

City of Subiaco

Integrated Transport Strategy 2015-2020 Summary

Prepared for
City of Subiaco

26 October 2015



CITY OF
SUBIACO

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Executive Summary

Cardno was commissioned by the City of Subiaco (the city) to develop an Integrated Transport Strategy (ITS) for 2015-2020. The city currently has an ITS which was developed in 2007. The intention of the ITS is to identify a range of interrelated transport strategies to assist the city to manage the sustained urban growth and to maintain the community's high quality of life.

The primary focus of this ITS is to:

- > identify constraints in current and planned road capacity, using the projections of the city.
- > identify measures to upgrade and improve the regional and local road connections to facilitate safe and efficient vehicle movement, manage freight movements and reduce congestion.
- > consider the implementation and management of 'Moving People' (TransPriority) principles to facilitate an efficient movement system.
- > identify measures to upgrade and improve public transport connections and facilities to reduce congestion.
- > create a safe environment for pedestrians and cyclists.
- > promote the use of active transport and reduce the reliance on private vehicle transport.

There are five fundamental elements of the ITS:

1. Managing travel demand.
2. Improving walking and cycling.
3. Improving public transport.
4. Managing vehicular traffic.
5. Improving and managing parking.

The development of the ITS has been achieved with representatives from key State Government agencies and they have played an integral role in the agreement of the strategic direction of the ITS. Key stakeholders include:

- > Department of Transport.
- > Public Transport Authority.
- > Main Roads WA.
- > City of Perth.
- > Shenton College.
- > City of Vincent.
- > Town of Cambridge.
- > Department of Health / QEII Medical Centre Trust.
- > Jolimont Primary School.
- > Subiaco Primary School.

Overview

The City of Subiaco is evolving. There are numerous drivers that are leading to increased pressure on the existing transport network. The city needs to plan for the future to serve residents, visitors, businesses and those who pass through city. In 2011, the total population for the city was an estimated 19,700 people.

Car ownership levels in the city continue to decrease, but the private car still remains the predominant mode of transport to work. The proportion of residents travelling to work by sustainable modes is on the rise and it is essential that this upward trend is maintained through an appropriately planned and designed transport network. For the city to thrive, the transport network needs to be planned to cater for the varying needs and demands of different transport users.

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1 Introduction

1.1 Context

Cardno was commissioned by the City of Subiaco (the city) to develop an Integrated Transport Strategy (ITS) for 2015-2020. The city currently has an Integrated Transport Strategy which was developed in 2007. This ITS has been developed in accordance with the 'Western Australian Planning Commission's (WAPC) Guidelines for preparation of Integrated Transport Plans 2012'.

The city is committed to creating a community where walking, cycling and public transport are attractive and convenient alternatives to travelling by car. All residents, visitors and local businesses are encouraged to travel sustainably when possible.

The ITS is an overarching strategic document that guides the development of transport infrastructure in the context of the needs of the community, to facilitate the land uses within the city, as well as to maintain effective transport modes.

1.2 Integrated Transport Strategy Objectives

The ITS has been guided by a number of objectives derived from the Department of Transport's Metropolitan Transport Strategy (1995–2029) and sets out six main principles for planning and delivering transport systems.

1. **Safety** – the transport system should be safe for all users.
2. **Efficiency** – the transport system should be provided, operated and used efficiently.
3. **Effectiveness** – the transport system overall should provide effective access and movement for all people and businesses for employment, health, education, commercial, service, social, leisure and freight purposes.
4. **Environmental Responsibility** – the transport system should be provided and used in an environmentally responsible manner.
5. **Social Responsibility** – the transport system should provide equitable travel and transport opportunities for residents and businesses, with social benefits and costs being shared by all beneficiaries.
6. **Robustness** – the transport system must provide service in the face of ongoing change during the coming years and must be able to respond to and take advantage of unpredictable economic, social and technological changes.



Source: City of Subiaco

1.3 Vision

The ITS supports the vision of the city's 'Strategic Community Plan' which is community based. The vision is for an effective and integrated transport system with a range of sustainable transport options for residents, visitors and workers, which makes the city less car dependent.

1.4 Key Drivers

Key drivers of the ITS include:

- > The impact of congestion on local roads, both from traffic generated by residents and people travelling through the city.
- > Parking issues including the perception of the availability of parking.
- > Subiaco Central Development Plan.
- > Increases in density and the impact on transport infrastructure.
- > The projected increase in the number of people travelling into the city for work.
- > The need to reduce car use and increase the use of sustainable transport modes.
- > Road safety.
- > Oil vulnerability, air pollution and greenhouse gas emissions.
- > Health impacts including increased opportunities for regular, incidental exercise through walking, cycling, and walking/cycling to public transport.
- > Improved viability of local businesses.
- > Liveability and place management – reduced traffic congestion and parking problems can make the city a more enjoyable place to live, work and visit.

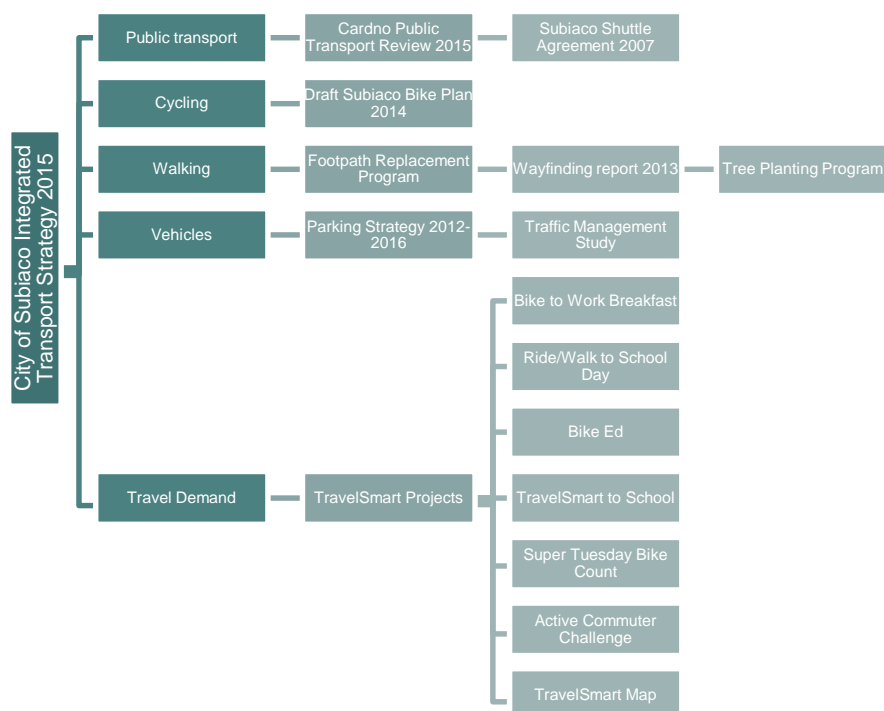
1.5 Where does the Integrated Transport Strategy Fit?

The ITS works in conjunction with the city's Strategic Community Plan and the Corporate Business Plan, as shown in **Figure 1-1** and **Figure 1-2**.

Figure 1-1 Relationship between Strategic Community Plan 2012 and Corporate Business Plan 2013-2017



Figure 1-2 Integrated Transport Strategy Hierarchy



Referring to the Strategic Community Plan 2012, the ITS falls under the informing strategies section. The Subiaco ITS is therefore an overarching strategic document that guides the development of transport infrastructure in the context of the needs of the community, and to facilitate the land uses within the Local Government Area, as well as maintain effective transport across the network.

1.6 Key Stakeholders

As part of the ITS development, key stakeholders were consulted and asked to provide their feedback on existing issues and future needs with respect to transport infrastructure and land-use integration. Relevant stakeholders that provided feedback, and associated meetings dates are shown below (**Table 1-1**).

Table 1-1 Key Stakeholders for the City of Subiaco ITS

STAKEHOLDER	DATE
City of Subiaco	
Department of Transport (DoT)	6 January 2015
Public Transport Authority (PTA)	6 January 2015
Main Roads WA	3 May 2015
City of Perth	3 May 2015
Shenton College	22 May 2015
City of Vincent	26 May 2015
Town of Cambridge	28 May 2015
Department of Health/QEII Medical Centre Trust	3 June 2015
Jolimont Primary School	18 June 2015
Subiaco Primary School	19 June 2015

Other stakeholders were contacted, but did not provide comments on the ITS.

2 Relevant Policies and Plans

The development of the City of Subiaco ITS is guided by a series of policies and evolving strategies as shown in **Table 2-1**.

Table 2-1 Relevant Policies and Plans

AREA	RELEVANT POLICY / PLAN
State Government	<ul style="list-style-type: none"> > State Planning Policy 1 (SPP1) State Planning Framework Policy (2000). > The Western Australian State Sustainability Strategy (2003). > Development Control Policy 1.6 (2006). > State Planning Policy 4.2 (SPP4.2) Activity Centres for Perth and Peel (2010). > Directions 2031 and Beyond (2010). > Public Transport for Perth in 2031 Plan (2011). > Perth CBD Transport Plan 2012 to 2016 (2012). > Moving People Network Plan (2013). > Western Australia Bicycle Network (WABN) Plan 2014-31 (2014). > MAX Light Rail Plan (2010).
Integrated Transport Strategy Review	<ul style="list-style-type: none"> > City of Subiaco Integrated Transport Strategy (2007). > Strategic Community Plan (2012). > City of Subiaco Corporate Business Plan 2014 – 2018 (2014). > Subiaco Integrated Transport Strategy Review 2014.
Planning	<ul style="list-style-type: none"> > Precinct policies. > Car Parking Amendment – End of Trip Facilities (2008). > Planning Policy Manual – End of Trip Facilities (2009). > Urban Design Framework 4 – Explanatory Report for Public Release (2013). > Planning Policy 2.13 Shortfall Cash Payments in Lieu of Car Parking in the Town Centre and Commercial/Residential Zones (2013). > City of Subiaco Local Planning Strategy (2014). > Subiaco Town Centre Public Realm Design and Streetscape Enhancement Plan (2014). > North Subiaco Urban Design Study (2014).
Transport	<ul style="list-style-type: none"> > Subiaco Car Sharing Service (2006). > Draft King Edward Medical Hospital (KEMH) Transport and Access Plan (2007). > Western Suburbs Regional Organisation of Councils (WESROC) Transport Review (2011). > Infrastructure 5 Year Capital Works Plan 2013/14 – 2017/18 (2013). > Laneway Report (2013). > Public Transport Review (2013). > TravelSmart Projects (2014). > Draft Subiaco Bike Plan (2014).

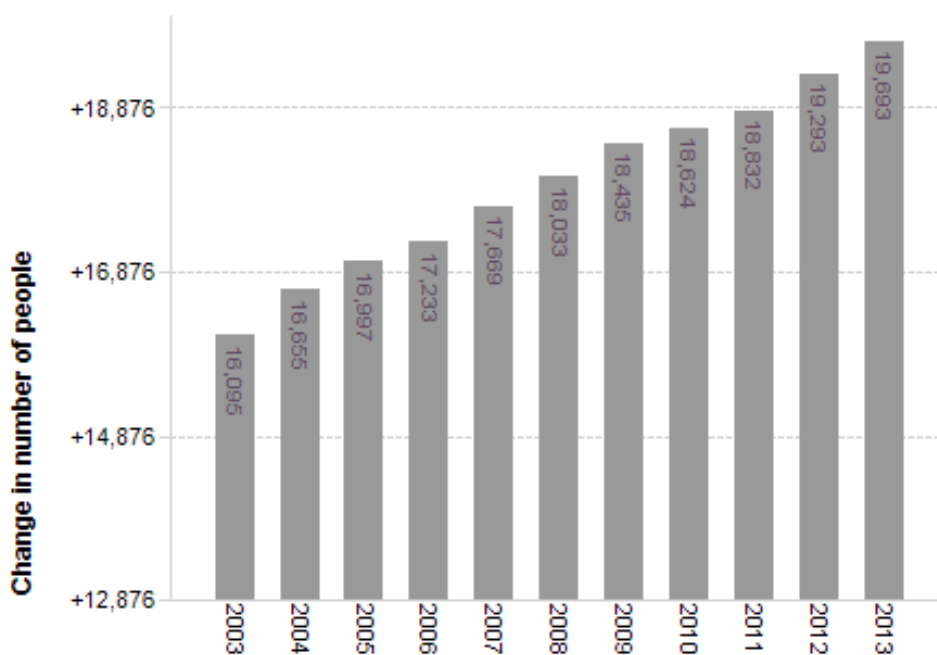
AREA	RELEVANT POLICY / PLAN
	> Driverless Cars Briefing Paper (2014).
Parking	<ul style="list-style-type: none"> > Parking Summary. > Multi Deck Car Park Study (2006). > Subiaco Parking Utilisation Survey (2007). > KEMH Deck Parking Report (2008). > City of Subiaco Forrest Street Carpark Development Feasibility Study (2010). > Parking Study Research Report (2012). > Parking Strategy 2012 – 2016 (2012).
Major Destinations	<ul style="list-style-type: none"> > Queen Elizabeth II Medical Centre (QEIIIMC) Travel Plan (2007). > Princess Margaret Hospital for Children (PMH) Travel Plan (2009). > Queen Elizabeth II Medical Centre (QEIIIMC) Survey Report (2012). > UWA Commute Survey Report (2013).
Parks	<ul style="list-style-type: none"> > Street Tree Policy - Management Guidelines (2012). > Significant Tree Register - Street Trees (2012). > Playspace Strategy (2013). > Public Open Space Plan (2014).
Environment	<ul style="list-style-type: none"> > Environment Enhancement Plan 2012-2016. > Local Climate Change Adaptation Action Plan 2013 – 2017.
Community Engagement	<ul style="list-style-type: none"> > Think 2030 Survey - Transport Responses 2013. > Community Perceptions Survey 2014.
Economic Development and Place Making	> City of Subiaco Economic Development Strategy 2013– 2017.
Access and Inclusion	> Disability Access and Inclusion Plan (DAIP) 2012-2017.
Built Environment	> Street Improvements – Oculus 2012.
Other Local Government ITS	<ul style="list-style-type: none"> > Shenton Park ITP (2000). > Nedlands Travel Plan and Actions 2009-2012 (2009).

3 Background

3.1 Population

The City of Subiaco covers an area of approximately 7 km² in inner western metropolitan Perth. The city lies about 3 km west of the Perth CBD and serves as the local council for several suburbs including Crawley, Daglish, Jolimont, Shenton Park and Subiaco. The current estimated population of people residing in Subiaco is approximately 19,700 based on Census data collected in 2011. As shown in the residential population has increased by 22% over the last ten years (Refer **Figure 3-1**).

Figure 3-1 Population of the City of Subiaco



Source: Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0). Compiled and presented by .id the population experts

Figure 3-2 shows the residential population of the City of Subiaco by 2011 ABS Census District (SA2). Shenton Park and Subiaco South have the highest population, while Subiaco Centro District having the lowest population as a result of the high density of commercial uses. However the Subi Centro area has the highest local residential growth rate, including a significant component of dense apartment and townhouse living.

Figure 3-2 Population Figures for City of Subiaco

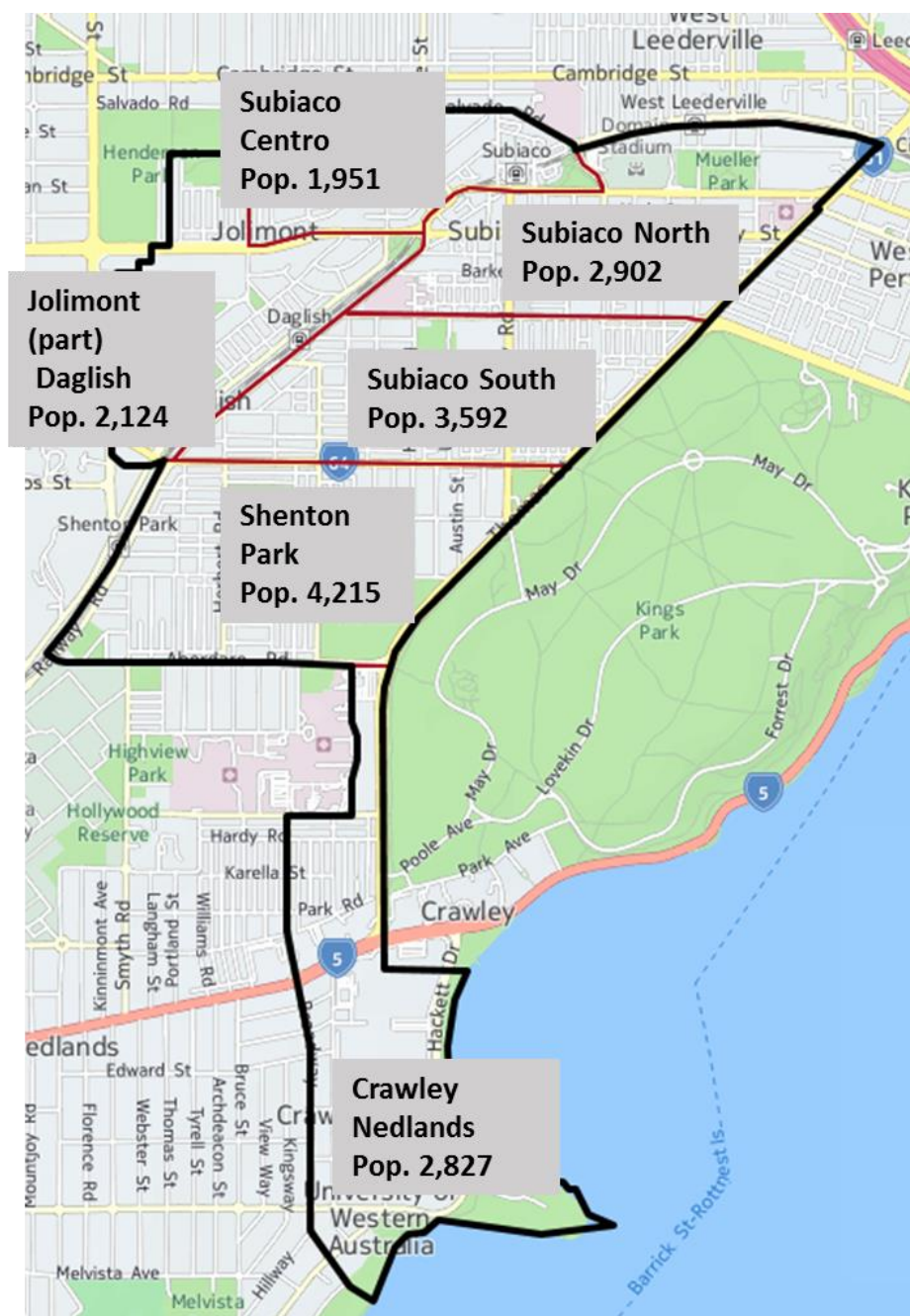
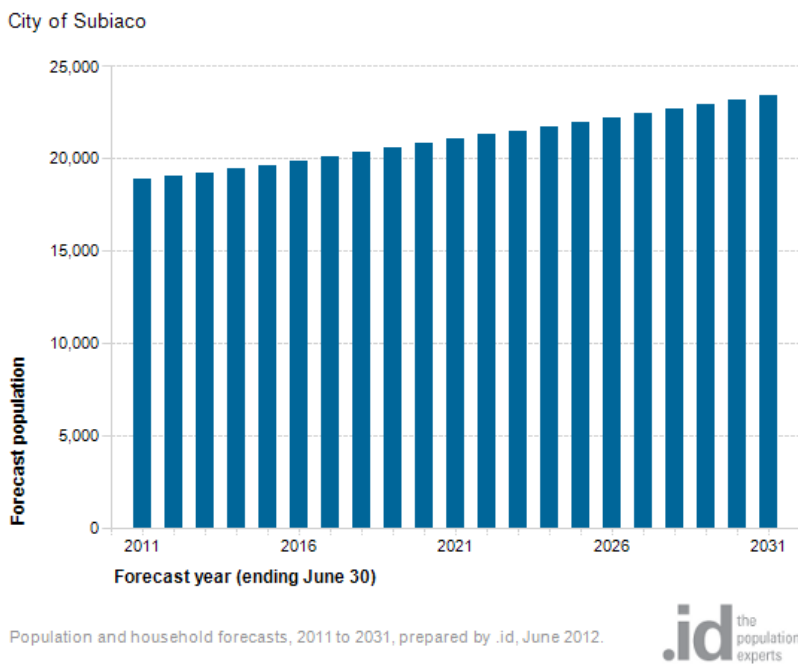


Figure 3-3 shows that the population for the city is estimated to reach 23,419 by 2031, an increase of approximately 19% over the next decade and a half.

Figure 3-3 Population Forecast



Source: Profile .id

3.2 Land Uses

Figure 3-4 shows that the Town Planning Scheme for the city is TPS 4. Currently the area is separated into 12 precincts each with their own planning policies related specifically to their area. The area is primarily made up of low density residential in the central area, public purpose facilities in the south and commercial and mixed use in the northern precincts.

The town centre, oriented around Rokeby Road, serves as a focal point for business, employment and visitors. The street functions as a small scale activity corridor featuring a high degree of variety in land use, narrow road reserve, excellent street frontage and a mix of night and day uses. Being a relatively old suburb, there is little vacant or underutilised land area within the town centre.

Subiaco is also characterised by a cluster of significant health facilities, which tend to generate a large number of private car trips. Additionally, Subiaco has dedicated a fairly large area to parks and open spaces.

Figure 3-4 City of Subiaco Town Planning Scheme No 4



3.3 Key Locations and Trip Generators

The City of Subiaco is not only a business oriented area but also contains many local attractions such as parks, open spaces, tourist attractions and recreational facilities. Key locations and trip generators include:

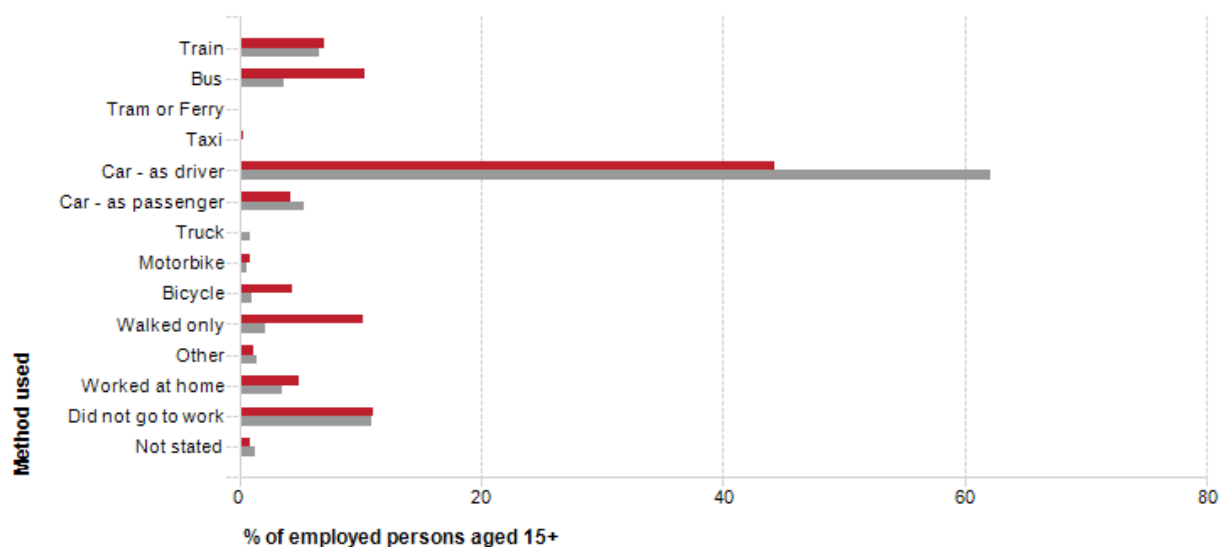
- > Subiaco Town Centre.
- > Subiaco Railway Station.
- > Princess Margaret Hospital for Children.
- > Queen Elizabeth II Medical Centre.
- > King Edward Memorial Hospital.
- > Subiaco Oval.
- > University of Western Australia.
- > Additional Trip Generators (schools, libraries, community centres, council offices and railway stations).

Travel behaviour data (Refer **Figure 3-5**) shows that 44.3% of residents use private vehicles as their preferred mode of transport to and from work, although the trend seems to have shifted during recent years. This is evident in the rise in public transport use and the increased use of active transport modes such as walking and cycling shown in (Refer **Figure 3-6**).

Figure 3-5 Travel Behaviour for the City of Subiaco

Total employed persons

City of Subiaco Greater Perth



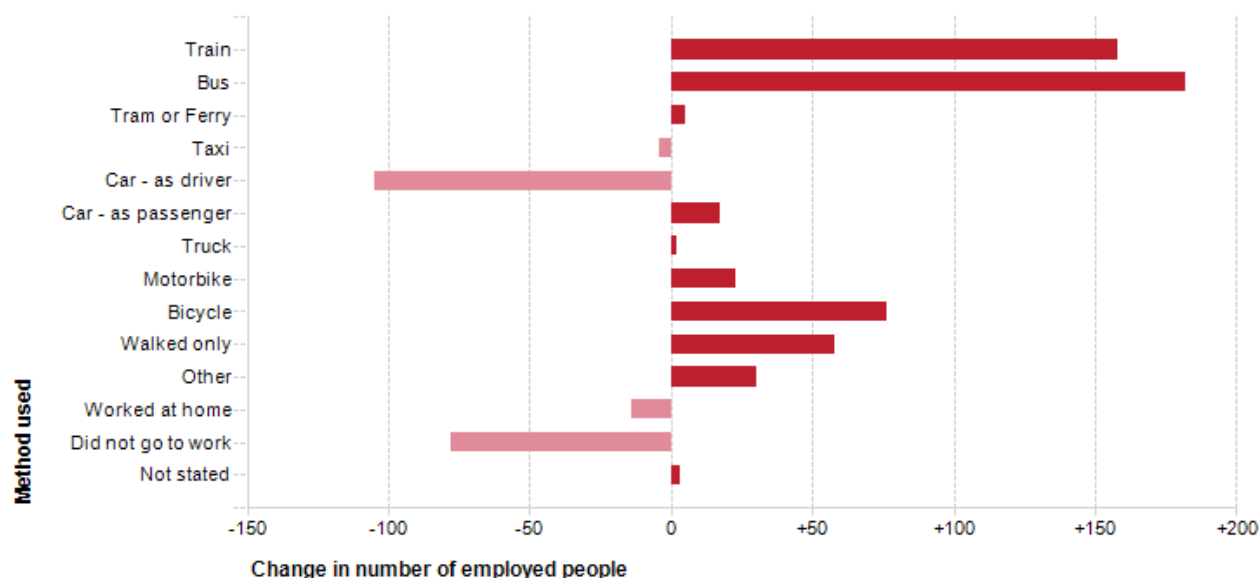
Source: Australian Bureau of Statistics, Census of Population and Housing, 2011 (Enumerated data)
Compiled and presented in profile.id by .id, the population experts.

.id the population experts

Source: Profile.id (2015)

Figure 3-6 Change in Transport Mode Share from 2006 to 2011

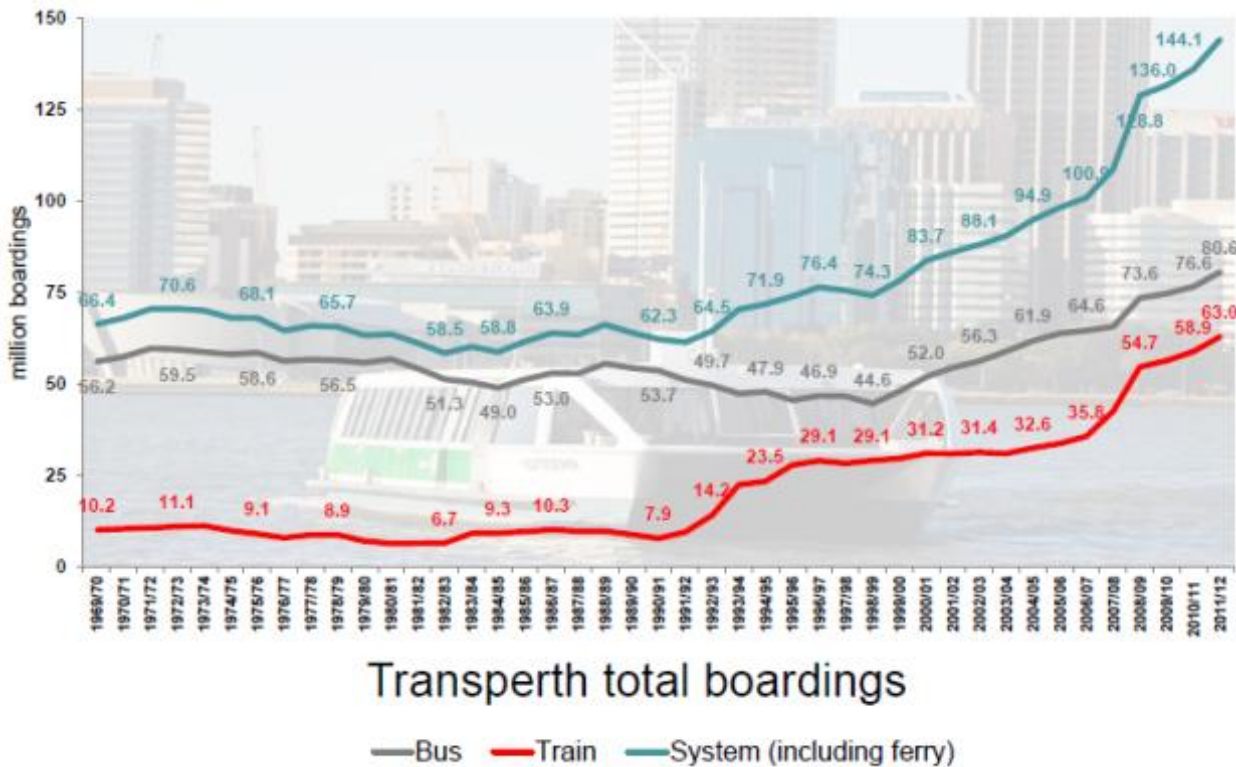
City of Subiaco - Total employed persons



Source: Australian Bureau of Statistics, Census of Population and Housing, 2006 and 2011 (Enumerated data)
Compiled and presented in profile.id by .id, the population experts.

.id the population experts

Figure 3-7 Transport Total Boardings (Historic Trends)



Source: Public Transport Authority

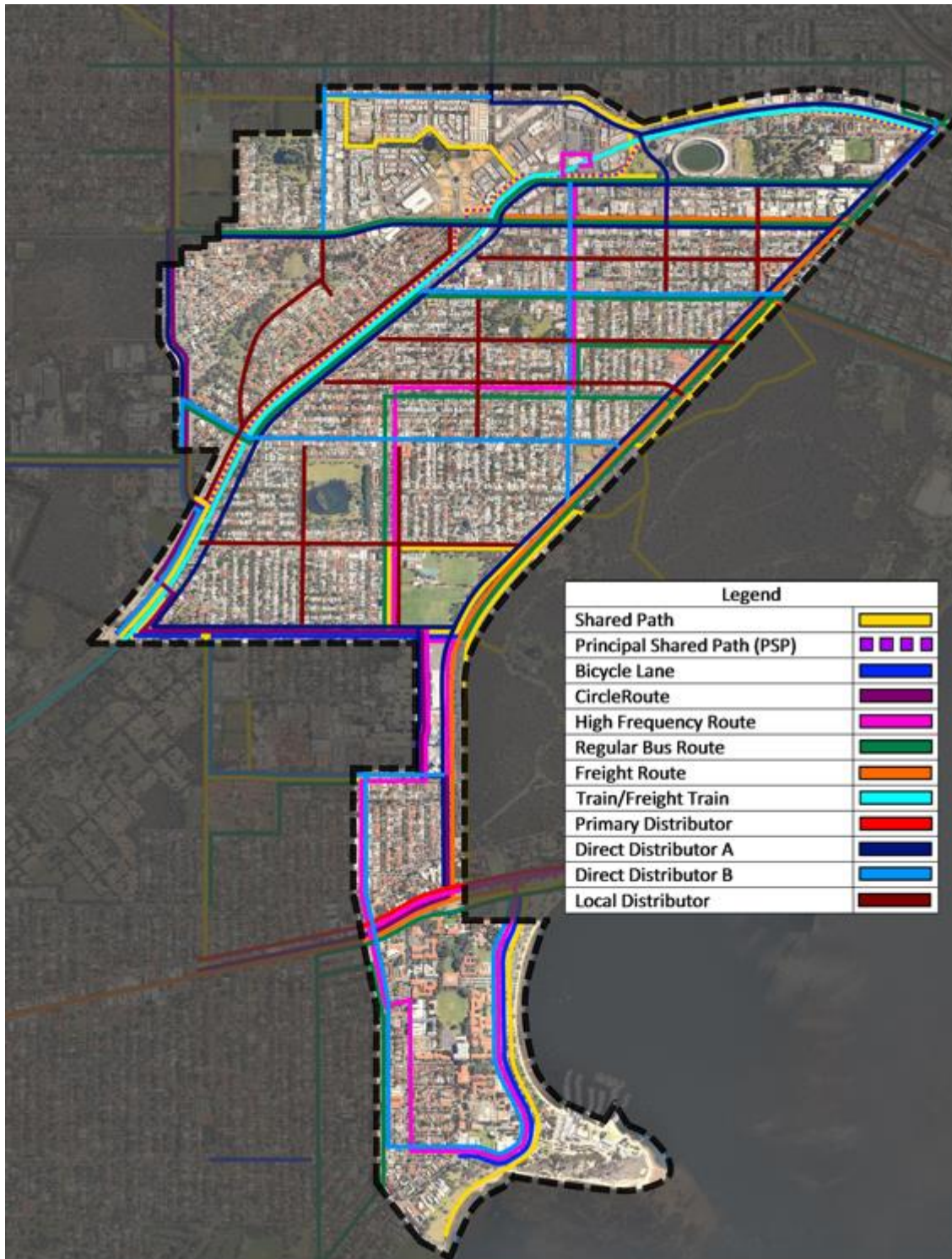
The Public Transport Authority predicts that by 2031 Perth's 2.2 million people will make more than twice as many trips by public transport than they do now, in the order of 760,000 trips per day (Refer **Figure 3-7**). This 120% increase is an average of 3.85% per annum, or slightly lower than the average for the past decade to 2009, due to a lower forecast rate of population growth. By the time the city grows to 3.5 million people, nominally by 2050, daily patronage is likely to be in the order of 1.5-2.0 million trips per day.

To facilitate this demand for public transport, the existing system needs to expand, both in frequency and capacity and at all levels of provision. Local improvements within the city act to connect residents, employees and visitors to the wider public transport network, allowing improved mobility for everyone.

4 The Transport System

The existing transport system for the city is comprehensive. The road network caters for local traffic movements as well as regional trips, as shown in **Figure 4-1** below. However, there are already restrictions and constraints in the network that will only become more severe in the future if changes are not made.

Figure 4-1 Existing Transport System



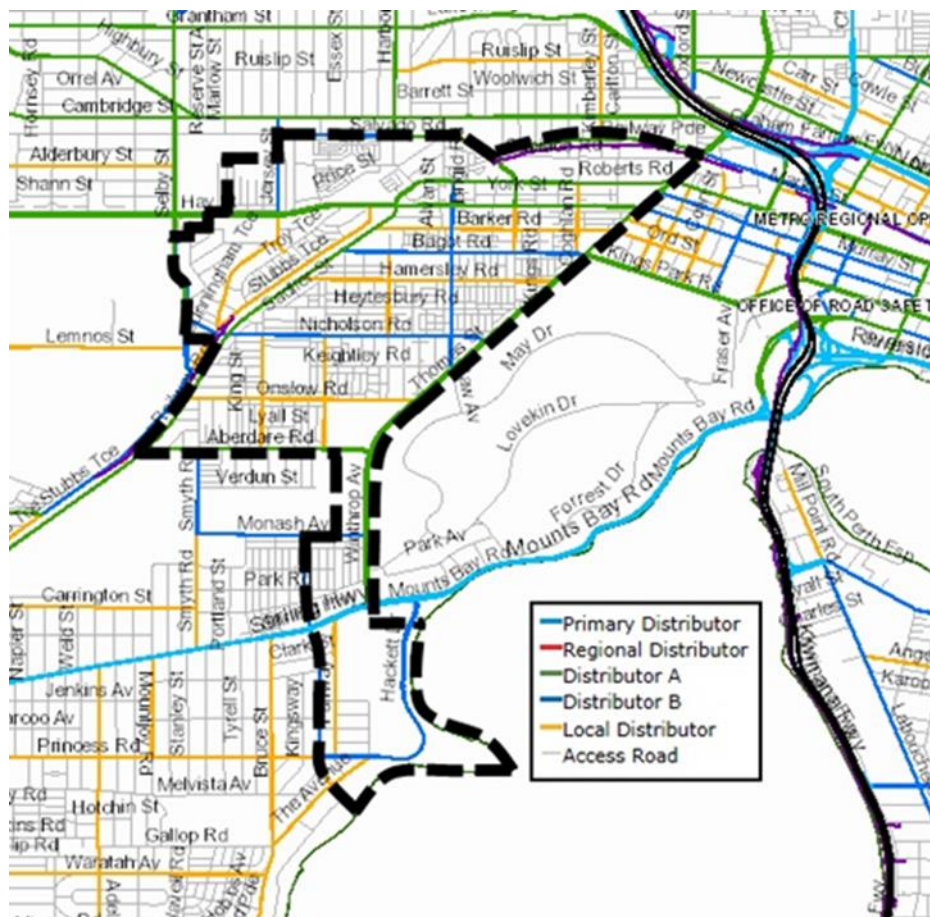
4.2 Road Network

The existing road hierarchy is shown and the different road types are set out in accordance with the MRWA Road Classification criteria. The distributor road network shown in **Figure 4-2** plays a vital role in moving traffic, public transport, cyclists, freight and pedestrians to and through the city.

The local road network generally adheres to a grid pattern, providing strong connectivity to the regional road network. The road network in Subiaco is generally well established with few opportunities for further capacity increases. These limitations tend to reinforce the need to improve accessibility and mobility options by sustainable transport modes.

The roads are generally well maintained which can be credited to the range of local government programs aimed at repairing and upgrading the existing road network. There is a high degree of vehicular accessibility to and from Subiaco from all directions. However, there are constraints associated with barriers to vehicular movement at the periphery of the local government area. These constraints include the Fremantle and Northern Rail Lines, Thomas Road and the Mitchell Freeway.

Figure 4-2 City of Subiaco Road Network



4.3 Road Capacity Assessment

A review of data from the Regional Operations Model (ROM) supplied by Main Roads Western Australia (MRWA) was undertaken with the aim of identifying road links within the study area that have potential capacity constraints (**Table 4-1**).

For each of these roads, recommendations have been made according to intersection operational assessment for the projected 2031 design year, and with respect to future land-use, transport and access planning by the city.

Table 4-1 Road Capacity Assessment and Recommendations

Road Junction	Recommendations
Harborne Street – Salvado Road Aberdare Road – Smyth Road Bagot Road/Kings Park Road – Thomas Street	A more detailed traffic assessment is required specifically at this intersection and the nearby surrounding area, as this is a crucial arterial road. A comprehensive analysis would be able to determine where the traffic is coming from and formulate solutions on how to either redirect traffic to other routes or determine the feasibility of expansion.
Hamilton Street – Roberts Road	It is recommended that the future form of Roberts Road be considered with respect to two-way movements and a detailed analysis completed to assess the need for intersection controls and Local Area Traffic Management in this area. This review may be completed by the MRA or the city in coordination with planning for the Princess Margaret Hospital redevelopment.
Coghlan Road – Barker Road	It is recommended that the intersection be changed into a roundabout form to support future traffic function.
Railway Street/Railway Parade – Thomas Street	A more detailed traffic assessment is required specifically at this intersection and the nearby surrounding area, as this is a crucial arterial road. A comprehensive analysis would be able to determine where the traffic is coming from and formulate solutions on how to either redirect traffic to other routes or determine the feasibility of expansion.
Aberdare Road – Thomas Street/Winthrop Avenue	The modifications include allowing two lanes to perform right turns on Thomas Street north and changing Aberdare Road west to allow two out movements. The left slip lane on Winthrop Avenue south is altered so that rather than be continuous when transitioning into Aberdare Road, it will transition into a separate lane and merge back into the right lane after a certain distance.
Winthrop Avenue – Monash Avenue Hackett Drive – Mounts Bay Road	It is therefore recommended that the city continue to support decision-making around the ongoing function of the Stirling Highway Corridor, and in particular the effect of these changes on the strategic use of the Subiaco road network.
Rokeby Road – Barker Road	It is recommended that the future form of this intersection be considered in the context of planning for Rokeby Road, and that modification to a signalised or roundabout form be completed with reference to all user groups, but particularly with an understanding of pedestrian and cycling use and safety.
Haydn Bunton Drive – Salvado Road/Railway Parade	It is therefore recommended that modifications to intersection form be completed only following detailed understanding of the impact of Subiaco Oval redevelopment.
Hamilton Street/Kerr Street – Railway Parade	While the deterrent to rat-running is required, upgrades to the Hamilton Street intersection are not recommended. Instead, improvements to Thomas Street should be pursued to alleviate the projected demand along Hamilton Street.

4.4 Pedestrian/Cycling Network

4.4.1 Pedestrian Network

The Pedestrian Network is comprised of footpaths on either one or both sides of the road. This provides a high level of accessibility and permeability as well as added safety for pedestrians. The current conditions of these footpaths are in relatively good order and initiatives have been taken by the city to improve those that require attention.

4.4.2 Cycling Network

The City of Subiaco cycling network includes bike paths, shared paths (paths shared with pedestrians) and bike lanes. Located along Railway Road is a high quality principal shared path (PSP) which is part of the Perth Bicycle Network.

An issue with the previous PBN bicycle routes is that a number of these routes are either disconnected or come to an abrupt end, creating problems for cyclists when navigating through Subiaco. These disconnected paths have a negative impact on the entire network as it becomes a series of disjointed bike paths rather than being an integrated and connected network.

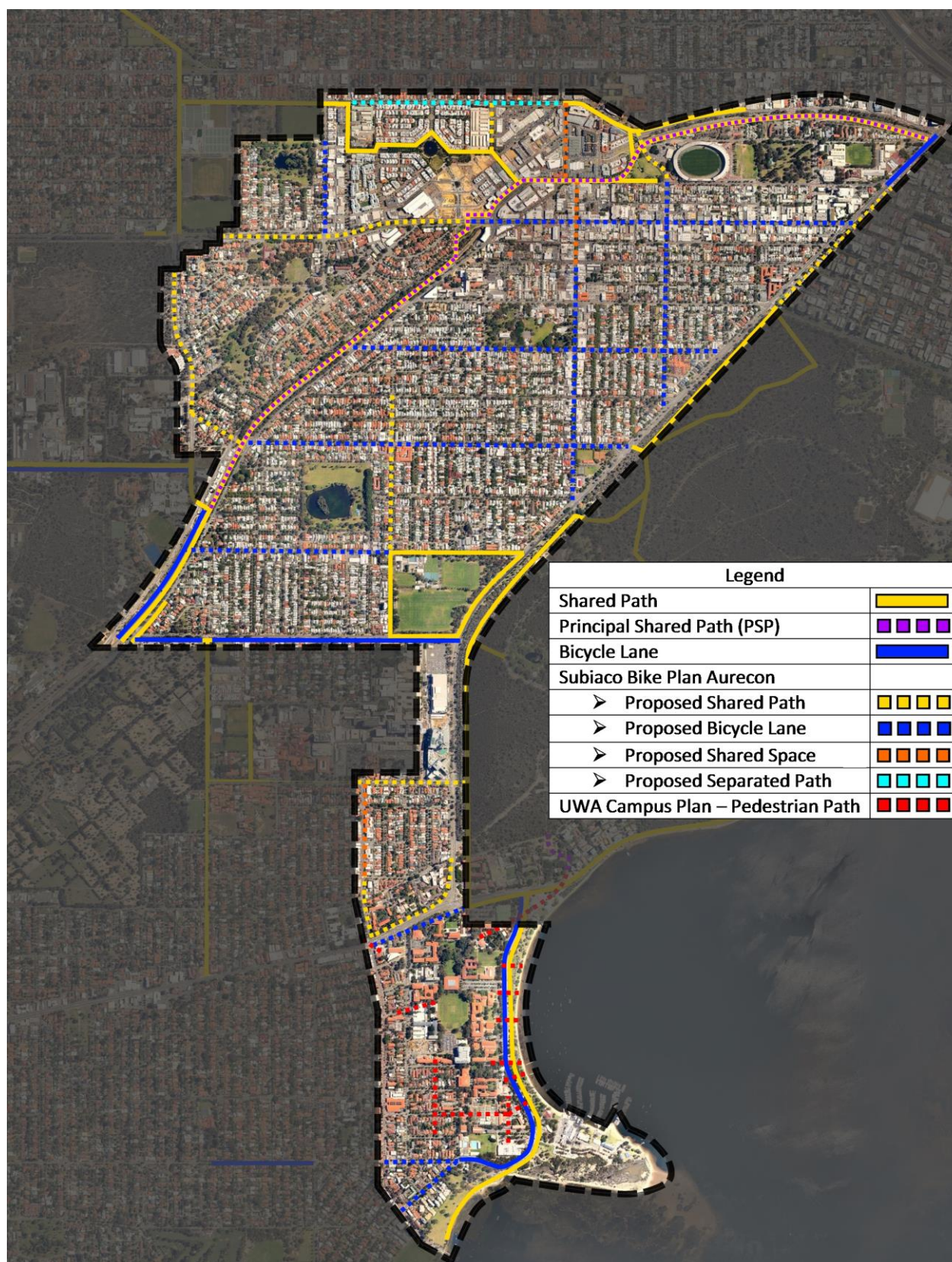
4.4.3 Universal Access Provision

Mobility aids provide facilities to aid people with disabilities and ensuring ease of accessibility throughout Subiaco. Well-designed infrastructure can fulfil the purpose of providing universal access to people with disabilities as well as for cycling and walking. Consideration needs to be given to amenities such as ramps, hand rails, disabled parking bays and disability access on public transport.

The City of Subiaco's Disability Access and Inclusion Committee, along with internal policies that provide this group with a meaningful voice in decision-making, greatly assists in achieving the city's access and inclusion goals.

The future direction of the primary pedestrian and cycling network has been adapted from work completed as part of the Draft Subiaco Bike Plan and reproduced here (Refer **Figure 4-3**).

Figure 4-3 Future Primary Pedestrian and Cycling Network



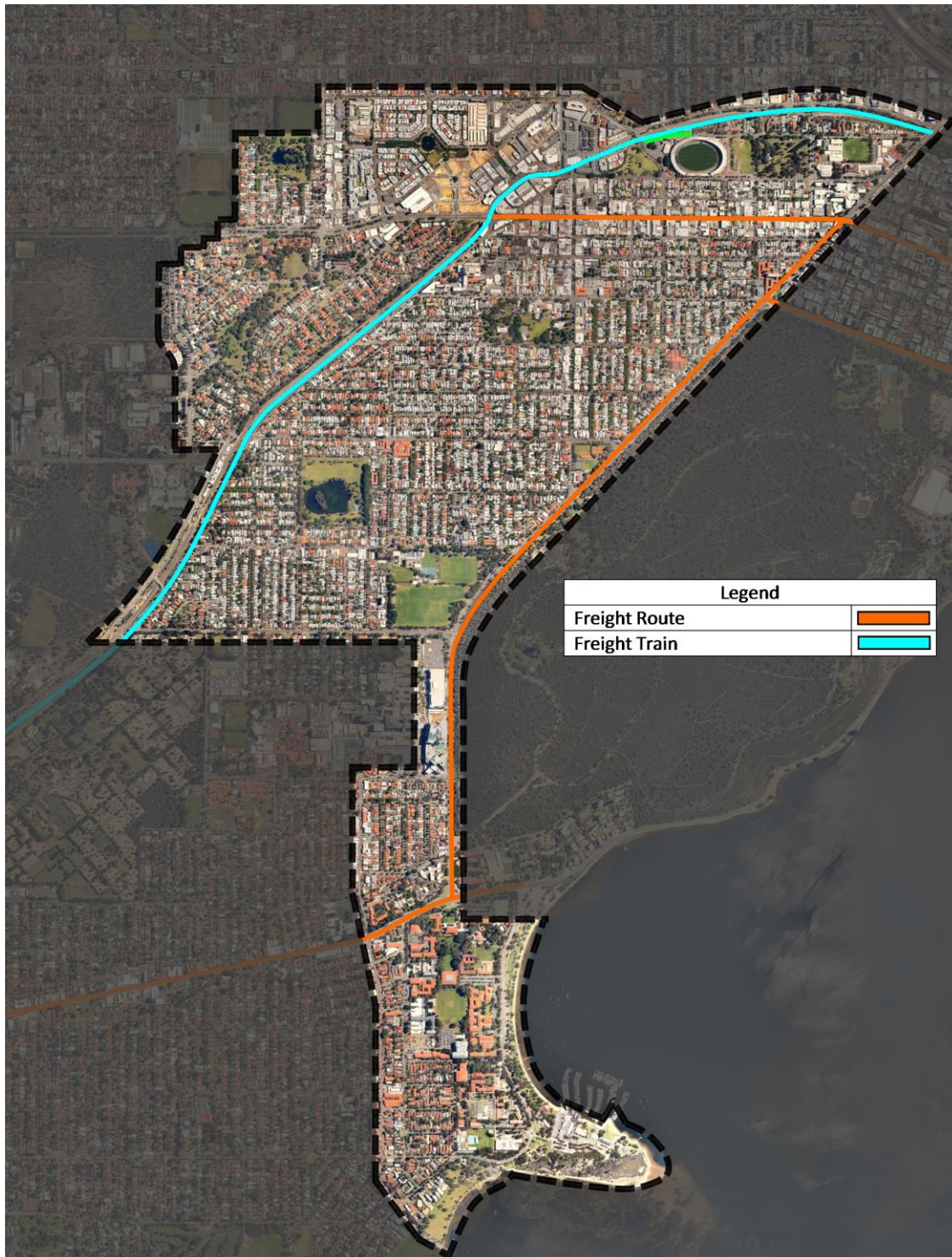
Adapted from the City of Subiaco Draft Bike Plan 2014

4.5 Freight

The major freight transport routes that travel through the Subiaco area and include Stirling Highway, Thomas Street and Hay Street. A lack of strategic freight can be generally considered a significant boon for the city, removing one of the most significant conflicts along major road corridors: the interaction between heavy vehicles and other road users (Refer **Figure 4-4**).

It is important that service vehicle and delivery movement is considered as the city evolves, to ensure that goods and services can be accessed and that commercial enterprise remains viable. Primary determinants for this include the provision of on-street and on-site loading.

Figure 4-4 Freight Network



4.6 Public Transport

The primary modes of public transport are buses and trains both operated by Transperth. The *Community Perceptions Survey* (2014) found that 96% of respondents were satisfied with the City of Subiaco's effort in providing better access to public transport.

4.6.1 Buses

The city is serviced by a number of bus routes that cover most of the Subiaco area, with multiple services operating along key transport corridors such as Railway Parade, Hay Street, Selby Street and Rokeby Road. The majority of the routes are designed to support the residential catchment and supplement the rail network.

Improvements to the provision of bus services may include the extension of the 97 Subiaco Shuttle to better link to the Northern Train Line. Additional frequency improvements will become necessary over time, to accommodate the increasing demand from residents, employees and visitors. These improvements are likely to occur gradually on a demand-responsive basis.

4.6.2 Trains

The Fremantle Line serves the city from West Leederville, Subiaco, Daglish and Shenton Park stations. The areas of Subiaco further to the north-west do not have effective access to train services, meaning that the only available public transport service is provided by buses. The facilities provided at the stations are generally adequate to satisfy the existing demand, although some of the stations lack amenities such as public toilets or other end-of-trip facilities.

Increased train service will occur over time as capacity continues to be surpassed during peak periods. However, these improvements are likely to occur only sporadically, and are determined wholly at the State and Federal Government levels.

4.6.3 Light Rail

The benefits of light rail are many, providing high capacity pedestrian-scale transport through a fine-grained network in a way that bus transport cannot easily replicate. Light rail has also been proven to foster and sustain development and commercial activity far beyond the cost of implementation.

However, the capital expenditure associated with light rail is very high, and as such cannot be feasibly completed at the Local Government level. The city's role is important in supporting the concept of light rail and by maintaining the corridors and facilitating sustainable growth so that the desired outcomes may be achieved.

4.7 Parking

Parking provision and management is a significant consideration for the city in the context of the overall transport network. Parking exerts significant influence over travel behaviour and as such it is critical to the city that parking is managed effectively, and that its provision is balanced between competing interests. The majority of available parking in Subiaco is located in the town centre and the areas that surround it (refer **Figure 4-5**).

The city is aware that a large supply of additional car parking would generate an equally large impact on the local road environment and the amenity afforded to local residents, employees and visitors. This occurs as traffic and congestion limit the ability for people to access facilities in the town centre or along primary traffic corridors.

Figure 4-5 Parking in the City of Subiaco



5 Future Transport Strategies

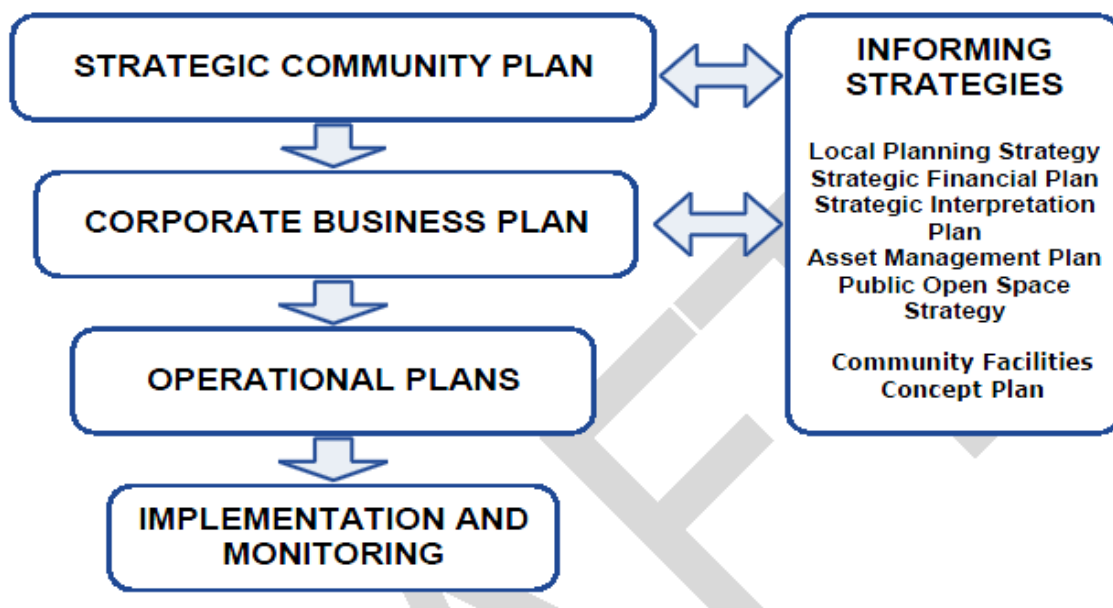
5.1 City of Subiaco Integrated Transport Strategy 2007

The City of Subiaco developed an Integrated Transport Strategy in 2007. The purpose of the transport study that accompanied the Strategy was to provide planning, policy and societal context and outline the method used to assess the options included within the ITS.

The following flowchart demonstrates how the Community Facilities Concept Plan fits within the City of Subiaco's Integrated Planning and Reporting Framework; listing those city plans, strategies and policies which are relevant to facility planning. Significant interrelationship exists between all strategic plans and documents, and all plans provide pivotal direction to achieving the city's vision. Consequently, the strategies, recommendations and targets outcomes set out in the above plans have been incorporated into the Community Facilities Concept Plan.

With each update and revision of the City's informing strategies, the Community Facilities Concept Plan will also be updated to ensure that community facilities continue to be developed in line with the Strategic Community Plan, and in line with community needs and expectations. (Refer **Figure 5-1**).

Figure 5-1 Integrated Planning and Reporting Framework



Source: City of Subiaco; CommPlan Alliance.

5.2 Transport Strategies

The 2007 Subiaco Integrated Transport Strategy contains five elements. They are discussed separately under the following five sections (Refer **Table 5-1**).

1. Managing travel demand.
2. Improving walking and cycling.
3. Improving public transport.
4. Managing vehicular traffic.
5. Managing parking.

The Strategy for each of the above five elements is discussed under the following headings:

- > Strategic objectives.
- > Policy directions.
- > Ongoing and future policies.

Table 5-1 Transport Strategies

MANAGING TRAVEL DEMAND		
Strategic Objective	Policy Directions	Ongoing and Future Policies
To improve access to facilities and services within the city without increasing car travel and to manage demand for vehicle travel at peak times.	<p>P1. Continue to promote walking and cycling for local trips.</p> <p>P2. Through good urban design, encourage direct and legible routes between key destinations and encourage complementary uses to be located within proximity to each other (whereby several purposes can be met through a single trip, e.g. shop, library, bank, chemist).</p> <p>P3. Continue to promote the use of public transport by providing information on new, improved and existing services on a regular basis.</p> <p>P4. Employers should be encouraged to support alternative travel means for their staff through education to employees and incentives/ travel benefits.</p>	<ul style="list-style-type: none"> ▪ Green Travel Plans developed by St John of God Hospitals, QEIIIMC, KEMH and UWA participated in the TravelSmart Workplace program. ▪ TravelSmart Household Program. ▪ TravelSmart program for small businesses. ▪ Cycle/walk to school day. ▪ Bike education. ▪ TravelSmart Map. ▪ Bike to work breakfast.
CYCLING AND WALKING		
Strategic Objective	Policy Directions	Ongoing and Future Policies
To encourage walking and cycling for local and daily trips as a sustainable alternative to private car use by providing a safe, connected and enjoyable walk/ cycle environment.	<p>P1. Provide a safe and enjoyable pedestrian/cycle environment. Wherever possible, pedestrian routes should have active building frontages, direct and legible connections, weather protection, good lighting and should avoid public access ways and high fence lines that prevent passive surveillance.</p> <p>P2. Incorporate universal access into street design, public transport infrastructure and building design.</p>	<ul style="list-style-type: none"> ▪ As part of Subiaco's footpath improvement program, a list of proposed footpath upgrades for 2014/15 have been identified by the city. ▪ End of Trip Facilities. ▪ Improve access for mobility impaired.

CYCLING AND WALKING

P3. Ensure that the road network allows for safe pedestrian and cycle crossing.

P4. Buildings and facilities should provide for end of trip facilities, this should be a requirement for new buildings in the City of Subiaco in line with the Austroads Standards.

P5. The city should encourage a fine grain mix of land uses whereby residents can satisfy daily needs at local neighbourhood shops by walking or cycling.

IMPROVING PUBLIC TRANSPORT

Strategic Objective	Policy Directions	Ongoing and Future Policies
Mode shift to public transport should be encouraged through improved infrastructure and services as well as information and education on the benefits of public transport over private car use.	<p>P1. The city should support, and work with the Public Transport Authority to increase the rail and bus infrastructure/ service to meet current demand, and to provide a service that will encourage more people to use public transport when travelling to, from and within the city.</p> <p>P2. Encourage land use patterns that are conducive to public transport use. This includes a suitably high density, fine grained street network with mixed land uses and catchments with a high number of potential patrons over the full week (i.e. not simply a commuter service).</p>	<ul style="list-style-type: none"> ▪ Buses. ▪ Subiaco Shuttle Extension. ▪ 'Green' Bus Proposal. ▪ Subiaco Central Area Transit (CAT) Service. ▪ Proposed Subiaco Light Rail. ▪ Proposed MAX Light Rail.

MANAGING VEHICULAR TRAFFIC

Strategic Objective	Policy Directions	Ongoing and Future Policies
Provide for safe movement of vehicles around the city and efficient use of existing road infrastructure.	<p>P1. Manage competing interests for limited road space by giving priority use of the road to different transport modes at particular times of the day in accordance with TransPriority principles.</p> <p>P2. Provide a safe street network and maintain a high level of safety for vehicle movements, including interactions with other users, into the future.</p>	<ul style="list-style-type: none"> ▪ Most of the road works projects involve maintenance and minor upgrades on existing roads. ▪ Infrastructure Five Year Capital Improvement Program. ▪ Active Traffic Management. ▪ Car sharing. ▪ Driverless cars.

PARKING		
Strategic Objective	Policy Directions	Ongoing and Future Policies
To encourage the efficient use of and management of available parking resources by providing a mix of short and long term parking to accommodate current and future uses within the centre.	<p>P1. Short term and long term parking zones will ensure consistent parking application around the Subiaco Town Centre.</p> <p>P2. Ensure sufficient parking supply to cater for the various uses with the Subiaco area.</p> <p>P3. Ensure parking does not impact negatively on user groups or general amenity of the area.</p> <p>P4. Ensure that parking provision supports other transport policy directions.</p>	<ul style="list-style-type: none"> City of Subiaco Parking Strategy 2012-2016. Time Controls Costs and Compliance. Residential Permit scheme. Managing Supply. Develop a plan to address the use of cash in lieu funds ensuring that appropriate funding is directed towards non-private car transport to facilitate a mode shift from the car to sustainable transport. Progress identification of multi-deck car parking sites in dense redevelopment areas, either by the city or by private business. Information should include business cases for construction and/or operation by the city, funding of development etc. Investigate options for multi deck car parking facilities.

6 Integrated Transport Strategy Actions

6.1 Context

Cardno has developed an ITS outline which identifies components of the transport framework which will need to be addressed or considered to ensure continued operation of the City of Subiaco network. The primary focus of this Integrated Transport Strategy is to:

- > Identify constraints in current and planned road capacity, using the projections of the city (as captured in the most recent update of the Main Roads Road Operations Model (ROM), *Directions 2031 and Beyond* and the Central Sub-regional Strategy.
- > Identify measures to upgrade and improve the regional and local road connections to facilitate safe and efficient vehicle movement, manage freight movements and to reduce congestion.
- > Consider the implementation and management of 'Moving People' (TransPriority) principles to facilitate an efficient movement system.
- > Identify measures to upgrade and improve public transport connections and facilities to reduce congestion.
- > Create a safe environment for pedestrians and cyclists.
- > Promote the use of active transport and reduce the reliance on private vehicle transport.

6.2 Integrated Transport Strategy Actions

The following recommendations (Refer **Table 6-1** to **Table 6-5**) draw from the goals established in the ITS and provide a set of measurable actions that the city will need to implement in order to achieve an integrated transport network throughout the municipality. This detailed action plan is intended to inform an implementation program which prioritises required actions for the City of Subiaco as well as external agencies such as Department of Transport, Public Transport Authority, Main Roads WA and the City of Perth.

There is some interrelationship between time frame and priority, with short-term projects that fit within the ITS review time horizon given precedence over longer-term, more speculative projects.

Table 6-1 Managing Travel Demand

Reference	Action	How does it manage travel demand?	Responsibility	Priority	Estimated Costs
1.1	Encourage schools to participate in Cycle to School Day and Walk to School Day.	Encourages students to walk and cycle to school instead of drive.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	\$20,000 (combined with actions 1.2, 1.3, 1.4, 1.5)
1.2	Encourage schools to participate in bike education.	Bike education teaches students how to safely ride to school.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	\$20,000 (combined with actions 1.1, 1.3, 1.4, 1.5)
1.3	Update and distribute the TravelSmart Map.	The TravelSmart Map shows all the cycling, walking and public transport routes, and major destinations, in Subiaco.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	\$20,000 (combined with actions 1.1, 1.2, 1.4, 1.5)
1.4	Hold an annual Bike to Work Breakfast during Bike Week.	Promotes cycling to work, school, and university.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	\$20,000 (combined with actions 1.1, 1.2, 1.3, 1.5)
1.5	Continue to promote the use of public transport by regularly providing information on new, improved and existing services.	Encourages travel behaviour change.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	Medium	\$20,000 (combined with actions 1.1, 1.2, 1.3, 1.4)
1.6	Increase density and land use mix to encourage more people and destinations to be located within the public transport catchment.	Encourages travel behaviour change.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	Medium	
1.7	Apply for selection by the State Government to participate in the Your Move program when it is offered to local governments.	Encourages long term travel behaviour change for residents and reduces demand for vehicle use.	<ul style="list-style-type: none"> City of Subiaco Department of Sport and Recreation Department of Transport 	Medium	\$125,000 (50% of the total cost for year 1)
1.8	Encourage organisations to participate in the TravelSmart Workplace program coordinated by the Department of Transport.	The TravelSmart Workplace program encourages staff and visitors to use sustainable transport to get to work, and during work. This program can include the development of travel plans for larger organisations.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	\$5k p.a. (advertising and internal TravelSmart funding)
1.9	Ensure that the managing travel demand recommendations align with Outcome Two of the City of Subiaco's DAIP.	Outcome 2 of the City of Subiaco's DAIP states that <i>'People with disabilities have the same opportunities as other people to access the buildings and other facilities of the relevant public authority'</i> .	<ul style="list-style-type: none"> City of Subiaco 	Medium	
1.10	Promote the safe use of roads for drivers, cyclists and pedestrians.	Encourages safe road user behaviour.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	Medium	

Table 6-2 Improving Walking and Cycling

Reference	Action	How does it improve walking and cycling?	Responsibility	Priority	Estimated Costs
2.1	Apply for annual funding from the Department of Transport Bicycle Network Grants to implement the recommendations from the bike plan.	PBN grants fund 50% of the cost of cycling infrastructure.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	
2.2	Support pedestrian and cyclist improvements to Rokeby Road in conjunction with the objectives of the public realm plan.	Improves pedestrian and cycling facilities along Rokeby Road.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	
2.3	Implement the recommendations of the Draft Subiaco Bike Plan.	The Draft Subiaco Bike Plan will complete the gaps and improve the connectivity of the bicycle network in Subiaco.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	
2.4	Support the Department of Transport's plans to construct cycling facilities in conjunction with the widening of Thomas Street.	Cycling facilities on Thomas Street will increase the accessibility for both pedestrians and cyclists on a vehicle dominated road.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	Medium	
2.5	Investigate the development of a central end of trip facility located in the Town Centre. As part of this action, undertake an End of Trip Facility Study to generate an inventory of private and public end of trip facilities in the city.	Many staff do not have access to workplace end of trip facilities. A central end of trip facility will allow these staff to walk or ride to work.	<ul style="list-style-type: none"> City of Subiaco 	Medium	\$40k study
2.6	Review the policies that require end of trip facilities to be included in the design of new buildings.	End of trip facilities in new buildings enable staff and visitors to walk or ride to work.	<ul style="list-style-type: none"> City of Subiaco 	Medium	
2.7	Provide incentives to commercial and retail properties to retrofit end of trip facilities in existing buildings.	Incentives will encourage businesses to retrofit end of trip facilities in existing buildings, to enable staff and visitors to walk or ride to work.	<ul style="list-style-type: none"> City of Subiaco 	Medium	\$40k study
2.8	Ensure that improving walking and cycling recommendations align with Outcome Two of the City of Subiaco's DAIP.	Outcome 2 of the City of Subiaco's DAIP states that ' <i>People with disabilities have the same opportunities as other people to</i>	<ul style="list-style-type: none"> City of Subiaco 	Medium	

		<i>access the buildings and other facilities of the relevant public authority'.</i>	▪ Department of Transport		
2.9	Use the Department of Transport walkability audit tool to audit footpaths in high demand areas, key public transport stops and around community facilities and major destinations to identify access and safety issues.	Creates a supportive walking environment using four principles: access, aesthetics, safety and security, and comfort.	▪ City of Subiaco	Medium	\$10k study
2.10	Develop a Footpath Policy and reporting system so that footpaths and shared use paths are well maintained and kept clear of hazards and obstructions.	Ensures that the walking environment is comfortable, safe, secure and accessible.	▪ City of Subiaco	Medium	
2.11	Install universally designed wayfinding signage at key locations including town centres, train/bus stations, libraries, community centres and parks.	Ensures that the experience of walking is direct and legible.	▪ City of Subiaco	Medium	\$50k design and signage study \$150k implementation
2.12	As part of applying for a permit to obstruct a road, footpath or verge, applicants should ensure that access for cyclists and pedestrians is maintained. Alternative temporary infrastructure should be equal to the equal to the existing infrastructure and take into account the access needs of people with disabilities.	Ensures the safety and security of walkers and cyclists.	▪ City of Subiaco	Medium	
2.13	Attend a Walk21 conference.	The Walk21 conference encourages professionals to develop policies and initiatives to increase walking and create liveable communities.	▪ City of Subiaco	Medium	\$5k training

Table 6-3 Improving Public Transport

Reference	Action	How does it improve public transport?	Responsibility	Priority	Estimated Costs
3.1	Liaise with the State Government and its agencies on the development of a light rail system through Subiaco to service UWA, QEII MC and other major demand generators.	Light rail provides an efficient, fast and direct form of transport, and can move a relatively large volume of people.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	
3.2	In the interim period prior to the light rail, liaise with the State Government and its agencies to provide a bus services along the general light rail route.	<p>Staging of infrastructure improvements to meet changing demand and behaviour over time.</p> <p>Provision of an alternative mode of transport or some form of infrastructure that will move a relatively large number of people.</p> <p>Increases the number of transport options to a significantly large number of people (e.g. to/from major trip generators).</p> <p>Provide a new or improved service or facility to improve access to Subiaco from/ to a point of origin outside the city with a large travel demand.</p> <p>Allows future modifications but requires significant capital investment (e.g. to modify infrastructure).</p>	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	\$60k feasibility study (combined with actions 3.3,3.4,3.5 and 3.6)
3.3	Liaise with the State Government and stakeholders to implement improvements to the Subiaco Shuttle, including the extension of the shuttle service to Glendalough or Leederville and extended hours of operation in the evenings.	<p>Provide efficient public transport infrastructure and continuously review services to ensure they meet changing travel demands.</p> <p>Option has been designed to (or by its nature can) accommodate future modifications or expansions.</p> <p>Increases the number of transport options to a significantly large number of people (e.g. to/from major trip generators).</p> <p>Provision of an alternative mode of transport or some form of infrastructure that will move a relatively large number of people.</p>	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	Medium	\$60k feasibility study (combined with actions 3.2,3.4,3.5 and 3.6)
3.4	Investigate the feasibility and possible routes for a Subiaco CAT service. This may include a staged roll-out consisting of smaller 'Green Bus' services, or other means.	A CAT service similar to the one implemented in the Perth CBD can support a large number of passengers due to its high frequency service and is relatively popular due to its free service.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	\$60k feasibility study (combined with actions 3.2,3.3,3.5 and 3.6)
3.5	Investigate the feasibility and possible routes for a small bus service.	If successfully implemented, it will provide easy access to areas within Subiaco.	<ul style="list-style-type: none"> City of Subiaco 	Medium	\$60k feasibility study (combined with actions 3.2,3.3,3.5 and 3.6)

Reference	Action	How does it improve public transport?	Responsibility	Priority	Estimated Costs
3.6	Liaise with the State Government to increase the capacity and frequency of the train system over time, especially at peak periods.	<p>Provide efficient, fast and direct public transport infrastructure.</p> <p>Provision of an alternative mode of transport or some form of infrastructure that will move a relatively large number of people.</p> <p>Increases the number of transport options to a significantly large number of people (e.g. to/from major trip generators).</p> <p>Provide a new or improved service or facility to improve access to Subiaco from/ to a point of origin outside the City with a large travel demand.</p> <p>Allows future modifications but requires significant capital investment (e.g. to modify infrastructure).</p>	<ul style="list-style-type: none"> Department of Transport City of Subiaco Department of Transport 	Medium	3.2,3.3,3.4 and 3.6) \$60k feasibility study (combined with actions 3.2,3.3,3.4 and 3.5)
3.7	Liaise with the State Government to implement improvements to bus service frequencies outside peak periods and to facilitate bus priority for high frequency transport routes.	<p>Provide efficient public transport services to major destinations and respond to changing working times and travel demand. Improve infrastructure to support public transport and encourage its use by providing it priority over car traffic.</p> <p>Provision of an alternative mode of transport or some form of infrastructure that can move more people by green modes.</p> <p>Increases the number of transport options available to a greater number of people.</p> <p>Provide a new or improved service or facility to improve access to Subiaco from/ to a point of origin outside the City.</p> <p>Option has been designed to (or by its nature can) accommodate future modifications or expansions.</p> <p>Better management or utilisation of an existing service or facility (making public transport more efficient).</p> <p>Allows future modifications but may require significant capital investment (e.g. to modify infrastructure).</p>	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	Medium	
3.8	Support connections between the light rail and nearby resident/employment zones, and between light rail and bus transport.	<p>Increased accessibility and convenience for users which in turn would convert more users.</p>	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	\$30k study

Reference	Action	How does it improve public transport?	Responsibility	Priority	Estimated Costs
3.9	When planning regular road closures for events on Rokeby Rd, consider the impact on buses and the future light rail.	Creates better synergies between the light rail and bus network allowing effortless transitions from one method of transport to another. Closing the road on Rokeby Rd will require a significant detour for bus route 97, as buses cannot use nearby narrow streets. It will also affect the future light rail route.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	High	
3.10	Ensure that improving public transport recommendations align with Outcome Two of the City of Subiaco's DAIP.	Outcome 2 of the City of Subiaco's DAIP states that <i>'People with disabilities have the same opportunities as other people to access the buildings and other facilities of the relevant public authority'</i> .	<ul style="list-style-type: none"> City of Subiaco 	Medium	

Table 6-4 Managing Vehicular Traffic

Reference	Action	How do these actions manage vehicular traffic?	Responsibility	Priority	Estimated Costs
4.1	Continue to develop and implement a variety of traffic management and street design measures, aimed at improving the amenity, comfort and safety of streets for all road users.	Provide a safe street environment for all users. Better management or utilisation of an existing service or facility- no impact on other users. Option has been designed to (or by its nature can) accommodate future modifications or expansions.	<ul style="list-style-type: none"> City of Subiaco Main Roads 	Medium	
4.2	Develop and implement TransPriority measures.	Allocates road capacity for sustainable transport uses in order to maximise accessibility and mobility, and promotes mode shift away from private vehicle transport. Supports private vehicle transport along primary routes and away from areas of conflict.	<ul style="list-style-type: none"> City of Subiaco Department of Transport 	Medium	
4.3	Design and plan for road modifications as defined by the 2031 Regional Operations Model (ROM). The will include the identification of sections of road currently identified by the 2031 ROM as requiring upgrade or duplication, as well as sections of road that are expected to require upgrade or duplication as a result of the Integrated Transport Strategy assessment.	These road improvements will help ease congestion in areas which are deemed to be at risk of being over capacity. This will ensure that the road network will be able to sufficiently handle the future increase in traffic.	<ul style="list-style-type: none"> City of Subiaco Main Roads 	High	\$100k detailed traffic modelling study \$2M+ p.a. implementation budget

Reference	Action	How do these actions manage vehicular traffic?	Responsibility	Priority	Estimated Costs
4.4	Monitor road and traffic conditions and perform upgrades when appropriate.	By monitoring the specified intersections that are expected to fail based on the SIDRA analysis, it can be predicted when the road network is unable to handle the traffic volumes thus providing the appropriate amount of time to implement upgrades.	<ul style="list-style-type: none"> City of Subiaco Main Roads 	High	
4.5	Conduct a feasibility study on the advantages and disadvantages of active traffic management in the context of the City of Subiaco.	Active traffic management can help increase peak traffic capacity and minimise disruptions to the road network from events and accidents.	<ul style="list-style-type: none"> City of Subiaco Main Roads 	Medium	\$25k study
4.6	Consult with relevant authorities, car sharing vendors and the general public in regards to the implementation of a car sharing service in the City of Subiaco.	All relevant stakeholders are consulted and any concerns and issues in regards to car sharing can be sorted out.	<ul style="list-style-type: none"> City of Subiaco 	Medium	\$15k study \$10k p.a. in-kind concession
4.7	In regards to car sharing, conduct an initial trial with a small fleet of cars in key destinations to gather data on usage rates. Promote carpooling as part of this action.	A car sharing service can provide convenient access to a vehicle for those who occasionally drive or only make short trips. To maximise the potential of this service, it should be conducted alongside the driverless car trials.	<ul style="list-style-type: none"> City of Subiaco 	Medium	Wholly or partially funded by for-profit 3rd party company. May require supplemental funding for study ~\$30k
4.8	Participate in driverless car trials when the technology is available, and integrate this with the proposed car sharing service.	Driverless vehicles have the potential to decrease private vehicle ownership rates.	<ul style="list-style-type: none"> City of Subiaco 	Medium	Wholly or partially funded by for-profit 3rd party company. May require supplemental funding for study ~\$30k
4.9	Continue support and implementation of the Infrastructure Five Year Capital Works Program.	Improves safety for drivers and pedestrians. Improves and maintains the quality of existing roads.	<ul style="list-style-type: none"> City of Subiaco Main Roads 	High	
4.10	Implement the actions in the Laneway Report 2013.	Improves the quality of laneways for both drivers and pedestrians.	<ul style="list-style-type: none"> City of Subiaco Main Roads 	Medium	
4.11	When planning regular road closures for events on Rokeby Road, consider the impact on buses and the future	Retains the function of public transport for access to and from events and ensures that	<ul style="list-style-type: none"> City of Subiaco Main Roads 	High	

Reference	Action	How do these actions manage vehicular traffic?	Responsibility	Priority	Estimated Costs
	light rail. Closing Rokeby Road will require a significant detour for bus route 97, as buses cannot use nearby narrow streets. It will also affect the future light rail route.	public transport modes remain a viable alternative to private vehicles.			

Table 6-5 Managing Parking

Reference	Action	How do these actions manage parking?	Responsibility	Priority	Estimated Costs
5.1	Review the need for minimum car parking requirements in areas that are within walking or cycling distance of a public transport node. Consider establishing maximum requirements.	This would provide better use of space, and encourages greater use of sustainable transport.	▪ City of Subiaco	Medium	\$50k parking utilisation and demand study
5.2	Investigate options for multi deck car parking facilities.	The possibility of a multi deck car park would provide the area with additional parking spaces. Reduces the need for on street parking, freeing up space for alternate land uses.	▪ City of Subiaco	Medium	\$40k location / needs assessment, should be combined with revision of parking standards
5.3	Improve wayfinding signage for available parking locations within the City of Subiaco.	Better accessibility and wayfinding towards parking areas.	▪ City of Subiaco	High	\$30k study \$200k implementation budget
5.4	Implement and review the Subiaco Parking Strategy 2012-2016, and ensure that the new Parking Strategy reflects the aims of the Integrated Transport Strategy.	Describes the steps and infrastructure requirements to make the transition from existing parking supply and policy frameworks towards a more effective management strategy. Ultimately, by reducing parking supply and increasing pricing, mode shift to sustainable transport is created.	▪ City of Subiaco	High	\$75k implementation review study
5.5	Develop a plan to address the use of cash in lieu funds ensuring that appropriate funding is directed towards non-private car transport to facilitate a mode shift from the car to sustainable transport.	Cash in lieu funds can be used to fund public parking or facilities, infrastructure and services for cyclists, pedestrians and public transport users.	▪ City of Subiaco	Medium	\$20k study