Travelling Green project was designed to combine the journey to school with the school curriculum, and provide tools to support teachers, parents and pupils to take an active part in the project. The intervention period was one term – between Easter and summer break.

The initial classroom activities were based on the Sustrans 'Safer Routes' Teacher's Resource package. The intervention school received this pack, but the control school did not. Children at the intervention school also received their own Travelling Green folder, which contained:

- Information Guide for Parents
- Pupil Participation Guide
- Distance and time chart
- Discovering distance
- Why walk? 10 good reasons to walk
- Top tips for Travelling Green
- Safety sense on the street
- Weekly goal setting activity
- Chart your progress
- Community map

The pilot project team realised the critical importance of parental involvement. A Parents' Information evening was held within the intervention school. The project team delivered a presentation and advice was given about how parents could support the project. Parents were encouraged to raise concerns and ask questions. The evening was well attended, and parents who did not attend received a letter from the Head Teacher giving information on Travelling Green.

The intervention school and the control school received Information Computer Technology assistance to map children's routes to school, and to assess levels of physical activity. The main data collected at baseline and follow-up showed a significant change in behaviour of the intervention school.

Using an online questionnaire, the children were asked their views about travel to school. At baseline, a high percentage of children said that they

would prefer to walk to school. At the intervention school, 87% of children indicated this preference, compared with 90% of children at the control school. The actual number of children who walked to school was much lower: 26% of children at the intervention school and 45% of children at the control school. The Travelling Green pilot sought to address these disparities.<sup>25</sup>

At baseline, 59% of children who lived within 2 kilometres of the intervention school travelled the main part of their journey to school by car. At follow-up, this had dropped to 44%.<sup>26</sup>

The average distance walked at baseline was 0.198 kilometre, which rose to 0.771 kilometre after the intervention.<sup>27</sup>

By introducing the project, parents were encouraged to choose alternatives to driving their children the entire way to school by car. The follow-up results showed that parents chose to drive their children some of the way, combining this with allowing them to walk the rest of the way. It appears that this option was a happy medium between doing all or nothing for parents. This change in attitude was another success.

The stages of change model was originally developed by Prochaska and DiClemente:

1. *Precontemplation*: not intending to make any changes.
2. *Contemplation*: considering a change.
3. *Preparation*: making small changes.
4. *Action*: actively engaging in a new behaviour.
5. *Maintenance*: sustaining the change over time.<sup>28</sup>

This model can be applied to active commuting behaviour. Children who walked to school and had been doing so for longer than six months were in the *action* stage. Children who travelled to school by an inactive mode and had no intention to become more active in the next six months were in the *pre-contemplation* stage.<sup>29</sup>

71% of children at the intervention school progressed to a higher stage of commuting behaviour change, or remained in the action or maintenance stages from their baseline.<sup>30</sup>

During the pilot, there were road safety concerns regarding a particular busy road on the main walking route to the intervention school. Children wrote to their local Councillor and West Dunbartonshire Council to highlight these concerns. It has since been agreed that a school crossing patroller will be situated at this road.

#### **4. DEVELOPMENTS**

Agnes Wilson, a teacher at the intervention school, felt that additional resources and activities were necessary to further develop the children's knowledge and attitudes to Road Safety and Personal, Social and Emotional Health Education. These additional curricular activities were developed the

year after the pilot programme, and they were further refined in 2004 and 2005.

The Travelling Green curricular activities now encompass ICT, Mathematics, Language, functional and imaginative writing. Within the technology aspect of the curriculum, the children made model vehicles, road signs and traffic lights. They each made a puffometer which measured the amount of air in their lungs with the aid of a ping-pong ball. In art and design, posters were made advising of the benefits to be gained from a healthy lifestyle, of the importance of a well-balanced diet and drinking water throughout the day. Children have since been provided with personal water bottles by most educational authorities.

Agnes Wilson maintains that the Travelling Green project is not as time-consuming as teachers may think. Also, the children perceive the project as being fun, but the teachers remain in control!

West Dunbartonshire employed a School Travel Co-ordinator in November 2003, and since then, many developments have been made with the Travelling Green project. Arrangements were made to roll out the project to 2 more schools, and develop the Curricular Pack (the children's activities and teachers' handbook). Four teachers were involved in this task, one from each school that would participate in the Travelling Green project in 2004.

Amendments were made to the Travelling Green materials, which now comprise of:

- A Pupil Information Guide
- A Pupil Workbook
- Pupil Worksheets
- A guide for parents about walking to school
- A chart to record progress home
- A chart to record progress to school
- Reflective stickers
- The Green Cross Code
- Arrive Alive – a highway code for young road users, and
- An aerial photograph of the school and local area

In 2004, 8 primary classes participated in Travelling Green. These classes consisted of 6 primary 5 classes, one primary 5/6 and one primary 4/5. Once again, the overall results were extremely positive. The total number of participants was 223 children.

Measurements were taken both before and after children participated in Travelling Green. Maps were used to map each child's route to school. Every child's route was marked on the maps, and each child individually coloured in his or her route to school, using a different colour of pencil for different modes of travel. Children then used a map-measuring device (similar to a mini trundle wheel) to measure the distance travelled.

Before participating in the Travelling Green project, 68 children (that is, 30%) travelled the entire way to school by car. After taking part in the project, only 18 children (8%) travelled the whole way by car. The average distance travelled by car was originally just under 1 kilometre, which was decreased to 0.68 kilometre at the end of the project.

The number of children who walked the whole way to school before Travelling Green was 103, that is 46%. After the project, the number of children walking to school had risen to 136 (62%).

If we include the children who now walk some of the way to school and travel part of the way by car, 178 children, that is 81%, walk some or all of the way to school every day! The remainder either take the bus or are driven to school.

Before Travelling Green, the average distance walked was only 0.43 kilometre. After the project, this had increased to 0.71 kilometre.

Children in the participating classes all received a record of their mode of travel and distance travelled to school before Travelling Green. At the end of the project, children were given a record of their before and after measurements, so that they could make comparisons. They also received a certificate to congratulate them on their achievements and their personal development.

## **5. EVALUATING TRAVELLING GREEN**

### **5.1 Children's Perspective**

The children all completed an evaluation of Travelling Green. The evaluation included questions such as:

- What did you enjoy least about Travelling Green? To which the most popular response was "nothing"!
- Did you manage to change the way you travel to school? To which 52% of children said yes, 32% already walked, and only 16% said no.

Some other important results from the children's evaluations were that:

- 87% of children said they enjoyed participating in Travelling Green.
- 87% of children said they thought they would continue to Travel Green after the summer holidays.
- 79% of children said they liked the materials, for example the worksheets, aerial photographs, stickers and workbook.

One of the most popular curricular activities with the children was the "Walk the Route" activity, which involved going on a walk around the local area, to spot hazards and safety features. It relates to the People and Place and Social Health strands.

The aims of this activity are:



- To identify and describe the natural and physical features of the local environment.
- To understand the need for a code of road safety behaviour, and
- To develop an awareness of the dangers of traffic.

“Walk the Route” is one of the first Travelling Green activities, and it is especially important for those children who have never walked to school.

Another popular activity, relating to the Physical Health strand, involves measuring your pulse rate before and after exercise and charting the difference. Children were asked to check the pulse rates of everyone in their group before and after exercise, then again at 1-minute intervals to check when their pulse rates return to normal. Children recorded the results in a chart on one of their worksheets. The quicker your pulse returns to normal, the fitter you are.

The aim of this activity was to develop an awareness of the relationship between fitness, physical activity, and pulse rate in response to the body’s need for oxygen. It was also interesting for the children to compare their varying levels of fitness.

The evaluation also asked children to make additional comments – these were some of the additional comments they made:

- “Thank you for picking this area to do it I really enjoyed it. It really makes me walk to school now. “
- “I enjoyed it so much that other schools should do it to make them healthier.”
- “I enjoy walking to school even more than travelling by car.”
- “I loved this project because it helped me cross at safer places at the roads.”
- “I like everything in the Travelling Green pack and getting more exercise.”
- “It was the best project I’ve ever done. So keep it up!”

## 5.2 Teachers’ Perspective

The teachers involved in the Travelling Green project also completed an evaluation and attended a meeting to give their feedback.

These are some of the teachers’ comments:

- “The children enjoyed having their own folder and were excited by the contents.”
- “The children *loved* the resources! Map/photo – particularly good in first lessons – an *essential* resource.”
- [The Parents’ Evening was valuable because] “Comments/worries from parents were particularly valuable e.g. should a child be particularly late, how would we follow this up?”
- “Parents’ feedback good and children with parents who came [to the Parents’ Evening] enjoyed the topic best.”

- “It would be useful to simplify the recording sheet for the journey to and from school.”
- “The walk [around the local area] was really worthwhile but not possible in small groups unless there is a student to assist or other cover.”

## **6 IMPROVEMENTS**

Since being evaluated in summer 2004, the Road Safety team have been making amendments to the resources and the actual planning of the project, in accordance with the feedback received from children and teachers.

One important change is the way the results of Travelling Green will be recorded. In previous years, measurements were taken by using computer mapping software. This software showed each child's home and allowed children to trace their route to school. However, there were many problems with the mapping software. There were issues with catchment areas, and some children's homes were not visible. The software did not always run smoothly with Apple Macintosh computers (which all of West Dunbartonshire's primary schools use), therefore an adult had to be present to support each pupil. This meant that doing the ICT work was extremely labour intensive. Due to the problems with the mapping software, teachers on the working group voted to map children's routes as a paper exercise in 2004, as already described.

The paper exercise was also far from ideal. The maps West Dunbartonshire have access to do not show some new estates built in the last couple of years, meaning that some children's homes were not on the maps. Also, West Dunbartonshire Council are only permitted to use maps for West Dunbartonshire. Children who lived just beyond the boundary of West Dunbartonshire, for example, children who attend Our Holy Redeemer Primary School but live within the Glasgow City Council boundary, were also unable to map their route.

Another major concern with the paper exercise is the fact that it was extremely time-consuming. The preparation of the maps took the School Travel Co-ordinator several weeks, so to prepare maps for all of the primary schools in West Dunbartonshire would be impractical.

West Dunbartonshire Council already have records of children's baseline and follow-up measurements for 2 years, the pilot year and 2004. These measurements conclusively show that Travelling Green is effective in increasing the distance walked to school and changing children's travel behaviour. Therefore, it has been decided that it is unnecessary to take these measurements again, so in 2005 the Travelling Green project will not measure the distance that children travel to school.

Instead, children will complete an online questionnaire before and after participating in Travelling Green, which will cover questions such as with whom they travel to school, and their mode of travel. This will allow teaching and road safety staff to measure any change in the mode of travel for the main part of children's journeys. Also it will allow assessment of whether

more children are travelling independently or with friends to develop their pedestrian skills, rather than relying on their parents to accompany them to school. This questionnaire is currently under development.

The children identified the progress charts as being complicated and difficult to complete. These have been completely simplified, which will make their completion easier for the children, and less time-consuming for teachers.

## 7 THE WAY FORWARD

Further amendments and improvements have been made to the Travelling Green pack, to better integrate the daily jog and target setting activities. It has been agreed that the daily jog will be incorporated earlier on in the project, to give the children the full benefit of daily physical activity. Target setting has now been linked to the progress charts to encourage even better results.

The planning and timescale of the project has also been altered to optimise parental involvement. In 2005, the intention is to promote more parental involvement, by raising awareness of Travelling Green before children officially start working on the project. Children will participate in some introductory activities to Travelling Green, and they will also take some of their materials home. It is hoped that if the children and parents know more about the project beforehand, there will be better attendance at parents' nights, and better encouragement from parents to their children, leading to better overall results.

Another development has been the creation of a Good Practice Guide, which focuses on surmounting the difficulties with making an active journey to school. It gives examples from the 4 schools involved in 2004, offering opportunities for all children to make an even more active journey to school. The Good Practice Guide makes suggestions for those children who currently walk to school, are driven all the way by a parent or guardian, or take the bus to school. These guides will be made available in all schools participating in Travelling Green in the future.

During the latter part of 2004, awareness raising sessions were held, which were well-attended by teachers, head teachers and Active Schools Co-ordinators. It is anticipated that the 4 schools who participated in 2004 will also take part in 2005, with the addition of 3 more schools. In 2006, 15 schools have committed to taking part in Travelling Green. West Dunbartonshire is a small local authority, so 15 primary schools equates to almost half of the total number of primary schools within the area.

West Dunbartonshire hope that the Travelling Green project will soon be made available to other local authorities throughout Scotland.

<sup>1</sup>Scottish Executive (2003) *Let's Make Scotland More Active: A strategy for physical activity*

<sup>2</sup>xxxx quoted by Sustrans, 2004, Safer Routes to Schools Conference, Edinburgh

<sup>3</sup>Scottish Executive (2003) *Let's Make Scotland More Active: A strategy for physical activity*

<sup>4</sup>National Heart Forum (2002) *Scottish Health Survey* quoted by Sustrans (2004)

<sup>5</sup>US Surgeon General's Report on Physical Activity and Health 1996, quoted by Argyll and Clyde NHS (2003)

<sup>6</sup>Greater Glasgow NHS, <http://www.show.scot.nhs.uk/gghb>, accessed on 16<sup>th</sup> February 2005

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