



### Teacher and Parent Manual

Smogbusters aim to work with the community to improve urban air quality and help Australia meet its greenhouse gas objectives, by increasing community understanding of and willingness to adopt better practices with respect to public transport and motor vehicle use.

Financial support for printing this kit was gratefully received from the Bicycle Industries Traders' Association (BITA) and Environment Australia



Smogbusters is a joint initiative of the Conservation Councils of Australia and the Federal Government through the Natural Heritage Trust.









### Acknowledgments

Original concept created and developed by Sheila Brown, Smogbusters Project Officer, Conservation Council of South Australia.

Editing and comments provided by Smogbusters team: David Wake, Christine Laurence, James Whelan, Rachel Carlisle, with air quality text written by Bronwen Machin. Many of the cartoons were generously donated by Les Robinson.



We are grateful to the numerous teachers and educational advisors who have contributed their thoughts and expertise so generously to this project, also to the schools in Adelaide who tested the program in pilot form.













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#### Introduction

#### What is Smogbusters?

The Smogbusters Program is a joint initiative of the *Conservation Councils of Australia* and the *Federal Government* through the *Natural Heritage Trust*.



Smogbusters aim is to work with the community to improve urban air quality and help Australia meet its greenhouse gas objectives, by increasing community understanding of and willingness to adopt better practices with respect to public transport and motor vehicle use.

*Smogbusters Way To School* is designed to encourage students, parents, and the broader school community to consider the implications of motor vehicle travel, particularly to and from school.



#### Smogbusters Way to School aims to:

- educate the school community about the effects of the motor vehicle in the urban environment
- educate the school community about realistic options





• in the longer term, contribute to an healthier environment and help keep the air clean for all.

#### Why is Smogbusters Way to School important for our schools?



Many parents consider it unsafe for children to walk or ride bicycles to school because there are so many cars on the road at that time of day. Parents respond to this by deciding to drive their children to school thus increasing the number of cars on the road, making it more unsafe for children to walk or ride, or even use public transport to get to and from school.



Now is the time to take action and address air quality and transport issues with the younger generations. We cannot afford to become complacent about the environment, particularly air quality, as air quality is often related to health issues such as asthma and coronary heart disease and affects everyone who breathes.

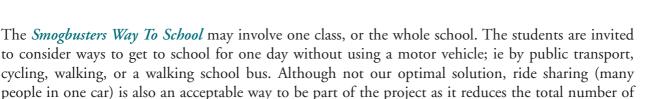








#### How it works



The Smogbusters Way To School Kit ensures participation is successful, informative and easy to implement.

#### The kit includes the following:

kilometres travelled to school for that day.

- A teacher and parents manual containing information about pollution and motor cars as well as suggested organisation of the program.
- A student activities manual containing information, class activity ideas and games. It also provides ways to calculate how much pollution was reduced by your school during the program.
- A board game 'SmogClouds and SunBeams'
- Two posters: 'Pollution Problems' and 'Pollution Solutions'.
- A contact sheet with relevant organisations and websites listed.

In conjunction with other schools taking part, you will be informed of the total reduction in emissions achieved by all schools taking part in the *Smogbusters Way To School* Program in your state.

#### How to use the kit

*Smogbusters Way To School Kit* is designed to take as much, or as little time as you decide will work with your pupils. Participation is the important thing.

The activities are designed to be included in the curriculum or run as an awareness raiser in the school. Teachers may also wish to address issues of stranger danger and road safety as an adjunct to this program, for which there are many resources already available.

The parent information could form articles in the school newsletter or be photocopied and used for direct distribution. They explain the program and engender support for the concept.

The Smogbusters Project Officer in each state is available to offer help and advice to teachers running the program if need be (see loose leaf contact kit list attached for details).

Thank you for your support of this initiative, for the sake of the environment, the future and your students.

If you breathe the air then this initiative is important for you

















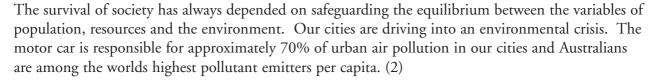






### Air Quality, Transport & Health

#### Introduction



Population trends over the next 15 years and associated demands for travel and services necessitate that a cautious approach be taken in order to ensure that air quality is maintained. (1)

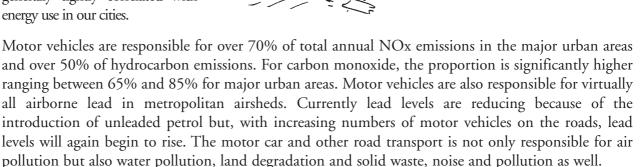
The increase of road transport, however, and the convenience of private motor vehicles and commercial road vehicles is increasingly associated with significant and serious impacts on health, including a decline in air quality, congestion, noise, injury, impacts on ecosystems and social impacts. (1)

Air pollution is visible in many cities and suburbs. Have you noticed the brown haze that hovers over some cities, particularly during the

Autumn Months?

#### Motor vehicles

Emissions inventories show that motor vehicles are the largest source of pollutant emissions in Australian created by humans. Airsheds and these emissions are generally tightly correlated with energy use in our cities.





















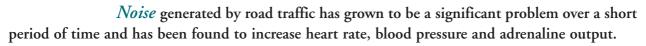


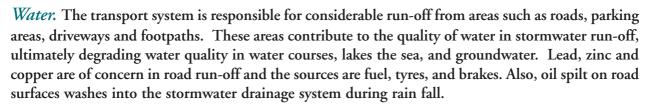


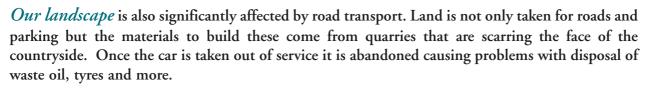
#### Types of Pollution



Air pollution is visible in many cities and suburbs and in recent years the cumulative effect of the world's transport systems is taking a toll on the planet. The combination of exhaust emissions from cars and sunlight produces photochemical smog which is increasingly noted for it's detrimental health effects.









Greenhouse gases are released as a result of the burning of fossil fuels. Since the industrial revolution people have continued to increase the output and concentration of certain gases into the atmosphere - these are chloroflurocarbons (CFC's), carbon dioxide (CO2), nitrous oxide (N20), methane (CH4), ozone (O3), hydrocarbons and nitrogen oxides (NOx).

The motor vehicle generates more air pollution than any other single human activity. Road transport contributes significantly to this through emissions caused by the fuel combustion process for producing energy, particularly in the form of carbon dioxide (CO2).

Increases in the concentration of atmospheric gases is predicted to influence global climate change by raising average global temperatures. The likely consequences are increasing sea temperatures, more storms, spread of diseases and loss of species.



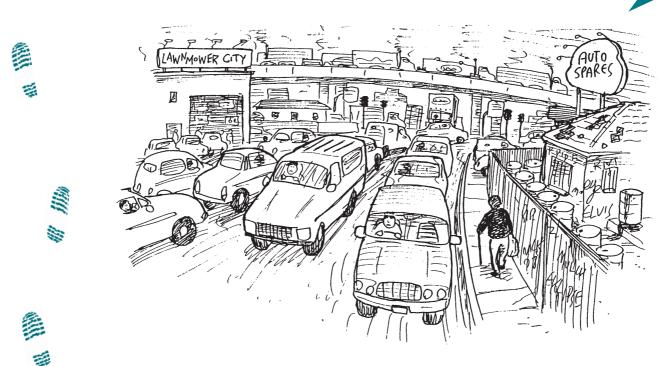












#### Traffic Congestion

Traffic congestion is the most serious source of central city air pollution, it has a marked effect on fuel consumption and therefore on motor vehicle emissions.



Due to the continual increase in the number of vehicles on the road, the frequency with which roads are congested is increasing. Peak periods are particularly prone to congestion. When a car is caught in traffic the car's exhaust is expelling more emissions than usual this is one of the many reasons not to have so many cars on the road.

If more of us used public transport, walked or rode our bike more frequently, then space would be freed up on the road for vehicles with many passengers like buses and trams, as well as couriers and delivery vehicles.



#### Urban Form: the shape of our city

Urban form and transport systems are interdependent. Australian cities have been through three distinct transport phases.

• The walking city era, where people walked everywhere and lived closely together in a town.



• Followed closely by the tram and railway era when there was a substantial increase in the size of the capital cities. At this time development was encouraged along tram and railway routes.



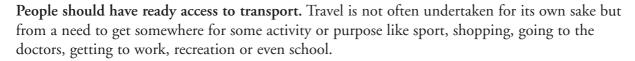
- The automobile era brought a revolution in transport and the suburbs expanded to fill the undeveloped land between the transport corridors that were already developed. From the 1950's onwards the number of petrol stations, parking areas and roads greatly increased. People became more car orientated and car dependent.
- Because we had such mobility, suburbs were planned a long way from the city centre, away from available public transport networks.

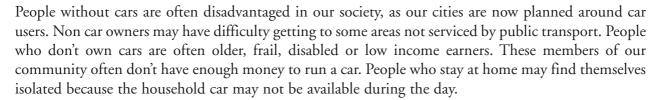


• Urban form and the structure of our suburbs has had a huge effect on energy use and the way we plan our trips. Population expansion needs to be located closer to public transport, employment and amenities such as shopping malls.

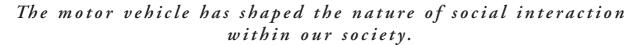


#### Social Issues





Low density suburbs are developed on the assumption that residents will have cars. Where public transport services do exist the services are often infrequent, don't go where people want to go and run to limited timetables.



Streets used to be living places where children played and many social networks were formed, they were places of social interaction. Nowadays, instead of meeting people informally on the street as we go about our daily business, whether it be going to school, work or even going out for a meal, we are sitting isolated from the very fabric of the society we live in by travelling directly to somewhere in a big steel box.

The public is becoming more and more isolated by this behaviour.

#### Technology

Technology will be able to bring about many changes to improve the efficiency of the motor vehicles. However, these improvements will be negated by the increasing number of kilometres we are driving. In order to get the benefit of these technologies and improve air quality we must cut back on the amount we drive.





















#### Towards a Solution

Smogbusters Way To School is a great way to get started by deciding to walk, cycle, use public transport or even carpool. It is a great way to help keep our air as clean as possible.









#### We can:



- take responsibility and make wise transport choices. The less we drive our cars, the better our air quality will be.
- at least once or twice a week, leave the car at home and walk, use public transport, cycle or even carpool with a friend to reduce the number of Vehicle Kilometres Travelled (VKT) and hence reduce emissions into the atmosphere from the motor vehicle.



- be a part of the Smogbusters Way To School day and help raise awareness about this pressing issue.
- as part of the Smogbusters Way To School day consider a way to get to school that does not involve using a car or at least reduces the vehicle kilometres travelled.
  - \* Walk with a friend



\* Cycle to school being careful to obey all road rules



- \* Organise a walking school bus
- \* Use public transport
- \* If you live a long way from school and there is no public transport then organise to travel with a friend and only bring one car instead of two.





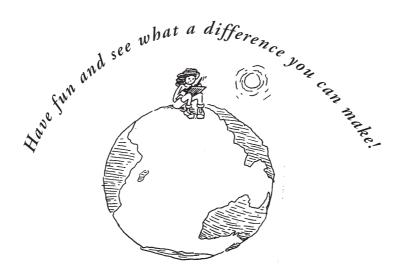


#### The Benefits

#### By taking action we can:

- help to reduce the number of cars on the road and reduce the amount of pollution expelled into the air.
- get fit by walking or cycling to school
- have fun talking to friends on the way to school
- allow a carer (or driver) to enjoy more free time (when it is not their turn to drive).

#### Remember if you breathe this initiative is important to you.



#### References:

- (1) Transport and Health: Assessing the Impact A collaborative project conducted by the Department of Public Health, Flinders University of South Australia and the South Australian Community Health Research Unit. 1997.
- (2) Urban Air Pollution in Australia: An Inquiry by the Australian Academy of Technological Sciences and Engineering 1997
- (3) Australian Conservation Foundation: Global Warming Information Kit.



















### Parent Information





The Smogbusters Way To School project is designed to encourage students and parents to consider the implications of motor vehicle travel, particularly to and from school.



#### About Smogbusters



The Smogbusters Program is a joint initiative of the Conservation Councils of Australia and the Federal Government through the Natural Heritage Trust.



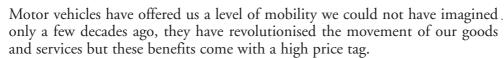
Smogbusters aim to work with the community to improve urban air quality and help Australia meet its greenhouse gas objectives, by increasing community understanding of and willingness to adopt better practices with respect to public transport and motor vehicle use.

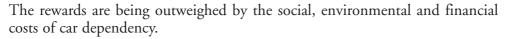


The *Smogbusters Way To School Kit* is designed to encourage students, parents, and the broader school community to consider the implications of motor vehicle travel, particularly while travelling to and from school.



#### Effect of motor vehicles





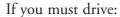


70% of urban air pollution is caused by the motor car. The motor car is not the best vehicle for every task and a variety of travel tasks require a variety of travel solutions.

Traffic congestion on our roads, and the associated air pollution that results from motor vehicle use, is becoming an increasing problem in all capital cities of the world.



Each individual must begin to take responsibility for their transport choices.



- keep your car well maintained
- avoid driving in peak hour traffic
- remember speed kills good fuel consumption
- drive smoothly and select the correct gear if driving a manual car





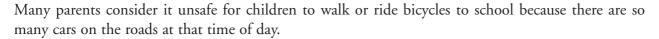








#### A self-fulfiling prophesy



Parents then decide to drive their children to school thus increasing the number of cars on the road and making it even more unsafe for children to walk, ride or use public transport.

Congestion on the roads outside schools at peak times is increasing.

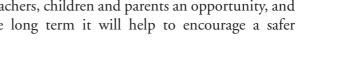
This, in turn, increases air pollution and reduces safety for our children.



Now is the time to take action and address air quality and transport issues with our younger generations. We cannot afford to become complacent about the environment, particularly air quality, as its' decline is often related to health issues such as asthma and coronary heart disease and affects everyone who breathes.

The Smogbuster Way To School project aims to give teachers, children and parents an opportunity, and an incentive, to halt this spiralling problem. In the long term it will help to encourage a safer environment and to keep the air clean for all.

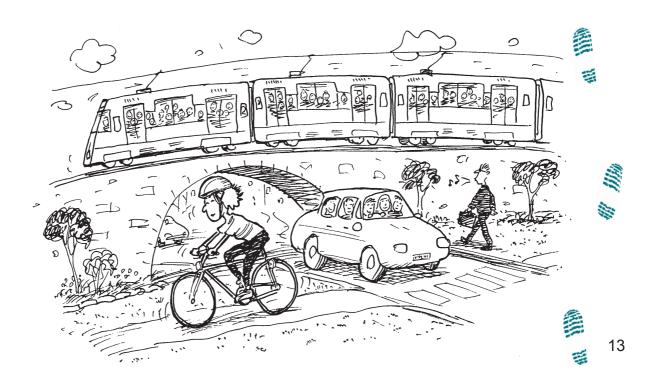
Support your child and help them to school the Smogbuster Way.





























#### MEDIA RELEASE <date> FOR IMMEDIATE RELEASE

### < Your school> takes action on air pollution

#### Smogbusters Way To School Week/Day on <date>

On <date><number of> students from <your school> will help combat increasing air pollution and greenhouse gas emissions in <capital city> by participating in the **Smogbusters Way To School** program.

<Teacher's name> said, "Smogbusters Way To School is designed to encourage students," parents and teachers to consider the impact of motor vehicle travel, particularly to and from school, on urban air quality and greenhouse gas emissions."

"Many parents consider it unsafe for children to use public transport, walk or ride their bikes to school because there are so many cars on the road at this time of day, "said <Title and name of Smogbuster Project Officer>, Smogbusters Project Coordinator.

"The Smogbusters Way To School is intended to give teachers, students and parents an opportunity, and incentive, to halt this spiralling problem by getting to school without using a car."

<Your school> will calculate the total vehicle kilometres travelled in an ordinary <week/day>, and then attempt to reduce that amount during **Smogbusters Way To School** <week/day>. They will also calculate the amount of air pollution and greenhouse gas emissions they have reduced.

The **Smogbusters Way To School** program is a joint initiative of the Conservation Councils of Australia and the Federal Government through the Natural Heritage Trust.

#### For more information contact:

<teacher's name and phone number> or Smogbuster Project Officer (in your state) <name> ph: <state contact no>





#### **USE SCHOOL LETTERHEAD**

### MEDIA RELEASE <date> FOR IMMEDIATE RELEASE

<Your school> reduces air pollution

Report on Smogbusters Way To School Week/Day on <date>

In one <day/week> students from <your school> reduced air pollution and greenhouse gas emissions by <x amount> - simply by changing the way they travelled to school.

<Teacher's name> said, "Walking, cycling, ridesharing and using public transport reduced the amount of vehicle kilometres travelled by <x amount>."

"As well as the reduction of carbon dioxide emissions, air pollution was reduced by <x amount> of hydrocarbons, <x amount> of carbon monoxide and <x amount> of nitrogen oxides. Not a bad days work for students keen to do something positive for their environment."

The **Smogbusters Way to School Kit** was designed to encourage students, teachers and parents to consider the implications of motor vehicle travel on urban air quality and greenhouse gas emissions, in this case for journeys to and from school.

According to <Smogbuster Project Officer Name>, Smogbusters Project Coordinator, :this is a significant and important reduction in pollution for only one <week's/day's> effort. Imagine what could happen if we all left our cars at home more often."

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#### For more information contact:

<teacher's name and phone number> or Smogbuster Project
Officer (in your state) <name> ph: <state contact no>





















### Evaluation Form

#	1.	Did your school run the program for a day	or a we	ek?						
	1a.	How many classes participated in the Smogbusters Way To School project?								
100	2.	How many students in your school in total participated on the day/week?								
	•	Was the information included in the school newsletter? (circle) Yes / No								
	,	3a. If yes, how many families does it go to?  Please include a copy of the newsletter for the Smogbusters records.								
	4.	Please rate the following:	,							
		Scale 1 2 3 (very difficult to use)	4	(ver	5 y easy	to use)				
ţ		(a) Was it easy to participate in the Smogbusters Way To School program?	1	2	3	4	5			
	5.	Please rate the following resources:								
		(a) Teacher information manual	1	2	3	4	5			
#		(b) Subjects chosen for student work sheets	1	2	3	4	5			
		(c) Individual classroom tally sheets	1	2	3	4	5			
	-	(d) Parent information sheets	1	2	3	4	5			
		(e) Range of smogbuster activities	1	2	3	4	5			
	***	(f) Reference sheet	1	2	3	4	5			
		(g) The kit overall	1	2	3	4	5			



## Evaluation form continued 5. Please comment on any of the above: (use another sheet of paper if necessary) . . . . . . . 6. Have you any suggestions for additions or improvements to the kit? 7. Please add any comments or suggestions for improvement to the organisation of 8. Would you consider being a part of another Smogbusters Way To School project?





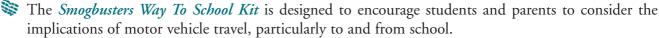


#### An Invitation...

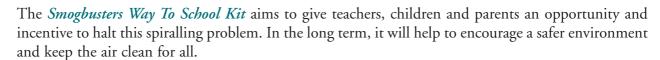
Our capital cities are renowned for their livability and blue skies, but now, with an increase in car use, all this is threatened. Smogbusters is an environment group based program dedicated to promoting creative, practical alternatives to the car. Our vision is of an Australia with fresh, clean air, where streets are for people and its easy to get where you want to go.



#### Your school can help make it happen!



Congestion on the roads outside schools at peak times is increasing. This, in turn, increases air pollution and reduces safety for children. Parents often think it is unsafe to walk or ride bikes to school because there are so many cars on the road. So they drive their kids to school and in doing so increase the number of cars on the road!





To register and receive an additional free Smogbusters Way To School Kit, complete and fax the form (overleaf) to the Smogbusters Project Officer in your state.









### School Registration Form

### To register, please complete this form and fax to:

Smogbuster Project Officer Conservation Council in your State

Fax No				110
(insert name of school)		is interested in S	mogbusters Way To School.	***
Who in your school will take	_	School ual class/es		
Grade level of classes	No. of classes	Total no. oj	f students in these classes	
				_
				- 111
Total no of classes and students				-
Contact name				#
			Postcode	
Phone		Fax		
Email				
	Your kit will be posted or	n receipt of this f	Fax .	

Thank you for your interest in the Smogbusters Way To School Kit.







For more information about Smogbusters phone (03) 9348 9044 www.environment.gov.au/smogbusters

