

Investing in a Cycling Network in South East Queensland

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ABSTRACT

Brisbane and the wider south east Queensland (SEQ) region is witnessing an unprecedented expansion of cycling infrastructure and other initiatives designed to encourage more cycling for transport and health reasons. These initiatives include a significant increase in off-road bikeways, on-road treatments, end-of-trip facilities, and bike and pedestrian bridges and paths. Brisbane City Council and the Department of Transport and Main Roads are working to ensure the best outcomes are achieved for this investment. Other initiatives such as a proposed public bike hire scheme in the city, behaviour change programs (Active School Travel and TravelSmart) and government policy changes are influencing the transport choices that people in south east Queensland make towards more sustainable modes.

INTRODUCTION

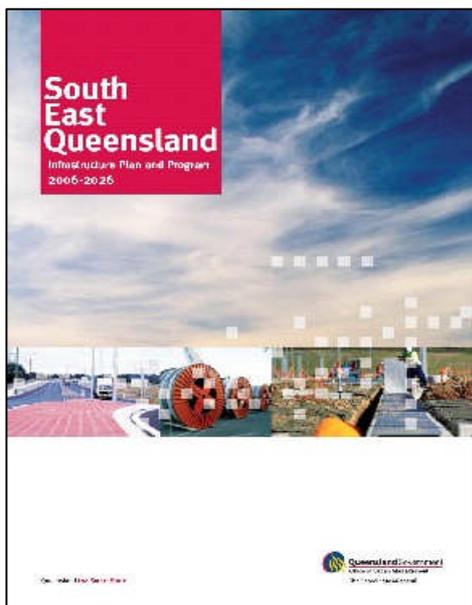
South east Queensland is one of the fastest growing regions in Australia. Every week, about 1700 people move to Queensland and about 60 per cent of these come to south east Queensland. Over the next 20 years, south east Queensland's population is expected to increase to about 4 million people. At this stage, the current world economic crisis seems to have made very little difference to these predictions.

Travel in South east Queensland is very car-dependent; accounting for about 80% of all trips. For SEQ, trips by bicycle or walking ("active transport") account for only about 1% and 8% respectively. In 2003, the Queensland Cycle Strategy set a mode share target of a 50% increase in bicycle trips by 2011 and a 100% increase by 2021; which, at this level, would see an increase in bicycle trips to about 4% of all trips by 2021. Later planning has acknowledged that a significant increase in cycling and walking trips will be necessary to make an impact on traffic congestion, rising health costs and vehicle emissions.

A major response to growth in South east Queensland was made by the Beattie government in 2005 with the release of the **South east Queensland Regional Plan**¹ and the **South east Queensland Infrastructure Plan and Program 2005-2026**² (SEQIPP). The Regional Plan acknowledged that fundamental changes were required to planning in SEQ, including planning for transport, ports, water resources, energy and health and education. It provided a statutory framework for managing growth in the region based around the themes of sustainability, urban consolidation, sub-regional containment and development in the Western Corridor (Ipswich and Toowoomba).

¹ <http://www.dip.qld.gov.au/seq>

² <http://www.dip.qld.gov.au/regional-planning/south-east-queensland-infrastructure-plan-and-program-2.html>



The South east Queensland Infrastructure Plan and Program 2005-2026 committed \$37.439 billion over the 20 year period to infrastructure for transport, water, energy, information technology and social and community infrastructure for health, education, vocational education and sport and recreation. Transport received about 74% of this allocation. In the 2008 iteration of SEQIPP, the investment increased to \$107.454 billion (in 2008 dollars) and the transport slice increased to 78% of the total.

CYCLE PLANNING

Both the SEQ Regional Plan and the SEQ Infrastructure Plan acknowledged the need for travel demand management measures that encourage less private vehicle travel, particularly during peak periods, and the need to provide for and promote the use of more sustainable modes (such as walking, cycling and using public transport) as viable alternatives.

\$556 million was allocated in the 2008 iteration of SEQIPP for cycle infrastructure throughout the region in the years up until 2026. A further \$153 million was allocated for two pedestrian/cycle bridges in Brisbane CBD, \$16 million for a bikeway on the Pacific Motorway and \$160 million for a sub-regional walking network program to commence in 2019-20.

Of the total \$83.711 billion in SEQIPP for transport infrastructure in 2008-26, nearly 58% was allocated to motorways, highways and major roads. About 38% was allocated to busways and rail projects (which includes some light-rail and some freight-specific projects). The allocation to cycling and walking infrastructure represents about 1% of the total.

Table 1: SEQIPP Funding 2008-2026

Infrastructure class (\$ million)	Western Corridor	Brisbane ¹	Gold Coast	Sunshine Coast	TOTAL
Motorways, highways and major roads	8,619	24,433	4,481	10,576	48,109
Walking and cycling (incl. bridges)	55	552	139	139	885
Busways and bus priority	435	7,943	237	400	9,015
Rail infrastructure (passengers and freight)	4,069	9,660	4,521	4,642	22,892
Transport investigations		353		7	360
Port infrastructure		2,450			2,450
	\$13,178	\$45,391	\$9,378	\$15,764	\$83,711

1. Includes Brisbane, Moreton, Redland and Logan

In November 2007, the Queensland government released the **South east Queensland Principal Cycle Network Plan**³ (PCNP) for SEQ. The PCNP provides a framework for future cycle planning in the region. The plan describes the key links, both existing and proposed, that will deliver a comprehensive cycle network in SEQ, including links on both State-owned and local government roads. The routes depicted in the plan indicate the cycling network needed to provide for an increased cycling transport task to 2026 and beyond.

Key characteristics include:

- cycling provision to/between trip attractors such as regional centres, universities, schools and major public transport interchanges
- provision for short and/or medium distance service trips (such as to schools and local shops) and longer distance commuting trips
- connections that feed and support local cycle networks
- crossings for physical barriers such as waterways and motorways
- integration with other transport and planning projects.

CYCLE NETWORK PROGRAM

The \$556 million funding provided under SEQIPP for cycle infrastructure supports the **Cycle Network Program** (CNP) in SEQ. Under this program, sixty per cent of funds are available to local governments in SEQ for 50/50 grants for approved cycle projects. Forty per cent is available for cycle works on State-owned assets.

Grants to local governments are subject to a rigorous assessment process based on their suitability in completing the SEQ cycle network. Projects considered eligible for funding under CNP include:

- cycling infrastructure where it provides a transport or utility function including but not limited to:
 - on-road cycle facilities including shoulder widening, line marking, lane and intersection reconfiguration, priority signalling
 - off-road shared use / exclusive use cycleways
 - crossing provisions such as bridges, underpasses and at-grade treatments
 - project construction, directional and route signage
 - lighting of cycleways and bicycle lanes
 - mid- and end-of-trip facilities (facilities available to the public that include secure bicycle parking areas, showers, change rooms and lockers)
- detailed planning and design of cycle infrastructure projects
- data collection for the purposes of monitoring and reporting on the performance of cycle infrastructure projects delivered as part of the Cycle Network Program
- land purchase as part of stand-alone cycling projects or larger infrastructure projects where it directly contributes to the acquisition of a critical cycling corridor linkage that cannot be achieved in any other way
- developing, improving and updating local cycle strategies and network plans, which will contribute to the outcomes of the *South East Queensland Principal Cycle Network Plan*.

³ http://www.transport.qld.gov.au/Home/Projects_and_initiatives/Plans/South_east_Queensland_principal_cycle_network_plan/

Project applications are scored against six key selection criteria to determine their suitability. The key selection criteria are:

1. **Connectivity** – cycling connections to trip attractors
2. **Network enhancement** – cycle routes as a component of, or link to, the *Principal Cycle Network Plan* corridors as indicated in the Five Year Rolling Program (see below) for the Cycle Network Program in South East Queensland.
3. **Network safety and security** - feeling and being safe
4. **Cost effectiveness** - value for money facilities
5. **Identified need** - meeting peoples' needs.
6. **Strategic Importance** - Integrated and coordinated delivery.

The Department of Transport and Main Roads is currently finalising a 5-year rolling cycle infrastructure program for consideration by the Queensland Government. Developed in consultation with local governments in SEQ, the 5-year rolling program will help to develop consistency and forward planning in cycle infrastructure arrangements. The first year of the plan will link into (and largely reflect) bids for grants under the Cycle Network Program and the following years will be indicative; as the out-years are generally dependent on local government budget allocations.

CYCLE INFRASTRUCTURE OUTCOMES

Since 2005, the Queensland Government has made a significant funding commitment to cycle infrastructure in SEQ, both by way of grants to local governments and capital works on State-owned assets.

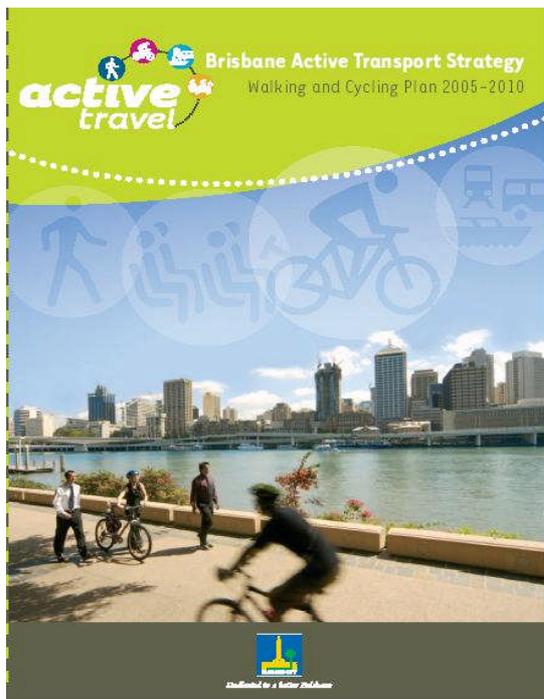
The Cycle Network Program has delivering a range of cycle facilities under the South East Queensland Principal Cycle Network Plan. \$38.6 million was allocated in capital grants in the four years 2005/6 to 2008/9, for 216 cycling infrastructure projects delivered in partnership with local governments.

In the same four year period, \$45.9 million was committed to capital works projects on state-owned assets. Some of these projects include the Normanby Pedestrian and Cycle Link (opened September 2007), the Toowong Cycle and Pedestrian Overpass (completed in March 2009) and a cycle centre at the Royal Brisbane and Women's Hospital (completed in October 2009).

BRISBANE CITY COUNCIL – CYCLING INITIATIVES

In 2005 Brisbane City Council released its *Active Transport Strategy: Walking and Cycling Plan 2005-2010*. This comprehensive Plan for investing in active transport modes complements the State Cycle Network Program, by providing for targeted infrastructure spending on cycling and pedestrian projects. The aim of the strategy is to increase cycling mode share in line with the Council target of 5% by 2031. In 2009, Council has almost 900 kilometres of on and off road paths constructed, as part of a targeted 2500 kilometre network.

Council's Active Transport Program is aligned with a complementary travel behaviour change program. This again replicates the State program, and Council has successfully partnered with the Queensland government in the successful TravelSmart series of large scale travel behaviour change projects.



The SEQIPP program provides for 50/50 subsidy for selected projects between Council and the State, and in recent years, this funding program has successfully brought forward a number of high-profile cycling projects such as the refurbishment of the Bicentennial Bikeway, the most popular bikeway in Brisbane.

Council's strategy is based on 8 themes similar to the State's key selection criteria for the CNP, but proposes a 15 year rolling program of investment into key infrastructure projects and policies, such as providing end of trip facilities, improving existing paths and introducing a public bike hire scheme. Council has recognised that to increase cycling mode share, a comprehensive package of actions must be undertaken, as a single action (such as just constructing more bikeways) will not prove effective in the long term.

Some of the key features of the Active Transport strategy include:

Bike Parking and End of Trip facilities

Council has recognised that providing high-quality end of trip bike parking facilities works successfully to overcome one of the significant barriers to increased cycling. In 2006/7 Council undertook large scale intervention surveys of cyclists. These surveys established that providing more than just "bike racks" was required to encourage more cycling.

In common with most urban areas, bicycle theft is an issue in Brisbane that acts as a deterrent to increased cycling. Council has addressed this by offering a hierarchy of bicycle parking. The most basic level of service is provided by bike racks. These are located throughout the city and Council installs large numbers of these, typically in suburban shopping centres and at public transport stops.

Council has trialled the installation of "Cyclepods" at selected ferry terminals in the city. These award-winning bike parking solutions offer an increased level of security over normal racks as well as being an iconic design that helps to identify the bike parking facilities. However, the uptake of these has been marginal and in some cases, controversial, as the Cyclepods are a large structure that can stand out from their surrounds. They are also reasonably expensive (approx \$10 000 installed).

The next level of security is offered through "bike shelters" at some major public transport interchanges. Holding approximately 24 bikes in a weatherproof structure, the shelters offer electronic "swipe card" security to those who sign up. Uptake has been satisfactory in most locations, although cost was initially a factor for users. Council has now made the shelters free to use, subject to a \$25 refundable deposit.

Council and the Queensland Government have developed a premier product in Brisbane's CBD; the King George Square Cycle Centre. Built as part of the Inner Northern Busway station, the Centre was opened in June 2008. It offers fully secure, staffed parking for 420 bikes, with 35 showers, lockers and electronic swipe card access. The centre is managed by a private company; "Cycle 2 City" who offer a variety of memberships, all of which include a free daily towel service. Laundry is offered to users for a fee, and there is a comprehensive service and maintenance facility at the centre.

Uptake of the centre has been good, with memberships now approaching 300. Council has adopted a deliberate position of allowing the market to operate the centre (as opposed to a

Council subsidy) which has proven largely effective, albeit slower than expected in marketing the facility to prospective clients.

Bike Counters

Council has undertaken annual counts of pedestrians and cyclists, using manual counters at 13 screenlines around the CBD over the last 6 years. Over this time there has been a marked increase in use of active transport modes, currently averaging a 13% increase per year for commuter trips (weekdays) and 22% for recreational trips (weekends).

However, the inherent vagaries of manual counts present Council with the issue that this data represents trend data only. To redress this, Council has started installing automated counters at these screenline locations. Using supplies recommended by the State Government as well as sourcing counter technology from overseas (in the form of Eco-counters), Council is now amassing a good data set that can be combined with that from the State to show the value in providing cycling infrastructure.

All new Council bikeways projects have counters built in as part of standard specifications.

Lighting

The Active Transport program recognises that cycling occurs outside of daylight hours and the summer season. To facilitate cycling safety outside of daylight hours, Council is progressively installing appropriate lighting across its bikeways network as well as including lighting in most new bikeways projects.

In some cases, lighting 'spill' from adjacent roadways is sufficient to provide illumination for cyclists. Where this isn't the case, and around structures such as bridges, Council seeks to provide suitable overhead lighting.

Council has been trialling solar-powered "cats eyes" for path delineation for several years. With recent advancements in technology, these devices are now proving durable and effective in many different situations throughout Brisbane. Of particular interest, is the use of these devices in areas of natural bushland, where overhead lighting would be obtrusive and disturbing to wildlife.

Signage

In 2008 Council developed a Signage Strategy for Bikeways. The significant aspect of this strategy has been the increased attention to directional signage. Prompted by community concerns for personal safety, the directional signage rollout has been comprehensively applied to existing and new bikeways across Brisbane, and is based on 5 fundamental factors:

1. "You are here" signs at significant locations
2. "fingerboard" signs pointing to nearby attractions
3. On-path signs pointing to nearby streets
4. Signs on structures such as overhead road bridges
5. Distance markers on selected pathways.

Community feedback has been very positive since the introduction of these signs, and the directional signs complement a new range of safety signs that predominately offer on-path markings and colour-graded separation on highly-trafficked parts of the network.

Recently the Department of Transport and Main Roads (DTMR) completed its Queensland Bicycle Network Signage and Mapping Project. This project was undertaken in order to assist the development of convenient and legible directional and information signage and best practice mapping across the whole Queensland cycle network. The project acknowledges that direction and information signage and mapping for bicycle routes ensures that cyclists and others throughout Queensland can use networks to their full potential and make quick and accurate route choices.

The outputs for the Queensland Bicycle Network Signage and Mapping Project include a technical note for the Traffic and Road Use Manual (TRUM), an advisory guide developed to assist network planners implement recommendations made in the TRUM note, and Cycle Note B11 detailing best practice bicycle mapping. Specifically:

- Traffic and Road Use Manual (TRUM) technical note 1.36: Queensland Cycle Network Directional Signage Guidelines⁴
- A Guide to Signing Cycle Networks⁵: showing the way to more cycle trips; and
- Cycle Note B11: Producing bicycle network maps and cycling transport access guides.

Network Connectivity

Increasing cycling is not an easy task. Council's research has shown that the lack of connectivity across the network is a major problem for those intending to adopt cycling for journeys. Council's Active Transport Strategy therefore provides a plan for creating a network. The investment strategy originally devised by Council has been boosted significantly by the current administration under Lord Mayor Campbell Newman, who has invested in excess of \$100M in cycling facilities over this current 4 year term.

Council now constructs a comprehensive program of on and off-road paths every year. This year's program exceeds \$25M and includes new on-road paths through the CBD. These paths service new infrastructure, such as that provided by the State in the form of the Kurilpa Bridge, a pedestrian and cycling bridge joining the city to the Arts precinct.

As Brisbane is a large city, the challenge is to provide high-quality cycling facilities that benefit all residents, not just those in the higher density inner city areas. To this end, Council's Active Transport Strategy deliberately targets infrastructure investment across the entire city, and seeks to build on new developments through developer contributions, and leverage off new road upgrades by providing high-quality cycle lanes. It is this latter aspect that perhaps provides the biggest challenge to Council, as it is understood that many prospective and new cyclists are not comfortable riding in general traffic. Council is therefore investing in innovative solutions such as bi-directional cycle lanes separated from general traffic where appropriate.

RECENT INNOVATIONS

Subsequent to the Active Transport Strategy, Council has proposed a public bike hire scheme similar to that operating successfully in many European cities. A contract with JC Decaux, operator of the highly-successful Paris scheme (among others) was signed in January this year, and Council is now working hard to finalise plans for installation of the infrastructure that will support 2000 bikes at over 150 locations in the inner city.

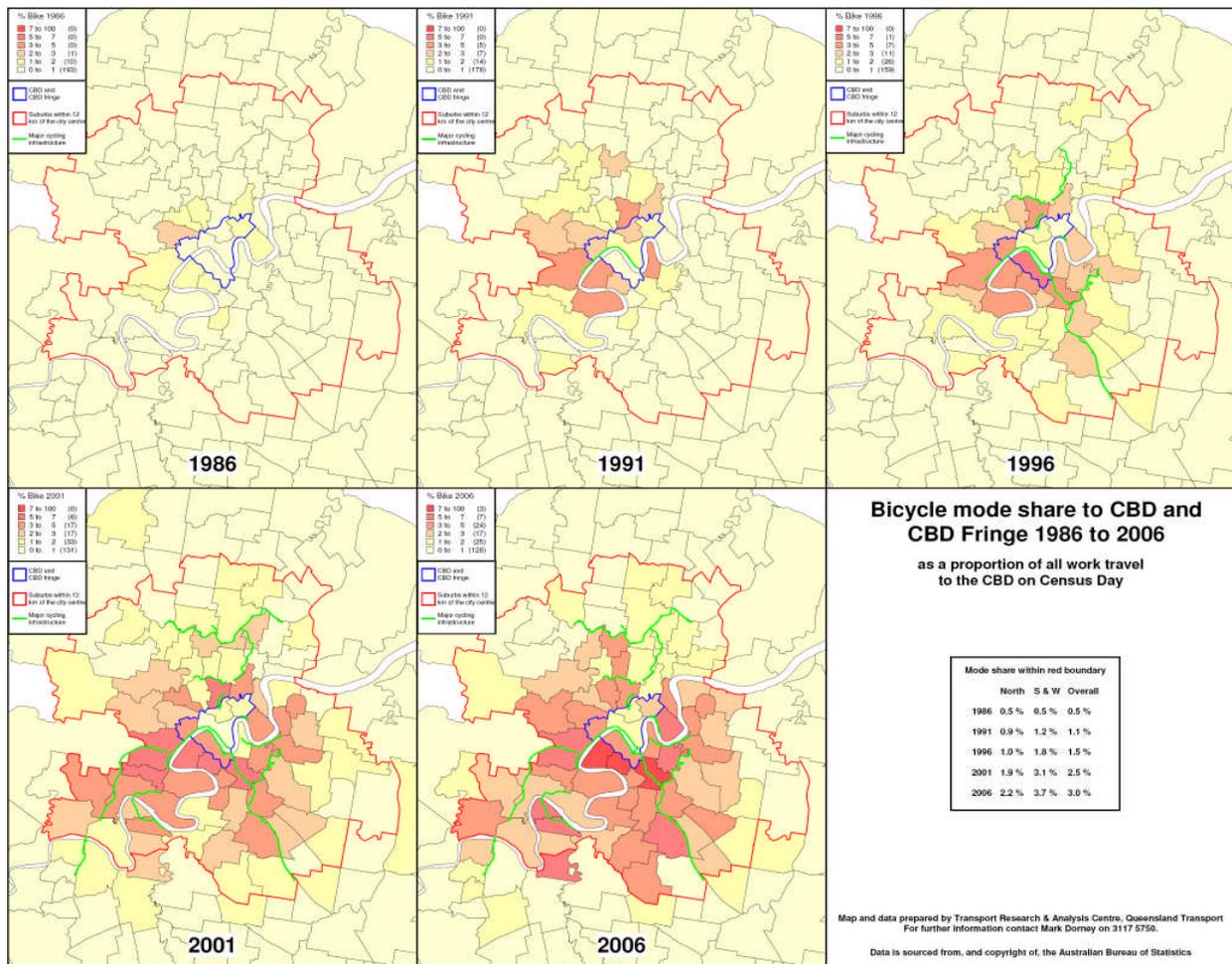
This type of investment in cycling is not without risks, however, Brisbane City Council has proven in recent years that bold and innovative ideas, combined with a strong level of capital investment in infrastructure and non-infrastructure solutions, will pave the way towards the adoption of more sustainable travel practices. Research undertaken by Council and

⁴ TRUM technical note 1.36 is available on <http://www.transportandmainroads.qld.gov.au/>

⁵ The Guide to Signing Cycle Networks and Cycle Note B11 are at: <http://www.mainroads.qld.gov.au/cycling>

Transport and Main Roads illustrates this. Figure 1 shows the uptake of cycling (journey to work data only) in census years since 1986, juxtaposed against the provision of cycling infrastructure. There is a clear relationship – the more cycling infrastructure is provided, the more uptake of cycling occurs. This gives credence to the oft-used maxim of “build it and they will come” and this is supported by more recent Council and State count data.

Figure 1: Bicycle Mode Share Brisbane 1986-2006; Journey to Work



Mark Dorney

Travel Behaviour Change

There can be little doubt that the biggest wins for cycling are gained when new infrastructure is accompanied by high quality individualised travel behaviour change campaigns. The British Medical Journal in September 2004 recognised, in a systematic review of walking and cycling promotion that “the best available evidence of effectiveness in promoting a modal shift is for targeted behaviour change programmes.” (Ogilvie et al, BMJ, Sept 2004)

This finding has been borne out by the results of the North Brisbane TravelSmart project, a partnership between the Australian government, Queensland government and Brisbane City Council in 2005-2007. Conducted over 75000 households, this project resulted in a decrease in single occupant vehicle use of over 13%, with relative modal increases for public transport of 22%, walking 49% and cycling 58%⁶.

⁶ <http://www.transport.qld.gov.au/Home/General-information/Travelsmart/#brisnorth>

Under the Queensland Government's Congestion Management Strategy, the government has committed over \$30 million over the next 4 years for a range of TravelSmart programs in South east Queensland. Three "communities" projects in Brisbane south/Ipswich, Sunshine Coast/Caboolture and the Gold Coast will target 324,000 households. The projects aim to reduce vehicle kilometres travelled and increase the use of sustainable transport options such as walking and cycling. The projects will be independently evaluated.

In 2008, Council's Active School Travel program across 21 Brisbane primary schools resulted in an average decrease in almost 25% of students being transported to and from school by car.

THE FUTURE FOR CYCLING IN SEQ

The future of investing in a cycle network for South East Queensland will be based around the following:

- Continuing investment at a state and local level (and preferably, the Commonwealth also)
- Investment in network connectivity as a priority
- Investment into supporting infrastructure such as counters, end of trip facilities, lighting and signage
- Development of strategic planning embodied in the South East Queensland Principal Cycle Network Plan to guide detailed investment
- Continued research into overcoming barriers to cycling
- Investment into non-infrastructure solutions such as TravelSmart and Active School Travel programs, for travel behaviour change
- A focus on intermodality between cycling and public transport
- Continued innovation such as the Public Bike Hire Scheme.

Without the combined effort on the part of Council and the State Government, there can be little hope of positioning cycling as a genuine alternative to car use. Transport and Main Roads and Brisbane City Council have demonstrated that targeted investment can result in a significant increase in cycling uptake.

However, the challenge to increase cycling mode share cannot be underestimated. Council is currently reviewing its Active Transport Strategy and the State Government is preparing a new Integrated Regional Transport Plan for South East Queensland (SEQ 2031). Both of these strategies will provide a mix of investment and innovation along the lines noted above, that will provide world-class cycling facilities for Brisbane and South East Queensland. The future for transport in South East Queensland will be clearly based on sustainable modes encouraged by suitable facilities and clear information and encouragement in travel choices.