9. Economic environment

9.1 Introduction

The Sunshine Coast is one of the fastest growing regions in Australia. Between 2007 and 2031, the Sunshine Coast's population is expected to increase by up to 84 % (Planning Information and Forecasting Unit 2009). This rapid growth puts pressure on the region, the transport system and the Sunshine Coast way of life. The Queensland Government is planning improvements to public transport on the Sunshine Coast to provide a balanced system into the future.

A city's economic and social wellbeing is highly dependent on a well-functioning transport system, and research suggests that successful cities have the right balance of good roads and quality public transport. While the benefits of supporting public transport and reducing car dependence are commonly associated with larger capital cities, improved public transport can bring a wide range of economic, social and transport benefits to communities of any size (Newman & Kenworthy 1999, pp. 212–223). This chapter reviews the available literature and provides case studies to show that smaller cities and communities can successfully reduce their private car dependence by encouraging the use of public transport and non-motorised travel.

Overall, the purpose of this chapter is to provide a preliminary analysis of the potential economic benefits and impacts of the project, including discussion on:

- the existing high-level economic make-up of the Sunshine Coast, including population, employment, business activity, the tourism industry and property market trends
- the links between improved public transport and economic growth
- user benefits, such as travel time improvements and reliability savings, improvements to road safety and lower vehicle operating costs
- wider community benefits, including employment and local business, land use and property, economic development potential, reduced community transport costs, transit-oriented development, and staging benefits
- how proposed parking changes might affect business activity in the corridor.

9.2 Methodology

This project is in the feasibility study phase, and its aim is to identify and preserve a transport corridor for construction in stages between 2014 and 2019. For that reason, a high-level qualitative analysis of potential economic benefits and impacts has been undertaken. This has involved a desktop economic analysis to understand the existing economic make-up of the Sunshine Coast and identify the anticipated benefits and impacts the proposal may have on the corridor. Qualitative economic analysis has been undertaken to the level needed to satisfy corridor preservation requirements.

A quantitative benefit–cost analysis has not been undertaken for this phase of planning. Should the project alignment be approved for preservation, a detailed business case would be undertaken in the future for the Queensland Government's consideration (see Figure 9-1). This will allow the government to make an informed decision on the funding and staging of the project.

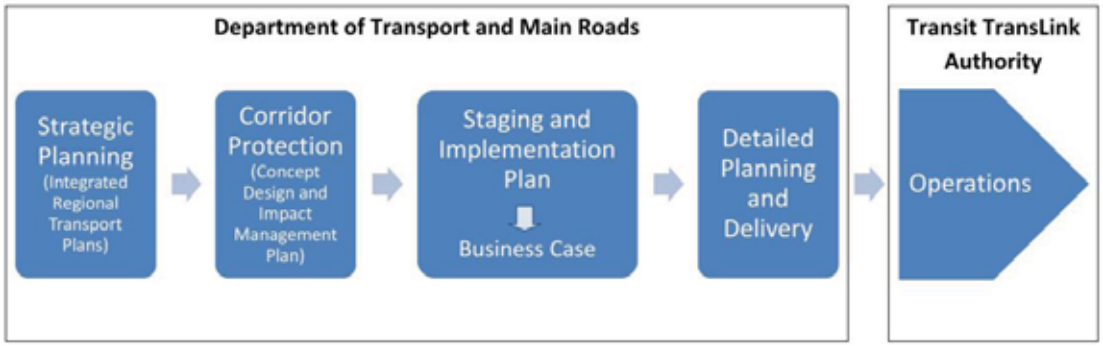

Figure 9-1: Overview of CoastConnect — Caloundra to Maroochydore planning process

9.3 Preliminary analysis

9.3.1 Existing situation

Population

The estimated resident population of Sunshine Coast Regional Council at 30 June 2009 was 323,423 people, an increase of 9,572 people or 3 % over the year[13]. This compares with an increase of 9,781 people or 3.2 % in the year to June 2008. Australian Bureau of Statistics figures show that the Sunshine Coast had the fourth largest growth in Queensland over the five years between 30 June 2004 and 30 June 2009, with an average annual growth rate of 3.1 % (Australian Bureau of Statistics 2009).

In the year to June 2008, natural increase (births minus deaths) accounted for an increase of 1,366 people, while assumed net migration resulted in a gain of 8,415 people.

Projections prepared by the Department of Infrastructure and Planning indicate that by 2016 the expected population of Sunshine Coast Regional Council will be between 367,900 and 400,010 people. By 2031, this is expected to change to between 461,210 and 558,880 people (low and high series) (see Figures 9-2 and 9-3). This rapid increase in population will have consequences for the Sunshine Coast's transport system. A significant increase in public transport patronage will be required to ensure a balanced future transport network.

Under the South East Queensland Regional Plan 2009–2031, an estimated 98,000 additional dwellings will be required by 2031 to accommodate the Sunshine Coast's proportion of expected regional growth.

[13] *Except otherwise stated, all population statistics and projections in this section are courtesy of Planning Information and Forecasting Unit 2009, Population and housing fact sheet: Sunshine Coast Regional Council, Department of Infrastructure and Planning, Brisbane.*

Around 61,000 dwellings will be located through the continued development of existing urban-zoned land and major long-term broad-hectare areas in Caloundra South and Palmview. Infill development is anticipated to provide 37,000 dwellings by 2031.

Infill areas are focused on Maroochydore, which is the principal activity centre for the Sunshine Coast, and around the major activity centres of Caloundra, Sippy Downs, Kawana Waters, Nambour and Beerwah (Department of Infrastructure and Planning 2008; SEQ Regional Plan 2009–2031).

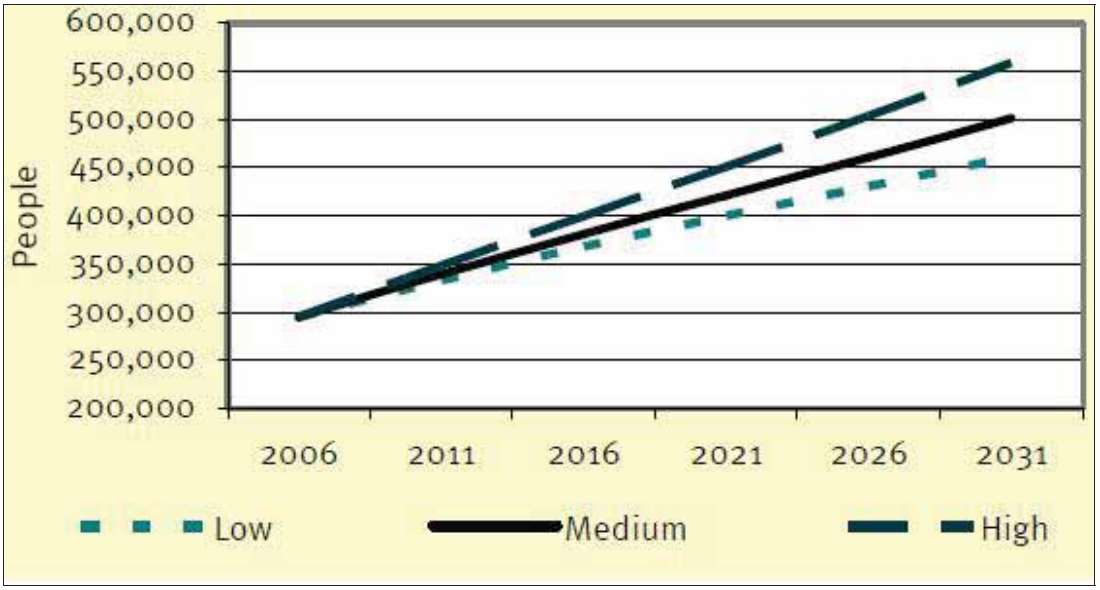

Figure 9-2: Graph of Department of Infrastructure and Planning population projections for Sunshine Coast Regional Council area

	Projected population			Five years to 30-Jun	Average annual change (medium series)
	Low	Medium	High		
2011	332,928	339,663	348,587	2011	2.9%
2016	367,902	381,458	400,003	2016	2.3%
2021	399,915	421,343	451,269	2021	2.0%
2026	430,723	460,862	503,789	2026	1.8%
2031	461,212	501,179	558,878	2031	1.7%

Figure 9-3: Table of Department of Infrastructure and Planning population projections and average annual change for the Sunshine Coast Regional Council area

The median age of Sunshine Coast Regional Council's population is projected to increase by three years from a median age of 41 years in 2006 up to median age of 44 years in 2031 (see Figure 9-4).

	Age group					Median age
	0-14	15-24	25-44	45-64	65+	
2006	56,901 19.3%	35,086 11.9%	74,700 25.3%	80,885 27.4%	47,553 16.1%	41
2031 *	87,464 17.5%	52,045 10.4%	119,189 23.8%	125,366 25.0%	117,114 23.4%	44

* Medium series

Figure 9-4: Table of Department of Infrastructure and Planning projection of population by age group, Sunshine Coast Regional Council

Employment

The Sunshine Coast's labour force totalled an estimated 159,100 people in March 2010, with a 13.8 % increase in the labour force since December 2004 (Sunshine Coast Regional Council & Caloundra City Enterprises 2008). The Sunshine Coast region has a labour force participation rate of around 62.2 % which has increased from about 50% in 2008. The Gold Coast, by comparison, has a labour force participation rate of 66 %. Metropolitan Brisbane — a mature, diverse economy — has a labour force participation rate of 70 %. A strengthening and broadening of the Sunshine Coast's economic base will be required to boost its rate of labour force participation (Sunshine Coast Regional Organisation of Councils 2004). Professionals comprise the largest employment sector on the Sunshine Coast, comprising 18 % of all employees. The technicians and trade workers sector is the second largest employer, employing 17 % of the workforce (see Figure 9-5).

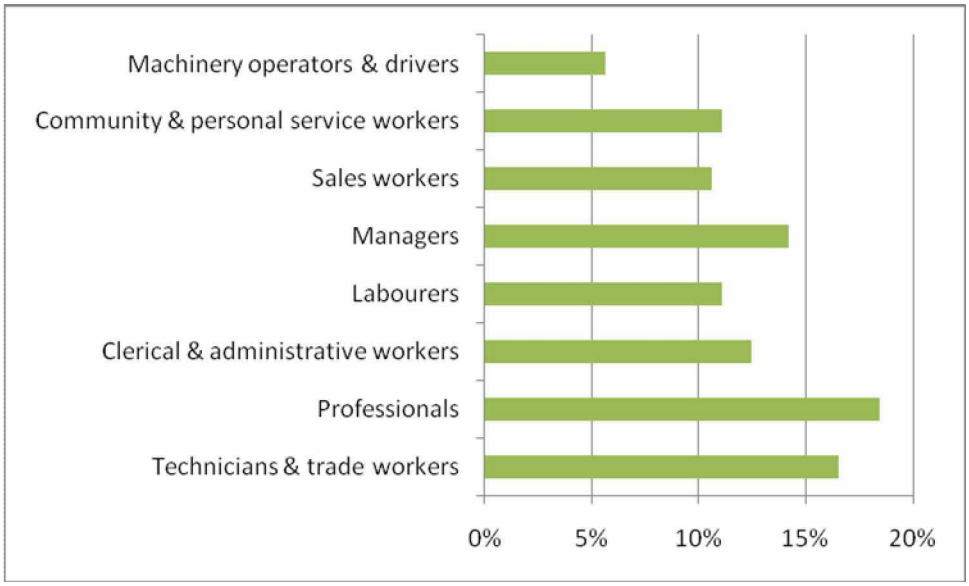

Figure 9-5: Graph of employment by occupation on the Sunshine Coast

Source: Department of Employment, Education and Workplace Relations, Labour market information portal.

Business activity

The gross regional product (GRP) of the Sunshine Coast is estimated at approximately $13 billion — more than double what it was in 2001. The construction industry is the most significant contributor, comprising 16.7 of the region's GRP, Property and business services (13.2 %) and retail trade (10.7 %) are the second and third greatest contributors, while health and community services (9.4 %) and manufacturing (9.3 %) are also key contributors to the regional economy (see Figures 9-6 and 9-7).

In June 2007, 31,770 businesses were operating in the Sunshine Coast region, representing a 4.6 % increase over the year (Sunshine Coast Regional Council & Caloundra City Enterprises 2008).

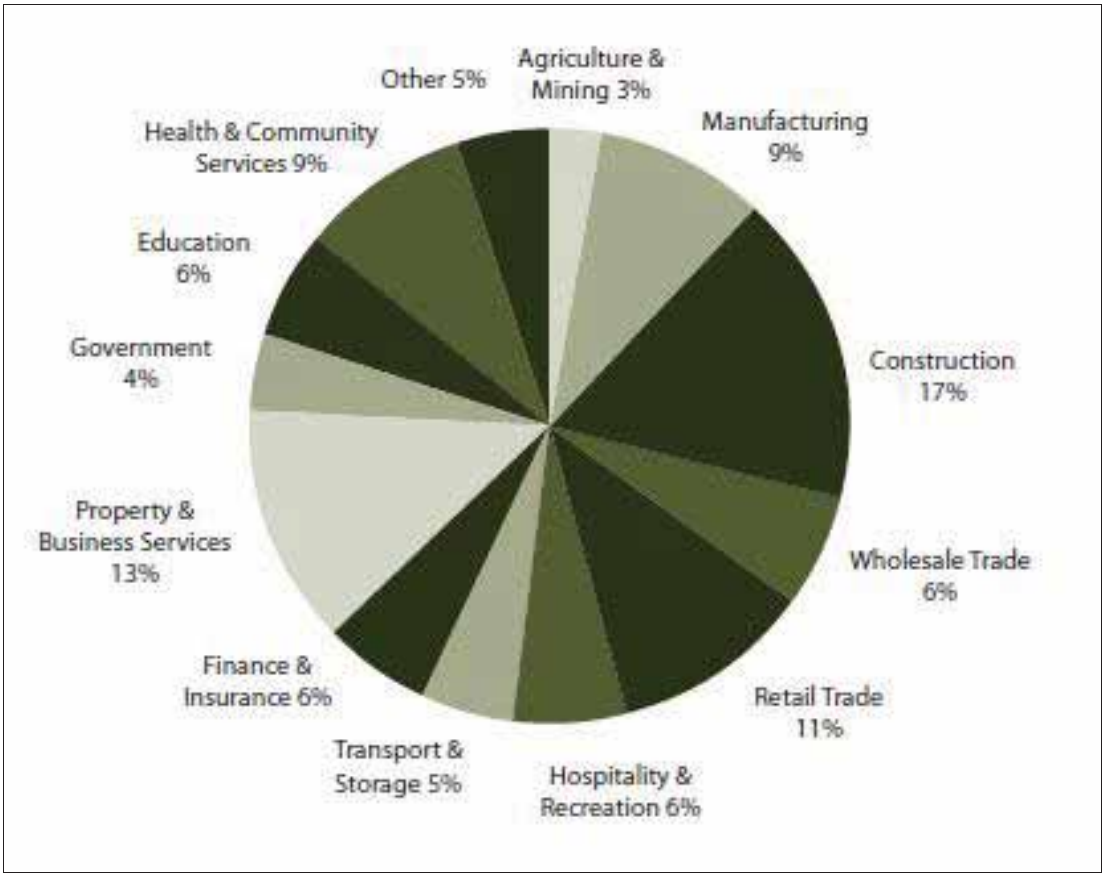

Figure 9-6: Sunshine Coast regional economy by sector

Source: Sunshine Coast Regional Council 2008, *Preliminary regional business* profile

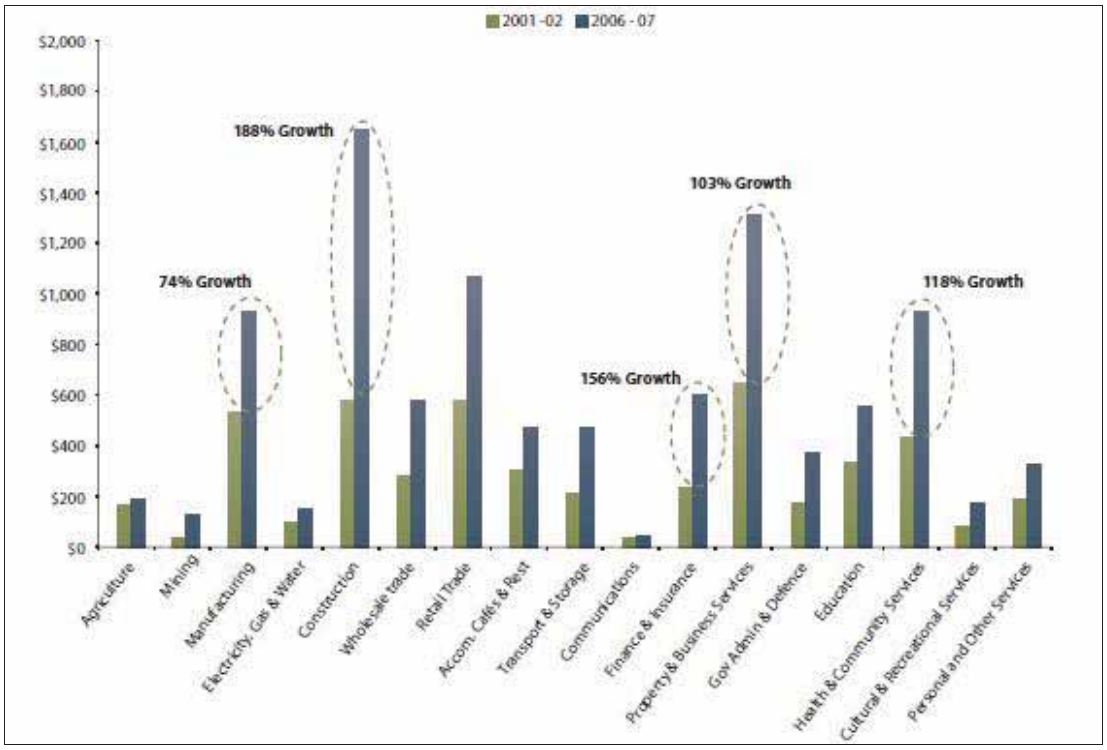

Figure 9-7: Growth in gross regional product ($M)

Tourism

The Sunshine Coast is a major holiday destination, and tourism contributes significantly to the regional economy. In 2007, the region attracted more than eight million visitors, 63 % of whom were domestic day visitors. Visitors spent $2.4 billion in the region. Domestic overnight visitors accounted for 71 % of the total spend and 82 % of the 13.3 million nights spent in the region. In June 2007, there were more than 9,100 tourism-related businesses in the region (Tourism Research Australia 2007). The tourism industry is expected to continue to play a big part in the local economy.

Property market trends

The median house price for the Sunshine Coast was $485,000 in March 2010 which is a slight increase over the quarter. This is the third highest median in Queensland. The region also had one of the highest median land prices at $272,000. (Master Builders 2010)

9.3.2 Potential benefits, impacts and typical mitigation measures

Potential benefits

This section provides a qualitative discussion on the potential economic benefits of the CoastConnect — Caloundra to Maroochydore project.

The link between transport benefits and economic growth

Although there is general agreement that transport efficiencies lead to economic growth, the process by which this takes place and the way in which it could be measured are often not well understood.

Significant progress has recently been made to demonstrate the link between transport's wider economic benefits and economic growth. Research for the Eddington Transport Study identified seven micro drivers of economic growth which can be achieved through transport efficiency gains (Eddington 2006). Figures 9-8 and 9-9 show how direct public transport benefits lead to economic growth through transport system usage, and the multiplier effect of the capital investment and operating the service.

Figure 9-8: How transport efficiencies achieved with public transport lead to economic growth

The left side of Figure 9-9 shows the way in which higher productivity and increased consumption, both cornerstones of economic growth, could be achieved through gains in transport system capacity and efficiency. On the right side, increased capital and operating expenditure leads to economic growth through the economic multiplier effect. The extent to which investment in public transport services expands the economy depends on the size of the investment and the magnitude of the multiplier. The size of the multiplier depends on the percentage of the investment that leaks out of the economy through savings, expenditure outside the study area, and taxes.

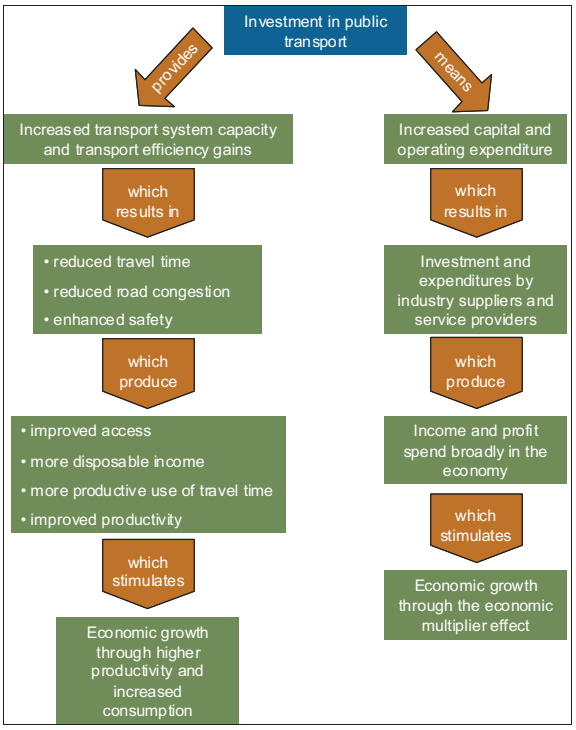

Figure 9-9: How investment in public transport leads to economic growth

Better public transport boosts productivity and expands the productive capacity of the economy. It does this by attracting skilled labour to employment areas that are well serviced by a balanced transport system with a range of travel options. This helps expand the labour pool and provides opportunities for business growth. Travel time reductions are used as a measure of improved productivity as they allow for more productive use of time and resources.

User benefits

Travel time and reliability

Public transport systems are an important part of an area's wider transport system. In more populated areas, large numbers of people use public transport for their journeys to work and education. As Infrastructure Australia (2008) has reported, without these networks and services, levels of congestion on our roads would be much higher and the central business areas of our cities would struggle to function.

Journey reliability is vital for many travellers. The importance of reliability intensifies as transport systems become more congested. Businesses can lose valuable working time if transport links are unreliable. Predictable transport services are important for commuters as well, whose quality of life can be adversely affected by irregular journeys and the stress of being late. Owing to the fact that buses will no longer be subjected to such variable travel times along the key CoastConnect arterials, the CoastConnect — Caloundra to Maroochydore project will bring greater certainty to passengers of journey time and of bus arrival and departure times.

Public transport infrastructure projects traditionally generate travel time savings for two types of the travelling public:

- public transport users, including those who would have used public transport even if the project were not to proceed
- road users who remain on the road but receive a travel time benefit as a result of reduced congestion.

The CoastConnect — Caloundra to Maroochydore project will save up to 13 minutes on a bus trip between Caloundra and Maroochydore in 2026 (see the Traffic and Transport chapter for more information). Current car users who do not shift to bus will also experience time savings. This is due to the shift in car users to bus users, due to the attractiveness of reliable and frequent bus services along Nicklin Way, Brisbane Road, Alexandra Parade and Aerodrome Road.

Road safety

A range of avoided costs are driven by mode shifts from private vehicle to bus travel. These comprise external costs that the person making the trip does not generally consider in their private vehicle cost calculation. These avoided costs include the impacts of accidents. Road-related accidents result in a multitude of adverse socioeconomic impacts on the community, government and the private sector.

Some of these factors include:

- immediate and ongoing medical costs
- property damage
- unquantifiable emotional damage
- police emergency service response costs
- road safety infrastructure enhancements
- higher insurance premiums
- legal costs.

Reduction in travel cost

Current car users who shift to bus will experience significant cost savings as bus fares are considerably lower than car vehicle operating costs. Consumers can make significant savings in transport-related expenditure through reductions in vehicle ownership and reducing their vehicle kilometres travelled in their private motor vehicle.

Wider community benefits

Employment and local business

Substantial regional employment and tourism benefits have been achieved elsewhere through public transport investment. While public transport infrastructure investment alone would not guarantee economic growth, research showed that, with the right mix of policy and economic conditions, it would generate substantial economic benefits (Bannister & Berechman 2000).

In relation to regional employment, public transport produces a significantly higher return on investment than car-oriented spending. Studies in the US and Canada (Litman & Laube 2002) found that the number of jobs generated by public transport expenditure is around five times greater than that generated by a similar size of car-related expenditure.

Of particular interest to the Sunshine Coast are the benefits that improved public transport could bring to the tourism industry. It is essential that the increasing numbers of tourists that travel by air to their destination be served by good quality public transport services. Restricting the mobility of a growing number of tourists who are without a car at their destination would suppress tourist spending (Prideaux 2004). Mandurah, south of Perth, is an Australian example of a small city that uses feeder buses to support the increased tourism activity generated by the new suburban/interurban rail line that brings tourists from Perth.

Land use and property

The potential benefits at and around the bus stations could result in higher uses and potentially increase the value of properties in the surrounding area. Extensive evidence exists of causality between public transport improvements and an increase in urban land value. For example, a recent study (TransLink 2001) showed that an average 20% increase in property values near Brisbane's South East Busway was largely attributed to the transport benefits of the busway. As land values are determined by a number of factors, this example is specific to the busway experience and is not directly transferable to the CoastConnect project. At a higher level, research by the Royal Institution of Chartered Surveyors (2002) demonstrated that these effects:

- are positive for both residential and commercial property markets
- could extend to a radius of 1,000 metres in the case of residential dwellings and 400 metres for businesses
- are easier to identify for tram or metro than for bus.

Figure 9-10 shows that the supply of a more efficient public transport service could lead to an increase in land value by encouraging more productive use of land and reducing development cost. Simultaneously, the intensity of land use in the corridor increases as a result of higher demand due to improved accessibility and higher density.

Land productivity increases and reduction in development cost is possible because:

- public transport services require relatively little urban space to move large numbers of people, which permits much higher density land uses. Not only would this increase the intensity of land use, interrelated activities could also take place closer to each other — commonly referred to as the agglomeration and clustering effect (Eddington 2006)
- better access to efficient public transport could improve an area's attractiveness to existing occupants and patrons, thereby increasing the demand for properties. This, combined with an increased number of additional trips to the corridor, may push up prices by stimulating demand for land in the corridor.

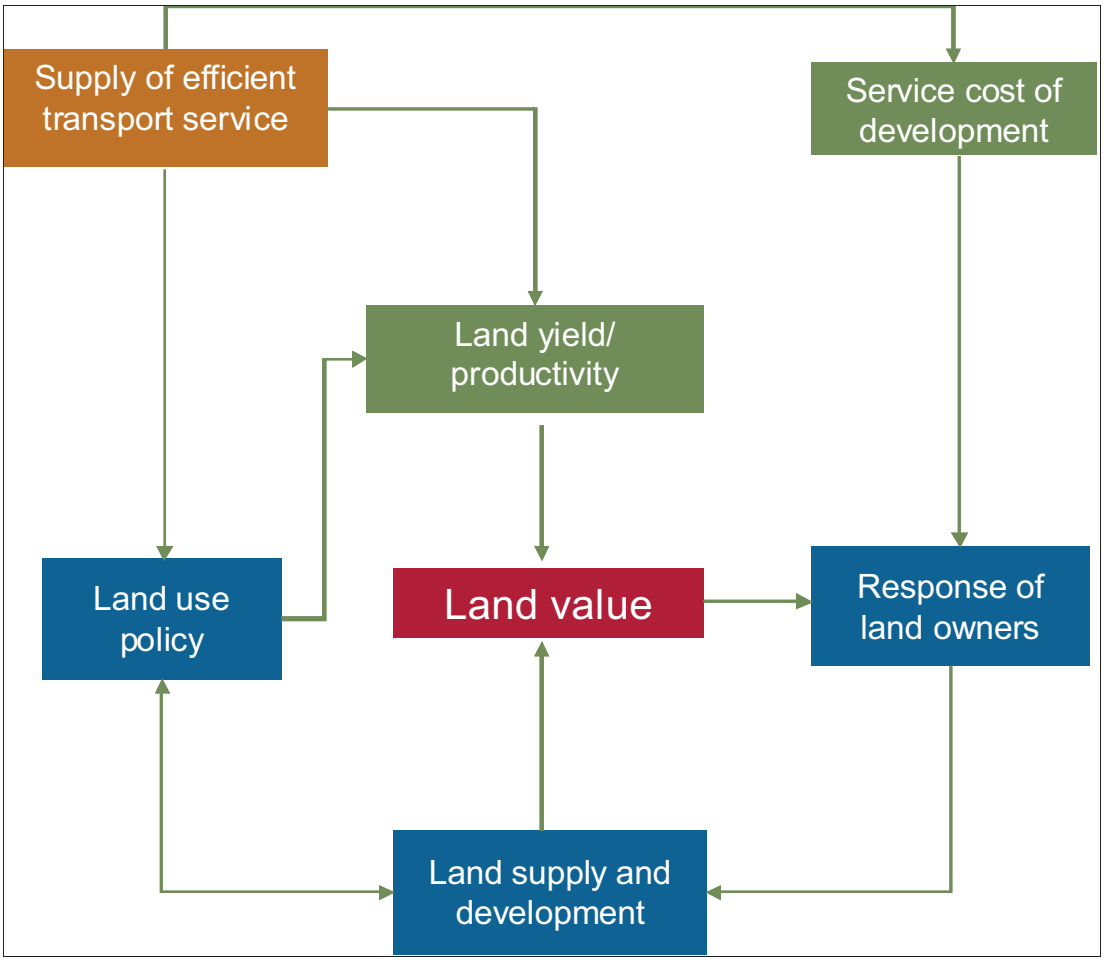

Figure 9-10: Efficient transport services lead to an increase in land value

More intensive high-density land uses create substantial opportunities for economies of scale in the provision of public services. Development costs could fall as a result of economies of scale to service higher density developments, and the savings resulting from less road infrastructure and car parking space requirements. The lower cost of servicing new developments encourages land owners and developers to release more land for development, thereby increasing the supply of competitively priced floor space.

PB (Bilsborough, Newman & Trubka 2009) calculated that the cost of infrastructure, transport, health and greenhouse gases for new housing built on Sydney's fringe was $344,000 more per new dwelling than for inner-city developments. Direct government savings on power, schools, water, sewerage and hospitals amount to $85,000 per dwelling for inner-city developments. In addition, it is estimated that $250 million in transport costs would be saved over 50 years for every 1,000 houses that are developed in the inner city rather than on the city's fringe (Newman 2009). Without an efficient public transport service, there is very little scope to increase the density of developments.

Cost to service development reduces significantly when good-quality public transport is available. Studies undertaken by PB (2008) showed that, by extending a high-quality bus service to a development rather than providing sufficient parking and road infrastructure improvements to satisfy car trip generation, as much as 50 % could be saved on the provision of transport infrastructure in an urban environment.

In most cases property values take a long time to react to changes in transport supply. It is not uncommon for noticeable changes to be observed 5 to 10 years after opening. Other studies noted a rapid impact. In the case of Brisbane, for example, property values reacted almost immediately to the South East Busway. Within a few months after opening of the busway, median property values for adjacent suburbs increased by between 4 % and 21 %. During the same period, value of properties further away declined by between 4 % and 7 %.

Table 9-1 lists a number of examples of the extent to which public transport services have increased land values in a corridor:

Table 9-1: Expected increase in property values

Public transport initiative	Gain in nearby property values
Brisbane South East Busway	20 %
USA (all transit systems)	20 % to 25 %
Chicago	20 %
Dallas	
▪ residential	39 %
▪ office	53 %
▪ taxable value	25 %

Despite substantive empirical evidence of causality between improved public transport and more productive land use, it remains difficult to predict the amount by which land value would increase in a specific case. It should also be considered that land value evolves over time and that changes can only be observed over the long term. Most estimates of land value changes are therefore based on empirical research done elsewhere, which are then applied to a study area.

In addition, not all increases in land value can be fully explained by productivity gains. Other factors such as scenic views, ambiance, speculative prices and 'address' also play a part. It should also be noted that increases in land value do not constitute an economic benefit per se.

The fact that property owners may gain financially from higher land value may be the result of speculative gains rather than a net increase in productivity.

Furthermore, if an increase in the efficiency of the transport system is not supported by pro–public transport land use policies, such as transit-oriented development (TOD), there is a real danger that it would lead to urban sprawl. Instead of exploiting agglomeration benefits in established growth centres, land owners and developers would be tempted to develop further from established hubs, thereby diluting much of the potential agglomeration benefits that would otherwise be realised with the introduction of an efficient public transport service.

Economic development potential

The provision of public transport services has an ability to encourage private investment beyond that of private vehicle focused transport solutions. Capital investment in a public transport system provides a sense of permanence and reliability.

This is not usually found when bus services are introduced on public roads without additional infrastructure improvements (Industry Commission 1993). Although the CoastConnect — Caloundra to Maroochydore project does not provide a fixed way system (e.g. bus rapid transit or rail), the introduction of bus priority lanes, quality stations and street furniture together with frequent reliable services would create an expectation of permanency by sending a clear signal that the Queensland Government is committed to the long-term sustainability of the service.

Reduced community transport costs

In December 2006, the Council of Australian Governments was advised that congestion in Australia's capital cities was costing the economy $9.4 billion each year, growing to $20.4 billion in 2020 (Infrastructure Australia 2008). Providing for the efficient movement of commuters on fast, frequent and reliable public transport can help reduce these costs.

In addition to the large ecological footprints of car-dependent cities, car dependence is associated with higher economic costs. Travel-related per capita fuel consumption in car-dependent cities is typically more than 1,000 litres per year, compared to 300–500 litres per year in transit-oriented cities. In cycling- and walking-friendly cities, per capita consumption could be as low as 100 litres per year. In monetary terms, per capita transport costs in car dependent cities vary from 12 % to 17 % of disposable income, compared to 5 % to 8 % in transit- and walking-oriented cities (Newman & Jenkins 2008).

Air quality and carbon emissions

Motor vehicles cause almost half of all air pollutants in south-east Queensland (Environmental Protection Agency & Brisbane City Council 2003). Every year, the average car releases around 325 kilograms of harmful gases and more than 5 tonnes of carbon dioxide into the regions air (Queensland Transport 2004). Traffic congestion is a large contributor to transport emissions. Increasing public transport use in Australian cities will help achieve emissions reductions (VFACTS 2007).

As Infrastructure Australia (2008) has noted, governments at all levels need to 'provide much greater investment in new public transport infrastructure in order to expand current transport systems and ensure that existing infrastructure and public transport is utilised effectively and efficiently to mitigate effects on climate change'.

The economic benefits of decreased greenhouse gas emissions and better air quality are a key part of the economic analysis in public transport infrastructure projects. The CoastConnect — Caloundra to Maroochydore project would benefit local air quality through the diversion of trips from cars to buses and easing of congestion resulting in a reduction in the amount of vehicle emissions. Refer to the Air Quality chapter of this Concept Design and Impact Management Plan for further information.

The importance of improved public transport is plain to see when you consider that every full bus takes up to 40 cars off the road. While an empty bus produces more pollution than a single car, in only takes six passengers in a bus to make the bus a cleaner option (Queensland Transport 2007).

Staging benefits

A major benefit of bus-based transit systems is that they allow for cost-effective staging. Unlike rail systems, the entire bus-based network need not be built before its transport benefits are realised. The CoastConnect — Caloundra to Maroochydore project will be built and opened in stages. Under this approach, bus priority infrastructure can be provided in the most congested sections and other parts of the network can be built as and when needed. This means public expenditure can be effectively targeted when and where it is most needed.

Potential impacts and mitigation measures

Reduction in on-street parking

The construction of the CoastConnect — Caloundra to Maroochydore project will require a reduction in on-street car parking in a number of locations. This section examines the likely effects of these changes in relation to the CoastConnect — Caloundra to Maroochydore project.

Literature review

A substantial amount of research exists on the relationship between on-street parking and the economic prosperity of an area. The main findings of a representative spectrum of researchers and geographical locations are summarised below.

- Empirical evidence (Roberts 1988) from a number of German cities showed little relationship between the provision of car parking and business turnover per square metre of shopping floor space.
- Based on case studies in a number of European cities in Germany, Austria, Denmark, France, Italy, UK and the Netherlands, Pritchard (add year) showed that car-parking provision appears unrelated to retail turnover or to rents paid on retail establishments.

- Extensive research on the business impact of the UK's 'red route' program confirmed that businesses in London and Solihull continued to thrive despite the removal of on-street parking. Reports state emphatically that, notwithstanding initial reservations by the business community, there were no adverse effects on retail and business performance (West Midlands Planning and Transportation Sub-committee 2006).
- Roberts (1988) and Trebilcock (1996) provide evidence that an excess of parking spaces above a certain threshold acts against the success of retail centres. Having a large number of empty parking spaces in a business centre creates the impression that shops are less successful. An oversupply of parking also detracts from an area's amenity with a resultant loss of ambiance. Removal of on-street parking could also eliminate many indiscriminate and dangerous parking manoeuvres.
- A convincing economic argument is put forward by Siebert (2008) who proposes that on-street parking should only be allowed if it is priced at its true economic value. This means that revenue from on-street parking should at least compensate for the foregone benefits of the bus service. It is unlikely that parkers would be prepared to pay this much for on-street parking when free parking is available close to shops.
- Parking policy of Australia's major cities expresses a preference for the most effective use of on-street space. Favouring public transport over on-street parking allows the road corridor to be used by a larger number of people. Adelaide's on-street parking policy (Adelaide City Council 2001), for example, states that '… it will be priority to make effective use of on-street parking space for public transport to encourage large numbers of visitors to the City to use public transport …'. Sydney's policy (City of Sydney 1998) states that on-street parking will be managed to '…assist with the implementation of major transport planning incentives such as the CBD Bus Priority, City Light Rail and proposed road tunnels under the City'. Melbourne's parking policy (City of Melbourne 2008) recommends that on-street parking could be reduced to either widen footpaths for cycling, pedestrian or for tram use.

Local business survey

The draft plans displayed in September 2008 affected a total of approximately 1,645 on-street car-parking spaces. Following community feedback and a review of the draft plans, on-street parking impacts have been reduced to approximately 916. Further, up to approximately 170 potential replacement car parks are now proposed at various locations, including Boolarong Crescent, Katoa Street, near Seabreeze Caravan Park, and along Kingsford Smith Parade. In addition to this, there is also potential for replacement parking to be provided at a redeveloped site on the southern side of Aerodrome Road between Rose Street and Second Avenue. Further investigation into the viability of the proposed replacement parking areas is to be undertaken to more accurately determine suitable layouts and timing of implementation. The investigation is to be undertaken in conjunction with the Sunshine Coast Regional Council.

The above figures represent a significant retention of car parking in the Caloundra to Maroochydore corridor. This has principally been achieved by narrowing the median on Nicklin Way, providing bus queue bypasses on Alexandra Parade and most of Aerodrome Road, and identifying suitable locations for potential future off-street parking areas.

A local business survey has been undertaken to determine the number and nature of businesses whose access to parking will be reduced and who will not have access to replacement parking. Five businesses were identified that:

- would no longer have on-street parking within 50 metres of their premises
- would not have access to any off-street parking
- would not be located close to any of the areas proposed for replacement parking as part of the CoastConnect — Caloundra to Maroochydore project.

These five businesses have been classified according to their customers' use of on-street parking. Experience indicates that customers of general retail stores and fast food outlets use shopfront parking more than customers of businesses that deal in services and commercial activities (see Figure 9-11). General retail customers also park for shorter periods — 90 % park for 15 minutes or less, compared to only 50 % of service customers who park for shorter than 15 minutes.

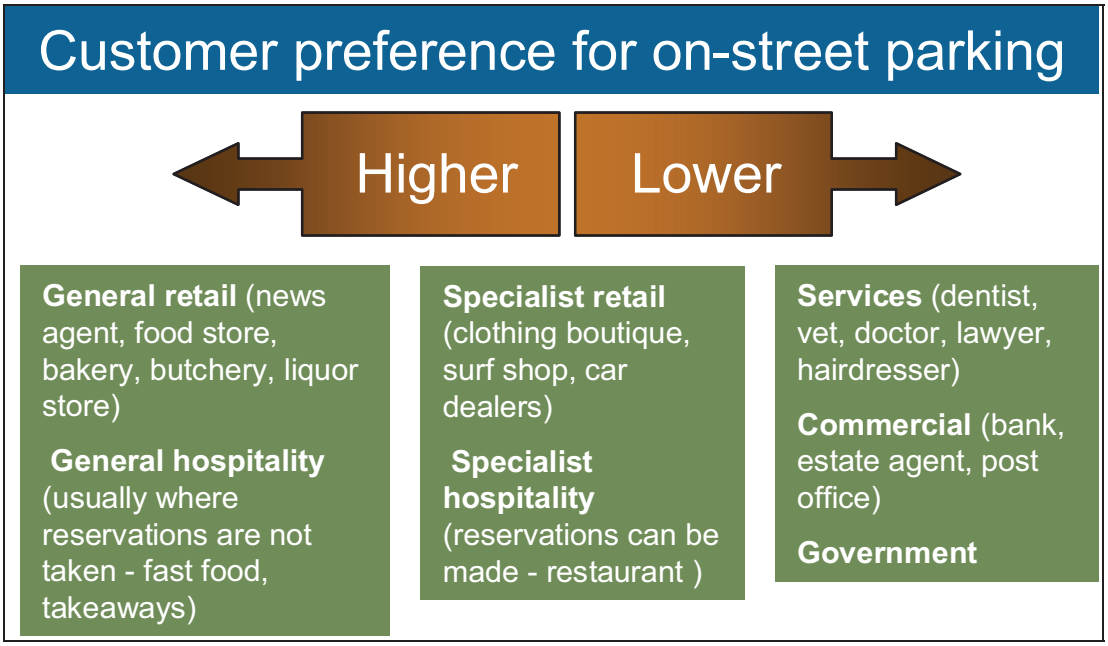

Figure 9-11: Customer preference for on-street parking

Based on this classification, two of the identified five businesses are at the lower end of the on-street parking use spectrum (one service business and one not-for-profit entity).

Three businesses are identified as having a moderate use of on-street parking (two specialist retail businesses and one specialist hospitality business):

With appropriate parking management and mitigation, as proposed in the CoastConnect — Caloundra to Maroochydore revised concept designs, it is unlikely that customer inconvenience resulting from the reduction in on-street parking would be translated to a significant loss in business turnover in the corridor. The short-term impact on business in the corridor and the Sunshine Coast economy would therefore be negligible.

In practice, it is expected that only a very small percentage of customers would altogether avoid a purchase in the corridor if on-street parking were reduced, because:

- there is evidence of ample underutilised off-street parking available
- existing off-street parking can be supplemented with additional overflow off-street car parks
- shopping malls do not offer more convenient parking than the off-street shopfront parking in the corridor
- traffic diversion will not occur as a result of the bus lanes introduction or parking reduction, which means that the amount of passer-by traffic would not reduce.

Successful mitigation of the reduction in on-street parking depends on the implementation of a combination of the following measures:

- provision of additional off-street parking
- improved signage and side road access to off-street parking
- improved parking management
- enforcement and compliance (time enforcement of existing parking to ensure that spaces are used only for short duration).

See the Parking chapter of this Concept Design and Impact Management Plan for more information on parking mitigation and replacement car parking.

Based on the research review and the local business survey, it is concluded that the reduction in on-street parking spaces would not have a significant detrimental effect on the short-term business turnover in the corridor, provided that adequate mitigation measures are introduced.

In the longer term, the project is likely to bring about significant economic benefits because it will:

- improved access to commercial precincts. Lower transportation costs would encourage people to make more frequent trips to the corridor. The corridor would also become more accessible for people without access to private cars, including tourists, older people, young people without driver's licences and people with physical impediments
- stimulate higher density developments, thus creating more opportunities for people to live and work in the corridor. High-density developments would only be possible with good-quality public transport services.

9.3.3 Case studies — economic benefits of improved public transport

A number of case studies that demonstrate the potential benefits of public transport improvements are outlined in the following section. Case studies were selected on the basis of their relevance to CoastConnect — Caloundra to Maroochydore, and the transport and land use conditions in the Sunshine Coast. Mount Druitt, Mandurah, Eugene and Boulder are all of comparable size to the community served by CoastConnect — Caloundra to Maroochydore, while the Brisbane and Ottawa examples show that bus services can successfully serve car choice users.

Mount Druitt, Sydney — high-quality public transport lowers car ownership in vulnerable socioeconomic area

Australian cities' outer suburbs are typically occupied by lower income socioeconomic groups. In Sydney, rapid population growth saw construction of detached family dwellings in outlying suburban areas. This resulted in extensive low-density car-based suburbs which lack sufficient public transport services (McGuirk & O'Neill 2002).

Data from Blacktown Council showed that suburbs on Sydney's fringe have higher-than-average levels of socioeconomic disadvantage: low incomes, low educational attainment, high unemployment and a concentration of people in unskilled occupations (City of Blacktown 2007). These outer-suburban areas have been identified as areas where residents face potential severe economic stress due to a combination of high mortgage payments and increasing petrol prices (Dodson & Sipe 2006).

Photo 9-1: Typical low-density development in Mount Druitt area

While Mount Druitt is typical of these areas (see Photo 9-1), a historical quirk meant that the local (private) bus operator has for many years been providing a higher quality public transport service there than in other similar areas. This includes regular services with a reasonable frequency at nights and on weekends (see Figure 9-12).

Sunday & Public Holidays continued						
map ref Route number	762/1	762/1	755	755	755	755
	pm	pm	pm	pm	pm	pm
Train departs Wynyard	7.14	7.44	8.14	8.44	9.14	9.44
Train arrives Mt Druitt	8.16	8.46	9.16	9.46	10.16	10.46
A Mt Druitt Station	8.26	8.56	B9.28	B9.58	B10.28	B10.58
E Hebersham (Jersey Rd & Carlisle Av)	8.31	9.01	B9.47	B10.17	B10.47	B11.17
F Blackett (Popondetta Rd & Murdoch St)	8.33	9.03	B9.44	B10.14	B10.44	B11.14
G Blackett (Carlisle Av & Manifold Rd)	U	U	B9.43	B10.13	B10.43	B11.13
H Bidwill (Popondetta Rd & Middleton Cr)	8.34	9.04	B	B	B	B
G Blackett (Carlisle Av & Manifold Rd)	U8.41	U9.11	B	B	B	B

Figure 9-12: The Sunday night service to Mt Druitt north suburbs (B is a combined loop service)

As a result, it is possible for local residents to make most of their trips by public transport. This has resulted in lower car ownership and usage compared to other similar parts of outer Sydney.

Households in the Mount Druitt north area travelled on average 15–18 kilometres by car each day, compared with an average of 18–25 kilometres for the rest of the City of Blacktown, and 25–30 kilometres per household for much of outer western Sydney (see Figure 9-13) (Newman & Bilsborough presentation). While there is no doubt that significant challenges continue to exist for this area, the continued presence of good public transport will go some way to alleviating community stress.

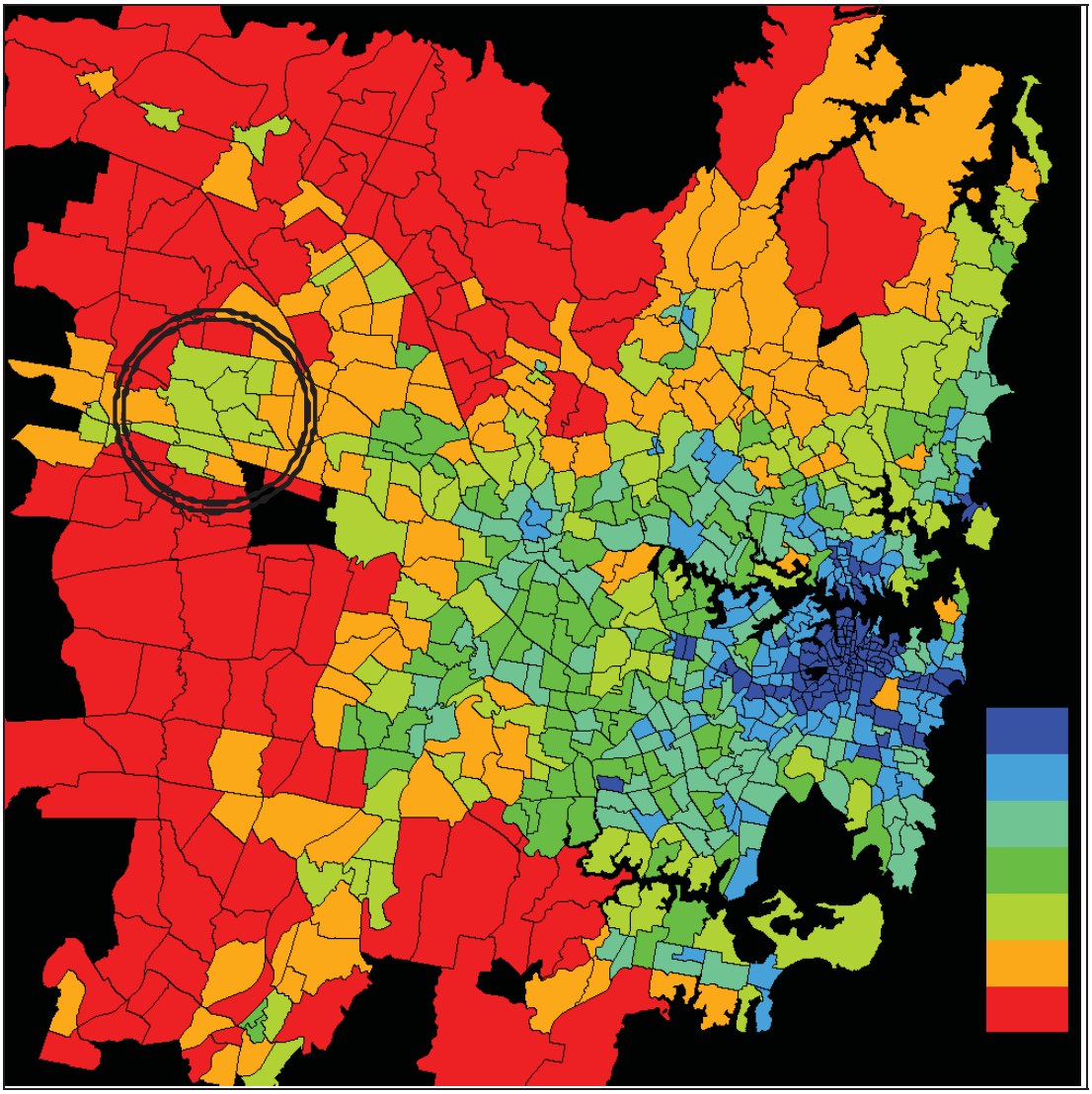

Figure 9-13: Car use in metropolitan Sydney: Mt Druitt area highlighted

Note: Blue areas designate high public transport ridership, whereas red indicate areas with high car usage.

Mandurah, Western Australia: connecting the coastal strip

Mandurah is a coastal town in Western Australia, located approximately 75 kilometres south of the Perth central business district (see Photo 9-2). Its 2006 population of around 62,000 is expected to grow to 100,000 by 2016. Although it was traditionally a separate town, Mandurah has increasingly been swallowed up by the growth of the Perth metropolitan area, to the extent that its economy is now inextricably linked to Perth's.

Photo 9-2: Mandurah foreshore

Initially the main transportation link to Perth was the Kwinana Freeway corridor, which experienced severe congestion, not only in commuter peak times, but also during holiday peak times, with Perth visitors heading south to Mandurah and beyond.

During the 1980s and 1990s there was a range of studies into the need for a fixed transit route in the corridor. Initially, a busway was provided in the median between Perth and Murdoch (see Photo 9-3), but by 2001 a decision had been made to construct an extension of the electrified Perth rail system.

The rail line was opened in December 2007 after a construction period of five years. The line cost $1.66 billion for the 71 km route, including two underground city stations and 9 suburban stations. A 15-minute minimum headway is provided all day, and a trip from Perth to Mandurah takes 49 minutes (compared with up to 70 minutes by car in the peak).

In the 12 months since opening, the new line has been extraordinarily successful: within 11 weeks the patronage was already at 80% of its expected 12-month target. The former bus service had a daily patronage of 16,000. After one year, the rail service was operating at 45,000 boardings. Intermediate stations are served by feeder buses that had proven more successful than expected.

In addition to Perth commuters, the line has proven very successful with tourists. The Mandurah Terminus is located on the fringe of the Mandurah town centre and features a bus–rail interchange. Normal service buses were provided to link the town centre with the station en route to suburban areas. Overcrowding on these buses prompted the introduction of a dedicated shuttle bus between the station, the town centre and the foreshore. Over 50,000 people used this shuttle bus in its first few weeks of operation.

There is also evidence that the rail line has increased tourism in Mandurah. The local council's economic community and development manager estimated that business along the foreshore had increased by 15–25 % and around 300–900 extra people have been coming to Mandurah each day since the opening of the railway (*Mandurah Mail* 2008).

Photo 9-3: Mandurah rail line in freeway median

Eugene, Oregon — modern bus rapid transit for a small city

Eugene, the administrative centre of Lane County, is a city of approximately 140,000 people in the state of Oregon in the north-western USA. The overall population density is a relatively low 13 persons per hectare. Adjacent to Eugene is the smaller city of Springfield (population 50,000). The city has a large white-collar population, and educational, health and administrative jobs are important to the region.

The EmX bus rapid transit (BRT) system was conceived in the late 1990s as part of a public transport system for the region. The first corridor, which links downtown Eugene with downtown Springfield, opened in December 2007. The route runs mainly in the centre of a major road — Franklin Boulevard — and around 60 % is in dedicated bus lanes (see Photo 9-4) (LTD 2009). The corridor includes a university, a hospital, a major college and the city centre.

Although the increase of 70 % in ridership on the new bus route after one year of operation is partly due to fares not being charged on the busway, the EmX BRT has nevertheless proven very successful (*Register-Guard* 2008). A 10-minute frequency is provided and approximately 500 passengers are being carried in the morning peak hour (Department of Transportation 2008).

Plans are in place for extending the EmX system to other routes, and the Mayor of Eugene has included expanding the EmX as an important part of developing a sustainable future for the region (Piercy 2008).

Photo 9-4: EmX in Franklin Boulevard

Boulder, Colorado — controlling sprawl in a small city

Boulder is a small city in the state of Colorado, USA, at the foothills of the Rocky Mountains. It is located around 70 kilometres from the state capital, Denver, and has an estimated population of around 103,000 people spread over a total area of 6,600 hectares (15.6 persons per hectare) (Planning Department 2008). Boulder's population is relatively young (average age 29, compared with the national average of 35) and around 62 % of its housing stock is single-family dwellings (22 % are apartments) (City of Boulder 2002a).

Photo 9-5: Elevated view of Boulder, with green belt clearly visible

Education and high-tech industries figure highly in its employment base. Around 50 % of its jobs are filled by people from outside Boulder, while less than 11 % of its working population commutes to jobs outside the city (City of Boulder 2002b). Since the late 1960s, Boulder has been characterised by a strict urban growth boundary (with green belt) and associated growth controls, which constrained population growth (see Photo 9-5).

Public transport in Boulder is provided by an innovative set of bus services. Traditional large buses (formerly provided by the Denver Regional Transit District –(RTD)) were replaced with a smaller, colourful fleet of midi-buses, branded as 'Hop'. This experiment proved very successful and was expanded to incorporate longer distance services, branded as 'Skip', 'Jump', 'Dash', 'Bound' and 'Stampede' (see Photo 9-6). Connections are maintained with RTD services for longer trips.

An important part of Boulder's strategy for serving its population includes maintaining a sustainable transportation system. The overall objective of its transportation master plan is zero long-term growth in car traffic. To achieve this, single-occupancy vehicle trips need to be reduced from 44 % of all trips in 1990, to 25 % by the year 2025, with no more than 20 % of roadways congested (City of Boulder 2009).

Data shows that these aims are being met. Between 1990 and 2006, single-occupancy vehicle trips dropped from 44 % to 38 %, bicycle mode share rose from 9 % to 13.6 % and public transport increased from 1.6 % to 4 % (City of Boulder 2007). Moreover, public transport mode share for downtown trips rose from 10 % to 21 % between 1993 and 1997 (Newman & Kenworthy 1999).

Photo 9-6: Small, colourful 'Bound' bus in Colorado

Brisbane: Market acceptance of the South East Busway

Based on a customer satisfaction survey which was undertaken in 2004 by Colmar Brunton for TransLink, the South East Busway has achieved the very high level of market acceptance of 4.1 out of 5 since its opening in 2000. The survey's aim was to measure client satisfaction levels of South East Busway respondents and benchmark it against the satisfaction levels gained in 2002 and 2003, and the initial perception and performance of the Inner Northern Busway.

The success of the South East Busway is evident from the high number of regular users. During peak hours, 60 % of passengers use the bus every day, while 19 % use the bus regularly during both peak and off-peak hours; 14 % use the service regularly during off-peak hours only.

Passengers reported that they mainly use the bus to save travel time (59 % of respondents), while 27 % of users reported no travel time savings, but choose the bus because the fare is lower than the cost of car use.

As could be expected, the most common destination for passengers was work (37 %). However, a significant proportion of trips (31%) included shopping as the secondary trip purpose, while 7 % indicated shopping as their main trip purpose. These passengers spent on average $66 per shopping trip.

A considerable number of bus passengers (45 %) who preferred to use the bus had access to a car. Of those who have a car, 70 % reported that they had become less reliant on their car since they started to use the South East Busway.

The survey also showed that there was a noticeable trend for higher income respondents to use the bus since the opening of the South East Busway. Although no recent data is available, this trend might have accelerated as a result of recent fuel price increases.

About 55 % of bus passengers did not have access to a car, while 28 % of respondents reported an average household income of less than $20,000 per year. Most users of the South East Busway live close to a bus station, as is evidenced by the fact that 57 % walked to the bus station; 22 % used a connecting public transport service and, significantly, 21 % used private transport to reach the bus station.

The main advantages of the South East Busway, as perceived by respondents, are summarised in Table 9-2.

Table 9-2: Perceived advantages of the South East Busway

Advantage	Percentage
Reduction in travel time	80 %
Reduction in travel congestion	80 %
Reduced air pollution	65 %
Reduced noise pollution	48 %
No advantages over previous bus systems	4 %

Source: Colmer Brunton 2004

Based on the above survey results, it is concluded that:

- the South East Busway has a high level of acceptance from current passengers
- bus services along the busway attract significant numbers of car choice users.

Ottawa — the bus city

Ottawa, the national capital of Canada, has a population of around 800,000 people and a total urban area of 352.7 km^2, giving it a population density of 23.0 persons per hectare. More than 70 % of its homes are single detached dwellings (City of Ottawa 2009b). It is Canada's fourth largest city and is a centre for education, high-technology industry and education.

A key feature of Ottawa's planning policy since the late 1960s has been an emphasis on public transport development. The Ottawa-Carleton Official Plan, released in 1974, explicitly stated that the city would 'give precedence to public transit over all forms of road construction or road widenings' (Regional Municipality of Ottawa-Carleton 1974).

This policy position has been carried through to the present day, with its current growth management strategy stating as one of its key principles:

"A Focus on Walking, Cycling and Transit – Ottawa implements policies that favour walking, cycling and public transit over the use of private motor vehicles, thereby facilitating the use of modes of transportation that are socially accessible, environmentally healthy and economically feasible. (City of Ottawa 2003)."

In order to support these policies, a high-quality public transport network was seen as essential. In 1978 the city approved the construction of a bus-based Transitway system (see Photo 9-7), the first phase of which was opened in 1983. The system now includes 34 kilometres of dedicated bus-only roadway with 38 stations. In the peak, 180 buses per hour pass through the central area (OCTranspo 2008).

Photo 9-7: Transitway bus and station, Ottawa

The Transitway system has been very successful in terms of both transport and development. Seventy per cent of people who work in downtown Ottawa arrive by bus. The mode share for non-workers exceeds 50 %. In total, more people use the east–west Transitway than the main east–west freeway. Other locations on the Transitway have been equally successful in attracting bus patronage.

The Transitway has resulted in more than one billion Canadian dollars in new construction around stations, compared to a construction cost of around $435 million for the Transitway. Development has included major shopping centres and a hospital (TCRP add year).

In 2001 the Transitway was supplemented by a short commuter rail system, and plans are now in place to extend and convert parts of the Transitway to light rail operation to cope with increased patronage demands (City of Ottawa 2009a).

The above research review and case studies have demonstrated that:

- a number of cities have successfully introduced priority bus services and infrastructure, which have been well patronised by car choice users
- public transport services can bring significant strategic transport network, environmental, social and economic benefits to cities of similar size to the Sunshine Coast
- government investment in capital infrastructure for public transport can lead to significant additional private investment by creating a sense of permanency and government commitment which is not present with bus systems that are not accompanied by infrastructure investment
- once a quality bus system has been established and public transport demand increases, further system improvements can include the introduction of higher capacity modes.

These benefits have been recognised in the Sunshine Coast Regional Economic Development Strategy, which sees investment in public transport systems as providing support to the region's economic competitiveness on the world stage (SGS Economics and Planning 2004). It is one of the economic foundations on which the Sunshine Coast will continue to prosper.

9.4 Conclusion

Rapid population growth and increasing congestion on the Sunshine Coast present a compelling case for improvements to public transport infrastructure. The CoastConnect — Caloundra to Maroochydore project would encourage more sustainable travel in the Caloundra to Maroochydore corridor, which would result in significant economic benefits to not only existing bus and road users, but the community at large.

This qualitative economic assessment demonstrated that:

- public transport can bring significant benefits to both large and small cities
- there are significant environmental, social and economic benefits associated with the use of public transport. These high-level benefits include:
  - transport network benefits — requiring less urban space, providing transport choice and reducing traffic congestion
  - environmental benefits — reducing pollution and greenhouse gas emissions
  - social benefits — enhancing social equity, providing transport for people who do not have access to private cars and decreasing traffic accidents
  - economic benefits — reducing community transport costs; supporting city development, employment and local business; and land use benefits through promoting urban regeneration and improving commercial activity
- government investment in capital infrastructure for public transport leads to significant additional private investment. It demonstrates government commitment and creates a sense of permanence which is absent from bus systems that are not accompanied by infrastructure investment.

With regards to changes to on-street parking, empirical research and case studies from across the world show that reduction in on-street car parks would have very little negative impact on the economy. Any impact could be reduced to a negligible level if on-street parking reduction were accompanied by appropriate mitigation and parking management measures. Moreover, CoastConnect — Caloundra to Maroochydore is likely to stimulate long-term business turnover through:

- improving access to commercial precincts. The corridor would in particular become more accessible for people without access to private cars, including tourists, older people, young people without drivers licences and people with physical impediments
- higher density developments, which would only be possible with public transport services, meaning that more opportunities could be created for people to live and work in the corridor.

In short, this qualitative analysis finds that the anticipated long-term economic benefits of the CoastConnect — Caloundra to Maroochydore proposal are expected to significantly outweigh any potential short-term economic impacts.

9.5 Future investigations

To assist government with future decisions around staging and construction funding, quantifying the full extent of the economic benefits and costs of the project will be useful. This would involve a cost–benefit analysis during future planning phases to improve the level of confidence and assess the total economic impacts and benefits of the project.

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