Chapter 12: Environmentally sustainable transport

12.1 The impact of transport on the environment

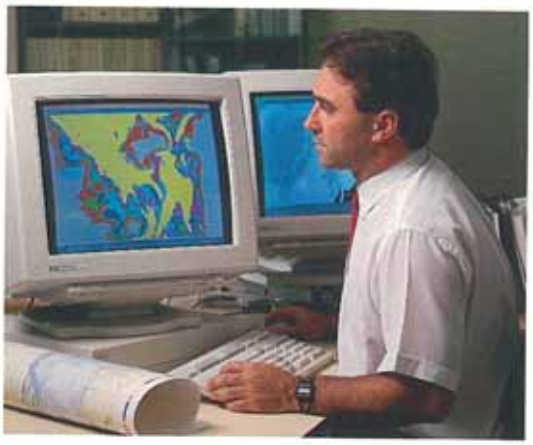
The most significant way the IRTP addresses concerns for the environment is through the IRTP Targets. These aim to reduce the trend towards 7.2 million total daily vehicle trips by 2011, down to 5.9 million; that is, 19% less than trend. This will be achieved by encouraging use of public transport, walking and cycling, and through travel demand management and land use planning measures.

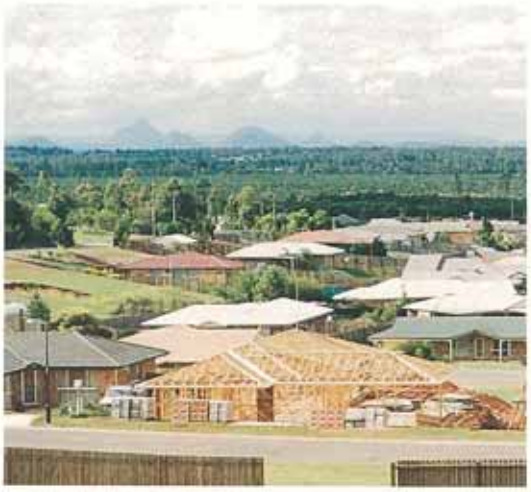
The environmental effects of our transport system are well known in general, though the ability to measure and predict impacts for the whole system needs development. The effects of transport fall into two categories - impacts from transport operation, and impacts from infrastructure development. As the region's transport task grows, the potential impact of transport on environmental quality will increase. The environmental consequences of the transport system must be managed and monitored in a coordinated way while at the same time meeting the region's needs to move people and goods.

How transport affects the environment

Development and use of the transport system has implications for environmental quality, natural resources and biological diversity.

- Air Pollution - vehicle emissions affect human health directly, particularly when sensitive land uses such as homes, hospitals or child care facilities abut busy roads. The main pollutants in vehicle exhausts are carbon monoxide, oxides of nitrogen, hydrocarbons, lead and fine particulates.
- Photochemical smog - oxides of nitrogen and hydrocarbons react with sunlight in the atmosphere creating smog which includes the pollutant ozone. Smog in South East Queensland has its worst effects in outlying areas such as Boonah, Ipswich and Deception Bay since the pollution is carried away from Brisbane where it is mainly generated.
- Greenhouse gases - carbon dioxide, a natural product of combustion, is the main greenhouse gas emitted by vehicles. Ever increasing vehicle travel is contributing to a build-up of greenhouse gases in the atmosphere that is expected to change our climate.
- Noise - noise mainly from busy roads and rail lines affects many dwellings in Brisbane. It interferes with communication and sleep and is the most complained about form of pollution.
- Water pollution - motor vehicles deposit many materials and chemicals onto road surfaces which run-off into our watercourses. Development of infrastructure, if not carefully managed, can allow sediments to run-off into watercourses. Development and management of road and rail systems also involves oils and chemicals that must be prevented from entering watercourses.
- Contamination of land - land can also become polluted, for example by gaseous lead emissions depositing on roadsides. Petrol stations, an integral component of the transport system, can contaminate land by loss of fuel from underground tanks.
- Visual effects - transport infrastructure and vehicles can be unsightly. Sufficient consideration should be given to landscape design and minimising visual intrusion and obstruction.
- Land take - the transport system takes up significant land resources - land which could otherwise be used for agriculture, housing, recreation areas, or be kept as bushland.
- Fuel consumption - our transport system is almost entirely reliant on oil which is a finite and dwindling resource. Even electric trains derive their energy from finite coal reserves.
- Biological diversity - the most obvious impact of transport on biodiversity is where new facilities are built in natural areas. Biodiversity is also affected by roadkill, isolation of wildlife populations, spread of weeds, noise interfering with breeding, and by enabling greater access for people to natural areas.





12.2 Operational impacts of transport

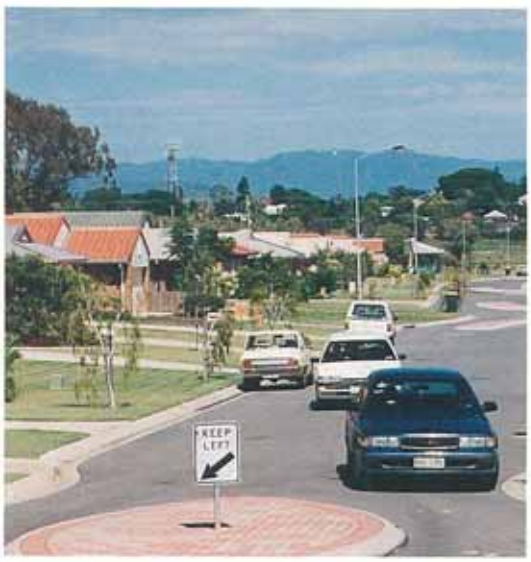
Of greatest concern is the impact of transport activity, particularly car use, on the region's air quality. Surveys indicate 78% of people in Brisbane are concerned about air pollution and submissions on the draft IRTP called for stronger action on environmental impacts. However, surveys associated with the IRTP showed a current reluctance to consider initiatives which restrict private vehicle use, so the IRTP concentrates on providing alternatives to private vehicles, improved vehicle standards and information campaigns about the impacts of personal travel choices. It is also clear that the region's population is currently reluctant to change lifestyle and locational decisions. Dispersed land use patterns will continue to place pressure on the transport system and the environment.

Motor vehicles contribute 72% by mass of major air pollutants in South East Queensland. Moreover, the geography of South East Queensland makes it susceptible to serious air pollution problems, should emissions continue to grow.

Continual improvements in the emission standards of vehicles over the past 25 years have had a big impact on the ability of the air shed to sustain air quality levels. The region's air quality generally meets agreed national guideline levels, although there is no reason to be complacent about future conditions.

Reducing the number of private vehicle trips and increasing the proportion of trips made on public transport will be the key to improved environmental performance of the transport system. However, there is also scope for direct action on vehicle emissions. The IRTP proposes an "Air Care" vehicle emissions action program to make immediate in-roads on air pollution.

The 19% reduction in vehicle trips to be achieved by the IRTP targets will also support the reduction of greenhouse gas emissions.



Continued improvements to vehicle design and operations of the transport system will be needed to maintain the low number of photochemical smog exceedences.

The Queensland Government supports amendments to tighten Australian Design Rules which specify vehicle air, noise emission and energy efficiency standards.

Incentives for people to purchase energy-efficient, low emission vehicles will be investigated including a pilot program to subsidise the cost difference between low emission and conventional diesel buses, and exploring sales tax and registration reductions.

Actions to enhance the public's knowledge of the environmental impacts of various modes of transport will be

included in the public information campaign to be run under the "Air Care" initiative and the travel demand management strategy of the IRTP.

Transport and energy efficiency

Transport activity accounts for almost all of the region's liquid fuel consumption, about 34% of greenhouse gas emissions and about 37% of total energy consumed by all activities. The IRTP is concerned with two principal issues:

- improving the energy efficiency of all modes of transport; and
- moving people and goods on more efficient transport modes.

The achievement of the IRTP objectives for more use of public transport, sharing of rides and increased opportunities for walking and cycling will play a major role in restraining the growth of the region's energy consumption.

It is also important to recognise that vehicles consume less fuel per kilometre when traffic is flowing freely. While it is not efficient to eliminate all congestion, there are good energy conservation reasons for planning to avoid chronic traffic delays across our major cities.

By 2005, it is estimated that 10% of all new vehicles will be electric vehicles requiring charging of energy storage devices. Opportunities for buildings to incorporate solar electricity generation systems, which sell excess power into the electricity grid, would reduce emissions from coal-fired electricity generation. Such arrangements would be consistent with competition policy, sustainable energy and greenhouse gas reduction strategies.

ACTIONS:

SIG 12.1	"Air Care" Vehicle Emissions Action Program
S 12.2	Support tightening of energy and emission standards
S 12.3	Support research on quantifying environmental impacts
S 12.4	Support research into alternative fuels and engines