

MAKING THE INVISIBLE REAL: USING SOCIAL MARKETING TECHNIQUES TO IMPROVE AIR QUALITY IN DUNDEE

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1. INTRODUCTION

Poor air quality is a fact of life in many Scottish towns and cities and those local authorities that have declared Air Quality Management Areas face considerable challenges in achieving air pollution reductions that are below the required thresholds.

That air pollution is now mostly invisible creates a further challenge of gaining public and political support for resolving a problem that many people cannot perceive (in comparison with identifiable images of smog-filled cities during the industrial age).

It is widely recognised that air pollution in most urban areas is nowadays caused largely by road traffic. But whilst the use of our transport system can exacerbate air quality problems, transport planners are finding new and innovative ways of being part of the solution.

It is true that advances in engine technology have made dramatic improvements to vehicle emissions performance in recent years and that traffic management and control systems can help to ease traffic flow (and so pollution) at some congested locations. However these types of approaches, many of which are readily implementable, make only small changes to emissions levels, and are therefore not able to deliver legislative requirements alone.

Therefore greater effort needs to be placed on targeting motorists to change their travel behaviour and so to reduce demand for private vehicles. Much work continues to be undertaken to persuade individuals to consider alternative choices to the private car.

Social marketing (defined in Section 3) is increasingly being used by transport practitioners on the back of a growing body of evidence of its success in influencing behaviour towards more active and sustainable modes. The same techniques can also be used to help reduce transport-related air quality problems.

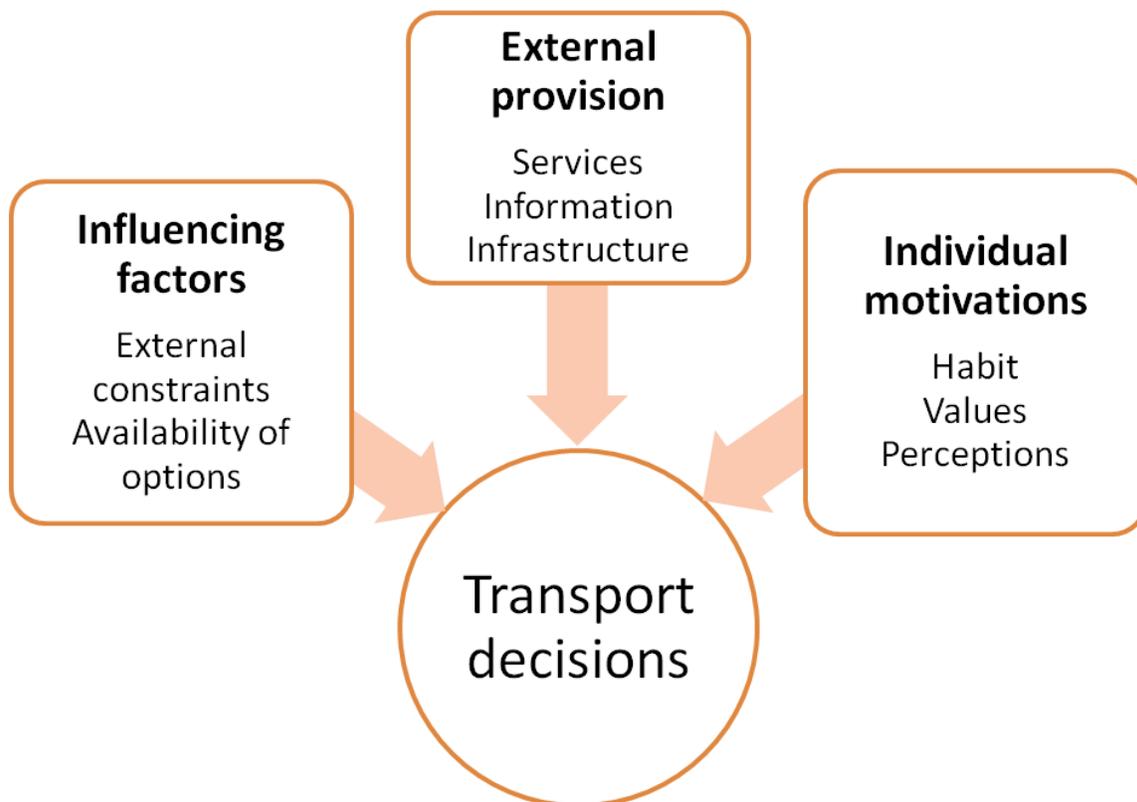
This paper discusses a social marketing campaign undertaken for Dundee City Council (DCC) in 2011 by JMP Consultants, to raise awareness of sustainable and active travel modes. Funded by the Scottish Government's Local Air Quality Management grant, the campaign's objective was to change motorists' travel behaviour towards less polluting modes.

This paper showcases the wide range of individualised and mass media approaches that were used during the campaign, and demonstrates how such approaches can form part of a wider strategy to tackle air pollution in urban areas.

2. OUR TRANSPORT DECISIONS

Travel is rarely an end in itself but a means to get from A to B. The decisions that we make include where to travel, when to travel and how to travel. Figure 2.1 below illustrates the key factors working to exert influence over our travel decision-making processes.

Figure 2.1 Factors influencing transport decision-making



At the top of the diagram is the external provision of services, information and infrastructure. As individuals, these are almost entirely outside of our control; we

rely on central and local agencies and transport operating companies to provide us with appropriate services and infrastructure, and information about them, to help us make effective transport decisions.

The left of the diagram highlights those influencing factors that play a role in our travel choices. Very often, external constraints will influence our travel choices, such as the time that we start work; a good example being individuals who work shift patterns and often find a lack of suitable public transport availability during off-peak times. Availability of options also affects choice; if there is a public transport service available, if so can the individual get to the bus stop to use the service?

However, it is the right hand part of the diagram that sets the context for this paper. Many of our journeys are largely free of actual external constraints and our transport decisions are more often than not based on habit (and perceived constraints). This is where individual motivations over-ride any practical constraints to choosing alternative travel choices; personal choice plays a significant role in our decision-making.

The decisions that people make are often quite inefficient, and borne out of a lack of understanding of the alternatives or deep-rooted misconceptions about quality of alternatives (as an example, many people, particularly frequent car drivers will significantly overestimate the time it takes to walk and under-estimate the time it takes to drive).

Considering all elements of decision-making has implications for how we approach the delivery of transport interventions now and in the future. Social marketing seeks to influence our travel habits, attitudes and perceptions, and therefore it is evident however that there is a clear role for social marketing as part of the overall transport mix.

3. WHAT IS SOCIAL MARKETING?

3.1 A definition

To set the context for the rest of this paper, it is useful to define exactly what is meant by 'social marketing'. It is a term that is increasingly being used both within and outside of the transport profession and can be described as "*...the systematic application of marketing - alongside other concepts and techniques - to achieve specific behavioural goals for a social or public good*"¹.

It differs from commercial marketing "*only with respect to the objectives of the marketer and his or her organisation. Social marketing seeks to influence social behaviours not to benefit the marketer, but to benefit the target audience and the general society*"².

Whilst social marketing employs different types of media to present appropriate messages, it should not be confused with the term 'social media', which relates to social communication through digital channels, most commonly recognised by online social networking sites such as LinkedIn, Facebook and Twitter.

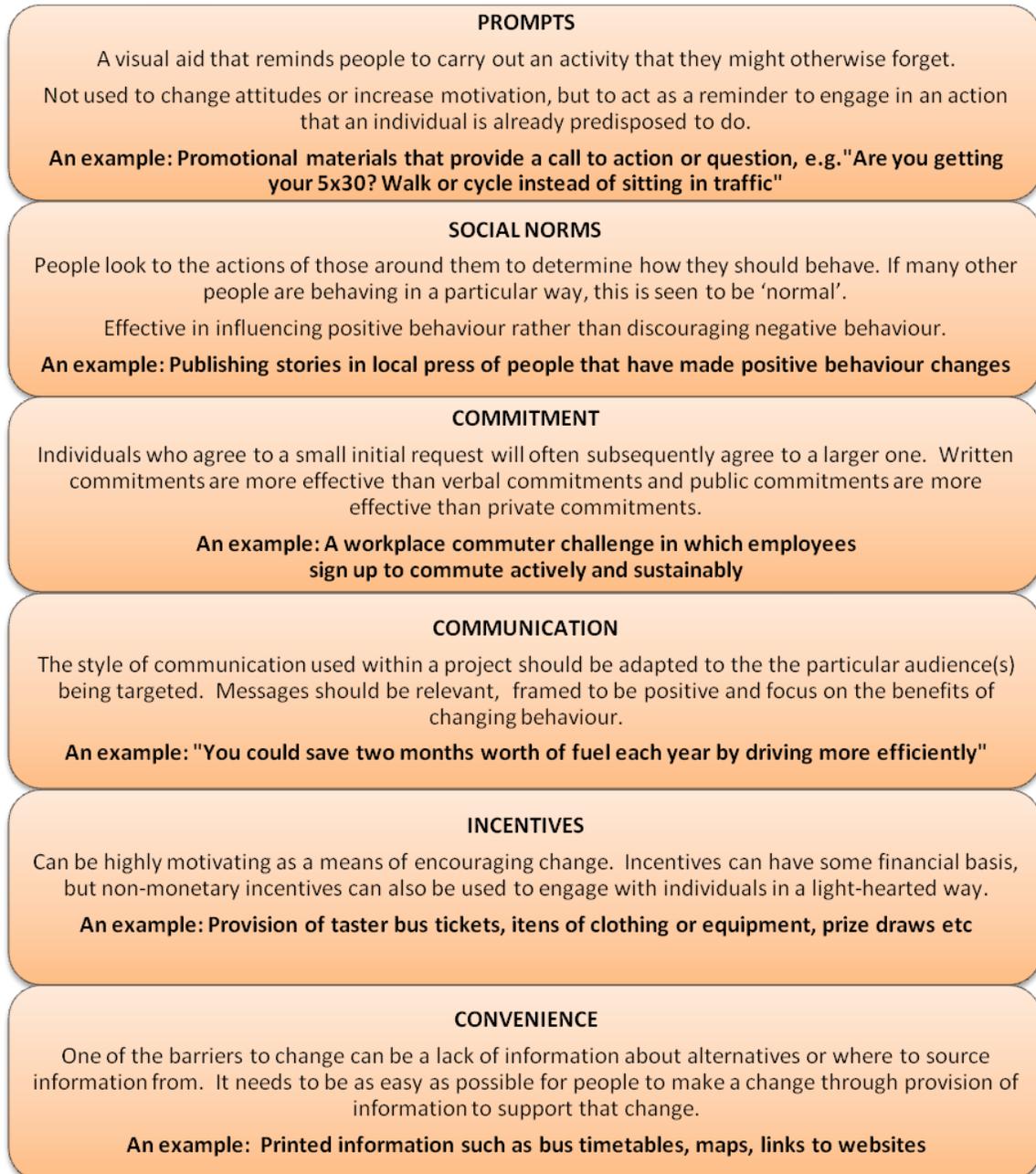
Social media can be valuable in communicating to and proactively engaging audiences, but social marketing is much wider than this and goes beyond the use of new social media channels.

Social marketing established itself as a discipline in the 1970s when it became apparent that the same marketing principles that were being used to sell products to consumers could be used to 'sell' ideas, attitudes and desired behaviours. For decades, marketing companies have successfully used techniques to make us aspire to drive a particular make of car, to consume a particular type of chocolate bar, or to use a specific brand of washing powder.

It therefore makes perfect sense that these same techniques can be used to encourage people to drive their car less, adopt more fuel efficient driving practices, or walk, cycle or use public transport more.

So what types of approaches are used to encourage behaviour change? Understanding behavioural change theory is essential. A summary of some of the theory and the principal techniques that should form part of any social marketing initiative is provided in Figure 3.1 below³.

Figure 3.1 The tools of social marketing



3.2 Social marketing in the transport context

For decades, transport practitioners have focussed on providing infrastructure and services to encourage change, but as discussed, this is only one element working to influence our travel decisions. Clearly, quality provision is important to help facilitate a change towards more sustainable travel options, but as a profession, we have overlooked the potential for using social marketing

techniques to achieve desired outcomes, having not seen this type of approach as part of our remit.

These techniques have been employed for many years to promote a range of public policy outcomes, most notably by the health sector for public health improvement (for example, 5-a-day, smoking cessation, alcohol consumption) and by promoters of road safety (drink-driving and speed reduction campaigns as examples).

More recently has there become greater realisation of the opportunities that social marketing provides. For example, the Institute for Government's Mindspace report for the Cabinet Office⁴ states that behavioural approaches "*can lead to low cost, low pain ways of 'nudging' citizens into new ways of acting*" which are "*especially relevant in a period of fiscal constraint*".

Moreover, the value for money of using behavioural change techniques is also proven. In terms of the value of different types of transport investment choices, recent research has concluded "*that by far the best value for money is being gained by low budget items, namely local safety schemes, smarter choices and cycling schemes*"⁵.

It is overwhelmingly clear why this is the case. Facilities, infrastructure or services cannot be used to their fullest potential if people are unaware of them or do not know how to use them. The author's experience from previous travel behavioural change initiatives has found that, very often, many people simply do not know what is available in their local neighbourhood to help facilitate a change to more active and sustainable travel behaviours (for example the existence of a traffic-free walking route or how frequent the local bus service is).

Not only this, but information on desirable behaviours that we wish people to adopt (such as driving less or walking more) is similarly useless if people are uncertain about how to go about achieving those goals. Covering these information or perception gaps pays easy dividends.

As transport professionals, we should challenge ourselves to take a step back from what is understood and familiar (e.g. how to design a particular piece of infrastructure or new bus service) and fully consider the individuals who use our transport systems.

Thinking back to the influences on our transport decisions, effective social marketing focuses on the individual within their own personal and social context; understanding the decisions that are within that individual's control and those

things that are not but may still have a powerful influence on them, and from this, working towards a change in behaviour that is both acceptable and achievable to that individual.

Furthermore, social marketing seeks to achieve a change in what people *do*, not just their level of awareness or understanding. This is particularly relevant given that evidence⁶ shows one third of the population experience a significant change in their travel behaviour each year, whether caused by changing job, moving house, having a family, starting a new school. Delivering behavioural change interventions should not just be a 'one time hit' but being able to influence and sustain changed behaviour in the longer term.

Social marketing is by no means a miracle cure for solving all transport issues, however evidence and experience shows that when applied effectively, it can be a powerful tool for achieving tangible and measurable impact on behaviours. In the next section, this paper will discuss specifically how the techniques have been used to address air quality objectives.

4. THE DUNDEE AIR QUALITY CAMPAIGN

4.1 Context

In September 2011, JMP undertook a major social marketing campaign on behalf of DCC, which aimed to reduce emissions from road traffic to help improve air quality on a congested corridor. The campaign was delivered under the Dundee Travel Active (DTA) brand, the city's extant travel behaviour change programme.

The whole of the DCC authority area is declared as an Air Quality Management Area (AQMA) in respect of a number of hotspot locations throughout the city where air pollution is above defined thresholds. Poor air quality at these hotspot locations is almost entirely attributable to emissions from road traffic.

In January 2011, DCC formally adopted their Air Quality Action Plan (AQAP) which sets out measures intended to deliver reductions in emissions at these hotspots. In response to a bid to the Scottish Government's Local Air Quality Management (LAQM) grant (which was an open bidding process to all local authorities with AQMAs), DCC was awarded funding to improving air quality on one corridor into the city (Lochee Road) which has two air quality hotspots.

Some of the LAQM grant awarded for Lochee Road was used to make improvements to traffic infrastructure and signal systems at the hotspot locations to ease traffic flow. However, it was recognised at the time of the bidding process

that infrastructure changes alone would not resolve all air pollution problems, and that work should be undertaken to influence motorists' travel behaviour.

4.2 Campaign objectives

The overarching aim of the campaign was to contribute to improvements in air quality by reducing demand for travel by private vehicles at the two hotspot locations on the Lochee Road corridor, particularly at times of traffic congestion, and to reduce emissions from those vehicles operating in these locations.

Focus was given to targeting private cars, as opposed to the bus, heavy goods and light goods fleets, as cars make up the greatest proportion of traffic flow on the corridor, and was recognised that there are other ongoing initiatives that are more appropriate for drivers of bus and commercial fleet vehicles.

The Lochee Road serves as an important radial route through the north-west suburbs of Dundee. Consequently, vehicles using the corridor and travelling through the hotspot locations have a wide range of origins and destinations, as is typical of suburban radial routes. The road experiences a combination of some longer distance movements (from Angus/Perth & Kinross to the city centre or beyond), various movements by local residents, and a large variety of journeys be people using the corridor only for a short length whilst travelling between northern and western suburbs of the city.

This made it apparent that mechanisms for encouraging behaviour change could not focus solely on those people living in the immediate vicinity of Lochee Road; that wider broadcasting of messages would be necessary to reach the corridor's users, and that messages to target local people would need to be different from those travelling from further afield.

4.3. Framing the messages

Understanding the potential uses of the Lochee Road corridor was beneficial when considering campaign messages; and so too was an understanding of how motorists behave. It is understood that people display significant inertia in travel patterns and so messages would need to be compelling enough to attract the attention of car drivers and make them want to know more.

Thinking back to one the tools of social marketing, 'communication', getting this correct was important; messages were targeted towards a particular audience and were framed to be positive and focus on how people could benefit through changing behaviour. Evidence from many initiatives shows that environmental

messages are a poor motivator of change for motorists and that the benefits must be internalised for behaviour to be altered by many people. Therefore, it was recognised that a campaign asking people to change for air quality improvement reasons would not be effective.

Considering on what might encourage motorists to change behaviour, the campaign sought to draw on available evidence about the potential financial savings that can be achieved by driving more efficiently or by switching to alternative modes. This is of particular relevance in the present economic climate, whereby saving money is a key incentive for many people to change their habits, and more so than for environmental or health reasons.

Dundee's campaign therefore focussed on cost savings as the key motivator for change. To engage the attention of motorists, the headline message centred on "Petrol XX% off" with different savings for different behaviours, as follows:

- "Petrol 15% off" to promote the potential for typical fuel cost savings for drivers by employing a range of fuel-efficient driving techniques;
- "Petrol 30% off" to promote the indicative cost saving of undertaking a typical urban journey by bus instead of by car; and
- "Petrol 100% off" to promote walking and cycling as a free means of travel.

The campaign was delivered over a four-week period with each week relating tying in with the key messages discussed above. Week one of the campaign was 'eco-driving week', the second week was 'public transport week'; the third week promoted active travel with the fourth week used as a summary and round-up of the three previous weeks.

4.4 Campaign delivery: mass marketing approaches

The campaign was delivered through a wide range of different mechanisms; through high profile mass media channels for people passing through the area from elsewhere and through individualised approaches predominantly to target local people. The mass marketing element is discussed in more detail below.

Billboards

Billboard advertising formed the most visually direct method of communication and proved to be a relatively cost effective means of displaying information to a large target audience. Evidence from campaign designs used elsewhere showed that one headline message plus one call to action is the appropriate level of information that can be absorbed by passing motorists.

Figure 4.1 Billboard advertising



The billboards were located at two highly-prominent locations on the Lochee Road. It is estimated that around 13,000 car drivers and passengers pass these sites each day and in addition to this they will have been seen by others passing the sites on foot, by bike or by bus.

Radio

To be able to reach a wide target audience across the city, the campaign engaged with one of Dundee's local radio stations to promote messages to station listeners. A comprehensive radio campaign was delivered, involving a combination of traditional sponsorship with interactive presenter involvement and on-air interviews with project staff.

Sponsorship of features on drive-time shows ensured that the campaign reached the audience demographic in which messages would be most relevant to. The station broadcasts within a ten-mile radius of Dundee city centre and have a

listenership of approximately 32,000 at present. Short messages were played throughout the day to offer key pieces of advice to listeners, as an example:

- *“The average driver wastes 15% of their fuel”;*
- *“With petrol costs so high, now’s the time to try the bus”;* and
- *“Stop wasting time and money sitting in traffic jams: walk or cycle instead”.*

The radio campaign featured a strong interactive element to captivate the interest of listeners with the station’s drive time presenter participating in a series of ‘as live’ outside broadcasts which were subsequently featured on-air. The presenter involvement was complemented by pre-recorded interviews with key members of project staff and project supporters used to convey more in-depth advice to listeners on each of the three key messages of the campaign.

Events

A number of promotional events were held during the period of the campaign, themed to tie in with the particular weekly message and were intended to raise awareness of the campaign in an enjoyable and interactive way. To launch the campaign and promote the fuel-efficient driving message, two related events were held in the city centre.

In conjunction with the EST, an eco-driving simulator challenge was held in one of the city’s main shopping centres in which members of the public could attempt to drive a simulated urban route in the most fuel-efficient manner. Follow up advice on saving money on travel costs was provided by the EST and a stall was available with information leaflets and promotional items.

Running parallel to the simulator challenge, the campaign received further support from Michelin who hosted a tyre check roadshow in the city centre, enabling motorists to bring their car along for a free tyre check. Michelin technicians were on hand to check the pressure and general condition of their vehicle's tyres and to provide drivers with advice on how correct tyre maintenance can help save on fuel costs.

Figure 4.2 Eco-driving simulator challenge



Providing information and incentivising change

In addition to the activities discussed above, a number of other mechanisms were used to promote the campaign's messages. A campaign leaflet and update to the existing Dundee Travel Active website ensured that individuals were provided with all the relevant information required on the benefits of making desired changes, how they could achieve these changes, and where to find further information. Monitoring of website activity showed that during the period of the campaign, the website received almost 1,500 visitors.

Stagecoach East Scotland provided support to the campaign through their own direct mail activities which sought to incentivise local people to use the bus. A direct mail pack containing a seven-day free travel tickets was posted to nearly 1,000 households along the Lochee Road corridor, of which 67 households redeemed their seven-day ticket and travelled on Stagecoach services in Dundee between September and December 2011. This equates to a response rate of 7%, which according to Stagecoach, is three times greater the Direct Marketing Association's expected response rate of 2% for direct mail campaigns of this nature.

4.5 Campaign delivery: individualised marketing approaches

The mass broadcast approaches described in the above section were appropriate for targeting the wider population in Dundee, but it was also necessary for the campaign to engage with local people, as the likely most regular users of the Lochee Road corridor.

The individualised aspect of the campaign involved the provision of personalised travel planning advice to householders living in the area around Lochee Road, and work with local primary school pupils.

Two hundred and thirty households in the vicinity of Lochee Road received an information pack during the third week of the campaign containing relevant information on alternative travel choices. Of these households, 47 of them were contacted, of which 26 householders (55%) participated in a discussion at their doorstep, mainly regarding their current travel patterns and ways in which to travel more actively and sustainably, if appropriate.

However, the main thrust of the campaign was a comprehensive programme of activity within three local primary schools. The Dundee Travel Active programme has engaged with many thousands of primary school pupils since 2009, and this work has been one of the most successful aspects of the initiative to date.

The previous work engaged primarily with pupils in the classroom environment through a programme of interactive workshop sessions, and through all-school assemblies, to teach children about safe, independent, active travel choices. The response received to the interventions from school staff and pupils had been overwhelmingly positive and DCC has recognised the value in the interventions.

This gave confidence that the approaches used during this campaign would be effective, and care was taken to ensure that the schools interventions clearly demonstrate linkages with the objectives of the Curriculum for Excellence, particularly within the Health and Wellbeing, Social Studies and Sciences components of the curriculum.

An intensive programme of activity was delivered at each of the three schools for a four-week period with two overarching aims: firstly to educate pupils (and their family groups) about air quality issues, and secondly, encouraging behavioural change to more healthy and sustainable choices, as a way of resolving these problems.

Each of the four weeks of the schools programme was designed to reflect the themes of the mass marketing elements of the campaign. In week one, workshops on the topic of air quality and air pollution were undertaken with Primary 7 pupils (as shown in Figure 4.3), who subsequently presented what they had learned to the rest of the school during an assembly.

The second week of the programme focussed on promotion of active travel choices and journey to school for classes in Primary 4 through to Primary 6. All-

class discussions and practical activity sessions covered the range of health, social and environmental benefits of using active and sustainable modes. The workshops were also used to lead each of the schools into the third week of the programme, the campaign's walk to school week.

Figure 4.3 Air quality workshop session



To encourage school-wide participation in the campaign, a walk to school week was arranged in each of the three schools. Children were asked to walk, cycle, use a bus or 'park and stride' with each class provided with a wallchart and stickers to record how many times in the week they travelled using active or sustainable modes. Each pupil in the school was provided with a school-specific flyer (as shown in Figure 4.4) which explained the initiative and provided a map of five- and ten-minute walking zones around each school, as well as a selection of recommended park & stride points.

Figure 4.4 Walk to school week flyer

**Dundee Travel Active
Walk to School Week**

Next week is Walk to School Week at St Mary's RC Primary School. This leaflet tells you what's happening and why.

Dundee Travel Active is working with pupils and parents at St Mary's RC Primary School to encourage travel to school on foot or by bike. Why? Because we're trying to reduce the amount of air pollution from traffic. Children that are active get healthier too and now that fuel's so expensive most options are cheaper than driving!

We want you and your child to walk or cycle to school each day next week if you can.

We know that many pupils already walk or cycle, and that's great. We also know that some live a long distance from school and can't walk or cycle all the way.

So, if you usually do walk or cycle to school then please continue to do so next week.

But, if you might normally drive, please think about what else you could do. Can you walk or cycle from home? Can you come on the bus? If you do need to drive, please try 'parking and striding' – driving most of the way but walking the last bit. We have 5 park and stride locations – try walking from them to school.

Each class will be monitoring how children travel through the week. Every child that walks, cycles, uses the bus or parks and strides will receive a **sticker, certificate and a bicycle helmet** (donated by Michelin).

If your child is in the class that has fewest children driven to school, they will also be entered into a **prize draw to win £200** to spend in Bikeworks and receive a **trophy** for their class.

0 Bus Stops
Park or Stride drop off point
10 minutes
5 minutes
5 minutes
5 minutes

If you would like to find out more about routes to walk or cycle, or which buses to use, visit dundeetravelactive.com or talk to our Travel Advisors (you'll see them at the school during Walk to School Week, wearing their red uniforms).

This information is made available in large print or in an alternative format that meets your needs.

Chinese	欲知詳情，請致電：01382 435825
Russian	Если вы хотите узнать подробности, пожалуйста, позвоните по телефону: 01382 435825
Urdu	پیشگیوں کے لیے 01382 435825 پر رابطہ کریں
Polish	Jeśli chcesz uzyskać informacje, prosimy o kontakt telefoniczny: 01382 435825
Alternative Formats	For further information please contact the issuer of this publication

Dundee City Council
CHANGING FOR THE FUTURE
dundeetravelactive
DCC (Dundee City Council)

The final week of the campaign was used as the opportunity to revisit each of the schools to gather information to identify if any short term changes in behaviour had been made as a result of the walk to school week, and to reward all pupils for their participation through a series of all-school assemblies.

In total, over the four-week period of the campaign, over 400 pupils participated in the in-class sessions (129 Primary 7 pupils in the air quality workshops and classes part, and a further 295 pupils in the active travel workshops).

A total of 767 pupils across 30 classes participated in the campaign's walk to school week with the average proportion of pupils reporting to have travelled actively or sustainably (walking, cycling, using the bus or park and stride) during that as high, at 84%. The results also show that across the three schools, the proportion of pupils walking to school increased by 11% following the walk to school week.

From the response gathered from school staff and pupils alike, it is overwhelmingly clear that the schools campaign was well received and offered an effective means of communicating air quality issues and the benefits of active and sustainable travel to pupils. The walk to school week element of the campaign also appears to have provided increased opportunity to influence wider family groups.

“My Primary 7s thoroughly enjoyed the session with the DTA team and the assembly went well too”

“We were delighted to have [the Travel Advisors] at our PTA meeting last night. They were well received by our parents”

5. CONCLUSIONS AND LESSONS FOR FUTURE CAMPAIGNS

This paper has shown how social marketing forms just one part of a much broader strategy including many other types of investment that, combined, have a good opportunity to reduce air pollution.

Many of the readily deliverable investments to improve air quality, such as advances in engine technology and traffic management enhancements, are not enough for air quality legislative requirements to be met.

Therefore, greater focus needs to be placed on reducing demand for vehicles through encouraging changes in travel choices towards more sustainable modes. Experience and evidence show that carefully-designed and implemented social marketing approaches can make good-value contributions to public policy outcomes and such approaches need not be difficult or expensive, particularly in comparison to often costly infrastructure measures.

Interventions will be acceptable and supported by almost all of the target population; there is no other type of intervention that can deliver such substantial changes in a politically acceptable way. The risks are few if the project is well planned and carefully executed. Crucially, projects can be implemented quickly: the benefits can start to be realised within a few months, not the years that many alternatives require.

This paper has discussed a social marketing campaign recently delivered in Dundee, the objectives of which were to reduce emissions from private vehicles, primarily at two air quality hotspot locations. Unfortunately, due to an equipment failure at the air quality monitoring stations on Lochee Road, it was not possible to obtain baseline data before the campaign commenced. As monitoring of air quality at these locations is ongoing and trends reported on an annual basis, with the relatively recent completion of the campaign (in September 2011) it is too early to determine whether the campaign has resulted in any significant change in emissions.

It is considered that the inclusion of an element of social marketing within any transport initiative is essential if real and measurable impacts on individuals' behaviour are to be achieved. In the case of this campaign, no other type of intervention would have so effectively targeted a large audience about making desired changes, and the benefits of so doing.

This paper adds to the existing body of evidence from within the transport sector which shows that social marketing can swiftly and effectively provide benefits across a range of policy and practice agendas, such as public health, carbon reduction or air quality improvements.

¹ French & Blair-Stevens, 2006

² Koetler & Zaltman, 1971

³ Adapted from Dr McKenzie-Mhor. Community Based Social Marketing, www.cbsm.com

⁴ Mindspace: Influencing behaviour through public policy, 2009

⁵ Professor Phil Goodwin. Written evidence to the House of Commons Transport Committee, March 2011

⁶ Derek Halden Consultancy for Scottish Government (unpublished)