



SMOGBUSTERS way to school



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



Cycling

PROMOTION FUND

www.cycling-australia.com

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



Natural Heritage Trust
Helping Communities Helping Australia

Acknowledgments

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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
 - give teachers, children and parents an opportunity, and incentive, to halt this spiralling problem.
 - in the longer term, contribute to a 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* may involve one class, or the whole school. The students are invited to consider ways to get to school for one day without using a motor vehicle; ie by public transport, cycling, walking, or a walking school bus. Although not our optimal solution, ride sharing (many people in one car) is also an acceptable way to be part of the project as it reduces the total number of kilometres travelled to school for that day.

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

The kit includes the following:

- 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

The survival of society has always depended on safeguarding the equilibrium between the variables of population, resources and the environment. Our cities are driving into an environmental crisis. The motor car is responsible for approximately 70% of urban air pollution in our cities and Australians are among the worlds highest pollutant emitters per capita. (2)

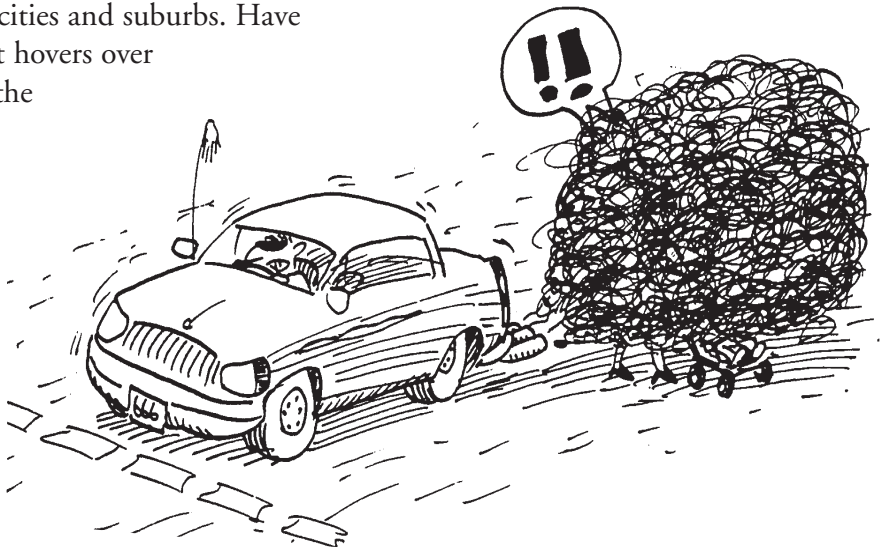
Population trends over the next 15 years and associated demands for travel and services necessitate that a cautious approach be taken in order to ensure that air quality is maintained. (1)

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.



Motor vehicles are responsible for over 70% of total annual NO_x emissions in the major urban areas and over 50% of hydrocarbon emissions. For carbon monoxide, the proportion is significantly higher ranging between 65% and 85% for major urban areas. Motor vehicles are also responsible for virtually all airborne lead in metropolitan airsheds. Currently lead levels are reducing because of the introduction of unleaded petrol but, with increasing numbers of motor vehicles on the roads, lead levels will again begin to rise. The motor car and other road transport is not only responsible for air pollution but also water pollution, land degradation and solid waste, noise and pollution as well.

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 its detrimental health effects.

Noise generated by road traffic has grown to be a significant problem over a short period of time and has been found to increase heart rate, blood pressure and adrenaline output.

Water. The transport system is responsible for considerable run-off from areas such as roads, parking areas, driveways and footpaths. These areas contribute to the quality of water in stormwater run-off, ultimately degrading water quality in water courses, lakes the sea, and groundwater. Lead, zinc and copper are of concern in road run-off and the sources are fuel, tyres, and brakes. Also, oil spilt on road surfaces washes into the stormwater drainage system during rain fall.

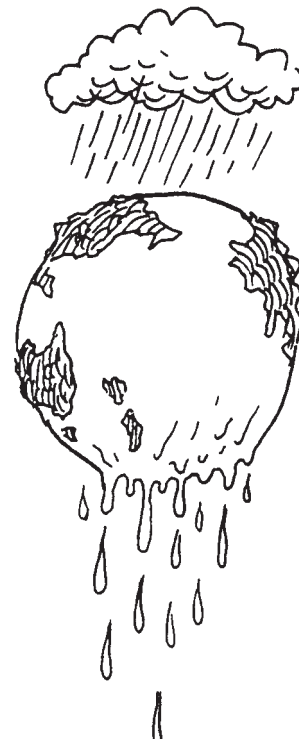
Our landscape is also significantly affected by road transport. Land is not only taken for roads and parking but the materials to build these come from quarries that are scarring the face of the countryside. Once the car is taken out of service it is abandoned causing problems with disposal of waste oil, tyres and more.

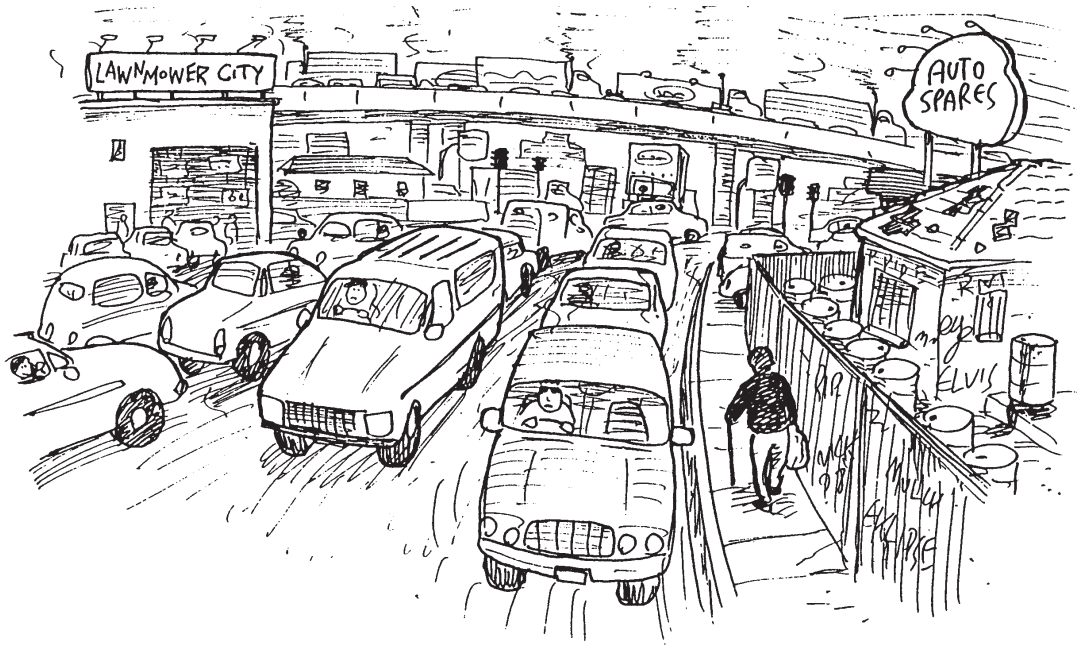
Global impacts of the motor vehicle

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 chlorofluorocarbons (CFC's), carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), ozone (O₃), hydrocarbons and nitrogen oxides (NO_x).

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

People should have ready access to transport. Travel is not often undertaken for its own sake but from a need to get somewhere for some activity or purpose like sport, shopping, going to the doctors, getting to work, recreation or even school.

People without cars are often disadvantaged in our society, as our cities are now planned around car users. Non car owners may have difficulty getting to some areas not serviced by public transport. People who don't own cars are often older, frail, disabled or low income earners. These members of our community often don't have enough money to run a car. People who stay at home may find themselves isolated because the household car may not be available during the day.

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.

The motor vehicle has shaped the nature of social interaction within our society.

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.

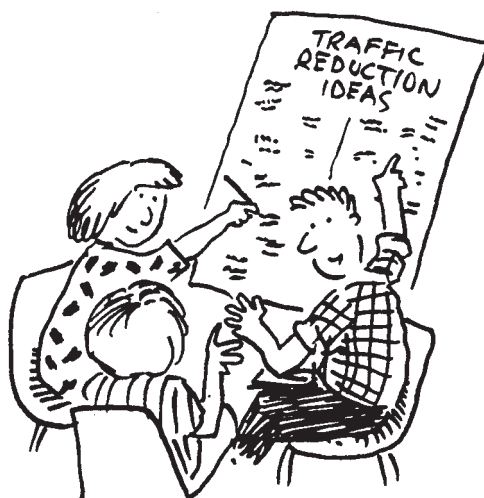
Technology

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

Motor vehicles have offered us a level of mobility we could not have imagined. Only a few decades ago, they have revolutionised the movement of our goods and services but these benefits come with a high price tag.

The rewards are being outweighed by the social, environmental and financial costs of car dependency.



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.

If you must drive:

- 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-fulfilling prophesy

Many parents consider it unsafe for children to walk or ride bicycles to school because there are so many cars on the roads at that time of day.

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.

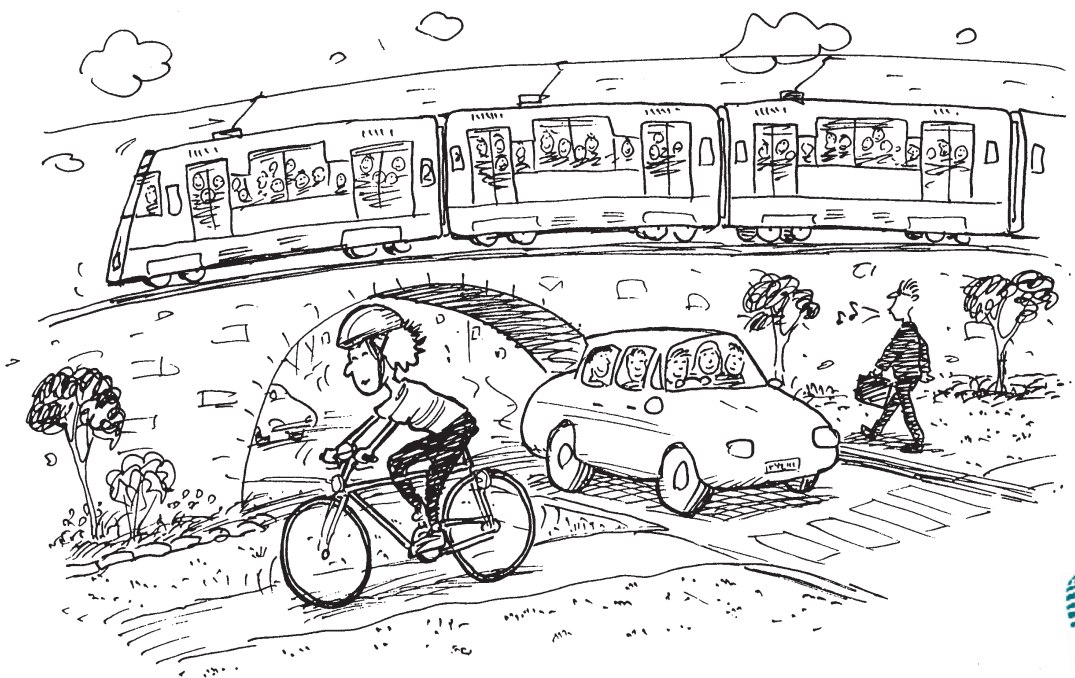
This, in turn, increases air pollution and reduces safety for our children.

We can make a difference!

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.



USE SCHOOL LETTERHEAD

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>





SMOGBUSTERS way to school

Evaluation form continued

5. Please comment on any of the above: (use another sheet of paper if necessary)

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6. Have you any suggestions for additions or improvements to the kit?

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7. Please add any comments or suggestions for improvement to the organisation of the program

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8. Would you consider being a part of another *Smogbusters Way To School* project? Yes / No

9. Any other comments?

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*Thank you for completing and forwarding this evaluation.
Please return to the Smogbusters project officer at the Conservation Council in your state.*



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!

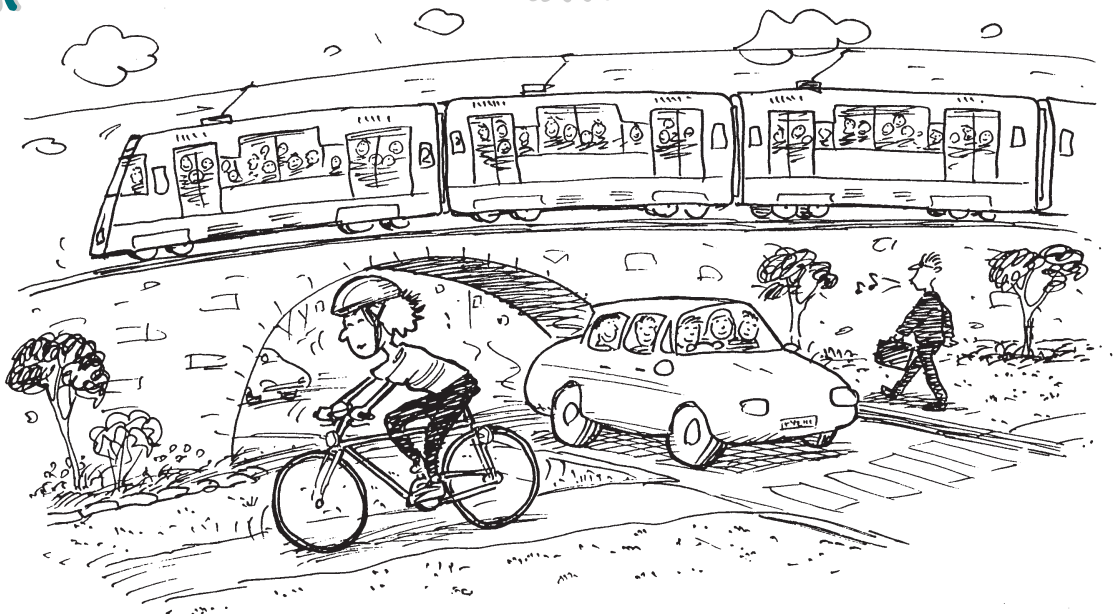
The *Smogbusters Way To School Kit* is designed to encourage students and parents to consider the implications of motor vehicle travel, particularly to and from school.

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!

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

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.

Important to be Involved... Easy to be Involved...





SMOGBUSTERS way to school

School Registration Form

To register, please complete this form and fax to:

Smogbuster Project Officer
Conservation Council in your State

Fax No.....

..... is interested in *Smogbusters Way To School*.
(insert name of school)

Who in your school will take part? Whole School
 Individual class/es

| <i>Grade level of classes</i> | <i>No. of classes</i> | <i>Total no. of students in these classes</i> |
|---|-----------------------|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| <i>Total no of classes and students</i> | | |

Contact name

School Address

..... Postcode

Phone Fax

Email

Your kit will be posted on receipt of this 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