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## South East Busway

Rochedale to Springwood

# In Brief

Winter 2009



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## Purpose

The Department of Transport and Main Roads has prepared a draft Concept Design Study to identify the future South East Busway alignment between Rochedale and Springwood.

The Concept Design Study also contains a preliminary investigation of a broad range of environmental, social, engineering and economic issues to ensure they are able to be managed appropriately in the future.

This 'In Brief' is an easy-to-understand summary of the main findings.

For a more detailed look at the project's anticipated benefits and potential impacts, please refer to the complete draft Concept Design Study. You can obtain a CD copy by calling the project team on 1800 794 288, or you can view it at public displays. See page 11 for more details.

The department is seeking feedback on the draft alignment and design. Comments and ideas from the local community together with the results of ongoing technical studies will be used to refine the draft plans over the next few months. The Concept Design Study will then be submitted to the Queensland Government to consider.

# Introduction and overview

## Introduction

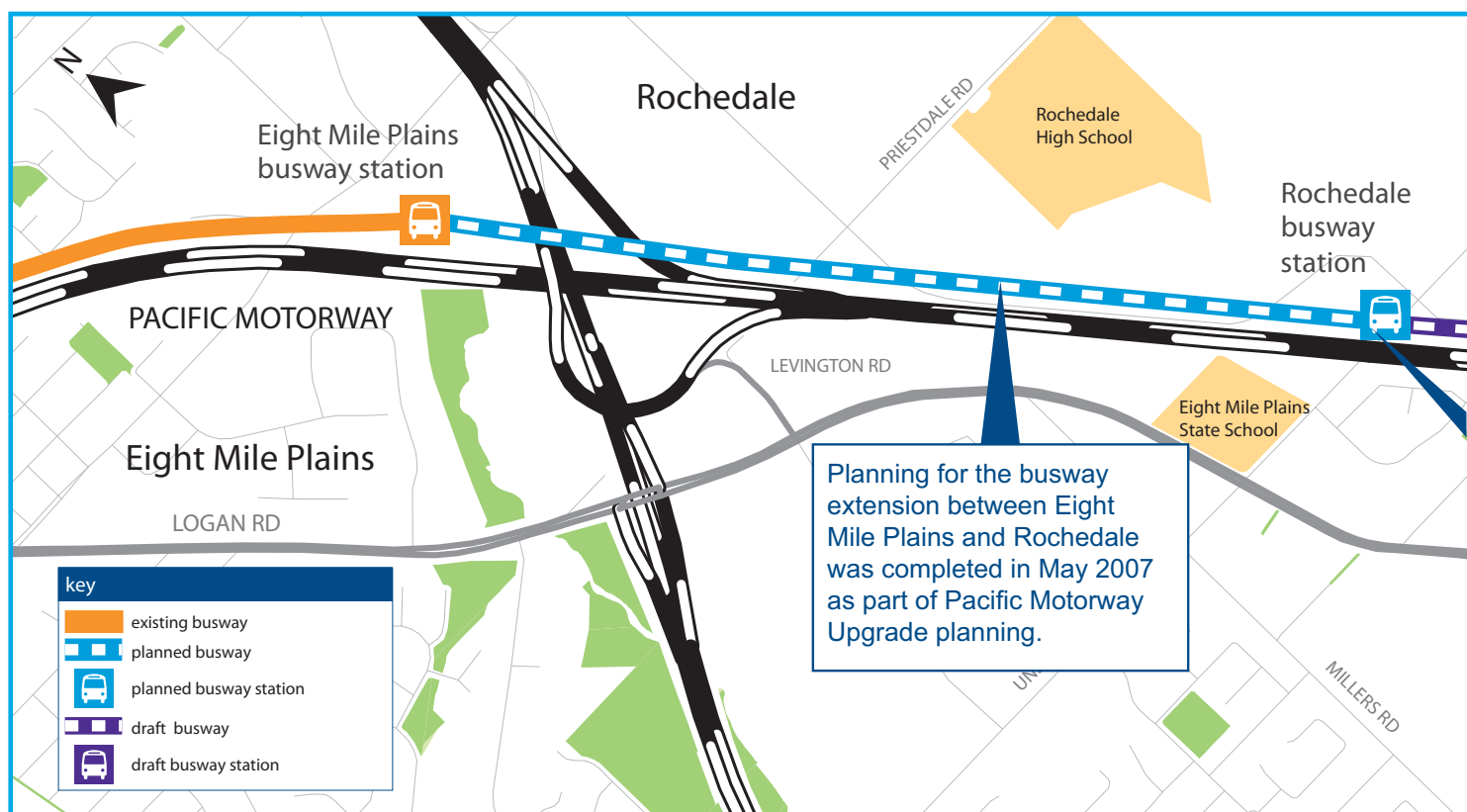
The South East Busway between Brisbane City and Eight Mile Plains is a success story – it carries more than 150 000 passengers per day or 35 million trips per year. Sections of the busway carry 18 000 passengers per hour. To carry the same number of people by car, an extra nine Pacific Motorway lanes would have to be built.

The Queensland Government is committed to delivering the South East Busway to Springwood between 2011 and 2026 as part of the South East Queensland Infrastructure Plan and Program 2008–2026. The South East Busway extension is part of the Department of Transport and Main Roads plan to meet the future transport needs of Brisbane’s growing southside communities.

Planning for the South East Busway extension between Eight Mile Plains and Rochedale was completed in May 2007 as part of Pacific Motorway Upgrade planning. The department has prepared a draft Concept Design Study to identify and protect the future busway corridor between Rochedale and Springwood.

The draft Concept Design Study identifies a draft future busway alignment and contains a preliminary investigation of a broad range of environmental, social, engineering and economic benefits and issues to ensure they are able to be managed appropriately in the future.

This document outlines the main findings of the draft Concept Design Study.



## What is the South East Busway extension between Rochedale and Springwood?

The South East Busway is dedicated infrastructure that delivers public transport to Brisbane's southside. It gives priority to buses by separating them from general traffic between Brisbane's Central Business District and Eight Mile Plains.

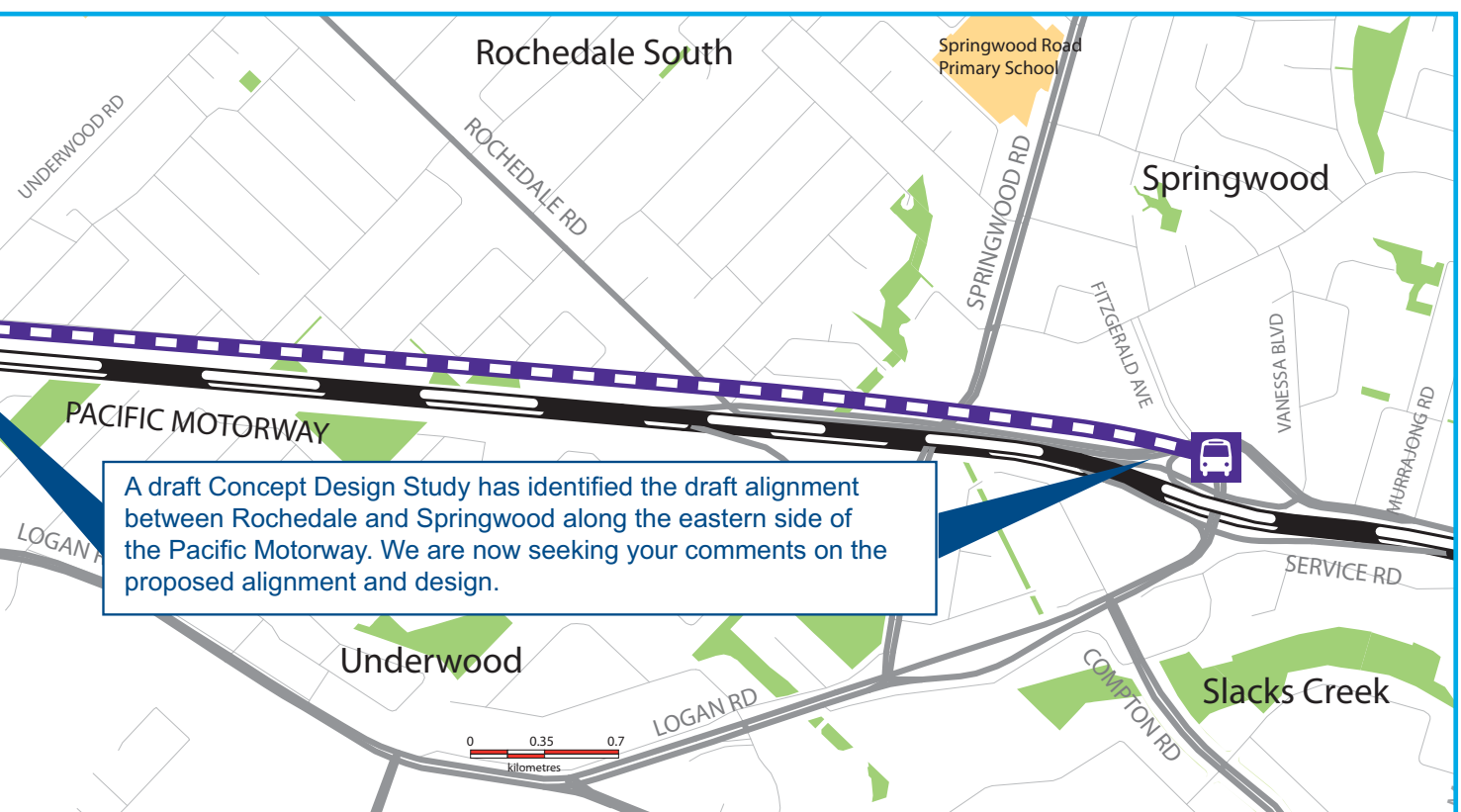
Planning for the South East Busway extension between Rochedale and Springwood will mean even more southside commuters will be able to enjoy congestion-free travel parallel to the Pacific Motorway in the future.

This planning will preserve the future busway corridor and ensure its place in Brisbane's public transport network.

The Rochedale to Springwood section of the South East Busway will consist of:

- a new 2.4 km section of busway between Rochedale and Springwood
- a new busway station at Springwood
- a passenger pick up and drop off area at Springwood (known as kiss 'n' ride)
- local bus access points (from the local road network to the busway)
- links to allow easy interchange between local bus and busway services
- well-connected pedestrian and cycle access to stations.

The busway alignment runs along the eastern side of the Pacific Motorway with a new busway station proposed near the existing Springwood bus interchange.



## The need for the project

The Department of Transport and Main Roads wants to help build a strong and green Queensland. One way we can do this is by making public transport an attractive and viable alternative to the car by delivering reliable services that are competitive with travel by private vehicle.

### Planning for the future

It is important to plan public transport now to ensure future developments such as new buildings and roads are planned with the future busway in mind.

A 'protected' busway corridor means that a busway alignment has been approved by the Queensland Government to be delivered in the future. Once a corridor is protected, any development that is proposed within the corridor is subject to assessment by the department to ensure it fits with busway planning.

### We're growing fast

South East Queensland is the fastest growing urban region in Australia. Over the next 20 years, the region's population is expected to increase to around four million people (South East Queensland Infrastructure Plan and Program 2008–2026).

We need a balanced transport system to make sure South East Queensland keeps moving sustainably into the future. That means planning for a mix of public and private transport options.

The existing South East Busway has shown that providing fast, frequent and reliable public transport attracts passengers.

Under the South East Queensland Regional Plan 2005–2026, Logan City is expected to accommodate a significant number of new residents, with Springwood listed as a Principal Activity Centre. Principal Activity Centres have key concentrations of employment, retail, education, cultural and entertainment facilities. They are also hubs for residential development and transport.

A number of areas south of Springwood – Logan Central, Shailer Park and Browns Plains – are identified as major centres with concentrations of employment.

If public transport use continues to increase as it has in recent years, Logan City and Beenleigh are expected to experience the highest growth rate in public transport trips in South East Queensland.

Extending the South East Busway in the future will help cater for this growth. It will enable buses to completely bypass congestion and move more people more efficiently.





## Benefits of extending the South East Busway

### Transport benefits

- Gives more southside residents a congestion-free run on fast, frequent and reliable bus services. Bus travel speeds of up to 90 km/hr are possible on the South East Busway. Even when traffic incidents congest the Pacific Motorway, the South East Busway continues to operate unaffected. During peak hour, this often makes the busway a quicker way to get around.
- Provides greater frequency and variety of bus services while retaining important local services.
- Encourages more people to use public transport.
- Caters to a broad catchment of suburbs as buses can enter and exit the busway to serve residential and commercial areas away from the busway.
- Allows for the integration of public transport and land use which allows people to complete multiple activities in one public transport trip.

### Social benefits

- Provides improved connections to where people live, work and play.
- Improves access to major destinations including Brisbane's Central Business District, Springwood, and the University of Queensland (via the Eastern Busway).
- Provides greater certainty about future infrastructure. By planning now, we can set aside the land we need for our future transport needs.

### Economic Benefits

- Allows cost-effective staging of the busway by constructing the highest priority sections first.
- Makes efficient use of infrastructure and has significant 'people carrying capacity'.
- Lowers operating costs for bus services through reduced travel times.
- Saves travel time for bus users.

### Environmental benefits

- Increases the efficiency and flow of bus movements and reduces fuel emissions through less 'stop-start' driving.
- Helps reduce overall vehicle emissions by reducing car use. For every full bus, there are up to 40 fewer cars on the road.
- Maximises sustainable transport options by encouraging passengers to walk, cycle or catch their local bus to the Springwood busway station.



“For every full bus, there are up to 40 fewer cars on the road.”

## Brisbane's busway network

The South East Busway is an important part of Brisbane's busway network, which is designed to fill the gaps between Brisbane's existing rail lines to complete the city's primary public transport network. The development of the busway network is identified in the Integrated Regional Transport Plan for South East Queensland, the South East Queensland Regional Plan, the South East Queensland Infrastructure Plan and Program and the TransLink Network Plan.



## Concept design process

### The planning process

The draft Concept Design Study identifies a preferred future busway alignment and contains a preliminary investigation of a broad range of social, environmental, engineering and economic issues. The results of this study will inform the development of a detailed impact management plan at a later date.

A more detailed impact management plan cannot be undertaken now because the busway extension from Rochedale to Springwood is in the planning stage. Impact management planning is better undertaken just prior to construction. This ensures that strategies can use any advancements in technology that could contribute to better outcomes for the community.

The busway extension has been identified for delivery between 2011 and 2026 in the South East Queensland Infrastructure Plan and Program 2008–2026. It is therefore too early to properly consider the management of impacts in detail.

### How it fits in with other projects

Undertaking busway planning now means we can integrate the future busway with:

#### Pacific Motorway Upgrade, Gateway to Logan Motorway

Initial planning for this project, involving an upgrade of the Pacific Motorway between the Gateway Motorway and the Logan Motorway, was completed in May 2007. It included plans to extend the South East Busway from Eight Mile Plains to Rochedale. Planning for the South East Busway extension between Rochedale and Springwood has resulted in design amendments that better accommodate the delivery of the future busway. These changes ensure the projects are integrated in a way that minimises the impacts on the local community. See page 12 for more information.

#### Greater Springwood Master Plan

Logan City Council planning for the Greater Springwood area aims to guide future development within the Springwood town centre and will incorporate the busway extension. The department is working with the Logan City Council to ensure the Springwood busway station will integrate with future development opportunities around the town centre.

## When will the extension between Rochedale and Springwood be built?

Brisbane's busway network is a long-term plan and will be built in stages to service the areas of highest priority first. It is important to plan ahead to identify the location of future busway corridors to ensure each link in the network is able to be built as the need arises.

The South East Queensland Infrastructure Plan and Program prioritises the Queensland Government's program of infrastructure and major projects and is reviewed annually. It has earmarked \$365 million for the construction of the busway extension (Eight Mile Plains to Springwood) between 2011 and 2026. Completing busway planning now preserves the corridor for future construction. It also provides additional information for the South East Queensland Infrastructure Plan and Program review process on the benefits the busway will deliver, its expected cost and the extension's priority against other projects.

“ Completing busway planning now preserves the corridor for future construction. ”



# Consultation

## Planning together

Consultation is vital to the success of the South East Busway extension.

Experience with other projects shows that local knowledge is the key to getting the planning right. By planning with the community, we can design a busway that fits in with the community's needs.

## Consultation so far

The first round of consultation occurred between August and September 2008 when we held displays and an information session to gather feedback about local issues. We have sought to engage communities along the Rochedale to Springwood corridor, inviting residents and business owners to participate in the project's development. We used this feedback to help produce the plans currently on display.

## What the community has said

Based on feedback from the first round of consultation, the community generally:

- supports extending the South East Busway to Springwood
- recognises the need for the project
- wants safe pedestrian and cycle access to Springwood busway station
- wants noise and visual issues to be thoroughly examined and managed
- wants more parking at busway stations.



Information session at Springwood Bowls Club in August 2008.

## Consulting with impacted property owners

Owners of properties that are directly impacted by busway planning are the department's main concern. We will continue to meet and talk with all potentially directly impacted owners over the next couple of months. These discussions will help us gather local information to refine the design.

In some cases, there are opportunities to refine the design to fit in with a property owner's plans and aspirations. Busway alignments can be adjusted and different construction techniques can have different impacts. We discuss these opportunities one-on-one with potentially affected property owners and try to reach solutions that are acceptable to all parties.

## Tell us what you think

Consultation is underway. We want to make sure the project continues to be guided by local knowledge. Comments and ideas from the local community, together with the result of ongoing technical studies, will be used to refine the draft plans over the next few months so they can be completed by late 2009. They will then be submitted to the Queensland Government to consider.

## Displays

Project displays will be available at libraries, the Logan City Council Administration Centre and State Government electorate offices from Monday 1 June to Friday 3 July 2009. Staff will be available at the times listed below to answer questions.

## Contact us

<b>Phone:</b>	<b>1800 794 288*</b> (freecall)
<b>Email:</b>	<b>sebusway@transport.qld.gov.au</b>
<b>Visit:</b>	<b>www.transport.qld.gov.au/sebusway</b>
<b>Write to:</b>	<b>South East Busway Extension Project Queensland Transport Reply Paid 213 Brisbane QLD 4001 (no stamp required)</b>
<b>Interpreter:</b>	13 14 50 <i>(for people of non-English speaking backgrounds)</i>
<b>TTY:</b>	13 36 77 (quote 1800 794 288)

\* Higher rates apply from mobile phones and pay phones. STD rates will apply if calling from outside South East Queensland.

## We want your feedback

The draft Concept Design Study presents the findings of preliminary investigations into a broad range of environmental, social, engineering and economic issues. It also identifies potential benefits and impacts to ensure they are able to be managed appropriately in the future. This 'In Brief' is an easy-to-understand summary of the draft Concept Design Study.

Please come along to one of the staffed displays and provide us with your feedback.

Feedback is invited until Friday 3 July 2009.

Date	Time	Venue
Thursday 4 June 2009	2pm – 4pm	<b>Logan North Library</b> Corner Sports Drive and Springwood Road, Underwood
Tuesday 9 June 2009	10am – 12pm	
Thursday 18 June 2009	5pm – 7pm	
Tuesday 23 June 2009	2pm – 4pm	<b>Centro Springwood</b> Corner Rochedale Road and Fitzgerald Avenue, Springwood
Saturday 27 June 2009	10am – 12pm	

# Draft alignment maps

## Alignment selection

The Department of Transport and Main Roads has worked with technical experts to develop the draft South East Busway extension alignment. Possible alignments were assessed against the following considerations:

- minimising property and construction impacts
- minimising traffic impacts, both during and after construction
- locating the busway and station where they will be most accessible to people and activity centres
- meeting relevant design standards
- maximising efficiency in terms of travel time, operation and construction
- maximising local interchange function and bus access onto and off the busway.

## Design amendments to Pacific Motorway Upgrade planning

In August 2008, the department started planning for the future extension of the South East Busway from Rochedale to Springwood.

This process had to take into account the planning work already completed for the Pacific Motorway Upgrade. It is important planning for the busway and motorway complement each other.

As a result of this work, the draft planning layouts recommend minor adjustments to approved Pacific Motorway Upgrade planning. The benefits of the minor adjustments include improved safety, less community disruption and significant cost savings.

The most significant change is the proposed relocation of the Rochedale Road off ramp.

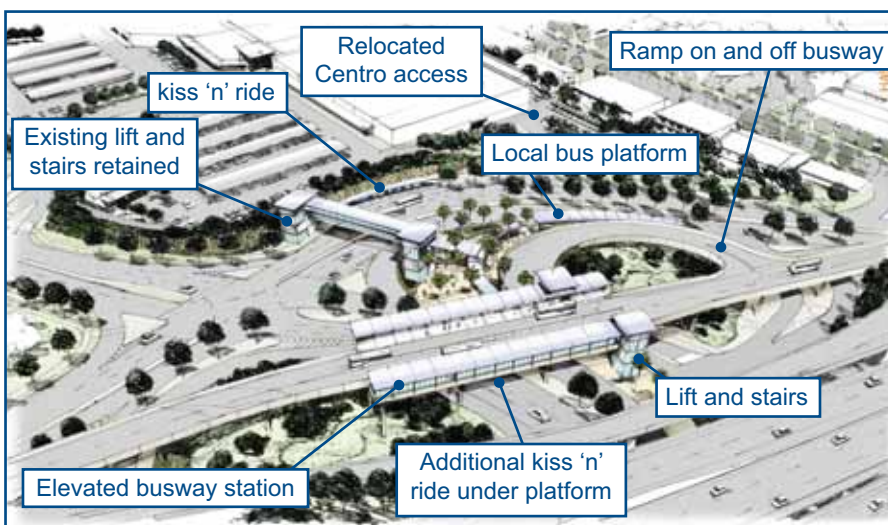


Preliminary planning shows that if the busway extension were to proceed without making changes to the master concept plans for the Pacific Motorway Upgrade, a 400 m busway tunnel would be needed under the motorway exit onto Rochedale Road. This is not a viable solution as it would present problems with maintaining the off ramp during busway tunnel construction.

The revised plans recommend the realignment of the Rochedale Road off ramp. The proposed realigned off

ramp intersects Rochedale Road north of Pindari Street. This has benefits for both projects. For the master concept plans for the Pacific Motorway Upgrade, it provides a safer route for motorists exiting the motorway because they will enter Rochedale Road at a signalised T-intersection. It also means the off ramp could remain operational during construction of the busway. For the busway extension, it means an expensive tunnel can be avoided.

### Draft Springwood Busway Station



For a more detailed map visit a staffed display, details on page 11.

# Key findings of the draft Concept Design Study

## Sustainability

Sustainability is a central theme of busway planning.

One of the ways to achieve a strong, green and sustainable Queensland is to get more people out of their cars and onto public transport. This results in fewer cars on the road and less pollution. Brisbane's busway network is all about delivering the infrastructure we need to give us fast, frequent and reliable bus services that are competitive with travel by car.

### A sustainable way to travel

The carrying capacity of a busway lane is significantly higher than of a typical motorway lane. A typical motorway lane has a maximum capacity of around 2000 people per hour. In some sections, the South East Busway carries 18 000 people per hour – that's the equivalent of nine motorway traffic lanes. By carrying more people more efficiently, the environmental footprint per person is significantly reduced. That is good for the environment and good for our future.

### Sustainable infrastructure

Achieving a sustainable outcome doesn't end with getting more people to use public transport. We want the construction, operation and maintenance of Brisbane's busway network to also be sustainable. This means promoting the use of renewable, long-lasting and/or fully recyclable resources. This will help minimise waste and emissions and maintain the value

of the busway as well as potentially reduce capital and recurrent costs.

The 'Engineering' chapter of the draft Concept Design Study has considered resource efficiencies through the incorporation of sustainable design criteria, which includes rainwater and solar energy collection and use, water sensitive urban design, climate sensitive design, energy and waste minimisation and recycling facilities. The 'Engineering' chapter also investigates how to choose the best material to minimise maintenance.

### Sustainable communities

The planning of transport infrastructure is important in the development of towns and cities as it contributes significantly to the sustainability of a region. Public transport infrastructure, in particular, is a form of sustainable development as it encourages the efficient movement of people and can help promote more self-contained land use patterns. This means people don't have to travel long distances to do the things they want to do, whether that be for work or recreation. Less travel means less pollution.

The South East Busway extension will increase access to employment opportunities and connect people to places in a way that minimises impacts on the environment. The 'Land Use' chapter of the draft Concept Design Study recognises the importance of incorporating busway stations with transit-oriented development, especially activity centres. While the busway project is not responsible for land use planning, the department is working closely with Logan City Council to coordinate transport and land use outcomes.





## Traffic and transport

### Planning to protect our lifestyle

The population of Brisbane and Logan is growing and the number of cars on our roads is increasing. We need to take steps now to plan and invest in all forms of transport – including reliable, cost-effective and time-saving public transport – to make sure Brisbane and Logan keep moving. Extending the South East Busway means even more southside residents will be able to take advantage of the fast, frequent and reliable travel it provides parallel to the Pacific Motorway.

### What the traffic studies tell us

Community consultation and previous studies tell us that buses are experiencing delays between Rochedale and Springwood. The provision of a dedicated busway in the future will greatly improve the reliability of bus travel times. A Department of Main Roads travel survey on the Pacific Motorway in 2006 recorded an average speed of 66 km/hr in the section between the Gateway Motorway and Underwood Road (the posted speed limit is 100 km/hr).

Bus travel speeds of up to 90 km/hr are possible on the South East Busway and even when traffic incidents congest the Pacific Motorway, the South East Busway continues to operate unaffected. During peak hour, this makes the busway a quicker way to get around.

### How the busway will improve the local transport system

Buses travelling along the South East Busway extension between Rochedale and Springwood will be independent of and unaffected by traffic on the Pacific Motorway. Buses will no longer be required to use the Rochedale Road and Fitzgerald Avenue off-ramps to access Springwood station. This means faster and more reliable journey times. In addition, extending the South East Busway will mean fewer buses are travelling on the Pacific Motorway therefore freeing up more space for vehicles.

The department is undertaking transport modelling to provide a more in-depth analysis of the corridor's transport issues and opportunities. The results of the modelling will be available in the final Concept Design Study.

### Proposed changes to local roads

There are likely to be some modifications to local streets as a result of the busway. If the busway proceeds in its current design in the current transport network, the following modifications to the road network would be required:

- Rothon Drive – local bus access point provided from Rothon Drive (north of Beverley Avenue) to allow local buses to join the busway.
- New Rochedale Road off ramp – the existing off ramp would be realigned to intersect Rochedale Road north of Pindari Street. The busway would travel beneath the off ramp.
- Rochedale Road realigned – between Kumbari Street and Fitzgerald Avenue, Rochedale Road would be shifted to the east of its current alignment to create room for the busway to run alongside the southbound lanes of the Pacific Motorway.
- Pindari Street - closed and Kumbari Street reopened.
- Moffit Court – closed at the Rochedale Road end. It is proposed to connect the western end of Moffit Court to Karoonda Crescent to maintain access. The closure of Moffit Court at the Rochedale Road end would avoid potential safety issues due to the proximity of the Rochedale Road off ramp intersection.



## Parking

It is TransLink's policy that park 'n' ride facilities should not be considered in the immediate activity area of centres identified by the South East Queensland Regional Plan. This aims to reduce traffic congestion within these centres and maintain pedestrian and cyclist friendly environments. Therefore, there will not be any additional park 'n' ride facilities located at the Springwood busway station.

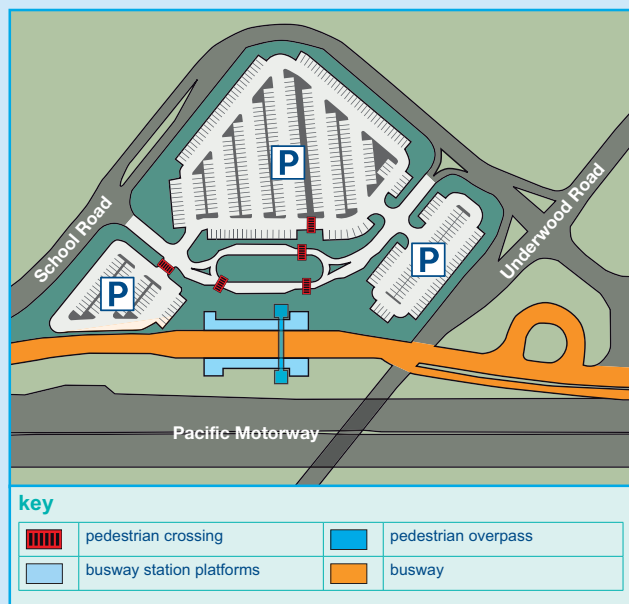
There are existing and/or planned park 'n' ride facilities located at:

- Springwood bus station: 100 bays currently available.
- Eight Mile Plains: One car park is located immediately adjacent to the busway station and another is 400 m to 800 m north of the bus station, on the other side of Miles Platting Road (approximately 1000 bays in total). Planning for a third park 'n' ride facility and improved pedestrian connections over Miles Platting Road is underway as part of the Gateway Upgrade South project.
- Logan Hyperdome: The master concept planning for upgrades to the Pacific Motorway allows for a park 'n' ride facility for approximately 750 parking bays.
- Rochedale: The master concept planning for upgrades to the Pacific Motorway makes provision for a park 'n' ride facility servicing the Rochedale busway station for approximately 600 parking bays.
- Paradise Road: The master concept planning for upgrades to the Pacific Motorway makes provision for approximately 160 parking bays.

We are making sure enough room is provided for kiss 'n' ride facilities. This will allow busway passengers to be easily dropped off or picked up close to the busway station.

TransLink will review bus routes to ensure it is easy for commuters to access the busway from their local bus stop. This reduces the need to drive to a station as local buses will continue to do their neighbourhood rounds before heading onto the busway for a congestion-free run.

We also want to ensure that residents and businesses who live and work near the future Springwood busway station aren't inconvenienced by commuters who hide 'n' ride – that is, park in local streets or shopping centre parking spaces that are close to the station. A parking management strategy will be undertaken in future planning phases to help minimise and manage any parking impacts.



Planned Rochedale busway station and 600 bay park 'n' ride at Underwood Road, Rochedale.

## Cycle and pedestrian access

Making it easy to access the busway is an important task for the department. Cycling and walking are the most environmentally-friendly ways of accessing the busway.

### Promoting pedal power

The department wants more people to leave their cars at home and walk, cycle and use public transport instead. Fewer car trips mean less carbon emissions. This means cleaner air for the future.

We are working to ensure that all busway stations are easily accessible for cyclists. This means:

- Providing quality facilities for cyclists at stations. Bike storage facilities are planned for Springwood busway station to make cycling as convenient as possible.
- Making sure local cycleways link to busway stations. We are working with other state and local government agencies to assess opportunities for improved cycle links and to ensure local cycleways connect to stations.

### Pedestrian access to busway stations

Good walking access to busway stations is vital to the success of Brisbane's busway network. Each busway station is designed for maximum accessibility by passengers on foot. Given that busway stations are designed to cater for high volumes of pedestrians, footpaths and road crossing facilities within the immediate vicinity of the proposed Springwood busway station need to be of a high quality.

## Bus services

When completed, the South East Busway extension will be another vital addition to Brisbane's busway network that will eventually span the city. It will give even more southside communities direct access to the busway network and TransLink services across the region.

The 'Network Integration' chapter of the draft Concept Design Study outlines how the busway extension may integrate with the transport network in Brisbane and Logan City in the future.

### Planning local services

Given that the South East Busway extension has not been identified for delivery in the short term, it is too early to provide an accurate description of the bus services that are likely to use the busway. However, to help in the design of the busway extension, transport planners and bus operations specialists have examined the existing bus routes and considered where busway stations, turnarounds and local access points should be located. The type and frequency of bus services that would be needed in the future have also been considered.

The busway design will take into account the following:

- the need to allow buses to enter the busway from the Rochedale Urban Village
- making it easy for buses to continue south from Springwood station to Logan Hyperdome
- possible extension of Springwood-only buses to service the Springwood town centre
- platform requirements to enable higher capacity buses and pre-paid functionality in the future.



## Urban design

Getting the right look and feel for the South East Busway extension is an important part of the project. Good urban design has the ability to take a functional, physical entity – the busway and its stations – and give it character through smart architecture, lighting, tailored design features, signage, furniture and artworks.

The project team’s urban designers have undertaken desktop studies and field studies to establish the existing character of the corridor and propose ways in which the busway can be custom-designed to fit in with the communities it will serve.

### Rochedale South

#### Existing situation

The Rochedale South section is characterised by low-density residential development, with pockets of townhouse development. The areas close to the Pacific Motorway are subject to significant vehicle noise, close proximity to exhaust emissions and minimal landscaping.

Urban design strategies from Pacific Motorway planning for this area include the use of melaleuca bark textures and patterns reflecting the geometric street lines.



The existing Rochedale South streetscape.

#### Possible design strategies

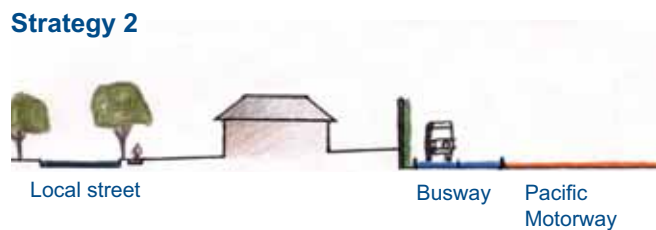
The busway is proposed to run in close proximity to residential houses on the eastern side of the Pacific Motorway and will therefore have an impact on the properties in this location. A mix of the proposed design strategies may be incorporated into the final design, depending on the findings of further investigations and consultation with local property owners.

The following possible design strategies apply to the section from Rothon Drive to Narrawong Street.

Strategy 1 is suited where houses on the eastern side of the Pacific Motorway are required for the busway extension. It suggests converting the remaining land into a park, using landscaping to provide a ‘green’ view from the busway corridor.



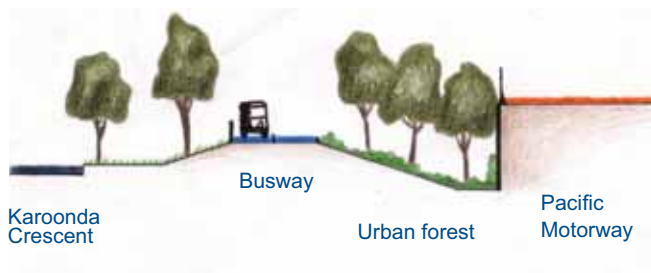
Strategy 2 is suited where existing houses can be retained and includes a noise wall at the back of the properties. Vegetation could be planted against the noise wall.



Strategy 3 is similar to strategy 1, however rather than converting the area to a park the land could be retained for redevelopment.



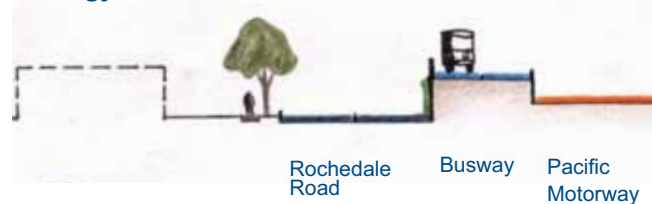
The following design strategy could be applied to Karoonda Crescent. It utilises the space between the busway and Pacific Motorway to create an urban forest. The remnant land would be converted to a park.



The following design strategies could be applied to Rochedale Road. In order to fit the busway beside the Pacific Motorway, Rochedale Road is proposed to be re-aligned which has impacts on adjacent properties.

Strategy 1 is suited where houses on Rochedale Road are required for the busway. It allows the resized blocks to be retained for re-use in the future.

### Strategy 1



Strategy 2 shows the alternative of creating a Rochedale Boulevard which features tree planting and wide footpaths. The remnant land would be converted to a park.

### Strategy 2



## Springwood

### Existing situation

The Springwood area is dominated by commercial development, including shopping centres and large retail uses. There are also a number of car yards and showrooms, professional services, smaller-scale office buildings and large areas of parking.

The existing Springwood bus interchange consists of two bus platforms and a pedestrian overpass above Rochedale Road. Urban design planning for the Pacific Motorway in this area include the use of kauri pine textures and landscaping.

### Design strategies

The Springwood busway station has been placed in close proximity to the bus interchange to enable easy connections for bus services and passengers. The urban design strategies for the Springwood busway station aim to reduce the visual impact of the busway station and provide for quality pedestrian and cycle access.

The strategies include:

- the activation of street edges surrounding the bus station precinct (Rochedale Road and Fitzgerald Avenue) by improving access and landscaping to maximise safety
- maintaining a functional and efficient relationship between the Springwood busway station and local bus interchange
- providing a clear entry point to the station to allow easy navigation.



The existing bus and road infrastructure at Springwood.

## Flora and fauna

The South East Busway extension corridor is already highly developed. Much of the area's original vegetation has been cleared and replaced by homes, businesses, industrial areas, community facilities and the Pacific Motorway corridor. The study corridor has little in the way of bushland, so habitat for native flora and fauna is limited mainly to backyards, roadside vegetation and pockets of Council-owned land.

The busway extension corridor does not bisect any wetland areas.

### What we know about flora and fauna between Rochedale and Springwood

Legislation is in place to protect local plant and animal species, particularly those that are rare or threatened. For the draft Concept Design Study, a desktop review of previous studies and field surveys was undertaken to identify the presence of flora and fauna listed under the *Environment Protection and Biodiversity Conservation Act 1999* and/or *Queensland Nature Conservation Act 1992*.

No vegetation of conservation significance has been identified in or adjacent to the busway corridor.

Studies show that there may be two fauna species in the study corridor that are considered rare and/or threatened - the koala and grey-headed flying fox. Habitat for the koala within the project area is likely to include isolated feed and shelter trees (predominantly large eucalypt and paperbark trees) in backyards, pockets of Council-owned land and roadside reserves.



Habitat for the grey-headed flying fox is most likely limited to feed trees. This includes a wide range of native and exotic species, including flowering eucalypts, fruit trees and fruiting figs and palms.

A number of locally significant bird species (species considered rare in the Logan City Council area) are also considered likely to be found within or alongside the busway extension corridor. These include the little lorikeet, Australian hobby, pacific baza and others. Habitat suitable for these species is likely to be restricted to vegetated backyards and isolated feed trees in park areas along the busway extension corridor. Similar habitat for these species occurs on land adjoining the corridor, with higher quality habitat in areas of remnant bushland and low density housing to the east and west of the project area.

Four *Environment Protection and Biodiversity Conservation Act*-listed migratory species were also identified as potentially occurring within or adjacent to the busway corridor – the cattle egret, white-throated needle rail, rainbow bee-eater and rufous fantail. These, however, are non-threatened species. Habitat for these species along the busway extension corridor is generally limited to that used for foraging and roosting (for example, regrowth vegetation and vegetated backyards).

### Minimising impacts on flora and fauna

A range of mitigation measures will reduce the significance of potential impacts. Types of mitigation techniques currently available include:

- using qualified fauna spotters during initial clearing to relocate any fauna that is disturbed
- landscaping and replanting of disturbed habitat with locally native plants (where appropriate)
- providing compensatory habitat for native fauna where habitat loss is unavoidable (e.g. deployment of nesting boxes and bat shelters in green space areas adjoining the project area to compensate for the loss of roosting/shelter sites during construction).

No negative long-term effects on the natural environment within the project corridor are predicted.

## Noise and vibration

Noise is unwanted sound – barking dogs, loud music, industrial machines. Noise pollution can affect our work and lifestyle, and that is why guidelines are in place to regulate noise levels.

The South East Busway extension will be located alongside one of the busiest roads in Queensland – the Pacific Motorway. Noise testing reveals that traffic noise from the Pacific Motorway forms a significant component of the acoustic environment along the Rochedale to Springwood corridor.

The noise and vibration assessment carried out for the Pacific Motorway Upgrade showed that some properties in the corridor are currently exposed to high levels of traffic noise.

### Managing noise and vibration during construction

Construction of the busway will temporarily increase noise levels in certain locations. Temporary increases in noise levels could be managed through an effective community consultation program and a range of control measures such as:

- installation of temporary or final noise screens early in construction
- use of noise limiting devices on construction equipment
- limiting work hours where possible
- providing advanced notice of works, especially any night time works or particularly noisy activities such as blasting, rock breaking and pile driving.

Residents may experience vibration during construction of the busway due to excavation, piling, drilling or compaction equipment. Any vibration impacts would be managed in the same way as noise impacts.

### Managing noise when the busway is in place

The Pacific Motorway Upgrade, Gateway to Logan Motorway project team and the South East Busway extension project team will work together to investigate opportunities to incorporate noise mitigation strategies (including noise barriers) into the project designs. This would provide effective measures to manage the impact of cumulative noise emissions.

The Department of Transport and Main Roads will investigate other ways to reduce noise, including low-noise road surfaces for the busway, limiting bus speeds in certain locations, and designing the busway so as to reduce steep grades (steep grades require more engine power, thus increase noise emissions).



## Air quality

Brisbane and Logan are clean and green cities – and we want to keep them that way.

Significant pressure on our air quality over the next twenty years will come from the expected increase in car travel. To help the environment, we need to change the way we live and travel. One way is to get more people out of their cars and onto public transport.

### What we know about air quality between Rochedale and Springwood

The Rochedale to Springwood corridor is dominated by a six-lane motorway which produces the majority of air pollutants in the study corridor.

From Environmental Protection Agency monitoring we know that existing air pollutants within the Rochedale to Springwood corridor do not exceed the relevant standards.

The department has undertaken a significant amount of analysis on air quality issues as they relate to Brisbane's busway network. From these studies, we know that busway projects present real benefits into the future as they attract more people onto public transport who would otherwise travel in cars.

It appears that air pollutants generated by bus transport are unlikely to increase significantly in the future. In fact some pollutants may even decrease due to technological advancements such as cleaner fuel technologies.



## Safety through design and management

Potential impacts on air quality need to be considered for both the construction and operational phases of the project.

During construction, dust produced by earthworks and transporting rubble can cause a nuisance and impact on air quality if it is not properly managed. Examples of potential mitigation measures include covering truck loads and soil stockpiles, laying gravel on access roads, setting speed limits for construction vehicles and using recycled water sprays and wheel washers.

When the busway is operational, there are a number of management strategies that can be used to ensure emissions from the busway are kept at a safe level. Emissions from buses are highest right on the kerb of the busway and decrease rapidly with distance. A 'buffer zone' between the busway and sensitive sites can help manage potential emissions. The road gradient can also affect the level of pollutants emitted by buses as steep grades require more engine power, thus producing more emissions. This is particularly important around busway stations.

### Busways are clean and green

Every year, the average car releases around 325 kg of harmful gases and more than five tonnes of carbon dioxide into Brisbane's air (TransLink, 2007). Busways have the potential to reduce car use by attracting more people to use public transport. That means fewer cars on the road and less pollution.

The busway's benefits for air quality are realised when comparing a bus to a car. A full bus produces 11 times less greenhouse gas emissions per person per kilometre than an average car containing only the driver. Although not every bus is full, it only takes six passengers to make the bus a cleaner option. What's more, busways cut bus emissions in half through less 'stop-start' driving by travelling on uncongested roads.



## Soils and geology

They might be largely hidden from view, but the soil and rock that form the geology of the southern suburbs are very important to the design of the South East Busway extension. Understanding the nature of the soil and rock helps confirm the optimal busway alignment and helps to determine what type of busway structure (bridge, tunnel or at-surface) is best suited to particular areas.

### What we know about soils and geology between Rochedale and Springwood

Previous studies for the existing South East Busway and the Pacific Motorway Upgrade tell us a lot about the soils, geology, topography and geomorphology of the study corridor. The study corridor features rising and falling terrain with low-lying areas of around 15 m Australian Height Datum (AHD) rising to heights of about 60 m AHD. There do not appear to be any topographic or geomorphologic (that is, landforms and surface shaping processes) issues that would substantially affect the successful implementation of the busway extension.

The draft busway alignment traverses a range of soil and rock types. The geology of the wider area comprises alluvium and sedimentary rock types of the Tertiary and Mesozoic age (e.g. Woogaroo Subgroup and the Tingalpa Formation). No major active geological faults have been identified in the wider area surrounding the busway corridor.

There is considered to be a low risk of acid sulfate soils being encountered during construction. Acid sulfate soils are naturally-occurring soils found in low-lying coastal areas. Left undisturbed, acid sulfate soils cause no harm to the environment or human health. However, if the soil is excavated, or altered by changes to the surrounding water table, chemical reactions can take place, creating sulphuric acid and sometimes dissolving mineral contaminants.

The report found that the project will not impact any existing economic mineral deposits or energy resources.

The report also found that no property lots in the study area were listed on the Environmental Protection Agency's registers as potential contaminated land sites. However, a review of historical aerial photography identified areas in Springwood that had been used previously for commercial purposes, which may have involved the storage of liquids. Further investigation is therefore needed to determine whether these sites contain contaminated land. Results will then drive which management options are required.

### Managing construction risks

Mitigation strategies would be put in place to adequately manage and reduce the risk of soil erosion due to construction and operation activities. Specific erosion and sediment control plans would be developed during the design phase. This would include site reinstatement measures (such as revegetation) once the works are complete.

In some areas it may be necessary to carry out ground improvement measures where embankments and batters are required (a 'batter' is a wall that gradually slopes upwards and backwards). Potential management strategies to improve embankment stability include the removal of high plasticity soils and low density alluvium, and preloading of foundation materials before embankment placement. Anchoring/soil nailing and shotcreting of steep cut batters could also be used to improve stability.



Batter slope under construction.

## Water quality

Assessing the way in which a project may affect the health of local waterways is an important part of infrastructure planning. Like local green spaces, we value creeks and waterways because they are important to our ecosystem, often offer scenic views, and provide us with places to relax.

The South East Busway extension between Rochedale and Springwood will not cross any creeks or waterways. However, like all roads in the local area, surface water runoff from the busway will be collected by a drainage network and discharged into Slacks Creek which feeds into the Logan River.

The department has undertaken a preliminary investigation into how runoff from the project might affect water quality and what we could do in the future to maximise benefits and minimise impacts.

### What we know about water quality in the study corridor

Slacks Creek is a freshwater waterway while the Logan River is an estuary, both contributing to the Logan River estuary catchment. Water quality in Slacks Creek and the Logan River is poor, according to the Ecosystem Health Monitoring Program (a collaboration between government, industry, researchers and the community that reports on the health of eastward draining rivers in South East Queensland).

### Maintaining water quality

Although already disturbed ecosystems, these watercourses will be sensitive to impacts of further disturbance. A range of practical measures would be put in place to ensure that our waterways are protected, both during construction and in the operation of the busway. These include:

- limiting the increase in stormwater runoff volume using natural drainage paths and infiltration basins
- controlling sediment-laden runoff from disturbed areas during the construction phase
- treating all stormwater runoff from hard surfaces through infiltration, sedimentation, storage or biological treatment before leaving the site.

Preliminary investigations indicate that, with appropriate mitigation measures, potential impacts on local water quality are manageable.

### Groundwater quality

The study team examined previous studies undertaken for the Pacific Motorway Upgrade and the Brisbane Aquifer project to gather information about groundwater levels and quality.

There is a difference in the depth, quality and expected yields of groundwater found along the Rochedale to Springwood corridor. The quality of groundwater along the corridor is generally potable, however the Brisbane Aquifer project noted that nitrate levels in groundwater around Rochedale South can be elevated. Generally, shallow water levels are expected in areas underlain by Quaternary sediments, which occur along the draft busway alignment. Groundwater levels within the Tertiary deposits, namely Corinda and Sunnybank Formations, and the Triassic rocks of the Moorooka Formation also exhibit shallow water levels under semi-confined conditions.

Given that no tunnels are proposed for the South East Busway extension to Springwood, the project is not expected to significantly impact the water table. More detailed investigations would be undertaken in a future impact management phase to assist in construction design. Monitoring of groundwater quality may be undertaken during construction to ensure impacts are minimised.

“ Assessing the way in which a project may affect the health of local waterways is an important part of infrastructure planning. ”

## Flooding

The department has undertaken a preliminary investigation of the potential impacts and anticipated benefits that the busway extension might have on flooding and the flow of water in the local area.

The aim of these investigations is to ensure that busway structures do not worsen the potential for local flooding or impede the natural flow of water during floods.

### What we know about water and flooding between Rochedale and Springwood

While the study corridor is not normally subject to flooding, there are several waterways downstream of the corridor that are.

There are no creeks that traverse the South East Busway extension corridor between Rochedale and Springwood. Stormwater runs towards the corridor from the east and discharges to the west of the corridor to a series of open channels and culverts in the upper reaches of Slacks Creek, which flows to the Logan River.

### Managing flood risk

The proposed busway design may require changes to two northern drainage systems, which in turn could impact flood storage in the local area. To mitigate this, the department may need to extend existing culverts (drains or channels) to ensure an adequate flow of water can be maintained when the busway is in place.

Preliminary investigations indicate that, with appropriate mitigation measures, impacts on the hydrological and hydraulic environment of the study corridor are manageable.

## Cultural environment

Every place has a history, a value, or a meaning to someone and the Rochedale South and Springwood areas are no different. Many sites in the southern suburbs are important to different groups for different reasons. The 'Cultural Heritage' chapter of the draft Concept Design Study is a preliminary investigation to identify any areas of cultural heritage significance and show how any adverse impacts could be managed in the future.

The draft Concept Design Study undertook a preliminary investigation of both Indigenous and non-Indigenous cultural heritage issues.

### Non-Indigenous cultural heritage

Preliminary investigations reveal that impacts on cultural heritage are unlikely. There were no environmental areas or historical sites registered or listed in the study area which would be impacted by the proposal.

### Indigenous cultural heritage

Construction of the extension from Rochedale to Springwood is generally unlikely to harm Aboriginal heritage where the development remains within the previously constructed road reserve and other highly developed areas. Some road widening construction activities may be undertaken in previously undisturbed areas. Potential impacts to undiscovered Indigenous sites are more likely to occur if other Indigenous sites have been found in the area. The potential for Aboriginal sites to be uncovered at locations where road widening is required or in previously undisturbed areas is considered low.

A strategy for the management of Indigenous sites which may inadvertently be discovered during any earth works would be developed for the construction phase. The native title group would be consulted with regards to their involvement in the project.

## Social environment

Providing a busway isn't just about the actual physical construction of the busway itself. It's about improving the area and ensuring that quality of life is protected into the future. The department has undertaken a preliminary social impact assessment to examine what sort of social effects the busway could have on the local community.

### Improving our community

The South East Queensland Regional Plan 2005–2026 identified Springwood as the only Principal Activity Centre designated in Logan City. Therefore, to support the future growth, it is important the area has a well serviced public transport system.

A study completed by Logan City Council in 2007 reported that 85% of survey respondents overwhelmingly supported the proposed vision for the Springwood town centre as 'a vibrant heart, a place to live and work, a place for shopping, dining and entertainment, cultural and community activities' and 'people and family friendly'.

Extending the South East Busway to Springwood will provide a range of benefits for communities in the study corridor, the majority of which apply to the broader community. The busway extension will provide more efficient, direct and reliable public transport options and will increase the convenience of public transport.

Passengers using the busway extension will benefit from:

- reduced travel time
- improved frequency and a greater variety of bus services
- consistent and reliable trip times.

## Social impacts

The impacts of the busway extension mainly relate to those directly affected by the project alignment. The following social impacts have been identified:

- the social impact of land requirements from commercial and residential properties when the busway is constructed
- impacts from construction activities on nearby properties and local communities (for example, noise and heavy vehicle traffic)
- impacts from operation of the busway (for example, noise).

### Acquiring private property

Directly affected property owners will be compensated in accordance with the relevant Queensland Government legislation (*Acquisition of Land Act 1967* and the *Transport Planning and Coordination Act 1994*). Where possible, the Queensland Government will seek to acquire private properties by negotiated agreement with the affected property owner.

Resumption is based on well-established principles of procedural fairness, natural justice, compensation at a fair market price, rights of appeal, prompt settlement and compassion. Compensation is calculated at the time of the acquisition and is based on the market value of the property unaffected by the project for which it has been resumed. The usual processes provide for the landowner to obtain independent expert valuation and legal advice at the department's expense to assist in the compensation process.

“The busway extension will provide more efficient, direct and reliable public transport options and will increase the convenience of public transport.”

## Getting the balance right

Successful delivery of the busway extension relies on mitigating potential impacts on communities as much as possible. In this regard, the project will need to:

- provide appropriate support to people who need to relocate
- increase awareness and understanding of the project by conducting an open and transparent communication and community consultation program
- manage the construction and operational impacts to maintain neighbourhood amenity.

With the implementation of management plans to minimise social impacts, the extension of the South East Busway is expected to make an overall positive contribution to equity and quality of life in the southern suburbs and the wider Brisbane and Logan City areas.

## A community snapshot of the study area

The total study area population in 2006 was 37 349 people.

The largest age group in the study area was 25 to 34 year olds with 14.4% of the population. 55 to 64 year olds made up 13.5% of the population.

The most prevalent family type found in the study area was couple families with children.

The labour force in the study area showed a lower rate of unemployment at 4.0% than Logan City with 5.8%.

The study area has a higher percentage of dwellings with two or more vehicles than Logan City and the Greater Brisbane area.

The Australian Bureau of Statistics (2006) Census of Population and Housing reported that 'Logan City is a growing residential area, with substantial rural, rural residential, commercial and industrial areas'.



## Economic environment

Brisbane and Logan City are part of the fastest growing urban region in Australia. Over the next twenty years, the region's population is expected to increase to around four million people (South East Queensland Infrastructure Plan and Program 2008–2026).

With this growth, congestion is increasing and traffic queues are getting longer. Brisbane's busway network is part of a balanced transport solution that will make sure the region keeps moving.

## Economic benefits of extending the South East Busway

Extending the South East Busway to Springwood will bring a number of economic benefits, including:

- reduced travel times
- lower operating costs for bus services through reduced travel times
- road safety cost benefits – as more people choose public transport as a safer alternative to the private car
- supporting development at Springwood
- catering to the transport needs of the future Rochedale Urban Village.

## A bright future

There are big plans for the Rochedale to Springwood corridor. The proposed creation of the Rochedale Urban Village will see the development of 900 hectares of semi-rural land to house more than 15 000 people. It will include a range of housing options, a new town centre, opportunities for business and clean industry, a number of new community parks and large areas of environmental protection. The South East Queensland Regional Plan 2005–2026 identified Springwood as the only Principal Activity Centre in Logan City.

Logan City has a strong economy that is supported by large manufacturing and retail trade sectors. There were approximately 43 700 jobs located in Logan City in 2001, which provided employment for both Logan residents as well as workers living outside the city. Manufacturing and retail trade account for 17% and 24% respectively of employment in Logan. There are, however, a number of other industries that make significant contributions to Logan's economy. These include construction, wholesale trade, education, property and business services, health and community services, communication services and government administration and defence.



## Land use and planning

There are state and local government plans in place to guide how our cities grow and develop. The South East Busway extension is being planned to complement the regional, state and local planning framework.

## Development along transport corridors

The department has been working with Logan City Council to ensure the busway complements future plans for the Rochedale and Springwood communities. Local councils ultimately determine the kind of homes, businesses and other development built alongside the busway or around busway stations. In Logan, development is guided by the Logan Planning Scheme.

The Springwood busway station has been located where it will best serve the surrounding residential and business communities. The department is continuing to work with Logan City Council through its Master Plan to ensure that the station is located in the best spot for the future, is accessible and has good links to those who will use the busway.

Some land acquired for the busway may be available for redevelopment after construction. Development of this land would be consistent with Logan Planning Scheme requirements.

## Future development

Once the busway alignment is officially announced, the Department of Transport and Main Roads places a requirement on the properties impacted by the busway. This may place a constraint on potential future development on adjacent properties. Ongoing consultation between the department, Logan City Council and development proponents will be required to ensure that any proposed development within the busway corridor is consistent with the busway proposal and redevelopment of Springwood town centre.

“ The Springwood busway station has been located where it will best serve the surrounding residential and business communities. ”

### Where do planning guidelines come from?

The main plans that guide development and infrastructure in the southern suburbs are:

- South East Queensland Regional Plan 2005–2026
- South East Queensland Infrastructure Plan and Program 2008–2026
- Brisbane City Council’s Transport Plan for Brisbane 2008–2026
- Logan Planning Scheme 2006
- TransLink Network Plan.

These plans have been developed with input from town planners, residents, community groups and elected representatives. They set guidelines on how and where local communities should grow, what we can build on our land, how new buildings should be designed, what infrastructure will be needed in the future, and how to protect the things we value, like bush land, open spaces and local heritage and character.

# Conclusion

## Future planning phases

The results of the Concept Design Study will inform the development of a detailed impact management plan at a later date. This will ensure impact management strategies consider any advancements in technology that could contribute to better outcomes for the community.

The draft Concept Design Study lists the types of studies that might be undertaken as part of future impact management planning. They include, but are not limited to, thorough investigations of noise, air quality, social, economic, engineering, transport, ecology, hydrology, land use, urban design and cultural heritage issues.

## Next steps

### Finalising the Concept Design Study

The draft Concept Design Study will be on display for public consultation until Friday 3 July 2009. Following the consultation period and a review of community feedback, the Concept Design Study is scheduled to be finalised and submitted to the Queensland Government for consideration in late 2009.

The final busway alignment and Concept Design Study will be available once approved by the Queensland Government. The South East Busway extension alignment will then be protected.

Once a corridor is protected, any development that is proposed within the corridor is subject to assessment by the Department of Transport and Main Roads. This means we can integrate any new development with the future busway and can minimise potential impacts when the busway is delivered.

## Key planning and consultation phases

