Foreword

Ensuring Queensland remains an enjoyable place to live and work is an important responsibility of both government and the community.

As one of Australia's fastest growing regions, South East Queensland must manage and develop its transport system in a way that helps maintain the quality of life for its residents, and enhances the region's attractiveness for industry and tourism.

This *Integrated Regional Transport Plan for South East Queensland* (IRTP) is the blueprint for the transport system which meets the region's looming transport challenges. It has been developed through a process of extensive public consultation and input which has helped to shape this plan.

While more road capacity will be needed as the region continues to grow, a strategy based solely on building more and more roads is not a viable solution in the longer term. This IRTP has been prepared with the benefit of significant community input on the type of transport system needed. It seeks to find a balance between private motor travel, public transport and cycling and walking. It also proposes ways to meet needs for access to important services without generating unnecessary vehicle trips.

With a joint approach from government and the community, the major transport challenges can be met. I appreciate the support from the region's 18 local governments and the Commonwealth Government in preparing this IRTP. I would also like to acknowledge the valuable input received from the many members of the public who took the time to prepare submissions, and the work of the previous government in commencing the IRTP project.

Little will be achieved without action by the community to reduce trips and use more environmentally sustainable modes of travel where these are a valid option. I invite all South East Queenslanders to consider their travel habits and to become involved in the more detailed studies that emerge from this regional plan. Together, we can create a prosperous and healthy South East Queensland.

Minister for Transport and Main Roads

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Executive summary

This *Integrated Regional Transport Plan for South East Queensland* (IRTP) is a 25 year plan to develop and manage the transport system in a way that supports the agreed plans for accommodating the region's expected major population and employment growth.

It draws together plans to manage the movement of people and goods in the region from Noosa to the NSW border and west to Toowoomba.

As a Queensland Government initiative involving the region's 18 local government councils and the Commonwealth Government, this IRTP will complement the forward planning of all government agencies and will play a vital role in managing the future development of the region.

The IRTP is a companion document to the *South East Queensland Regional Framework for Growth Management* which was the outcome of the SEQ 2001 regional planning project.

Opportunities for community input have been provided throughout the development of this IRTP. The views expressed through these processes have formed an important consideration in framing the proposals. Significant transport planning research has been used to establish achievable targets for increased walking, cycling, public transport use and shared rides, and reduced traffic growth.

The IRTP is a "living" document which will be revised every five years to monitor progress toward achieving the targets, to respond to changing community attitudes and to incorporate the findings of the more detailed studies recommended in this plan.

The transport challenge

South East Queensland faces the challenge of managing sustained population growth well into the next century. One of the most obvious results of population growth is a predicted large increase in transport activity. Using the agreed land use patterns developed through the SEQ 2001 regional planning project, the IRTP has determined the extent of the future transport task.

The projections highlight the need to plan a more sustainable transport system. If the current trends are projected for the 20 years between 1992 and 2011:

- population will increase 60%;
- the number of person trips taken each day will increase by 70%; and
- because the urban areas are spreading out further in a dispersed settlement pattern, the total amount of car travel on the region's roads will increase by nearly 100%.

Adding new road capacity will provide some relief and support the development of new communities. However a strategy based solely on providing more and more new road space is not a viable solution in the longer term.

The amount of construction required to add enough capacity to the road system to maintain traffic flows at previous levels may prove unaffordable. In any event, extensive urban development and geographic constraints mean there are few corridors available to construct major new roads in rural areas, and the community is increasingly reluctant to tolerate intrusions of motor traffic through developed areas.

A new approach

The *Integrated Regional Transport Plan for South East Queensland* (IRTP) balances the future needs for public transport, freight, general motor traffic, non-motorised transport and travel demand reductions in the one process. The term "integrated" also means the transport system is considered alongside broader urban development and lifestyle choices, with greater integration of land use and transport as a key goal.

A key aim of this IRTP is to moderate, rather than strive to satisfy unrestrained traffic growth. To achieve this, it establishes targets for increased use of public transport, ride sharing, walking and cycling. Together, achievement of these targets will reduce the number of vehicle trips on our road system by 1.3 million trips each day. This will reduce predicted travel demand by nearly 20%.

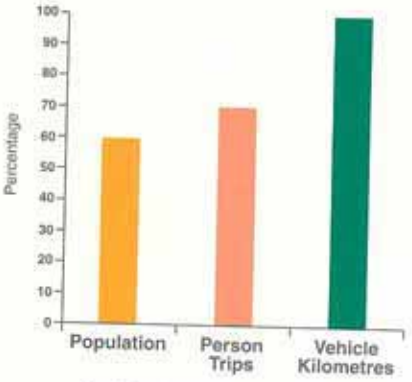
The development process surrounding this IRTP has already changed the emphasis in transport planning away from moving vehicles to moving people and goods, and supporting better designed communities which reduce the need to travel.

Previous work and public consultation

A significant amount of work and public consultation has paved the way for this IRTP. The most significant of these are:

- *South East Queensland Passenger Transport Study* (1991);
- *SEQ 2001 Transport Policy Paper* (1993);
- *South East Queensland 2001 Regional Framework for Growth Management* (1995);
- Discussion paper entitled *Towards an Integrated Regional Transport Plan for South East Queensland* (1995);
- *Draft Integrated Regional Transport Plan for South East Queensland* (1996); and
- *South East Queensland Regional Framework for Growth Management Update* (1996).

Percentage growth for population and travel



Predicted growth over 20 years 1992 to 2011

Population growing at 2.5% p.a.
Person trips growing at 2.8% p.a. because people are travelling more.
VKT growing at 3.5% p.a. because of increased person trips and our urban areas are getting bigger.

To support the 1995 discussion paper on the IRTP, there was a major survey of households and the Regional Transport Reference Group was convened to provide advice on the matters which were worthy of broad community support. The release of the Draft IRTP in August 1996, and the accompanying consultation program, provided the opportunity for the public to comment on the draft proposals.

Over 50 000 people were directly involved in some way during the IRTP consultation program.

The objectives

The IRTP establishes a vision of a transport system which efficiently moves passengers and freight, supports economic development, and reduces car dependency. To fulfil this vision, it establishes the following objectives:

- *developing a more sustainable transport system* - by increasing the proportion of trips made by public transport, walking and cycling, and in shared rides, and reducing growth in peak commuter car travel;
- *restraining the growth of peak period car travel demands* - by reducing the predominance of single occupant vehicle travel, increasing ride-sharing, improving public transport, eliminating unnecessary trips and better sharing of the traffic load around the network to make the most of the existing transport system;
- *providing efficient and sufficient road capacity* - by planning to meet moderated traffic demand and accommodate the growth of the region's urban areas;
- *ensuring the efficient movement of freight* - by high quality rail, road, air and sea links and intermodal facilities;
- *providing for pedestrians and cyclists* - by providing safe, secure and integrated facilities and networks;
- *coordinating transport and land use planning* - by supporting more compact, better designed urban development which supports public transport and allows people to walk and cycle more;
- *ensuring social justice* - by a more inclusive transport system which shares the costs and benefits of transport equitably across the region; and
- *maintaining environmental quality* - by cleaner vehicles and better approaches to providing transport infrastructure.

Shaping the future transport system

The integrated approach adopted in this IRTP recognises that public transport and private vehicles have complementary, not competing roles. What is needed is a balance that limits new road capacity expansion and favours public transport, and high efficiency passenger and freight vehicles.

Travel demand management through trip reduction programs, rationalised parking supply and consideration of more direct user pricing for road use, must accompany policies to provide transport facilities and services. This will reduce the need to provide new roads and make better use of the existing system.

The proposals

This IRTP contains 140 actions. In summary, the major proposals are:

- change the planning approach so the projects considered are more closely aligned with the sort of transport system the community wants;
- ensure there is a "seamless" public transport system which combines all available public transport operations and provides a range of alternatives to car travel;
- upgrade the traditional line haul public transport (rail and bus) systems to cope with massive peak period increases;
- make public transport safer, more frequent, convenient, accessible, secure, affordable, reliable and faster;
- improve cross city public transport services and introduce more flexible types of public transport including "on demand" and "hail and ride" mini bus services;
- give priority, congestion-free running to road-based public transport vehicles in major urban areas;
- develop an efficient and reliable system of transport interchanges linked to public transport and private vehicle networks;
- provide additional peak period road capacity for higher occupancy passenger vehicles and freight;
- support economic development by ensuring quality passenger and freight transport links and terminals are available to major industry and employment areas;
- focus on urban ring roads and bypasses, and avoid increasing peak period general motor traffic capacity to congested major centres;
- plan and provide local arterial road systems as part of new urban development;

- make better use of existing road capacity, including widening and upgrading existing roads to maximise their usefulness; and

- provide advice to local government on ways to support public transport and reduce the need to travel.

Better public transport

The IRTP seeks to increase the current proportion of trips made on public transport in SEQ by 50% in the year 2011. The overall market share of public transport would increase from 7.0% in 1992 to 10.5% of all trips, compared with a decline to about 6.3% if present trends continued.

To achieve the targets, the IRTP proposes a major program of improvements to deliver a high quality, integrated public transport system based on:

- traditional mass transit (buses and trains);

- opportunities for new forms of mass transit including light rail;

- midi and mini buses to service less popular routes economically;

- hail and ride services in inner urban areas;

- maxi taxis and taxi buses which are available on call for shared rides (dial-n-ride) to offer more choices with increased flexibility and convenience;

- taxis for rapid response, shared rides or individual journeys; and

- ferries in those areas where water transport offers a realistic alternative to land transport.

In addition, the support services for public transport will be improved and better coordinated through:

- improved vehicle design to improve accessibility and reduce boarding times;

- easily accessed, secure physical design of interchanges and stops;

- integrated timetables so that feeder services connect to line haul services;

- integrated fares, ticketing, passenger information and marketing to ensure convenient affordable travel; and

- implementation of public transport priority measures where congestion is experienced.

Walking and Cycling

A major increase in the proportion of trips made by walking and cycling can be achieved by providing improved facilities and by ensuring our communities are better designed. The IRTP seeks to increase the current proportion of walking trips from 13% to 15% and cycling trips from 2% to 5% by the year 2011.

Cycles are ideally suited to journeys of under 15 km and walking is suited to trips of under 2 km. Beyond these distances, many people do not consider these transport modes viable. However, with linkages to the public transport system, the range of these combined modes can be extended greatly.

Cycling and walking are highly efficient and inexpensive modes of travel which can provide a "door-to-door" service. These modes also have the benefits of being healthy, readily accessible to most people and environmentally benign (emitting no air or noise pollution).

To increase the proportion of trips undertaken by cycling the IRTP aims to:

- provide cycleways and sealed cycle lanes on roads that are safely designed, well constructed and, where possible, separated from pedestrian networks;
- ensure cycle routes link to public transport networks;
- explore options to provide for carrying cycles on public transport;
- encourage provision of secure cycle storage facilities, showers and dressing rooms at places of employment and other key destinations;
- provide information about the benefits of cycling as a transport mode; and
- integrate cycling facilities into the early stages of land use planning and development approval.

For many of today's parents and grandparents, walking was the primary means of travel around their local area when they were growing up. Today many local trips are undertaken in cars. If we are to achieve a sustainable transport system in South East Queensland then it is essential that we act now to reverse this trend.

To increase the proportion of trips undertaken by walking the IRTP aims to:

- create safe and well maintained pedestrian pathways and crossings;
- ensure pedestrian routes link to public transport networks and pedestrians have priority in public transport precincts;
- inform people about the benefits of walking as a transport mode;
- integrate walking facilities into the early stages of land use planning and development approval;

- encourage a better mix of land uses to establish an environment conducive to walking; and
- ensure that the designs of pedestrian facilities address personal security concerns by providing adequate lighting, provision for passive and active surveillance and where possible, separation of cycle ways and pedestrian routes.

Travel demand management

Travel demand management measures seek to meet a portion of the community's needs without increasing the capacity of the transport system. This will save resources that can be better used for government services in other areas. It will also reduce the impact of new transport infrastructure on the community.

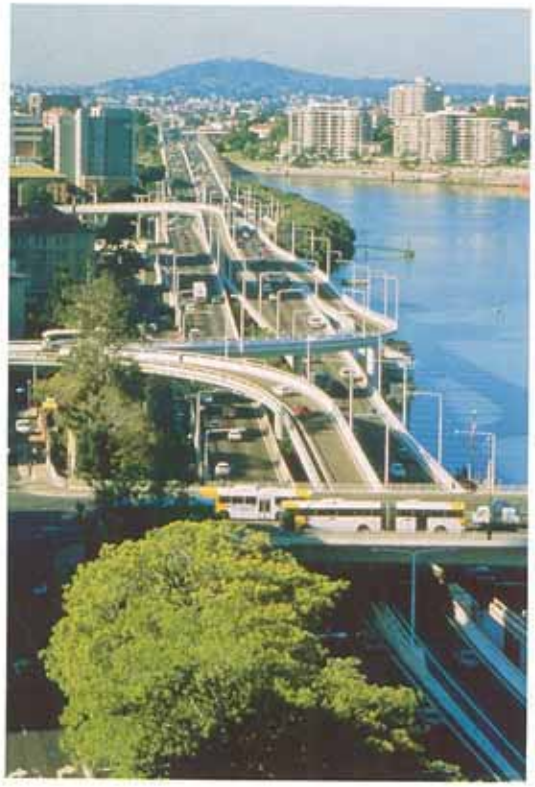
The primary focus of travel demand management is on influencing travel demand to generate more efficient use of existing transport capacity. In particular, this can be achieved by discouraging the growth of single occupant vehicle travel in peak periods. Measures will include:

- community education and promotion of alternative modes, especially public transport, ride sharing, walking and cycling;
- priority to higher efficiency passenger vehicles around the road network;
- using technology and more flexible operating hours for education, shopping and employment to share the load better and make best use of the available transport system capacity;
- support for ride-sharing schemes;
- rationalised parking policy so parking is not easier and cheaper than using public transport; and
- considering transport pricing measures, so the cost of each trip becomes apparent.

The regional road network

Achieving the IRTP targets for increased use of more sustainable transport practices will moderate projected travel demand by nearly 20%. However, there will still be about 5.9 million vehicle trips taken on the road system each day in 2001, compared to 4.2 million in 1992.

To maintain our current ability to move around the region, roads will need to be developed and managed so they can meet the needs of people for movement and deliver goods to markets safely without unacceptable impacts on the community and the environment.



The IRTP's regional road network strategy presents a balance between:

- moderating traffic growth and giving priority to public transport;
- widening and upgrading existing roads; and
- constructing new road links, especially bypasses and ring road connections.

The task of managing and developing the road system involves much more than satisfying demands for private vehicle use. Roads carry many forms of transport and should be viewed as multi-modal transport infrastructure. Accordingly, agencies involved in road planning, management and development will adopt a multi-modal focus.

Since road-based vehicles will continue to meet the majority of public passenger demands, management of the road system will play a crucial role in meeting the targets for increased market share for public transport.

Freight

To realise its full economic potential, the region must ensure that a high quality freight transport system is able to deliver goods to markets quickly and cost-effectively, while minimising the impacts on the community and the environment.

Investigations are proposed to find the best way to move freight around the Brisbane rail network in the face of increasing capacity constraints caused by growth of passenger traffic.

While every effort will be made to ensure rail freight is competitive with road transport, the majority of the region's freight movements are local in nature or are small tonnages which are generally not a market rail can penetrate. This means the vast majority of freight will be moved on the road system.

If freight vehicles are faced with chronic road congestion, commodity prices will be higher, and the region will find it increasingly difficult to attract new business and industry.

There are road proposals aimed at providing a continuous system of high capacity, safe and secure roads which will maximise separation of freight traffic from urban settlement areas.

As the region's economy expands, new freight terminals will be needed at strategic locations to reduce pressures on the existing limited freight facilities. Potential sites are limited in number and need to be identified and protected from incompatible surrounding development.

Land use and transport

Land use and development must build on and support the existing transport system, and help make public transport, walking and cycling more competitive with car travel.

The IRTP supports a long term shift to forms of urban development which provide a quality urban experience on a walking scale. Instead of large areas of segregated housing, better designed neighbourhoods would offer the lifestyle benefits of reduced car dependency and increased access to local activities.

Within these communities, there will be a place for a range of quality public transport services which are easily accessed by walking and cycling, as well as private cars.

The region also has a major imbalance between the location of housing, which is often located in urban fringe areas, and jobs, which are usually found in the existing urban centres like the City of Brisbane. To reduce this imbalance, the IRTP supports a less centralised pattern of employment including the development of "Key" regional employment centres as proposed under the *Regional Framework for Growth Management*.

At the same time, new industrial and commercial development zones need to be identified by local economic development strategies and supported by transport investments.

Published guidelines entitled "Shaping Up" will provide the ideas and opportunities for better designed communities which support the IRTP objectives.

Social justice

A socially just transport system needs to ensure all members of the community can access basic services like employment, education and shopping. And the costs of providing transport, both in financial terms and in terms of community impacts, should be shared equitably across the region.

Expansion of the public transport system will amplify the considerable social benefits it provides to the community. At the same time, the system will be made safe, secure and affordable. For example, regular audits of the public transport system involving user groups most at risk will identify security and accessibility concerns to be addressed by government and operators.

Improved procedures will ensure the planning and evaluation of transport options considers the full range of costs and benefits of all options. And planning will identify those urban areas of the region which suffer relative disadvantages of available public transport services. This will enable services to be provided at appropriate levels across the region.

The IRTP also encourages public debate on how to spread the cost of providing transport facilities more equitably. For example, a person who only uses a car in off-peak periods pays the same general taxes and charges as a person who drives themself to work in congested periods.

Environmentally sustainable transport

Transport activity is a major contributor to energy consumption and emissions to the environment. The environmental consequences of transport must be managed in a coordinated way and the number of private vehicle trips contained to improve the environmental performance of the transport system.

Currently the region's air quality is much less affected by vehicle emissions than that of Sydney or Melbourne. Progressive reductions in lead content in petrol have improved air quality. However with a doubling of present travel demand possible in 20 - 25 years, there is no reason for complacency.

Reducing the number of private vehicle trips and increasing the proportion of trips made by public transport, walking and cycling will be the key to improved environmental performance of the transport system.

Major new transport initiatives will also be required to demonstrate how their design and use will contribute to the achievement of adopted environmental guideline levels.

Implementation

The strategic policies and actions contained in this IRTP provide a clear basis for guiding South East Queensland towards more sustainable transport in the future. Implementation of the IRTP will centre on appropriate consultation, agreed sharing of management responsibilities and adequate funding for the transport system.

The IRTP implementation arrangements, guided by the Regional Coordination Committee, will allow coordinated planning of the various elements of the transport system in conjunction with growth management in South East Queensland and will treat all modes of transport consistently.

Queensland Transport will ensure there is a specific focus on implementing the IRTP. The department will work closely with local governments and relevant state government departments such as the Department of Local Government and Planning and the Department of Main Roads.

Local governments will assume a lead agency role for local integrated transport and land use planning within their jurisdiction, with support from Queensland Transport and the Department of Main Roads.

The need for an integrated public transport system will require all service providers to work in combination with other service providers, to give the highest possible level of service to the public.

Community involvement in transport decisions

The community must be consulted at the right time to enable it to influence transport decisions before government commitments are made.

Community involvement has played a major part in drawing up this IRTP. Its release also provides the community with a framework under which local studies will be conducted.

Input from communities will be sought at all planning scales from the IRTP to more local planning studies and the individual project scale. There also needs to be clear rules which must be followed by transport agencies in conducting consultation, planning and transport development processes.

The IRTP has developed guidelines which outline improved processes for community consultation. These are supported by detailed draft processes and procedures being developed by Queensland Transport and the Department of Main Roads. These types of formal guidelines should be followed by all agencies.

Transport investment

As the region continues to expand, it will be increasingly difficult to provide high quality transport infrastructure and services from available revenue sources. This will be the case irrespective of whether the IRTP targets for increased public transport, ride sharing, walking and cycling are achieved. The major issue is that while population is growing at between 2 and 2.5% each year, travel demand is growing at around 3.5%.

To maintain the current levels of access and mobility, up to $31 billion will be needed for system improvements, operating costs and maintenance over the next 25 years, and $19 billion for capacity enhancement for roads, rail, and other public transport.

If the average motorised trip time doubled from the 1992 level of 17 minutes to 34 minutes in 2011, as the IRTP predicts could happen without intervention, then household car trips in an urban area would cost, on average, an additional $ 2.30, and a commercial trip would cost, on average, an additional $ 8.60. In the year 2011, there will be about 8 million private vehicle trips, and 2 million commercial trips in the region each day. The cost of not implementing the IRTP and achieving the targets would therefore be in the order of $34 million per day or $12 billion per year.

"The cost of not implementing the IRTP would be around $12 billion per year."

Estimates of the shortfall between likely available funding for transport, and the need for investment to improve and expand the transport system range between $10-12 billion over the next 25 years. The IRTP begins discussion on how the proposed system improvements can be funded.

Transport pricing measures relate to the marginal cost of the individual trip. The IRTP recognises that direct transport pricing measures can be an efficient and equitable way to raise public funds for new transport improvements, because these costs are paid by the infrastructure user. They can also help restrain the growth of travel demand, reducing unnecessary travel.

Improvement is also needed in the way the benefits and costs of transport projects are evaluated, so investments support agreed community objectives and represent an appropriate use of public funds.

Conclusions

The predicted growth, the potential impact of excessive car dependence, and the possible extent of the funding shortfall, create significant challenges for government and the community.

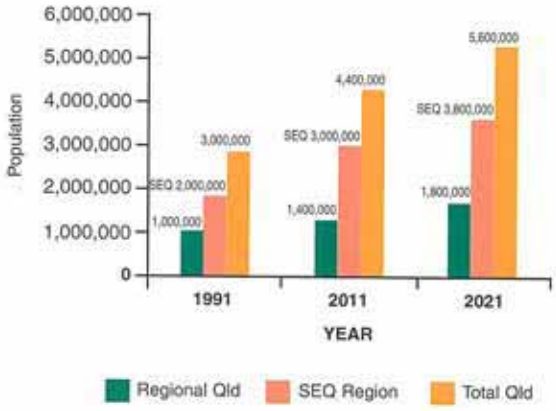
Based on experience with urban transport issues in population growth areas around the world, governments in South East Queensland will find it increasingly difficult to match the public's expectations for mobility with:

- their willingness to finance transport system improvements;
- their willingness to accept the inevitable impact of new transport facilities on communities and the environment; and
- the state of the environment this generation wishes to leave for future generations.

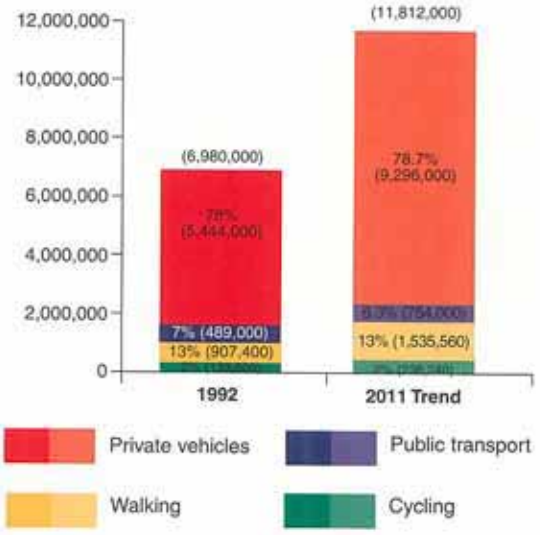
The support and understanding of the community is essential if major changes to travel culture are to be achieved. This *Integrated Regional Transport Plan for South East Queensland* establishes a course for finding the right balance.

PART A The transport challenge

SEQ region will experience continuing population growth in the 21st century



Trend
Weekday person trips



By 2011, the trend is:

- increase from 6,980,000 to 11,812,000 trips per day
- 3,851,000 additional car trips per day (71% increase)
- public transport market share will decline from 7% to 6.3%
- 256,000 additional public transport trips per day (55% increase)

Chapter 1: Introduction

1.1 The region's transport problem

The South East Queensland region extends from Noosa in the north, west to Toowoomba and south to the NSW border. The region has been experiencing sustained high levels of population growth, higher than 2% per year, since the early 1970s.

While efforts will be made by government to share population growth around the State, population projections show this rapid growth is expected to continue well into the 21st century. By 2021, the population of South East Queensland will exceed 3.8 million and will constitute about 68% of Queensland's 5.6 million people.

The region now faces a major challenge: managing population growth in a way that maintains and enhances the quality of life for its residents.

One of the most obvious effects of sustained high growth in population is a large increase in transport activity. On current trends, the following changes are predicted over the 20 years between 1992 and 2011:

- population will increase to around 3 million, up more than 60%;
- the number of trips made each working day will increase to 11.8 million, up 70%;

Unless remedial action is taken, the following transport outcomes will occur:

- the number of trips by private vehicle will increase by about 3.85 million, to 9.3 million each day, up 71%;
- the average vehicle occupancy will decline from 1.3 to 1.2 persons;
- public transport's market will decline from 7% to 6.3%;
- the proportion of all trips made by walking and cycling will remain at a relatively low 15%;
- the total amount of motorised travel, measured in vehicle kilometres, will increase by nearly 100% to about 93 million kilometres each day;
- trips to work, which are major contributors to peak hour congestion, will increase by 110% to 2.4 million trips each day, with about 200 000 commuters entering the City of Brisbane from around the region;

- the amount of freight carried will increase by between 80% and 120%; and
- the average length of motorised trips will increase from about 12.5km to over 15km.

The prevailing land use patterns over the past 40 years have seen residential development spreading out from our cities at an alarming rate, increasing the separation between jobs and housing and other services like education and recreation.

As a result, car dependency has continued to rise. Over 78% of all trips in the region are now undertaken in private vehicles. This has significant impacts on the environment and the enjoyment of life, especially for those who do not operate a motor vehicle. Cities experience environmental decay, and traffic congestion makes industry less competitive. People spend more time travelling and less time at work or with families. Accidents claim lives and impose significant social costs.

Many major roads are already congested at levels that would have been unacceptable even a few years ago. With travel growth of the magnitude expected, by about 2005 many of the major roads in the region would be heavily congested for many hours each day. Without adding significant additional capacity to the transport system, parts of the region's major cities could be almost gridlocked by 2011.

1.2 Meeting the challenge

Choices will have to be made as to what sort of transport system the region has in the future. The key advantage is that the implications of unrestrained growth in travel demand are known now, when there is still time to do something about it.

Adding new road capacity will provide some relief and support the development of new communities. However a strategy based solely on providing more and more new road space is not a viable solution in the longer term.

The level of construction required to add enough capacity to the road system to maintain congestion at previous levels may prove unaffordable. In any event, extensive urban development and geographic constraints means there are few corridors available to construct major new roads in rural areas. And the community is increasingly reluctant to tolerate intrusions of motor traffic through developed areas.

South East Queensland does not have to accept the current trends towards widespread congestion. Nor should it rely solely on building roads in an effort to keep pace with travel growth. What is needed is a strategy which increases the viability of alternative, more efficient transport practices, restrains the growth of motor traffic, and reduces the need to travel.

This *Integrated Regional Transport Plan for South East Queensland* follows such a strategy. It draws together plans and policies for a transport system which can maintain our present levels of access to important services and activities without the unacceptable impacts and high costs of a car-dependent society. To ensure success, the IRTP considers all modes of transport and views transport decisions as part of the broader process of creating communities.

1.3 Scope of the IRTP

The IRTP is based on plans adopted by the Commonwealth, Queensland and local governments under the *Regional Framework for Growth Management*. The IRTP provides a strategic framework for the development and management of the South East Queensland transport system in a way that supports these agreed plans for population and employment growth. Where appropriate, the IRTP considers interaction between the south east and adjoining regions, for example in Toowoomba, where the economy is closely linked to the Darling Downs.

The IRTP adopts a 25 year planning horizon, from 1997 until the year 2021. This will enable a proper investigation of transport actions and opportunities so corridors and funding are available when needed. Long range population projections are available for this planning period.

However, accurate projections of population and land use changes are available only up until the year 2011. In addition, most of the base data was gathered in the census of 1991, and the *South East Queensland Household Travel Survey* in 1992. For this reason, much of the planning analysis and targets cover the period from 1992 to 2011

The IRTP will be reviewed every five years to take account of updated census and travel survey data, longer term land use projections, changing conditions and community values.

This IRTP considers transport connections to airports, but excludes direct consideration of aviation issues. Aviation could be included in the next review of the IRTP.

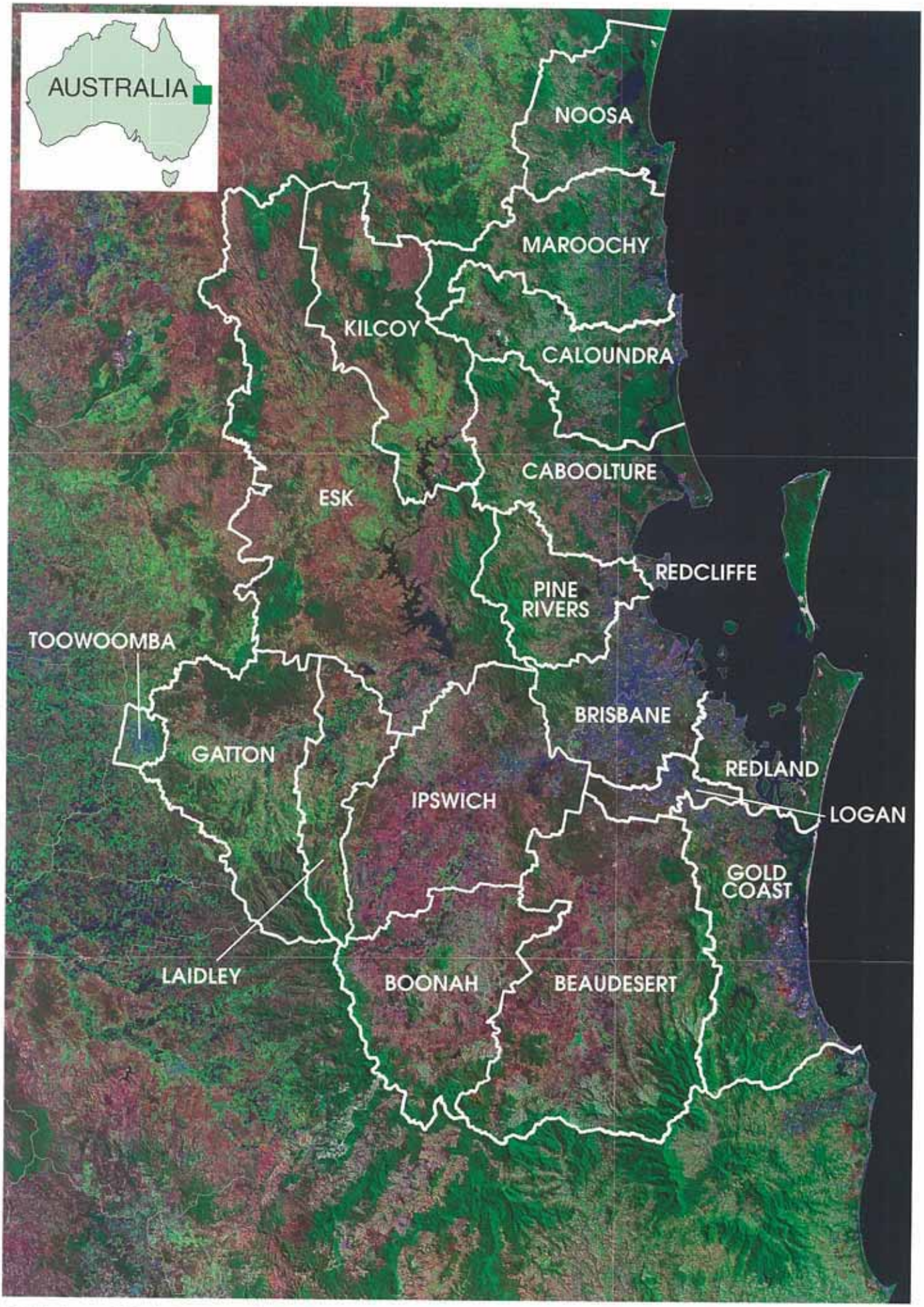
Many of the actions in the Implementation section of this IRTP relate to the preparation of more detailed Integrated Local Transport Plans and individual corridor studies. The results of these investigations and infrastructure developments will be included in the next IRTP.

1.4 Format of the IRTP

Part A describes the transport challenge facing South East Queensland.

Part B describes how the future transport system will be shaped. Short descriptions of strategic actions are introduced in this part of the plan.

Part C provides details of implementation. It expands on the short description of strategic actions introduced in Part B and includes a detailed three year implementation program.



Satellite image of South East Queensland with local government boundaries superimposed.

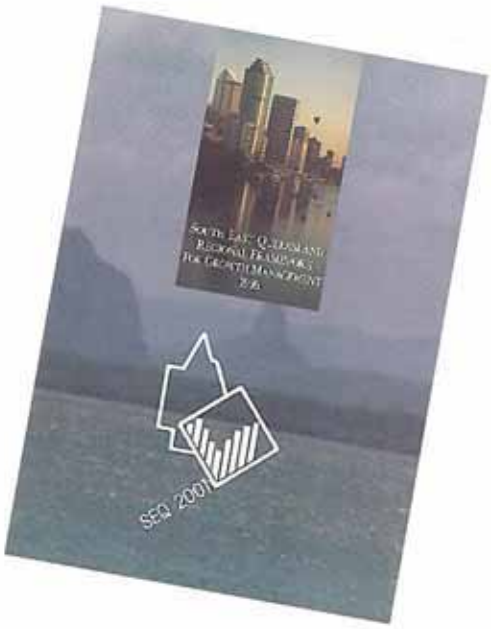
Chapter 2: Urban settlement and travel patterns in the region

2.1 Population and employment location in the 21st century

Where people live, and where jobs are located, has a major bearing on future travel demands and the likely success of transport system changes. If large distances separate the starting and finishing points of trips, motorised transport is necessary. And if trip ends are dispersed throughout the community, public transport services are less likely to pass close enough to be competitive with the car.

The region has a major imbalance between the location of housing and jobs. For example, in 1992 the City of Brisbane had about 40% of the region's population, but over 53% of its jobs. People are tending to live in suburban dormitory areas and accessing employment and other essential activities by car.

This IRTP is based on agreed plans in the *Regional Framework for Growth Management* which seeks to concentrate population growth in agreed urban development corridors and concentrate new jobs in agreed business and industry centres across the region. This would help reduce the imbalance between employment and housing location and cut down on the amount of peak period commuter travel. It would also assist public transport by concentrating passenger demands around major service corridors.



Under the *Regional Framework for Growth Management* the majority of new housing and population growth will be accommodated in four major urban areas:

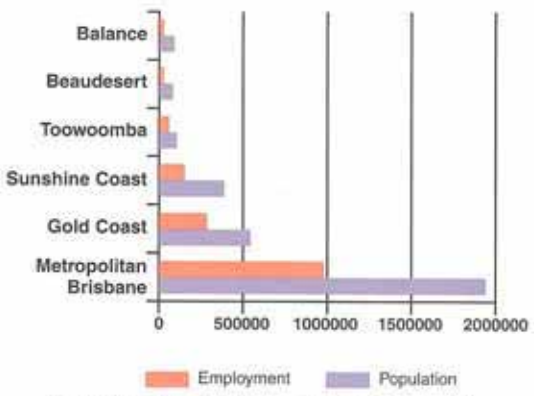
Sunshine Coast	214 000
Gold Coast City (including Beenleigh)	252 000
Toowoomba	25 000
Brisbane Metropolitan area (including Ipswich)	609 000
Existing smaller urban areas and balance of region	81 000
Total growth between 1992 and 2011	1 181 000

Employment growth is expected to roughly match population growth, increasing by 65% from about 911 000 jobs in 1992 to 1.5 million jobs in 2011. Under previous trends, employment growth was expected to remain focussed on the City of Brisbane, while its population would increase only slightly on 1992 levels.

Even with the changes proposed by the *Regional Framework for Growth Management:*

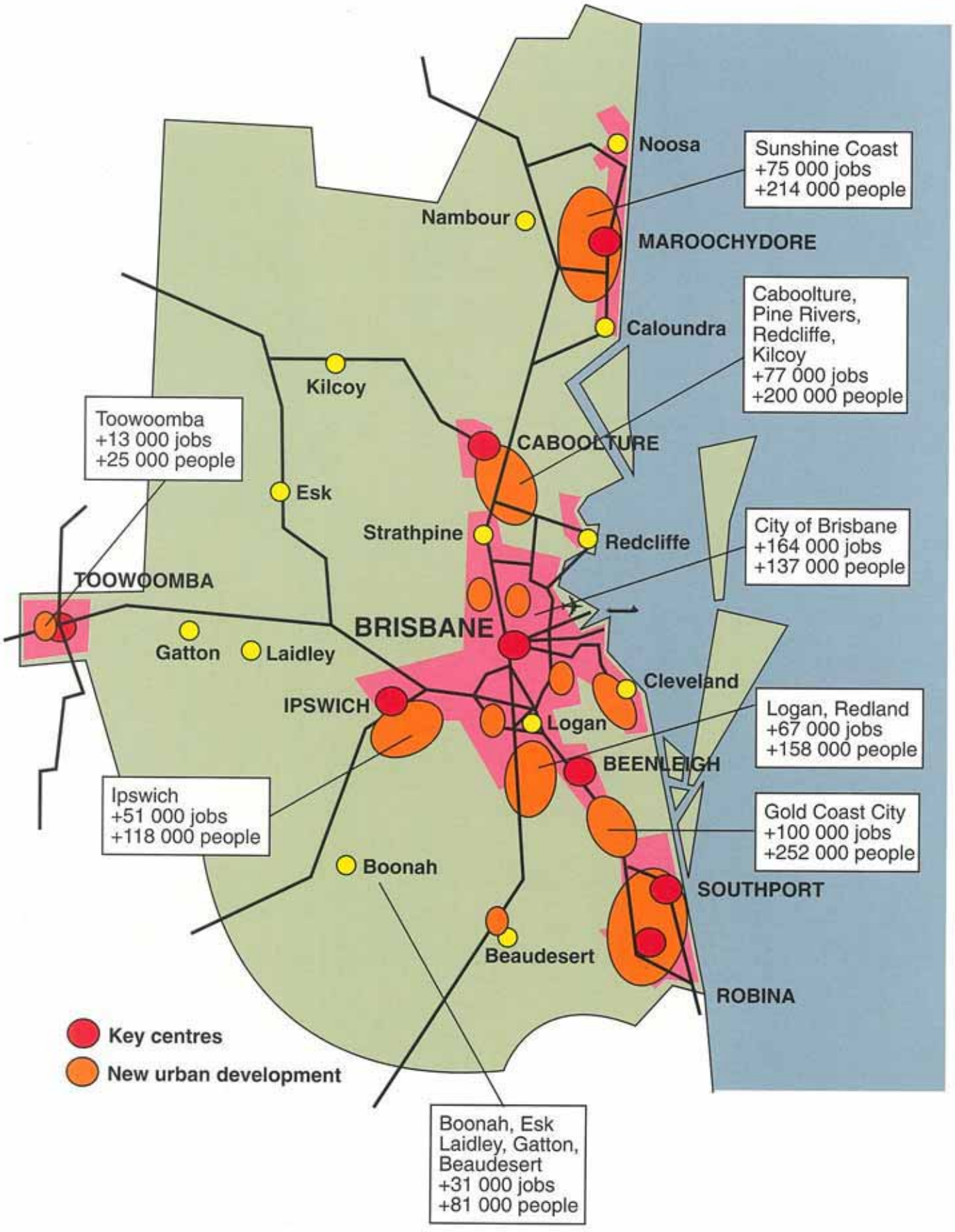
- much of the population growth will be accommodated in new development on the fringes of the region's urban areas. Only 12% of the additional population will be accommodated in the City of Brisbane;

Total population and jobs in 2011



Predicted population and employment in SEQ metropolitan areas

Predicted population & employment growth – South East Queensland 1992 – 2011



- over 27% of the new jobs would still be located in the City of Brisbane;
- by 2011, over 43% of jobs, but only 29% of population, would be located in the City of Brisbane; and
- an estimated 200 000 commuters will enter the City of Brisbane each day from around the region to work.

Many of those jobs which are located closer to new housing areas will become more widely and randomly distributed, meaning they will be difficult to access with public transport.

2.2 Travel trends for the period 1992 to 2011

The IRTP has predicted the growth in travel demand using data from the 1991 census and major surveys of regional travel behaviour undertaken in 1986 and 1992. The planning methodology and technical data are presented in the *IRTP Technical Report*, May 1996. The calculations use the patterns of housing and employment adopted by the *Regional Framework for Growth Management*.

Trips were analysed on the basis of numbers of people rather than numbers of vehicles to provide a better basis for planning a mix of transport modes to meet people's travel needs. Traditional transport planning usually removed public transport trips and walking and cycling trips from the calculations and considered only private cars and commercial vehicles.

These projections confirm a clear trend towards more trips, longer trips, increased car dependency, and a decline in public transport use. In the 20 years between 1992 and 2011 the number of person trips made each working day would increase by over 70% from 6.9 to 11.8 million and the total amount of motorised travel, would increase from 46.7 to about 93 million vehicle kilometres each day, an increase of almost 100%.

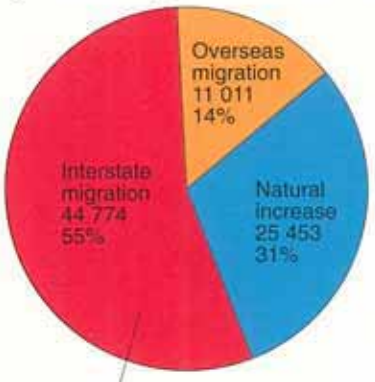
And with population and car ownership continuing to grow, the same trends could continue beyond 2011 if major changes are not made.

2.3 Projected travel patterns

In 1992, an average household generated about 10 trips each day, and almost 95% of these were local trips, under 20 km. The Brisbane metropolis was the focus for over 72% of all trips. Analysis of changing trip patterns over the period 1992 to 2011 reveals that:

- in total numbers, local trips are projected to remain dominant and increase the most. For example, for the southern sector of the region south of the Coomera River, there were 775 800 local trips in 1992. In 2011 this would

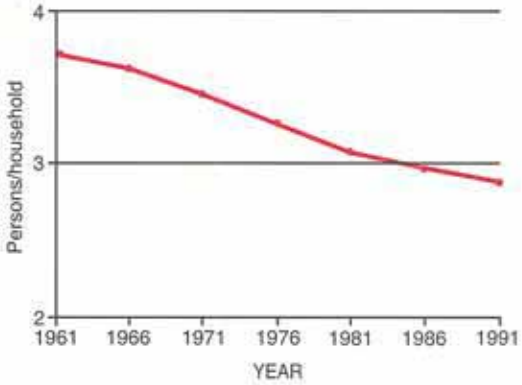
Contributions to population growth (whole of Queensland) between October 94 and September 95



NSW and Victoria accounted for 79% of net interstate migration

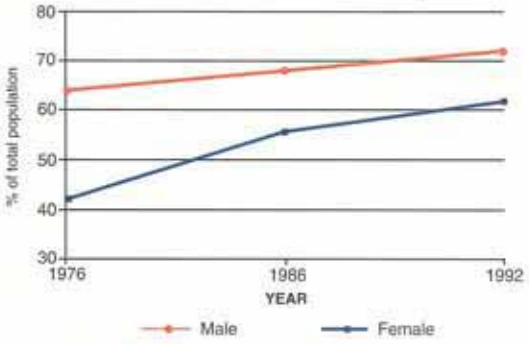
Household size

Brisbane Statistical Division

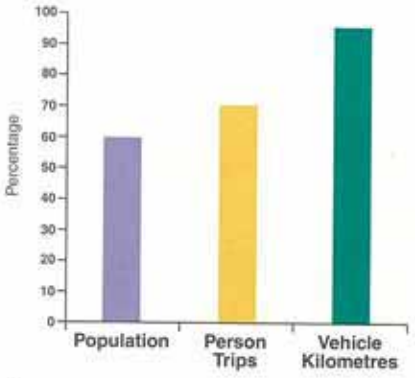


The average numbers of people in households is declining. Trip making is related to households, rather than numbers of people, so as households numbers grow, trips numbers grow.

Driver's Licence availability



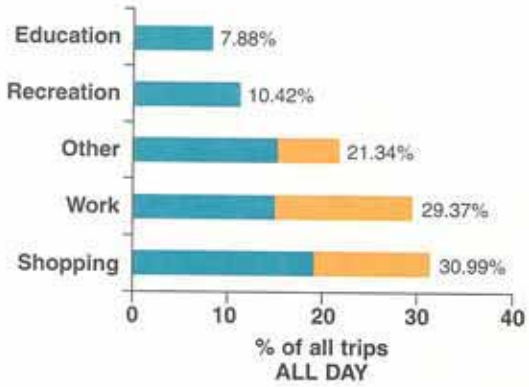
Growth rates for population and travel



Percentage growth over 20 years 1992 to 2011

Population growing at 2.5% p.a.
Person trips growing at 2.8% p.a. because people are travelling more.
Vehicle kilometres growing at 3.5% p.a. because of increased person trips and our urban areas are getting bigger.

Trip purpose 1992



Others include:
home to home;
home to child care; and
passenger serving journeys.

Home based

Non-home based

increase by 88% to 1.5 million local trips each day. By comparison, only 40 000 trips from this sector would be to the Brisbane area;

- average trip length will increase from 12.5 to 15 km due to the expansion of urban areas and the dominant pattern of detached housing with little mixing of non-residential land uses;
- significant growth in percentage terms is projected for trips between neighbouring sectors. For example, a 366% increase in trips between the Beenleigh sector and the Gold Coast sector. However in total trip numbers, this only increases from 15 700 to 73 100;
- the City of Brisbane will remain the focus for a large proportion of the longer trips in the region;
- over 90% of all trips will be associated with three major urban areas of Metropolitan Brisbane (including Ipswich), the Sunshine Coast and the Gold Coast; and
- bypass trips which seek to avoid a major centre enroute to another destination (e.g. interstate trips) will continue to be a small proportion of total travel.

2.4 Transport funding

Transport revenue in the SEQ region

Fragmentation of planning and funding responsibilities has made the task of understanding the region's capacity to fund the transport system very difficult. Much more study is needed of how and when funding is allocated to transport, so the best use of scarce public resources can be made.

Table 1 provides a break up of public funding estimated for capacity enhancement, system maintenance and operating subsidies. They do not include farebox revenue from Queensland Rail and Brisbane City Council (Brisbane Transport) buses which is also reinvested in system operations. The figures are primarily based on 1994/95 budget figures.

Private sector funding

As part of development processes, private sector developers can be required to:

- construct local streets and pedestrian and cycling infrastructure, and cater for public transport;
- provide public transport interchanges in retail centres;
- pay contributions to upgrades of local arterial roads; and
- provide land for future transport corridors.

Private transport providers also invest significant amounts in bus and taxi fleets, which are essential elements of the region's public transport system.

The amount of private sector investment in the region is significant but almost impossible to accurately estimate without detailed work. It could be between $300 and $500 million each year.

The majority of private sector road development funds are invested in constructing new urban streets as part of land development works. Monetary or in-kind contributions to State main road infrastructure totalled less than $20 million in 1994/95.

Table 1 Public sector funding for transport in South East Queensland in 1994/95

Road infrastructure	
National Highways	$76 m
Other State roads	$210 m
Local government roads	$265 m
Bus priority measures on roads	$8 m
Sub total	$559 m
Rail and intermodal infrastructure	
Intermodal facilities	$5 m
Passenger rail capital works	$170 m
Sub-total	$175 m
Passenger services	
Passenger rail subsidies	$94 m
Subsidies to private bus operators	$12 m
School transport subsidies	$56 m
State subsidy to Brisbane City Council buses	$29 m
Brisbane City Council subsidy to BCC buses	$40 m
Kerbside infrastructure by SEQ local govts	$10 m
Sub-total	$241 m
Bikeways and pedestrian paths (estimate)	$10 m
Rail freight subsidy (SEQ estimate)	$40 m
Total public funds for transport in SEQ	$1025 m

Chapter 3. Consultation

3.1 Consultation on the structure of the region

The IRTP was a key recommendation of the *Regional Framework for Growth Management* which is a strategy developed by the three spheres of government to manage growth in the region up until the year 2011. This was the major outcome of the SEQ 2001 regional planning project and represents the community's vision for the region.

Extensive consultation and refinement during the SEQ 2001 project produced a land use framework and significant transport policies and actions which have been incorporated in this IRTP. In addition, the four Sub-Regional Organisations of Councils have produced planning reports which contain significant transport recommendations. These have also been considered in this IRTP.

This IRTP aims to set the strategic directions in the development and management of the transport system in a way that is consistent with the community's vision for the region.

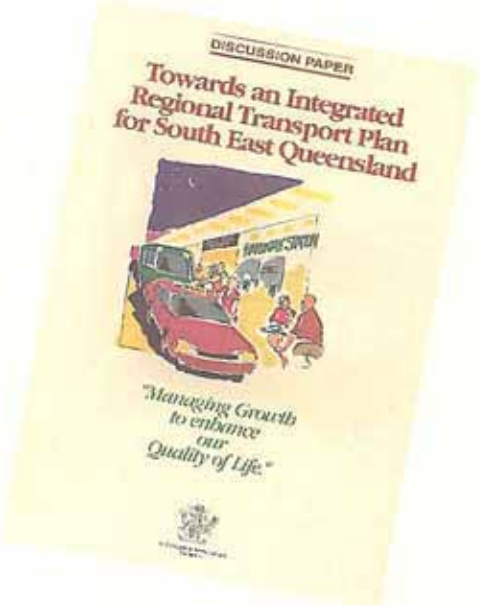
3.2 IRTP consultation

This IRTP was developed with very extensive input from the community.

The process provided the community with the opportunity to have input on how the future transport system will support the *Regional Framework for Growth Management* plans for the structure of the region, not just on where a pre-determined transport facility should be built.

The IRTP consultation process involved two phases:

- a Discussion Paper phase to provide an opportunity for views to be expressed on regional transport issues; and
- a Draft IRTP phase which made the Draft IRTP available for public comment following consideration of the comments received on the Discussion Paper.



Phase 1: Discussion Paper

The Discussion Paper consultation process involved:

- an information brochure with a tear-off survey form to 735 000 households;
- the distribution of 21 000 Discussion Papers;
- a toll free telephone information hot-line;

- 22 workshops around the region; and
- meetings and seminars with major interest groups.

The Regional Transport Reference Group was established to provide independent advice and comment on the development of the Plan. Membership comprised non-government organisations, unions, transport interest groups, industry groups and government departments.

The strong public response to the consultation process included:

- 45 000 survey responses;
- 1200 comprehensive written submissions; and
- attendance of over 1000 people at workshops and seminars.

The Regional Transport Reference Group prepared a major communique setting out key issues and strategies which it considered worthy of broad community support.

In all, nearly 50 000 South East Queenslanders were interested in giving their views on regional transport issues.

Strong public support was given for:

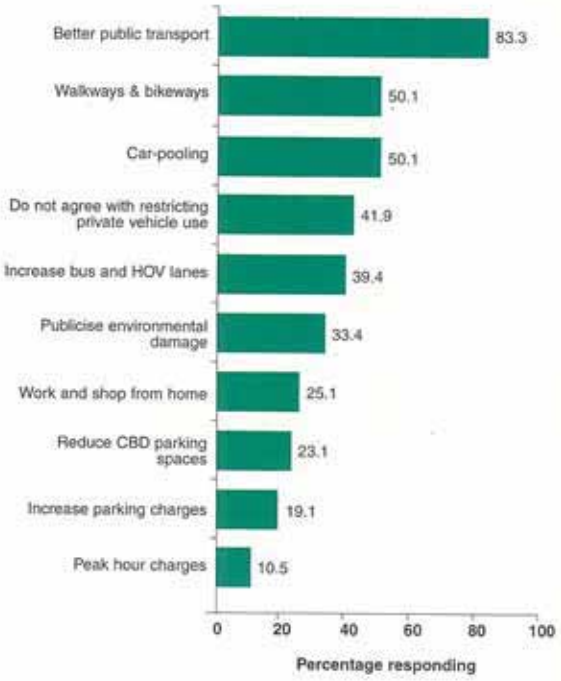
- improving public transport by increasing services and reducing fares;
- using non restrictive measures for reducing private vehicle use;
- constructing ring roads and using more rail freight to reduce the interaction between private and heavy vehicles in urban and city centres; and
- increasing the attractiveness of walking and cycling through more bicycle and pedestrian paths and bicycle storage facilities.

People supported the construction of new major roads where there is:

- a clearly identified need;
- fuller evaluation of environmental impacts; and
- accountable planning and decision making processes in place.

In response to the possible introduction of tougher travel demand management measures or the raising of revenue for roads on a "pay as you go" rather than a fixed cost basis, there

Support for each option for decreasing private vehicle use



was a reluctance to consider changes until alternative public transport systems were improved. The use of public education campaigns, akin to anti-drink driving and anti-smoking campaigns, was seen as a more acceptable measure to help change travel culture, at least in the short term.

Perhaps the most encouraging response was the widespread support for developing an integrated transport program which supports agreed land use outcomes. People clearly appreciated that a regional strategy represents the best chance to change the current trends towards increasing car dependency.

Phase 2: Draft IRTP

The Draft IRTP was released in August 1996 for public comment. The consultation process involved:

- 21 000 Information Brochures;
- a toll free telephone information hot-line;
- internet site;
- 13 workshops around the region; and
- meetings and seminars with local governments and major interest groups.

A total of 547 submissions on the Draft IRTP were received:

- 15 from local government or groupings of local governments;
- 31 from major interest groups;
- 220 form letters; and
- 281 individual submissions.

The key themes from submissions were:

a) strong support for the concept of an IRTP;

b) concern that any proposal to increase rail freight capacity would impact on environmentally sensitive areas in southern Brisbane;

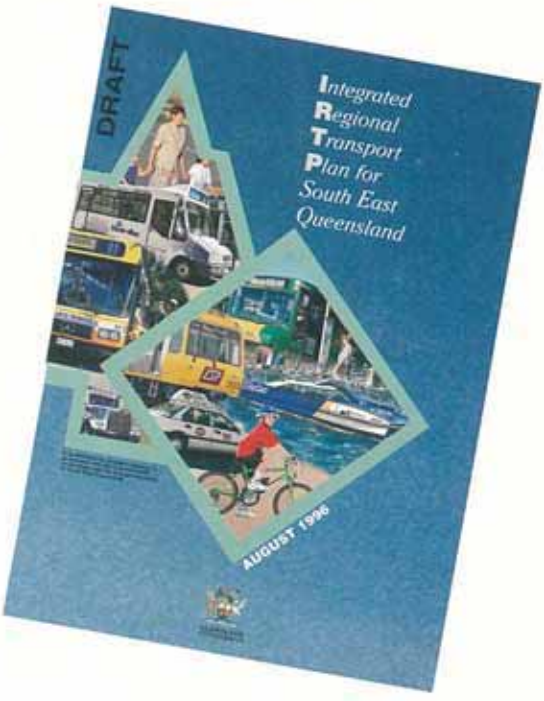
c) concern that western metropolitan transport capacity improvements would include only road based solutions;

d) mixed views about the IRTP targets (considered too low by environment and community groups, and too high by industry bodies and some local governments);

e) comments, especially from local government, about the funding shortfall and implementation timing for projects;

f) strong support for actions aimed at improving public transport and reducing car travel demands;

g) divided opinion on road congestion (its use as a travel restraint measure versus impacts on the economy);



h) comment that cycling and walking ought to be treated more directly; and

i) concern about the environmental impacts of transport.

There is widespread support for an integrated transport plan which supports agreed land use outcomes. And while the community wants to see the environmental impacts of transport minimised, there remains debate in the community about the level to which the use of the private vehicle should be restricted.

This IRTP maintains the targets set out in the Draft IRTP, but now sets individual targets for walking and cycling. The analysis shows that the Draft IRTP targets are achievable but difficult targets, given the community's current reluctance to change travel behaviour.

However, the IRTP aims to build on the community's support for minimising environmental impacts to help achieve the targets. By making improvements to public transport, cycling and walking facilities, these modes will be available as realistic options more often. Also, by continuing to provide information to the community on the impacts that personal travel choices have on the environment and communities, it is expected that travel behaviour will gradually change.

The next review of the IRTP will be able to take account of updated census and travel data to determine how actual travel behaviour relates to the targets. Changing conditions and community values will be considered and the targets and strategies revised accordingly.

The two issues which attracted the most comment on the Draft IRTP were rail freight capacity and western metropolitan transport capacity. These issues have been addressed by clearly defining the scope of specific transport investigations into these two matters, and staging the studies so that an integrated analysis of needs and problems is conducted before any new corridors are considered.

Cycling and walking have been treated more directly in this IRTP by consolidating and augmenting the cycling and walking material that was dispersed through the Draft IRTP into one chapter.

Comment about implementation has been addressed by strengthening the implementation section of the IRTP and establishing an indicative three year program to outline the first stages of implementation in more detail. Each year, an addendum will be produced which will outline the updated three year implementation program.

3.3 The vision for the region

A vision for transport in the future

Extensive community consultation has contributed to the development of a long term strategic vision for the transport system of South East Queensland. The vision for South East Queensland's transport system will ensure more efficient passenger movements, support economic development, enhance environmental sustainability, improve safety and reduce car dependency.

This can be achieved through:

- a high quality, seamless and accessible public transport network which covers all sectors of the urban area and provides rapid transit to all the major centres;
- priority operating conditions for road-based public transport through an interconnected system of busways, bus lanes and transit lanes;
- high quality, cost-effective rail services for suburban and inter-urban travellers;
- public transport interchanges centrally located in major urban centres;
- more variety of activity at public transport facilities;
- quality park-and-ride facilities where major arterial roads pass near public transport stations;
- a continuous system of major arterial roads giving priority to road based public transport, high occupancy vehicles and freight;

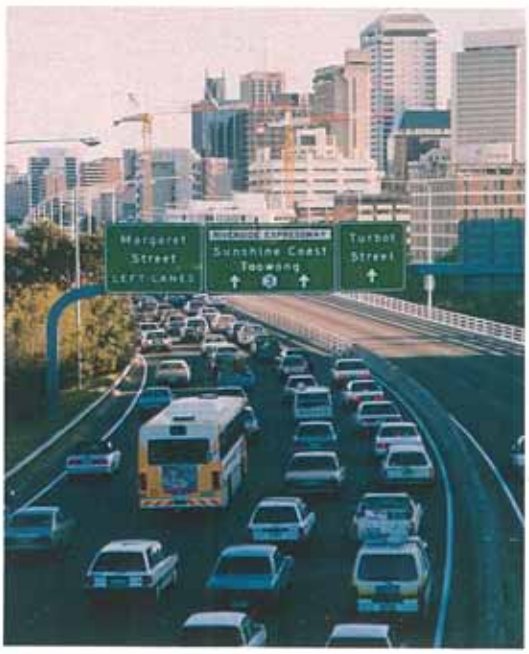
- a freight transport system connecting major freight terminals, commercial and industrial areas which minimises the negative impacts on communities;
- local arterial roads planned and provided as part of urban development, to avoid major highways being clogged by local traffic;
- neighbourhood streets where pedestrians and cyclists share space with cars operated at slow speeds;
- a continuous network of pedestrian and cycling paths connecting across suburbs, cities and towns; and
- improved urban design along major mass transit routes and around public transport stations so more people live and work within an easy walk of public transport.

Community consultation revealed a mood for significant changes to current travel trends. This long term vision reflects this mood for change. But to achieve this vision, short term objectives and actions are needed. Major changes must begin now if current trends are to be reversed.

PART B Shaping the future transport system

Chapter 4: A new approach to transport planning

4.1 Need for a new approach



As the number of people living and working in South East Queensland grows, the high costs of car dependency are becoming noticed through:

- financial costs of providing additional road capacity;
- social costs imposed on nearby communities;
- environmental costs of air pollution; and
- increasing congestion and impacts on business and industry.

What is needed is a major shift towards more efficient, environmentally friendly modes of transport which can provide people with access and mobility without the undesirable impacts of single occupant car travel. This will require concerted efforts on behalf of government and private sector operators to improve the quality and coverage of public transport. Pedestrian and cycling facilities will have to be improved and better integrated into land use planning. Utilising road space more efficiently in peak hours by sharing rides will also avoid the need to add more road capacity. Planning and ultimate construction of a road network in developing areas will support passenger transport, freight, economic development and provide a system of roads for local trips.

And recognising the impacts of major transport facilities on subsequent land use and urban development patterns will allow these facilities to be designed to support more self-contained urban communities which reduce the amount people have to travel.

4.2 The IRTP approach

Success in developing a more sustainable transport system will begin with a fundamental change in the way transport projects are developed in the first place.

Past approaches to transport planning were based on identifying and satisfying likely growth in peak period travel demand. The emphasis was on moving cars, not people. Individual components of the transport system such as roads or rail lines were planned in isolation, and there was little opportunity to consider the system as a whole.

The IRTP recognises that the transport system must be managed and developed alongside decisions about broader urban development and lifestyle choices. It uses a new, better

integrated approach to transport planning which considers public transport, road traffic capacity, non-motorised transport and travel reductions together.

ACTION:
A 4.1 Adopt IRTP planning guidelines

4.3 IRTP objectives for more sustainable transport

South East Queensland needs an integrated transport system which can reduce dependence on the private car and encourage increased use of public transport and shared rides, as well as more opportunities for walking and cycling. This will free up valuable road space and defer or avoid the need to add capacity to the road system.

Meeting the transport task with less vehicle trips will also have "flow-on" effects including less congestion for road freight movements, and less emissions of pollutants and greenhouse gases to the enviroment.

Better public transport will also provide considerable social benefits for those who do not have access to a car.

These broad aims have been translated into the following objectives for the IRTP:

- *developing a more sustainable transport system* - by increasing the proportion of trips made by public transport, walking and cycling, and in shared rides, and reducing growth in peak commuter car travel;
- *restraining the growth of peak period car travel demands* - by reducing the predominance of single occupant vehicle travel, increasing ride-sharing, improving public transport, eliminating unnecessary trips and better sharing of the load around the network to make the most of the existing transport system;
- *providing efficient and sufficient road capacity* - by planning to meet moderated traffic demands and accommodate the growth of the region's urban areas;
- *ensuring the efficient movement of freight* - by high quality rail, road, air and sea links and intermodal facilities;
- providing improved facilities for pedestrians and cyclists;
- *coordinating transport and land use planning* - by supporting more compact, better designed urban development which supports public transport and allows people to walk and cycle more;
- *ensuring social justice* - by a more inclusive transport system which shares the costs and benefits of transport equitably across the region; and
- *maintaining environmental quality* - by cleaner vehicles and better approaches to providing transport infrastructure.

4.4 The IRTP targets

Public transport targets

Public transport's share of the total SEQ travel market has been in decline over the past few decades, dropping from 40% in 1960 to 7% in 1992. While the decline has slowed, the slide towards increased car use will continue unless concerted action is taken to improve public transport and introduce supporting travel demand management measures to make it more competitive relative to the car.

The IRTP seeks to increase the current proportion of trips made on public transport in the region by 50% in the year 2011. The overall market share of public transport would increase from 7.0% in 1992 to 10.5% of all trips, compared with a decline to about 6.3% if present trends continued. Such a target is well above the levels generally found in Australian cities and towns.

This target was established in the *Regional Framework for Growth Management.* It is a target for the entire region and will vary depending upon the type of community and the ability of public transport services to compete with car travel.

Analysis has been made of the ability to achieve the 50% increase, as well as higher increases, and the overall cost and effectiveness of achieving such a target. This work is in documents which support the IRTP.

The analysis concluded that reversing the current decline and achieving a 50% increase in public transport's share of all travel is an achievable, although difficult, target. It would reduce estimated vehicle travel demand in 2011 by 9%, from 93 million to 85 million vehicle kilometres each day.

The first step is to plan a transport system which can accommodate increased public transport use and reduced car dependency.

The projected population increase of 60% between 1992 and 2011 will also impact on the capacity of the future public transport system. To achieve this seemingly modest 50% increase in public transport's share of travel by 2011, the public transport system will have to cater for 1 240 000 trips each day, an increase of 154% on 1992 levels.

The possibility of doubling the present share of trips by public transport (from 7% to 14% of all trips) throughout South East Queensland by the year 2011 was assessed and found not to be achievable without:

- a significant revision of current plans for urban expansion; and
- the introduction of tough measures to restrain the use of private cars in peak periods.

Neither of these appear to be feasible given current community lifestyle and travel preferences. However in subsequent revisions of the IRTP it may be possible to establish such a target for the year 2021 or beyond.

The City of Brisbane has higher overall population densities, higher traffic congestion and a stronger tradition of public transport use. A 100% increase within the city boundaries would be achievable with the right mix of policies and investment to improve public transport and discourage private vehicle use.

The Brisbane City Council's TravelSmart policy advocates a doubling of public transport use within the City boundaries. Achieving such a target would be necessary to help achieve the overall regional target, and it is therefore strongly supported by proposals in this IRTP.

Sub-regional targets for increased public transport travel

Since different parts of the region are, by nature, more dependent on car travel, the regional target of 10.5% has been broken down into achievable sub-regional components which still yield the same overall result:

Sector	Trend 2011 public transport mode split	Target 2011 public transport mode split
Sunshine Coast	2.3%	6.5%
Gold Coast	2.4%	6.5%
Metropolitan Brisbane (including Brisbane City)	8.4% (8.5%)	13.0% (17.0%)
Ipswich	8%	13%
Toowoomba	2%	6.5%
Balance*	3.6%	4.3%
Total for region	6.3%	10.5%

(* Balance: North West, South West, Laidley corridor)

These sub-regional targets have been translated onto the ground using "screenline" targets which intersect the major movement corridors at key points around the region. This will allow the capacity of the transport system crossing these screenlines to be tailored toward achieving the overall sector targets.

In many cases, the targets will lead to more public transport capacity, and reduce the need to provide additional general road traffic capacity. For the first time, there will be a means of actively planning and providing transport services and facilities which meet agreed regional travel outcomes.

The process of implementing this IRTP will involve the preparation of more specific integrated local transport plans which translate the policies and planning approach into plans which suit local communities.

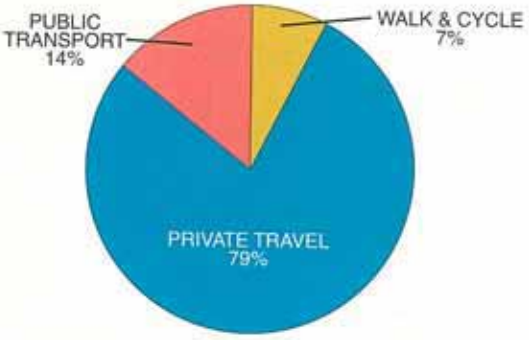
Walking and cycling targets

In 1992 about 15% of all trips were by non-motorised modes, although this dropped to less than 7% for journeys to and from work. For most people, walking journeys of up to 2 km and cycling journeys of up to 15 km are possible. These non-motorised modes can provide cost-effective and environmentally responsible means of transport. The IRTP aims to increase the proportion of cycling trips from 2% to 5%, and the proportion of walking trips from 13% to 15% to achieve a target of 20% for non-motorised modes in 2011. This can be achieved by providing the right facilities and by improving the structure of urban areas, for example, through:

- improved facilities for pedestrians and cycling, including well-connected networks of paths, bikeways and bicycle lanes across cities and towns, and secure bicycle lockers at shops, major transport stops and places of employment;
- better design of town centres and neighbourhoods to improve connectivity, accessibility and safety for pedestrians and cyclists (including local streets which are shared spaces between pedestrians, cyclists and slow vehicles);
- developing options to allow cycles onto public transport at all times;
- ensuring residences and businesses are oriented towards local streets and pathways to improve pedestrian security; and
- encouraging people to fulfil needs locally by more compact communities and better mixing of land uses.

Peak demand factors

Mode of travel to work
Brisbane Statistical Division 1991



IRTP targets are for 24 hour travel.
Mode shares are different for peak hours.

Vehicle occupancy targets

It has been estimated that the region's average vehicle occupancy rate declined from 1.4 in 1976 to about 1.3 persons per vehicle in 1992. With increasing car ownership and diversity of trips, this is predicted to decline further unless concerted action is taken to support more efficient use of road space.

Increasing vehicle occupancies, particularly in peak periods, will result in major savings in the need to provide additional road capacity. The IRTP target for vehicle occupancy is 1.4 persons per vehicle in 2011. This will result in a saving of about 8 million vehicle kilometres per day, which is about the same saving as will be gained by increasing public transport use by 50%. It would also reduce fuel consumption by over 700 000 litres each day.

Measures to increase vehicle occupancy include:

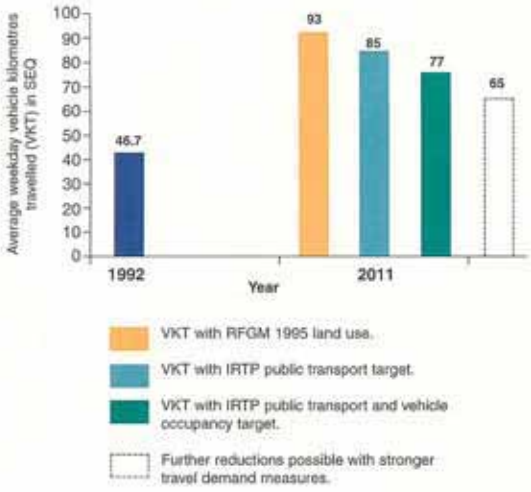
- high occupancy vehicle lanes or "transit lanes" to give multi-occupant vehicles priority, congestion free running;
- discount city parking and priority parking for cars entering with multiple occupancy;
- promoting ride sharing as part of corporate and household trip reduction strategies; and
- introducing ride-sharing schemes such as car pools and van pools to pick up and drop off people at their door.

Vehicle kilometres travelled targets

In 1992, the average weekday vehicle kilometres travelled per person in the region was 25 km. Under current trends, the combined impact of social factors and urban expansion is projected to result in an increase in average weekday vehicle kilometres travelled to 31 km per person in 2011.

The IRTP target for 2011 is to maintain vehicle kilometres travelled at 1992 levels of 25 km. Achievement of the public transport, walking, cycling and vehicle occupancy targets outlined in this chapter would allow this target to be achieved.

Vehicle kilometres travelled



Targets for more sustainable transport

The IRTP seeks to achieve the following travel targets by the year 2011:

- proportion of trips by public transport increased by 50% from 7.5% to 10.5% of all trips;
- proportion of trips by cycling increased from 2% to 5% (+323%*);
- proportion of walking trips increased from 13% to 15% (+95%*);
- a big increase in daily public transport use + 751 000 trips (+ 154%*);
- increased average vehicle occupancy to 1.4 persons (+ 10%*);
- total daily private vehicle trips reduced from 7.2 million under trend to 5.9 million, or 19% less than trend(+ 38%*);
- total reduction on trend fuel consumption of 1.4 million litres each day; and
- total reduction in average weekday vehicle kilometres travelled from 31 km per person under trend to 25 km (0%*)

* (%) shown are increases on 1992 levels

4.5 Applying the new planning approach

The IRTP establishes targets and proposes strategic actions to shape the future transport system.

Over the next three years, more detailed integrated local transport plans and corridor studies will design local transport networks based on achieving the sector and screenline targets for increased public transport use, non-motorised transport and vehicle occupancy.

The IRTP targets can be met by applying the new planning approach to local transport plans and corridor studies, and providing the right sort of transport services. Transport facilities must also build on and support agreed urban settlement patterns, and help restrain the continuing expansion of the region's cities.

The targets will guide the development of transport investment projects and policy settings by State and local government agencies.

To support the achievement of the targets, and establish the basis for the future regional transport system, the IRTP has also developed actions, transport investment opportunities and other investigations which are based on achieving the swing away from car dependency.

Apart from the transport mode targets, these actions and opportunities also take account of:

- policies and opportunities derived from the public consultation program;
- agreed housing, employment and industry location plans; and
- best practice in urban transport planning.

ACTION:
KA 4.2 Incorporate the IRTP targets into Integrated Local Transport Plans

4.6 Strategic transport opportunities

The maps on the following pages show the strategic transport system development opportunities. These are explained in the remaining chapters that make up Part B of this plan, with Part C providing details of implementation. The text accompanying the maps briefly describes the purpose of each opportunity and gives a reference to the relevant IRTP action.

The IRTP projects are derived from a strategic regional transport planning analysis. In many cases, only the strategic transport task is identified, with more detailed work and consultation needed to determine the right mix of transport

services. This will either be done as part of integrated local transport planning processes, or in specific planning in major transport corridors.

The results of these processes will feed into the next review of the IRTP.

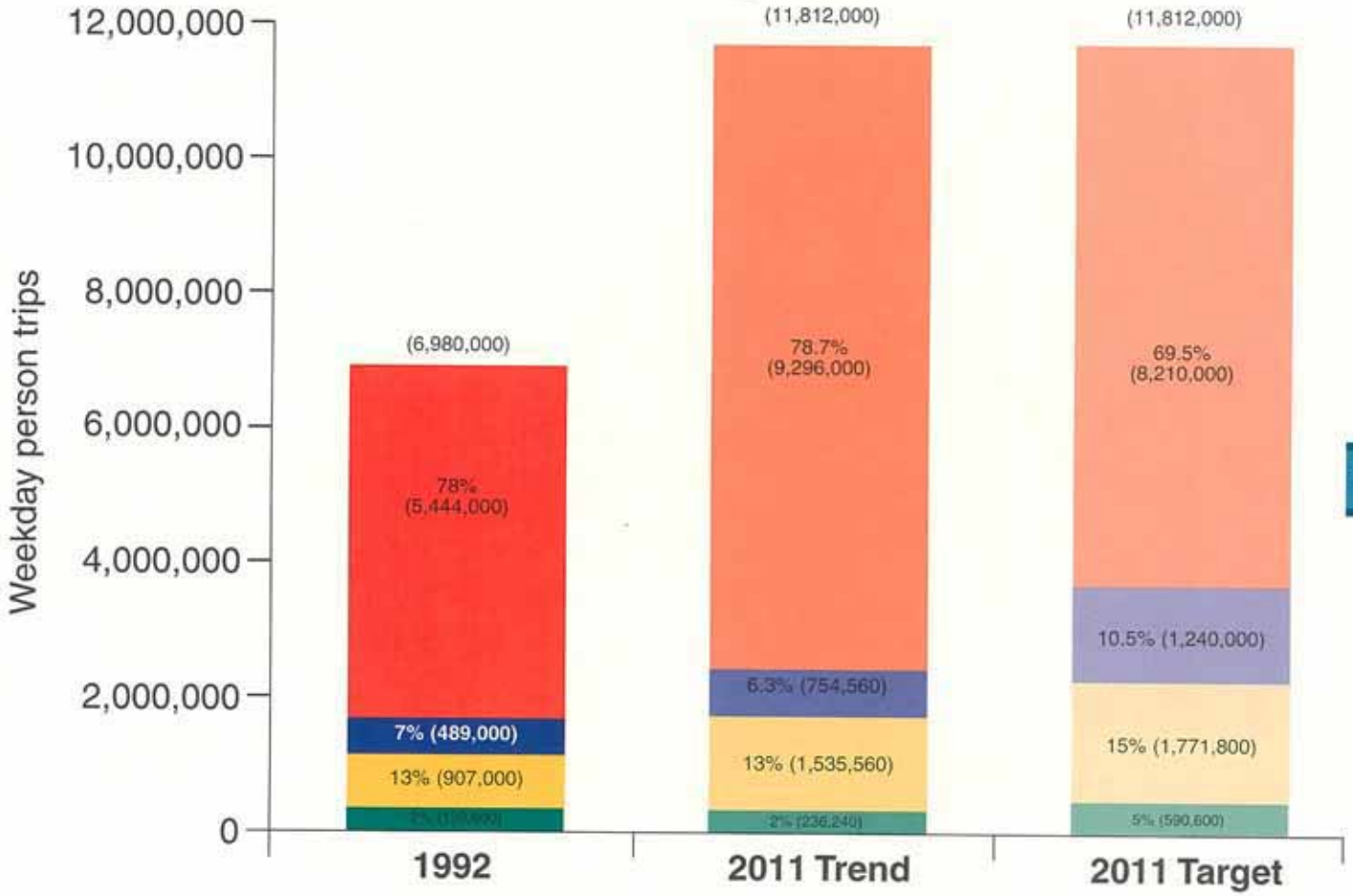
Before a firm commitment to undertake any investment project is made:

- the project must be evaluated through government investment appraisal processes to ensure they represent appropriate commitments of public funding and to determine the optimum timing of investment; and

- detailed public consultation will be undertaken in accordance with adopted guidelines, to ensure the full range of issues and concerns are addressed.

The evaluation processes are discussed in further detail in the implementation section, Part C, of this IRTP.

IRTP targets



- Decrease proportion of trips by private vehicle by 9%
- Increase proportion of walking trips from 13% to 15%
- Increase proportion of cycling trips from 2% to 5%
- Increase proportion of trips by public transport by 50% – from 7% to 10.5%

NOTES: Weekday person trips is the number of people making trips rather than the number of vehicles. The IRTP uses person trips to provide a better basis for planning a mix of transport modes.

The target to increase average vehicle occupancy from 1.3 to 1.4 will also reduce the number of vehicles needed to carry the 8,210,000 trips that would be taken in cars.

How the IRTP works

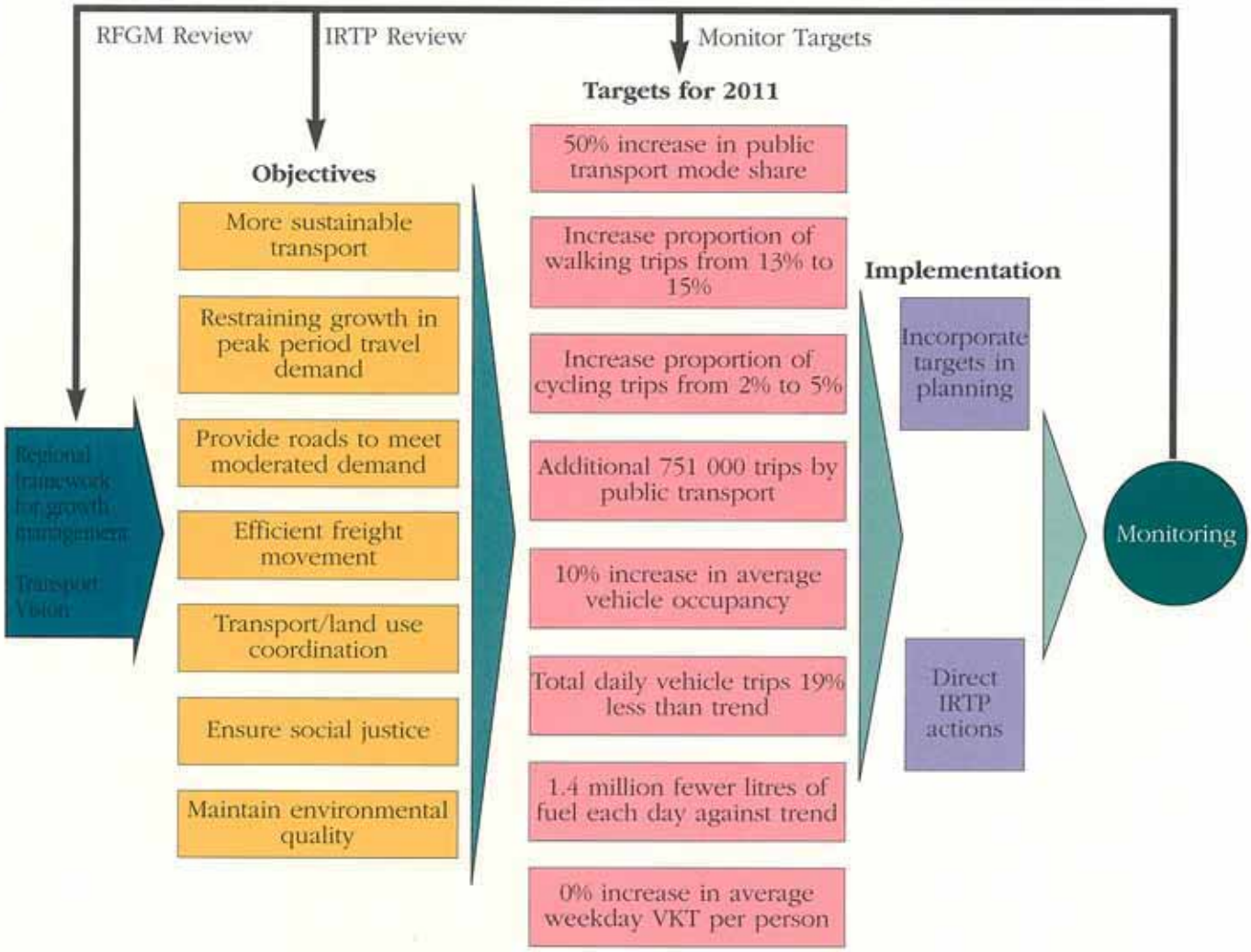
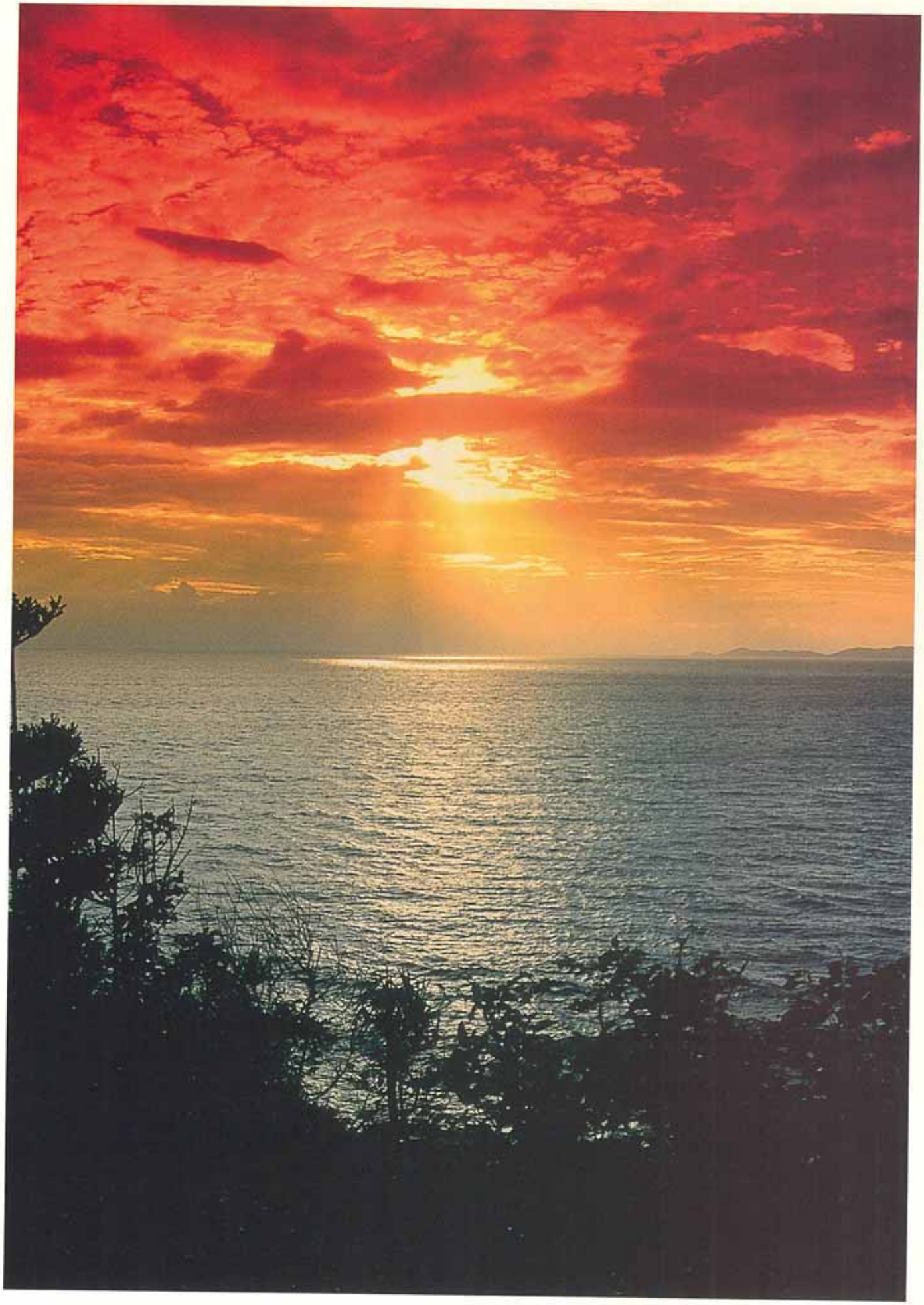
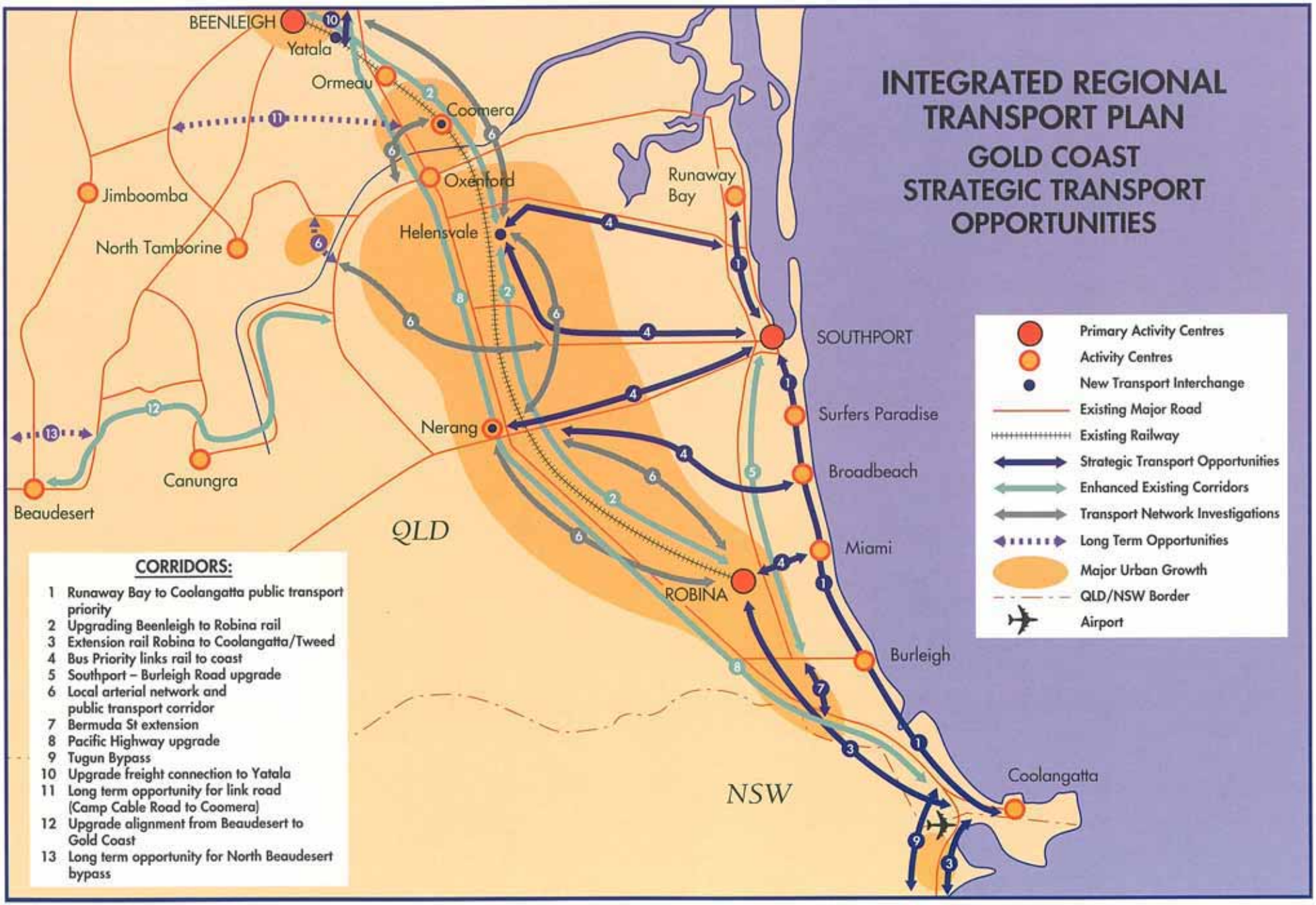


TABLE 2 – Network performance Indicators

Performance criteria	1992 **Existing** 7.0% Public Transport*	2011 **Trend** 6.3% Public Transport*	2011 **Target** 10.5% Public Transport*	2011 **Target** 10.5% Public Transport and 1.4 Vehicle occupancy
Average trip time	17 minutes	34 minutes	30 minutes	26 minutes
Average vehicle speed	44 km/h	27 km/h	30 km/h	33km/h
Carbon monoxide	18 t/km²/y	56 t/km²/y	47 t/km²/y	39 t/km²/y
Hydrocarbons	5 t/km²/y	12 t/km²/y	11 t/km²/y	9 t/km²/y
Oxides of nitrogen	1.4 t/km²/y	2.9 t/km²/y	2.6 t/km²/y	2.4 t/km²/y

Note:The 2011 figures are based on hypothetical no increase in road capacity.
*Vehicle occupancy of 1.288.

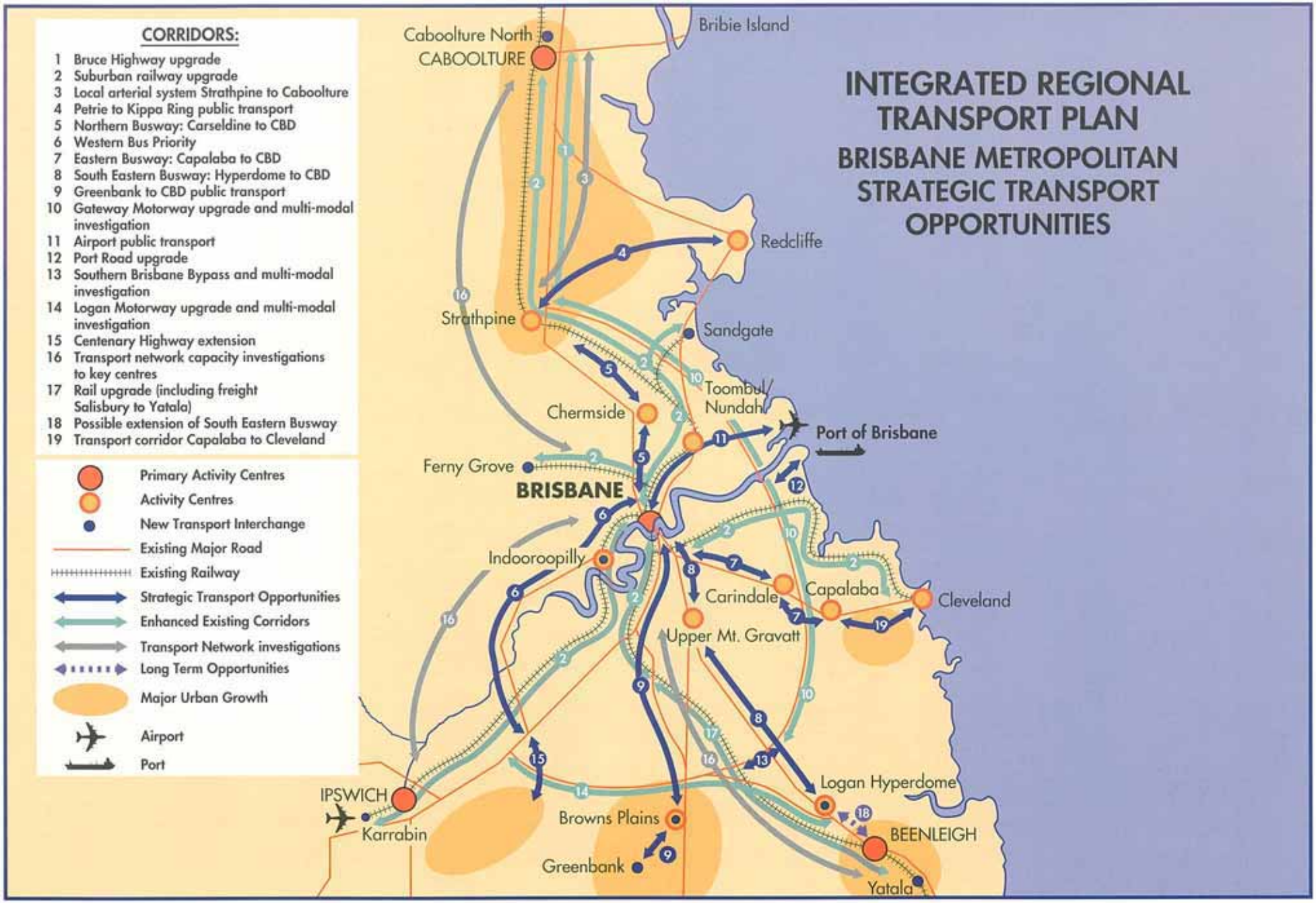



INTEGRATED REGIONAL TRANSPORT PLAN
GOLD COAST STRATEGIC TRANSPORT OPPORTUNITIES
BEENLEIGH
Yatala
Ormeau
Coomera
Oxenford
Helensvale
Jimboomba
North Tamborine
Nerang
Canungra
Beaudesert
Runaway Bay
SOUTHPORT
Surfers Paradise
Broadbeach
Miami
ROBINA
Burleigh
Coolangatta
QLD
NSW
Primary Activity Centres
Activity Centres
New Transport Interchange
Existing Major Road
Existing Railway
Strategic Transport Opportunities
Enhanced Existing Corridors
Transport Network Investigations
Long Term Opportunities
Major Urban Growth
QLD/NSW Border
Airport
CORRIDORS:
1 Runaway Bay to Coolangatta public transport priority
2 Upgrading Beenleigh to Robina rail
3 Extension rail Robina to Coolangatta/Tweed
4 Bus Priority links rail to coast
5 Southport – Burleigh Road upgrade
6 Local arterial network and public transport corridor
7 Bermuda St extension
8 Pacific Highway upgrade
9 Tugun Bypass
10 Upgrade freight connection to Yatala
11 Long term opportunity for link road (Camp Cable Road to Coomera)
12 Upgrade alignment from Beaudesert to Gold Coast
13 Long term opportunity for North Beaudesert bypass

Gold Coast (GC) strategic transport opportunities

Code	Corridor	Type	Concept	Related Actions *
GC 1	Runaway Bay to Coolangatta public transport priority	strategic transport opportunity	Improve flow conditions for buses and visibility of bus system. Allow for incorporation of light rail or other new transport modes as demand dictates.	A 5.1 c KA 5.2 g KA 5.4 b SIG 5.6 f A 5.15 KA 5.23 c
GC 2	Beenleigh to Robina rail	enhanced existing corridor	Upgrade running time of inter-urban rail. Introduce suburban rail and additional stations with development.	A 5.14 A 10.6 f A 10.7 g KA 10.13 a
GC 3	Extension of rail Robina to Coolangatta/Tweed	strategic transport opportunity	Identify and preserve an alignment. Introduce right mode of transport for the task.	KA 5.2 b KA 8.15 KA 8.10 d
GC 4	Bus priority linking rail to coast	strategic transport opportunity	Congestion free running for buses between the rail and the coast.	KA 5.4 A 10.6 g
GC 5	Southport - Burleigh Rd upgrade	enhanced existing corridor	Upgrade to cope with growth in local traffic.	KA 8.2 KA 8.12 a
GC 6	Local arterial network and public transport corridor	transport network investigation and long term opportunity	Network of local arterials to carry local traffic and provide inter-connected system for buses.	KA 8.10 d KA 8.13 a KA 8.15
GC 7	Bermuda St extensions	trategic transport opportunity	Support role of Southport-Burleigh Rd as main north-south connector for local traffic.	KA 8.2 KA 8.11 a KA 8.15
GC 8	Pacific Mwy	enhanced existing corridor	Upgrade to cope with growth and serve as regional connection. Supporting measures are included to ensure highway can continue to serve its regional role.	KA 8.12 b KA 8.15
GC 9	Tugun Bypass	strategic transport opportunity	Further improve standard of Highway 1 and allow old highway to cater for local movements.	KA 8.2 KA 8.11 b KA 8.15 KA 9.6
GC 10	Freight connection to Yatala	strategic transport opportunity	Improve freight connections to encourage industries to locate in industrial areas and support economic development.	KA 8.2 KA 9.5 b KA 9.6
GC 11	Link road (Camp Cable Rd to Coomera)	long term opportunity	Identify corridors and preserve ahead of land development so opportunities to improve transport movement are protected.	KA 8.2 A 8.14 a KA 8.15
GC 12	Alignment from Beaudesert to Gold Coast	enhanced existing corridor	Upgrade to improve intra-regional and inter-regional connectors, particularly when combined with improved alignment between Beaudesert and Cunningham Hwy.	KA 8.2 KA 8.12 C
GC 13	North Beaudesert Bypass	long term opportunity	Improve freight connection between Yatala and Bromelton.	KA 8.2

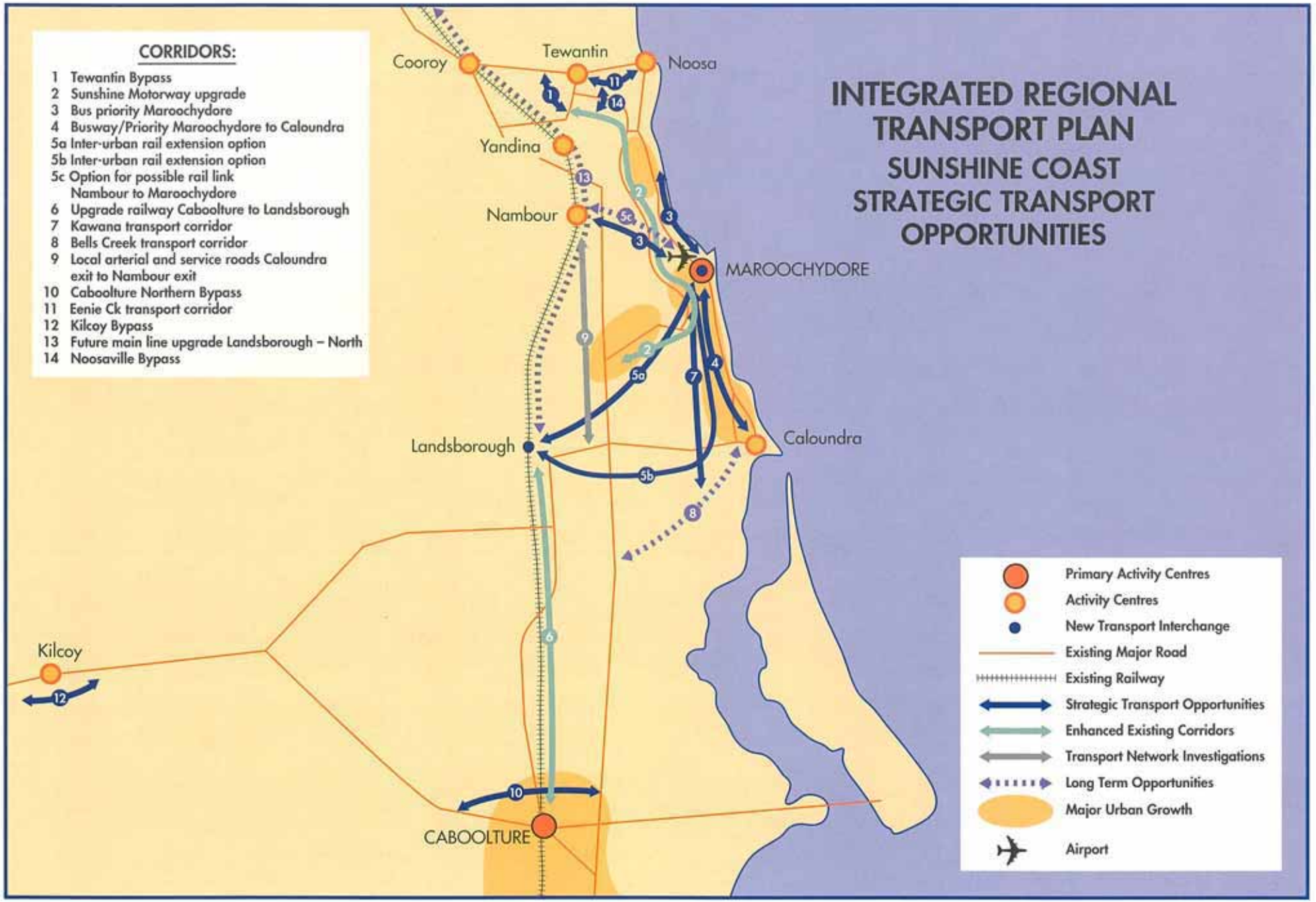
* Chapter 17 provides a detailed list of actions.


INTEGRATED REGIONAL TRANSPORT PLAN
BRISBANE METROPOLITAN STRATEGIC TRANSPORT OPPORTUNITIES
CORRIDORS:
1 Bruce Highway upgrade
2 Suburban railway upgrade
3 Local arterial system Strathpine to Caboolture
4 Petrie to Kippa Ring public transport
5 Northern Busway: Carseldine to CBD
6 Western Bus Priority
7 Eastern Busway: Capalaba to CBD
8 South Eastern Busway: Hyperdome to CBD
9 Greenbank to CBD public transport
10 Gateway Motorway upgrade and multi-modal investigation
11 Airport public transport
12 Port Road upgrade
13 Southern Brisbane Bypass and multi-modal investigation
14 Logan Motorway upgrade and multi-modal investigation
15 Centenary Highway extension
16 Transport network capacity investigations to key centres
17 Rail upgrade (including freight Salisbury to Yatala)
18 Possible extension of South Eastern Busway
19 Transport corridor Capalaba to Cleveland
Primary Activity Centres
Activity Centres
New Transport Interchange
Existing Major Road
Existing Railway
Strategic Transport Opportunities
Enhanced Existing Corridors
Transport Network investigations
Long Term Opportunities
Major Urban Growth
Airport
Port
Caboolture North
CABOOLTURE
Bribie Island
Redcliffe
Strathpine
Sandgate
Toombul/ Nundah
Chermside
Port of Brisbane
Ferny Grove
BRISBANE
Indooroopilly
Carindale
Capalaba
Cleveland
Upper Mt. Gravatt
IPSWICH
Karrabin
Browns Plains
Greenbank
Logan Hyperdome
BEENLEIGH
Yatala

Brisbane metropolitan (BM) strategic transport opportunities

Code	Corridor	Type	Concept	Related Actions *
BM 1	Bruce Hwy	enhanced existing corridor	Upgrade to cope with growth. Apply package of measures to ensure highway can serve its regional function.	KA 8.10 KA 8.12 d KA 9.6 f A 10.6 a
BM 2	Suburban railway	enhanced existing corridor	Increase rail capacity as passenger demand grows.	KA 5.3 b A 5.10 A 10.6 b, d, e A 10.7 a KA 10.13 b, c, f KA 10.14 a
BM 3	Local arterial system Strathpine - Caboolture	transport network investigation	Improve local traffic and public transport movement in this growth corridor so that Bruce Hwy can cope with growth in regional traffic.	KA 8.2 KA 8.10 a KA 8.13 b
BM 4	Petrie - Kippa Ring public transport	strategic transport opportunity	Test options for best mode of public transport in urban growth area and introduce services.	KA 5.2 c SIG 5.6 e KA 10.13
BM 5	Northern busway: Carseldine - CBD	strategic transport opportunity	Speed flow of buses through congestion and improve visibility of system. System will integrate with the suburban rail network and will be designed to light rail grades to allow conversion when warranted.	KA 5.4 SIG 5.6 b A 10.7 b
BM 6	Western bus priority	strategic transport opportunity	Speed flow of buses through congestion and improve visibility of system. System will integrate with the suburban rail network and will be designed to light rail grades to allow conversion when warranted.	KA 5.2 i KA 5.4 SIG 5.6 c A 10.7 e
BM 7	Eastern busway: Capalaba - CBD	strategic transport opportunity	Speed flow of buses through congestion and improve visibility of system. System will integrate with the suburban rail network and will be designed to light rail grades to allow conversion when warranted.	KA 5.4 SIG 5.6 d A 10.7 d, f
BM 8	South Eastern busway: Hyperdome - CBD	strategic transport opportunity	Speed flow of buses through congestion and improve visibility of system. System will integrate with the suburban rail network and will be designed to light rail grades to allow conversion when warranted.	KA 5.4 SIG 5.6 a A 10.7 c, j
BM 9	Greenbank - CBD public transport	strategic transport opportunity	Line haul P.T. connection to Browns Plains - Greenbank growth area	KA 5.2.a KA 5.3.e KA 5.4 SIG 5.6 g A 10.7 k KA 10.13 e
BM 10	Gateway Motorway and multi-modal investigation	enhanced existing corridor	Ensure Gateway/Logan Mwy system can continue to perform its role for regional movement and economic development.	A 9.2 KA 9.6 d
BM 11	Airport public transport	strategic transport opportunity	Enhance public transport link from airport to CBD.	A 5.1 d KA 5.2 f KA 5.4
BM 12	Port Rd	strategic transport opportunity	Secure vital link in regional network.	KA 8.11 c KA 9.6 a
BM 13	Gateway Mwy extension multi-modal investigation	strategic transport opportunity	Ensure Gateway/Logan Mwy system can continue to perform its role for regional movement and economic development.	A 9.2 KA 9.6 c
BM 14	Logan Motorway multi-modal investigation	enhanced existing corridor	Ensure Gateway/Logan Mwy system can continue to perform its role for regional movement and economic development.	KA 8.12 e A 9.2 KA 9.6 b
BM 15	Arterial road and public transport Springfield/ Ripley/Ipswich	strategic transport opportunity	Support Springfield/Ripley urban growth corridor with appropriate local road connections and line haul public transport. Support Ipswich Key Centre.	A 5.1 KA 8.10 A 9.2 KA 10.13
BM 16	Transport network capacity investigations to Key Centres	transport network investigation	Upgrade transport system capacity and connectors to Key Centres of Beenleigh, Ipswich and Caboolture as population and employment growth occurs.	KA 8.2 KA 8.10 b, c KA 8.16 KA 8.18 A 10.6
BM 17	Rail (including freight Salisbury to Yatala)	enhanced existing corridor	Increase rail capacity as passenger demand grows. Investigate improved freight connections to encourage industries to locate in key industrial areas and support economic development.	KA 5.3 i KA 5.11 A 9.2 KA 10.13
BM 18	Possible extension of South Eastern busway	long term opportunity	Speed flow of buses through congestion. Improve system visibility.	KA 5.4 SIG 5.6 a
BM 19	Transport corridor Capalaba - Cleveland	strategic transport opportunity	Improve road and public transport connections in line with growth.	KA 5.4 KA 8.2 KA 8.11 d

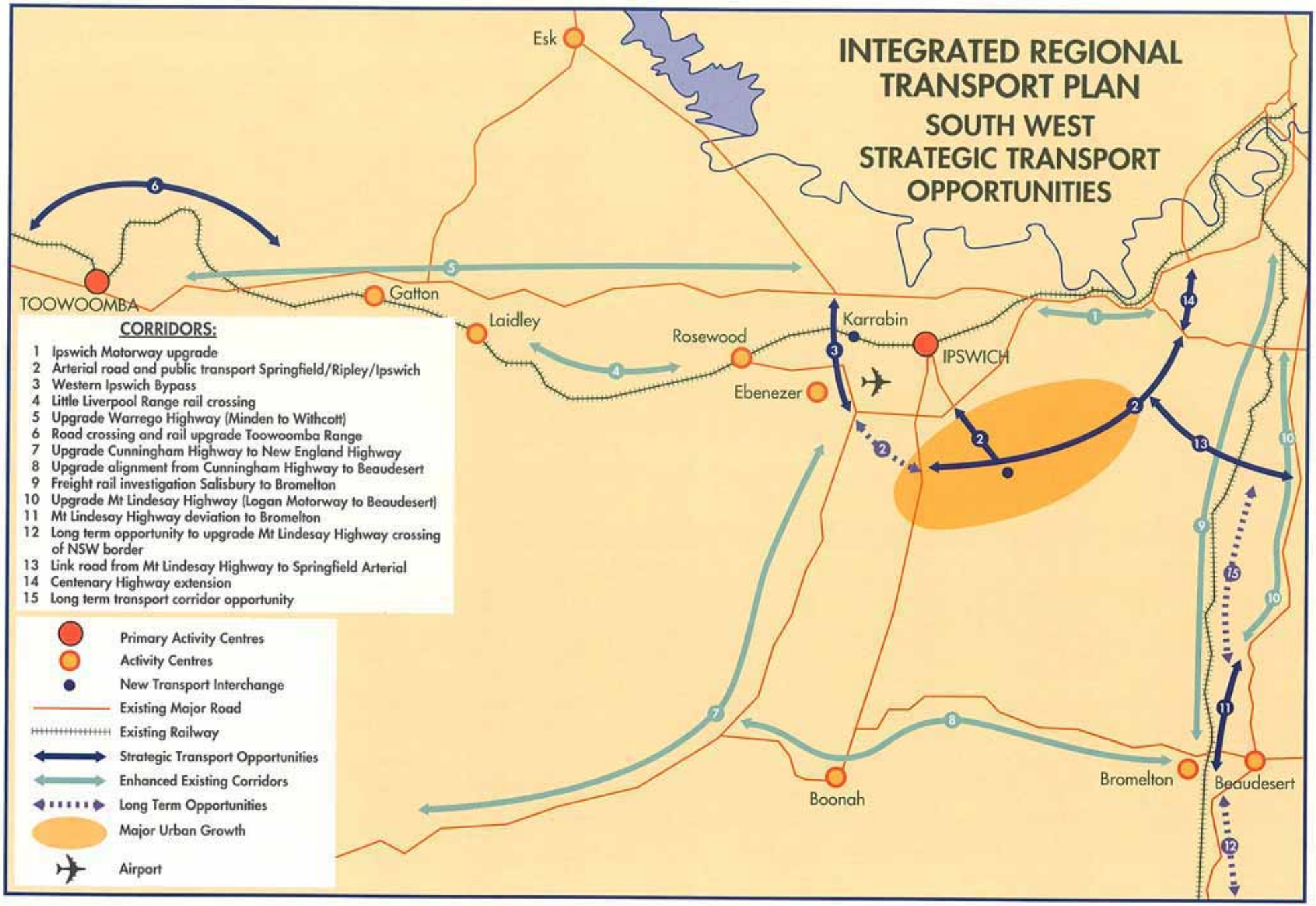
* Chapter 17 provides a detailed list of actions.


INTEGRATED REGIONAL TRANSPORT PLAN
SUNSHINE COAST STRATEGIC TRANSPORT OPPORTUNITIES
CORRIDORS:
1 Tewantin Bypass
2 Sunshine Motorway upgrade
3 Bus priority Maroochydore
4 Busway/Priority Maroochydore to Caloundra
5a Inter-urban rail extension option
5b Inter-urban rail extension option
5c Option for possible rail link Nambour to Maroochydore
6 Upgrade railway Caboolture to Landsborough
7 Kawana transport corridor
8 Bells Creek transport corridor
9 Local arterial and service roads Caloundra exit to Nambour exit
10 Caboolture Northern Bypass
11 Eenie Ck transport corridor
12 Kilcoy Bypass
13 Future main line upgrade Landsborough – North
14 Noosaville Bypass
Cooroy
Tewantin
Noosa
Yandina
Nambour
MAROOCHYDORE
Caloundra
Landsborough
Kilcoy
CABOOLTURE
Primary Activity Centres
Activity Centres
New Transport Interchange
Existing Major Road
Existing Railway
Strategic Transport Opportunities
Enhanced Existing Corridors
Transport Network Investigations
Long Term Opportunities
Major Urban Growth
Airport

Sunshine Coast (SC) strategic transport opportunities

Code	Corridor	Type	Concept	Related Actions *
SC 1	Tewantin Bypass	strategic transport opportunity	Help improve Tewantin centre and local traffic movements.	KA 8.11 e
SC 2	Sunshine Motorway	enhanced existing corridor	Upgrade to play key role as central spine for local movement. Allow Bruce Hwy to operate as regional highway.	KA 8.12 f
SC 3	Bus priority Maroochydore	strategic transport opportunity	Speed flow of buses through congestion and improve visibility of system. System will be designed to light rail grades to allow conversion when warranted.	KA 5.4 A 10.6 a
SC 4	Busway/priority Maroochydore to Caloundra	strategic transport opportunity	Speed flow of buses through congestion and improve visibility of system. System will be designed to light rail grades to allow conversion when warranted.	KA 5.23 d KA 5.4 SIG 5.6 A 10.6 a A 10.7 h
SC 5a	Inter-urban rail extension option	strategic transport opportunity	Identify and preserve an alignment for extension of rail to Maroochydore Key Centre. Introduce right mode of transport to service passenger demand for inter-urban and suburban movement.	KA 5.2 e KA 5.3 f A 5.14
SC 5b	Inter-urban rail extension option	strategic transport opportunity	Identify and preserve an alignment for extension of rail to Maroochydore Key Centre. Introduce right mode of transport to service passenger demand for inter-urban and suburban movement.	KA 5.2 e KA 5.3 f A 5.14
SC 5c	Option for possible rail link Nambour to Maroochydore	strategic transport opportunity	Investigate opportunities for a rail alignment from Maroochydore to Nambour as part of Sunshine Coast public transport network.	A 5.14 A 10.6 b A 10.7 i
SC 6	Rail Caboolture to Landsborough	enhanced existing corridor	Additional track capacity and alignments will improve freight and passenger rail competitiveness.	A 5.14 A 9.2 A 10.6 b A 10.7 i
SC 7	Kawana transport corridor	strategic transport opportunity	Local arterial road capacity to cope with growth in local traffic. Complement role of Sunshine Motorway.	KA 8.11 f
SC 8	Bells Creek transport corridor	long term opportunity	Preserved as long term opportunity should development be permitted in area. Allow Bruce Hwy to operate as regional highway.	A 8.14 b
SC 9	Local arterial and service roads Caloundra exit to Nambour exit	transport network investigation	Keep local traffic off Bruce Hwy allowing it to operate as regional highway.	KA 8.13 c
SC 10	Caboolture Northern Bypass	strategic transport opportunity	Help improve Caboolture town centre and connections to Kilcoy and beyond.	KA 8.11 g KA 9.6
SC 11	Eenie Creek transport corridor	strategic transport	Improve local movements.	KA 8.11 h
SC 12	Kilcoy Bypass	strategic transport opportunity	Help improve Kilcoy town centre and freight movements.	KA 8.11 i KA 9.6
SC 13	Future main line Landsborough to North	long term opportunity	Upgrade with additional track capacity and improved alignments to improve freight and passenger rail competitiveness. Consider relationship with SC 5a, b and c.	A 5.14 A 9.4
SC 14	Noosaville Bypass	strategic transport opportunity	Provide an alternative entry route into Noosa Shire.	KA 8.12

* Chapter 17 provides a detailed list of actions.


INTEGRATED REGIONAL TRANSPORT PLAN
SOUTH WEST STRATEGIC TRANSPORT OPPORTUNITIES
Esk
TOOWOOMBA
Gatton
Laidley
Rosewood
Ebenezer
Karrabin
IPSWICH
Boonah
Bromelton
Beaudesert
CORRIDORS:
1 Ipswich Motorway upgrade
2 Arterial road and public transport Springfield/Ripley/Ipswich
3 Western Ipswich Bypass
4 Little Liverpool Range rail crossing
5 Upgrade Warrego Highway (Minden to Withcott)
6 Road crossing and rail upgrade Toowoomba Range
7 Upgrade Cunningham Highway to New England Highway
8 Upgrade alignment from Cunningham Highway to Beaudesert
9 Freight rail investigation Salisbury to Bromelton
10 Upgrade Mt Lindesay Highway (Logan Motorway to Beaudesert)
11 Mt Lindesay Highway deviation to Bromelton
12 Long term opportunity to upgrade Mt Lindesay Highway crossing of NSW border
13 Link road from Mt Lindesay Highway to Springfield Arterial
14 Centenary Highway extension
15 Long term transport corridor opportunity
Primary Activity Centres
Activity Centres
New Transport Interchange
Existing Major Road
Existing Railway
Strategic Transport Opportunities
Enhanced Existing Corridors
Long Term Opportunities
Major Urban Growth
Airport

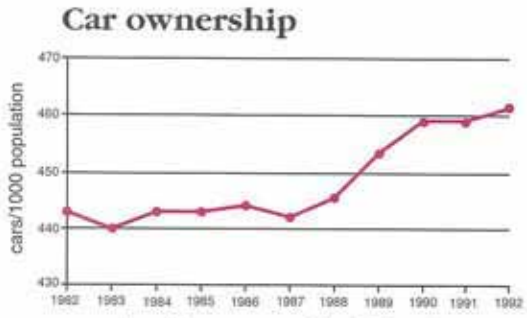
South West (SW) strategic transport opportunities

Code	Corridor	Type	Concept	Related Actions *
SW 1	Ipswich Motorway	enhanced existing corridor	Differentiate regional and local traffic in western urban corridor.	KA 8.17 a KA 9.6
SW 2	Arterial road and public transport Springfield/ Ripley/ Ipswich	long term opportunity	Support Springfield Ripley urban growth corridor with appropriate road and line haul public transport connections. Support Ipswich Key Centre.	KA 5.2 b KA 8.17 b A 9.2 A 9.5 c
SW 3	Western Ipswich Bypass	strategic transport opportunity	Improve freight connection to Ebenezer. Encourage industries to locate in this key industrial area. Support economic development.	KA 8.17 c A 9.8 d
SW 4	Little Liverpool Range rail crossing	enhanced existing corridor	Improve competitiveness of rail freight from Darling Downs and southern states. Open up opportunities for passenger rail.	KA 5.2 h A 5.14 A 9.3 A 10.6 c A 9.2
SW 5	Warrego Highway (Minden to Withcott)	enhanced existing corridor	Upgrade highway and support its role as regional facility with land use measures.	KA 8.12 g KA 9.6
SW 6	Road crossing and rail upgrade Toowoomba Range	strategic transport opportunity	Improve this vital freight link, improve safety, reduce travel time and take freight out of Toowoomba.	A 5.14 KA 5.2 h A 9.2 A 9.3 KA 9.6 h
SW 7	Cunningham Hwy to New England Hwy	enhanced existing corridor	Upgrade Cunningham Hwy as regional connector and support with land use measures to secure its regional function.	KA 8.12 h KA 9.6
SW 8	Alignment from Cunningham Hwy to Beaudesert	enhanced existing corridor	Improve intra-regional and inter-regional connections.	KA 8.12 i KA 9.6
SW 9	Freight rail Salisbury to Bromelton	enhanced existing corridor	Improve freight connections to encourage industries to locate in key industrial areas and support economic development.	A 9.2 A 9.5 a
SW 10	Mt Lindesay Hwy (Logan Motorway to Beaudesert)	enhance existing corridor	Upgrade to encourage industries to locate in key industrial areas and support economic development.	KA 8.12 j KA 9.6
SW 11	Mt Lindesay Hwy deviation to Bromelton	strategic transport opportunity	Improve freight connections to encourage industries to locate in key industrial areas and support economic development.	KA 8.11 j A 9.8 c KA 9.6
SW 12	Mt Lindesay Hwy crossing of NSW Border	long term opportunity	Upgrade to support economic development and open up new markets.	KA 9.6
SW 13	Link road from Mt Lindesay Hwy to Springfield arterial	strategic transport opportunity	Create better connection for public transport and motor traffic between these major urban development areas and improve access to Beaudesert.	KA 5.2 KA 8.11 k KA 9.6
SW 14	Arterial road and public transport Springfield/ Ripley/ Ipswich	strategic transport opportunity	Extend for local road connections and line haul public transport to support Springfield/Ripley urban growth corridor, and Ipswich Key Centre.	KA 5.2 KA 8.10 A 8.14 c A 9.2 KA 10.15 d
SW 15	Alignment west of Mt Lindesay Hwy	long term opportunity	Identify corridors and preserve ahead of land development so opportunities to improve transport movement are protected.	KA 8.10 KA 9.6

* Chapter 17 provides a detailed list of actions.

Chapter 5: Better public transport

5.1 Quality public transport



Growth in car ownership - SEQ region

Improving public transport to provide a realistic alternative to car travel is the single most important transport issue facing the region.

Public transport mode shares have been declining over many years for a variety of reasons, including:

- quality of service delivery relative to car travel;
- social and economic trends resulting in increased car travel;
- dispersed land use and travel patterns; and
- more car oriented local development.

If people can count on high quality, safe, reliable, secure, affordable and frequent public transport, they will be able to rely less on cars, freeing up valuable road space and avoiding the need to construct major new roads to accommodate peak private vehicle demands.

Public transport also has major social benefits in providing transport for those who, for whatever reason, do not drive a car.

A basic aim is to provide public transport to such a standard that no household in the region has to run two or more cars in order to meet the household's travel needs. This will free up significant proportions of household income for other essential activities like education, housing and recreation. It is estimated that running a small second car can cost up to $7,000 per year, or $135 per week, when all costs are considered.

In order to make public transport more competitive with the car it needs to be viewed as a product from the perspective of the customer, not the operator or the regulator. This means improving the total door-to-door journey, not just the time spent travelling on the public transport vehicle.

Quality public transport includes:

- high frequency of service to minimise waiting times;
- high density of routes so trip origins and destinations are within an easy walk of the public transport service;
- services which cater better for travel across the city, rather than focussing mainly on the central activity districts;
- total travel time and directness of journey competitive with car travel;
- punctuality and reliability, with easy-to-remember service times;
- passenger comfort and adequate seating capacity both on and off vehicle;
- faster, easier boarding arrangements and accessibility for people with mobility difficulties;

- safety and security both on and off vehicle, especially improving the capacity to pick up and set down passengers close to their door in off-peak periods;
- direct, secure pathways for walking and cycling access to public transport;
- strategically located park-and-ride facilities which intercept major car movements outside cities and centres;
- convenient transfers between public transport services, with guaranteed connections and common fare and ticketing arrangements; and
- value for money and affordable fares, especially "through-ticketing" for broken journeys and discounts for group travel.

5.2 The vision for public transport

To achieve the public transport targets, this IRTP provides a major program of improvements to deliver a high quality, integrated public transport system.

The key elements of the IRTP vision for public transport are:

- improvements and expansion of rail, bus, ferry and taxi services;
- movement towards new on-demand or "personal public transport" services, in consultation with bus and taxi operators, to expand the range of public transport services; and
- support for public transport through infrastructure, integrated ticketing, information systems and land use.

To provide the necessary level of passenger service, the future public transport system will be based on:

a) improved speed, comfort, safety, service frequency and reliability of the region's large and expanding bus fleet;

b) improved service levels on the suburban and inter-urban passenger rail networks;

c) expanding the coverage of line-haul public transport, including opportunities for light rail, rail and busway;

d) ferry services in those areas where water transport offers a realistic alternative to land transport;

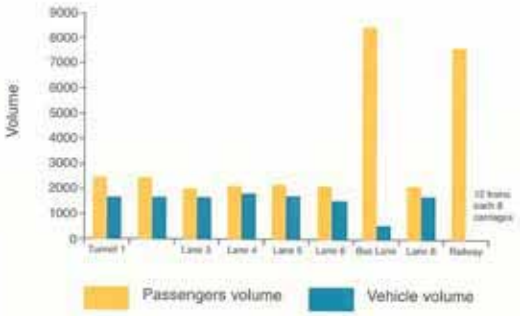
e) expanding the range of services, including midi and mini buses to service less popular routes economically, "hail and ride" services in inner urban areas and "dial-n-ride" services, with fare structures between that of single hire taxis and buses, to respond to unscheduled user needs;

f) taxis for rapid response, shared or individual journeys; and

g) support services for public transport including:

- improved vehicle design to make boarding faster and improve accessibility for people with mobility difficulties;

Public transport is more efficient



Sydney Harbour Bridge and Tunnel
Southbound traffic volumes by lane - morning peak

- easily accessed, secure design of interchanges and stops;
- integrated timetables so that feeder services connect to line haul services;
- integrated fares, ticketing, passenger information and marketing to ensure convenient affordable travel; and
- road infrastructure which gives priority to public transport vehicles through congested areas.

h) improved access to public transport by ensuring:

- quality connections to stations and stops;
- more variety of uses on and around stations to increase activity, informal surveillance and security and make public transport stops more user friendly places;
- efficient and reliable interchange between modes, including quality "park-and-ride" facilities where major arterial roads pass close to rail and busway stations;
- all major employment and retailing centres are served by public transport and are within 40 minutes travel from most parts of the urban area;
- more than 90% of residents live within 400 m of a well-served public transport stop;
- almost every journey can be made by public transport with a maximum of one interchange between vehicles; and
- public transport services in new urban development areas are commenced in the early stages of residential occupation, before people purchase a second car.

5.3 The public transport system

The right type of public transport for the task

Selecting the right type of public transport for the task is vital if cost-effective services are to be provided to meet future passenger demands. The IRTP introduces a better, more rigorous way to plan for future public transport needs. This will avoid choosing a public transport technology which cannot take people where they need to go, or is too expensive to build and run relative to the available market of passenger demand, or is not flexible enough to respond to changing demands over time.

Modern trip patterns are very different to those prevailing when mass transit systems developed in the nineteenth century. New public transport services need to match the level of service available to car travellers, so public transport can compete with the car.

In 1992, rail and bus services carried about equal shares of the passenger market in the Brisbane metropolitan area. Buses and taxis provided the public transport service in the balance of the region. Since there is a continuing preference for low density detached housing, road based services which can service dispersed travel patterns will carry an increasing share of public transport trips.

Midi and mini bus vehicles are currently being introduced by most bus service providers. This recognises changing trip patterns by improving the flexibility and operating efficiency of bus transport.

Expansion and upgrading of the high capacity line haul public transport facilities is also required to meet the future increases in passenger demand along major movement corridors. This will include fixed track and roadbased technology.

Decisions on the type of public transport infrastructure and services must consider:

- the right amount of peak period carrying capacity needed;
- a suitable frequency of service which can meet identified traveller needs;
- ability to effectively integrate with existing public transport systems;
- ability to pick up and set down passengers close to where they wish to be;
- the role of feeder services and reliable interchanges;
- the role of park and ride, and its compatibility with adjacent land use;
- efficiency in both capital and operating costs, including potential efficiency gains over time;
- flexibility to cope with future increases in passenger demand; and
- ability to stage construction to allow early servicing of new communities.

ACTIONS:

A 5.1 Ensure the right public transport mode is selected for the task and establish opportunities for new modes of public transport.

KA 5.2 Investigate and provide public transport to major urban growth corridors

KA 5.3 Establish or expand "park-and-ride" and bus-rail interchanges

Bus services

In many parts of the Brisbane metropolitan area, buses running in mixed traffic will be unable to gain a sufficient advantage to attract the number of passengers needed to meet the targets for increased public transport use. Buses will face increasing congestion and be unable to offer a service good enough to compete with the car. As part of developing a better public transport system, the IRTP has investigated ways to enhance

the performance of buses and speed their progress across congested areas.

"Busways" are systems of bus stations connected by dedicated rights-of-way for buses only. They give buses the flexibility to continue their journey on the road system after exiting the busway. Busway development is also capable of being staged to allow the construction of bus stations in new housing or commercial areas, with initial bus connections running either in mixed traffic, or on bus lanes or transit lanes. As passenger demand and congestion increase, the busway can be completed.

The *Brisbane Busway Plan* initially conceived by the Brisbane City Council has been broadened into the SEQ Regional Busway Network, encompassing at least 75 km of dedicated busways and around 65 stations. This system can build on the already strong role of buses in the regional transport system and provide the necessary improvements to system capacity and travel times in a cost-effective way. The links in the busway network have been chosen for corridors not served by rail. Feeder bus services will serve both busway and rail stations, with local buses also having the option of being able to use the busway. (See map on page 44.)

Investment in the busway infrastructure will need to be supported by bus priority measures on arterial roads and in the inner city.

ACTIONS:

KA 5.4	Establish bus rapid transit system
KA 5.5	Continue bus stop and bus priority improvement program
SIG 5.6	Develop SEQ Regional Busway Network
KA 5.7	Develop inner city transit plans for Brisbane and Key Centres
A 5.8	Improve enforcement of bus and transit lanes

Passenger rail services

Passenger rail will have a major role to play in attracting more passengers to its existing network and expanding catchments through some network extensions. The Citytrain system has a high passenger capacity and can meet high demands during peak times at lower average costs than other modes, but rail is expensive to expand and is expensive to operate during off-peak times. It requires the support of land use policies to concentrate residential and commercial development within an easy walk of railway stations to provide cost-effective services. Feeder buses must also play a greater role in bringing passengers outside the immediate rail catchment to stations. Rail, bus services and busways will play complementary roles in expanding the coverage of public transport and collectively providing the capacity to meet the IRTP public transport targets.

The IRTP proposes significant improvements in service levels on the existing suburban network, to build on the already strong tradition of rail use in the metropolitan area. This includes balancing longer distance express services from outer suburban areas with upgraded inner urban rail services, to capitalise on the ability of rail to attract passengers out of cars.

Possible extensions of the Brisbane suburban passenger rail system are also envisaged where new rail services would:

- support the development of agreed major housing and commercial development areas;
- prove a cost-effective means of meeting the future public transport task; and
- influence land use, locational choice and car ownership in new areas.

The at-grade intersections at Yeerongpilly and Corinda, and the Merivale Bridge between South Brisbane and Roma St stations, are potential choke points in the rail network. With the increased service frequency and service coverage recommended in the IRTP, it may be necessary to identify alignments and preserve opportunities for intersection improvements and an additional river crossing.

The extension of inter-urban rail services, from Landsborough to Maroochydore and from Robina to the NSW border, would play an important role in supporting the ongoing development of the "Key" employment centres adopted under the *Regional Framework for Growth Management*.

Investigations of the feasibility of such railway extensions need to be completed, and transport corridors identified and protected to enable future urban development to support the provision of mass public transport services.

Planning for new inter-urban rail services must have regard to the ability of such services to target the major local travel market. This suggests that high speed inter-urban express services and local suburban rail services may need to operate in the one corridor. For example, the longer term possibility of local passenger rail services on the Gold Coast line south from Coomera, would increase the value of rail in meeting public transport targets. Additional stations and tracks, partially funded in association with new urban development, would be needed to support combined operations.

ACTIONS:

KA 5.9	Establish rail service agreements
A 5.10	Review Citytrain timetable and upgrade inner city services
KA 5.11	Provide infrastructure and trains to improve rail frequency
A 5.12	Continuously develop railway fare structures
A 5.13	Investigate and remove constraints in the existing rail system and investigate the need for Inner City Rail second river crossing
A 5.14	Investigate opportunities for high-speed inter-urban rail

Light rail opportunities

Throughout the consultation process, many people have suggested the introduction of light rail systems such as those found in Europe and more recently, the United States. These are based on modern electric rail technology and operate either on-street or in a dedicated right-of-way. The optimal length of a light rail system is about 10 - 15 km, although many systems are shorter. The maximum speed is about 80 km/h which limits the effective operation of light rail over long distances.

A common feature of successful light rail projects is their integration with an urban development strategy to concentrate passenger demands along the route.

A light rail project was investigated by Brisbane City Council in 1992 to connect the New Farm area to the Valley and Brisbane CBD as part of the urban renewal project. However this was subsequently found to be too expensive to build and operate relative to the likely passenger demand, and a bus solution was chosen.

A new light rail system is being developed in Sydney. This is a private sector consortium with some government financial assistance for land and infrastructure.

It will serve a short, very high capacity passenger demand corridor linking the new casino residential, hotel and entertainment precinct to Darling Harbour and Central Station. There could be similar opportunities for private sector involvement to bring light rail to Queensland in the Brisbane Central Activity District area, or in the Gold and Sunshine Coast tourist precincts.

ACTION:

A 5.15 Ensure that light rail options are evaluated under actions 5.1 and 5.2.

Ferries

The success of the recently introduced CityCat services on the Brisbane River demonstrate that a fast, comfortable and highly visible public transport system has the potential to attract patronage. Further patronage increases would be possible with land use support and improved connections to ferry terminals. The IRTP supports continued improvements to the Brisbane River Ferry services.

Waterways on the Gold Coast offer an opportunity to establish a commuter ferry network as part of an integrated passenger system.

A ferry plan will be developed and implemented for the Moreton Bay islands that is consistent with Strategic Plans and the outcomes of the current islands development plan process.

ACTIONS:

A 5.16 Continue to increase speed and frequency of ferry services on the Brisbane River

A 5.17 Investigate ferry network for Gold Coast waterways

A 5.18 Develop and implement a ferry plan for Moreton Bay Islands

Taxi transport

Taxis account for about 26 000 trips out of the 6 million motorised trips in the region each day. They are a relatively small but important element of the transport system. The use of multi hire (ride-sharing) and maxi taxi vehicles is already seeing an expansion of the taxi business into new types of travel, especially for groups.

The taxi industry will play an important role in expanding service innovations into new markets so the public is offered a range of travel choices and fares. In combination with other service providers, an increasingly flexible taxi service will help achieve better overall public transport services.

On demand or "personal public transport" services

As an extension of the current increases in flexibility of bus and taxi services, the IRTP supports the development, in consultation with the taxi and bus industry, of innovative ride-sharing systems which maximise passenger accessibility and convenience. Key features of such services would include:

- multi hire taxi and taxi bus services with pricing structures between that of single hire taxis and buses; and
- integration of timetables for scheduled services with multi hire and single hire taxi dispatch systems so an intending passenger is offered a range of choices depending on the available travel time and desired fare payment.

These services would more closely match the flexibility and convenience of car travel, giving service providers a means to provide a realistic alternative at an affordable rate. Supporting these services with high occupancy vehicle lanes would further increase their ability to compete with the car.

On demand public transport is also able to pick up and set down passengers close to the door, satisfying important personal security concerns, especially for night time travel.

Through a better match of transport services and technology, the installation of widespread electronic call points across the public transport network would allow the passenger to get information on the desired service, and summon a ride.

The IRTP proposes investigatory pilot studies aimed at progressively implementing more demand responsive services. Queensland Transport will work with the bus and taxi industry to explore, trial and promote opportunities for more flexible demand responsive services.

ACTIONS:

SIG 5.19 Increase coverage of public transport services by using smaller on-demand services.

KA 5.20 Continue reforms to public transport service contracts

Supporting public transport

Many issues affecting the quality of public transport are outside the control of public transport providers. Improving quality across the total public transport journey requires the support of governments, developers and land use authorities through:

- land use decisions which ensure housing and trip attractors are located within an easy walk of public transport routes;
- appropriate planning and funding for strategic public transport infrastructure like interchanges, busways, rail links, commercial activity at stations as well as coordination between modes;
- local area improvements like quality public transport stops and pedestrian and cycle connections;
- giving priority to public transport in major commercial and retail developments;
- road management decisions to provide bus priority lanes and traffic signal priority; and
- regulatory conditions which encourage service coordination, innovation, improved service quality and the use of business skills by operators.

ACTIONS:

KA 5.21 Convene a task force to prepare a public transport coordination model and guidelines

A 5.22 Publish guidelines on the attributes of a seamless public transport system

KA 5.23 Implement a system of bus and transit priority measures

S 5.24 Designate on town plans, centres which will become the focus of public transport services, and consider measures to increase activity at public transport stations

S 5.25 Investigate commercial floor space limits for developments which are not on line haul public transport routes

Public transport reforms

While government has an obligation to ensure the community has a high quality, well coordinated public transport system, the providers of services will be either private sector operators or government-owned businesses operating in a commercial framework.

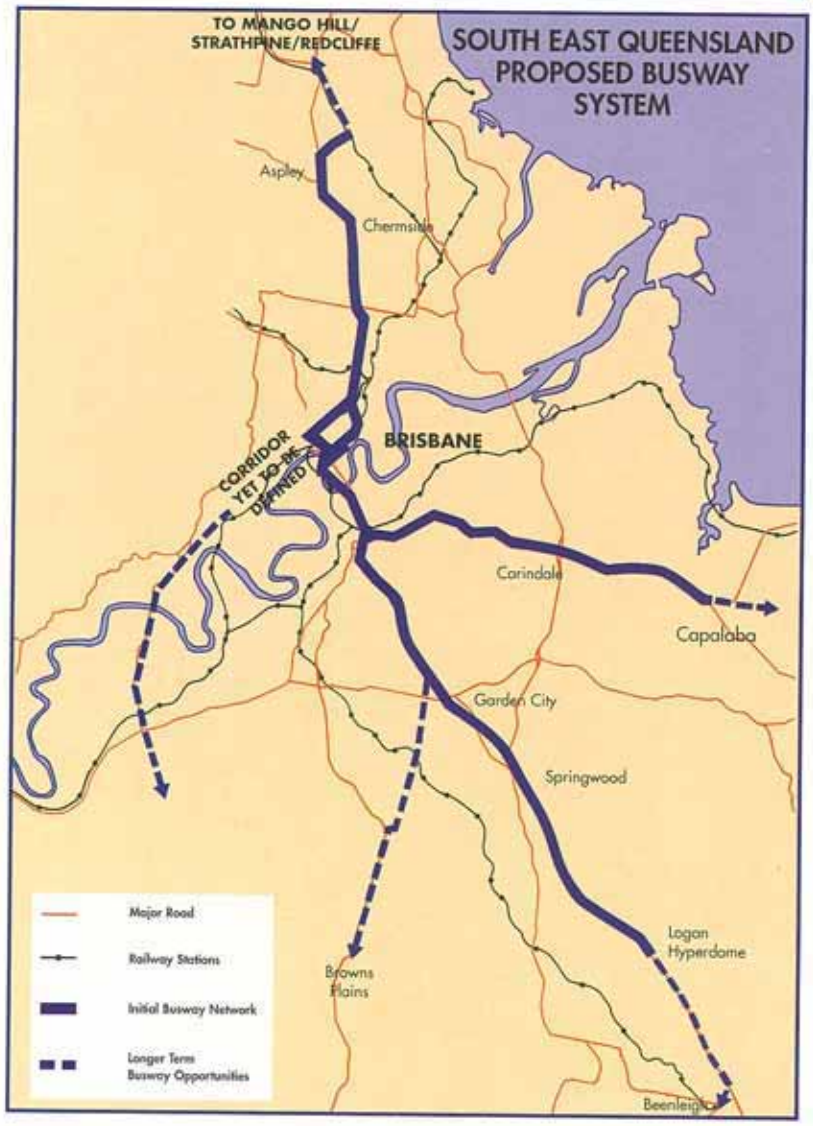
Public transport operations should be regarded as a commercial business aimed at attracting maximum patronage.

Recent changes to passenger transport contract arrangements have already seen an improvement in the level of bus service enjoyed by residents of some parts of the region. Bus service contracts now place the onus on the contractor to continuously improve services and encourage a customer focus. The IRTP strategies take these reforms to their next stage, so the benefits of a coordinated public transport system are fully realised.

ACTIONS:

KA 5.26 Ensure the public transport system is a seamless entity from a passenger's perspective

A 5.27 Ensure public transport services keep pace with urban development



Public transport choices

Personal Public Transport (PPT) re-orients public transport services towards flexibility, passenger accessibility and passenger convenience. It offers new forms of multihire services with a price structure between current taxis and scheduled services.

On demand "personal public transport" Transit 21 Signature project

Currently, choices in public transport include either a fixed route bus or train at one end of the spectrum, or taxis at the other end of the spectrum. Public transport in the 21st century will be very different. In consultation with bus and taxi operators, the Transit 21 Signature project will aim to introduce maxi taxis and taxi buses which provide more public transport choices. This would provide many benefits:

- new residential and commercial developments can have access to public transport from the first day of occupation (albeit not traditional scheduled services);
- maxi taxi or taxi bus vehicles can service low density and rural residential areas which are not viable for scheduled bus services, and with cheaper fares than taxis;
- data from the use of on demand services will indicate if a scheduled bus service should be introduced;
- the fleet will be able to run feeder services to rail and busway stations, increasing the catchment of the line haul system, and reducing the need to construct park and ride facilities;
- maxi taxis and taxi buses will have access to transit lanes, which will allow the vehicles to skip congestion;
- the versatile fleet can more readily match services to individual needs; for example, requirements for low-floor buses;
- community groups that currently own vehicles to transport people with special needs will have access to a fleet of suitable vehicles;
- the passenger task peaks in the morning and afternoon, and the delivery task peaks in the middle of the day. The fleet of on-demand vehicles can be used to serve both tasks;
- the need for families to own a second car is reduced, avoiding the high overall costs of car ownership; and
- personal security is enhanced because of door-to-door service.

The combination of improvements to the rail and bus network, and the improvements to the taxis, maxi taxis and taxi buses will help to achieve the IRTP targets for public transport.

Chapter 6 Cycling and walking

6.1 Encouraging cycling and walking

Planning for cycling and walking are essential components of the package of measures necessary to restrain traffic growth and address urban congestion. Through better planning for cycling and walking, the IRTP seeks to increase the current proportion of walking and cycling trips from 15% to 20% by the year 2011.

Attitudes towards cycling and walking are generally positive, and the majority of people recognise these transport modes as healthy and good for the environment. However, cycling and walking are not as widely used as they could be.

The costs to society and the environment associated with cycling and walking are considerably lower than those associated with the use of private motor vehicles. However, the relative convenience, comfort and personal security afforded by the car make it an attractive individual choice of travel mode, even for short, local journeys that could be easily accomplished by cycle or on foot.

Improving the attractiveness of cycling and walking so as to provide a viable alternative to car travel will help to reduce road congestion. If people are presented with the opportunity to cycle and walk to their destination in a pleasant, safe environment along a direct route then there is a real chance that they will choose these transport modes.

Demonstrating to our children that the car is not the only way of going places is one of the best investments we can make in the future of South East Queensland's transport system.

In 1992, 90% of cycling trips were less than 4.5 kilometres. For work related trips, 90% of cycling trips were less than 6 kilometres. The majority of walking trips cover less than 500 metres, with 90% of all walking trips being less than 1.8 kilometres. In general terms, cycles are ideally suited to journeys of under 15 kilometres and walking is suited to trips of under 2 kilometres. Beyond these distances many people consider these transport modes unviable. However, with linkages to the public transport system the range of these combined modes can be extended greatly.

Cycling and walking are highly efficient modes of travel, with low operating costs, which can provide a "door-to-door" service. These modes also have the benefits of being healthy, readily accessible to most people and environmentally benign (emitting no air or noise pollution).

In order for the proportion of trips undertaken by cycling and walking to increase these modes must be made as convenient as possible. To achieve this a basic aim is to promote cycling and walking "friendliness" in all aspects of transport and urban planning and infrastructure provision.

Cyclists and pedestrians travel at the same time as other people, night time included. Therefore provision should be made for cycling and walking routes that are functional by night as well as by day.

To increase the proportions of trips undertaken by walking or cycling the IRTP aims to:

- provide quality facilities for cyclists and pedestrians;
- ensure better links between cycle, pedestrian and public transport networks;
- create a safer cycling and walking environment;
- educate people about the benefits of cycling and walking as transport modes; and
- achieve better designed communities which support walking and cycling.

The integration of cycling and walking facilities into the early stages of land use planning and development approval, offers great potential to encourage people to walk and cycle. An urban form sympathetic to cycling and walking makes these travel modes more attractive. Walking and cycling in areas with a more compact urban form is far more prevalent than in lower density areas.

Cycling and walking are often considered together as transport modes and are invariably linked due to past provision of shared recreational cycle and walking paths. However, experience has shown that combined cycling and walking paths act as a disincentive to both user groups and can result in injury to users and fatalities. To ensure the safety of users and maximise the attractiveness of these facilities, separated cycling and walking routes are to be provided where possible. Where this can not be achieved, options to clearly segregate paths should be explored.

6.2 Cycling

Cycles consume no fuel, produce no pollution and consume less space when compared to other forms of transport with the exception of walking. Cycling is also a very economical travel mode and is accessible to the majority of the population. Cycling also offers users exercise, recreational benefits and enhanced personal freedom.

Cycling has the potential to contribute to meeting a wide variety of transport needs including commuter, local and school trips.

Cycling is a legitimate and viable form of transport which has potential to increase travel choice and reduce dependence on private motor vehicles.

For the proportion of trips undertaken by cycle to increase, this transport mode needs to be competitive with the private motor vehicle. For this to occur, cycling facilities must provide access

that matches the access motorists have come to expect from the road network. A combination of cycle paths and lanes presents the optimum solution for establishing and enhancing the cycling system in South East Queensland.

The provision of safe, direct and convenient on-road and off-road routes for cyclists is the single most important component of providing an attractive, functional cycle system.

Cyclists also need to use the road to get to their destination. This frequently necessitates mixing of motor vehicles and cycles on carriageways. Cyclists are vulnerable road users and this requires a responsible attitude on the part of cyclists and places a special responsibility on motorists to take account of the special needs of cyclists. Education of cyclists and motorists is essential to establishing cycling as a viable mode of transport. For example, an emerging trend is for some motorists to believe that cyclists should not have access to roads with un-marked cycle lanes, but should only have access to marked cycle lanes and off-road cycle paths.

Vehicle speed is a major factor influencing the attractiveness of on-road cycling. Reducing vehicle speed has the potential to create streets that are "cycle friendly" without the need for dedicated cycle lanes.

Facilities for cycling

- Dedicated cycling routes termed "cycleways" can be a combination of on-road and off-road facilities.
- Cycle paths provide a functional off-road cycling route that is free from the dangers to cyclists posed by vehicles.
- On-road cycle facilities usually provide the most direct route in terms of time and distance and provide access to adjoining development, local areas and the greater road network.
- A network should be developed which combines cycle paths and on-road cycle facilities.

Cycles and public transport

Most public transport services cannot provide the door to door service that many people require or desire. Dual mode transport involving cycling or walking to public transport networks presents a means of filling this service gap.

Encouraging cycling to public transport also enhances the attractiveness of both transport modes and increases the effective range of both. This can be achieved by:

- making provision for carrying cycles on public transport;
- providing secure cycle parking at key access points to public transport networks; and
- ensuring cyclist and pedestrian routes link to public transport networks.

Queensland Rail currently allows cycles to be carried on passenger trains outside peak travel hours. To assess the feasibility of expanding the operating hours of this service. Queensland Transport and Queensland Rail will assess the impacts of carrying cycles on trains during peak hours, and then undertake a trial program of carrying bikes on trains during peak travel demand periods.

Bus services have traditionally not provided for carriage of cycles in South East Queensland. However, other regions have reported extraordinary success with "cycle-on-bus" programs and the potential exists for a similar approach to be adopted in South East Queensland.

Providing secure cycle parking at park-and-rides and other key access points to public transport networks enhances access and creates a natural link between travel modes that can bolster the attractiveness of both at once. Secure cycle lockers are currently provided free of charge to patrons of Queensland Rail at many stations. The IRTP envisages the provision of similar, high quality facilities at key bus stops and other public transport interchanges.

Improved linkages between pedestrian, cycling and public transport networks will be achieved through consideration of these linkages at both the planning and design stages of development of cycling, walking and public transport infrastructure.

End of journey facilities

Secure cycle storage facilities, showers and dressing rooms at places of employment and other key destinations are essential to providing a functional cycle system. To achieve provision of these facilities the IRTP recommends a package of information schemes, incentive schemes and regulatory reform. In addition, the IRTP proposes that existing and new State Government buildings provide secure cycle parking and shower facilities which can be made available to employees as well as members of the public.

Cyclist safety

Providing safe cycling environments will assist with the achievement of the IRTP targets.

Through on-going community education and information dissemination, the IRTP seeks to encourage responsible cyclist and motorist behaviour. Vulnerable cycle user groups, such as school children, need special support.

Poorly designed and constructed cycle paths can detract from the attractiveness of the mode.

Cycles are inherently unstable vehicles, particularly when exposed to wind effects created by vehicles passing by at higher relative speeds. Provision of lateral separation of cycle lanes from vehicles must take account of this phenomenon. Greater separation is required for greater relative speed differences.

ACTIONS:

KA 6.1	Plan and provide pedestrian and cycling networks
A 6.2	Use AUSTROADS design standards for walking and cycling facilities
KA 6.3	Produce a South East Queensland Regional Cycle Plan
A 6.4	Establish a State Cycle Committee to guide cycle policy
A 6.5	Develop ways to separate pedestrians and cyclists on paths
A 6.6	Establish education and encouragement campaigns for cyclists
A 6.7	Establish programs to combine cycling and public transport
A 6.8	Provide secure parking and "end of trip" facilities for cyclists
A 6.9	Examine potential for cyclist-activated traffic signals

6.3 Walking

For many of today's parents and grandparents, walking was the primary means of travel around their local area when they were growing up. Today, many local trips are undertaken in cars. If we are to achieve a sustainable transport system in South East Queensland then it is essential that we act now to reverse this trend.

Distance and travel time prevent many trips from being walked. Regular commuter and other pedestrian trips of over 2 km (about twenty minutes walking time) are generally considered unviable by many people.

Making trips feasible by the addition and maintenance of footpaths, pedestrian crossings and a better mix of land uses will contribute to establishing an environment conducive to walking. Similarly, improving personal security of pedestrians through design that allows both passive and active surveillance is important in catering for pedestrians.

Enhancing the walking environment

A basic aim of the IRTP is to provide pedestrians with an environment that is safe, pleasant and conducive to pedestrian movement.

The relatively slow pace of walking allows people to take in much more of the surrounding environment. Pleasant features make walking a more attractive option. Architectural diversity, greenery, shade, shelter, places to rest, water, expansive views, and concentration of activities all have the potential to enhance the attractiveness of walking as a transport mode.

The avoidance of environments that discourage walking is also important if walking is to present an attractive transport choice.

Exposure to car exhaust, dangerous street crossings, poor connections with public transport services, the need to share facilities with cyclists, inadequate lighting, lack of personal security and poorly maintained pedestrian paths are some of the key factors that discourage walking.

As with cycling, urban form has a great influence on the proportion of walking trips undertaken. The consideration of pedestrian needs in the early stages of land use planning and development approval is essential if a pedestrian friendly environment is to be established.

Many regions around the world have, through neglect or oversight, allowed the growth of environments that are hostile to pedestrians. This has resulted in the imposition of considerable social and environmental costs on their communities. In these environments, cultures have grown up that see walking as an inferior mode of travel. This situation must not be allowed to develop in South East Queensland.

Pedestrian facilities must be woven into the urban fabric and integrated with all transport modes if walking is to continue to be a viable mode of travel.

Walking and public transport

Pedestrian access to public transport and the establishment of pedestrian friendly public transport precincts are essential to support the use of public transport. Adequate linkages between pedestrian routes and key public transport access points provide people with an attractive "door to door" service. Creation of an environment around public transport nodes makes both walking and public transport more attractive. This approach has benefits for both pedestrians and public transport users.

Pedestrian safety

Personal safety is a major concern to many pedestrians and fear is a particular deterrent to walking. The design of pedestrian facilities must address these safety concerns if walking is to be a viable transport mode. For example, adequate lighting, provision for passive and active surveillance, safe crossings, path maintenance, adequate visibility and separation of cycle ways and pedestrian routes where possible are important components of an effective pedestrian system.

ACTIONS:

A 6.10 Design standards for pedestrian access to public transport

A 6.11 Ensure pedestrian facilities cater for special needs

A 6.12 Ensure provision of high quality pedestrian facilities

Chapter 7: Travel demand management

7.1 The travel demand management concept

Travel demand management measures seek to meet a portion of the community's needs without increasing the capacity of the transport system; in effect, to restrain the growth of travel demand and make better use of the existing transport system. This will save resources that can be better used for government services in other areas. It will also reduce the impact of new transport infrastructure on the community.

The primary focus is on influencing travel demand to generate more efficient use of existing transport capacity. In particular, this can be achieved by discouraging the growth of single occupant vehicle travel in peak periods where there are more sustainable modes of transport available. Measures will include:

- well-researched campaigns of public education and promotion of alternative modes;
- priority to higher efficiency passenger vehicles around the road network as discussed in the public transport and road chapters of this IRTP;
- facilitating ride-sharing schemes (including car-pooling and van-pooling);
- encouraging businesses and households to reduce trips to avoid unnecessary travel;
- using technology and supporting more flexible operating hours for shopping and employment to share the load better and make best use of available transport system capacity;
- managing access to, and operations along, major roads with measures such as ramp metering;
- rationalised parking policy to discourage all day commuter parking in centres and ensure that parking is not easier and cheaper than using public transport; and
- considering charges for using roads on a pay-as-you-go basis, so the cost of each trip becomes more obvious.

7.2 Public education

Success in restraining the growth of travel demand depends on the support of the travelling public. For this reason, the IRTP concentrates on developing community understanding of the need to reduce car trips.

Community surveys have already been undertaken to ascertain the needs and views of the community on transport and travel

and on future policy options. Building on the results of these, a public information campaign will increase awareness of the implications of excessive car use and educate people on efficient travel behaviour. Many people are simply unaware of the high costs of maintaining a motor vehicle, and of the continuing improvements to public transport in the region. Providing quality information will allow people to make better travel decisions.

ACTIONS:

KA 7.1 Public education to support travel demand management

A 7.2 Publish travel option bulletins e.g. with rates notices

A 7.3 Provide real time information on traffic conditions and travel alternatives

7.3 Active trip reduction measures

The IRTP incorporates a number of trip reduction measures to actively support public education campaigns.

Transport planning processes will consider how each transport network improvement can contribute to the achievement of the IRTP targets for vehicle occupancy and public transport. Actions discussed in the public transport and road chapters of this IRTP, which give priority to higher passenger efficiency vehicles, are measures which actively encourage people to share rides or use public transport, rather than each person travelling in single occupant vehicles.

It is estimated that most businesses and households could reduce their number of trips by 15% without suffering loss of access to desired services.

An area to address is the inclusion of benefits in employment packages such as company cars and free parking. This practice causes many commuters to become "car captive" in that they are forced to drive to work. These employment packages could be restructured to minimise this effect and encourage more responsible travel. Private and public sector organisations would be encouraged to facilitate employee use of public transport, ride-sharing in vehicle fleets, and use of taxis to reduce unnecessary car use and demand for car parking spaces.

The same sort of trip reduction strategies could be applied to household travel. Households could be provided with information, for example through a "kit" of ideas to reduce trips.

New technology will allow the development of "Intelligent Transport Systems" which, for example, provide traffic signals which smooth traffic flows by responding to traffic conditions, as well as warning motorists of congestion so they can choose an alternative route.

Changes to travel patterns can also share the load around the network better. More flexible working patterns have already extended the peak period and reduced the load on the network so that peak commuting trips are spread over a larger proportion of the day. With the agreement of retailers, shopping hours in major centres could be altered to reduce conflicts between shopping and commuter traffic.

ACTIONS:

KA 7.4 Incorporate IRTP mode share targets in transport planning

A 7.5 Collaborate on incentives for corporate trip reduction plans and ride sharing schemes

A 7.6 Investigate tax incentives to reduce car commuting

A 7.7 Establish program focusing on household trip reduction

A 7.8 Investigate options to achieve peak spreading

Note: actions in public transport and road chapters also support active trip reduction measures

7.4 Car parking

Car parking policy is one area where opportunities exist for more rational pricing and supply policies. The provision of parking spaces and the cost of using them has a strong relationship with public transport usage. If there is nowhere to park or parking is expensive, people will be encouraged to ride-share or use good public transport services instead of driving.

Currently it is possible for a motorist to park quite close to the heart of Brisbane for only $4 per day, which is less than the cost of most public transport fares. Increasing the cost of long stay parking, for example through a levy which is used for improving public transport, could reduce the incentive for people to drive and postpone the need to provide additional road system capacity.

Local planning policies often set high requirements for car parks to be provided as part of new development. These could be reviewed in areas where quality public transport is available.

ACTIONS:

KA 7.9 Develop and implement parking plans for all Major Centres

KA 7.10 Reduce planning requirements for parking where public transport is available

7.5 Transport pricing

A major issue for the future is the way revenue for transport system improvements is raised.

At present, transport system improvements are largely funded from consolidated public revenue sources which are not related to the amount of transport activity by individual tax

payers. In addition, vehicle owners pay sales tax, registration charges, and insurance which bear little relationship to how often they use their vehicle. This means the major costs of car use are either paid in general taxes or are fixed costs related to owning a vehicle, rather than the "marginal" costs of actually driving it. Because revenue is not linked to transport activity, it does not automatically grow to keep pace with travel demands.

Public transport trips are priced more closely to the amount of individual travel, and so on a single trip basis, driving can actually appear much cheaper than using public transport. This affects decisions about how trips are made.

Many urban roads are becoming congested because people tend to use their cars inefficiently, by driving alone in peak hours. This is wasteful of road space and creates demands for further road system capacity. It could be argued that those who either do not own a car, or drive their cars in off-peak periods or on less congested routes, subsidise (through fixed taxes and charges) others who drive alone in peak hours.

Transport pricing measures have been used in other jurisdictions to fund transport improvements and generate more efficient use of transport system capacity. There is some evidence that the very existance of transport pricing measures can achieve significant reductions in travel demand.

Part C of the IRTP discusses a predicted shortfall in funding for transport over the next 25 years. This shortfall arises from the fact that travel demand is growing much faster than population. Alternative funding options, linked to usage, would help to avoid such a shortfall occurring through:

- aligning revenue more closely with transport activity; and
- restraining the growth of excessive vehicle use.

The initial IRTP consultation phase indicated the community was reluctant to consider changes to the present revenue raising arrangements unless these were accompanied by a significant reduction in current tax arrangements.

The IRTP recognises transport pricing can be an effecient way to restrain travel demand, and an equitable way to fund predicted shortfalls in transport investment needs. As the transport task becomes increasingly diffult to meet, such options must continue to be discussed in the community.

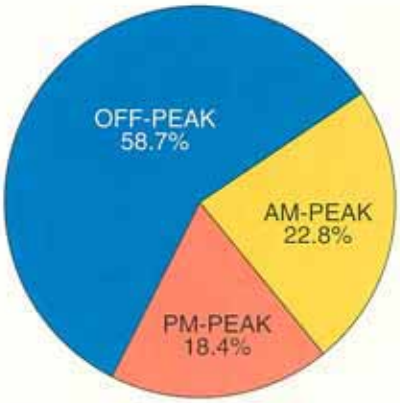
ACTIONS:

S 7.11 Progress key transport elements of the Queensland Commission of Audit Report

A 7.12 Convene a community summit on funding transport

Peak demand factors

Proportion of travel on a weekday in 1992



AM PEAK 7 - 9
PM PEAK 4 - 6

22.8% of all trips occurred in the morning peak

Education and shopping trips coincide with work trips in the am peak.

Chapter 8: The regional road network

8.1 The road strategy

Even with a major shift towards more efficient passenger transport modes, and actions to restrain the growth of single occupant vehicles in peak periods, the capacity and coverage of the road network will have to increase significantly to accommodate increased travel demands. This is primarily because the region's population is increasing and urban areas are getting larger each day. It is estimated that over 80% of the region's population growth between 1992 and 2011 will be located in new communities which require new road connections.

Achieving the IRTP targets for increased use of more sustainable transport practices will reduce projected private vehicle travel demand by about 19%. However, there will still be about 5.9 million private vehicle trips each day in 2011, compared to just over 4.2 million in 1992.

To maintain our ability to move around the region, the IRTP predicts a need for some 13,000 additional lane kilometres of arterial and distributor level roads, both to serve new urban development areas, and to accommodate demands on the existing road system. This includes adding lanes to existing roads. Roads will need to be developed and managed so they can meet the needs of people for movement and get goods to markets safely without unacceptable impacts on the community and the environment.

It is also essential to ensure that the already large road asset base is efficiently utilised before new roads are built. Accordingly, the options for maximising service delivery of existing roads must be considered alongside proposals to provide new facilities.

But widening existing roads which pass through commercial and residential areas can bring local traffic, through-traffic and pedestrians into conflict. In some cases, new roads will be the best solution when the full range of issues and impacts are considered.

The IRTP's regional road network strategy presents a balance between:

- moderating traffic growth and giving priority to public transport and high occupancy vehicles;
- widening and upgrading existing roads; and
- constructing new road links, especially bypasses and ring road connections.

The task of managing and developing the road system involves much more than satisfying demands for private vehicle use. Roads carry many forms of transport and should be viewed as multi-modal transport infrastructure. Accordingly, agencies involved in road planning, management and development will adopt a multi-modal focus.

"Roads carry many forms of transport and should be viewed as multi-modal transport infrastructure."

8.2 Road hierarchy

South East Queensland roads cater for a range of traffic movements, including:

- long distance interstate and inter-regional travel;
- medium distance travel between parts of the region, including travel between its major cities; and
- local movements under about 20 kilometres, often within the one urban area.

Planning for roads which accommodate primarily interstate and inter-urban movements has sometimes failed to properly recognise the ability of more local traffic to cause congestion. In some areas of the region which are experiencing high rates of urbanisation, the national or interstate highway system is being used as a trunk road for a developing urban area. Often local traffic is simply not provided with a realistic alternative route.

In these cases, a network of local arterial roads connecting to key destinations within a 10 km radius, as well as early provision of public transport services, can ensure the highway system continues to support long distance freight, commercial and tourist travel.

A road hierarchy provides a clear set of rules for road planning and management. A range of road hierarchy classifications are used across South East Queensland. The IRTP supports the adoption of a single hierarchy across South East Queensland which is based on existing classifications . Each level in the hierarchy should reflect the function of the road in meeting transport movements of all modes and supporting desired land use objectives. Construction and management of individual roads must build on and support the road hierarchy and recognise the relationship of each road to higher and lower order roads in the network.

How roads are discussed in this IRTP

- National interstate or inter-regional highways link South East Queensland to other State capitals and the major regions of Queensland.
- Inter-urban arterial roads link the region's urban areas to each other, including key regional centres, major employment, industry and business centres and population centres.
- Local arterial roads link local activities and housing to each other and cater for movements within urban areas. In some cases these roads will carry very high traffic volumes, especially in peak commuting periods.
- Local distributor and collector roads provide for movement of cyclists, public transport and general motor traffic through neighbourhoods.
- Local streets are shared spaces for local traffic, cyclists and pedestrians.

The IRTP deals primarily with the network of strategic roads which are important for movement across and out of the region. Lower order roads will be addressed through integrated local transport plans and local planning schemes. However the road network is an interconnected system and both strategic and local roads need to be considered within the same management framework.

Rather than striving to meet insatiable demands for peak period single occupant car use, provision of new road capacity must give priority to meeting the needs of higher efficiency passenger transport and freight vehicle movements.

Accordingly, the adopted road hierarchy will take into account specific provision for:

- a public transport priority system of busways, bus only lanes, high occupancy vehicle (transit) lanes and appropriate bus priority at key intersections;
- priority lanes on congested roads for high occupancy vehicles, especially in peak periods - an assessment will be needed in each case of whether the lanes should be available to vehicles with 2+ or 3+ occupants;
- accommodating pedestrians and cyclists;
- a primary freight network to link the port, airport, freight terminals and major freight generating nodes;
- designated routes for extra large freight vehicles and carriage of dangerous goods; and
- management of traffic to make better use of the existing road system.

ACTIONS:

KA 8.1	Adopt functional road hierarchy classification
KA 8.2	Implement measures to sustain the road hierarchy
A 8.3	Consider adjustments to control of roads in consultation
S 8.4	Adopt guidelines for road planning and management

A standard urban bus can seat about 49 people, taking up significantly less road space than 49 cars.

8.3 Priority use of road space

Since road-based vehicles will continue to meet the majority of public passenger demands, management of the road system will play a crucial role in meeting the targets for increased market share for public transport.

Public transport vehicles are about 10 to 20 times more efficient in their use of road space, as well as consuming less fuel and emitting less pollutants. In urban areas where congestion is experienced, the progress of public transport vehicles will be assisted through measures such as:

- exclusive rights-of-way or separate roadways (busways);
- separate lanes for exclusive public transport use (bus lanes);
- bus priority through traffic signals and queue jump lanes; and
- high occupancy vehicle or transit lanes which are shared by buses and multi-occupant private vehicles.

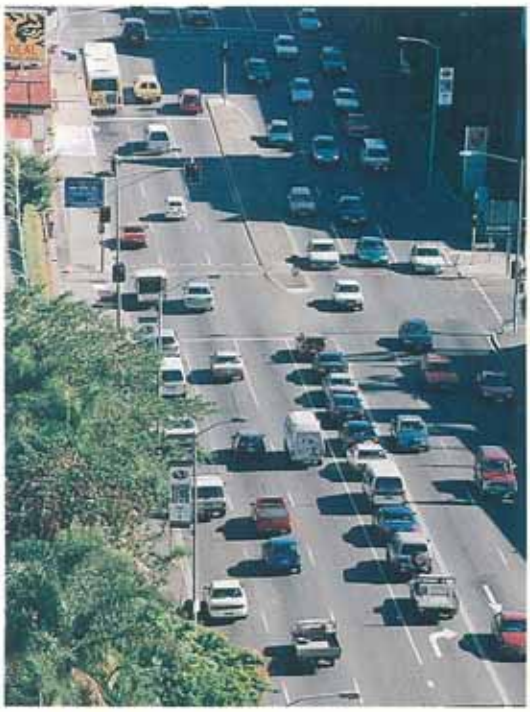
High occupancy vehicle lanes

High Occupancy Vehicle (HOV) or "transit" lanes giving priority travel for efficient passenger vehicles send a clear message that vehicles which move more people will be given priority in order to best use capacity. These may be lanes on an existing roadway used all day or in peak periods, or entirely separate roadways built in the median or separate rights of way.

In Queensland, transit lanes are currently "T3" lanes which may be used by taxis, buses, bicycles, motorcycles, emergency vehicles and cars carrying three or more people. The concept should be extended to include vehicles with two or more people (T2 lanes) on certain suburban arterials, as well as trucks on designated freight routes.

Freight priority

A priority freight road system will link the port, airports, major inter-modal freight terminals, and freight generating areas, and provide priority to freight transport vehicles. This is discussed in the Freight section of the IRTP.



Special freight vehicle lanes will be trialed on designated freight routes, to give commercial vehicle and trucks priority over general motor traffic. Key freight movement points like the Gateway Bridge toll gates will also be equipped with facilities to allow priority access for freight vehicles.

Traffic management

Coping better with peak vehicle demands also requires the use of traffic management techniques to manage traffic flows and make best use of available road capacity. Current electronic signal systems and ramp metering are helping to maintain traffic flow. In the future, "Intelligent Transport Systems" will help spread the traffic load around the network and better manage traffic flows. More efficient management of traffic incidents will also avoid unnecessary delays.

Improved vehicle-responsive traffic signal control will be introduced on major arterial roads in South East Queensland in 1997. This will allow:

- smoothing out of traffic peaks and changing signals to accommodate traffic conditions prevailing at the time, rather than predetermined signal settings;
- better detection and management of traffic incidents;
- identifying priority vehicles like buses and aiding their progress through the signals system; and
- accurate road-side public information on traffic flow conditions, congestion and parking supply along key arterial roads.

ACTIONS:

KA 8.5 Implement a system of bus priority measures
KA 8.6 Use intelligent transport systems to manage traffic flows
A 8.7 Implement better incident management on roads
A 8.8 Plan a network of HOV/transit lanes and trial T2 transit lanes where T3 lanes are not viable
A 8.9 Revise road design standards to accommodate public transport

8.4 Better planning of road needs

A key issue for the region is resolving the need for new or upgraded major roads to connect major urban development corridors. While the most pressing problems relate to the Pacific Highway, the other highways leading north, south and west of Brisbane are all experiencing major urban growth along their perimeters. Without proper planning, they will be heavily congested with commuter traffic in peak periods by 2011.

In the past, investigation of the need for and costs and benefits of major new roads often centred on relieving congestion for general motor traffic. While congestion is a major cause of economic and social disruption, continually adding road capacity is not the only solution to overcome it. Investigations of new road opportunities must be undertaken within a broader context which:

- investigates the underlying reasons for the network deficiencies, and develops and tests a range of solutions aimed at alleviating the problems;
- ensures a maximum number of the predicted trips are carried on public transport, and where appropriate, by walking and cycling in accordance with the IRTP mode share targets;
- supports agreed regional development outcomes including the development of new employment and industry areas, and freight transport;

- considers the options for maximising service delivery of existing roads alongside proposals to provide new facilities. This includes increasing the proportion of higher occupancy vehicles using the roads;

- assesses the potential alternative uses of the funding to provide high quality alternative urban transport solutions;

- explicitly assesses and considers in total cost estimates the need for further investment in roads to alleviate congestion created in other parts of the system by the construction of the new road (especially where adding capacity merely transfers the problem to a location where construction is difficult or expensive); and

- gives the fullest possible consideration to the cost of impacts on communities and the environment before deciding whether to proceed with a road proposal.

Local arterial roads and local by-passes

Poorly planned new urban communities along the periphery of major national highways and inter-regional roads tend to rely on these roads as the main trunks onto which all local traffic is fed. These impacts can be avoided by providing local arterial roads and judicious use of highway interchanges. Then, at the appropriate point, vehicles wishing to make a longer distance journey could access the major road system.

This can be achieved if quality, direct local arterial road systems are planned and provided as part of urban development, and the number and spacing of highway interchanges is rationalised.

A key need is to ensure the that local arterial road systems provide alternatives to avoid choke points in the inter-urban road system, especially at river crossings.

Major urban growth areas where local arterial road planning must accompany urban development plans include:

- Caboolture and Mango Hill/Griffin to protect the integrity of the Bruce Highway as a National and inter-regional Highway;

- the western urban corridor from the Centenary Highway to Rosewood to protect the integrity of the National and inter-regional highways;

- West Burleigh to Coomera development corridor, to ensure the Pacific Motorway will be able to perform its strategic functions as an inter-regional road; and

- Logan River to Springwood to help keep local traffic pressures off the Pacific Highway.

Widening existing roads which pass through commercial and residential areas can bring local traffic, through-traffic and pedestrians into conflict. In some cases, new roads will be the best solution when the full range of issues and impacts are considered. The IRTP supports local government investigations of the need for local by-passes around centres, such as an Inner City Bypass, where they support urban renewal and other IRTP objectives.

ACTION:
KA 8.10 Local arterial networks to keep local trips off regional roads

Better road network planning

The provision of new road networks must:

- support the SEQ 2001 objective of locating jobs and housing closer together;
- be limited to moderated travel growth, taking account of increased public transport use;
- support higher occupancy vehicle travel;
- incorporate quality local arterial roads so journeys within urban areas do not have to be made on national or inter-urban roads; and
- consider the provision of walking and cycling paths and bicycle lanes where these contribute to better connections for non-motorised travel.

8.5 Strategic road network actions

Road development actions to support the achievement of the IRTP key objectives are included in the strategic transport opportunities described in Chapter 4.

Some of the most significant actions are:

- upgrading of the Pacific Highway to the NSW Border, (including the construction of High Occupancy Vehicle lanes between Klumpp Road and the Logan Motorway; the eight lane Pacific Motorway south of the Logan Motorway; and investigation of the Tugun Bypass);
- upgrading of the Bruce Highway from the Gateway Motorway to the Caboolture-Bribie Is Road;
- upgrading of the Gateway and Logan Motorways to maintain a high standard urban bypass of Brisbane;
- completion of the Southern Brisbane Bypass to link the Logan Motorway to the Gateway Motorway;
- enhancing road access to the Port of Brisbane;
- construction of a new crossing of the Toowoomba Range and Toowoomba bypass;
- provision of bus priority on major roads in the following areas:

- Brisbane metropolitan arterial network;
- Ipswich;
- Gold Coast Highway Southport to Coolangatta, and on bus routes to the new rail stations; and
- Maroochydore to Caloundra, with particular emphasis on Maroochydore town centre; and

- widespread provision of peak period transit lanes on major Brisbane metropolitan arterials, as well as the Gold and Sunshine Coasts.

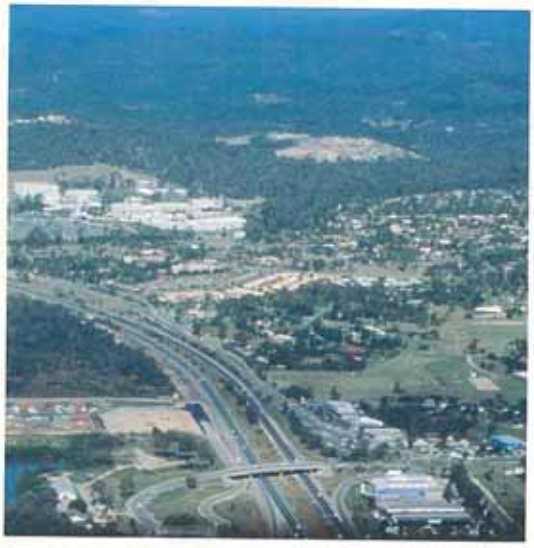
In addition, new road actions will need to be developed as the region's population continues to grow. These new actions should support the achievement of the IRTP objectives and consider the road planning principles discussed above.

The Pacific Highway corridor

Travel demands are predicted to increase throughout the Pacific Highway corridor due to urban development along the highway periphery, as well as continued growth in housing and employment on the Gold Coast itself. The City of the Gold Coast is expected to accommodate an additional 252 000 people, or around 21% of the region's expected population growth from 1992 to 2011. Apart from the City of Brisbane, Gold Coast City is the most important location for employment, with an additional 121 000 jobs, or 20% of the region's expected employment growth.

Major projects under way in this corridor are:

- construction of the eight lane Pacific Motorway between the Logan Motorway and Smith St and six lanes to Nerang by 2000;
- construction of High Occupancy Vehicle lanes between the Gateway Motorway and Logan Motorway by 2001;
- planning for the upgrading of the Logan Motorway at the northern end of the Pacific Motorway;
- conducting a feasibility study for the Tugun Bypass at the southern end of the Pacific Motorway;
- planning for the provision of a combination of service roads and local arterial roads as part of urban development, to allow people to travel within urban communities without having to access the Pacific Highway or Pacific Motorway; this will include additional river crossings of the Logan and Coomera rivers; and
- Robina rail and feeder bus services by late 1997.



To support these works, and ensure the Pacific Highway and Pacific Motorway can continue to meet long term demand for inter-urban travel, an integrated package of transport and land use measures is proposed. These will include:

- construction of a dedicated two-way, two-lane busway from the Gateway Motorway to the Brisbane Central Business District by 2001, and planning for a dedicated busway on key sections to the Logan Hyperdome;
- investigation of setting aside lanes for high occupancy vehicles and public transport vehicles on the Pacific Motorway;
- restraining growth in commuter travel from the Gold Coast and hinterland and southern metropolitan area to jobs in the city of Brisbane by further measures to locate employment closer to housing;
- concentrating urban development at public transport nodes in the corridor and providing good feeder bus services, so households do not have to own a second car;
- further planning and provision of local arterial roads as part of urban development, to allow people to travel within urban communities;
- enhancing Gold Coast Rail services to provide higher speed, more frequent services; that is, more track capacity and improved alignments through to Roma Street, as well as more stations for local train services between Yatala and Robina in association with transit-supportive development;
- conducting a feasibility study of extending the Gold Coast Rail to Coolangatta; and
- conducting feasibility studies of upgrading the current inter-city rail to standard gauge or new technology fast trains, capable of speeds greater than 200 km/h.

Since much of the projected traffic growth will be local, it will be possible to divert a large flow of traffic away from the Pacific Motorway by providing a combination of service roads and local arterial roads as part of urban development. For example, only about 10% of the vehicles crossing the Logan River will be bound for the Brisbane Central Activity District, and as much as 30% will be bound for local destinations within a 10 km radius.

In addition, the northern end of the highway and the existing Beenleigh to Brisbane suburban rail will be under considerable stress from local growth around Beenleigh. A transport network investigation needs to be undertaken between Brisbane and Beenleigh to accommodate future major growth of travel associated with the development of housing and employment around the Beenleigh Key Centre.

This will include consideration of road and rail system upgrades and construction of a busway to ensure the Pacific Highway continues to cater for inter-urban and inter-regional movements. For example, improved "grade separation" of selected intersections, and additional access control along the existing alternative major roads from Mt Gravatt to Beenleigh would allow removal of traffic signals and increased speed limits.

The Mount Lindesay Highway

Upgrading and realignment of the Mount. Lindesay Highway south of Beaudesert across the NSW border has been suggested as an alternative freight and interstate traffic route to the Pacific and New England Highways. There would be clear benefits in linking the designated major industry area at Bromelton, west of Beaudesert to the beef producing region in northern NSW. As an alternative link between Brisbane and NSW, there would also be benefits to interstate traffic generally.

Consideration of the realignment and upgrading of the Mount Lindesay Highway across the NSW border must pay specific attention to:

- the costs of construction relative to likely actual economic benefits; and
- the environmental impact of a road upgrade through the border area.

The IRTP supports further study of this concept. If a cost-effective route which has acceptable environmental impact can be found, this upgraded connection could be considered in more detail.

As an interim measure, the upgrading of the Mt Lindesay Highway from Beaudesert to the Logan Motorway, the possible provision of a western bypass of Beaudesert to improve connections to the major industrial growth centre at Bromelton, and the identification of a long-term transport corridor south of Greenbank should be investigated as a high priority, and necessary corridors reserved.

Inappropriate road network development

A number of opportunities to develop other roads have been considered during the IRTP process. Unless there is a change in preferred development patterns or current designated freight transport routes, there will be no need to investigate these road corridors any further. In some cases, alternative options to these roads, mainly the construction of local arterial roads or public transport rights of way, may be required to accommodate growth in travel demand.

Major road connections which are currently not considered appropriate for the future are:

- a new inter-urban road between Caboolture and the Sunshine Coast, to duplicate the Bruce Highway;
- a motorway through the inner north eastern suburbs of Brisbane (termed the "Airport Motorway" in some documents); and
- a new inter-urban road corridor west of the Pacific Highway between Brisbane and the Gold Coast.

Major road corridors held in reserve

A number of major road corridors have been identified and protected in the past. Some of these corridors are not currently required for new roads. They are proposed to be dealt with in the following manner.

Retain for future study of possible alternative uses of the land including public transport rights-of-way:

- Northern Transportation (Airport) corridor and east-west connector to Gympie Road.

Retain and protect pending resolution of the Western Brisbane transport network investigation:

- the Kenmore - Moggill Pocket corridor, Moggill-Warrego Highway Connection; and
- the Samford bypass and Ferny Grove connectors.

Retain and protect pending investigation of possible future transport needs:

- the north western transport corridor from Stafford through Everton Park to Aspley;
- the southern portion of the South Coast Motorway Corridor/Smith Street Connector from Beenleigh-Redland Bay Road to Nerang-Broadbeach Road; and
- the transport corridor between Moreton Bay Road (Capalaba) and Long Street (Cleveland).

Retain and protect pending future investigation of possible new urban development (beyond the year 2011):

- the Bells Creek Arterial road corridor, "Caloundra Downs" area.

ACTIONS:

KA 8.11 Investigate strategic road opportunities as per IRTP maps

KA 8.12 Investigate enhancing existing road corridors as per IRTP maps

KA 8.13 Initiate transport road network investigations as per IRTP maps

A 8.14 Consider long term road opportunities as per IRTP maps

KA 8.15 Ensure Pacific Motorway can cope well into the future

KA 8.16 Initiate Brisbane to Beenleigh network investigation for urban growth

8.6 Major transport investigations

The *Regional Framework for Growth Management* recommended that the IRTP establish peripheral transport corridors around the Brisbane metropolitan area. It supported major transport investigations, in the following geographic areas:

- western Brisbane;
- south-west of Ipswich; and
- west of Ipswich

Western Brisbane transport capacity

Factors such as changing population and travel patterns in the western suburbs, and the increase in the number of people to the north and west of Brisbane, are placing pressure on transport capacity in the western metropolitan area. The absence of rail services and bus priority systems in large parts of the area has contributed to over reliance on car travel.

With the completion in 1997 of the Gateway Motorway extension, Brisbane will have the Logan Motorway and Gateway Motorway as a major urban bypass. While there is no need for another bypass of Brisbane for long distance traffic, significant concerns exist about the ability of the Gateway Motorway and western metropolitan road network to cope with future urban traffic. Additional transport system capacity will be needed in the 21 st century unless there is a major change in travel behaviour in the western suburbs, or changes in proposed urban development patterns to the north and south west of Brisbane.

A transport investigation needs to be undertaken to determine how to resolve future network deficiencies in the western Brisbane area. The western Brisbane transport capacity investigation will be addressed in a staged approach as follows:

1. conduct an analysis of present and future passenger and freight travel demands in the western metropolitan area;

2. analyse the reasons for, and nature of, the predicted growth in passenger and freight demand, and assess a range of options to address travel growth, including all transport modes, as well as land use strategies to reduce travel demand and localise journeys;

3. identify transport system improvement options, including opportunities for a western busway; and

4. plan and protect for the mix of strategies.

A feature of this and all other transport studies will be extensive community consultation on the options and preferred solutions, as well as comprehensive social, economic and environmental impact assessment.

South-west of Ipswich

A transport corridor in south-western Ipswich could extend the proposed Centenary Highway extension and link the new development areas of Ripley and Springfield to:

- the Ipswich - Boonah Road in the west; and

- the Logan Motorway and Centenary Highway in the east.

This corridor could offer significant benefits as an alternative route to keep pressure off the Ipswich Motorway as well as serving major growth areas south of Ipswich. People from these new development areas would have an alternative route to Ipswich and Brisbane and points beyond without having to rely on the Ipswich Motorway. A network of local arterial roads to improve connections between communities will also be needed to protect the integrity of the major highways. An alignment should be investigated as part of a joint road/rail corridor study, and the potential benefits and costs of such a road studied in more detail.

In the longer term, the extension further west from Ipswich - Boonah Road to the Cunningham Highway may also be warranted, and investigations of this extension should be undertaken as part of this study.

West of Ipswich

A transport corridor to the west of Ipswich linking the Warrego Highway to the Cunningham Highway would serve the proposed major industrial development area at Ebenezer. This link could also connect to a major park-and-ride facility at Karrabin rail station, and would play an important role in serving the long term development potential of the Amberley Air Force Base.

An alignment should be identified and protected for this corridor and connections as part of integrated local transport planning in the Ipswich area.

ACTIONS:

KA 8.17 Undertake impact assessment studies for strategic road opportunities in Ipswich

KA 8.18 Investigate transport options for the western Brisbane area

Chapter 9: Freight

9.1 Importance of freight

Transport links have a major influence on the ability of industries to compete in national and international markets.

Efficient freight transport is vital to the economic development of Queensland, and provides people with the goods and services they need. Major commodity flows occur within and through the region, particularly in association with the Port of Brisbane and other key industry areas.

The transport network for South East Queensland will support the economic development objectives of the *Regional Framework for Growth Management* by supporting value-adding industries with efficient transport links, and maximising the region's advantages as a Gateway to the Pacific Rim.

Increasingly, industries are moving goods on a 24 hour basis. Since freight traffic must often pass through urban areas, there is a high potential for conflict as 24 hour freight operations increase in the future.

And, as freight vehicles are usually much larger than private vehicles, many people feel threatened by their presence on the road system. The IRTP consultation process revealed significant public concern about the safety and impact of heavy freight vehicles mixing with car traffic and passing through residential areas.

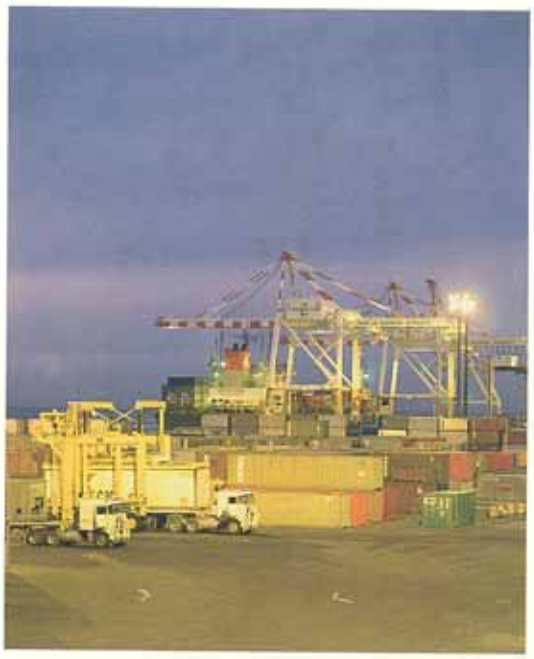
In an integrated planning process, there is a risk that freight needs will be seen as less important than public transport and congestion issues raised by the general travelling public. Alternatively, freight transport might be unnecessarily penalised due to its perceived impact on the community.

Yet, if the needs of freight transport are neglected, everyone in the region will pay through higher commodity prices, the inconvenience of not being able to readily obtain supplies, loss in international competitiveness and reduced employment opportunities. To realise its full economic potential, the region must have a high quality freight transport system which is able to get goods to markets quickly and cost-effectively, while minimising the impacts on the community and the environment.

9.2 The freight task

Australia has one of the highest per capita rates of road freight haulage in the world, and the movement of freight in the SEQ region is consistent with this. In 1991/92, the total freight moved in the region was 123 million tonnes per annum shared by the following modes:

- 79% by road;
- 8% by rail; and
- 13% by sea.



Over 90% of freight movements are localised, moving goods within the region. Of these, over 95% are moved by road, and less than 5% by rail and sea combined.

The region has two major intermodal freight terminals: the rail-road interchange at Acacia Ridge; and the Port of Brisbane. Both of these require freight traffic to pass through urban settlement areas, presenting difficulties in upgrading road and rail links to support expanded activities.

The Rocklea markets in Brisbane are the largest single generator of freight movements, yet even these account for less than 0.5% of the regional total. Other key freight centres include retail distribution centres and major industries around the Port of Brisbane and in the Wacol/Acacia Ridge area.

Brisbane Airport is increasing its importance as a generator of truck movements, particularly of high value goods, though in tonnage terms it is relatively unimportant as a freight node.

Analysis of regional population and travel demand growth indicates that an increase in population of 60% on today's levels, would increase the freight task (measured by tonne kilometres hauled each day) by 80-120%.

9.3 Better planning of freight needs

Traditional approaches to transport planning have concentrated on moving general motor traffic. While the needs of freight were recognised, no clear method existed for ensuring freight needs received appropriate priority. Freight needs and demands should be considered in an integrated way with people movement as part of integrated transport studies.

The *South East Queensland Freight Study* is a major report on future regional freight needs completed by Queensland Transport in June 1996. Local government and the public were consulted during the study and the IRTP planning framework helped guide that study. The IRTP steering arrangements will be used to oversee the *South East Queensland Freight Study* implementation.

The IRTP identifies key freight transport needs and opportunities derived from assessment of future employment and industry development. It incorporates the key elements of the *South East Queensland Freight Study*, and supports its recommended strategy. Many of the study's recommended actions are local in nature and are not contained in the strategic actions of the IRTP. They are nonetheless important in supporting an efficient freight system.

The IRTP also strongly encourages local government to identify and prioritise freight transport infrastructure needs as part of local economic development strategies. In this way, appraisal of future transport investment options can fully consider the needs of freight transport.

ACTION:

A 9.1 Use IRTP steering arrangements to oversee implementation of the *South East Queensland Freight Study*.

9.4 Rail freight

Carrying additional freight on rail has been suggested by many people as a way to restrain the growth and impact of heavy vehicles on our road system. While it makes sense to maximise the use of the rail system for carrying freight, there is little scope for major changes in the modal split for the current freight task because of the short distances and volumes involved and local delivery nature of the intra-regional freight. Such markets are generally not contestable by rail.

There are however, significant opportunities for rail to gain additional market share of new products moved on long haul corridors including:

- development of the Darling Downs coal reserves at Macalister and Brigalow; and
- establishment of new extractive industry operations to the south and west of Brisbane.

A new rail alignment over the Toowoomba Range would provide for better grades and safer travel, improving the rail travel time from the Darling Downs to Brisbane by around 90 minutes. This will enhance the competitiveness of rail freight from the Downs and southern states. It would open up the opportunity for a future passenger rail service between Toowoomba and Brisbane to be more competitive with road transport.

New freight rail connections also need to be considered to support industrial growth areas around the region. These should be considered at Bromelton (west of Beaudesert), Yatala (south of Beenleigh) and Ebenezer (west of Ipswich).

However, a potential major constraint on the future growth of rail freight is the conflict between freight and passenger services in the metropolitan area. To achieve the improved public transport services required by the IRTP, much higher frequency passenger services will be required in all time slots. Freight trains are slower and longer than passenger trains, and have a lower priority. Freight traffic tends to be "squeezed out" of the suburban rail network in peak hours, further threatening freight rail viability.

The configuration of the current rail network through the metropolitan area also means:

- there are limited opportunities for high volume freight traffic travelling from Toowoomba to the Port of Brisbane to pass through the suburban network; and

- virtually all rail freight for northern destinations must pass through the centre of Brisbane on its journey from the major freight terminals on the south side of Brisbane.

As the freight and passenger tasks increase over the next 10 years, major bottlenecks will become evident in the central city area at Normanby and Roma Street, and at the Park Road Junction, as well as on heavily trafficked passenger lines to Ipswich and Petrie.

Unless the ability to deliver a service competitive with road freight is to be severely compromised, it will be necessary to develop new freight rail facilities, with the long term aim of segregating metropolitan passenger and freight activities on to dedicated rail systems.

Another constraint to rail freight is the Queensland gauge (1067 mm) system and existing clearances under bridges and overhead wires. Since road transport is becoming more efficient in its ability to cater for bulk haulage, future freight rail links will need to be planned to accommodate longer trains, or double stacking of containers which requires standard gauge and additional height clearances.

Rail freight capacity and economic development is a key issue facing South East Queensland. The IRTP proposes a study into Rail Freight Capacity as follows:

1. identify future demand for rail freight movements;
2. examine constraints on the existing system;
3. examine a wide range of options to overcome constraints, including elimination of choke points on the existing rail network; and
4. if necessary, examine long term options for further expanding rail freight capacity.

A feature of this and all other transport studies will be extensive community consultation on the options and preferred solutions, as well as comprehensive social, economic and environmental impact assessment.

ACTIONS:

A 9.2	Study freight rail demand, system constraints and upgrading options
A 9.3	Investigate new rail lines at Toowoomba and Little Liverpool ranges
A 9.4	Investigate feasibility of improved rail between Landsborough and Yandina
A 9.5	Investigate rail freight connections to major industrial areas