



23rd Australasian Transport Research Forum
Perth, Western Australia. 29 September – 1 October 1999

Smogbusters Way to Work: Greening Travel Choices Through the Workplace

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Abstract

Vehicle emissions are a major contributor of pollutants to the airsheds of Australia's major cities. Transport practices need to change to address air pollution and other impacts of car domination of our cities. Workplaces generate many trips, many of which are made by car, including employee commute trips, business trips, service trips and visits by clients. Workplaces therefore provide an opportunity to manage travel demand.

The Smogbusters Way to Work project involves a workplace in each of Brisbane, Sydney, Melbourne, Adelaide and Perth. It aims to reduce vehicle trips by encouraging the use of alternatives including walking, cycling, public transport, carpooling and teleaccess. The focus is on finding ways for employees and others to make small changes which benefit themselves, their organisation and the environment. Employee travel was surveyed and information sought on other trips.

A Green Transport Plan was developed for each workplace, recommending appropriate means of reducing vehicle trips. Actions identified include providing information on travel alternatives, improving cycling facilities and making better provision for public transport use and carpooling. These actions are being progressively implemented. An evaluation survey is proposed to assess consequent changes in travel behaviour.

Workplace interventions to manage travel demand are relatively new in the Australian context. This project suggests that engaging with people through the workplace has potential to reduce vehicle use, by influencing individual's travel choices and involving organisations in managing the travel they generate. This offers one way of reducing air pollution and promoting more sustainable urban transport.

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Introduction

Motor vehicle use in Australia's major cities is high and increasing. Car trips dominate urban passenger travel, average car use per capita exceeds 6,500 kilometres per annum and total vehicle kilometres travelled is growing (Kenworthy et al 1997). The impacts of this car dependence include air pollution, greenhouse gas emissions and the effects of traffic on the liveability of neighbourhoods.

Motor vehicle emissions are the single largest source of air pollution in Australia's major cities (Australian Academy of Technological Sciences and Engineering 1997). They contribute to photochemical smog and particulate pollution which are the key urban air quality problems affecting public health. Transport activity, largely road transport, generates 17 per cent of Australia's annual greenhouse gas emissions (Commonwealth of Australia 1998) and accounts for one-third of an average household's emissions (Australian Greenhouse Office 1997).

Reducing these emissions and other impacts of car use will require changes in travel choices, urban transport systems, land use and vehicle technology and fuels. In many ways the urban transport challenges we face are due to the travel choices made by urban dwellers, influenced by the environment they live and work in. In this context informing and involving the community is important to promote more sustainable transport.

Smogbusters is a community education program promoting better transport practices to reduce urban air pollution and greenhouse gas emissions. The program involves Conservation Councils in Queensland, New South Wales, Victoria, South Australia and Western Australia (the peak community environment organisations in these states) with the support of the Commonwealth Government through Environment Australia. It involves a number of projects which seek to raise community awareness and support positive action for greener transport.

One project under the Smogbusters program seeks to reduce vehicle use, and so reduce emissions, by engaging with workplaces to influence travel choices. This project, Smogbusters Way to Work, is the focus of this paper. Following is some background to the project and an outline of what has been involved. A case study of two of the participating workplaces is provided. The potential for managing travel demand through workplaces is discussed.

Workplaces and travel demand

Travel demand management (TDM) is about managing transport practices to reduce their negative impacts whilst facilitating access. This approach seeks to influence demand for travel through changes in land use, managing infrastructure and services and informing travel decisions. It is in contrast to the traditional response of increasing infrastructure supply, usually road capacity, to satisfy demand, which is being recognised by many as an ineffective and unsustainable solution in the long-run (Goodwin et al 1991)

Influencing the travel choices of individuals can be an important way to manage demand (James and John 1997). Where appropriate services and infrastructure exist or can readily be made available, measures to effect travel decisions which reduce reliance upon the private car could lead to significant changes in transport practices.

Workplaces offer a forum for informing travel decisions and encouraging the use of alternatives to single occupant car travel. Workplace interventions have been undertaken in many European and North American cities. This includes encouraging or requiring workplaces to take action to reduce the vehicle trips they generate through Green Transport Plans or similar. These plans may address employee commute trips, all work related travel by employees or, all employee, visitor and service trips. Experience with implementing workplace plans to reduce car trips shows mixed results, though there are cases of significant reductions (Rye 1999).

There appear to have been few workplace interventions in Australia. One example is the TravelSmart Workplace program by the Department of Environmental Protection and Department of Transport in Perth. An information campaign in several central area workplaces to promote travel alternatives resulted in a reduction in drive alone car commute trips (Gary John, Department of Transport WA pers. comm.). This approach is now being applied to more workplaces in Perth (Catherine Baudains, Department of Environmental Protection WA pers. comm.). Transport planning for some trip generators in Perth, Adelaide and Sydney has included consideration of ways to promote travel alternatives in the workplace (some examples are given in Mason 1998 page 2).

Smogbusters Way to Work

Introduction

In seeking to promote greener transport practices the Smogbusters program sought a way of raising community awareness, demonstrating practical action and realising measurable benefits. A workplace intervention was seen as a challenging but potentially rewarding approach to take. The Smogbusters Way to Work project seeks to engage with workplaces to develop a Green Transport Plan and deliver a reduction in vehicle use by encouraging use of low emission alternatives i.e. walking, cycling, public transport, carpooling and teleaccess.

Aims

The project seeks to reduce vehicle trips in a way which benefits the individual, the business and the community. It acknowledges the potential for small changes in travel choices by many individuals, such as changing a few trips each week away from car driver to alternative modes. This results significant overall changes (this idea has been promoted by Werner Brög of Socialdata and others)

The Green Transport Plan model used addresses employee commute, business and personal workday trips as well as visitor and service trips. Methodology for the project drew on workplace TDM resources developed overseas (BC Transit 1995, Department of Environment, Transport and the Regions 1997, Transport 2000 1997).

Recruiting workplaces

A workplace was recruited in each of Brisbane, Sydney, Melbourne, Adelaide and Perth, most being medium sized, private sector workplaces (Table 1). This was done by contacting a number of workplaces to determine interest, with a preference for those with 100 employees or fewer so as to make the project manageable given resource constraints. The opportunity to raise their public profile, enhance environmental performance or address transport issues affecting the workplace proved the key factors in generating interest.

Table 1. Workplaces involved in Smogbusters Way to Work

City	Workplace	Location	Employees
Brisbane	architects firm	2km from central Brisbane	55 mostly professional
Sydney	architects firm	Sydney central business district	65 mostly professional
Melbourne	law firm	Melbourne central business district	36 professional
Adelaide	information system provider	3km from central Adelaide	60 professional, sales and administrative
Perth	water utility	4km from central Perth	820 professional and administrative

Assessing transport practices

A survey was undertaken between October and December 1998 to assess current practice by asking employees about their work-related travel. It also asked about their interest in using travel alternatives and sought suggestions on how the use of alternatives could be encouraged. A questionnaire was distributed to all, or a sample of, employees to complete and return.

The survey results showed that the level of car use varied as did use of other modes across trip purposes (Table 2). This reflects the location of workplaces, availability of travel alternatives and, perhaps, the culture and workday demands of the businesses.

For each workplace, several employees noted interest in using alternatives to driving alone for some of their trips. Many suggestions were made for promoting and providing for walk, cycling, public transport and carpool trips and teleaccess instead of driving alone.

Table 2. Main modes used for workplace related employee travel

Workplace/City	Work commute trips	Business trips	Personal workday trips
architects firm, Brisbane 40 respondents	Car driver 38% Car passenger 16% Public transport 28% Bicycle 11%	Car driver 29% Car passenger 9% Taxi 48%	Car driver 34% Car passenger 14% Public transport 26% Cycle 14%
architects firm, Sydney 41 respondents	Car driver 15% Car passenger 3% Public transport 72% Bicycle 4%	Car driver 100% (only two trips recorded)	None recorded
law firm, Melbourne 36 respondents	Car driver 12% Car passenger 6% Public transport 65% Bicycle 9%	Public transport 17% Walk 83%	Public transport 48% Walk 49%
information systems provider, Adelaide 29 respondents	Car driver 78% Car passenger 4% Public transport 7% Bicycle 7%	Car driver 91% Public transport 9%	Car driver 51% Car passenger 12% Walk 18%
water utility, Perth 116 respondents	Car driver 63% Car passenger 7% Public transport 17% Bicycle 8%	Car driver 62% Car passenger 15% Public transport 8% Taxi 15%	Car driver 19% Walk 73%

Note: Based on unlinked trips.

Green Transport Plans

The survey findings, together with information available on visitor and service trips and access options, were used to develop Green Transport Plans. The level of workplace involvement varied. In some cases the Smogbusters Project Officer drafted the plan, liaising with workplace contacts as needed. In other cases the workplace took a more direct role in preparing the plan.

The structure of the Green Transport Plans differed, to suit workplace needs, but all included these elements:

- Background: the project, the workplace, aims of the plan
- Current practice: review of transport practices/travel patterns and access options
- Actions: outline of actions recommended to reduce car use and promote alternatives
- Monitoring: steps to measure progress and review the plan.

The actions proposed to influence travel choices depended on current travel patterns, the alternatives available and changes that were considered feasible for the workplace. They included improving facilities and practices at the workplace, providing information on travel options and offering incentives and encouragement to change modes. Most can be implemented directly by the businesses themselves. Suggested actions which can be applied in workplaces are listed in Table 3.

Table 3. Workplace strategies to reduce travel demand

Strategy	Suggested actions
Inform employees and visitors about travel options	<ul style="list-style-type: none"> • Produce an access guide for the workplace emphasising how to get there using green modes • Include information on travel alternatives in brochures for workshops, meeting invitations, corporate website, etc • Make public transport timetables and access guide available in brochure rack as reception desk.
Improve provision for walk and cycle access	<ul style="list-style-type: none"> • Provide secure, sheltered bicycle parking for employees and short-stay parking for visitors • Seek legible, contiguous and safe pedestrian links between the workplace and public transport stops, local shops, etc. May require path additions or improved lighting by local council • Undertake an audit of pedestrian and cycle access to identify problems. This could involve evaluating conditions and facilities and asking users their views.
Encourage public transport use	<ul style="list-style-type: none"> • Provide prepaid public transport tickets for business trips • Provide public transport tickets for employees, at cost or discount price • Offer 'guaranteed ride home' assistance for regular public transport commuters who miss a service due to having to work late.
Promote carpooling/ridesharing	<ul style="list-style-type: none"> • Establish a ride-matching system, e.g. a pin-up board with map or online register, to connect employees interested in carpooling to and from work. • Provide car parking spaces for regular carpoolers. • Encourage carpooling for business trips, including shared use of company vehicles and taxis.
Manage car parking and the vehicle fleet	<ul style="list-style-type: none"> • Limit car parking available at the workplace with preference to those with need, e.g. people with a disability and employees needing a car during the workday. • Limit size and use of vehicle fleet to reduce costs and encourage use of alternatives where possible.
Promote teleaccess	<ul style="list-style-type: none"> • Develop a teleworking policy to encourage employees to work from home some days. Should define management arrangements to facilitate this • Encourage use of email, internet and phone or fax as an alternative to physical trips by employees or clients, e.g. to forward documents or seek information.

An evaluation survey is planned for late 1999 to measure change in travel patterns. A process of checking progress and reviewing the plan is important given the innovative nature of the project.

The following case studies illustrate how the project has been undertaken in two cities.

Case study: Brisbane

Bligh Voller Nield is a national firm of architects. Their Brisbane office, located in Fortitude Valley about two kilometres from the central city, is participating in the project. There are 55 employees at the workplace, including architects and technical and administrative staff.

The employee survey found that 38 per cent of commute trips are made by car as driver and more than one quarter by public transport. For the 40 survey respondents, private vehicle kilometres travelled as driver or passenger over a week totalled 3,245 kilometres. Most business trips (75%) were made either by car, either as driver or passenger including extensive use of taxis. Some 18 parking bays are provided at the workplace, with most allocated to senior staff. A review of courier use found that the workplace generates 30 to 40 trips each week, mostly by motorcycle couriers.

Bligh Voller Nield had no specific policies on transport so the project offered an opportunity to review practices and identify changes that could be made. The Smogbusters Project Officer with the Queensland Conservation Council liaised with contacts in the workplace to discuss strategies for reducing vehicle trips.

The workplace is close to the Brunswick Street Train Station and several bus services run along the road where it is situated. There are amenities including lunch bars within walking distance. Car parking was seen as an issue, with parking limited for visitors and some spaces allocated to staff not always used. Business trips commonly involve travel to work sites, often by taxi or private car, though alternatives could be used for some of these trips.

Key strategies identified in the Green Transport Plan for the workplace include:

- Promoting public transport accessibility and cycling facilities to employees and visitors. This includes incorporating information on access options on business cards and publications.
- Offering alternatives to company cars and parking spaces in salary packaging. Payroll deduction of public transport fares is proposed.
- Providing public transport passes for business trips, as an alternative to taxi trips.
- Encouraging ridesharing. This can include car parking bays for carpoolers, a ridematching system for employees to use and promoting carpooling for business trips.

Time is valued in this workplace. This example shows that a busy, medium sized professional practice can adopt practical actions to reduce car use for commute and business trips.

Case Study: Perth

In Perth the project involved the Water Corporation, a state government enterprise providing water and wastewater services throughout WA. The corporation's head office is located in the John Tonkin Water Centre in Leederville, two kilometres from the city centre. It accommodates over 820 employees, mostly professional and administrative staff

The corporation is seeking solutions to parking problems at the workplace and also wants to enhance its environmental performance. The project offered an opportunity to do this. The Conservation Council of WA's Smogbusters Project Officer worked together with the corporation's Environmental Resource Awareness group (ERA). The group comprises employees from several divisions and aims to reduce environmental impact of day-to-day activities.

The employee survey involved self-selected respondents within one division at the workplace. It showed that most (63%) of work commute trips were made alone by car. Most business trips were made by car, with 62 per cent by the driver alone. Data on service and visitor trips was not collected, excepting a cursory review of one division's courier use over a week which showed that most were by bicycle.

An 'access audit' was done to assess availability of transport facilities and services in the workplace and its environs. This highlighted proximity to the Leederville Train Station, located 500 metres from the workplace. Frequent train services offer ready access to the central city, and to locations on the northern line. A bus service running between Perth and Glendalough passes nearby (about every half hour).

The workplace is adjacent the Mitchell Freeway and bound by some major roads, including Loftus Street which is a busy arterial road. Access by road is good though there is congestion especially in the morning peak. The level of traffic detracts from cycle access, though a north-south dual use (cycle and pedestrian) path runs along the freeway close to the workplace. There is limited bicycle parking for employees at the workplace. Many cafes, shops and banks are within walking distance, in the Leederville town centre.

Drawing on the survey and access audit results, ERA and the Smogbusters Project Officer discussed ways to reduce vehicle trips, leading to the Green Transport Plan. The plan was to cover the Planning and Development Division (about 160 employees) but in the process of developing the plan it became clear that many strategies would affect the whole workplace, so a wider scope was adopted.

The Green Transport Plan idea was endorsed by the corporation's executive. The draft plan was discussed with sections that would need to participate in its implementation. Changes were made to reflect concerns over the practicality of some strategies, including proposals for user pays parking and teleworking. The final plan was adopted by management. Key actions being implemented are:

- Developing an access guide on travel options for employees and clients. This will provide mapped and written information, tailored to the workplace, on walk, cycle and public transport access and encouraging carpooling and teleaccess.

- Providing information and encouragement to employees to try alternatives to driving. An awareness-raising campaign including talks is proposed, to be followed by a Smogbusters Breakfast to encourage employees to try using a 'green mode' to travel to work.
- Providing car parking bays and a ride matching system for carpooling. An intranet based ride-matching system is to be trialed to allow employees interested in carpooling to link up.
- Providing improved bicycle parking for employees and clients. Secure, sheltered long term parking for employee's bicycles is needed as well as short-stay visitor parking.
- Making multiriders (prepaid multiple use, intermodal tickets) available for business trips to encourage public transport use. This was done successfully by one branch and will be extended across the workplace to make it easier to use the bus or train.

The corporation's active participation in the project, and adoption of a Green Transport Plan, shows the commitment of a large enterprise to managing the travel it generates. The process of developing the plan and seeking internal support for it showed that greater awareness of why and how travel demand can be managed is needed. This plan will be the first step. A better picture of the trips generated by the workplace will be important in monitoring change and identifying further actions that can be taken. The Water Corporation's plan sets an example for other workplaces in Perth.

Discussion and conclusions

Work-related travel, including commuting to and from work and business trips, may account for about one quarter of personal travel activity in our cities (Werner Brög, Socialdata pers. comm.). Influencing the incidence and modes used for these trips can help reduce car dominated travel patterns and their impacts. The effects may extend further by raising individual's awareness of transport impacts and travel options for all trip purposes. It could also encourage more workplaces and other trip generators to take some responsibility for urban transport problems.

Smogbusters Way to Work is action research in progress. It shows the willingness of some workplaces to look at their transport practices and make changes which can reduce air pollution and other impacts caused by increasing car use. Green Transport Plans provide a framework for reviewing current practice, considering strategies which would be feasible and effective to effect positive changes and implementing these actions.

Smogbusters Way to Work is an innovative project which has involved non-government conservation organisations, supported by the Commonwealth Government, working together with businesses to improve environmental outcomes by encouraging individuals to change their travel behaviour. A range of strategies have been proposed, reflecting the various influences on travel choices and the actions which can be taken in workplaces to promote travel alternatives.

The project could be enhanced through more comprehensive evaluation of current travel patterns and potential reductions in vehicle kilometres travelled, and so greenhouse gas

and pollutant emissions and energy consumption. This way the aim can be translated into demonstrable environmental and workplace benefits

The results from the project will be used to develop a resource to facilitate action by other workplaces.

Acknowledgments

Thanks to fellow Smogbusters for their comments; James Whelan (Queensland Conservation Council), Christine Laurence and Naomi Wolfe (Nature Conservation Council of NSW), Bronwen Machin, Rachel Carlisle and Karl Charikar (Environment Victoria) and Sheila Brown (Conservation Council of SA). Alice Aguilar of Environment Victoria processed employee survey data.

Thanks also to Gary John of the WA Department of Transport who provided useful references. The interest of the participating workplaces has been critical to the project. The Smogbusters program is funded by the Commonwealth Government through the Natural Heritage Trust.

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