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14 Public transport network integration

14.1 Introduction

The key objective of the Cairns Transit Network is to plan and protect three key priority public transport corridors across Cairns. These corridors aim to improve the speed and reliability of bus services operating within these corridors. The three key corridors and central section are:

- Central – City Place
- Northern corridor – City Place to Palm Cove (via Smithfield)
- Southern corridor – City Place to Gordonvale (via Earlville and Edmonton)
- Western corridor – Cairns Base Hospital to Skyrail (via Redlynch).

The Cairns Transit Network has been developed to cater for the future long term growth of public transport usage across Cairns with a range of differing treatment options considered within each corridor. The various bus priority/treatment options are described in detail within Chapter 15: Engineering and include:

- dedicated busway corridor
- median bus-only corridor
- bus/transit lanes
- bus priority signals at traffic lights and bus queue jumps at intersections.

The Cairns Transit Network will be the backbone to the Cairns public transport network. It delivers the necessary infrastructure to support the efficient movements of buses across the Cairns urban area.

14.2 Purpose

The purpose of this chapter is to provide a preliminary analysis of the public transport network for Cairns. This chapter explains the role of the Cairns Transit Network, highlights how the public transport network will function with the future transit network, and describes the key benefits and impacts across the entire Cairns public transport network including:

- an appreciation of the existing public transport network across Cairns and the key issues affecting public transport services
- priority areas for future services and improvements to the existing network and relationship to the overall efficient provision of public passenger services
- preliminary identification and evaluation of how the Cairns Transit Network will operate outlining public transport user benefits and broader community benefits (such as accessibility, travel choice and integration between land use and transport)
- identification of public transport benefits and impacts of the project.

This chapter outlines the strategy for operating buses on the Cairns Transit Network corridor and how the corridor will integrate with the broader public transport network. This will assist in informing the staging opportunities identified in Chapter 19 for the network.
14.3 Methodology

The process applied in the development of this chapter has entailed a desktop assessment. This has included a review of the existing public transport network across Cairns and current strategic planning documents. This has assisted in developing a future integration strategy for the Cairns Transit Network and identifying what future investigations are required to successfully develop and deliver the Cairns Transit Network.

14.4 Background

The City of Cairns is the major centre of Far North Queensland. Since 1971, the population has grown at an average rate of 3% to a total of 165,015 at the 2006 census. Future projections indicate that by 2031 the Cairns population is expected to increase to between 206,090 and 248,770 people (low and high series) resulting in an additional 41,000 to 83,000 people over the next 22 years (Planning Information and Forecasting Unit (PIFU), October 2007). This population growth, coupled with the continued high visitation rate of tourists to the area, highlights the importance of providing high quality public transport services for the area.

Cairns has the highest public transport use in regional Queensland. In 2006, there were in excess of 3.36 million passenger trips by public transport network across Cairns. Overall, public transport ridership in Cairns has outperformed population growth, growing at an average annual rate of 9% since 1999. More recently, since 2004 bus ridership has increased by 37.8% from 2.4 million to 3.36 million passenger trips per year due significantly to improvements to the public transport network introduced in April 2005. This is higher than bus ridership growth in Townsville, which has increased by 28.32% between 2004 and 2009 (this growth is calculated on qconnect services).

Bus patronage figures in Cairns and Townsville between the years 2004 and 2009 are shown in Table 14.1 below. Note these figures are based on qconnect urban patronage (not including cash school trips).

<table>
<thead>
<tr>
<th>Year</th>
<th>Cairns</th>
<th>Townsville</th>
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<tbody>
<tr>
<td>2004/05</td>
<td>2,555,033</td>
<td>1,239,174</td>
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<tr>
<td>2005/06</td>
<td>2,853,504</td>
<td>1,380,012</td>
</tr>
<tr>
<td>2006/07</td>
<td>3,095,677</td>
<td>1,456,045</td>
</tr>
<tr>
<td>2007/08</td>
<td>3,030,858</td>
<td>1,415,215</td>
</tr>
<tr>
<td>2008/09</td>
<td>3,308,483</td>
<td>1,590,075</td>
</tr>
</tbody>
</table>

Source: QConnect Annual Report 2009

Since 2004, an additional number of service enhancements have been made to supplement the existing public transport network. In January 2008, a new zonal system was implemented resulting in a 12 zone system (shown in Figure 14.3) and revised fare structure reducing the cost for most trips by public transport across Cairns.

14.4.1 Strategic planning context

Enhancements to the existing public transport network for Cairns are underpinned by four key strategic documents. They are:

- *Far North Queensland Regional Plan 2009-2031*
- *Far North Queensland Regional Infrastructure Plan 2009–2031*
Cairns Transit Network
Concept Design Report

Chapter 14
Public transport network integration

Page 14.5

- Southern Cairns Integrated Land Use and Transport Study (2002).

These documents highlight the future intent for public transport provision in the Cairns urban area.

**Far North Queensland Regional Plan 2009-2031**

The *Far North Queensland Regional Plan 2009-2031* is the over-arching plan for the region and takes precedence over all other planning instruments. A key element within the plan is the provision of transit oriented communities (TOCs) which will define the future settlement pattern of Cairns. Underpinning these TOCs is the delivery of the Cairns Transit Network.

The plan highlights that the transit network will improve public transport in Cairns by giving buses priority and providing an alternative to the private motor vehicle.

**Far North Queensland Regional Infrastructure Plan 2009-2031**

The *Far North Queensland Regional Infrastructure Plan 2009-2031* identifies regionally significant infrastructure projects that support the *Far North Queensland Regional Plan*, in addition to strategic initiatives and corridor projects for further investigation. Within the plan a key response is:

> “planning the Cairns Transit Network ahead of development to identify and protect corridors for a future bus rapid transit network and transit oriented communities” p8.

The plan highlights the importance of detailing future corridors to address with growth that is anticipated in major centres. This is to ensure roads flow freely for trips that require road transport and to make sustainable transport options more widely available to the community.

**Key outcomes for the transport system identified in the Far North Queensland Infrastructure Plan 2009-2031 include:**

- safer transport to support safer communities
- efficient and effective transport to support industry competitiveness and growth
- fair access and amenity to support liveable communities
- environmental management to support environmental conservation
- a mode share consistent with sustainable outcomes.

The plan recognises the Cairns Transit Network as a regionally significant project which will help make public transport an attractive alternative to the car. The plan also highlights that the project, comprising transit priority, transit lanes and transit stations, will be delivered in stages as required. A high priority is the construction of City Place within Cairns city centre.

**Cairns Integrated Public Transport (CIPT) Plan (2005)**

The focus of the *Cairns Integrated Public Transport (CIPT) Plan (2005)* is to develop strategies to provide a public transport system that:

- offers an attractive alternative to the car
- better meets the needs of people who do not have adequate access to transport
- attracts enough public transport passengers to ensure the long-term sustainability of the transport system
• moderates transport corridor needs in environmentally sensitive areas
• supports the local economy and provides for tourist needs.

The plan identified short, medium and long term improvements to existing and proposed public transport services and infrastructure within Cairns from Palm Cove to Gordonvale and surrounds.

The medium to longer term time horizons examined were:
• medium term requirements to 2016
• long term requirements to 2036.

Of note in the medium term (2016) network plan are the key connections between Cairns city centre, Earlville and Edmonton as well as intended priority treatments from the city centre to Cairns North. In the long term (2036) the network plan shows an expansion of bus/transit lanes from the city centre to the north and a bus only right of way from the city centre via Earlville to Edmonton. This is shown in Figure 14.1 and Figure 14.2 below which show the possible staging of the future transit network.

The Cairns Integrated Public Transport (CIPT) Plan (2005) examined available mass transit technologies (such as heavy rail, metro, light rail, monorail) and determined that bus rapid transit was the most appropriate solution for Cairns.

Southern Cairns Integrated Land Use and Transport Study (2002)

The Southern Cairns Integrated Land Use and Transport Study (SCILUTS, 2002) identified future public transport patronage targets in the peak period of 10% by 2016 and 20% from southern Cairns to the city centre by 2036. To achieve this, the study determined that a rapid public transport system was required.

Cairns Central Business District (CBD) and North Microsimulation (2010)

TMR and the Cairns Regional Council are currently undertaking a joint traffic modelling project for traffic demand in the CBD and North Cairns area. The model is a tool to test congestion thresholds that may trigger public transport and other infrastructure investment scenarios. Preliminary modelling results show that in the medium term the future upgraded ultimate road network cannot cater for the expected peak private vehicle demand, and other modes of transport need to cater for trips too and from Cairns city centre. Without increased public transport patronage and an associated rapid transit system the road network will become jammed and additional vehicles simply cannot enter the network during work commuter hours. This modelling project is expected to be complete by December 2010 and the results will assist in detailed design and impact management phases of the Cairns Transit Network.

14.5 Existing Cairns public transport network

This section highlights the existing urban bus network across Cairns. The Cairns public transport network includes bus routes that service the activity centres, corridors and communities within the urban footprint of the Cairns Regional Council area. These bus services are operated by a sole operator, Transit Australia Group Pty Ltd, operating as Marlin Coast Sunbus under a seven year contractual arrangement to the Department of Transport and Main Roads. The contract area extends from Palm Cove (Buchans Point) in the north to Edmonton in the south, with route extensions from Edmonton to Gordonvale.
As at 2009 there were 59 buses in the Sunbus fleet providing urban services and 44 dedicated school buses. School services are operated by Loves Bus Service subcontracting to Transit Australia Pty Ltd. There are currently 34 accessible buses in the fleet with Transit Australia Group recently committing to replace 24 buses in Cairns, offering improved passenger and driver comfort and improved engine reliability. Overall, there are in excess of 4 million service kilometres annually with in excess of 99% of the population being within 800 metres of a bus route.
Figure 14.1: Cairns Integrated Public Transport (CIPT) Plan 2005 – medium term network plan
Figure 14.2: Cairns Integrated Public Transport (CIPT) Plan 2005 – long term network plan
14.5.1 Bus routes

There are currently 23 bus services operating within the Cairns service area. The key destination within the network is Cairns city centre, being the Lake Street transit mall. The bus routes for Cairns are defined below by their respective northern, southern and western corridors. These are shown in Figure 14.3.

Northern corridor bus routes

- Route 1C – Smithfield via James Cook University, Yorkeys Knob and Holloways Beach to Cairns City
- Route 1D – Yorkeys Knob to Cairns City
- Route 1H – Smithfield via James Cook University, Yorkeys Knob and Holloways Beach to Cairns City
- Route 1N – Palm Cove to Cairns City
- Route 1X – Palm Cove via Clifton Beach and Smithfield to Cairns City
- Route 2 – Kewarra Beach via Trinity Beach, James Cook University and Smithfield to Cairns City
- Route 2A – Palm Cove via Kewarra Beach, Trinity Beach, Trinity Park, James Cook University and Smithfield to Cairns City
- Route 7 – Smithfield via Machans Beach and Edge Hill to Cairns City.

Southern corridor bus routes

- Route 1 – Edmonton via Bentley Park, Earlville and Westcourt to Cairns City
- Route 1A – Edmonton via Bentley Park, Earlville and Westcourt to Cairns City
- Route 1C – White Rock via Woree, Earlville and Westcourt to Cairns City
- Route 1E – White Rock via Woree, Earlville and Westcourt to Cairns City
- Route 1F – White Rock via Earlville and Westcourt to Cairns City
- Route 1G – White Rock via Woree, Earlville and Westcourt to Cairns City
- Route 1H – White Rock via Woree, Earlville and Westcourt to Cairns City
- Route 1N – Edmonton via Bentley Park, Earlville and Westcourt to Cairns City
- Route 1X – Woree via Earlville and Westcourt to Cairns City
- Route 3 – Edmonton via Bentley Park, Mount Sheridan, Forest Gardens, Earlville and Westcourt to Cairns City
- Route 11 – Edmonton via Earlville and Westcourt to Cairns City
- Route 12 – Edmonton via Earlville and Westcourt to Cairns City
- Route 13 – Gordonvale via Earlville and Westcourt to Cairns City.
Figure 14.3: Cairns bus network (November 2009)
Western corridor bus routes

- Route 1E – Smithfield Heights via James Cook University, Smithfield, Caravonica, Redlynch, Freshwater, Stratford and Aeroglen to Cairns City
- Route 1G – Smithfield Heights via James Cook University, Smithfield, Caravonica, Redlynch, Freshwater, Stratford and Aeroglen to Cairns City
- Route 4 – James Cook University via Brinsmead, Manoora, Earlville, Westcourt and Portsmith to Cairns City
- Route 5 – Brinsmead via Manoora and Manunda to Cairns City
- Route 5A – Brinsmead via Manoora and Manunda to Cairns City
- Route 6 – Cairns City via Manunda and Manoora returning to Cairns City
- Route 6A – Cairns City via Manunda and Manoora returning to Cairns City
- Route 8 – Earlville via Manoora and Westcourt to Cairns City.

14.5.2 Service frequency

The timetabled service frequency for all bus routes operating in Cairns is detailed in Table 14.2 below which shows the minutes between each service.

Table 14.2: Current bus service frequencies (as at September 2009)

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<tr>
<th>Route</th>
<th>Weekday AM Peak</th>
<th>Weekday Day-time</th>
<th>Weekday PM Peak</th>
<th>Weekday After 7pm</th>
<th>Saturday AM Peak</th>
<th>Saturday Day-time</th>
<th>Saturday PM Peak</th>
<th>Saturday After 7pm</th>
<th>Sunday AM Peak</th>
<th>Sunday Day-time</th>
<th>Sunday PM Peak</th>
<th>Sunday After 7pm</th>
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<td>Smithfield to Cairns City via Yorkeys Knob and Holloways Beach</td>
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<tr>
<td>Palm Cove via Clifton Beach, Kewarra Beach, Trinity Beach, JCU and Smithfield to Cairns City</td>
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<tr>
<td>Gordonvale via Edmonton, Earlville, Westcourt to Cairns City</td>
<td>30</td>
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<tr>
<td>JCU to Cairns City via Smithfield, Raintrees and Portsmouth</td>
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<td>Brinsmead via Manoora and Manunda to Cairns City</td>
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<td>Brinsmead via Manoora and Manunda to Cairns City</td>
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<td>80</td>
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<tr>
<td>Manoora via Manunda to Cairns City</td>
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<tr>
<td>Smithfield Shopping Centre via Machans Beach to Cairns City</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>-</td>
<td>60</td>
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<tr>
<td>JCU to Cairns City via Raintrees and Cairns</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>70</td>
<td>60</td>
<td>60</td>
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</tbody>
</table>
14.5.3 Existing bus patronage

There were in excess of 3.36 million passenger trips by the public transport network across Cairns in 2006 showing substantial growth of 80% since 1999 as shown in Figure 14.4. Figure 14.5 shows monthly bus patronage across Cairns for 2006.

<table>
<thead>
<tr>
<th>Route</th>
<th>Weekday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM Peak</td>
<td>Daytime</td>
<td>PM Peak</td>
</tr>
<tr>
<td>TAFE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>60</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>12</td>
<td>60</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>90</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Gordonvale via Edmonton, Earlville, Westcourt to Cairns City

Figure 14.4: Cairns bus network patronage growth (1999 – 2006)

Source: Sunbus ticket data

Figure 14.5: Monthly bus patronage across Cairns for 2006.
Of the scheduled urban bus services operating throughout Cairns, the dominant corridor was the northern corridor which carried 56% of total passengers across the network. The breakdown of passenger numbers on the three corridors is:

- Northern corridor – 56%
- Southern corridor – 22%
- Western corridor – 22%.

The most patronised bus services across Cairns in order of patronage numbers were:

- Route 1X – Palm Cove via Clifton Beach and Smithfield to Cairns City then Westcourt via Earville to Woree
- Route 2A – Palm Cove via Kewarra Beach, Trinity Beach, Trinity Park, James Cook University and Smithfield to Cairns City
- Route 1A - Edmonton via Bentley Park, Earville and Westcourt to Cairns City
- Route 1C – White Rock via Woree, Earville and Westcourt to Cairns City then Westcourt via Earville to White Rock
- Route 1E – Smithfield Heights via James Cook University, Smithfield, Caravonica, Redlynch, Freshwater, Stratford and Aeroglen to Cairns City then Westcourt via Earville and Woree to White Rock.

These services carried over half of the total passenger trips across the Cairns public transport network carrying in excess of 56% of total passenger movements by bus in 2006. Figure 14.6 below shows the patronage breakdown via each bus route for the 2006/07 financial year.
14.5.4 Passenger composition

The composition of tickets for the 2008/09 financial year indicates that full adult fares account for approximately six in ten trips across the Cairns public transport network. This comprises:

Table 14.3: Fare comparison Cairns and state-wide

<table>
<thead>
<tr>
<th>Fare type</th>
<th>Cairns</th>
<th>State-wide (excluding south-east Queensland)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full adult</td>
<td>57%</td>
<td>35%</td>
</tr>
<tr>
<td>Child / students</td>
<td>30%</td>
<td>45%</td>
</tr>
<tr>
<td>Pensioners</td>
<td>10%</td>
<td>17%</td>
</tr>
<tr>
<td>Tertiary students</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Of note are the high proportion of full adult fares (57%) in comparison to the state-wide average (35%) and lower proportion of child/student and pensioner fares. This difference may be attributed to the strong tourist numbers visiting Cairns.

14.5.5 Trip purpose

Composition of passengers by purpose of journey is not known precisely. Research undertaken by Colmar Brunton (2006) for Queensland Transport indicated the following composition of trips undertaken by bus in Cairns.

- employment 35%
- education (tertiary/TAFE) 15%
- shopping 12%
- another reason (entertainment, medical, social) 12%
- tourism (1) 15%
- all reasons equally 16%
14.5.6 Seasonality of passenger movements

Cairns public transport passenger volumes vary significantly throughout the year. This is due to factors which include:

- higher passenger volumes in the dominant tourist season in the winter and spring months from April to November
- lower passenger volumes in the summer period and wet season with the lowest period of passenger numbers generally being between the months of December and February
- seasonal factors that also coincide with the University, TAFE and school teaching periods.

These factors substantially influence public transport patronage, especially tourist volumes. Apart from changes in tourism usage of bus services, seasonality is also affected by the general increase in residents, business, social and recreation activity in the winter months.

![Cairns Season Passenger Totals](image)

Figure 14.7: Cairns season passenger totals (2003 to 2008)

14.5.7 Key centres serviced by the public transport network

The existing Cairns public transport network services the key centres defined within the *Far North Queensland Regional Plan 2009-2031*. These are categorised by:

- principal regional activity centre – Cairns City
- major regional activity centres - Earlville, Edmonton and Smithfield
- district regional activity centres – Clifton Beach, Gordonvale, Manunda, Mount Sheridan, Redlynch and Westcourt.

Cairns City as a principal regional activity centre and is a focal point of the Cairns public transport network with all bus services travelling through the existing Lake Street transit mall (City Place). Second and third to Cairns City are the major regional activity centres of Smithfield with nine bus routes and Earlville with eight bus routes servicing these centres. Other destinations well serviced by bus routes are James Cook University located on the periphery of the Smithfield centre, and Raintrees Shopping Centre which is defined as a district regional activity centre. Table 14.4 below shows the centres with the most bus routes.
<table>
<thead>
<tr>
<th>Location</th>
<th>Total Services</th>
<th>Bus Route</th>
<th>Route Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Street Transit Mall</td>
<td>22</td>
<td>All Services</td>
<td>All Services</td>
</tr>
<tr>
<td>Smithfield Shopping Centre</td>
<td>9</td>
<td>1C</td>
<td>Smithfield to CBD via Yorkeys Knob</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1E</td>
<td>White Rock to JCU via Redlynch</td>
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<tr>
<td></td>
<td></td>
<td>1G</td>
<td>JCU to CBD via Redlynch</td>
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<tr>
<td></td>
<td></td>
<td>1H</td>
<td>Smithfield to CBD via Holloways Beach</td>
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<tr>
<td></td>
<td></td>
<td>1X</td>
<td>Palm Cove to Coconut Village</td>
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<td></td>
<td></td>
<td>2</td>
<td>Kewarra Beach to CBD via JCU</td>
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<td></td>
<td></td>
<td>2A</td>
<td>Palm Cove to CBD via JCU</td>
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<td></td>
<td></td>
<td>4</td>
<td>JCU to CBD via Raintrees &amp; Portsmouth</td>
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<td></td>
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<td>7</td>
<td>Smithfield to CBD via Machans &amp; Edge Hill</td>
</tr>
<tr>
<td>Earville – Stockland Shopping Centre</td>
<td>8</td>
<td>1</td>
<td>Gordonvale to CBD via Bentley Park</td>
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<tr>
<td></td>
<td></td>
<td>1A</td>
<td>Sugarworld to CBD via Bentley Park</td>
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<td></td>
<td></td>
<td>3</td>
<td>Edmonton to CBD via Timberlea &amp; Forest Gardens</td>
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<tr>
<td></td>
<td></td>
<td>4</td>
<td>JCU to CBD via Raintrees &amp; Portsmouth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>Earville to CBD via Raintrees &amp; TAFE</td>
</tr>
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<td></td>
<td></td>
<td>11</td>
<td>EXPRESS Edmonton &amp; Bentley Park to Earville &amp; CBD</td>
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<td></td>
<td></td>
<td>12</td>
<td>EXPRESS Sugarworld to Earville &amp; CBD</td>
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<td></td>
<td></td>
<td>13</td>
<td>EXPRESS Gordonvale to Earville &amp; CBD</td>
</tr>
<tr>
<td>James Cook University</td>
<td>7</td>
<td>1C</td>
<td>Smithfield to CBD via Yorkeys Knob</td>
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<tr>
<td></td>
<td></td>
<td>1E</td>
<td>White Rock to JCU via Redlynch</td>
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<tr>
<td></td>
<td></td>
<td>1G</td>
<td>JCU to CBD via Redlynch</td>
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<tr>
<td></td>
<td></td>
<td>1H</td>
<td>Smithfield to CBD via Holloways Beach</td>
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<td></td>
<td></td>
<td>2</td>
<td>Kewarra Beach to CBD via JCU</td>
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<tr>
<td></td>
<td></td>
<td>2A</td>
<td>Palm Cove to CBD via JCU</td>
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<td></td>
<td></td>
<td>4</td>
<td>JCU to CBD via Raintrees &amp; Portsmouth</td>
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</table>
### 14.5.8 Fares

Fares for typical journeys by Sunbus, based on the fare zones, are given below (based on an Adult single ticket in 2010).

- from Palm Cove to Cairns City Centre is $5.00
- from Yorkeys Knob to Smithfield Shopping Centre is $2.00
- from Redlynch to Cairns City Centre is $2.90
- from White Rock to Cairns City Centre is $2.90
- from Cairns City Centre to Earlville Shopping Centre is $2.50
- from Mount Peter to Cairns City Centre is $4.30.

### 14.5.9 Key features of the existing public transport network

Below is a summary of some key features of the public transport network across Cairns.

- all existing bus routes are focused on Cairns city centre, highlighting the importance of the role of the future Cairns city centre stops
- the existing Lake Street transit mall provides for buses to layover for a short stop or driver meal and toilet break
- services operating to the north of the city centre service the beachside developments of Yorkeys Knob, Kewarra Beach, Trinity Beach and Machans Beach to the city, which all use the Captain Cook Highway
- most of the southern routes use the Bruce Highway and operate between Gordonvale, Edmonton via Earlville to the city centre
- most services operate at 30 or 60-minute intervals
- some routes connect some of the northern suburbs to destinations south of the city such as White Rock and Bayview Heights
- local bus services connect the inner suburbs such as Brinsmead, Edge Hill and Earlville to access the city centre
- all buses serve a local shopping centre and the city centre
route 2A targets many of the developments in and around the Northern Beaches as well as James Cook University, Smithfield shopping centre and Cairns City centre.

**Key nodal points**

A public transport node is a concentration point where connecting public transport services meet, usually at key activity centres. In Cairns, there are currently five key nodal points within the existing Cairns public transport network where several bus routes converge, allowing passengers the option to interchange between routes. They are:

- Earlville bus interchange
- James Cook University bus interchange
- Lake Street transit mall
- Smithfield bus interchange
- Westcourt bus interchange.

Of significance are the Lake Street transit mall and Earlville bus interchange as they accommodate the highest number of bus movements through these facilities.

**Lake Street transit mall**

The key nodal point of the existing Cairns public transport network is the Lake Street transit mall in the city centre with in excess of 1.5 million passengers per annum travelling through the existing Lake Street transit mall (AECOM, 2006). All buses service the transit mall with the majority of services terminating within the city.

**Earlville bus interchange**

This facility is located within the Stockland Earlville shopping centre and provides a linear bus platform of approximately 60 metres with provision for a maximum of five buses in a one way direction. Buses access the facility from Mulgrave Road with buses manoeuvring through the car park at traffic signals to access the stop.

**14.5.10 Key issues with existing bus network**

In many parts of the Cairns region, buses running in mixed traffic are unable to gain a sufficient advantage to attract the number of passengers needed to meet the goals for increased public transport use.

Long waiting times between some services, low levels of off-peak public transport and unreliable bus journey times are some current issues being experienced across the existing bus network.

The most frequent services operate at half hourly intervals and service the city centre and the Earlville to Cairns corridor. There are only three express services operating in peak periods.

Bus services are infrequent in Mooroobool, some Northern Beaches and Smithfield. There are widespread inadequacies in off-peak services, with very few services operating on weekends (particularly Sundays). Off-peak and weekend service frequencies generally range between one hour and two hourly intervals.

Bus journey times can be unreliable due to traffic congestion in peak periods on the Bruce Highway and Captain Cook Highway on the approach to Cairns centre.
Issues with existing facilities

Key issues for the Earlville bus interchange include delays due to conflict with vehicular traffic in entering and exiting the facility and inadequate weather protection for passengers.

The existing Lake Street Transit Mall facility was constructed over 20 years ago and is in need of a major upgrade to improve capacity, compliance with disability standards, improve weather protection and enhance its overall visual amenity.

Key issues with the existing facility include:

- the facility does not comply with Disability Discrimination Act standards
- there are not enough bus bays to meet future needs
- bus bays are too small for the new larger buses
- buses must “lay over” in the transit mall while drivers are on break, taking up space and creating noise and fumes
- the shelters do not provide adequate protection from sun and rain
- there is not enough waiting room and seating for passengers
- buses get delayed trying to turn into and out of the transit mall, and by cars waiting for parking spaces at the entrance
- cars, buses, tourist coaches, pedestrians, cyclists and delivery vehicles all compete for space, creating dangerous conflicts between users
- the existing facility looks tired and out of date, which reflects poorly on the Cairns city centre.

14.6 Future public transport demand

Public transport patronage for Cairns is expected to increase from about 4.3 million passenger trips a year in 2009 to 40.3 million passenger trips a year in 2036. This is based on minimum targets set by the Far North Queensland Regional Plan 2009-2031. These targets set public transport’s share at 10% of all peak hour trips in 2016 and 20% of peak hour trips in the southern corridor in 2036. This is shown in Table 14.5 below.

Table 14.5: Cairns patronage forecast

<table>
<thead>
<tr>
<th>Year</th>
<th>Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>4.3 million</td>
</tr>
<tr>
<td>2016</td>
<td>7.7 million</td>
</tr>
<tr>
<td>2026</td>
<td>17.5 million</td>
</tr>
<tr>
<td>2036</td>
<td>40.3 million</td>
</tr>
</tbody>
</table>

In developing the future bus route network, forecast changes in residential population and employment patterns have been used to understand where people will be living and working as Cairns grows. New developments such as Mount Peter and the Edmonton town centre will generate and attract public transport patronage, while the intensification of development in certain established areas will also increase travel demand.
The introduction of bus rapid transit systems have been shown to result in higher than average increases in public transport patronage (as illustrated in the section below). In addition to patronage growth associated with a growing population, bus rapid transit systems can also experience increases in patronage generated from:

- walking or cycling from surrounding population and employment areas
- feeder buses (which will involve an interchange at the station)
- interchange from another mode
- passenger pick-up and set-down (including taxi)
- park-and-ride.

**Public transport patronage associated with busways**

In Brisbane, the introduction of bus rapid transit systems such as the South East Busway (which opened in 2001) has seen significant public transport patronage growth. Between 2005 and 2006, patronage on the South East Busway grew by 20%, compared to 12% average growth for all Brisbane Transport services. This means patronage growth on the busway was 64% higher than the average growth across the rest of the Brisbane Transport network (Source: ‘Measuring the Value and Benefits of the South East Busway’; 2009 prepared for the Department of Transport and Main Roads).

Figure 14.8 indicates the growth in patronage from 2003 to 2006. This was sourced from TransLink ticketing data.

![Figure 14.8: Monthly total patronage profile on the South East Busway](image)

Bus rapid transit systems are designed to move high volumes of people efficiently. In 2007, the South East Busway carried over 17,000 passengers an hour during peak times; whereas a general traffic lane can only carry 1,400 people per hour. Customer feedback has also indicated that 40% of people now choose to use busway services for trips that were previously made by car.

This demonstrates that transit networks can be a catalyst for delivering higher than average increases in the use of public transport.
14.7 Future bus network strategy for the Cairns Transit Network

14.7.1 Network design concepts

14.7.1.1 Network structure

The current Cairns bus network is anchored by the Lake Street Transit Mall. Located within the Cairns city centre it is the major attractor and trip generator of the network. The city centre is currently supported by a number of intermediate attractors including:

- Northern corridor – Smithfield
- Southern corridor – Earlville, Edmonton and Gordonvale
- Western corridor – Raintrees, Westcourt and Redlynch.

The existing bus network is structured so that bus routes service these centres with the key destination being the Cairns city centre. This style of network will also apply to the future Cairns public transport network.

The operating strategy on the South East Busway in Brisbane is an example of an ‘all-to-one’ network. This network includes ‘spine’ services, ‘express’ services and ‘feeder’ services, which focus on travel to the Brisbane CBD. These are explained below:

- ‘spine’ services run for the length of the busway (or from park and ride stations in outer suburbs) stopping at all busway stations to the city centre
- ‘express’ services pick up people from local suburban routes approaching the busway, then join onto the busway and stop at the first station to allow interchanging. These services then run express (non-stop taking advantage of high operating speeds) to inner city stations. Some ‘express’ services run only in peak periods and aim to provide additional capacity when travel demand is high
- ‘feeder’ services run on suburban streets and terminate at a busway station allowing passengers to transfer. The terminating bus can then use bus turn-arounds or ramps to leave the busway.

It is envisaged that this will also apply to the future Cairns Transit Network.

14.7.1.2 Connectivity between services

Interconnecting public transport services can make it easier for passengers to travel to where they want to go while offering convenient access to many destinations. The more opportunities there are to transfer between various services, the more journey combinations and destinations are possible for passengers.

Interconnected services provide greater travel options and can provide a more cost-effective way of providing public transport coverage. Direct public transport services can be provided to major centres when there is sufficient demand to justify the service or during peak period. However, with direct services it is not possible to cater for every trip from every origin to every destination. The investment required could not be justified as the demand for travel would be too low.

In some cases, ‘feeder’ routes will be provided to key centres along the Cairns Transit Network where passengers can transfer to reach their final destination. Feeder services pick up people from their local bus stop and join key interchange locations. This can be done at
significantly lower costs than direct services and allows services to be provided at frequencies that would not be viable otherwise.

While transfers can allow access to more destinations, they must be done in a seamless and coordinated way to minimise inconvenience to passengers. Transfers will need to be made easy through timetable connections at key Cairns Transit Network stations (coordinated arrival and departure times) to connect to high frequency services at Cairns Transit Network stations.

What this means for the Cairns Transit Network corridor is there is a need to strike the right balance between maximising the opportunities while minimising the need for passengers to transfer. Where demand is sufficient, the principle of ‘same seat’ journey should apply. This means full bus loads of people will have direct services and will not be required to transfer. A same seat journey is provided where a bus service picks up passengers from their local bus stop and then joins the transit network creating greater catchment penetration to the surrounding development.

The key transfer stations along the Cairns Transit Network will be located at:

- City Place
- Smithfield Centre
- James Cook University
- Cairns Base Hospital
- Skyrail
- Earlville station
- Edmonton station.

### 14.7.1.3 Regional connections

Palm Cove, Smithfield, Edmonton and Gordonvale already serve as key hubs connecting long distance regional coach services with the urban bus network.

The Cairns Transit Network will provide regional connections at the following interchanges:

- Palm Cove – Connections to communities in the north, eg Port Douglas, Mossman, Daintree, Wujal Wujal, Cooktown
- Smithfield and Skyrail – Connections to Kuranda, Mareeba, northern Tablelands
- Edmonton – Connections to Yarrabah
- Gordonvale – Connections to communities in the south, eg Babinda, Innisfail, southern Tablelands.

Cairns Central and Gordonvale stations will also provide interchange opportunities with the long-distance rail network.

The coordination of services at these regional interchanges will be investigated in future detailed design and impact management phases of the project.

The Queensland Government provides financial support to some bus operators to help keep services running. For example, there are:
• regular bus services from Cairns to Cooktown with stops at Port Douglas, Mossman, Wonga Beach, Cape Tribulation, Cow Bay, Wujal Wujal, Bloomfield, Rossville, Helenvale and Mungumby

• regular bus services from Cairns with stops at Kuranda, Mareeba, Atherton, Herberton, Ravenshoe, Mt Garnet and on to Karumba

• bus services three times a day from Cairns to Atherton with stops at Kuranda and Mareeba.

14.7.1.4 City Place

Cairns city centre is the most popular destination in Cairns, so improving the capacity, efficiency and comfort of all public transport within the city centre is the highest priority on the network.

In response to community feedback the project team has modified the initial concept design and reduced the visual impact of bus facilities. The low speed, bus-only link across City Place is retained which will significantly improve the reliability and comfort of bus services. By removing the multiple turn movements that buses are currently required to make, the design will minimise conflicts at several busy pedestrian crossings.

14.7.1.5 Bus layover

To enhance bus operations through the city centre and eliminate buses idling or laying over at city stops two bus layover facilities have been identified. One layover is for services from the north and west, and the other for services from the south. The layover for services from the north and west is located on Bunda Street adjacent to Cairns Railway Station within Cairns Central. The other layover is identified on Grafton Street adjacent to Munro Martin Park.

The Bunda Street bus layover will operate with buses travelling from the City Place on Lake Street turning into Spence Street and then travel through Cairns Central and turn into Bunda Street. Buses will layover on the eastern side of Bunda Street with two locations possible. This will also provide a smooth interchange with regional coach and rail services. (As shown in Figure 14.9).

The Munro Martin Park bus layover will operate with buses travelling from City Place on Lake Street turning left into either Florence or Minnie Streets and onto Grafton Street. Buses will layover on the western side of Grafton Street with a new parking area provided for buses within the existing road reserve. This is shown in Figure 14.10.
Proposed bus layover for northern services

Figure 14.9: Bus layover for northern and western services

Proposed bus layover for southern services

Figure 14.10: Bus layover for southern services
14.7.2 Strategy overview

The bus network strategy for the Cairns Transit Network includes three key spines, developed with an aim of providing a high frequency priority network that is easy to use. This is depicted in Figure 14.11 below. To achieve this, the network could be developed to reflect the direction of travel by defining a colour for each corridor. This will be supported by re-numbering the existing bus routes so that they are easily understood by existing and prospective passengers.

Services on these key spines will link major transport nodes. This is exemplified by a possible bus route which will service Gordonvale, Edmonton, Earlville and Cairns city centre at an all-day service frequency of 15 minutes or better. Across the Cairns Transit Network, there could be high frequency priority services as described below:

- **Blue line** – bus route 111 servicing the north of Cairns (Palm Cove via Smithfield to Cairns City)
- **Red line** – bus route 222 servicing the west of Cairns (James Cook University via Smithfield, Redlynch, Manoora and Manunda to Cairns City)
- **Green line** - bus route 333 servicing the south of Cairns (Gordonvale via Edmonton and Earlville to Cairns City).
Figure 14.11: Cairns Transit Network corridors
In developing the network the following factors have been considered:

- providing transfer opportunities to local network services from services that link from areas outside of the Cairns urban areas (including Port Douglas, Kuranda and the Tablelands, Babinda and Innisfail) to stations along the network
- planning services that continue through the major regional activity centres such as Earlville, Edmonton and Smithfield and connect with the district regional activity centres namely Clifton Beach, Gordonvale, Manunda, Mount Sheridan, Redlynch and Westcourt.

14.7.3 Bus service frequency

The spine services using the Cairns Transit Network could operate with a 10 minute service frequency. Services will operate for the minimum operating hours between 7am-9pm weekdays, 7am-7pm on Saturdays and 10am-4pm on Sundays.

The service frequency of the spine services on the Cairns Transit Network in 2036 could provide the approximate level of service (in the one direction during AM peak):

- Northern corridor - a bus every 5 minutes between the Cairns city centre stops and James Cook University
- Western corridor - a bus every 6 minutes between Cairns Base Hospital and Redlynch
- Southern corridor - a bus every 3 minutes between the Cairns City stops, Earlville and Edmonton.

These figures are indicative, based on varying population densities and the associated predicted transport demand. For example, the higher population in the south will require more bus services to carry the transport task, which translates to a higher frequency along the corridor.

The inclusion of feeder routes will further improve the combined service frequency at specific points of the corridor.

14.7.4 Local routes connecting with the Cairns Transit Network corridors

The existing bus network covers the local suburban catchment and then joins major arterial roads (such as the Cook Highway or Bruce Highway) to access the city centre. It is expected that these existing services will continue to service local suburban catchments and then access the transit network to bypass congestion. This will provide high quality service to local communities.

The introduction of new routes may be required to service new urban areas along the corridor. This will be determined in future detailed design and impact management planning phases of the project.

For the local route network, service frequencies could be either 15 or 30 minutes depending on demand.

Access points not only allow local routes to connect to the Cairns Transit Network, but can also offer turn-around and bus layover facilities, either in scheduled operations or special events ie such as the annual ‘Amateurs’ at Cannon Park racecourse. There may be operating advantages in running a service to a particular station and then using the access point to turn around and commence a return journey from that point. Some on-street
kerbside space near the access point could be allocated to bus lay-by, and again there may be operating advantages for scheduling a driver change-over, comfort break or end of trip lay-over/timing point at this location.

### 14.8 Cairns Transit Network stations

A total of 59 stations and stops are identified along the Cairns Transit Network. The station locations have been determined to:

- maximise network operational efficiencies and service coverage
- service key trip generators
- maximise pedestrian and cycle access to the stations.

Key considerations that have been undertaken when determining station locations for the Cairns Transit Network include the need to:

- optimise patronage
- integrate with existing and future land use
- provide opportunities for convenient transfer to other modes
- support overall bus operations on the network and adjacent corridors
- ensure that stations create a logical system with relatively consistent spacing (not too close or too far apart).

Stations will have high quality waiting environments with sheltered platforms, pedestrian crossing points (or overpasses if required), static and real-time information display capability and security monitoring by closed-circuit television. The platforms are typically at kerb or footpath level. Table 14.6 lists the desirable facilities at a standard bus rapid transit station. Major stations, such as City Place and Edmonton, may require a greater platform length and width to cater for anticipated passenger demand. The specific design of stations and their facilities will occur in future detailed design phases, in consultation with the community. All stations will be designed to comply with the *Disability Discrimination Act 1992* and the *Disability Standards for Accessible Public Transport 2002*.

**Table 14.6: Desirable facilities at stations**

<table>
<thead>
<tr>
<th>Facility</th>
<th>Standard Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform length</td>
<td>30m</td>
</tr>
<tr>
<td>Platform width</td>
<td>3.6m</td>
</tr>
<tr>
<td>Seating</td>
<td>Yes</td>
</tr>
<tr>
<td>Telephone and help point</td>
<td>Optional</td>
</tr>
<tr>
<td>System branding and corporate architecture</td>
<td>Yes</td>
</tr>
<tr>
<td>Passenger information</td>
<td>Yes</td>
</tr>
<tr>
<td>Map case and route display</td>
<td>Yes</td>
</tr>
<tr>
<td>Bike lockers or racks</td>
<td>Yes</td>
</tr>
<tr>
<td>Advertising</td>
<td>Optional</td>
</tr>
<tr>
<td>Lighting</td>
<td>Yes</td>
</tr>
<tr>
<td>Service vehicle bay</td>
<td>Yes</td>
</tr>
<tr>
<td>Ticket Vending machine</td>
<td>Provision for future</td>
</tr>
</tbody>
</table>
Facility Standard Station

<table>
<thead>
<tr>
<th>Facility</th>
<th>Standard Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCTV surveillance</td>
<td>Yes</td>
</tr>
<tr>
<td>Vending machines</td>
<td>Optional</td>
</tr>
<tr>
<td>Storage</td>
<td>Optional</td>
</tr>
<tr>
<td>Litter bins</td>
<td>Yes</td>
</tr>
</tbody>
</table>

As discussed in section 14.7.1.2, there will be a number of key transfer stations. At these stations, or close by, provision will be made for buses to turnaround to maximise efficiencies in the network and enhance the long term capacity and integrity of the network.

14.9 Access to the network

14.9.1 Walking and cycling

Walking and cycling is the preferred way for passengers to access the Cairns Transit Network. The station locations along the Cairns Transit Network will be accessible via the local road network and pedestrian/cycle paths. Refer chapter 17.

The determination of end of trip cycle facilities will be considered in future stages. It is intended that secure bike racks/storage be provided at bus stations.

The planning and design of stations, including paths, stairs, ramps, waiting areas and other facilities, will address requirements for people with disabilities in accordance with the Disability Discrimination Act 1992 and the Disability Standards for Accessible Public Transport 2002.

Further details of pedestrian and cycle access to the network are defined in chapter 17.

14.9.2 Kiss and ride facilities

Kiss and ride facilities (passenger pick up and drop off areas) provide a designated kerb-side zone that is safe and convenient for drivers to temporarily park and drop-off/pick up passengers next to a public transport station or stop. They are intended to encourage car passengers to make at least part of their journey by public transport, rather than being driven the entire way to their destination.

Kiss and ride facilities will be provided at key stations along the Cairns Transit Network. The pick-up/drop off points will be located as close as practical to the bus loading areas and be designed for efficient access from the surrounding road network.

The detailed planning of kiss and ride facilities will ensure no impacts on the safe operation of the road, avoid conflict with buses and minimise effects on adjoining properties. Consideration of the location of future kiss and ride facilities will be determined in future detailed design and impact management planning phases.

14.9.3 Park and ride facilities

Park-and-ride facilities allow people to drive to a station, park their car, and then use public transport services (as shown in Figure 14.12). They provide access to the public transit system for people who:

- live in low density areas where there is no local bus service
- perceive local bus service to be poor
are willing to drive and park to access a high frequency spine service with a guaranteed travel time

need their car to travel to other locations before or after using public transport

want to access a peak event (eg, sporting event).

Figure 14.12: Example of park and ride facility at Eight Mile Plains, Brisbane

Park and ride is the least preferred way to access the Cairns Transit Network. Park and ride locations need to be strategically located as to not discourage pedestrians, cyclists and long-haul transit riders to begin driving a motor vehicle to a station.

The South East Queensland Park and Ride Strategy (draft, 2007) provides some guidance on suitable locations, being generally:

- in corridors, or extensions to corridors that have current or impending public transport priority measures and experience congestion downstream
- in areas that do not have other park and ride facilities in close proximity
- at sites with good access to/from the major road network.

It is intended in future detailed design and impact management phases that park and ride locations will be explored at the following locations:

- Thomatis Creek station – on the western side of the Captain Cook Highway
- Redlynch area – located near the Cairns Western Arterial Road to cater for people accessing the network from Redlynch Valley
- Mount Peter – located on the northern side of Draper Road in Mount Peter providing access for people driving from south of Gordonvale or the Gillies Range Road.

Park and ride facilities serve an important role in the transport network. They are intended to intercept car journeys before entering congested areas and encourage a transfer to priority public transport to reach final destinations. For transit oriented community (TOC) based growth patterns they are however only an interim measure and should not be planned to be an ultimate solution within the urban footprint. This is because as Cairns develops with TOC...
centres the majority of the population will be within easy walking or cycling distance of a transit station. Park and ride facilities can however significantly expand the catchment area for public transport outside of the urban footprint, allowing people distant from line haul services to catch public transport.

14.9.4 Bus access to the network

A number of bus access points are proposed at key locations along the network. These access points will allow buses to enter or exit the network and join the local road and street network. This allows passengers to catch a bus from their local bus stop and then join the network and receive the benefits of bus priority.

Proposed locations for these bus access points will operate where the design treatment is busway or median bus only corridor. Where busway is the design solution these bus access points to the network can operate with or without traffic signals depending on the surrounding traffic environment. However, in the instance of median bus-only corridor it is essential that all bus access points be controlled by traffic signals as buses will be required to manoeuvre across general traffic lanes.

14.10 Future investigations

This chapter provides information that informs future detailed design and impact management phases outlining key requirements for the project. Further analysis is required to:

- assist with preparing a detailed operating plan for construction and operations of the Cairns Transit Network and local bus services including:
  - planning for service changes including the introduction of the future high frequency services
  - reviewing the existing local feeder network to ensure appropriate service coverage and integration with services operating on the corridor
  - optimising travel times, frequency and operating hours for services
  - timetabling and vehicle scheduling.
- provide detailed planning for operational needs including bus-turnaround facilities, layover areas and driver amenities.
14.11 References


Department of Infrastructure and Planning, Far North Queensland Regional Plan 2009-2031, February 2009

Department of Infrastructure and Planning, Far North Queensland Infrastructure Plan 2009-2031, February 2009

Planning Information and Forecasting Unit (PIFU, October 2007) Population and housing factsheet – Cairns City

Queensland Transport, Department of Main Roads and Cairns City Council, Cairns Integrated Public Transport (CIPT) Plan (2005)

Queensland Transport, Main Roads and Rockhampton City Council, Capricornia Integrated Regional Transport Plan (CapIRTP) 2004-2030

Queensland Transport, Queensland Transport Passenger Transport Annual Report 2008-09


Sinclair Knight Merz (2002), Southern Cairns Integrated Land Use and Transport Study (SCILUTS), unpublished document

Sunbus website - www.sunbus.com.au