

Stirling City Centre

# Integrated Transport Strategy

## Strategy Report

December 2013





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## 1. Executive Summary

### 1.1 Introduction and background

GHD has been commissioned by the Stirling City Centre Alliance to develop an integrated transport strategy for the proposed redevelopment of the city.

This strategy outlines the following:

- The vision and approach adopted by the Stirling City Centre Alliance for the delivery of an integrated land use – transportation system.
- How the components of an integrated transport strategy align with local, regional and national policy so that stakeholders can gain confidence that the objectives and components in the action plans meet the requirements within policy at all levels.
- The issues and needs (or problems and opportunities) that the integrated transport strategy should address. This is structured so that the requirements of an Infrastructure Australia funding bid submission can be easily extracted.
- The objectives and action plans in the strategy that support the delivery of the areas of strategic focus in the Stirling City Alliance Performance Framework.
- The precinct by precinct area action plans.
- The program of infrastructure and redevelopment so that there is coordination of the transportation initiatives, planning and capital works, with the strategic development of land uses within the city.
- The techniques and key performance indicators that allow the strategy progress to be measured so that the strategy can evolve to build on the achievements.

The city is formally acknowledged as an important activity centre in the state planning policy Directions 2031. Stirling, along with the other activity centres, is seen as an important hub for development. The principles of transit oriented

development and location of business are fundamental in delivering a more sustainable urban form for the wider Perth area.

A significant amount of strategy development, consultation and stakeholder discussions have been undertaken to date. An integrated transport strategy is therefore required to collate these into a single coherent strategy. This integrated transport strategy will support a funding application submission to Infrastructure Australia and be used to seek state agency support for the transportation strategy.

### 1.2 Vision and approach

The vision promoted by the Stirling City Alliance is to:

***“Create Stirling as a sustainable 21st century city – a place for everyone. It will be a hub for a diverse and prosperous community offering wellbeing for all.”***

The vision is supported by the local areas of strategic focus in the Stirling City Alliance Performance Framework, including:

- Governance
- Accessibility and Urban Form
- Environmental Health
- Community Wellbeing
- Economic Health

The vision and areas of strategic focus have implications for stakeholders, local businesses and community groups. The Stirling City Centre Alliance has engaged with the community and stakeholders throughout the planning to date and the vision and areas of strategic focus align with the regional and national objectives for transport, development and planning.

Figure 1: Activity centre hierarchy



### 1.3 Existing transport provision

The existing transport facilities and provision define the baseline transport conditions that need to be improved as part of an integrated land use-transport strategy. This has been considered in varying levels of detail in the studies undertaken to date. The pedestrian, cycle, public transport, road, and restricted access vehicle networks are shown in Figure 13 to Figure 17.

The problems and opportunities for Stirling have been reviewed, in part, previously in the City of Stirling Integrated Transport Strategy (City of Stirling, 2009), Stirling Regional Centre Structure Plan Transport Review (June 2007) and other supporting reports.

This report draws together the reviews undertaken into a consolidated summary for the study area. This approach will identify solutions for inclusion in the action plan and is intended to summarise the issues that the core transportation projects address. The modal problems and opportunities are shown in Table 6 to Table 9.

### 1.4 What has been achieved so far

An alliance was set up in 2008 to plan, manage and develop the strategy and approach to deliver a new development rationale for the city. The Stirling City Centre Alliance is made up of representatives from key stakeholders and continues to plan for a high density city to meet the growth aspirations of the regional planning policy Directions 2031. In addition an integrated transport strategy working group and community leadership group (CLG) have been established.

An integrated transport strategy working group was established to review the input to the strategy report. This working group included representatives from the City of Stirling, Main Roads WA, Department of Transport, Department of Planning, Public Transport Authority and GHD.

The role of CLG is to promote community involvement in the development of the city. The rationale is that effective communication, transparency of process, accessible information and community involvement will allow informed decision making and make the Stirling City Centre Alliance accountable to the community's needs. This should facilitate 'getting things done' and gaining community support prior to project and program delivery.

A significant amount of strategy and planning has been undertaken for the Stirling City Centre Alliance and by the City of Stirling, including:

#### Multi-modal strategy

- Integrated Transport Strategy, City of Stirling, 2009
- ~ Stirling City Centre Alliance – Long Term Transport Vision (2009)

- Scarborough Beach Road Activity Corridor – Transport Report, SKM, March 2010

#### Pedestrian and cycling strategy

- Stirling City Centre Cycling Plan, SKM, June 2010
- Integrated Cycling Strategy (First Draft), City of Stirling, October 2010
- City of Stirling Policy Manual – Section 6 – Bicycle Parking, City of Stirling

#### Public transport strategy

- Stirling Tram Feasibility Study – Preliminary Patronage Estimates, Parsons Brinkerhoff, February 2010
- Stirling City Centre Light Rail Feasibility Study – Phase 2, Parsons Brinkerhoff, November 2010
- Herdsman Business Park and Glendalough Station Transport Strategy, SKM, October 2010
- Stirling City Centre Public Transport Strategy, GHD, December, 2013

#### Access and parking strategy

- Stirling City Centre Access and Parking Strategy, SKM, August 2010

These have driven the move towards a strategy for increasing the density of residential development, mix of land uses, and promotion of more sustainable modes of transport.

Gaps have been identified and these will be filled as part of the ongoing evolution of this integrated transport strategy. These include the development of road and public transport plans.

### 1.5 Targets and objectives

#### 1.5.1 Land Use and Development Growth Targets

The following land use and development growth targets are planned for Stirling City Centre:

- **T1:** Increase in residential dwellings from 1,625 to 13,900
- **T2:** Currently residential housing density is six dwellings per hectare, future 45 dwellings per hectare
- **T3:** Current population 3,800, future population 25,000
- **T4:** increase in 'strategic jobs' from 475 in 2006 to 4,124 by 2031
- **T5:** Total commercial floorspace of approximately 970,000m<sup>2</sup>, including: 438,000m<sup>2</sup> commercial, 48,000m<sup>2</sup> health/ welfare/ community, 461,000m<sup>2</sup> retail, and 23,000m<sup>2</sup> entertainment/ recreation/ culture.

The rationale behind the substantial growth targets in the city, especially in terms of population growth, is that expansion at the edge of the Perth urban area is less sustainable due to the effects of increased travel distances, increasing energy costs, and loss of natural habitat and farmland. Changing demographics of an ageing population, smaller households, and changing lifestyle expectations are resulting in a growing demand for higher density living and better access to recreational and social amenities without the use of a private car. The city is well placed to facilitate this growth but is contingent on a high quality public transport system and development at a higher density to reduce the number of single occupancy car trips.

### 1.5.2 Mode Hierarchy and Share Targets

The realisation of the Stirling City Centre Alliance's development aspirations requires a significant change in travel behaviour from the existing mode shares. The existing trends show the dominance of the private car, but the targets for the City of Stirling reflect the aspiration to improve the mode share and reassign modes in the modal hierarchy to promote walking, cycling and public transport above the private car. The overall target mode shares (**T6**) for the study area are:

- car driver 35%,
- car passenger 15%,
- public transport 18%, and
- walking and cycling 32%.

### 1.5.3 Environment Targets

The integrated transport strategy will also contribute towards the achievement of environmental objectives. Therefore broad overarching targets are defined:

- **T7:** Reduce the CO2 emissions from transport travelling to and from the city, including freight vehicles
- **T8:** Increase the use and implementation of infrastructure to support alternative fuel vehicles
- **T9:** Reduce noise pollution from transport and improve air quality in the city

### 1.5.4 Social Targets

- There are social targets that the integrated transport strategy can contribute towards, including:
- **T10:** Improve accessibility to services to reduce social exclusion
- **T11:** Improve access to/ from public transport interchanges for those with disabilities

### 1.5.5 Health Targets

The health agenda is becoming increasingly important and integrated transport planning can contribute towards the delivery of initiatives that support healthy living. Overarching targets include:

- **T12:** Increase the number of people walking and cycling to and from work to help reduce the levels of adult obesity
- **T13:** Increase the number of children choosing more active modes of transport to reduce the levels of childhood obesity

### 1.5.6 Objectives

The integrated transport strategy is about setting the overarching objectives and strategy that will inform the detailed area plans and planning requirements of all new development.

## 1.6 Action plans

The action plans takes the area wide modal approach (shown in Figure 2, Figure 3, Figure 4 and Figure 5). The measures proposed will be developed over the lifetime of the integrated transport strategy. There are projects and policies that are applicable to more than one precinct and therefore these are considered as part of the area wide action plan; the precinct action plans provide more information on the local details of the strategy.

The core schemes and policy are:

- Stirling Station and multi-modal Interchange
- Mitchell Freeway ramps and road upgrades
- Stephenson Avenue
- Light rail
- Bus network improvements
- Pedestrian crossings, footpaths and active street frontages
- Cycle paths and end of trip infrastructure
- Reserve for road/ rail tunnel beneath the city
- Local Freight access for delivery
- Gateways to the city to indicate change in road characteristics
  - ~ Speed reductions
  - ~ Streets with active frontage
  - ~ Car free zone
  - ~ Self explaining roads
- TravelSmart
- Standards, guidance and development application requirements

Table 1: Summary of Integrated Transport Strategy Objectives (Part 1)

GOVERNANCE	
<b>Objective G1:</b> Diverse representation of all stakeholders in an appropriate governance structure in a local office	The integrated transport strategy has been developed by the Stirling City Centre Alliance and includes members from the major state bodies.
<b>Objective G2:</b> To engage with all stakeholders across community, business and government with clear accountabilities whilst adhering to the vision	
<b>Objective G3:</b> To deliver and define projects on time, cost and quality that ensure development meets the vision and provide positive advantages to all stakeholders	
<b>Objective G4:</b> Require professionals of all disciplines and stakeholders to engage as part of a collaborative process to the planning of the city	
<b>Objective G5:</b> Undertake cross boundary working to ensure that transportation policy, strategy and infrastructure proposals are integrated across authority boundaries	
<b>Objective G6:</b> Develop actions plans to promote initiatives that meet the local, regional and national areas of strategic focus	
ACCESSIBILITY AND URBAN FORM: WALKING	
<b>Objective AW1:</b> To provide infrastructure and facilities that ensure high levels of walking, through a fine grained infrastructure of streets that are safe, comfortable and well connected.	Supports targets: T6, T7, T8, T9, T10, T11, T12, T13
<b>Objective AW2:</b> Improve the permeability of the pedestrian network by reducing the severance effect of existing road and rail infrastructure, and larger development plots.	
<b>Objective AW3:</b> Increase the mode share of walking and cycling to over 17% to 22% and the number of pedestrian km’s travelled by residents and visitors.	
ACCESSIBILITY AND URBAN FORM: CYCLING	
<b>Objective AC1:</b> To provide infrastructure and facilities that ensure high levels of cycling, through convenient, legible (wayfinding and signage) and improved on and off street cycle networks, and sufficient end of trip facilities at new development and transport interchanges.	Supports targets: T6, T7, T9, T10, T12, T13
<b>Objective AC2:</b> Improve the planning and safety of the cycle network to reduce the number of cyclists deaths and serious accidents on the highway network, through reduced vehicle speed limits and traffic calming. Reduce the speed differential between motorised modes of transport, cyclists and pedestrians in zones where conflict could occur.	
<b>Objective AC3:</b> Improve the understanding of the benefits of cycling and increase the mode share of walking and cycling to over 10% to 15%, the frequency of trips, and the number of cycling km’s travelled by residents and visitors.	
<b>Objective AC4:</b> Implement guidance and best practice requirements for the network so that new developments and developers understand the need to provide cyclist and cycle facilities to, from and in their sites.	
<b>Objective AC5:</b> Ensure the needs of cyclists are recognised and provided for in the planning and road construction authorities, and promote cycle parking standards that are appropriate to the land use and target mode share for cycling.	
<b>Objective AC6:</b> Develop a cycle network where no residential dwelling in the study area is located more than 200m from a cycle lane or path.	
<b>Objective AC7:</b> Develop a program of cycle training and education for the residents and visitors of the city.	
ACCESSIBILITY AND URBAN FORM: PUBLIC TRANSPORT	
<b>Objective APT1:</b> Provide infrastructure and facilities that increases the number of people using public transport and facilitates the regeneration and intensification of development in the city, in line with City of Stirling, Stirling City Centre Alliance and Directions 2031 requirements.	Supports targets: T1, T2, T3, T4, T5, T6, T7, T9, T10
<b>Objective APT2:</b> Propose a land use and transportation policy framework that allows the catalytic effects of a quality public transport system on economic uplift to be managed effectively and allow for value capture.	
<b>Objective APT3:</b> Ensure that the local connections in multi-modal interchanges are legible, accessible, safe places, with sufficient capacity to accommodate existing and future movement and waiting demands when travelling as part of a multi-modal journey.	
<b>Objective APT4:</b> Create a public transport system that reduces congestion, improves accessibility, and reduces the consumption of fossil fuels.	
<b>Objective APT5:</b> Develop a public transport system that is standardised and integrated with other public transport proposals in the overall Perth system.	

Table 2: Summary of Integrated Transport Strategy Objectives (Part 2)

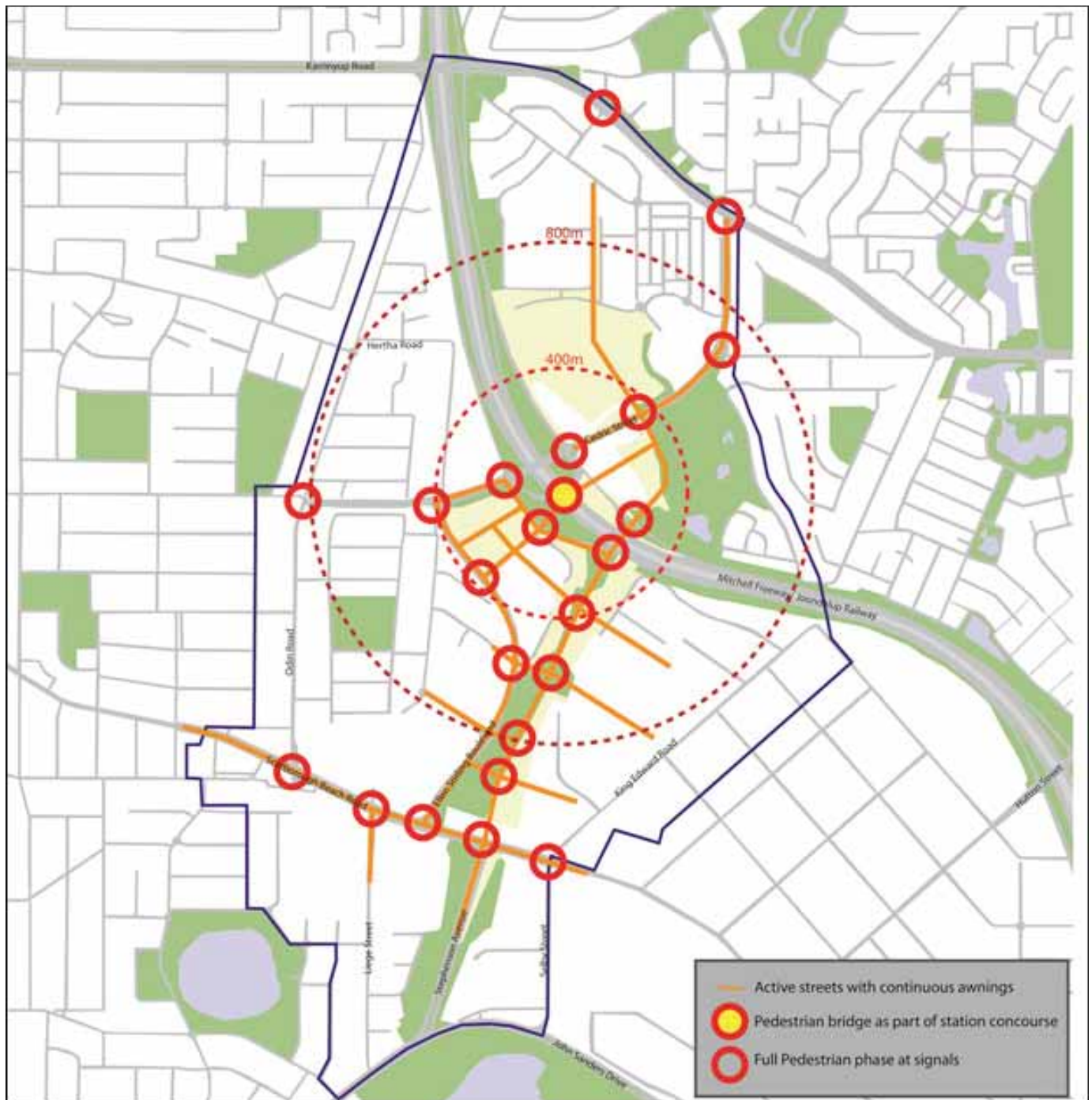
ACCESSIBILITY AND URBAN FORM: PRIVATE CAR AND FREIGHT		
<b>Objective APC1:</b> Provide a road network that is permeable and provides multiple routes for drivers travelling to, from and in the city.	Supports targets: T1, T2, T3, T4, T5, T6	
<b>Objective APC2:</b> Reduce vehicle speeds on the road network wherever feasible and appropriate.		
<b>Objective APC3:</b> Maintain the reserve beneath Stephenson Avenue as a potential future bypass tunnel under the city and adjacent areas.		
<b>Objective AP1:</b> Provide levels of car parking that are appropriate to the future mode share targets, land use mix and densities, including rationalisation and analysis that, where practicable, promotes sharing of car parking between multiple land uses and a turnover of car parking spaces that improves availability of car parking in the city.		
<b>Objective AP2:</b> Develop best practice guidelines for the design, standards, charging structures and management mechanisms for parking that are consistent to those to be applied across all of Perth's activity centres, and promote an increase in the number of people accessing the city centre by public transport, walking and cycling.		
<b>Objective AP3:</b> Minimise parking construction costs and manage access to alternative transport modes to encourage use ensuring the road capacity is not exceeded.		
<b>Objective AP4:</b> Manage the traffic routing to and from car parks in the city.		
<b>Objective ASF1:</b> Promote efficient movement of goods and services in order to support sustainable economic development and prosperity, through improved movement of freight through the city.		
<b>Objective ASF2:</b> Protect freight corridors and bypass routes to, from and in the city, including a north-south freight route linking to the Mitchell Freeway.	Supports targets: T1, T2, T3, T4, T5, T6, T10, T11, T12, T13	
ACCESSIBILITY AND URBAN FORM: DEMAND MANAGEMENT		
<b>Objective ADM1:</b> Promote initiatives that reduce the need to travel and reduce the length of journeys.		
<b>Objective ADM2:</b> Provide viable alternatives to the private car.		
<b>Objective ADM3:</b> Develop an integrated transport strategy that has the flexibility to meet the demands of a changing economy and market environments.		
<b>Objective ADM4:</b> Coordinate new development with efficient, economic and timely provision of infrastructure and services.		
<b>Objective ADM5:</b> Travel Plans to be a requirement of all planning applications that have a significant transportation impact.		
<b>Objective ADM6:</b> Support initiatives that reduce the demand for car parking in the city.		
<b>Objective ADM7:</b> Utilise intelligent transport systems to improve the operation of the network.	Supports targets: T6	
ACCESSIBILITY AND URBAN FORM: ROAD SAFETY		
<b>Objective RS1:</b> Meet the movement demands of all the users of the City of Stirling in a safe and secure transportation network.		
<b>Objective RS2:</b> Meet the movement demands of all the users of the City of Stirling in a safe and secure urban realm.		
<b>Objective RS3:</b> Make it easier and safer for people to access services.		
<b>Objective RS4:</b> Reduce the number of deaths and serious accidents on the roads in the City of Stirling.		
<b>Objective RS5:</b> Improve road user behaviour and infrastructure.		
<b>Objective RS6:</b> Ensure that speed limits and travel speeds are appropriate for the safety of road infrastructure.		
<b>Objective RS7:</b> Improve the safety of vehicles on the road.		



Table 3: Summary of Integrated Transport Strategy Objectives (Part 3)

ACCESSIBILITY AND URBAN FORM: URBAN FORM	
<b>Objective UF1:</b> To provide an active vibrant and safe city with a mix of uses.	Supports targets: T1, T2, T3, T4, T5, T10, T12
<b>Objective UF2:</b> Improve the quality of the public realm through provision of a high quality built form.	
<b>Objective UF3:</b> Promote and support initiatives that maximise sustainability and achieve integration of land use and transportation in the proximity, planning and partnership areas. All new development to integrate with the existing and proposed transportation networks to ensure that the use of existing and future infrastructure is used efficiently.	
<b>Objective UF4:</b> Encourage best practice design of new development proposals and redeveloped transport infrastructure proposals.	
<b>Objective UF5:</b> Promote the City of Stirling as an activity centre and continue to propose strategy that supports the transit oriented development objectives promoted in regional planning policy. Create an urban centre that has public transport at the heart of the proposal and has higher density, mixed use, community and residential development located close to train stations or higher frequency/ quality public transport.	
<b>Objective UF6:</b> Plan and provide for a wide range of employment, housing, recreational facilities and open space and facilitate growth in residential, commercial, and retail development at a higher density than currently exists.	
<b>Objective UF7:</b> Maximise essential service infrastructure efficiency and equity and identify projects that maximise population growth.	
<b>Objective UF8:</b> Locate major generators of travel demand in existing centres that have good transport links, either now or in the future.	
ENVIRONMENT	
<b>Objective E1:</b> Minimise the emissions from transportation	Supports targets: T7, T8, T9
<b>Objective E2:</b> Reduce the impact of transport on communities	
<b>Objective E3:</b> Provide quality green spaces	
<b>Objective E4:</b> Protect our natural and built environments and scarce resources	
<b>Objective E5:</b> Protect individuals from unreasonable levels of noise and air pollution	
<b>Objective E6:</b> Create sustainable developments that reduce demand for energy, transport and water	
COMMUNITY WELLBEING	
<b>Objective C1:</b> Promote social inclusion by connecting communities with the services they wish to use on a day-to-day basis	Supports targets: T10, T11, T12, T13
<b>Objective C2:</b> Increase the accessibility to transport facilities for all sectors of the community	
<b>Objective C3:</b> Plan transportation networks and facilities so that those with disabilities are able to access and use the network	
<b>Objective C4:</b> Respond to social changes and optimise the land use and transport conditions that create vibrant, accessible, healthy and adaptable communities	
ECONOMIC HEALTH	
<b>Objective H1:</b> To maximise economic investment and feasibility of projects	Supports targets: T1, T2, T3, T4, T5, T6
<b>Objective H2:</b> To reduce the cost of capital and headwork infrastructure and maximise use of existing infrastructure	
<b>Objective H3:</b> Provide a high capacity communications network	
<b>Objective H4:</b> To provide high levels of diverse local employment	
<b>Objective H5:</b> To promote a strong national economic identity for the city	
<b>Objective H6:</b> Use a transparent system for determining charges for transportation and funding of infrastructure.	
<b>Objective H7:</b> Link investment decisions to the overall plan for integrated transport	
<b>Objective H8:</b> Develop a mechanism to capture value from new development to support the provision of quality transportation infrastructure	
<b>Objective H9:</b> Provide a funding source for alternative transport	

**Figure 2: Stirling City Centre - Walking Action Plan**



*Note: This layout can only be used to illustrate a possible option. The final movement network will be determined in the Public Transport Concept Design and the Traffic Modelling and Assessment process*

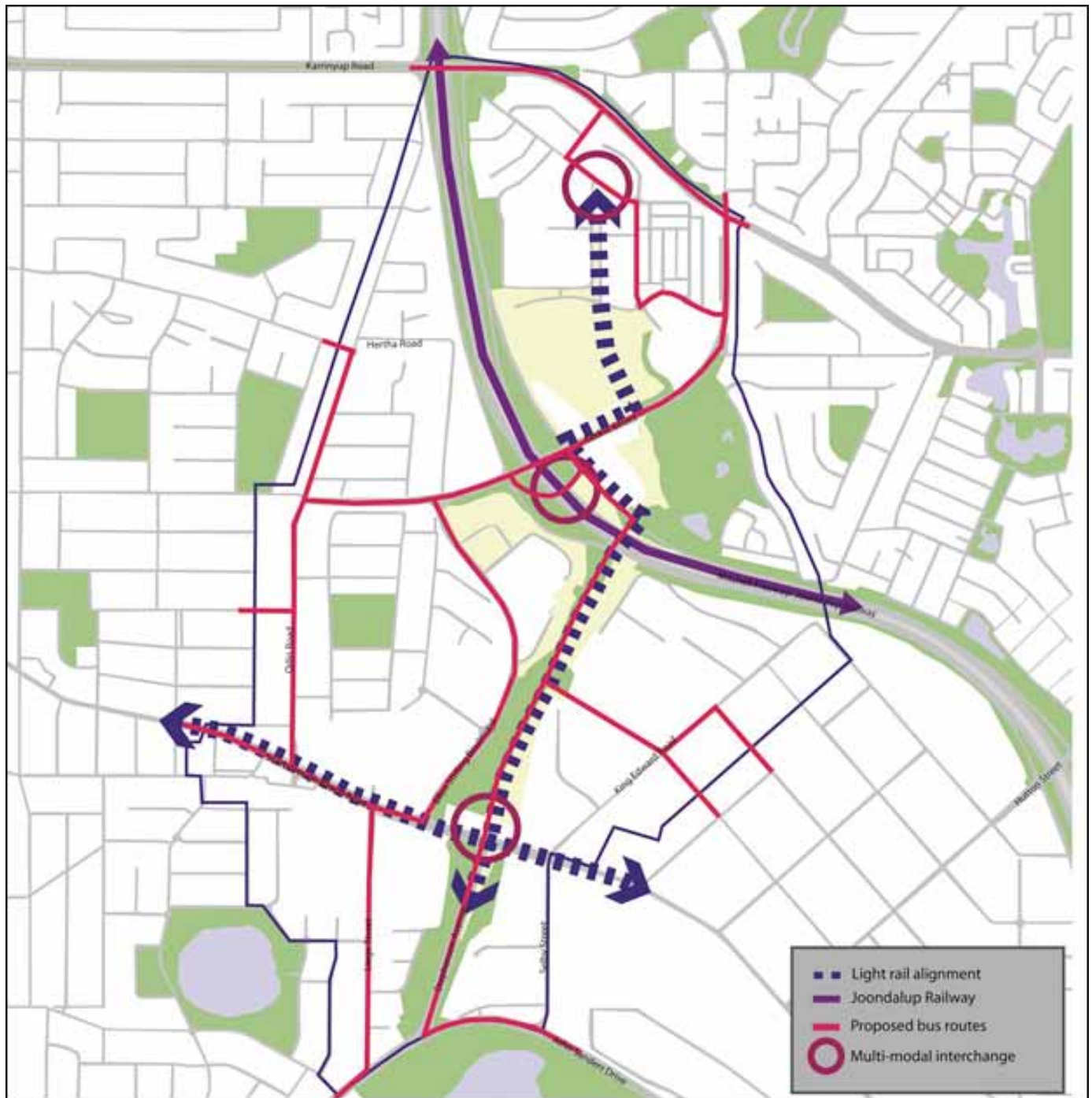
**Figure 3: Stirling City Centre - Cycling Action Plan**



*Note: This layout can only be used to illustrate a possible option. The final movement network will be determined in the Public Transport Concept Design and the Traffic Modelling and Assessment process*

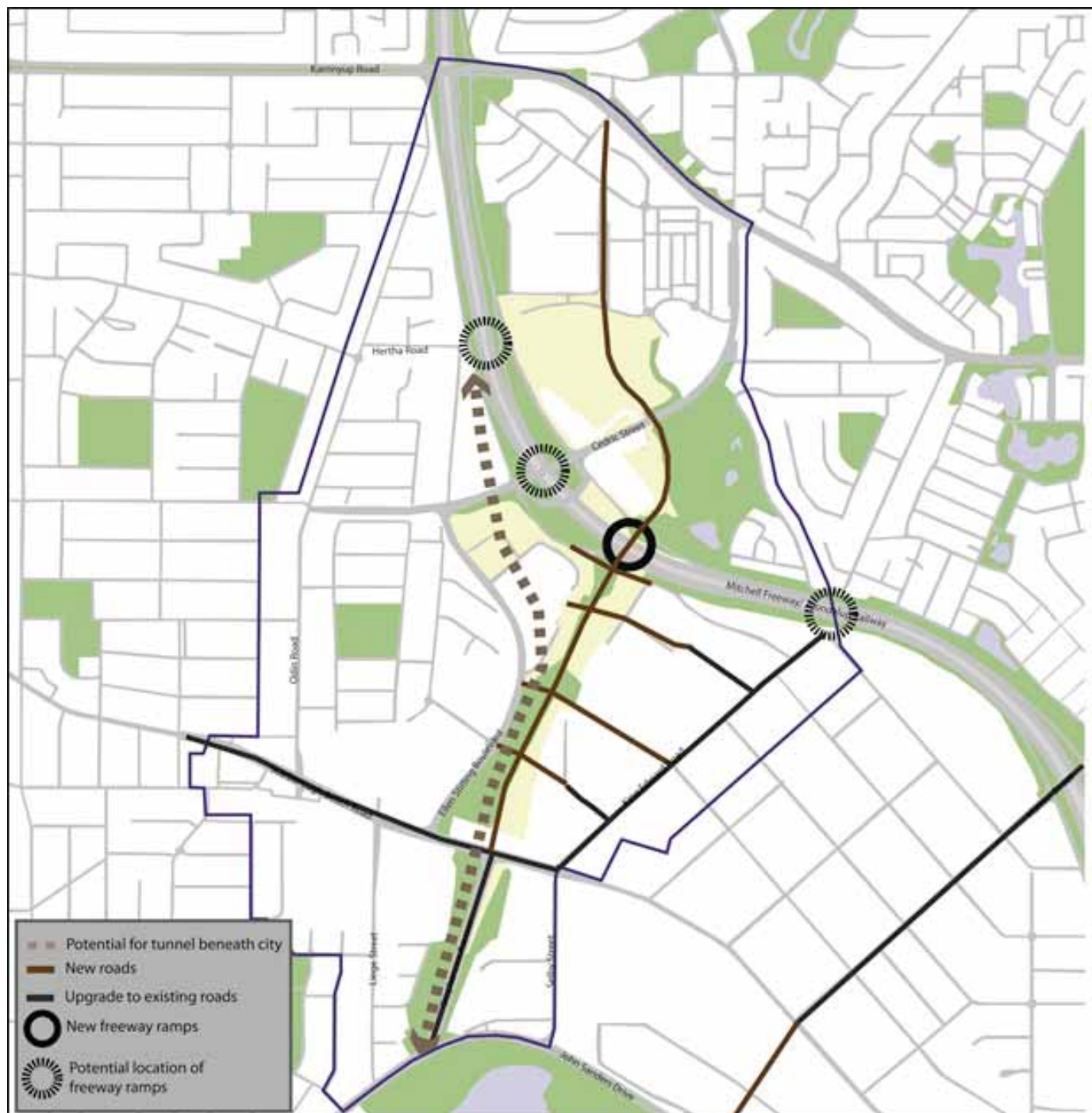


**Figure 4: Stirling City Centre - Public Transport Action Plan**



*Note: This layout can only be used to illustrate a possible option. The final movement network will be determined in the Public Transport Concept Design and the Traffic Modelling and Assessment process*

**Figure 5: Stirling City Centre - Road Action Plan**



*Note: This layout can only be used to illustrate a possible option. The final movement network will be determined in the Public Transport Concept Design and the Traffic Modelling and Assessment process*

## 1.7 Program of infrastructure and development

The pathways to delivery of the objectives of this transport strategy will differ depending on whether the strategy is development or transportation led. A short discussion of these options is included and highlights the issues that the scenarios experience.

It should be noted that funding for the implementation of the transport infrastructure could occur via numerous avenues. At time of publishing, there is no agreed funding model or commitment to funding for this infrastructure.

### 1.7.1 Development led

The development led scenario assumes that the patronage triggers for new public transport infrastructure and changes to parking standards are based on thresholds of road capacity and public transport usage. The modal shares will be influenced by the availability of parking, quality of public transport service, and progress of implementation of other measures within this integrated transport strategy.

The densities, land use and locations would be determined by the market by the emergence of planning applications, and the ability of the road network to accommodate further growth. At the outset, the parking provision at new developments would be based on existing standards. The provision of higher numbers of car parking spaces would result in increased traffic volumes and potentially result in pressure to upgrade roads and intersections to increase capacity. In this scenario the provision of increasing numbers of car parking spaces is driving upwards the need to expand road capacity.

In this scenario, the City would also be able to permit developers to provide on-site parking at the future desired parking ratios and accommodate surplus (in line with parking standards of the time) within offsite parking areas. This would require complex legal agreements to be put in place so that developers would understand the triggers for removal of car parking and be encouraged to implement TravelSmart initiatives to assist with managing down the demand for parking.

The City would need to implement changes in legislation to allow developers the option to provide lower levels of parking without the need to provide cash-in-lieu; the applicant would need to demonstrate the viability of lower levels of car parking. This will require development applications to include a comprehensive transport assessment and applicants would be encouraged to create Travel Plans to promote alternative modes of transport to the private car.

The demand for the public transport upgrades would be triggered by a combination of increasing road traffic congestion and patronage levels on public transport. Patronage thresholds would need to be established at the outset so that the upgrade stimuli are defined and agreed.

The risks with this scenario are:

- developers may be reluctant to develop with the lower onsite parking space provisions and may contest the removal of offsite parking through legal action;
- a significant amount of space would be required for offsite parking – land for this is currently unavailable;
- additional new road space leads to release of latent demand and increased traffic volumes. It would be unpopular to remove road space once it has been constructed;
- ad-hoc road and intersection widening through development applications;
- increased traffic congestion decreases viability and attractiveness of public transport because of delay to vehicles through lack of dedicated infrastructure;
- community backlash over congestion;
- the patronage levels required to trigger the public transport upgrades may not eventuate;
- the patronage levels required to trigger the public transport upgrades may not eventuate because the attractiveness (and therefore potential for mode shift) of buses is not as great as bus rapid transit or light rail; and
- the cost to developers and the City of Stirling to construct and maintain the offsite car parking areas could alternatively have been invested providing the public transport outcome desired by the Stirling Alliance up front.

### 1.7.2 Transport led

The transport led scenario recognises that without viable alternatives it is unreasonable to expect individuals to travel by modes other than private car, and for developers to construct at higher densities with lower levels of on-site parking. The quality of the public realm and multi-modal access is essential to encouraging development that meets the aspirations of the city, private cars are accommodated but do not dominate the streetscape.

The transport led scenario provides light rail infrastructure at the outset and requires initiatives that promote more sustainable modes to the top of the mode hierarchy. Essentially, the transport led scenario requires upfront investment in infrastructure, with costs being recouped through value capture mechanisms.

Improved public transport, walking and cycling facilities would act as a catalyst for redevelopment of existing sites to provide mixed use in the city at higher densities and with lower parking space provision per square metre. This scenario would channel funding directly into public transport, walking and cycling facilities rather than through a two stage process where investment is initially required to construct temporary car parking areas and road infrastructure (widening and intersection capacity upgrades).



The City would need to implement changes in legislation to allow developers to construct lower levels of parking without the need for cash-in-lieu, and require transport assessments to be submitted as part of development applications. The transport led scenario reverses the relationship between available road capacity and number of parking spaces with the capacity dictating the number of spaces.

The strategy requires the supporting multi-modal infrastructure to be implemented to reduce the need to travel by car. As with the development led scenario, the absence of new transport infrastructure could constrain growth in development.

The risks with this scenario are:

- be that upfront funding or value capture mechanisms may not possible;
- developers may not come forward to regenerate the city (although it is understood there is demand for development in the city);
- the light rail/ bus service requirements are diluted and a sub-optimal solution is implemented;
- patronage forecasts are not accurate and are an over-estimate;
- other multi-modal infrastructure does not eventuate and therefore access to, from and in the City by walking, cycling and public transport is compromised.

### 1.7.3 Preferred Scenario

The transport led scenario is preferred by the Stirling Alliance. It is suggested that further qualitative 'path analysis' is undertaken to understand the evolution and impacts of the City under the two scenarios because the actions in support of one mode will affect the others – diversity of access is fundamental to the development of the area.

## 1.8 Funding mechanisms

The potential funding mechanisms for the provision of the transportation infrastructure outlined in this integrated transport strategy are:

- Infrastructure Australia
- City of Stirling funding
- Cash-in-lieu/ developer contributions to infrastructure
- Parking levy
- Land/ asset sales and value capture
- Public Private Partnerships

## 1.9 Legislation requirements/ changes

The initiatives included in this integrated transport strategy and wider development aspirations require a change in existing legislation at both local and state levels, including:

- Change to infrastructure and development approvals process via the City of Stirling Improvement Scheme
- Application of the projects development and implementation process to deliver projects that address the key reporting areas and are measurable against the performance framework's key performance indicators
- Require multi-modal transport assessments, statements and travel smart action plans (travel plans) to be submitted for all developments.
- Refine local planning strategy/ scheme to allow developers to offset car parking provision using one or a combination of: cash-in-lieu, offsite car parking, promotion of and/ or funding for alternative modes of transport infrastructure, providing a robust and evidence based transport assessment and travel plan are submitted with the development application.
- Change the car parking standards for development in the local planning strategy/ scheme. Liaise with the state departments to ensure major activity centre parking standards are consistent. Ensure that an appropriate buffer zone is included in the strategy to minimise overspill parking in areas surrounding zones that have more stringent car parking standards.
- Develop a value capture mechanism for existing and future development.
- Develop a methodology for achieving developer contributions towards improving transport provision. Align this with the transport assessment and travel plan process to allow understanding of the transport impact of a development, and therefore calculation of an appropriate contribution.

## 1.10 Measuring progress

The Stirling City Centre Alliance has developed a performance framework (Performance Framework, Key Performance Areas and Key Performance Indicators, November 2010) to monitor the progress of projects and strategy against the key performance indicators and areas of strategic focus.

## 2. Introduction

### 2.1 Overview

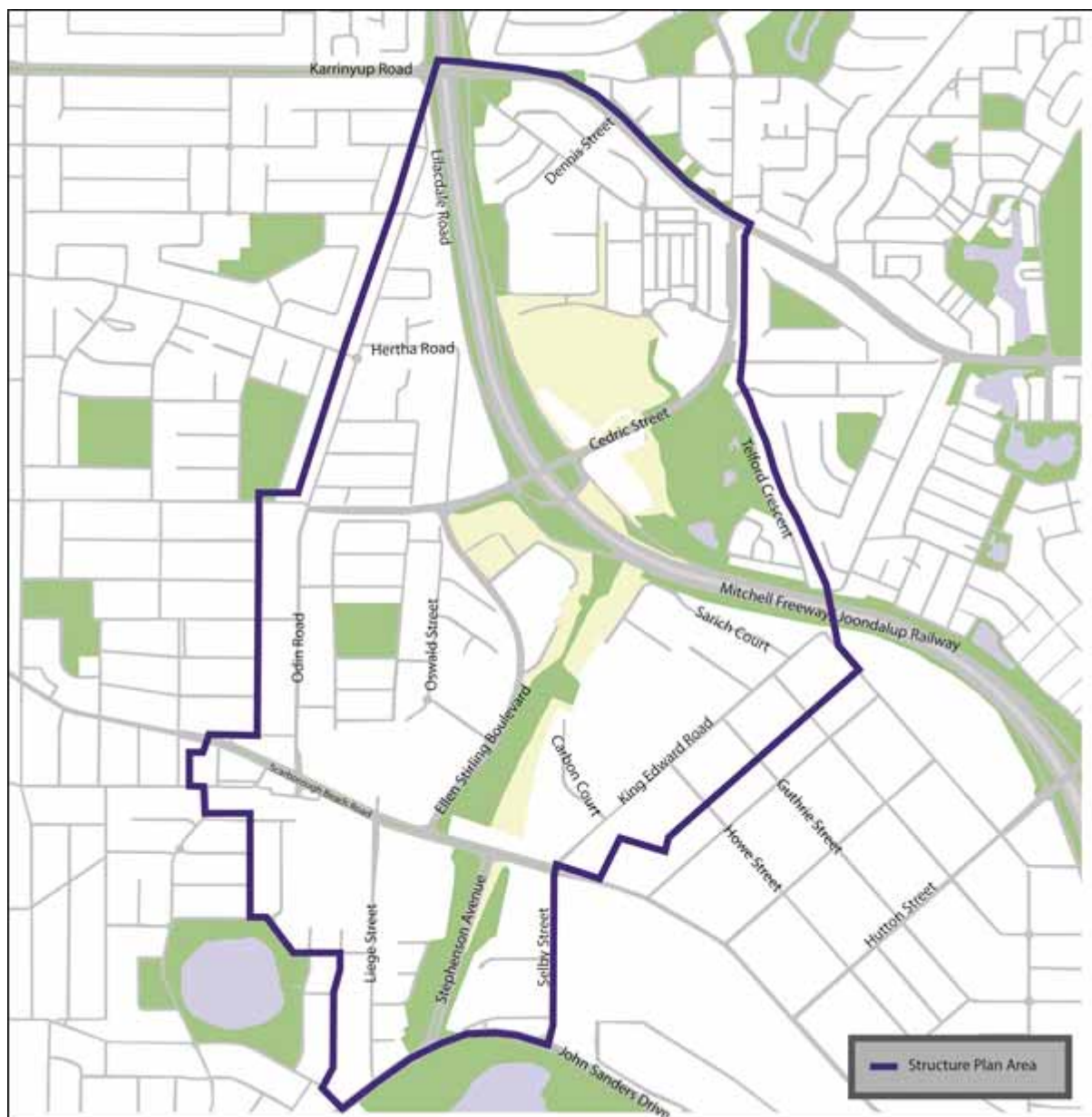
GHD has been commissioned by the Stirling City Centre Alliance to develop an integrated transport strategy for the proposed redevelopment of the city. Integrated transport planning must be a holistic approach that considers transportation, land use, and other external planning factors that relate to social inclusion, environment and health. This strategy collates the significant amount of consultation and strategy development that has been completed to date. The area covered by this strategy corresponds to the structure plan area, as shown in Figure 6.

The planning and provision of an integrated and sustainable transport system must consider the needs of the community and align with the policy agendas at national, state and local government level, and other relevant plans, strategies and aspirations.

This integrated transport strategy sets out the vision, masterplan and approach the Stirling City Centre Alliance has adopted for the delivery of an integrated transport network that facilitates the growth desired by both the City of Stirling and the targets included in the regional strategy: Directions 2031.

The objectives and action plans in this strategy align with national and regional policy, and plans are set out by mode and by precinct. The precinct action plans include overarching design principles and guidance that new developments are required to meet. It is considered that this will provide consistency in the design of the urban environment and certainty to developers. The guidance, or area action plans, are written to inform the road, pedestrian, cycle, public transport and car parking requirements for each precinct. An indicative program and timing for infrastructure, and the monitoring of the strategy are also discussed.

**Figure 6: Integrated Transport Strategy Area**



## 2.2 Purpose of the Integrated Transport Strategy

The primary purpose of this integrated transport strategy is to present an action plan that will facilitate growth in development in the city, based on the improvement to the provision of infrastructure that supports more sustainable modes of transport. This strategy will outline the following:

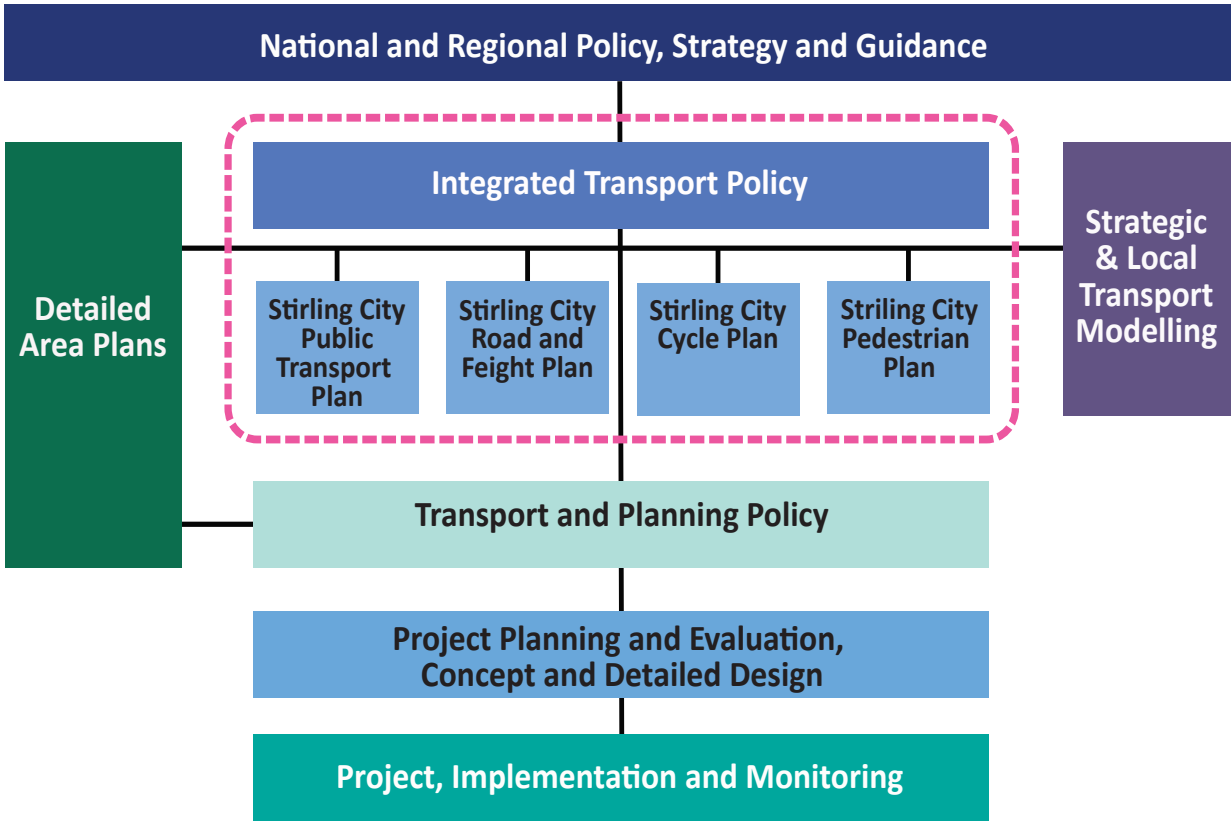
- The vision and approach adopted by the Stirling City Centre Alliance for the delivery of an integrated land use – transportation system.
- How the components of an integrated transport strategy align with local, regional and national policy so that stakeholders can gain confidence that the objectives and components in the action plans meet the requirements within policy at all levels.
- The issues and needs (or problems and opportunities) that the integrated transport strategy should address. This is structured so that the requirements of an Infrastructure Australia funding bid submission can be easily extracted.
- The objectives and action plans in the strategy that support the delivery of the areas of strategic focus in the Stirling City Alliance Performance Framework.

- The precinct by precinct area action plans.
- The program of infrastructure and redevelopment so that there is coordination of the transportation initiatives, planning and capital works, with the strategic development of land uses within the city.
- The techniques and key performance indicators that allow the strategy progress to be measured so that the strategy can evolve to build on the achievements.

## 2.3 The Integrated Transport Strategy in Context

This integrated transport strategy has been developed to draw together the different aspects of planning and strategy development to date. The integrated transport strategy and supporting documents will be used to define policy and guide detailed and conceptual design. The context for this integrated transport strategy is illustrated in Figure 7.

Figure 7: Context of the Integrated Transport Strategy



## 2.4 Inputs to an Integrated Transport Strategy

An integrated transport strategy must therefore include multiple mode-specific components of a transport system, consideration of other planning issues, and the phasing, timing and implementation methods for the strategy proposals. This integrated transport strategy sets out the policies and sub-strategies that have been developed to date and the gaps that need to be filled as part of ongoing strategy development and refinement. The strategy is considered to be a 'living' document that sets the framework for delivery of the vision for transportation in the City of Stirling.

The inputs to the integrated transport strategy should therefore be reviewed and extend across transportation, land use, and other social and environmental issues. The inputs to an integrated transportation strategy are shown in Figure 8.

## 2.5 Facets of an Integrated Transport System

The factors that influence the integration of a transport system must be considered in the development of an integrated transport strategy. Transport planning must consider the local and regional components and understanding of the factors that influence the quality and level of integration.

There are nine components to integrated transport that relate to proximity, partnership (or collaboration), and planning (in terms of individual journey planning). Figure 9 shows the components for the delivery of an integrated land-use/transportation system. The objectives and action plan measures should support the delivery of an integrated transport system and therefore meet the regional and national objectives for transportation.

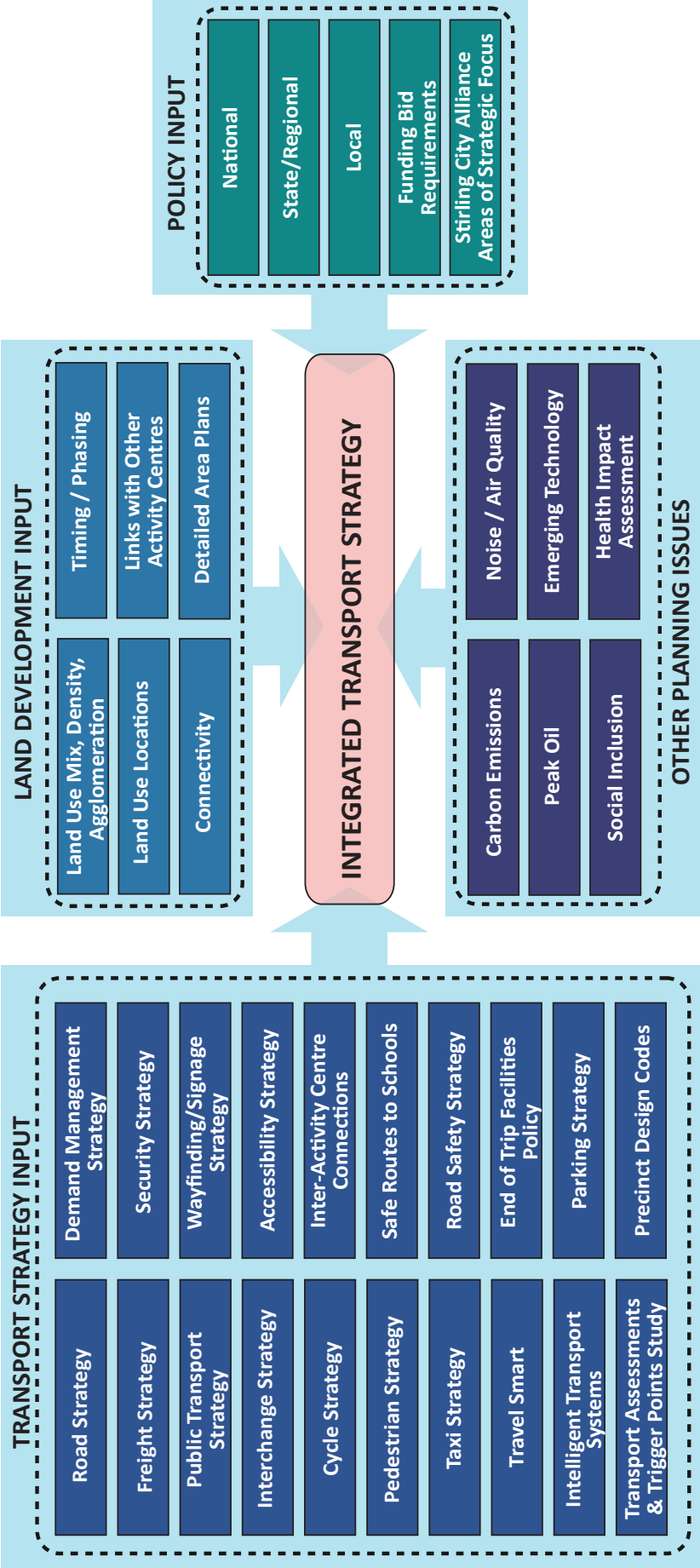
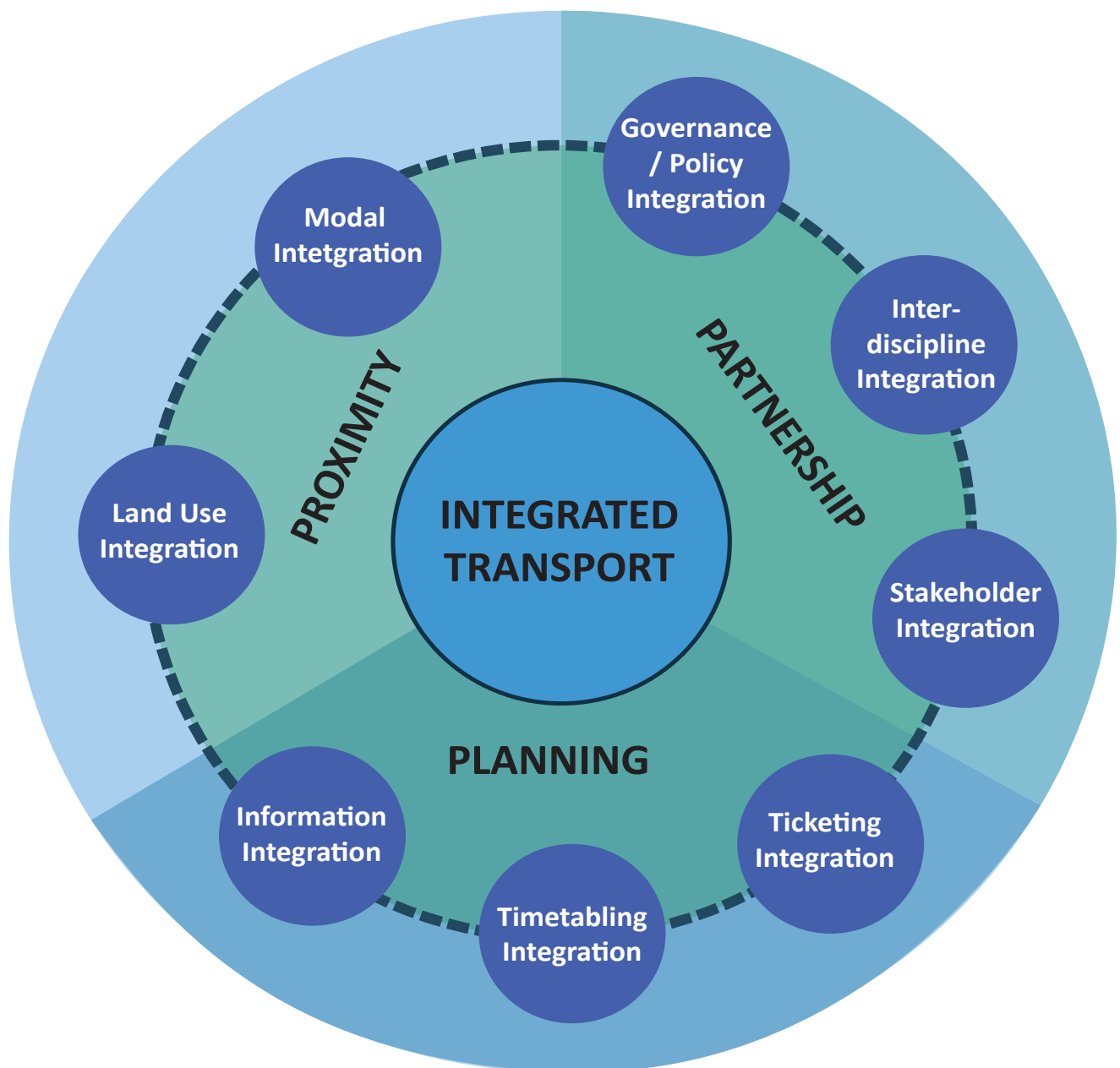


Figure 8: Inputs to the Integrated Transport Strategy



*Figure 9: Components of Integrated Transport*



### **2.5.1 Land use integration**

Land use integration can be referred to as ‘horizontal integration’ and is considered to be how land uses, facilities and transportation interact to provide a system that allows all sectors of community the opportunity to access services they require. This requires planning of both the activity centres and local centres in a coordinated manner so that transportation connections are provided with the critical development mass to allow them to be sustainable. Overarching objectives of land use integration are:

- Locate major generators of travel demand in existing centres that have good transport links
- Promote residential development in areas that have a variety of good transport links
- Provide and enhance transport infrastructure in a manner consistent with land use objectives

Land use and transport integration is fundamental to the Stirling City Centre Alliance vision and the two are connected where one supports the other. Studies undertaken to date and market research suggest that the full development aspiration, mode share targets, and car parking targets of the city are dependent upon provision of a light rail system.

### **2.5.2 Modal integration**

Locational integration is considered to be the local links and connections on a micro-scale e.g. the interchange between bus and rail, light rail and walk to destination etc. Locational integration is guided by the design of spaces used for interchange and movement and the development of options for travel between trip origin and destinations. This is a critical part of understanding and ensuring movement to/ from and within Stirling Railway Station, and the proposed light rail and bus interchanges. Analysis of these interactions and barriers is required for the integrated transport strategy.

### **2.5.3 Governance/ policy integration**

Governance/ policy integration can be referred to as ‘vertical integration’ and is the synergy and consistency of policy and strategy between different levels of government so that the approach is coordinated and has mutual support. The integrated transport strategy must therefore align with the national, regional and local transportation and planning objectives of policy released by the national and regional stakeholders. This is important for the city centre in three ways:

1. The KRA/ KPI’s should align with national and regional policy.
2. The other activity centres in the wider Perth area must adhere to the same parking, planning and transportation requirements (a metropolitan activity centre parking strategy is currently being developed).
3. Parking charges and management mechanisms must be consistent across the activity centres to ensure that the city is not perceived by developers as an area that is more challenging/ less beneficial to develop in. The cycle parking standard must be set to allow target mode shares to be achieved.

### **2.5.4 Stakeholder integration**

The key stakeholders have different opinions and priorities for the transportation and land use infrastructure requirements. Achieving alignment among stakeholders (Main Roads WA (MRWA), Public Transport Authority (PTA), Department of Planning (DOP), City of Stirling, Department of Transport (DOT)) is important as part of the development of an integrated transport strategy that will achieve support. The Stirling City Centre Alliance board and integrated transport strategy working group comprises members from these organisations. Community consultation and engagement with local interest groups is also important.

### **2.5.5 Ticketing/ pricing integration**

Ticketing and pricing structures need to be coordinated to assist with integrating transportation and development. Transperth operate the public transport network pricing on a zone-by-zone basis and utilise a smart card payment system called SmartRider.

The SmartRider system is setup to allow users to tag-on and tag-off of public transport services and calculates the most cost efficient fare for the user. The SmartRider system allows users to pre-pay or voluntarily sign up for automatic top ups. This allows users to avoid the perceived inconvenience of physically handling a transaction each time they make a public transport journey. It also has the benefit of allowing the user the comfort that as the fare calculated is the most cost efficient, they can travel anywhere on the system in the knowledge that they are getting the best value for money.

Car drivers often do not consider the full cost of a trip at the outset because refuelling happens as/ when required rather than at the start of the journey, and the per kilometre cost allocated because of depreciation to the value of the vehicle, insurance and tax costs etc are not distributed onto each journey by the individual. Therefore the SmartRider pre-paid smartcard system is closer to replicating the decision that a car driver makes when making a journey i.e. the public transport fare/ petrol/ other vehicle costs have already been paid so the trip mode decision is based on time/ convenience.

### **2.5.6 Timetabling integration**

Timetabling integration is another facet of multi-modal interchange that is focused on the connectivity of services based on their timetabling, the desire to reduce waiting times for people using the transport network, and the creation of a seamless journey. The coordination of timetables is within the jurisdiction of the PTA.

### **2.5.7 Information integration**

Information integration relates to the provision and ability to access information on multi-modal transport. The emergence of smart phones, real time passenger information, live transport updates, websites dedicated to journey planning etc has improved the amount of information available to users. Integration of these systems is considered to be an important component of any integrated transport strategy because users are able to reduce time spent travelling and make more informed travel decisions.

### **2.5.8 Inter-discipline integration**

Inter-discipline/ planning integration relates to how 'experts' from different professions coordinate their approaches to deliver an integrated output. This is considered to be an important component of successful placemaking.

### 3. Background

Integrated transportation strategy is an essential component of the planning of functional and attractive urban centres that stimulate development and economic growth. This integrated transport strategy will consolidate a significant volume of analysis and existing single mode transport strategy into a holistic transportation plan that facilitates the creation of an equitable and sustainable world class urban centre, which contributes to the growth of the local, regional and national economy.

The city is formally acknowledged as an important activity centre in the state planning policy Directions 2031. Stirling, along with the other activity centres, is seen as an important hub for development. The principles of transit oriented development and location of business are fundamental in delivering a more sustainable urban form for the wider Perth area.

Key factors that have led to the existing land uses and development density in Stirling are the connections to strategic road links and the close proximity to the centre of Perth. The Mitchell Freeway provides an important north-south road link that provides access to other strategic roads, including: Kwinana Freeway, Graham Farmer Freeway, and Reid Highway. This has promoted growth in the area and led to a diverse mix of retail and commercial uses. However, this connectivity and land use mix has resulted in a car-centric focus to the existing Stirling centre.

If the same rationale continues to be adopted the future development growth would be constrained in both type and density, and the streetscape will be dominated by private cars. This will not deliver the aspirations of the Stirling City Centre Alliance or the growth targets and type in Directions 2031. The City of Stirling currently has development restrictions in place purely to manage the growth in car parking provision and the subsequent traffic growth. Movement towards higher density development will require a significant change in mindset to promote walking, cycling, and public transport to the top of the mode hierarchy.

The Draft Stirling City Centre Structure Plan (July 2011) provides a summary of the population and employment growth targets for the city. The population of the City of Stirling as a whole has grown annually at a rate of 2% per annum since 2006, typically through either infill development or new development north of the railway.

The commercial development of the City of Stirling's new central business district is considered critical to the development of a 24 hour economy that provides a proportion of the employment required to meet the needs of the forecast population growth in Perth and Peel. Areas around the City of Stirling (most notably Herdsman Business Park) have begun to develop a significant commercial office function, catering for larger format commercial office buildings. The emergence of these developments demonstrates an appetite to develop at higher densities in the City of Stirling and that there is a demand for expansion of this area.

**Figure 10: Activity Centre Hierarchy**



Source: Direction 2031

Analysis by Pracsys indicates that the area in and around Stirling has evolved from general retail and light industry to become a major convenience and comparison retail centre, with the retail in Osborne Park having a metropolitan wide catchment. The future development will require an increase in retail development, potentially through the expansion of the Westfield Shopping Centre.

The 2001 and 2006 census data published by the Australian Bureau of Statistics (ABS) provides information on travel to work behaviour for the City of Stirling. The trends for car dependence and lower levels of use of more sustainable modes are also reflected across the majority of the rest of Perth.

The 2001 census showed high proportions of people travelling by car, with 85%, 84% and 68% to Osborne Park, Herdsman and Stirling regional centre respectively. The 2006 census shows that 78% of travel to work trips to Stirling (wider area) are made by car; 4% of these are as car passengers. The 2011 census is due to be released in winter 2012 and therefore this should be interrogated to understand the current travel and transportation trends.

A study\* undertaken for the Stirling City Centre Alliance suggests that 80% of trips are currently made by car, with 58% as car drivers. This decrease in car driver mode share has been driven by multiple factors.

The construction and opening of the northern rail line and increased bus provision at the rail-bus transport interchange has increased the number of people travelling by these modes, resulting in a greater awareness of the benefits of walking, cycling, and public transport in both state agencies and the general public. This is emphasised by the Metropolitan Regional Scheme (MRS) amendment to the Stephenson Highway reserve to change some of the historic designations in the 1956 Interim Development Order.

The success of the northern rail line, and other rail infrastructure throughout Perth, has generated interest in developing further public transport corridors that facilitate both travel by this mode, and increased density of development within the catchment area of these services. The intensification of land uses at activity centres should relieve the current pressure placed on Perth's radial dominated rail system by creating more multi-direction travel movements. However, attention should also be given to the development along the corridors.

The Stirling City Centre Alliance consider public transport as pivotal in the creation of a high quality, and higher density development for the wider Perth area. Strategies to improve access to Stirling and Glendalough Rail Stations and provision of a light rail based system are core projects if the city is to realise its full potential and the growth aspirations and objectives of Directions 2031 are to be delivered.

There are quick and direct multi-modal connections between Stirling, Joondalup and Perth that provide alternative options to the private car for travel between these locations. However, the public transport and cycle connections to other regional important centres e.g. Morley, Midland and Fremantle are less direct or non-existent. The strategic connections are also an important consideration for the wider planning of Perth.

A significant amount of strategy development, consultation and stakeholder discussions have been undertaken to date. An integrated transport strategy is therefore required to collate these into a single coherent strategy.

\* Herdsman Business Park and Glendalough Station Transport Strategy (1st October 2010)

## 4. Vision and Approach

### 4.1 Introduction

This integrated transport strategy sets the objectives and actions for delivery of the vision of the Stirling City Centre Alliance and demonstrates how this aligns with regional and national objectives for transport, land use and evolution of urban, city centre, environments in Australia so that they contribute towards the prosperity of the national and regional economies. The Stirling City Centre Alliance is exploring an innovative redevelopment funding model that could be applied to other activity centres in Perth and other Australian cities.

In 2003 the Western Australian Planning Commission acknowledged that transportation is a derived demand that is driven by the need for people to get from one place, where they do something, to another place where they do something else – essentially there is almost always a purpose to the trip. Integrated transport must observe this principle and reflect the fact that travel is associated with land uses and the proximity, mix and density will affect individuals' travel choices.

An integrated transport strategy is required because a 'business as usual' approach to transportation infrastructure provision will only deliver the land use and population targets of both the city and Directions 2031 through continued urban sprawl. The delivery of transit oriented developments and increased density in activity centres requires an approach that promotes walking, cycling and public transport to the top of the mode hierarchy and locates day-to-day services in the catchment of a greater number of people.

Increased traffic congestion will impact on a business' ability to operate and the increased costs due to delay and higher fuel consumption will affect profitability or be passed onto the consumer. Staff will also be subject to ever increasing delays because of congestion on the road and rail networks, this will reduce the time individuals will have for recreational and social use.

Increased traffic congestion also has implications for air quality and noise generated from traffic. Slower, stop-start, traffic flow uses more fuel and causes increased traffic noise from vehicle braking and accelerating. This has local implications for the location and design of new developments.

This chapter sets out the longer term vision for the city and defines the underlying approach to the development of an integrated transport strategy which is consistent in this vision and supports the local and state planning objectives.

### 4.2 Overarching Vision

The vision of the City of Stirling is underpinned by the Stirling City Alliance Performance Framework. This sets out the Key Result Areas (KRA's) and Key Performance Indicators (KPI's) that strategy and policy development should support.

The Performance Framework has been set up to support the objectives in Directions 2031 (Liveable, Prosperous, Equitable, Accessible, Green, and Responsible) and delivery of the vision of "By 2031, Perth and Peel people will have created a world class liveable city; green, vibrant, more compact and accessible with a unique sense of place." The vision promoted by the Stirling City Alliance is to:

***"Create Stirling as a sustainable 21st century city – a place for everyone. It will be a hub for a diverse and prosperous community offering wellbeing for all."***

The overarching principles and key drivers that inform the vision of this integrated transport strategy are for an accessible, equitable, safe and sustainable transport system that integrates with development and maximises the opportunities available to allow both individuals and businesses to flourish.

Individuals should be able to travel safely and comfortably to services that are both local and beyond the city. Employers and businesses should be able to enjoy a system that provides good access for their workforce, freight and support services.

The carbon agenda is at the forefront of planning and development and transportation currently accounts for between 20% and 25% of carbon emissions globally. The City of Stirling has prepared a peak oil strategy to plan for the reduction in global access to cheaper oil supplies.

### 4.3 Long Term Transport Vision

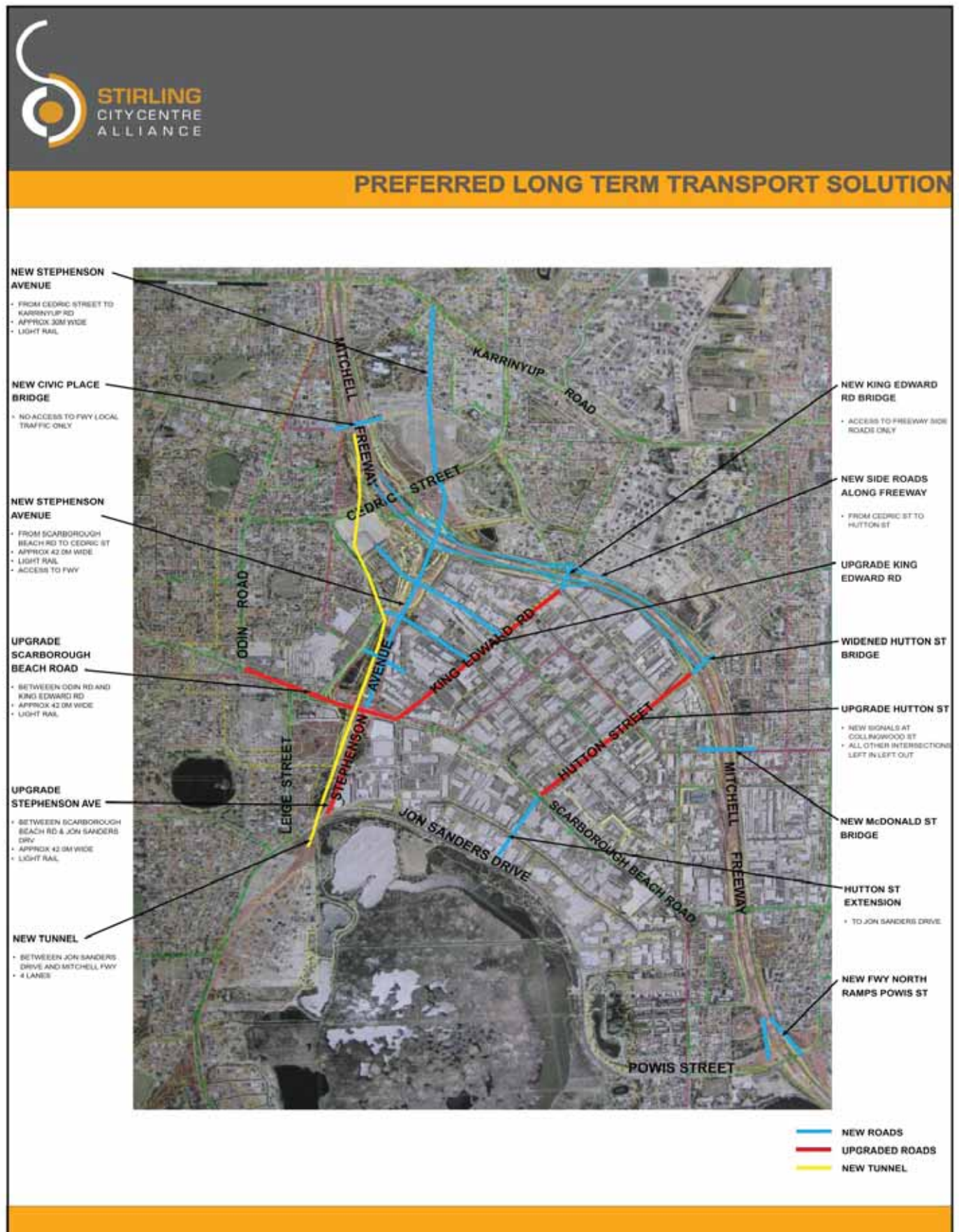
A long term transport vision has been developed in consultation with stakeholders and the community. A workshop was held in February 2009 to agree a long term transport planning and land use solution for the area. This was the culmination of six months' work into the transport options. The principles proposed and agreed as part of this workshop included: ensuring optimal use of existing infrastructure; adopt a 'provide what is reasonable on a needs and opportunity basis' approach; promote a grid network that has multiple movement opportunities; promote non-motorised modes and public transport in the mode hierarchy; and provide a safe network. The findings of this workshop were summarised into an agreed vision for the city. The long term vision is shown in Figure 11.

Subsequent to this more traffic modelling has occurred and alternative transport networks are also being considered. This will be further refined in the Public Transport Concept Design and future Road Traffic Modelling and analyses processes.



**Figure 11: Long Term Transport Vision (2009)**

This solution illustrates one possible option. The arrangements to be adopted will be determined in the Public Transport Concept Design and Road Traffic Modelling and Analysis process.



## 4.4 Approach

This section of the report provides an overview of the approach, and the national and regional context, and the local areas of strategic focus. The objectives, action plans, performance measuring and monitoring are included in subsequent sections. Figure 12 sets out the approach adopted and demonstrates that there is an iterative process to integrated transport planning.

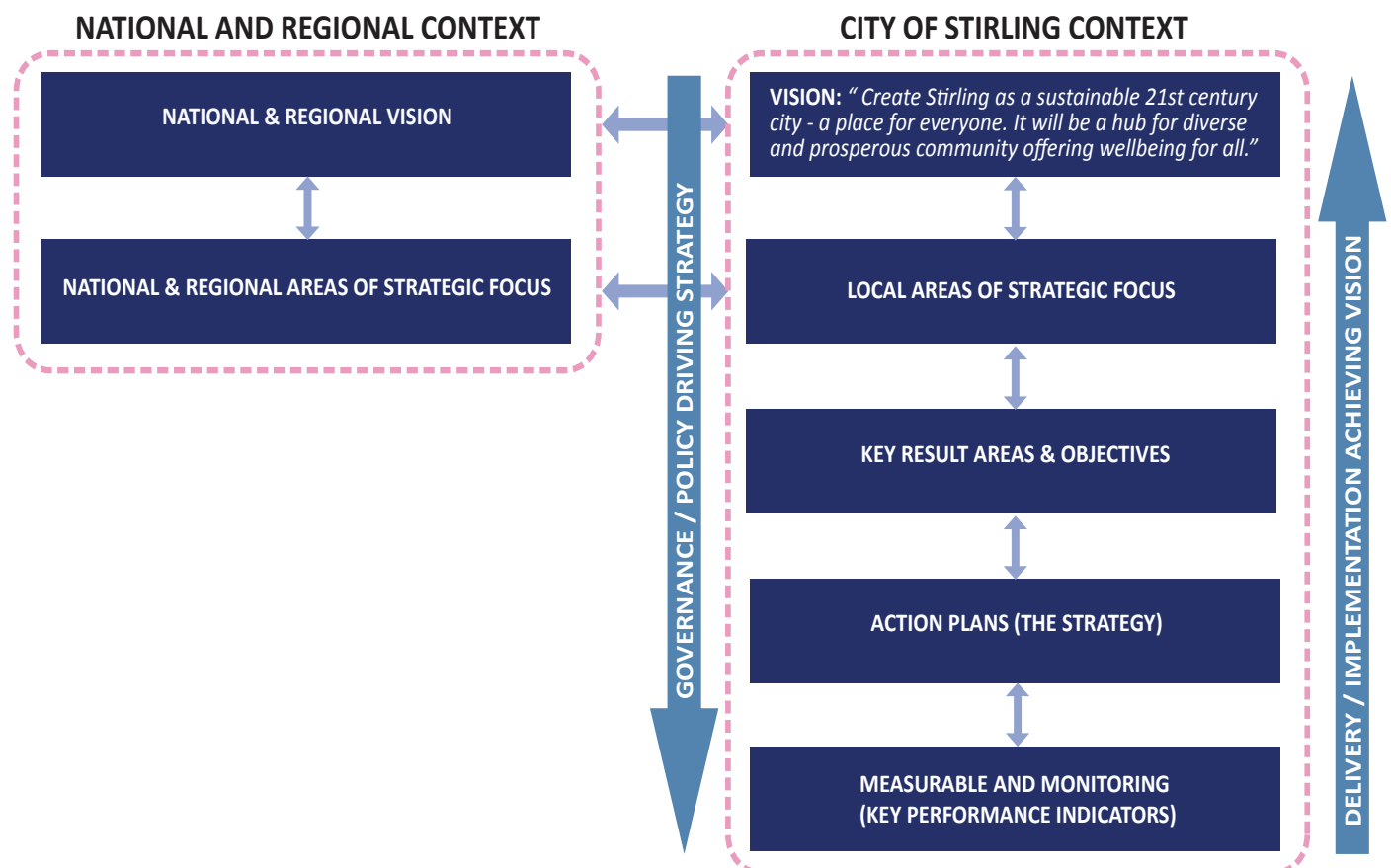
### 4.4.1 National and Regional Context: Strategy, Guidance and Areas of Strategic Focus

The national level of government has multiple departments including Commonwealth Department of Infrastructure and Transport, and Infrastructure Australia. The Council of Australian Governments and the aforementioned departments have interests in the promotion of sustainable, safe, efficient, competitive, and secure transport system. A role of the Commonwealth Department of Infrastructure and Transport is to assist the government to promote, evaluate, plan and invest in infrastructure.

In December 2009, the Council of Australian Governments (COAG) agreed to set criteria for future strategic planning of Australia's capital cities, including:

- Capital city planning systems must be integrated across functions (land use, transport planning, economic, infrastructure development, environmental assessment, urban development)
- Integration must also occur across government agencies
- The COAG agreed on 1 January 2012 that all state governments have plans in place that meet the objective to integrate functions and governance and the federal government would link future infrastructure funding decisions to achieving these criteria. The national objectives and requirements for transportation that are most relevant to this integrated transport strategy are:
- National Charter for Integrated Land Use and Transport Planning
- Australian Transport Council policy directions
- Infrastructure Australia policy directions (including Our Cities, Our Future)
- National Guidelines for Transport System Management in Australia
- National Road Safety Strategy 2011 to 2020
- Australian Local Government Association policy direction
- Australian National Cycling Strategy 2011 to 2016

Figure 12: Overview of the Approach





- Our Cities, Our Future – A National Urban Policy for a Productive, Sustainable and Liveable Future 2011
- National Disability Strategy (2010 to 2020) and Disability Discrimination Act 1992

The regional context is considered to be strategy that covers the wider Western Australia state area, and the wider Perth and Peel region. The concept of providing activity centres which are highly accessible by public transport is one that is accepted in emerging planning and transportation policies and strategies.

The following Western Australia State Government agencies have an interest in integrated transport planning:

- Department of Transport
- Main Roads WA
- Public Transport Authority
- Department of State Development
- Road Safety Council
- Department of Planning
- Western Australia Planning Commission

These agencies have developed state level policies that relate to integrated transport strategy and planning, including:

- Metropolitan Transport Strategy 1995-2029 (Department of Transport, 1995) [Draft 2012]
- State Planning Strategy (currently under review)
- State Sustainability Strategy (State government, 2003)
- Directions 2031 and Beyond (Western Australian Planning Commission, 2006)
- WA Public Transport Masterplan (Draft for Consultation, July 2011)
- WA Bicycle Network Plan 2012-2021 (Draft for Consultation, March 2012)
- State Planning Policy 4.2 Activity Centres for Perth and Peel (Western Australia Planning Commission, 2010)
- Central Metropolitan Perth Sub-regional Strategy (Western Australia Planning Commission, 2010)
- Towards Zero, road safety strategy for 2008 to 2020 (Road Safety Council, 2009)
- State Planning Policy 3 – Urban Growth and Settlement

- State Planning Policy 5.4 – Road and Rail Transport Noise and Freight Considerations in Land Use Planning
- Liveable Neighbourhoods
- Development Control Policy 1.5: Bicycle Planning
- Development Control Policy 1.6: Planning to Support Transit Use and Transit Oriented Development
- State and Metropolitan Strategic Transport Plans (currently being developed)
- State Congestion Management Strategy (currently being developed)
- Parking Strategy for Metropolitan Centres (currently being developed)
- The objectives of national and regional strategy should be aligned and subsequently this integrated transport strategy should deliver and support these. Table 4 sets out the high level areas of strategic focus and where these occur in national and regional policy; the policies currently being developed are omitted from this summary.

## 4.5 Local Areas of Strategic Focus

The vision is supported by the local areas of strategic focus in the Stirling City Alliance Performance Framework, including:

- Governance
- Accessibility and Urban Form
- Environmental Health
- Community Wellbeing
- Economic Health

The vision and areas of strategic focus have implications for stakeholders, local businesses and community groups. The Stirling City Centre Alliance has engaged with the community and stakeholders throughout the planning to date and the vision and areas of strategic focus align with the regional and national objectives for transport, development and planning (see Table 5). These objectives are common themes in transportation and development planning globally.

The integrated transport strategy should therefore promote objectives and initiatives that support the local, regional and national agenda.

**Table 4: National and Regional Aims and Policy Reference**

AREAS OF STRATEGIC FOCUS	NATIONAL REFERENCE	REGIONAL REFERENCE	
Productivity, Prosperous, Efficient, Competitive, Reliable, Economic, Transparent	<ul style="list-style-type: none"> <li>• Our Cities, Our Future – A National Urban Policy</li> <li>• National Charter of Integrated Land Use and Transport Planning</li> </ul>	<ul style="list-style-type: none"> <li>• Directions 2031</li> <li>• Metropolitan Transport Strategy 1995-2029</li> <li>• State Sustainability Strategy</li> <li>• WA Public Transport Masterplan</li> <li>• Central Metropolitan Perth Sub-regional Strategy</li> </ul>	<ul style="list-style-type: none"> <li>• State Planning Policy 4.2 – Activity Centres for Perth and Peel</li> <li>• State Planning Policy 5.4 – Road and Rail Transport Noise and Freight Considerations in Land Use Planning</li> <li>• Liveable Neighbourhoods</li> <li>• Development Control Policy 1.6 – Planning to Support Transit Use and Transit Oriented Development</li> </ul>
Liveable, Safe and Secure, Accessible	<ul style="list-style-type: none"> <li>• Our Cities, Our Future – A National Urban Policy</li> <li>• National Charter of Integrated Land Use and Transport Planning</li> <li>• National Road Safety Strategy 2011-2020</li> <li>• Australian National Cycling Strategy 2011-2016</li> </ul>	<ul style="list-style-type: none"> <li>• Directions 2031</li> <li>• Metropolitan Transport Strategy 1995-2029</li> <li>• WA Public Transport Masterplan</li> <li>• State Planning Policy 4.2 – Activity Centres for Perth and Peel</li> <li>• Central Metropolitan Perth Sub-regional Strategy</li> </ul>	<ul style="list-style-type: none"> <li>• Towards Zero, Road Safety Strategy for 2008 to 2020</li> <li>• Liveable Neighbourhoods</li> <li>• Development Control Policy 1.5 – Bicycle Planning</li> <li>• Development Control Policy 1.6 – Planning to Support Transit Use and Transit Oriented Development</li> <li>• WA Bicycle Network Plan 2012-2021</li> </ul>
Environment, Sustainable and Robust, Responsible	<ul style="list-style-type: none"> <li>• National Charter of Integrated Land Use and Transport Planning</li> <li>• Our Cities, Our Future – A National Urban Policy</li> </ul>	<ul style="list-style-type: none"> <li>• Directions 2031</li> <li>• Metropolitan Transport Strategy 1995-2029</li> <li>• State Sustainability Strategy</li> <li>• WA Public Transport Masterplan</li> <li>• State Planning Policy 4.2 – Activity Centres for Perth and Peel</li> <li>• Central Metropolitan Perth Sub-regional Strategy</li> </ul>	<ul style="list-style-type: none"> <li>• State Planning Policy 3 – Urban Growth and Settlement</li> <li>• State Planning Policy 5.4 – Road and Rail Transport Noise and Freight Considerations in Land Use Planning</li> <li>• Development Control Policy 1.5 – Bicycle Planning</li> <li>• Development Control Policy 1.6 – Planning to Support Transit Use and Transit Oriented Development</li> <li>• WA Bicycle Network Plan 2012-2021</li> </ul>
Integrated and Coordinated	<ul style="list-style-type: none"> <li>• National Charter of Integrated Land Use and Transport Planning</li> </ul>	<ul style="list-style-type: none"> <li>• Directions 2031</li> <li>• WA Public Transport Masterplan</li> <li>• Central Metropolitan Perth Sub-regional Strategy</li> <li>• State Planning Policy 3 – Urban Growth and Settlement</li> </ul>	<ul style="list-style-type: none"> <li>• State Planning Policy 5.4 – Road and Rail Transport Noise and Freight Considerations in Land Use Planning</li> <li>• Development Control Policy 1.5 – Bicycle Planning</li> <li>• Development Control Policy 1.6 – Planning to Support Transit Use and Transit Oriented Development</li> </ul>
Social and Equitable	<ul style="list-style-type: none"> <li>• National Charter of Integrated Land Use and Transport Planning</li> <li>• National Disability Strategy 2010-2020 and Disability Discrimination Act 1992</li> </ul>	<ul style="list-style-type: none"> <li>• Metropolitan Transport Strategy 1995-2029</li> <li>• State Sustainability Strategy</li> <li>• WA Public Transport Masterplan</li> </ul>	<ul style="list-style-type: none"> <li>• State Planning Policy 4.2 – Activity Centres for Perth and Peel</li> <li>• Development Control Policy 1.6 – Planning to Support Transit Use and Transit Oriented Development</li> </ul>

#### Definitions of “Areas of Strategic Focus” in Table 4

<b>Productivity:</b>	How efficiently cities connect people, knowledge, businesses and markets and how effectively economic and human capital is utilised directly impacts upon the economic performance of the urban and regional areas and their ability to contribute to national productivity.
<b>Prosperous:</b>	The success as a global city depends upon building on current prosperity.
<b>Efficient, Competitive, Reliable, Economic:</b>	To promote the efficient movement of people and goods in order to support sustainable economic development and prosperity.
<b>Transparent:</b>	Transparency in funding and charging to provide equitable access to the transport system through clearly identified means where full cost recovery is not applied.
<b>Liveable:</b>	Liveable cities offer a high quality of life and support the health and wellbeing of people who live and work in them, and visit for business or recreation. Liveable cities are equitable, socially inclusive, affordable, accessible, healthy, safe and resilient.
<b>Safe and Secure:</b>	To provide a safe transport system that meets mobility, social, and economic objectives with maximum safety for it's users.
<b>Environment:</b>	To minimise the impact of transport and development on the environment.
<b>Accessible:</b>	People should be able to meet their education, employment, recreation, service and consumer needs within a reasonable distance of their home.
<b>Sustainable and Robust:</b>	Rapidly growing urban populations intensify the demand for water, energy, land and other resources. There is a need to reduce carbon pollution, produce environmental benefits, and become more resilient to future shocks, including the impact of climate change. Growth should be within the constraints placed on us by the environment we live in.
<b>Responsible:</b>	There is a responsibility to manage urban growth and make the most efficient use of available land and infrastructure.
<b>Integrated and Coordinated:</b>	Promote effective and efficient integration and linkage of the transport system with urban and regional planning at every level of government and with international transport.
<b>Social and Equitable:</b>	To promote social inclusion by connecting remote and disadvantaged communities and increasing accessibility to the transport network.

**Table 5: City of Stirling Areas of Strategic Focus: Alignment with National and Regional Areas of Strategic Focus**

	National and Regional Areas of Focus				
<b>City of Stirling Area of Strategic Focus</b>	Productivity Prosperous, Efficient, Competitive, Reliable, Economic Transparent	Liveable, Safe and Secure, Accessible	Environment, Sustainable and Robust, Responsible	Integrated and Coordinated	Social and Equitable
Governance				✓	
Accessibility and Urban Form		✓			
Environmental Health			✓		
Community Wellbeing		✓			✓
Economic Health and Sustainability	✓	✓			

## 5. Existing Transportation Provision

### 5.1 Overview

The existing transport facilities and provision define the baseline transport conditions that need to be improved as part of an integrated land use-transport strategy. This has been considered in varying levels of detail in the studies undertaken to date. The baseline data review for the modal strategies and consultation undertaken with stakeholders identifies the strengths and weaknesses of each mode.

The land use intensification and multi-modal transport changes proposed are spread over an area that has local and regional significance. Therefore the changes are of a scale that suggests the baseline data is less important for this strategy compared to, for example, a standard transport assessment of strategy to upgrade a single transport corridor.

### 5.2 Existing pedestrian provision

The permeability of development blocks, disconnections in the path network, and the car-oriented transport network creates significant barriers to walking in the existing area. The City of Stirling is committed to increasing the kilometres of footpath as part of a continuous upgrade program and uses the 'Self Explaining Roads' concept to define the path and streetscape requirements (see section 8.8.3 on page 117). The existing pedestrian facilities in the structure plan area are shown in Figure 13.

### 5.3 Existing bicycle provision

The Perth Bicycle Network (PBN) is an identified network of cycling routes across the metropolitan area. The Department of Transport, Main Roads WA and the Public Transport Authority co-ordinate the delivery of the Principal Shared Path component, but the majority of the routes, along with the development of local network plans are delivered by local government authorities with funding assistance through the State Government's PBN Local Government Grants Program. The PBN currently caters for longer distance commuter cycling and is therefore not as suitable for local cycle trips or use by recreational cyclists. The state government has released the draft bicycle plan for the wider bicycle network. The existing bicycle network of the structure plan and wider area of influence is shown in Figure 14.

### 5.4 Existing public transport

The existing public transport network for the area comprises of bus routes and the mainline rail accessed via Stirling and Glendalough Stations. Transperth holds information regarding the timetables and routes that operate to, from and in the study area. The bus operation is currently constrained by the capacity bottleneck at Stirling Bus Station and the congestion on roads in the city, including Ellen Stirling Boulevard, Cedric Street and Scarborough Beach Road. The existing bus network and facilities of the structure plan and wider area are shown in Figure 15.

The SmartRider ticketing system provides an indication on the number of people using the bus and rail network. This information can be used to determine the existing utilisation, especially in terms of heavy rail passenger loadings. The existing rail network usage patterns shows the dominance of Perth CBD as a destination and the relatively lower number of passengers travelling from and to Perth in the AM and PM peak hours respectively.

The Joondalup Line currently uses the median in the Mitchell Freeway and operates below theoretical capacity of each train comprising a six car set and operating with a headway of 3 to 4 minutes. Increasing the existing platform lengths, vertical clearances, and placement of the rails in the median of the Mitchell Freeway would require substantial investment.

### 5.5 Existing road network

The regional road network serving Stirling is dominated by the Mitchell Freeway, Karrinyup Road and Scarborough Beach Road. The Mitchell Freeway is in the jurisdiction of MRWA and is a six lane divided freeway with three lanes in each direction. There are three interchanges with the Mitchell Freeway at Karrinyup Road, Cedric Street, and Hutton Street.

The local road network consists of multiple primary and secondary routes. The road network is at capacity during the peak hours and therefore vehicles are delayed when travelling to, from and through the area. The existing road hierarchy of the structure plan and wider area are shown in Figure 16. The Stirling City Centre Alliance has developed a number of strategies and undertaken study of the transportation issues that need to be resolved to deliver the growth aspirations for the city. These will be collated into an integrated transport strategy.

The existing freight network and rules permits vehicles of semi-trailers size and below to use all roads in the network. There are restricted areas for vehicles above this size; these are designated by the RAV routes. The Main Roads website has an interactive mapping system that allows these routes to be viewed. Analysis of this database shows that vehicles within category 2, 3 and 4 are permitted on the roads within Osborne Park and access to the freeway primarily via Hutton Street. The RAV 2, 3 and 4 networks are shown in Figure 17.

### 5.6 Existing car parking

Currently car parking is available in a combination of large at grade and decked car parks and there are many accesses to and from these car parks that can cause local traffic management issues. Car parking also provides the frontage to many streets and therefore does not "activate" the street e.g. Ellen Stirling Boulevard.



Figure 13: Existing Pedestrian Facilities

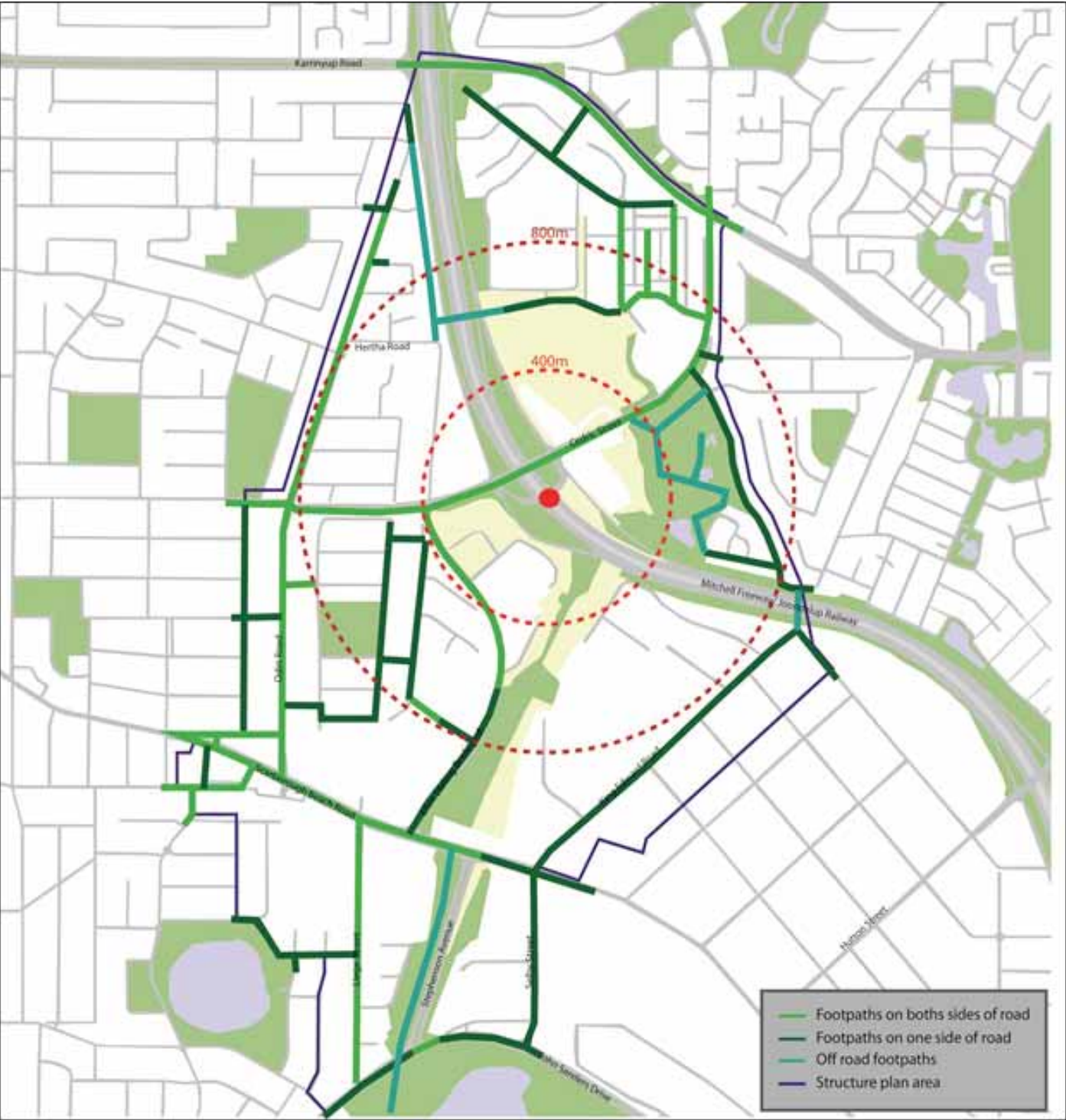


Figure 14: Existing Bicycle Facilities

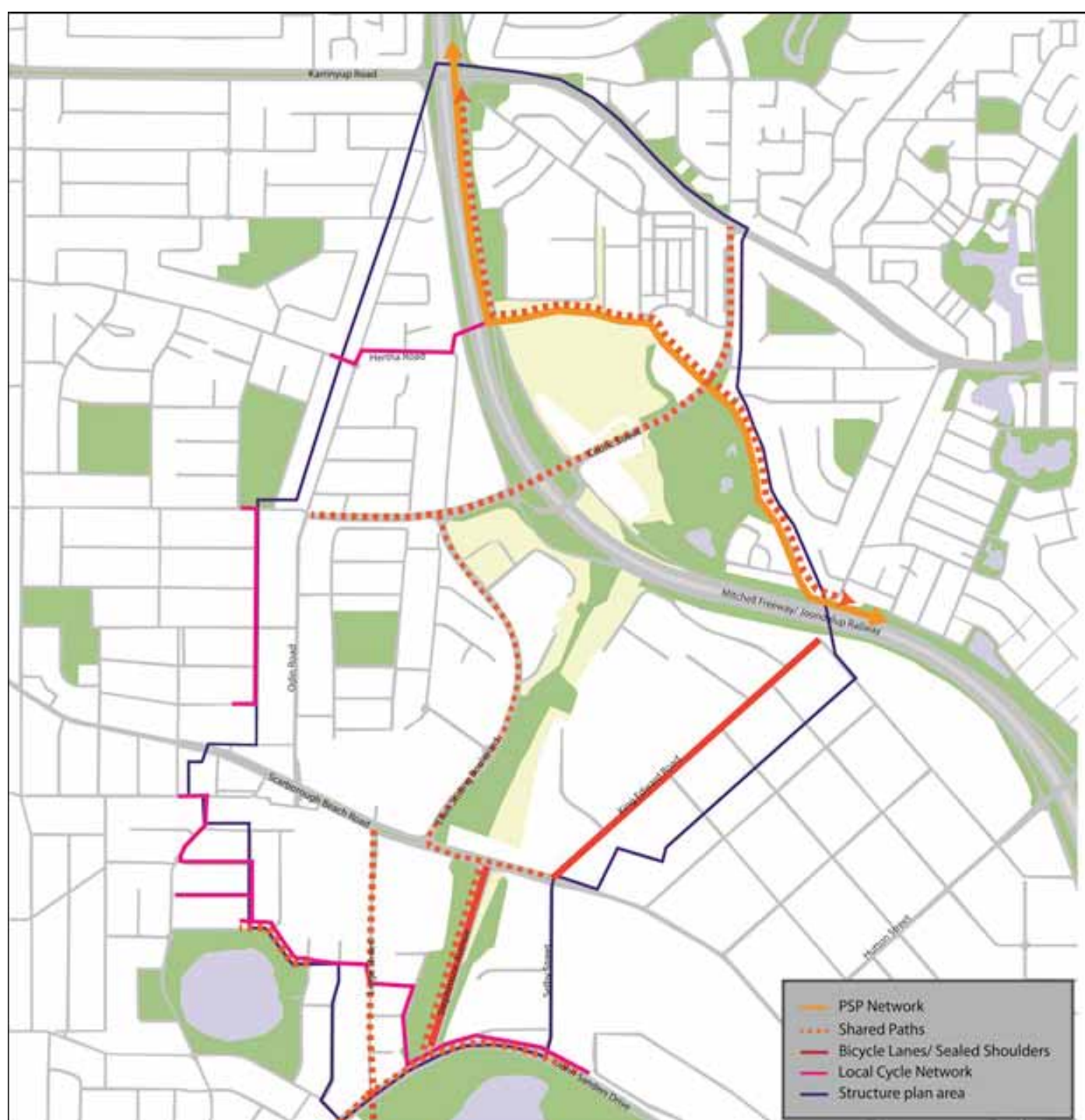




Figure 15: Existing Public Transport Facilities

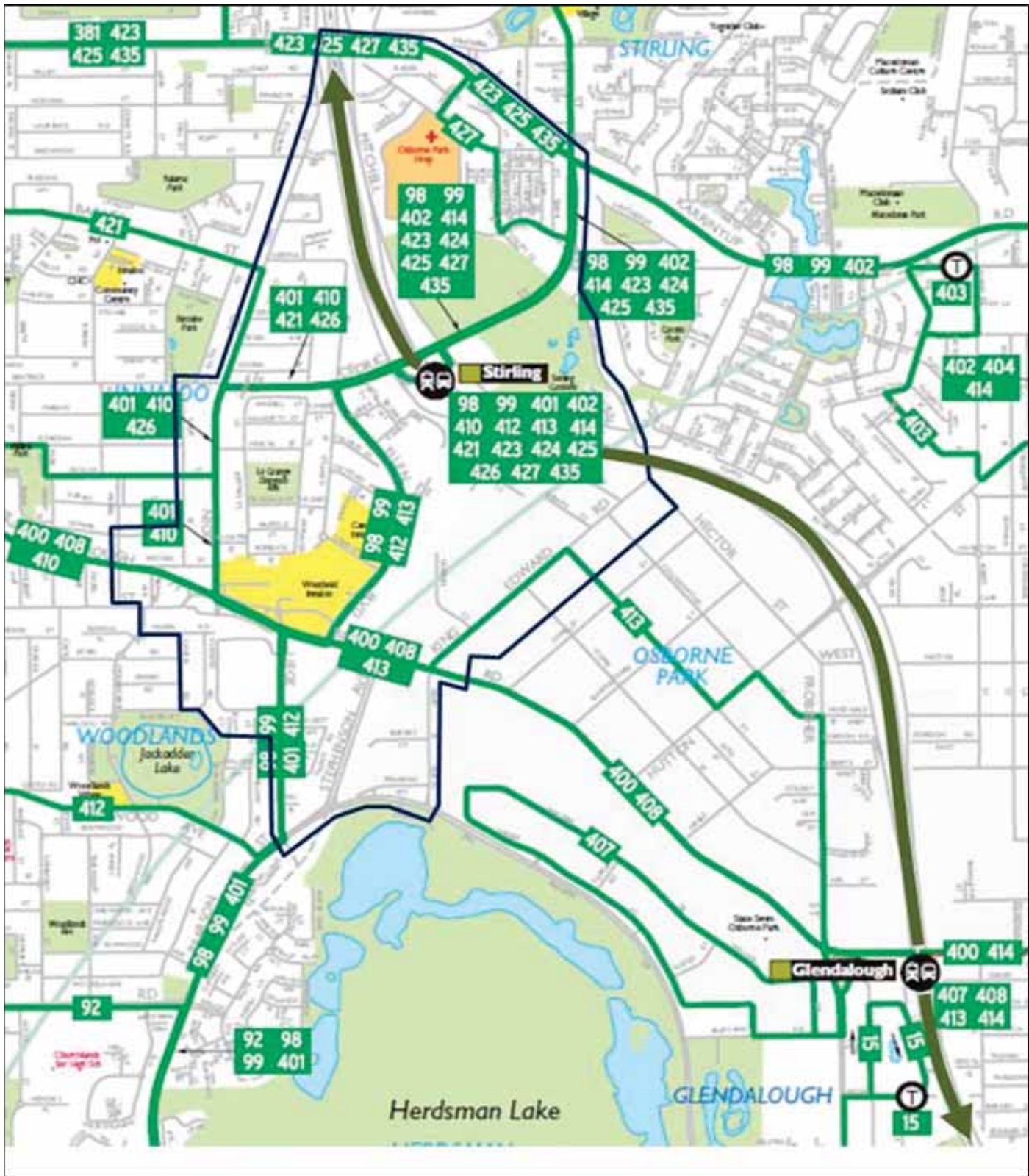
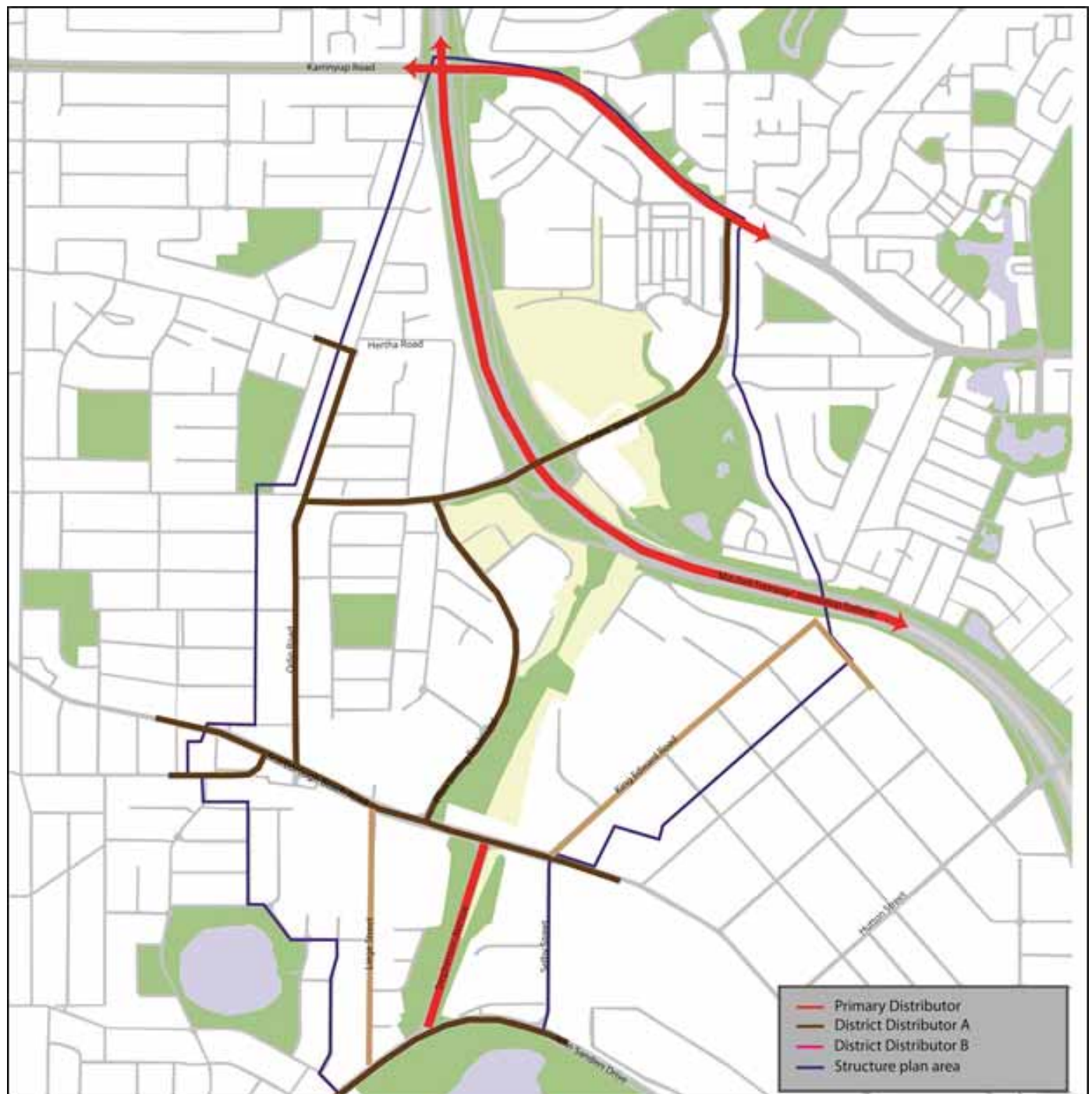




Figure 16: Existing Road Hierarchy



**Figure 17: Existing Restricted Area Vehicle Network (RAV Routes 2, 3 and 4)**

## 5.7 Problems and Opportunities

The problems and opportunities for Stirling have been reviewed, in part, previously in the City of Stirling Integrated Transport Strategy (City of Stirling, 2009), Stirling Regional Centre Structure Plan Transport Review (June 2007) and other supporting reports.

This report draws together the reviews undertaken into a consolidated summary for the study area. This approach will identify solutions for inclusion in the action plan and is intended to summarise the issues that the core transportation projects address. The action plans will also demonstrate how the initiatives will align, support, and deliver the national, regional and local planning and transportation objectives and KRA's.

The problems and opportunities are summarised by mode in Table 6, Table 7, Table 8 and Table 9. This demonstrates the impact these problems will have on the delivery of the objectives in the areas of strategic focus.

Table 6: Problems and Opportunities - Pedestrian Network

Problem Issue/ Identification	Problem Assessment and Analysis					Option Development (Opportunity)	Option Analysis
	Problem Analysis (Evidence)						
	City of Stirling Area of Strategic Focus	Urban Form	Environmental Health	Community Wellbeing	Economic Health and Sustainability		
	Governance	Accessibility and Urban Form	Environmental Health	Community Wellbeing	Economic Health and Sustainability		
1	The urban core is severed by the freeway/ rail reserve. This is a physical barrier to pedestrian movement	X	XXX	X	XX	X	<p>The project area is separated into two sections by a 200m to 300m road/ rail reserve. This segregation will restrict growth and lead to car-based transport dominating.</p> <p>• Do nothing.</p> <p>• Pedestrian bridges</p> <p>• Decked section of freeway in the vicinity of Stirling Station.</p> <p>• Do nothing = no cost, but barrier is not removed.</p> <p>• Pedestrian bridges = medium cost, the width of the bridges impact on the attractiveness to pedestrians.</p> <p>• Decked area of the freeway = highest cost but most attractive pedestrian realm, potential to construct over freeway (air rights depending)</p>
2	Not all streets benefit from having footpath(s)	X	XXX	X	XX	X	<p>Figure 13 shows the on-street footpath network.</p> <p>• Do nothing.</p> <p>• Provide footpaths. The City of Stirling has a program of planned footpath upgrades. The emergence of new and redevelopment should also provide an opportunity to upgrade the pedestrian network.</p> <p>• Doing nothing will reduce the attractiveness of walking.</p> <p>• Quality footpaths of appropriate width on both sides of the street, or shared surfaces that promote pedestrians to the top of the mode hierarchy will increase footfall.</p>
3	Buildings do not 'face the street' and many plots are single land use so there is a lack of natural surveillance and 24 hour activity.	X	XXX	X	XX	XX	<p>Current land zoning and development plot layouts are single use. Some of the existing retail area at Westfield shopping centre does not 'face the street'.</p> <p>• Promote development that is mixed use and has an active frontage.</p> <p>• Business as usual development approach.</p> <p>• Transformation of the public realm will ensure a more active street scene that is more pedestrian friendly and therefore encourages an increase in walking.</p> <p>• Business as usual will result in inactive and potentially intimidating spaces.</p>
4	Severance due to development plots being large and impermeable due to built form or restricted hours of access.	X	XXX	X	XX	XX	<p>Large development plots and lack of permeability through these. Shopping centre and commercial sites close for access outside of opening hours.</p> <p>• Consider the pedestrian amenity and network in the development applications of all redevelopment sites in the city</p> <p>• Improve permeability of the network by creating and reserving pedestrian desire lines in policy.</p> <p>• Creation of a finer grained pedestrian network will improve connectivity and increase the attractiveness of walking.</p> <p>• Failure to do this will discourage walking because of the lack of direct pedestrian connections.</p>
5	Poor streetscape due to street clutter, poor landscaping and fractured street frontage	X	XXX	X	XX	XX	<p>Over proliferation of signage and discontinuous footpaths and access leads to an unattractive and illegible street.</p> <p>• Rationalise signage and street furniture.</p> <p>• Adhere to cross sections and design codes for the city</p> <p>• The street scene will be improved and information will be easier to understand</p>
6	Poor pedestrian crossing facilities at road intersections	X	XXX	X	XX	XX	<p>Many (all) signalised intersections do not benefit from a dedicated pedestrian phase</p> <p>• Do nothing.</p> <p>• Provide staggered crossing facilities.</p> <p>• Provide an all green pedestrian stage at intersections and mid-block.</p> <p>• Doing nothing and providing staggered crossings mid-block and at signalised intersections are sub-optimal solutions.</p> <p>• All green pedestrian stages facilitate 'straight across crossing'; this is better for pedestrian connectivity</p>
7	Footpath provision in the vicinity of intersections is often compromised by intersection geometry	X	XXX	X	XX	XX	<p>Footpath provision in the vicinity of intersections is often compromised by intersection geometry</p> <p>• Do nothing</p> <p>• Widen footpaths at intersections where high footfall is anticipated</p> <p>• Doing nothing could result in footpath congestion, safety issues, and discourage walking.</p> <p>• Wider footpaths can provide a more "comfortable" pedestrian environment</p>
8	There are intersections that do not benefit from shaded areas.	X	XXX	X	XX	XX	<p>Street trees that provide shade are not always provided at key shade points e.g. intersections.</p> <p>• Do nothing</p> <p>• Provide street trees at key shadepoints</p> <p>• Doing nothing does not resolve this issue.</p> <p>• Provision of street trees at shade points should be planned to ensure visibility is retained at intersections.</p>

XXX – High Level of Impact on Delivery of Area of Strategic Focus, XX – Impact on Delivery of Area of Strategic Focus, and X – Low Impact on Delivery of Area of Strategic Focus



Table 7: Problems and Opportunities - Cycle Network

Problem Issue/ Identification	Problem Assessment and Analysis					Problem Analysis (Evidence)	Option Development (Opportunity)	Option Analysis
	City of Stirling Area of Strategic Focus							
	Governance	Accessibility and Urban Form	Environmental Health	Community Wellbeing	Economic Health and Sustainability			
1	Large traffic volumes discourage cycling	X	XXX	XX	XX	XX	Increased traffic reduces cycle amenity and safety.	<ul style="list-style-type: none"><li>Do nothing</li><li>Revise existing car parking standards to levels that encourage alternative modes of transport and reduce car usage</li></ul> <ul style="list-style-type: none"><li>Changing the car parking standards will reduce the number of vehicles travelling to and from a development.</li></ul>
2	Existing cycle parking and end of trip facilities do not support the desired mode share	XX	XXX	XX	XX	XX	Low cycle parking and minimal end of trip facilities reduce the attractiveness of cycling.	<ul style="list-style-type: none"><li>Do nothing</li><li>Revise/ update the end of trip facilities policy</li><li>Introduce travel planning as a mandatory requirement of the development application process</li><li>Provide additional cycle parking at rail stations</li></ul> <ul style="list-style-type: none"><li>Doing nothing may constrain growth in the number of cyclists.</li><li>Improving end of trip facilities will encourage more cycling to, from and in the city.</li></ul>
3	There is a lack of clear wayfinding signage and cycle routes are not well defined	XX	XXX	X	X	XX	Signage is missing, in poor condition or badly located.	<ul style="list-style-type: none"><li>Do nothing</li><li>Provide wayfinding signage</li><li>Improve legibility of cycle routes.</li></ul> <ul style="list-style-type: none"><li>Improving wayfinding and legibility of routes will assist in increasing the number of people cycling and the ease of cycling.</li></ul>
4	Road reserves often channel water into gutters or kerbside where cyclists are often required to ride	X	XX	X	X	X	Road geometry and design.	<ul style="list-style-type: none"><li>Do nothing</li><li>Provide off road cycle facilities</li><li>Provide Copenhagen cycle lanes</li><li>Provide wider roads that include cycle paths</li></ul> <ul style="list-style-type: none"><li>Doing nothing could discourage cycling.</li><li>Other dedicated cycle route designs could alleviate this issue.</li></ul>
5	Most employers have salary sacrifice for cars but not bicycles	XX	XX	XX	X	XX	Financial/ legislation constraints exist.	<ul style="list-style-type: none"><li>Do nothing</li><li>Lobby for changes to financial//legislation circumstances</li><li>Introduce pool bicycles into workplaces</li></ul> <ul style="list-style-type: none"><li>There is potential to increase the number of cycle trips to, from and in the city for commuting and business travel.</li></ul>
6	Topography and climate often cited as a barrier to cycling	X	XXX	X	X	X	Extreme heat and wet weather conditions can discourage cycling.	<ul style="list-style-type: none"><li>Introduce drinking fountains and shelters in the street design</li></ul> <ul style="list-style-type: none"><li>Potential to improve the attractiveness of cycling as a mode of transport.</li></ul>

XXX – High Level of Impact on Delivery of Area of Strategic Focus, XX – Impact on Delivery of Area of Strategic Focus, and X – Low Impact on Delivery of Area of Strategic Focus

Table 8: Problems and Opportunities - Public transport Network

Problem Issue/ Identification	Problem Assessment and Analysis					Option Development (Opportunity)	Option Analysis	
	City of Stirling Area of Strategic Focus							
	Governance	Accessibility and Urban Form	Environmental Health	Community Wellbeing	Economic Health and Sustainability			
1	Insufficient public transport to support proposed growth	X	XXX	XX	XXX	XX	Existing bus routes do not have sufficient capacity or operate at a frequency that supports the projected growth in development	<ul style="list-style-type: none"><li>Provide additional public transport to/from and in the city.</li><li>Increase frequency of existing bus services, change bus routes, bus rapid transit or light rail</li></ul> <ul style="list-style-type: none"><li>An increase in bus service frequencies will not be able to accommodate all growth in development because of the capacity available at the bus station. Needs higher quality public transport solution to stimulate a significant mode shift.</li><li>Solution requires growth in bus provision and a new light rail system.</li></ul>
2	Bus station is at/ close to capacity	X	XXX	XX	XXX	XX	The existing bus interchange configuration cannot accommodate future bus numbers to assist in meeting development growth	<ul style="list-style-type: none"><li>Do nothing</li><li>Duplicate/ increase scale of the existing facility.</li><li>Create alternative bus station.</li></ul> <ul style="list-style-type: none"><li>Doing nothing will constrain the development growth in the city.</li><li>Duplication of the existing bus station facility will significantly increase bus capacity and improve the flexibility of the operations.</li><li>Alternative bus station will disperse interchange</li></ul>
3	Trains are close to capacity	X	XXX	X X	XXX	XX	Currently trains to and from Perth in the AM and PM peak hours respectively are at capacity. Trains running in the opposite directions in these periods have a relatively low utilisation due to Perth focus of rail trips.	<ul style="list-style-type: none"><li>Increase frequency and capacity of trains.</li><li>Facilitate development growth at activity centres outside of the Perth CBD.</li></ul> <ul style="list-style-type: none"><li>Existing travel patterns focus on Perth so concentration of land uses at other activity centres will more efficiently use existing rail network.</li><li>Trains currently are mixed between three and six sets, increasing all to six sets and reducing the headway will increase capacity.</li></ul>
4	Difficult to access station interchange	X	XXX	X	XXX	X	The current interchange is difficult to access by foot and bicycle. Indirect desire lines. Minimal end of trip facilities.	<ul style="list-style-type: none"><li>Do nothing</li><li>Improve pedestrian connectivity to the station.</li></ul> <ul style="list-style-type: none"><li>Doing nothing will not encourage walking and cycling between the city and the station.</li><li>Improved pedestrian connections will assist in increasing the number of people accessing the station by foot.</li></ul>
5	Public transport has to utilise same space as cars and therefore are delayed by traffic.	X	XXX	XX	XXX	X	Public transport is delayed because of existing traffic congestion. This impacts on the 'attractiveness' of the public transport operation.	<ul style="list-style-type: none"><li>Do nothing.</li><li>Dedicated public transport lanes.</li><li>Headstart facilities at signals.</li><li>'Call Green' facility at signals.</li></ul> <ul style="list-style-type: none"><li>Delays to public transport impacts on the attractiveness of public transport as a mode.</li><li>Providing dedicated public transport facilities will improve the operation and punctuality of services. This can increase the attractiveness of the mode and therefore increase patronage</li></ul>
6	There is not a value capture funding model for new public transport	XX	XX	X	X	XXX	Delivery of light rail requires funding that may not be available from state or federal sources.	<ul style="list-style-type: none"><li>Do nothing.</li><li>Create policy/ legislation/ guidance to allow use of value capture mechanisms to fund public transport.</li></ul> <ul style="list-style-type: none"><li>Improved public transport potentially increases land values.</li><li>A mechanism to recoup the investment in public transport from land rents, rates, business charges should be considered.</li></ul>

XXX – High Level of Impact on Delivery of Area of Strategic Focus, XX – Impact on Delivery of Area of Strategic Focus, and X – Low Impact on Delivery of Area of Strategic Focus



## 6. What Has Been Achieved So Far

### 6.1 Overview

A significant amount of work has been undertaken to date to develop and plan the individual components that will make up the integrated transport strategy.

An alliance was set up in 2008 to plan, manage and develop the strategy and approach to deliver a new development rationale for the city. The Stirling City Centre Alliance is made up of representatives from key stakeholders and continues to plan for a high density city to meet the growth aspirations of the regional planning policy Directions 2031.

This integrated transport strategy has been developed by GHD and the Stirling City Centre Alliance in close consultation with members of the integrated transport strategy working group. The working group was tasked with review of the individual components of the integrated transport strategy and the process of compiling these into a coherent and comprehensive plan.

The existing transportation and land uses have been reviewed in the development of this, and all preceding, strategy. A summary of the relevant strategy and reports is included to outline what has been achieved to date.

### 6.2 The Stirling City Alliance

The board of the Stirling City Alliance is made up of representatives from representatives of: City of Stirling, Western Australia Planning Commission, Department of Planning, Department of Transport, Main Roads WA, Landcorp, Property Council of Australia (WA), Sustainable Energy Association, and community groups. Additional members from the Department of Health, Water Corporation, Western Power, and Department of Water are included in the board meetings when required. The Stirling City Centre Alliance follows a Public-Private Community Partnership model and the structure of the Alliance and members is shown in Figure 18.

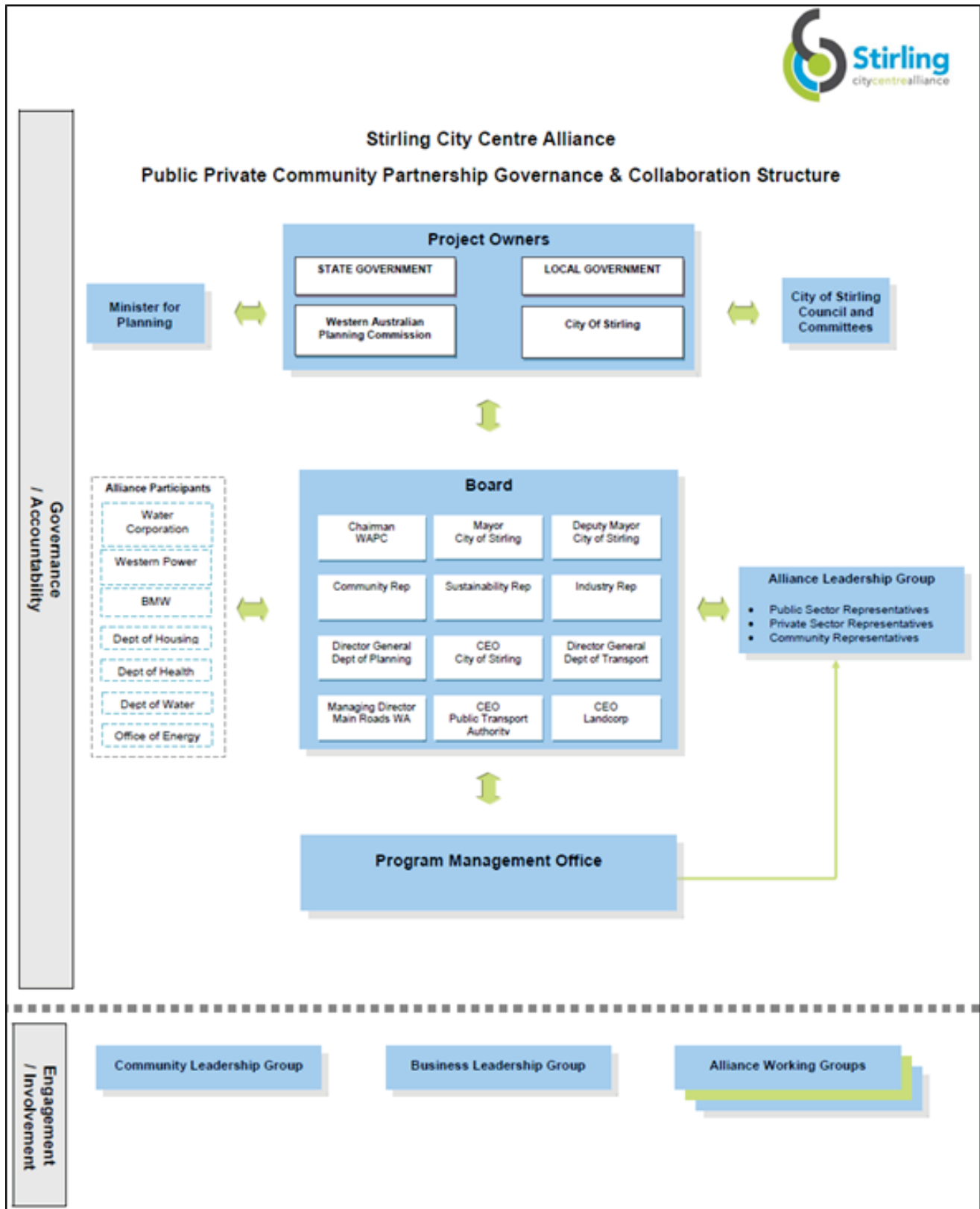
### 6.3 Integrated Transport Strategy Working Group

An integrated transport strategy working group was established to review the input to the strategy report. This working group included representatives from the City of Stirling, Main Roads WA, Department of Transport, Department of Planning, Public Transport Authority and GHD.

### 6.4 Community Leadership Group (CLG) Workshops

The role of CLG is to promote community involvement in the development of the city. The rationale is that effective communication, transparency of process, accessible information and community involvement will allow informed decision making and make the Stirling City Centre Alliance accountable to the community's needs. This should facilitate 'getting things done' and gaining community support prior to project and program delivery.

Figure 18: Stirling City Centre Alliance Public Private Community Partnership



## 6.5 Strategy Development to Date

A significant amount of strategy and planning has been undertaken for the Stirling City Centre Alliance and by the City of Stirling, including:

### **Multi-modal strategy**

- Integrated Transport Strategy, City of Stirling, 2009
- Stirling City Centre Alliance – Long Term Transport Vision (2009)
- Scarborough Beach Road Activity Corridor – Transport Report, SKM, March 2010

### **Pedestrian and cycling strategy**

- Stirling City Centre Cycling Plan, SKM, June 2010
- Integrated Cycling Strategy (First Draft), City of Stirling, October 2010
- City of Stirling Policy Manual – Section 6 – Bicycle Parking, City of Stirling

### **Public transport strategy**

- Stirling Tram Feasibility Study – Preliminary Patronage Estimates, Parsons Brinkerhoff, February 2010
- Stirling City Centre Light Rail Feasibility Study – Phase 2, Parsons Brinkerhoff, November 2010
- Herdsman Business Park and Glendalough Station Transport Strategy, SKM, October 2010
- Stirling City Centre Public Transport Plan, Stirling Alliance with GHD, December 2013

### **Access and parking strategy**

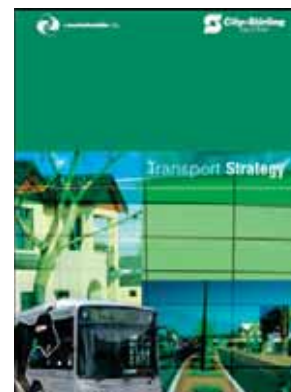
- Stirling City Centre Access and Parking Strategy, SKM, August 2010

These have driven the move towards a strategy for increasing the density of residential development, mix of land uses, and promotion of more sustainable modes of transport.

The overarching principle applied and acknowledged throughout the strategies is that a significant reduction in the number of people driving to, from and in the City of Stirling is required to facilitate the creation of a CBD environment and the target levels of development for this area.

### **6.5.1 Integrated Transport Strategy, City of Stirling, 2009**

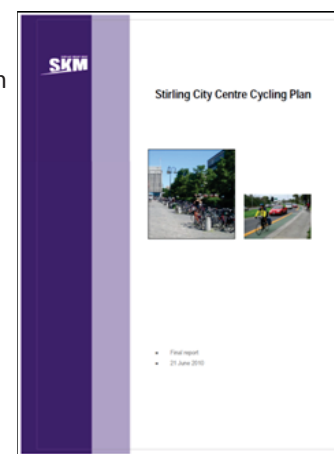
The 2009 City of Stirling integrated transport strategy was developed to set out the vision of transport for up to 2025. This set out some of the objectives that have guided the subsequent modal strategies, including the need to encourage more sustainable modes of transport, enable efficient movement of people and goods, improve accessibility for pedestrians, cyclists and public transport, and provide transport and access to services for all sectors of the community.



The strategy report highlighted that the key issues to be addressed are high levels of car dependence, local and global environmental, economic, and social costs including climate change and peak oil. In addition, the requirement for collaboration between local and regional government and agencies was highlighted to ensure that a holistic and universally agreed way forward would be agreed. Subsequently strategies to address car dependence and peak oil have been developed by the Stirling City Centre Alliance, and the creation of the Alliance represents collaboration between local and regional government agencies.

### **6.5.2 Stirling City Centre Cycling Plan, SKM, June 2010**

This cycling plan was developed in close consultation with key stakeholders including Main Roads WA and Bikewest. The plan identified a network plan for the city centre and determined the appropriate types of infrastructure. The overarching objectives for cycling that were identified in the plan included increasing the cycle kilometres travelled, frequency of cycle trips, cycling mode share, and usage of the bicycle for all trip purposes.



The provision of end of trip cycle parking is fundamental to the promotion of cycling. The Stirling City Centre Cycling Plan suggests that the following minimum cycle parking standards should be applied:

- Residential – once cycle bay per unit
- Commercial/ office tenant – one cycle bay/ 200m<sup>2</sup> GFA
- Commercial/ office visitor – one cycle bay per 500m<sup>2</sup> GFA
- Retail – one cycle bay/ 200m<sup>2</sup> GFA

The commercial cycle parking requirements can be inferred to equate to a 10% mode share for cycling. The KPI for cycling is for a 10-15% mode share and therefore this standard should be revised to allow a greater number of staff to cycle to and from commercial developments and facilitate achievement of a 15% mode share for cycling.

In summary, the Stirling City Centre Cycling Plan has been developed to inform the integrated transport strategy and the aspiration to provide improved cycle facilities to promote an increase in the number of people cycling.

### **6.5.3 Integrated Cycling Strategy (First Draft), City of Stirling, October 2010**

The draft of this strategy is currently being refined and updated by representatives of the City of Stirling. The strategy sets out the importance of safety and signage, resolution of conflict points, continuity, functionality and legibility, the 'Think 20' concept and the role of non-motorised user audits (NMU's).

The strategy includes detail on how the network can be improved and enhanced through definition of the target cyclist, improving principal cycling facilities, making the PBN attractive to all cyclists, developing the local network, exploiting the potential of public access ways (PAWs), focusing future cycle provision, and improving and providing end of trip facilities.

### **6.5.4 City of Stirling Policy Manual – Section 6 – Bicycle Parking, City of Stirling**

This section of the policy manual relates to the end of trip facilities and bicycle parking requirements at new development. The overarching objectives of the policy are to ensure that adequate facilities are provided, end of trip facilities are considered in design, and the use of bicycles is encouraged for all trip purposes.

It is a requirement that the location and number of bicycle parking bays are included in the transportation component of planning applications submitted to the City of Stirling. The bicycle parking standards have been considered as part of the aforementioned bicycle strategies and should be consistent with the mode share and land use targets for the city.

### **6.5.5 Stirling Tram Feasibility Study – Preliminary Patronage Estimates, Parsons Brinkerhoff, February 2010**

This study was a high level investigation of the potential patronage for a proposed tram/ light rail system for the Stirling Centre, including the major commercial and retail areas of Osborne Park and Glendalough. The report suggests that the system could be constructed in three phases, with the focus of the study being on phases 1 and 2 relating to the hospital to Stirling and Stirling to Glendalough.

The study concluded that a well-designed system would show good two-way patronage throughout the day as it supports multiple uses. The study also suggested that phase 1 would act as a development catalyst. Phases 1 and 2 in conjunction would generate significant levels of development and have an increased patronage. The study concluded that further analysis was warranted.



### **6.5.6 Stirling City Centre Light Rail Feasibility Study – Phase 2, Parsons Brinkerhoff, November 2010**

The phase 2 study identified that there are linkages between the different components of the transport strategy and the land use vision and stated that understanding these interdependencies is a critical part of developing an integrated transport strategy.

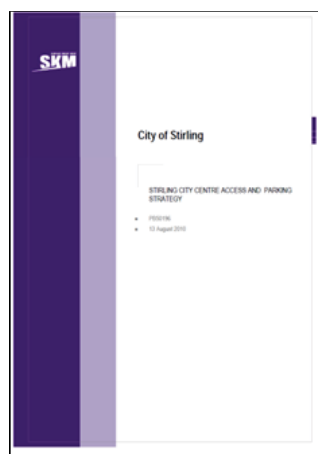
The phase 2 study undertook additional modelling to progress the findings from the phase 1 study; the conclusions reported were:

- Potentially a strong market for a high quality public transport system that connects Stirling with other areas, and acts as a 'pedestrian accelerator' in the City of Stirling
- Demand could be in the range of around 40,000 to 55,000 passengers per day
- The transit system has a strong role to play in reducing the use of private motor vehicles for movement in the centre and minimising the demand for parking
- Street running transit (tram) has the potential to attract marginally more passengers than the other options
- The design of the transit system, the final decision regarding the streets in which it operates and the delivery of developments which support active street frontages will have a strong bearing on the ultimate success of the transit system

- It is essential that supportive land use and transportation policy framework be in place prior to implementation to allow the catalytic effects and economic uplift to be produced effectively and to allow for value capture
- Close integration is required at Stirling and Glendalough Stations to ensure barrier free seamless interchange
- The ticketing system will need to be included as part of the TransPerth SmartRider system
- The system should be integrated and standardised with the overall Perth LRT system.

### 6.5.7 *Stirling City Centre Access and Parking Strategy, SKM, August 2010*

The Stirling City Centre Alliance commissioned a city centre access and parking strategy to understand the amount of traffic that can be accommodated on the proposed street network without unacceptable levels of congestion. The longer term transport plan for the city centre and access to and from the freeway is at the concept stage which has been agreed by the Stirling City Centre Alliance. Further detailed traffic analysis is required to inform the next statutory planning documents about road networks and land requirements.



The conclusions of the strategy are that in order to deliver the growth aspirations, a high proportion of access to the city centre will need to be accommodated on public transport, walking and cycling. This will require quality, safe and convenient walking and cycling routes throughout the city, supported by a legible urban environment. Public transport routes should be easy to comprehend with access and interchange at Stirling and Glendalough Stations being as seamless as practicable.

A key conclusion of the study was that parking restraints are required to restrain the traffic growth and achieve the levels of development desired by the Stirling City Centre Alliance, the City of Stirling, and Directions 2031. The following recommendations were made by the strategy for the maximum level of parking permitted for new developments:

- Residential: 1.0 bay per unit on average for each dwelling
- Office: 1.0 bay/ 100m<sup>2</sup> GFA
- Supermarket and large retail: 4.0 bays/ 100m<sup>2</sup> GFA
- Small main street retail: 2.0 bays/ 100m<sup>2</sup> GFA

The strategy includes detail on a further level of regulation required to ensure the total level of parking of an area of developable land does not exceed a threshold level. This threshold level is required to ensure very high density office or retail developments do not result in excessive levels of parking and traffic, even though parking meets the aforementioned criteria. The strategy proposes that the maximum parking levels in the city centre be regulated on a hectare of land basis.

The strategy recommends a maximum of 250 bays per hectare for all land in the City Centre, except in the proposed high density precinct around Stirling Train Station, where a lower level of 200 bays per hectare is recommended.

The strategy recommends that pay parking be introduced into the City Centre (both on-street and off-street) as soon as possible and that the fees set be high enough to encourage some drivers to change their travel behaviour. This will assist with the turnover of spaces and should ensure that there is a reasonable level of parking availability.

A cash-in-lieu policy is proposed with a primary purpose to support a demand management framework that reinforces regulations designed to limit supply. A secondary objective of this is to provide a source of funds for alternative transport infrastructure and services.

The report also outlines parking management strategies that are additional to the parking pricing and supply, including:

- Ensure that the majority of the parking provided in the city centre is public parking available for a mix of users. Mandate shared parking as part of the development approval process
- Ensure that the supply of city centre parking meets the needs of short term business and shopping visitors by provision of a mixture of 1,2 and 4 hour parking
- Locate long stay parking on the periphery of the city centre
- Distribute car parks around the city centre so as not to create points of congestion
- Maximise the availability of on-street parking in the city centre and use pay parking to ensure it is used efficiently by short term visitors to the centre



- Provide a level of priority for residents in precincts surrounding the city centre but not for on-street parking in the business core of the centre
- Develop a wayfinding and guidance system to improve visitor's access experience and provide more efficient utilisation of resources
- Ensure there is a generous supply of parking for cyclists and motorcyclists
- Ensure there is a high level of compliance with agreed policies and regulations

### **6.5.8 Scarborough Beach Road Activity Corridor – Transport Report, SKM, March 2010**

The transport strategy for the Scarborough Beach Road Activity Corridor has been developed to guide the planning, design and development of the future corridor. The report states that the Western Australia Planning Commission and the City of Stirling have a vision to transform Scarborough Beach Road into an activity corridor. The progression of conceptual designs is ongoing as part of the study of the Scarborough Beach Road Corridor. The recommendations of the report were:

- Plan and design a high frequency, high capacity public transport system along Scarborough Beach Road with full priority along its length.
- Introduce a parking strategy for each growth node as part of a comprehensive demand management strategy aimed at limiting traffic growth, particularly during peak periods.
- Plan for connectivity and accessibility rather than achievement of high levels of vehicle capacity. Limit Scarborough Beach Road to a maximum of two lanes of traffic in each direction.
- Where existing street network is fragmented and poorly connected, create a series of alternative travel routes for traffic parallel to and across Scarborough Beach Road.
- Design Scarborough Beach Road as a slow speed street with numerous signalised intersections to enable pedestrian crossings and vehicular crossings and access, with the intention of making it unattractive to longer distance, higher speed through traffic.
- Make provision for safe cycling movement along Scarborough Beach Road as well as along parallel routes. Provide for route continuity with a choice of at least two routes for cyclists of different confidence and experience.
- Provide parallel kerbside parking where required, to meet the needs of adjacent businesses.
- Provide verge widths of sufficient width to provide for pedestrian movement on both sides, separate bicycle paths where required, street planting, services and indented parallel car parking where required.
- Design intersections along Scarborough Beach Road so that they are safe and comfortable to use by pedestrians and cyclists and provide priority for public transport vehicles, even if this reduces capacity for vehicular traffic.

### **6.5.9 Herdsman Business Park and Glendalough Station Transport Strategy, SKM, October 2010**

A key objective of the transport strategy for Herdsman Business Park and Glendalough Station is to limit the amount of traffic accessing the area to a level that can be accommodated on the proposed street network without unacceptable levels of congestion. The strategy set out high level access principles to manage congestion, promote public transport use, integrate development growth with the transport strategy components, promote walking and cycling, and manage the demand and quantum of parking.

### **6.5.10 Public Transport Strategy, December 2013**

The public transport strategy sets the short, medium and long term public transport infrastructure and service upgrades to service the mix of development in the City Centre. This public transport strategy was developed through a collaborative approach with the key stakeholders including the Stirling City Centre Alliance, the City of Stirling, the Department of Planning, the Department of Transport, the Public Transport Authority and Main Roads WA.

The short and medium term recommendations of the report were:

#### **Short Term to 2018**

- Implement a branded shuttle bus route between Stirling and Glendalough train stations
- via Ellen Stirling Boulevard and Scarborough Beach Road, instead of Option 2 with loop
- to Selby Street only. This route would incorporate Route 407 via the Herdsman Business Park.

#### **Medium Term from 2018 to 2024**

- Plan for linkages to the MAX light rail system to provide a single integrated light rail network for Perth.
- As a first stage connection to the Stirling City Centre, an extension from Fitzgerald Street in North Perth to the Stirling train station could be planned for along Angove Street, Scarborough Beach Road and Ellen Stirling Drive or alternatively via Stephenson Avenue. This extension would service the suburbs of North Perth and Mt Hawthorn urban villages, Glendalough train station, the Osborne Park business park, Innaloo and the Stirling City Centre. A minimum service frequency of every 15 minutes is recommended with connections to the trains and buses at Glendalough and Stirling train stations.
- Detailed concept planning for the alignment and stop locations would need to be conducted to develop a concept plan that can be costed and assessed in an economic business case. This would also require patronage modelling for the future demand on the light rail services, traffic modelling to assess the impacts on the road network and environmental and social assessments with community consultation to determine the other information required for the business case.

- The bus network would be redesigned so that Routes 400 and 408 west of Glendalough train station would be replaced by a new high frequency Route 990 between Stirling train station and Scarborough Beach via Ellen Stirling Boulevard and Scarborough Beach Road. The local bus routes to the Herdsman Business Park and Osborne Park along Howe Street (Routes 407 and 413) would remain for local access to support the growing higher density development in the areas located away from Scarborough Beach Road and the light rail stops.

#### **6.5.11 Integrated Transport Strategy – Draft Roads Strategy (June 2013)**

A draft roads strategy was produced which assesses road intersection traffic analysis/modelling for 16 key intersections within the Stirling Structure Plan area. The strategy produced traffic intersection analysis over six volumes using SIDRA software. Plans showing major links, triggers, indicative phasing and infrastructure requirements for the four scenarios (do nothing, roads only, roads & priority bus, roads & light rail) for three years (2013, 2031, 2051) were used based on proposed development yields and shifts in transport mode share targets. The summary report outlined findings and recommendations to inform future traffic modelling in the Stirling City Centre.

#### **6.5.12 Public Transport for Perth in 2031 (Draft) July 2011 by Department of Transport**

This Plan identifies the public transport network needed to support Perth's growing population and links to and between strategic centres throughout the metropolitan area. It also proposes the preferred type of public transport service (mode) and the priorities for infrastructure investment across the network including the Stirling City Centre.

It should be noted that the draft plan proposes light rail between Stirling and Glendalough by 2031.

#### **6.5.13 Stirling City Centre Alliance, Review of Stirling City Centre Parking, Policy and Scheme Requirements, SKM, September, 2013**

The review assesses the draft scheme requirements being proposed against current State Government activity centre policies and strategic planning for the Stirling City Centre. It also makes recommendations aimed at keeping the proposed scheme requirements as simple and transparent as possible and to cap parking in the city centre to the extent necessary to manage congestion and maintain good accessibility in the long term.

Key inclusions are:

- Maximum levels be set on a net hectare basis at a maximum of 250 bays per hectare
- Public car parks using funds from cash-in-lieu will be permitted to provide a higher concentration of car parking than the maximum proposed 250 bays/ha
- Maximum levels of residential parking be set at 1.25 bays per dwelling
- Maximum parking for short stay accommodation shall be 0.5 bays per short stay accommodation unit
- Unbundling of parking shall apply
- Encourage shared parking
- If parking is provided below the maximum permitted level of parking then a cash in lieu payment will be required for non-residential or short stay accommodation
- A transport infrastructure contribution be imposed on new developments
- At least 50% of all parking should be allocated for public parking
- No retrospective application to existing development – existing development will be permitted to maintain and operate existing levels of parking but not be able to increase this above maximum levels stipulated
- Transitional parking provisions are proposed

## **6.6 Filling the Gaps**

A significant amount of work has been undertaken to develop multi-modal initiatives required to inform the integrated transport strategy; this chapter outlines the scope of works required to fill the gaps in strategy. The gap review considers the transportation strategy inputs shown in Figure 8.

### **6.6.1 Road and Freight**

A road and freight strategy needs to be developed to pull together the work that has been undertaken to date as part of the multi-modal assessments. The road and freight strategy is informed by the multi-modal transport model being developed by the Stirling City Centre Alliance and a transport assessment/trigger point study.

This study should consider the development (land use and scale)/ transport implications of providing phased car parking restrictions, temporary car parking and a gradual upgrade of public transport vs light rail being provided at the project outset.

### **6.6.2 Stirling Station Interchange Re-design Study**

There has been work to develop the light rail scheme for the City of Stirling. A public transport and interchange strategy is needed to collate the proposals and define initiatives to achieve the target mode share of 35% for public transport. This should utilise the pedestrian modelling being undertaken by the Stirling City Centre Alliance and develop a preferred layout for the Stirling Station Interchange.

A public transport strategy is therefore identified as a gap in the existing strategy development and is required as part of the integrated transport strategy. The report would act as an addendum to the integrated transport strategy.

### **6.6.3 Pedestrian**

A pedestrian strategy should be developed to understand the existing footpath provision, barriers to movement and initiatives that will improve the connectivity, safety and quality of the pedestrian network.

The linkages between pedestrian facilities and key trip attractors (in terms of land use and public transport facilities) should be defined and proposals that improve and upgrade the connections should be determined. This should address connectivity through development blocks and across known barriers to pedestrian movement. Where appropriate the desire lines should be specified so that these can be reserved as part of the future redevelopment of plots in the city centre.

The strategy should specify the minimum and desirable pedestrian facility requirements, in terms of path widths, crossings types (mid-block and at signalised intersections), and design requirements for mobility impaired users.

Pedestrian movement to, from and in the public transport interchanges should also be modelled as part of a 'first principles approach' and using VISSIM to understand how the interchanges would operate and determine whether refinements to layout and design are required. There is overlap between this strategy and the public transport planning.

### **6.6.4 Taxi**

Taxis require facilities at public transport nodes and in urban areas to allow them to pick up, drop off and wait for passengers. Consideration needs to be given to the design, location and layout of taxi facilities in the station and urban streets designs to ensure that there is adequate provision for taxis. It is suggested that the taxi operators are engaged in this process to gather their thoughts and opinions as part of the planning process. There is overlap between this strategy and the public transport strategy because taxi drop off/ pick up should be incorporated into the Stirling Station Interchange design.

### **6.6.5 TravelSmart and Travel Planning**

TravelSmart initiatives and Travel Plans utilise approaches to promote awareness of more sustainable travel alternatives and encourage a change of attitude and behaviour towards walking, cycling, public transport, and car pools. A TravelSmart strategy and Travel Plan guidance document should be developed by the City of Stirling as part of the wider agenda to promote sustainable transport. This should draw upon expertise that exists in the Department of Transport and Department of Environment and Conservation.

There is overlap between this and the safe routes to school strategy and provision of travel information and marketing that should be undertaken as part of public transport promotion.

### **6.6.6 Intelligent Transport Systems**

An intelligent transport strategy should be developed that draws together the initiatives proposed to:

- Manage traffic congestion
- Provide high quality traveller information for public transport
- Manage the usage of car parks

### **6.6.7 Demand Management**

A higher level demand management strategy should be developed to define the mechanisms that will be used to manage travel demand and travel choices to and from the city. There is overlap with the majority of the other strategies so this should therefore act as a summary report of the demand management initiatives that are proposed.

### **6.6.8 Transport Assessments/ Trigger Point Assessment**

New developments should be required to undertake a multi-modal transport assessment to determine the triggers for requiring upgrades to infrastructure.

An overarching transport assessment/ trigger point study should be undertaken as part of the road strategy and strategic/ local transport modelling for the area. This should provide an indication of the trip generations that emerge based on low, medium and high growth planning scenarios, and how this relates to the requirements for infrastructure upgrade and subsequent impact on mode share. This would allow a higher level understanding of how schemes could be prioritised, staged and implemented. This will verify whether the indicative stages shown in the Structure Plan are appropriate.

### 6.6.9 Security

Safety and security of areas and spaces should be considered in the planning of the area. This should utilise best practice examples and Western Australia planning guidelines. The integrated transport strategy should set out high level objectives and sub-strategies. There is overlap between this and the pedestrian strategy.

### 6.6.10 Wayfinding/ Signage

A strategy to inform pedestrians, cyclists and car drivers on route choices and facilities should be developed. This has four strands:

- Pedestrian wayfinding/ signage
- Cycle wayfinding/ signage
- Car parking wayfinding/ signage
- Public transport wayfinding/ signage

These should be incorporated in the relevant mode specific strategies.

### 6.6.11 Accessibility

Accessibility is measured by a person's ability to reach key services. An accessibility strategy should consider how people can access health, education, employment, shopping and leisure facilities and propose appropriate initiatives to improve accessibility and guide planning requirements. All of the supporting strategies in the integrated transport strategy will contribute to improving accessibility.

The accessibility strategy should set out how the following will be achieved:

- Improve accessibility to activities, services and goods, particularly for disadvantaged or vulnerable groups
- How partnerships will be formed with key stakeholders to promote inclusion
- Determine whether educational and health groups will develop a partnership with the City of Stirling to deliver improved access to and from their sites
- Prioritise initiatives that support access to existing facilities
- Guide how new developments should promote accessibility, to, from and through their sites
- Improve access to/ from schools
- Improve the street scene
- Making travel more affordable
- Reducing the need to travel

A system has been developed in London to measure the 'Public Transport Accessibility Level' (PTAL). The development of a similar tool for the city could be undertaken to provide an appropriate calculation of accessibility so that different car parking requirements, housing densities etc can be stipulated based on level of accessibility e.g. more accessible areas are subject to more stringent parking requirements and allow higher density developments.

### 6.6.12 Safe Routes to School

This should be incorporated in the roads strategy, with focus being on how safety can be improved in the vicinity of schools through traffic calming initiatives, promotion of more sustainable modes of transport, provision of training to educate students of best and safe practice when travelling.

### 6.6.13 Road Safety

This should be incorporated in the road strategy and include a comprehensive analysis of intersection crash statistics.

## 6.7 Summary

There has been a significant amount of strategy development undertaken to date, including consideration of access and parking, cycling, public transport viability, and area focused strategy. Gaps have been identified and these will be filled as part of the ongoing evolution of this integrated transport strategy.

It is intended that these individual strategies sit beneath this overarching integrated transport strategy, with this report providing a summary of the objectives and action plans. Individually these strategies address areas in Alliance's areas of strategic focus and therefore comply with national and regional policy; this is summarised in Table 10. It is intended that these individual strategies would be included in one or all of the following strategies:

- Public transport strategy
- Pedestrian strategy
- Cycle strategy
- Parking and Access Strategy
- Road strategy

The Herdsman and Scarborough Beach reports are standalone studies that incorporate the principles of the integrated transport strategy.

**Table 10: Strategy Contribution to the Areas of Strategic Focus**

	City of Stirling Areas of Strategic Focus				
City of Stirling Transportation Strategy	Governance	Accessibility and Urban Form	Environmental Health	Community Wellbeing	Economic Health and Sustainability
Accessibility Strategy <sup>1</sup>	✓	✓✓✓	✓	✓✓✓	✓
Access and Parking Strategy	✓✓	✓✓✓	✓	✓	✓✓
Cycle Strategy	✓	✓✓✓	✓	✓	✓✓✓
Demand Management Strategy <sup>1</sup>	✓✓	✓✓✓	✓	✓	✓✓
End of Trip Facilities Policy	✓	✓✓✓	✓	✓	✓✓
Herdsmen Business Park/ Glendalough Station Study	✓	✓✓✓	✓	✓	✓
Intelligent Transport Systems Strategy <sup>1</sup>	✓	✓✓✓	✓	✓	✓✓
Interchange Strategy <sup>1</sup>	✓	✓✓✓	✓	✓	✓✓✓
Pedestrian Strategy <sup>1</sup>	✓	✓✓✓	✓	✓	✓
Public Transport Strategy <sup>1</sup>	✓✓	✓✓✓	✓	✓✓	✓✓✓
Road and Freight Strategy <sup>1</sup>	✓✓	✓✓✓	✓	✓	✓✓
Road Safety Strategy <sup>1</sup>	✓	✓✓✓	✓	✓✓	✓
Scarborough Beach Road Activity Corridor Study	✓	✓✓✓	✓	✓	✓
Security Strategy <sup>1</sup>	✓	✓✓✓	✓	✓✓	✓
Safe Routes to Schools <sup>1</sup>	✓	✓✓✓	✓	✓✓	✓
Taxi Strategy <sup>1</sup>	✓	✓✓✓	✓	✓	✓
TravelSmart <sup>1</sup>	✓	✓✓✓	✓	✓	✓
Wayfinding/ Signage Strategy <sup>1</sup>	✓	✓✓✓	✓	✓	✓

Contribution to the Areas of Strategic Focus: High ✓✓✓ Medium ✓✓ Lower

1. Strategy to be developed as part of ongoing strategy refinement



## 7. Delivering Quality Travel – Targets and Objectives

### 7.1 Overview

The Stirling City Centre Alliance aims to deliver quality travel through their integrated approach to planning and transportation. The drivers for change are discussed and the strategic land use and mode targets specified. It is considered that target setting is an essential component of transport strategy because an absence of targets implies that strategy has no direction and achievement of an 'average' outcome is acceptable. An overarching principle of the Stirling City Centre Alliance is for 'win-win' outcomes.

An integrated strategy should consider the individual facets that comprise an integrated transport system and the measures that are proposed should support these. The focus of the integrated transport strategy is the delivery of the KRAs and objectives in the accessibility and urban form strategic focus area, however it is noted that integrated strategy will inevitably deliver objectives in the other areas relating to the environment, social inclusion/ equity, and economy.

The mode objectives and initiatives will be summarised and the alignment with local areas of strategic focus will be demonstrated. Further depth is provided on a precinct by precinct basis in Chapter 8.

### 7.2 Strategic Targets (Drivers for Change)

There are numerous factors that will influence the transformation of the city ranging from issues that are Stirling focused to issues that are global and a concern to all cities. Stirling needs to become an urban area that meets the objectives of both the City of Stirling and the wider area covered by Directions 2031.

The global economic events during 2008-09 and the ongoing debt management in multiple European nations require a robust strategy for development, energy and transport that is sympathetic to the economic, environmental and social needs of the residents of Perth. The City of Stirling and Stirling City Centre Alliance consider that the city is well placed to meet the demands for increased residential, office and retail space and growing population in a sustainable manner.

#### 7.2.1 Land Use and Development Growth Targets

The following land use and development growth targets are planned for Stirling City Centre:

- T1: Increase in residential dwellings from 1,625 to 13,900
- T2: Currently residential housing density is six dwellings per hectare, future 45 dwellings per hectare
- T3: Current population 3,800, future population 25,000
- T4: increase in 'strategic jobs' from 475 in 2006 to 4,124 by 2031
- T5: Total commercial floorspace of approximately 970,000m<sup>2</sup>, including: 438,000m<sup>2</sup> commercial, 48,000m<sup>2</sup> health/ welfare/ community, 461,000m<sup>2</sup> retail, and 23,000m<sup>2</sup> entertainment/ recreation/ culture

The rationale behind the substantial growth targets in the city, especially in terms of population growth, is that expansion at the edge of the Perth urban area is less sustainable due to the effects of increased travel distances, increasing energy costs, and loss of natural habitat and farmland. Changing demographics of an ageing population, smaller households, and changing lifestyle expectations are resulting in a growing demand for higher density living and better access to recreational and social amenities without the use of a private car. The city is well placed to facilitate this growth but is contingent on a high quality public transport system and development at a higher density to reduce the number of single occupancy car trips.

### 7.2.2 Mode Hierarchy and Share Targets

The realisation of the Stirling City Centre Alliance's development aspirations requires a significant change in travel behaviour from the existing mode shares. The existing trends show the dominance of the private car, but the targets for the City of Stirling reflect the aspiration to improve the mode share and reassign modes in the modal hierarchy to promote walking, cycling and public transport above the private car. The overall target mode shares (T6) for the study area are:

- car driver 35%,
- car passenger 15%,
- public transport 18%, and
- walking and cycling 32%.

The modal strategies are shown in Figure 19, Figure 20, Figure 21 and Figure 22.

### 7.2.3 Environment Targets

The integrated transport strategy will also contribute towards the achievement of environmental objectives. Therefore broad overarching targets are defined:

- T7: Reduce the CO2 emissions from transport travelling to and from the city, including freight vehicles
- T8: Increase the use and implementation of infrastructure to support alternative fuel vehicles
- T9: Reduce noise pollution from transport and improve air quality in the city

### 7.2.4 Social Targets

There are social targets that the integrated transport strategy can contribute towards, including:

- T10: Improve accessibility to services to reduce social exclusion
- T11: Improve access to/ from public transport interchanges for those with disabilities

### 7.2.5 Health Targets

The health agenda is becoming increasingly important and integrated transport planning can contribute towards the delivery of initiatives that support healthy living. Overarching targets include:

- T12: Increase the number of people walking and cycling to and from work to help reduce the levels of adult obesity
- T13: Increase the number of children choosing more active modes of transport to reduce the levels of childhood obesity

## 7.3 Objectives of the Integrated Transport Strategy

The integrated transport strategy is about setting the overarching objectives and strategy that will inform the detailed area plans and planning requirements of all new development. The action plans and strategies conform to local and state objectives and the timing of delivery of these is outlined in Chapter 9. The objectives are summarised beneath the areas of strategic focus and by mode in the accessibility and urban form. The objectives contribute towards the aforementioned land use, mode, environment, social and health targets.

Table 12: Summary of Integrated Transport Strategy Objectives (Part 2)

ACCESSIBILITY AND URBAN FORM: PRIVATE CAR AND FREIGHT	
<p><b>Objective APC1:</b> Provide a road network that is permeable and provides multiple routes for drivers travelling to, from and in the city.</p> <p><b>Objective APC2:</b> Reduce vehicle speeds on the road network wherever feasible and appropriate.</p> <p><b>Objective APC3:</b> Maintain the reserve beneath Stephenson Avenue as a potential future bypass tunnel under the city and adjacent areas.</p> <p><b>Objective AP1:</b> Provide levels of car parking that are appropriate to the future mode share targets, land use mix and densities, including rationalisation and analysis that, where practicable, promotes sharing of car parking between multiple land uses and a turnover of car parking spaces that improves availability of car parking in the city.</p> <p><b>Objective AP2:</b> Develop best practice guidelines for the design, standards, charging structures and management mechanisms for parking that are consistent to those to be applied across all of Perth's activity centres, and promote an increase in the number of people accessing the city centre by public transport, walking and cycling.</p> <p><b>Objective AP3:</b> Minimise parking construction costs and manage access to alternative transport modes to encourage use ensuring the road capacity is not exceeded.</p> <p><b>Objective AP4:</b> Manage the traffic routing to and from car parks in the city.</p> <p><b>Objective ASF1:</b> Promote efficient movement of goods and services in order to support sustainable economic development and prosperity, through improved movement of freight through the city.</p> <p><b>Objective ASF2:</b> Protect freight corridors and bypass routes to, from and in the city, including a north-south freight route linking to the Mitchell Freeway.</p>	<p>Supports targets: T1, T2, T3, T4, T5, T6</p>
ACCESSIBILITY AND URBAN FORM: DEMAND MANAGEMENT	
<p><b>Objective ADM1:</b> Promote initiatives that reduce the need to travel and reduce the length of journeys.</p> <p><b>Objective ADM2:</b> Provide viable alternatives to the private car.</p> <p><b>Objective ADM3:</b> Develop an integrated transport strategy that has the flexibility to meet the demands of a changing economy and market environments.</p> <p><b>Objective ADM4:</b> Coordinate new development with efficient, economic and timely provision of infrastructure and services.</p> <p><b>Objective ADM5:</b> Travel Plans to be a requirement of all planning applications that have a significant transportation impact.</p> <p><b>Objective ADM6:</b> Support initiatives that reduce the demand for car parking in the city.</p> <p><b>Objective ADM7:</b> Utilise intelligent transport systems to improve the operation of the network</p>	<p>Supports targets: T1, T2, T3, T4, T5, T6, T10, T11, T12, T13</p>
ACCESSIBILITY AND URBAN FORM: ROAD SAFETY	
<p><b>Objective RS1:</b> Meet the movement demands of all the users of the City of Stirling in a safe and secure transportation network.</p> <p><b>Objective RS2:</b> Meet the movement demands of all the users of the City of Stirling in a safe and secure urban realm.</p> <p><b>Objective RS3:</b> Make it easier and safer for people to access services.</p> <p><b>Objective RS4:</b> Reduce the number of deaths and serious accidents on the roads in the City of Stirling.</p> <p><b>Objective RS5:</b> Improve road user behaviour and infrastructure.</p> <p><b>Objective RS6:</b> Ensure that speed limits and travel speeds are appropriate for the safety of road infrastructure.</p> <p><b>Objective RS7:</b> Improve the safety of vehicles on the road.</p>	<p>Supports targets: T6</p>

**Table 13: Summary of Integrated Transport Strategy Objectives (Part 3)**

ACCESSIBILITY AND URBAN FORM: URBAN FORM	
<p><b>Objective UF1:</b> To provide an active vibrant and safe city with a mix of uses.</p> <p><b>Objective UF2:</b> Improve the quality of the public realm through provision of a high quality built form.</p> <p><b>Objective UF3:</b> Promote and support initiatives that maximise sustainability and achieve integration of land use and transportation in the proximity, planning and partnership areas illustrated in Figure 8. All new development to integrate with the existing and proposed transportation networks to ensure that the use of existing and future infrastructure is used efficiently.</p> <p><b>Objective UF4:</b> Encourage best practice design of new development proposals and redeveloped transport infrastructure proposals.</p> <p><b>Objective UF5:</b> Promote the City of Stirling as an activity centre and continue to propose strategy that supports the transit oriented development objectives promoted in regional planning policy. Create an urban centre that has public transport at the heart of the proposal and has higher density, mixed use, community and residential development located close to train stations or higher frequency/ quality public transport.</p> <p><b>Objective UF6:</b> Plan and provide for a wide range of employment, housing, recreational facilities and open space and facilitate growth in residential, commercial, and retail development at a higher density than currently exists.</p> <p><b>Objective UF7:</b> Maximise essential service infrastructure efficiency and equity and identify projects that maximise population growth.</p> <p><b>Objective UF8:</b> Locate major generators of travel demand in existing centres that have good transport links, either now or in the future.</p>	<p>Supports targets: T1, T2, T3, T4, T5, T10, T12</p>
ENVIRONMENT	
<p><b>Objective E1:</b> Minimise the emissions from transportation</p> <p><b>Objective E2:</b> Reduce the impact of transport on communities</p> <p><b>Objective E3:</b> Provide quality green spaces</p> <p><b>Objective E4:</b> Protect our natural and built environments and scarce resources</p> <p><b>Objective E5:</b> Protect individuals from unreasonable levels of noise and air pollution</p> <p><b>Objective E6:</b> Create sustainable developments that reduce demand for energy, transport and water</p>	<p>Supports targets: T7, T8, T9</p>
COMMUNITY WELLBEING	
<p><b>Objective C1:</b> Promote social inclusion by connecting communities with the services they wish to use on a day-to-day basis</p> <p><b>Objective C2:</b> Increase the accessibility to transport facilities for all sectors of the community</p> <p><b>Objective C3:</b> Plan transportation networks and facilities so that those with disabilities are able to access and use the network</p> <p><b>Objective C4:</b> Respond to social changes and optimise the land use and transport conditions that create vibrant, accessible, healthy and adaptable communities</p>	<p>Supports targets: T10, T11, T12, T13</p>
ECONOMIC HEALTH	
<p><b>Objective H1:</b> To maximise economic investment and feasibility of projects</p> <p><b>Objective H2:</b> To reduce the cost of capital and headwork infrastructure and maximise use of existing infrastructure</p> <p><b>Objective H3:</b> Provide a high capacity communications network</p> <p><b>Objective H4:</b> To provide high levels of diverse local employment</p> <p><b>Objective H5:</b> To promote a strong national economic identity for the city</p> <p><b>Objective H6:</b> Use a transparent system for determining charges for transportation and funding of infrastructure.</p> <p><b>Objective H7:</b> Link investment decisions to the overall plan for integrated transport</p> <p><b>Objective H8:</b> Develop a mechanism to capture value from new development to support the provision of quality transportation infrastructure</p> <p><b>Objective H9:</b> Provide a funding source for alternative transport</p>	<p>Supports targets: T1, T2, T3, T4, T5, T6</p>

## 8. Action Plans

### 8.1 Overview

The action plans take the area wide modal approach (shown in Figure 19, Figure 20, Figure 21 and Figure 22) and discuss these with the land use/ growth assumptions on a precinct by precinct level. The initiatives proposed as part of this integrated transport strategy support the delivery of the vision, and align with the local and state objectives. Central to this vision are core projects that provide benefits beyond the boundary of a single precinct; these are discussed within the area wide action plan (Section 8.4).

Major development should be located in areas of high accessibility where it does least harm to the environment and delivers most benefit to the wider community.

Investment in infrastructure will be required to promote the development growth aspirations of the Stirling City Centre Alliance and allow Stirling to fulfil its role as one of the region's most important strategic metropolitan centres. The measures proposed will be developed over the lifetime of the integrated transport strategy, with the intention being that this document will provide the framework to work with our partners, stakeholders and the local community.

### 8.2 Defining the Action Plan Areas

Six action plan areas are defined by the draft Stirling City Centre Structure Plan. The growth of the Stirling City Centre requires a coordinated approach to planning and transportation requirements of the area. To assist this process six precincts have been identified based on the qualities and characteristics that define each of them; these are: Innaloo Precinct, Northern Precinct, Osborne Park Precinct, Southern Precinct, Station Precinct, and Woodlands Precinct. Identification of these precincts enables staged implementation and design providing the common themes and triggers between them are fully understood.

The growth projected for these areas will place increasing demand on the transportation network and it is clear that there is a decision to make between planning for car growth, or planning for a quality urban centre where travel by more sustainable modes is dominant. The Stirling City Alliance wish to see the latter promoted and has been developing bicycle, parking, access, and light rail feasibility studies to inform this integrated transport assessment.

### 8.3 Area Wide Development Growth

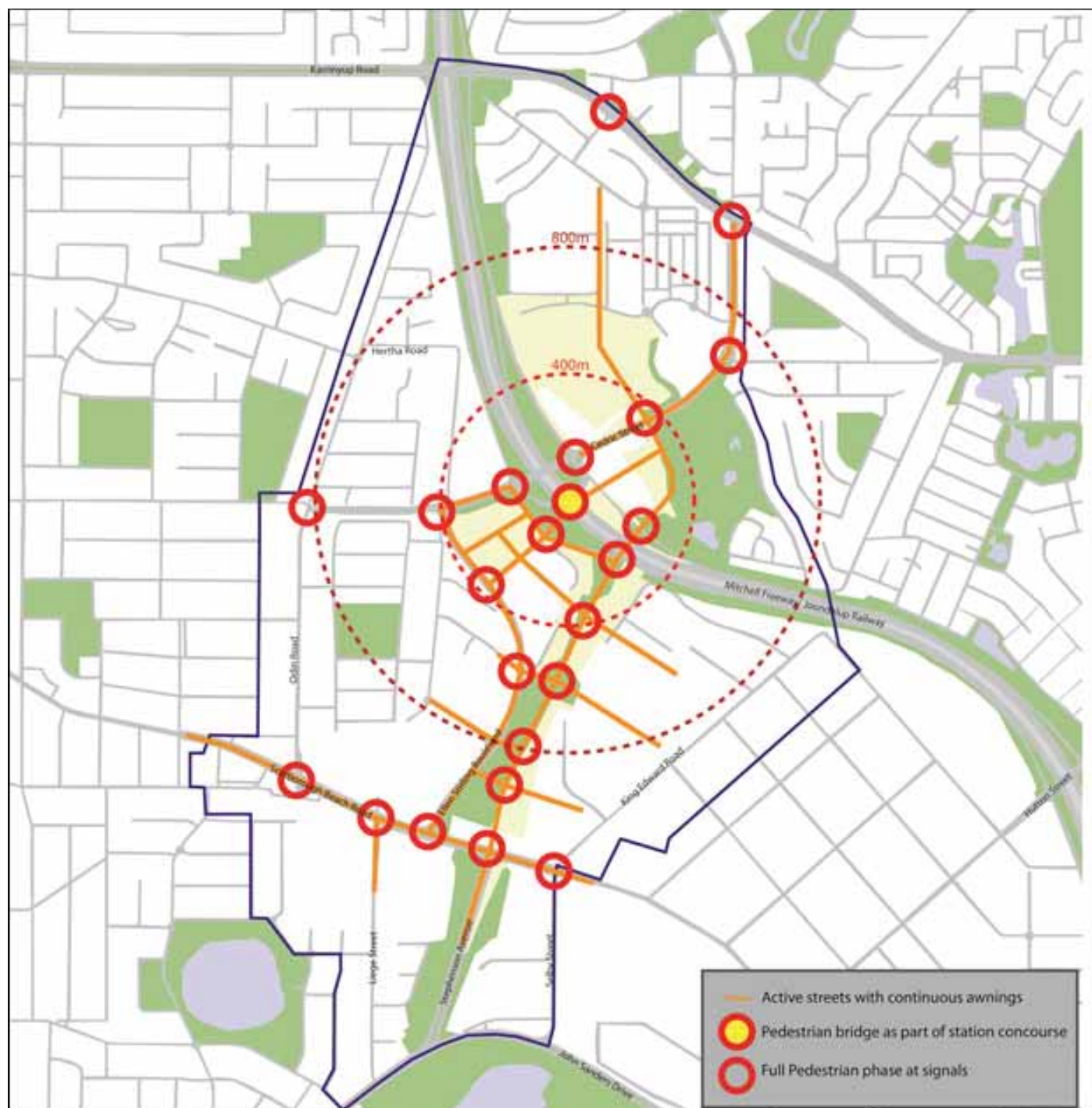
The growth aspirations of the city will require a radical change to the travel behaviour of individuals moving to and from the centre, and the transport infrastructure and strategy that is constructed and implemented.

The overall growth for the area includes an increase to approximately 13,900 residential dwellings and 970,000m<sup>2</sup> of commercial floorspace. The structure plan for the city is shown in Figure 24.

Please note the following figures, the Cycling Action Plan, Public Transport Plan, Public Transport Plan and Road Action Plan will be determined in the Public Transport Concept Design and the Traffic Modelling and Assessment process.

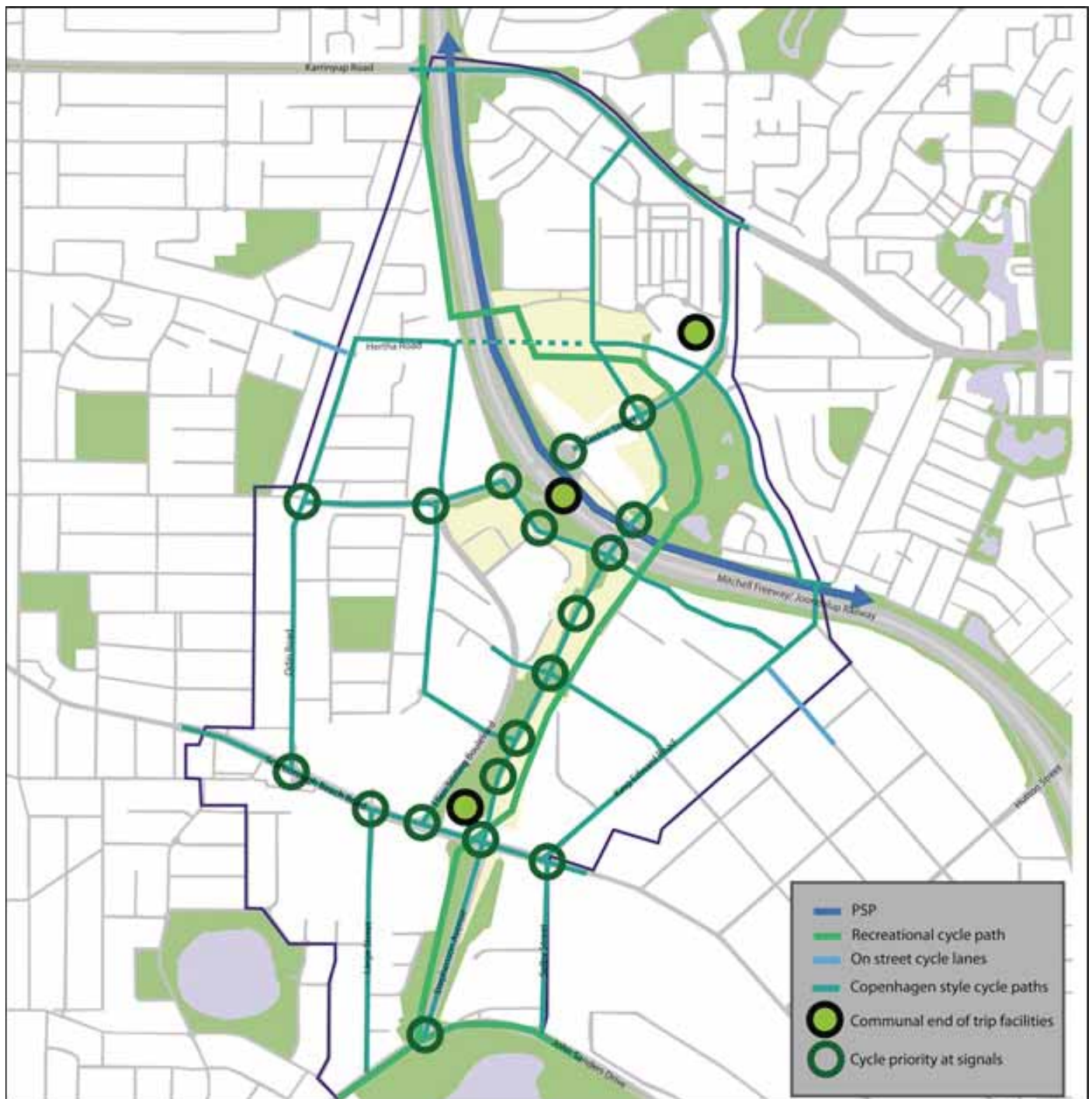


**Figure 19: Stirling City Centre - Walking Action Plan**



*Note: This layout can only be used to illustrate a possible option. The final movement network will be determined in the Public Transport Concept Design and the Traffic Modelling and Assessment process*

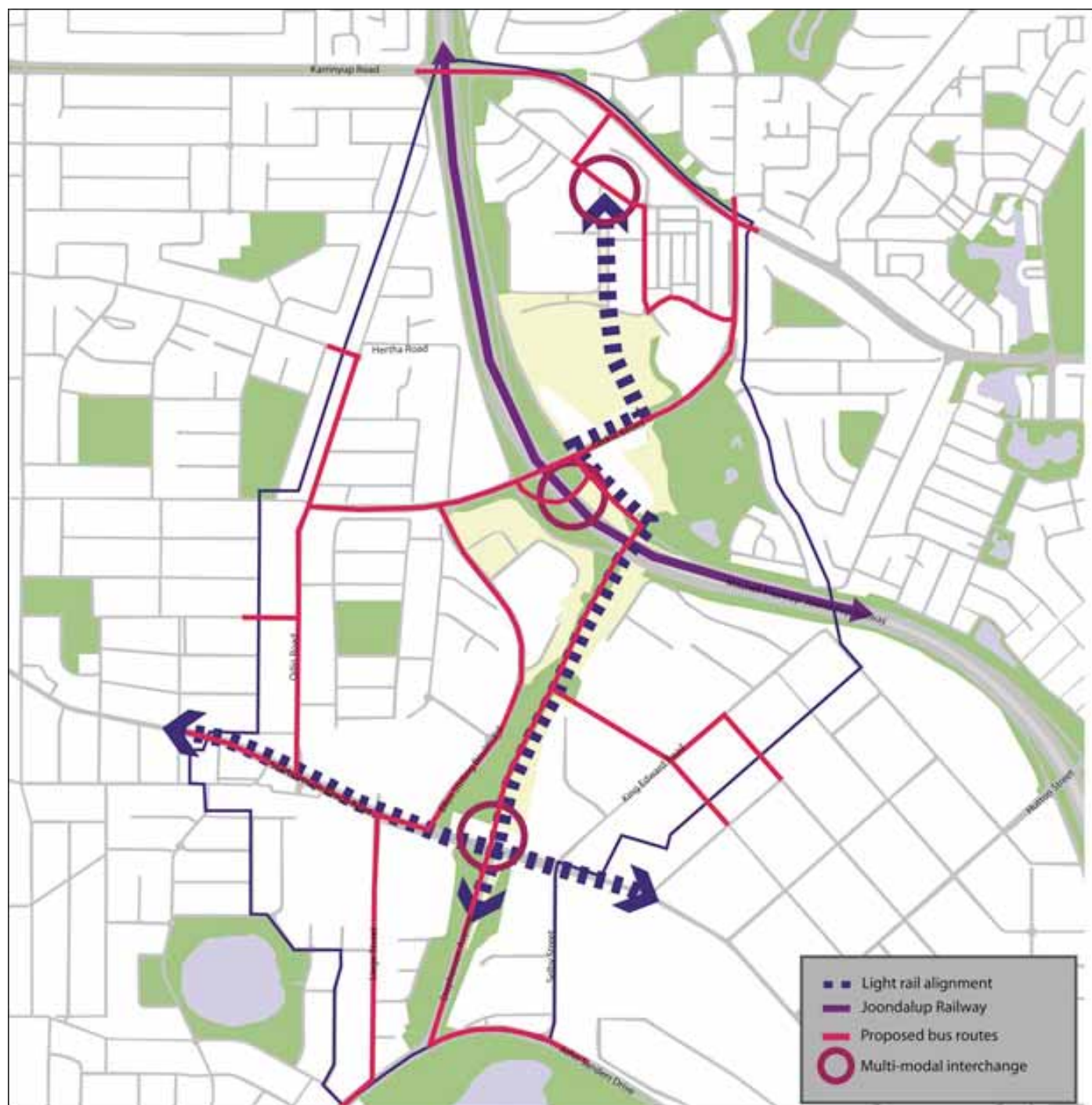
Figure 20: Stirling City Centre - Cycling Action Plan



Note: This layout can only be used to illustrate a possible option. The final movement network will be determined in the Public Transport Concept Design and the Traffic Modelling and Assessment process



**Figure 21: Stirling City Centre – Public Transport Action Plan**



*Note: This layout can only be used to illustrate a possible option. The final movement network will be determined in the Public Transport Concept Design and the Traffic Modelling and Assessment process*

Figure 22: Stirling City Centre – Road Action Plan



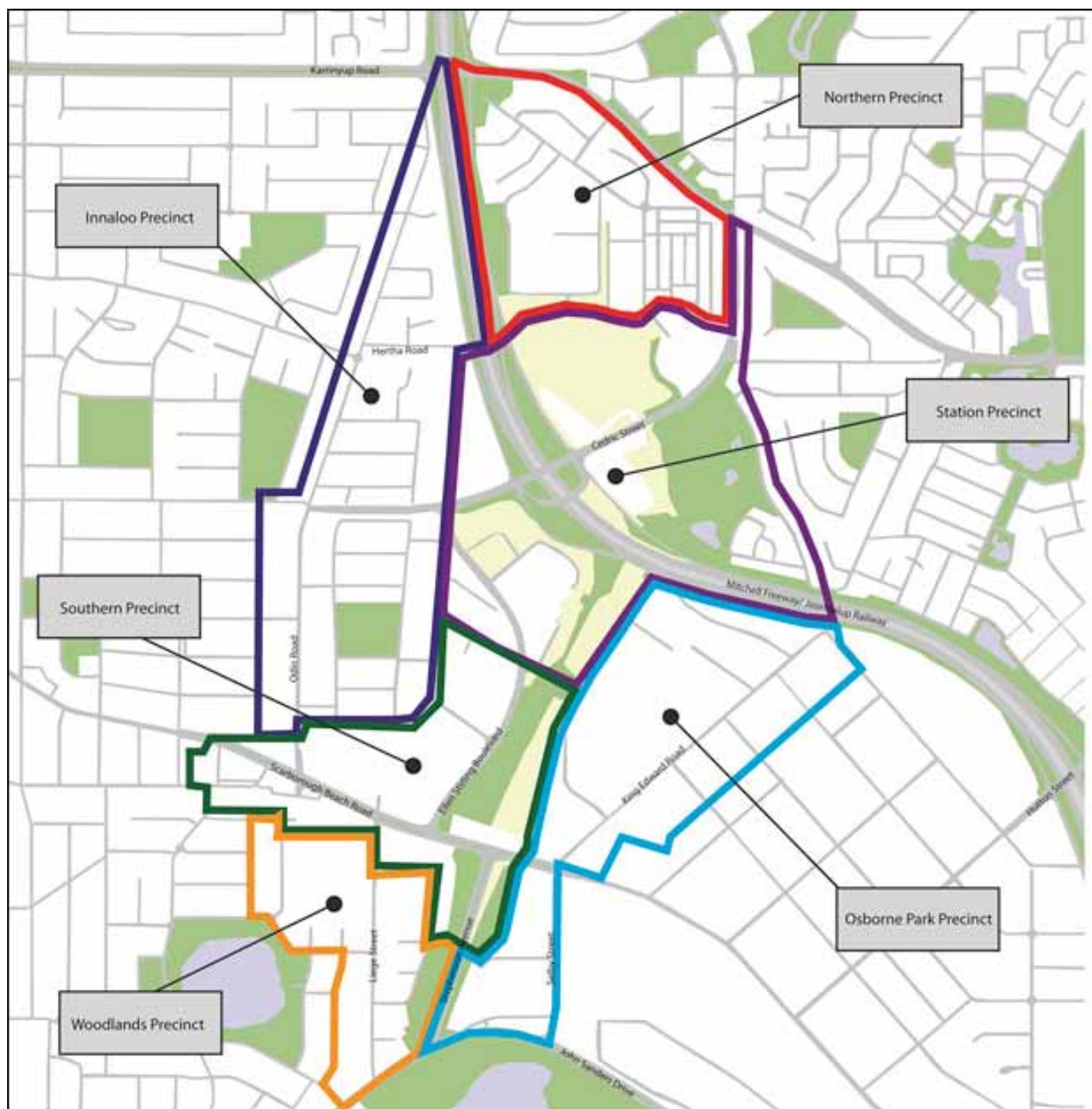
Note: This layout can only be used to illustrate a possible option. The final movement network will be determined in the Public Transport Concept Design and the Traffic Modelling and Assessment process

Table 11: Summary of Integrated Transport Strategy Objectives (Part 1)

GOVERNANCE		
<p><b>Objective G1:</b> Diverse representation of all stakeholders in an appropriate governance structure in a local office</p> <p><b>Objective G2:</b> To engage with all stakeholders across community, business and government with clear accountabilities whilst adhering to the vision</p> <p><b>Objective G3:</b> To deliver and define projects on time, cost and quality that ensure development meets the vision and provide positive advantages to all stakeholders</p> <p><b>Objective G4:</b> Require professionals of all disciplines and stakeholders to engage as part of a collaborative process to the planning of the city</p> <p><b>Objective G5:</b> Undertake cross boundary working to ensure that transportation policy, strategy and infrastructure proposals are integrated across authority boundaries</p> <p><b>Objective G6:</b> Develop actions plans to promote initiatives that meet the local, regional and national areas of strategic focus</p>		The integrated transport strategy has been developed by the Stirling City Centre Alliance and includes members from the major state bodies.
ACCESSIBILITY AND URBAN FORM: WALKING		
<p><b>Objective AW1:</b> To provide infrastructure and facilities that ensure high levels of walking, through a fine grained infrastructure of streets that are safe, comfortable and well connected.</p> <p><b>Objective AW2:</b> Improve the permeability of the pedestrian network by reducing the severance effect of existing road and rail infrastructure, and larger development plots.</p> <p><b>Objective AW3:</b> Increase the mode share of walking and cycling to over 17% to 22% and the number of pedestrian km's travelled by residents and visitors.</p>		Supports targets: T6, T7, T8, T9, T10, T11, T12, T13
ACCESSIBILITY AND URBAN FORM: CYCLING		
<p><b>Objective AC1:</b> To provide infrastructure and facilities that ensure high levels of cycling, through convenient, legible (wayfinding and signage) and improved on and off street cycle networks, and sufficient end of trip facilities at new development and transport interchanges.</p> <p><b>Objective AC2:</b> Improve the planning and safety of the cycle network to reduce the number of cyclists deaths and serious accidents on the highway network, through reduced vehicle speed limits and traffic calming. Reduce the speed differential between motorised modes of transport, cyclists and pedestrians in zones where conflict could occur.</p> <p><b>Objective AC3:</b> Improve the understanding of the benefits of cycling and increase the mode share of walking and cycling to over 10% to 15%, the frequency of trips, and the number of cycling km's travelled by residents and visitors.</p> <p><b>Objective AC4:</b> implement guidance and best practice requirements for the network so that new developments and developers understand the need to provide cyclist and cycle facilities to, from and in their sites.</p> <p><b>Objective AC5:</b> Ensure the needs of cyclists are recognised and provided for in the planning and road construction authorities, and promote cycle parking standards that are appropriate to the land use and target mode share for cycling.</p> <p><b>Objective AC6:</b> Develop a cycle network where no residential dwelling in the study area is located more than 200m from a cycle lane or path.</p> <p><b>Objective AC7:</b> Develop a program of cycle training and education for the residents and visitors of the city.</p>		Supports targets: T6, T7, T9, T10, T12, T13
ACCESSIBILITY AND URBAN FORM: PUBLIC TRANSPORT		
<p><b>Objective APT1:</b> Provide infrastructure and facilities that increases the number of people using public transport and facilitates the regeneration and intensification of development in the city, in line with City of Stirling, Stirling City Centre Alliance and Directions 2031 requirements.</p> <p><b>Objective APT2:</b> Propose a land use and transportation policy framework that allows the catalytic effects of a quality public transport system on economic uplift to be managed effectively and allow for value capture.</p> <p><b>Objective APT3:</b> Ensure that the local connections in multi-modal interchanges are legible, accessible, safe places, with sufficient capacity to accommodate existing and future movement and waiting demands when travelling as part of a multi-modal journey.</p> <p><b>Objective APT4:</b> Create a public transport system that reduces congestion, improves accessibility, and reduces the consumption of fossil fuels.</p> <p><b>Objective APT5:</b> Develop a public transport system that is standardised and integrated with other public transport proposals in the overall Perth system.</p>		Supports targets: T1, T2, T3, T4, T5, T6, T7, T9, T10



**Figure 23: Stirling City Centre – Precinct Action Plan Areas**





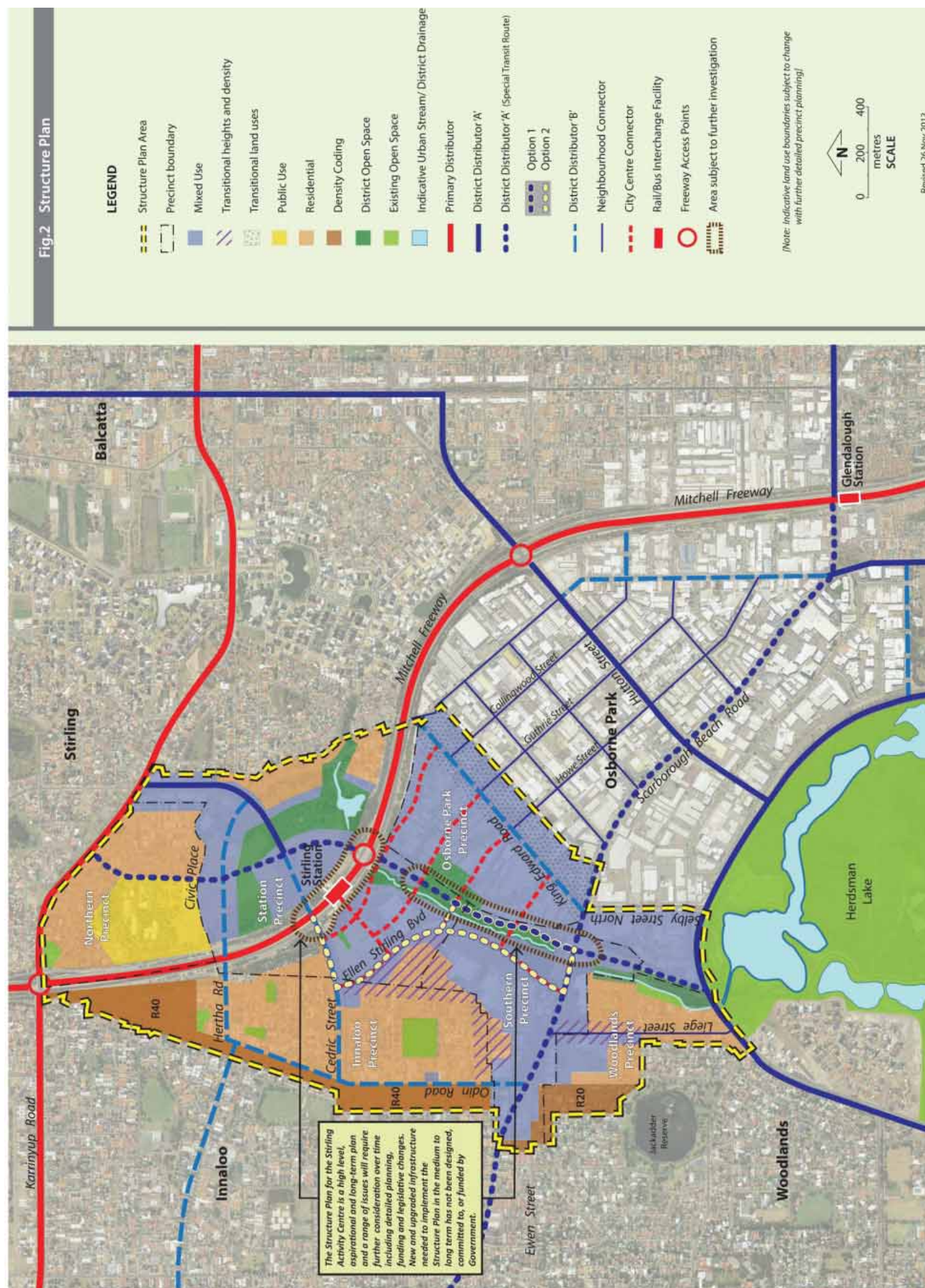


Figure 24: Stirling City Centre – Draft Structure Plan

## 8.4 Area Wide Action Plan

This integrated transport strategy will set out the actions required to deliver the growth and support the local and state objectives. There are projects and policies that are applicable to more than one precinct and therefore these are considered as part of the area wide action plan; the precinct action plans provide more information on the local details of the strategy.

It is acknowledged that these projects and development growth will be delivered in stages and therefore require a coordinated approach to action planning to meet both the short and longer term objectives. As discussed previously, this strategy report collates the components of the mode specific strategies and presents these as a summary. Therefore, should the reader require further details they are referred to the mode specific strategy reports.

The core schemes and policy are:

- Stirling Station and multi-modal Interchange
- Mitchell Freeway ramps and road upgrades
- Stephenson Avenue
- Light rail
- Bus network improvements
- Pedestrian crossings, footpaths and active street frontages
- Cycle paths and end of trip infrastructure
- Reserve for road/ rail tunnel beneath the city
- Freight corridor
- Gateways to the city to indicate change in road characteristics
  - ~ Speed reductions
  - ~ Streets with active frontage
  - ~ Car free zone
  - ~ Self explaining roads
- TravelSmart
- Standards, guidance and development application requirements

The alignment with policy and interdependencies are highlighted in Table 14.

Table 14: Core Actions and Policies, Support for Objectives and Areas of Focus, and Interdependencies

ACTION/ POLICY	SUPPORTS OBJECTIVES	SUPPORT FOR AREAS OF STRATEGIC FOCUS				
		Governance	Accessibility and Urban Form	Environmental Health	Community Wellbeing	Economic Health and Sustainability
Stirling Station and multi-modal interchange	AC1, APT3, ADM1, ADM2, RS1, RS2, RS3, UF5, UF8, C1, C2, C3	✓	✓✓✓	✓	✓✓	✓✓
Mitchell Freeway ramps and road upgrades	APC1, APC2, AC2, ADM7, RS1, RS3, RS5	✓	✓✓✓	✓	✓	✓✓
Stephenson Avenue	APT1, APC1, APC2, ADM2, RS1, RS3, RS5, UF5, C1, C2, C3	✓	✓✓✓	✓	✓✓	✓✓
Light rail	APT1, APT2, APT3, APT4, APT5, ADM1, ADM2, RS1, RS3, UF5, UF8, C1, C2, C3	✓	✓✓✓	✓✓	✓✓	✓✓
Bus network improvements	APT1, APT2, APT3, APT4, APT5, ADM1, ADM2, RS1, RS3, RS2, UF5, UF8, C1, C2, C3	✓	✓✓✓	✓✓	✓✓	✓✓
Pedestrian crossings, footpaths and active street frontages	AW1, AW2, AW3, APT1, UF1, UF2, UF5, C1, C3	✓	✓✓✓	✓✓	✓✓	✓✓
Cycle paths	AC1, AC2, AC3, AC4, ADM1, ADM2, RS1, RS2, RS2, UF8	✓	✓✓✓	✓✓	✓✓	✓✓
Reserve for road/ rail tunnel beneath the city	APC3	✓	✓✓✓	✓	✓✓	✓✓
Freight corridor	ASF1, ASF2	✓	✓✓✓	✓	✓	✓✓
Gateways to the city to indicate change in road characteristics	AC2, RS1, RS4, RS5	✓	✓✓✓	✓✓	✓	✓✓
TravelSmart	AW3, AC3, AC7, ADM1, ADM2, ADM5, RS3, E1, E2, E6, C2, C3	✓	✓✓✓	✓✓	✓	✓✓
End of trip infrastructure	AP1, AP2, AP3, AC1, AC3, AC4, ADM1, ADM2, ADM4, ADM6, RS3	✓	✓✓✓	✓✓	✓✓	✓✓
Standards, guidance and development application requirements	APC2, AP1, AP3, AC1, AC5, AC6, APT1, ADM1, ADM4, ADM5, ADM6, RS2, UF1, UF2, UF3, UF4, UF6, UF8, E6, C3, C4	✓✓	✓✓✓	✓✓	✓✓	✓✓
Speed reductions	APC2, AC2, RS1, RS4, RS3, RS6, E1	✓	✓✓✓	✓✓✓	✓	✓✓
Streets with active frontage	AW1, AW2, AW3, ADM2, C3	✓	✓✓✓	✓✓	✓✓	✓✓
Car free zone	AW1, AW2, AW3, ADM2, E1, E3	✓	✓✓✓	✓✓	✓	✓✓
Self explaining roads	APC2, AC2, RS1, RS4, RS3, RS6, E1	✓	✓✓✓	✓✓	✓	✓✓



### 8.4.1 Public transport

#### Stirling Station: Multi-Modal Transport Interchange

Stirling Station's role as a locally and regionally significant interchange between multiple modes of transport will become more important. The proposals are for improved pedestrian connectivity both through and into the station area, additional bus capacity, connectivity with the future light rail, and an increase in frequency and capacity of trains operating on the Joondalup Railway.

An integrated Station/Urban Form design is required to define the station footprint and linkages; preferably to 15% Concept Design standard.

A public transport plan, interchange strategy and interchange design will be prepared to support this integrated transport strategy. Further information regarding the interchange is including in the station precinct area action plan.

#### Stirling Light Rapid Transit (LRT)

The Alliance has commissioned studies to determine the preferred mode of transit for the public transport system in the city. In order to achieve the scale of development, proposed car parking standards and transportation mode shares, the analysis undertaken to date suggests that a light rail system is required.

The implementation and type of public transport that will be provided in the city is still being determined and will be informed by the development of a multi-modal transport model, further design of light rail options, and the public transport and interchange strategy that will all be undertaken during 2012/13.

#### Bus Network Improvements

The Public Transport Authority (PTA) has proposed revisions to the operation of the bus routes through the area as part of the development of a public transport strategy that will support the redevelopment of the city. Most notably, the bus services that currently operate on Scarborough Beach Road between Frobisher Street and Stephenson Avenue would be replaced by the future light rail system.

The network that is proposed for the future is shown in Figure 25.

The bus routes in each corridor will be discussed in the precinct specific action plans, but there are some general details that apply to multiple precincts in the city, including:

- Bus lanes/ tram lanes through Stephenson Avenue, Scarborough Beach Road, and Ellen Stirling Boulevard (light rail alignment depending)
- Bus priority at intersections (including facility to call green as bus approaches intersection)
- Real time passenger information and improved waiting facilities at all stops.

#### Pedestrian crossings, footpaths and active street frontages

The Stirling Alliance wishes to promote walking as a core mode of transport within the city. Figure 19 sets out the locations of intersections where pedestrians should be given dedicated crossing facilities and streets with active frontages and awnings provided. The City of Stirling has a program of footpath upgrade to increase the number of streets with footpaths on one or both sides. New road infrastructure and developments in the city should make provision for footpaths to be provided on both sides of the street.

#### Stirling City cycle infrastructure

A strategy for cycling has been prepared by the Alliance; sits beneath this overarching strategy (as shown in Figure 7). The strategy was discussed with stakeholders over an 18 month period to ensure that there was agreement from all parties on the way forward. The overall action plan is shown in Figure 20.

The cycle strategy included provision of Copenhagen style cycle lanes (see Figure 35 on page 100) on roads throughout the city that provides the users of the network with multiple route choices. Further detail on Copenhagen style cycle paths can be found in the Stirling City Centre Cycling Plan (June 2010). Priority will be provided to cyclists and appropriate treatments will be implemented at intersections throughout the city; further information is provided in Stirling City Centre Cycling Plan (June 2010).

A recommendation is for vehicle speeds to be reduced throughout the city so that the speed differential between motorised vehicles and cyclists is minimised.

The principal shared path network will be improved as part of the Stage 1 road and access works being defined in Main Roads' business case for infrastructure.

#### Cycle hire scheme

Consideration should be given to the development of a cycle hire scheme for the city, and end of trip facilities will be required at new commercial developments.

#### End of trip infrastructure

End of trip infrastructure influences the travel mode people will choose to a destination. Therefore, the provision of appropriate car parking, cycle parking, showers and locker facilities can help or hinder travel by the multiple modes of transport available.



The requirements for car and cycling parking, and end of trip facilities (showers, lockers etc) are detailed in the Stirling City Centre Access and Parking Strategy and the City of Stirling Policy Manual – Section 6.

A mechanism for achieving commitment to delivery of end of trip facilities is via a Travel Plan. Therefore, it is suggested that the local planning scheme and strategy should be updated to include a requirement for developers to submit a Travel Plan as part of development applications.

### Cycle parking supply – parking standards

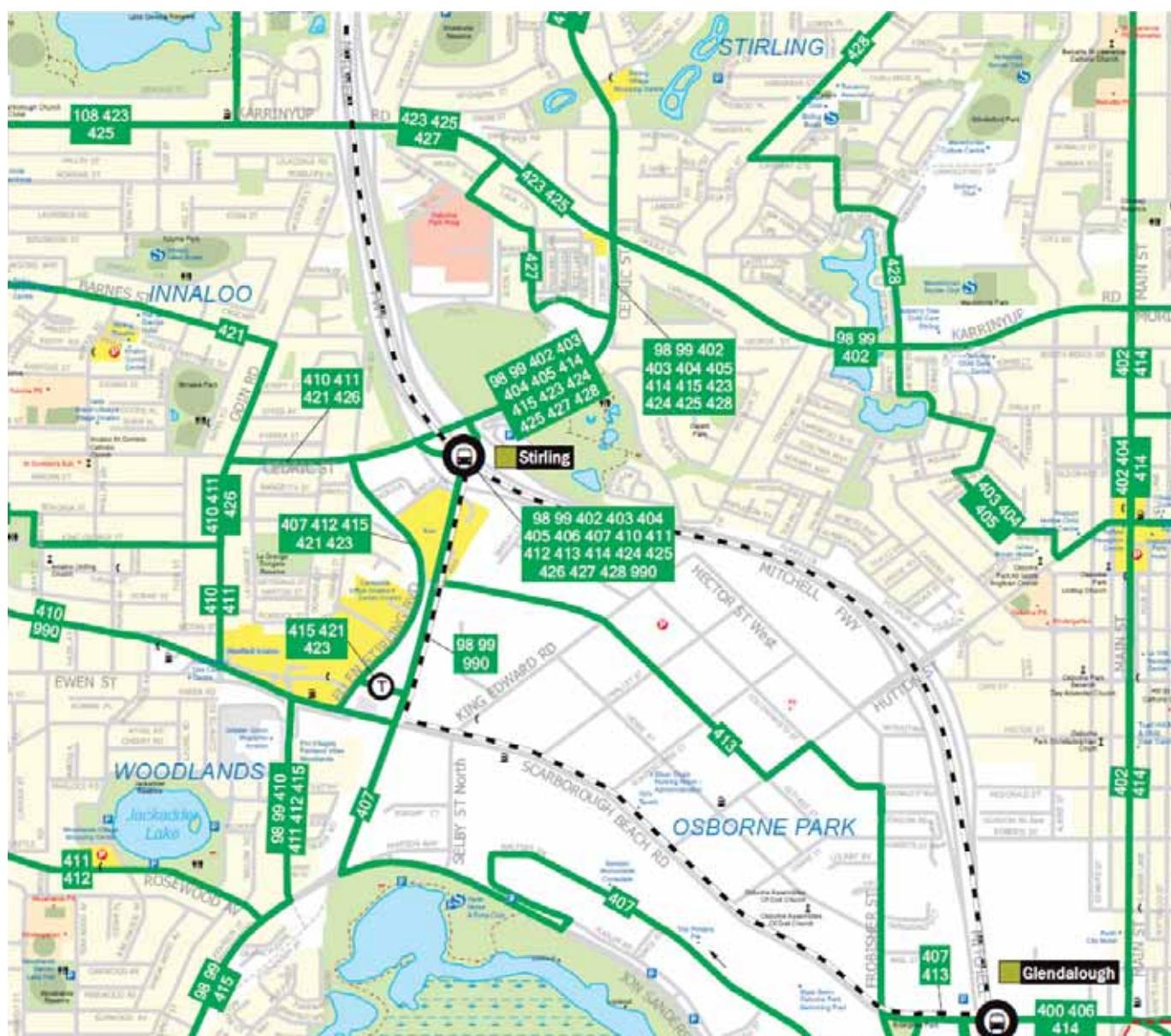
The bicycle parking standards that are included in the City of Stirling Policy Manual – Section 6 sets out bicycle parking standards for the city. These should be revisited and consideration has been given to the parking standards

proposed in the Stirling City Centre Cycling Plan (June 2010). The following standards are suggested in order to achieve the mode share targets for cycling:

- Residential: minimum of one cycle bay per unit
- Commercial/ office tenant: minimum of one cycle bay per 150m2 GFA
- Commercial/ office visitor: minimum of one cycle bay per 500m2 GFA
- Retail: minimum of one cycle bay per 200m2 GFA

The use of cycle parking at commercial and retail developments should be monitored to ensure that adequate parking is available. When the demand for cycle parking regularly exceeds 85% of supply, additional cycle parking should be provided.

**Figure 25: Future Bus Network in the Structure Plan Area**



### Mitchell Freeway Ramps, Stephenson Avenue, Road Upgrades, and Road Reserve for Future Tunnel

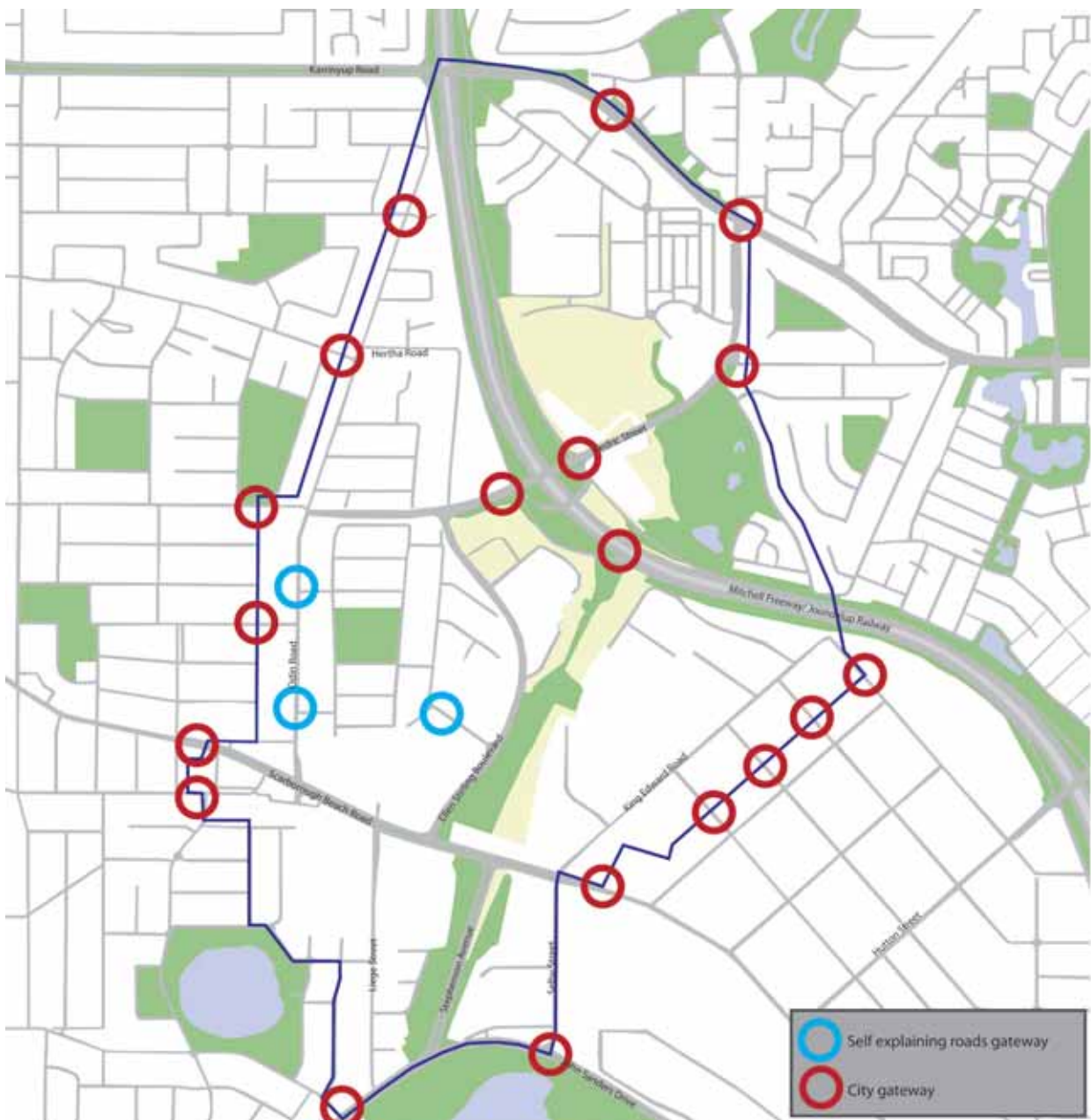
A long term transport plan has been developed by the Stirling City Centre Alliance to manage the flow and demand for traffic and people movement through the city. This solution illustrates one possible option. The arrangement to be adopted will be determined in the Public Transport Concept Design and Road Traffic Modeling and Analysis process.

This provides the road component of the holistic multi-modal approach to addressing movement demands in the city. Figure 22 shows these initiatives.

### Gateway Treatments

It is proposed that all roads in the development area will be limited to 30 km/h so the changes in speeds will need to be clearly defined on the approach and at gateways to the city. The locations of the gateways (shown in Figure 26) will be at intersections on the edge of the city and at the entry to the 'self explaining roads' area. The gateways will also allow marketing and branding of the town centre and set up a clear definition of the town centre.

**Figure 26: Locations of Gateway Treatments**





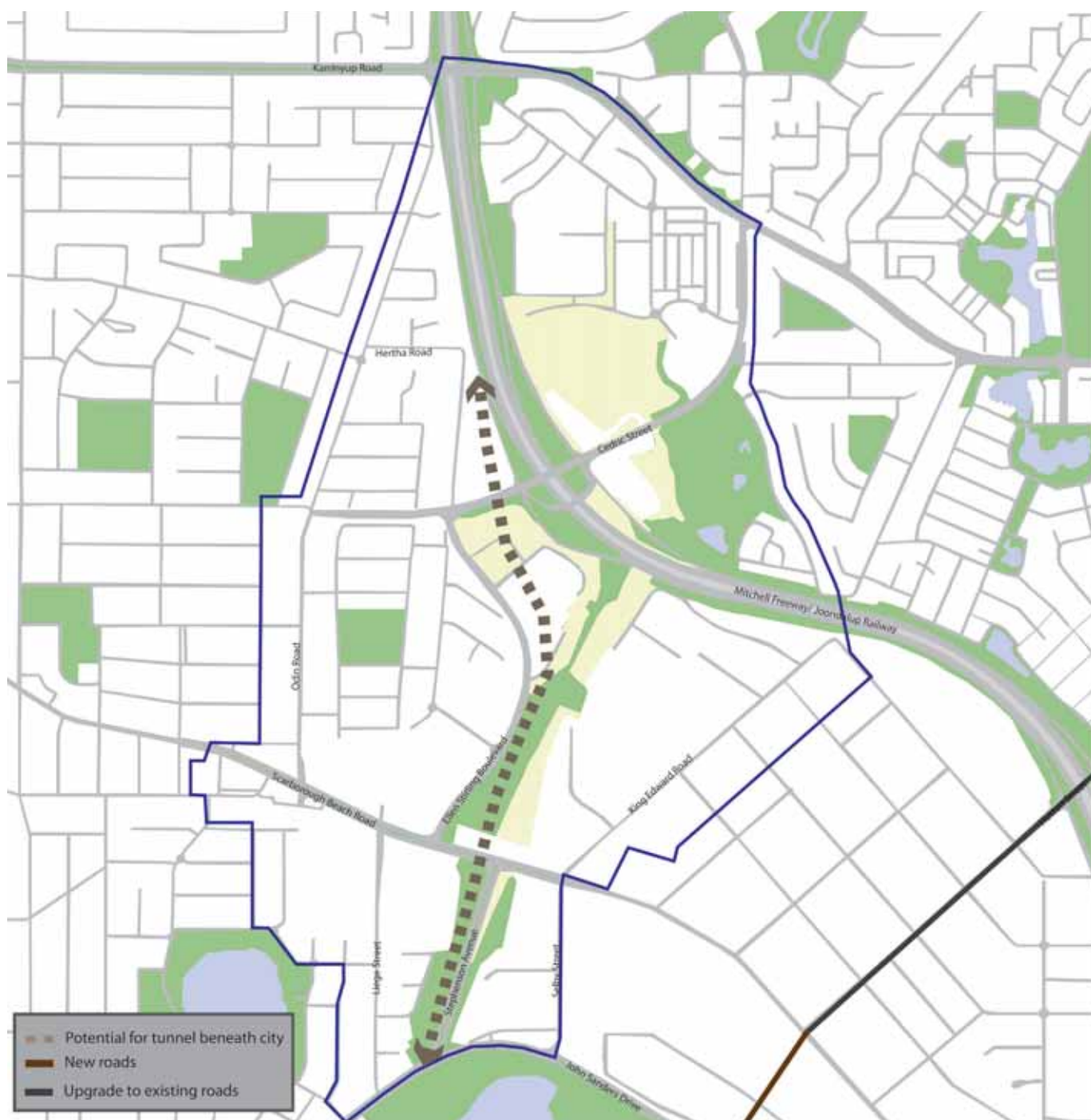
## Freight and Servicing for the City

There is a substantial amount of retail and commercial development proposed for the city and in the existing Osborne Park industrial area. This will therefore result in a significant number of service vehicles entering the city and wider area in a typical day.

Hutton Street will be widened and extended to Jon Sanders Drive to create a designated freight route through the city that provides easy access to and from the Mitchell Freeway.

Hutton Street is a logical route for freight because it facilitates direct access to and from the Osborne Park industrial estate. Freight servicing should be off-street and during periods where the noise is not intrusive on the residential development. Reservation is also included for the development of a tunnel beneath the city in the longer term. The freight network strategy/ plan are shown in Figure 27.

**Figure 27: Freight network changes**



### Car Free Zone, 'Self Explaining' Roads, Shared Streets Zone, and Active Street Frontages

A car free zone has been included in the supporting strategies. This area will comprise high quality public open space and recreational pedestrian and cycle paths in conjunction with higher density residential development. The benefits of this zone are that there would be higher numbers of people walking and cycling, less land take required for roads and parking allowing this to be allocated to the provision of more public open space.

The 'self explaining' roads initiative is being promoted in the Innaloo Precinct (shown in Figure 47). This will be discussed in further detail in the Innaloo Precinct Action Plan.

The shared street zone identifies an area where provision for multi-modal transport is included within the street design. The focus in this area is ensuring that there is a balanced allocation of space to each mode so that travel by more sustainable forms of transport is encouraged.

Active street frontages are important in the development of a city centre. The natural surveillance that is produced creates the perception of a more attractive pedestrian environment.

**Figure 28: City of Stirling – car free zone, 'self explaining roads', and shared street zone**



### 8.4.2 Car parking

#### Car parking supply – parking standards

A Stirling City Centre Access and Parking Strategy is in development. The strategy will define car parking standards.

The proposed strategy will also include initiatives to manage demand for parking such as :

- A pool of public shared parking
- Locate longer stay parking on the periphery of the city, and dispersed to minimise congestion on the road network
- Manage down the demand for park and ride at Stirling Station through promotion of travel to/ from the station by bus, light rail, walking and cycling
- Provide time limited and pay parking on the streets in the city and promote more user friendly payment mechanisms. Enforce parking controls to minimise the occurrence of illegal parking behaviour
- Promote car share schemes in the city, particularly at developments with very low or zero parking. The car share vehicles should be of a low emission standard or electric and therefore consideration needs to be given to developing a guidance document for the provision of electric vehicle charging infrastructure
- Improve wayfinding and parking guidance using real time car park occupancy signage on the approaches to the city
- The visual impact of car parks should be reduced through screening of decked car parks by the building form
- Reduce the severance effect of single level car parks
- Rationalise and consolidate parking through the sharing of car parking between land uses that have demand for parking at different times of a day

### 8.4.3 Other

#### Travel Behavioural Change

Travel behavioural change and mechanisms to support this are a key component of integrated transport strategy. Western Australia currently has a TravelSmart program managed by the Departments of Transport and Environment and Conservation. Travel Plans are a tool that can be used to promote the TravelSmart agenda and should become a mandatory part of development applications in the city; this will require changes to the existing local planning strategy and lobbying of support from state agencies.

#### Design standards, guidance, and development application requirements

Chapter 10 of this report outlines the policy, legislation, governance and financial requirements/ changes necessary to facilitate this integrated transport strategy. This includes the need to consider how the transport impact of new developments will be assessed and mitigated, and the need for developers to make a contribution to improving the transport system.

This integrated transport strategy provides the agreed in principle design standards for road cross sections in the city. Formal Transport Assessment and Travel Plan guidance documents should be produced by the City of Stirling to assist developers.. A developer contributions policy for transport will also be required, but it is critical that this be a Perth wide initiative.



## 8.5 Southern Precinct Area Action Plan

The southern precinct includes the existing Innaloo Shopping Centre site, both sides of Scarborough Beach Road from Stephenson Avenue to Odin Road, and the Stephenson Avenue reserve extending south towards Herdsman Lake.



### 8.5.1 Development Growth

The area will comprise of mixed use development, but have an emphasis on retail landuses. The existing shopping centre is likely to be redeveloped, with the Alliance's aim being to create a street-based shopping environment. The residential development will take the form of higher density residential apartments, and Ellen Stirling Boulevard will be reconfigured to create a public realm dominated by pedestrians. There will be an improved active frontage to activate the streets in the precinct. The development growth aspirations for this precinct are summarised in Table 15.

**Table 15: Southern precinct growth aspirations**

Residential	2,100 dwellings
Office	41,000m <sup>2</sup>
Health/ welfare/ community	7,000m <sup>2</sup>
Retail	200,000m <sup>2</sup>
Entertainment/ recreation/ culture	17,000m <sup>2</sup>

### 8.5.2 Maximum Parking Allowance

The Access and Parking Strategy (2010) defines the maximum parking allowances for each precinct. The maximum allowable and preferable/ likely total parking space numbers outlined in the Access and Parking Strategy (2010) are 7,330 for both.

### 8.5.3 Transportation Initiatives

The action plan for the southern precinct should address the key issues of concern, including:

- Need to align transportation strategy with timing of commercial development
- Improved access to the shopping centre
- Promote Ellen Stirling Boulevard as a pedestrian focused street/main street

These core transportation initiatives will be supported by the area wide initiatives discussed in Section 8.4 of this integrated transport strategy.

**Stephenson Avenue/ Scarborough Beach Road Public Transport Interchange**

A public transport interchange will be provided at the intersection of the proposed two main light rail lines on Stephenson Avenue and Scarborough Beach Road. The form of this will be determined as part of the public transport plan, a comprehensive transport interchange design study and modelling that will be undertaken. This interchange should include communal end of trip facilities for cyclists and be a hub for the storage of bicycles for the future cycle hire scheme.

**Stephenson Avenue – Central Section (Howe Street to Scarborough Beach Road)**

The central section of Stephenson Avenue will be constructed to facilitate multi-modal movement. . On-street parking, dedicated public transport lanes, and Copenhagen cycle lanes will be considered. The cross section for this part of Stephenson Avenue is shown in Figure 29 .

The intersections on Stephenson Avenue that will have a dedicated pedestrian and cycle phase, and bus/light rail priority are:

- Stephenson Avenue/Scarborough Beach Road
- Carbon Court/Stephenson Avenue/Oswald Street
- Howe Street/Stephenson Avenue (discussed in the station precinct)

The light rail vehicles will need to be stored locally due to the proposed extent of the light rail system. A site adjacent to Stephenson Avenue, south of Scarborough Beach Road has been earmarked in the light rail feasibility studies as the preferred location for the depot. A light rail/ bus interchange will be provided in the vicinity of the Stephenson Avenue/ Scarborough Beach Road intersection. This will need to be complemented by quality pedestrian facilities including a

dedicated pedestrian phase at this intersection. Provision for a tunnel for road and/ or rail has been included beneath the city as part of the agreement to remove the historical Stephenson Avenue freeway reserve.

**Scarborough Beach Road (King Edward Road to Bowra Avenue)**

Scarborough Beach Road will be reconfigured as part of the proposed redevelopment of the city. The traffic speeds on Scarborough Beach Road will be restricted by the application of a 30km/h limit subject to approval processes. The conceptual cross section for this part of Scarborough Beach Road is shown in Figure 30. This shows that there is provision for Copenhagen cycle lanes, two road lanes in both directions, and a dedicated light rail corridor.

**Ellen Stirling Boulevard (Howe Street to Scarborough Beach Road)**

The southern section of Ellen Stirling Boulevard will continue the characteristics outlined in the discussion of the station precinct. There is a proposal to elevate Ellen Stirling Boulevard to facilitate access into the Westfield shopping centre car parks; this will be evolved in discussions with the site owners. The cross section of Ellen Stirling Boulevard is shown in Figure 31.

**East West Roads - Oswald Street, and Carbon Court and others**

Oswald Street and Carbon court provide east-west connections into the Innaloo and Osborne Park precincts respectively. Oswald Street could be part of the Copenhagen cycle path network and the signalised intersections between these roads and Stephenson Avenue could have dedicated pedestrian and cycle phases. The conceptual cross section of Oswald Street is shown in Figure 32.

Figure 29: Stephenson Avenue Conceptual Cross Section (for Howe Street to Scarborough Beach Road)

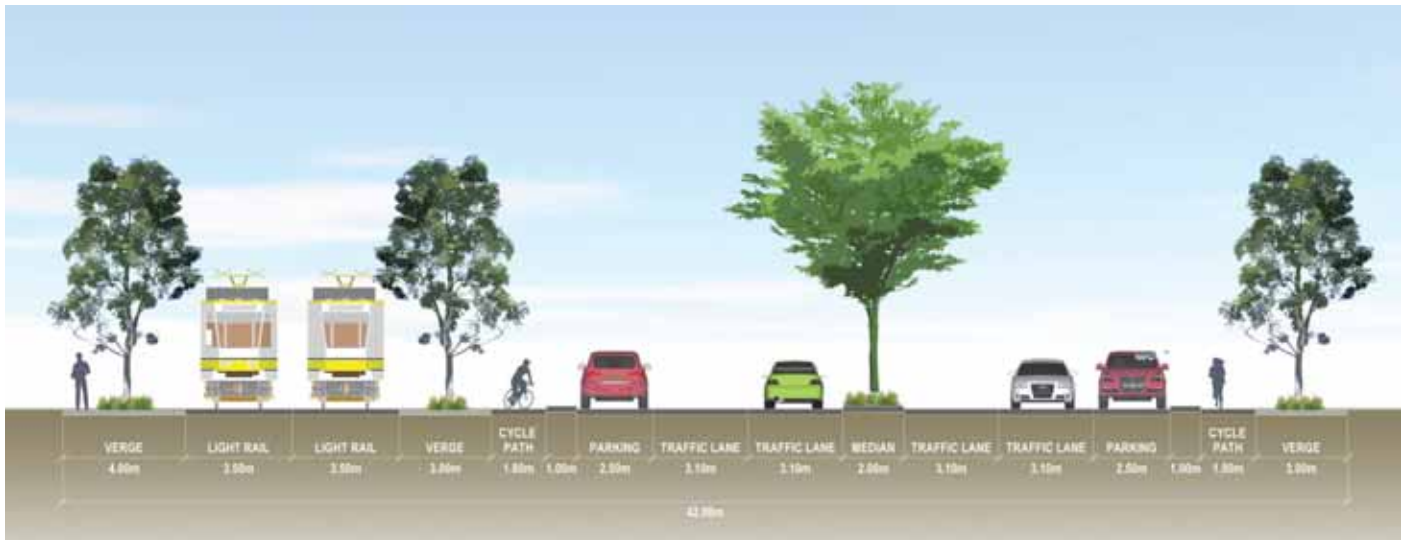


Figure 30: Scarborough Beach Road Conceptual Cross Section

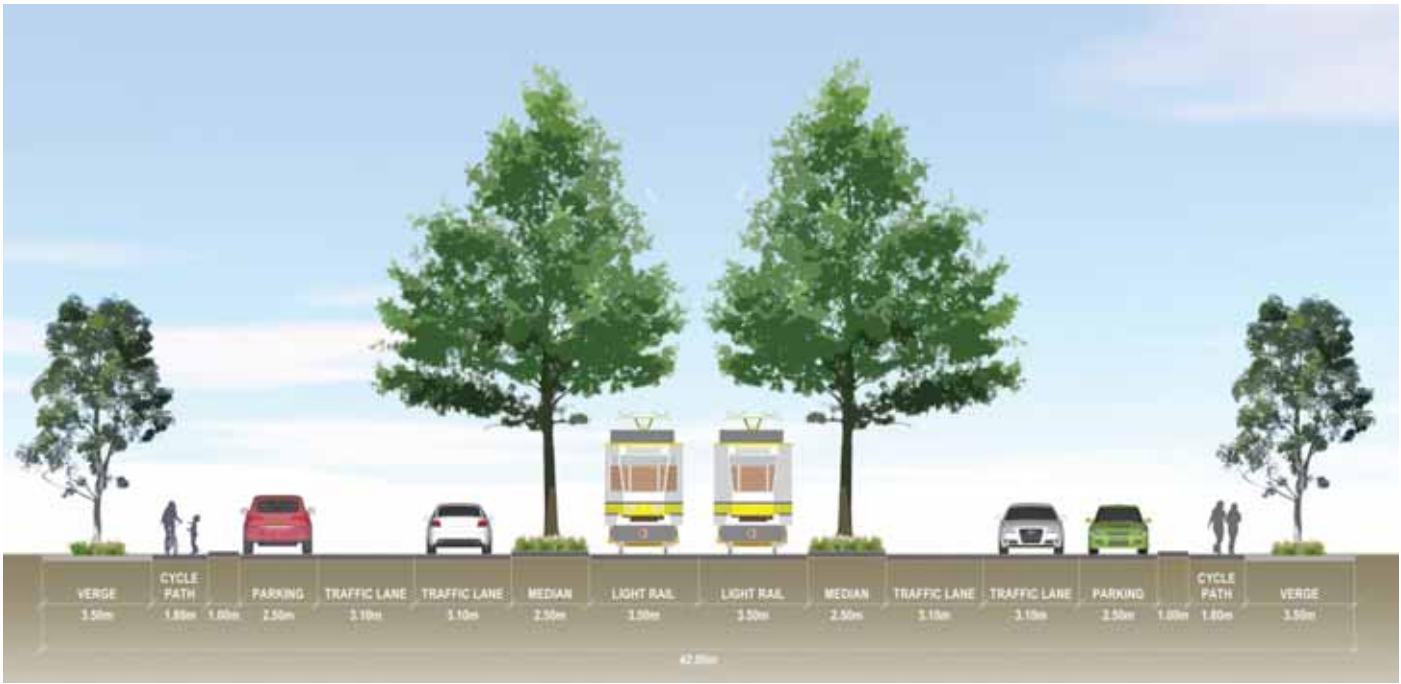


Figure 31: Ellen Stirling Boulevard Conceptual Cross Section (Howe Street to Scarborough Beach Road)



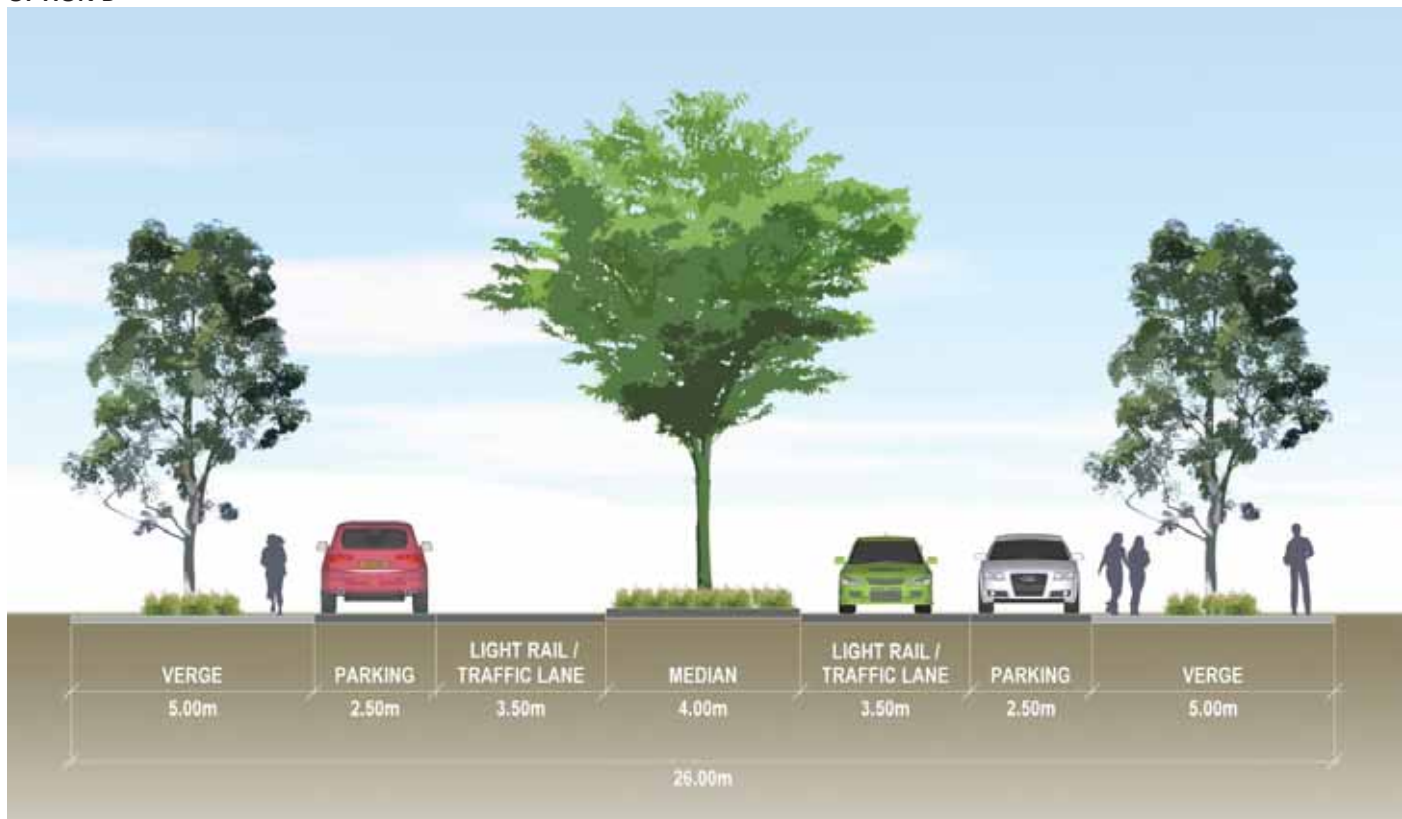


Figure 32: Oswald Street Cross Section

OPTION A



OPTION B



## 8.6 Station Precinct Area Action Plan

The station precinct includes all land in a 400m radius of Stirling Station and therefore represents an area that can accommodate higher density of development. The character statement for the area is to provide mixed use development that is office development led. The location provides a genuine opportunity to create a major regional business centre at the core of a major public transport interchange comprising bus, rail and LRT.



### 8.6.1 Development Targets for Station Precinct

The Stirling City Alliance wants to develop a transport network that facilitates the following development growth.

**Table 16: Station precinct growth aspirations**

Residential	4,500 dwellings
Office	291,000m <sup>2</sup>
Health/ welfare/ community	4,000m <sup>2</sup>
Retail	68,000m <sup>2</sup>
Entertainment/ recreation/ culture	4,000m <sup>2</sup>

The built form will reduce in height as development moves away from the train station; this will need to be carefully planned especially at the transition zones to the existing residential areas. A linear park and stream are key components of this precinct and the overall city green corridor.

### 8.6.2 Maximum Parking Allowance

The Access and Parking Strategy (2010) defines the maximum parking allowances for each precinct. The maximum allowable and preferable/ likely total parking space numbers outlined in the Access and Parking Strategy (2010) are both 4,660 bays.

### 8.6.3 Transportation Initiatives

This precinct forms one of the main hubs for multi-modal interchange, freeway access and access into the northern section of Stephenson Avenue. Permeability across the Mitchell Freeway is fundamental to connecting the northern and southern areas of the precinct.

The action plan for the southern precinct should therefore address the following issues of concern:

- Requirement to be the focal point for interchange between local and regional transport
- Connectivity and provision of a safe pedestrian environment for crossing of the freeway

Therefore there is a need to upgrade the multi-modal interchange at the station, facilitate LRT access to Stephenson Avenue, manage vehicle access between Stephenson Avenue and Mitchell Freeway, and improve north-south pedestrian connectivity. The car free zone and end of trip facilities were discussed in Section 8.4 of this strategy.



### Stirling Station and Multi-Modal Transport Interchange

The Stirling Station multi-modal interchange will be required to accommodate travel movements by walking, cycling, bus, light rail, kiss and ride, and heavy rail. The multi-modal interchange has a local and regionally significant role to assist meeting the growth aspirations for the city and to facilitate the wider network upgrades proposed as part of the Department of Transport's Public Transport for Perth in 2031 strategy.

The design of this interchange will be developed at a later date to advance the current concept; the preliminary concept is shown in Figure 33 and includes duplication of the existing bus facility for reference only.

There is overlap between the development of the transport interchange and the land development in the vicinity of the station. The land use and transport components will need to be designed together to ensure that appropriate access and development scales can be provided in a transit oriented scheme.

The aim is to provide an interchange layout and development configuration that improves the permeability across the Mitchell Freeway so that the north and south developments are closely integrated. The concept should include a pedestrian connection through to Sarich Court that provides both a strong pedestrian connection into and through the station area, and a quality pedestrian square marking the gateway to the city centre.

The proposal may require discussion of the air rights with the relevant State agencies if further development above the interchange is promoted. The transit oriented developments at Subiaco, Joondalup and the future Perth City Link show that there is a precedent in Perth for construction of interchanges and development above railways

The interchange will require bus priority to be implemented at the access intersections. The conceptual layout shown above allows for different access routes, and shows there is an important intersection at the entrance to the bus station that will need to accommodate buses, light rail, cars, pedestrians and cyclists. The signals at this intersection will need to be configured to prioritise the bus and light rail movements and also include a dedicated pedestrian phase. The intersections with Cedric Street will also need to include public transport priority to ensure that buses and light rail do not get delayed because any delay will reduce the attractiveness of this option.

Whilst it may be desirable to orient the public transport requirements off Cedric Street it is still subject to the broader studies in progress and therefore subject to change.

The preliminary alignment for the light rail system shows the route via the new Stephenson Avenue extension and Cedric Street. The interchange between the light rail and other modes is currently shown north of the station; it is suggested that it would also be beneficial to have a southern interchange that is located as close to the mainline railway as practicable.

**Figure 33: Stirling Station Multi-modal Interchange - Concept Plan**



The interchange must include provision for taxis and kiss and ride preferably on both the northern and southern sides of the interchange. The station must be fully Disability Discrimination Act (DDA) compliant, include real time passenger information and wayfinding signage to assist travellers in making a seamless interchange. The station and interchange will include communal end of trip facilities and will also be a location for storage of bicycles when a hire scheme is implemented. It is suggested that a series of performance standards are defined so that the interchange requirements are agreed prior to the design and modelling.

#### **Stephenson Avenue – North Section (Civic Place to Howe Street)**

The northern section of Stephenson Avenue is defined here as being the section that will be constructed between Cedric Street and the planned extension of Howe Street. The vision for this road is to create a multi-modal corridor that has a high quality streetscape, including central public transport lanes, Copenhagen style cycle lanes, active street frontage, some on-street car parking, wider pedestrian paths and street planting to improve the overall visual amenity. The speed limit will be 30 kilometres per hour.

A conceptual cross section of the Stephenson Avenue road reserve has been agreed previously in principle and a detailed design of this corridor should be developed to tie in with work being undertaken for the freeway ramps. An indicative cross section for Stephenson Avenue is shown in Figure 34. The cross section shows the light rail system running through the centre of the street (in the median) to accommodate these vehicles and the associated passenger waiting facilities; buses operating on the future routes 98, 99, 413 and 990 may also be able to use this corridor.

The design of the signalised intersections on Stephenson Avenue should accommodate the public transport lane requirements a facility to 'call green' when a public transport vehicle approaches the intersection that so that delay to the public transport operation is minimised should be considered with operational implementation.

#### **Access to Mitchell Freeway**

The access to Mitchell Freeway could be reconfigured as part of the overall transport strategy. The initiatives proposed that are in the boundary of the station precinct area action plan could include:

- New Hertha Road Bridge with access to the freeway south only or via retention of the existing Cedric Street north ramps.
- New freeway access at Stephenson Avenue
- New collector/ distributor roads parallel to Mitchell Freeway
- Managed motorways initiative

The design of the freeway ramps which would be undertaken by Main Roads WA and 'managed motorways' is being included in the overall concept to improve traffic flow on the Mitchell Freeway.

#### **Cedric Street (Karrinyup Road to Ellen Stirling Boulevard)**

Cedric Street is an important east-west road through the station precinct. The character of Cedric Street could be changed dramatically as a result of the development in and around the station. A potential cross section is shown in Figure 37.

The cross section shows that there are not dedicated lanes for bus or light rail on this road but priority for public transport movements should be provided at signalised intersections.

#### **Ellen Stirling Boulevard – Northern Section (Cedric Street to Howe Street)**

This section of Ellen Stirling Boulevard currently accommodates the traffic generated by the existing IKEA development and the existing traffic travelling to Westfield Innaloo. The construction of Stephenson Avenue will reduce the traffic volumes on Ellen Stirling Boulevard. The cross section of Ellen Stirling Boulevard is shown in Figure 38.

Signalised intersections should include priority for buses and facilities for pedestrians and cyclists.. Copenhagen cycle paths could be provided along Ellen Stirling Boulevard.

Ellen Stirling Boulevard will also accommodate bus vehicle movements. The bus facilities should include real time passenger information and upgraded waiting facilities that include shelters and seating.

Figure 34: Stephenson Avenue Conceptual Cross Section – Cedric Street to Freeway

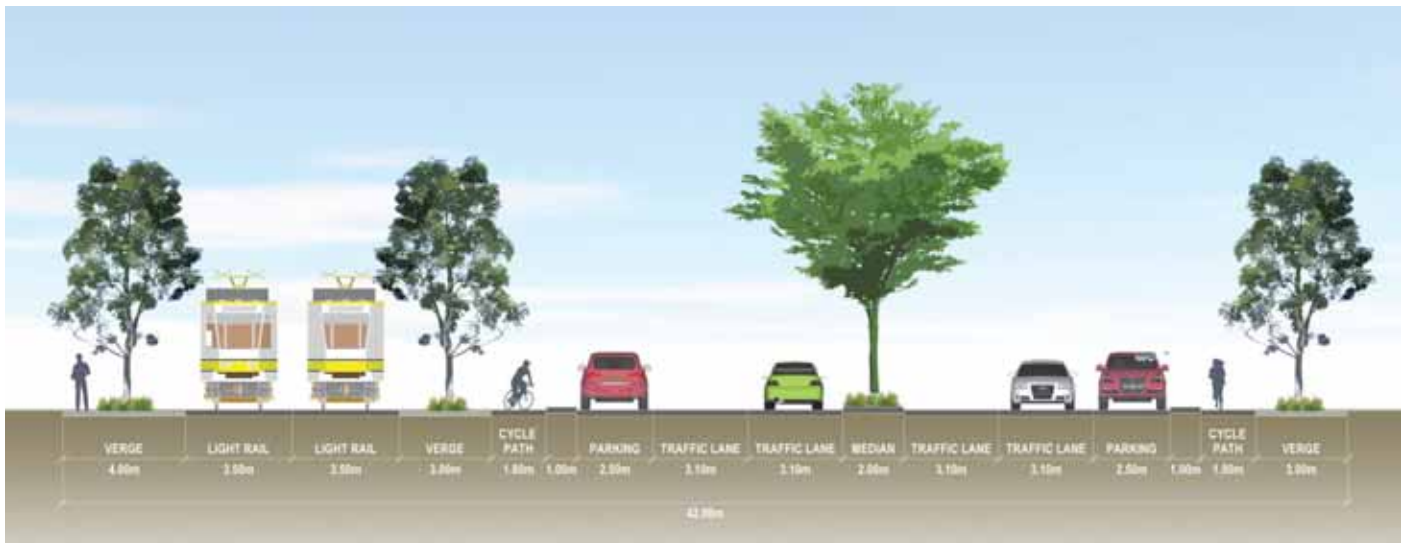


Figure 35: Stephenson Avenue Conceptual Cross Section – Stephenson Bridge

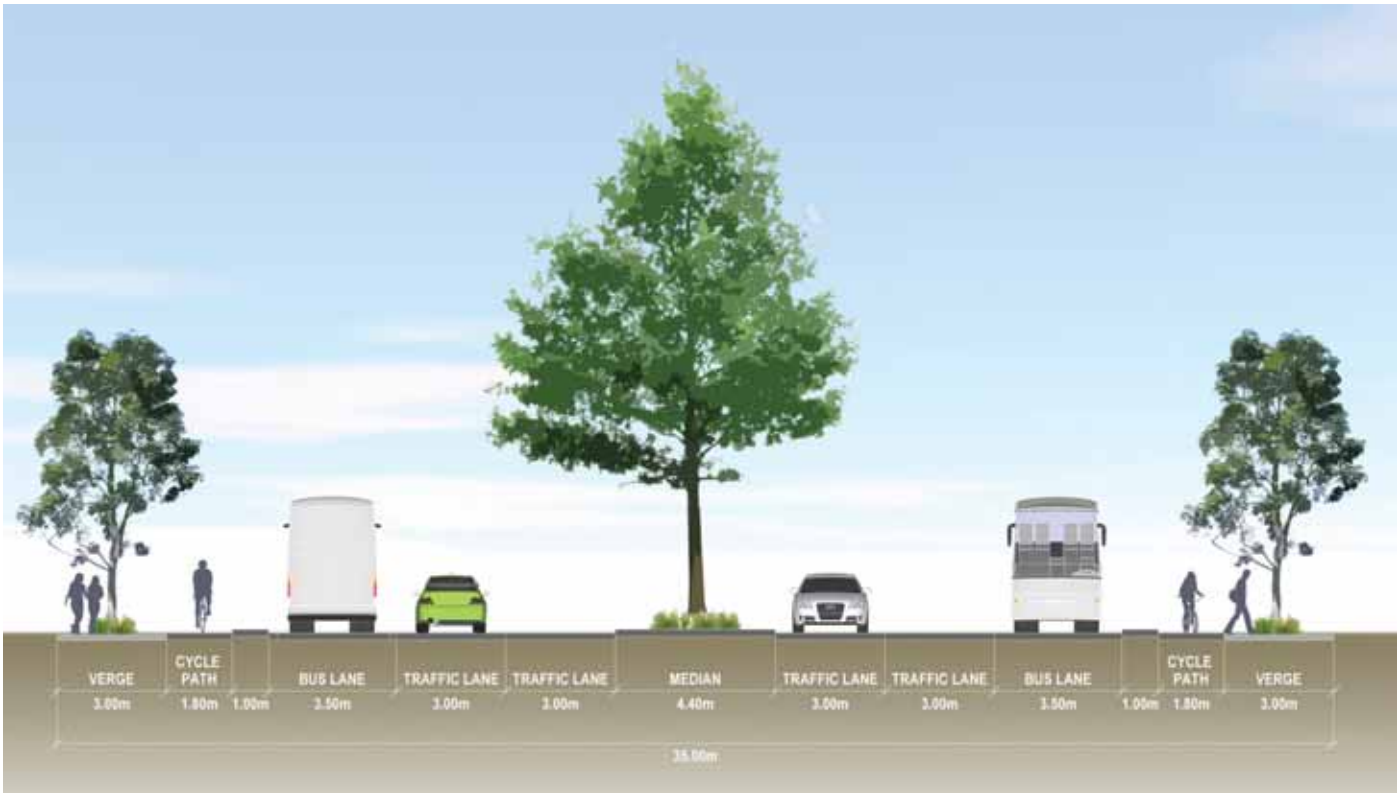


Figure 36: Stephenson Avenue Conceptual Cross Section – Freeway to Guthrie Street

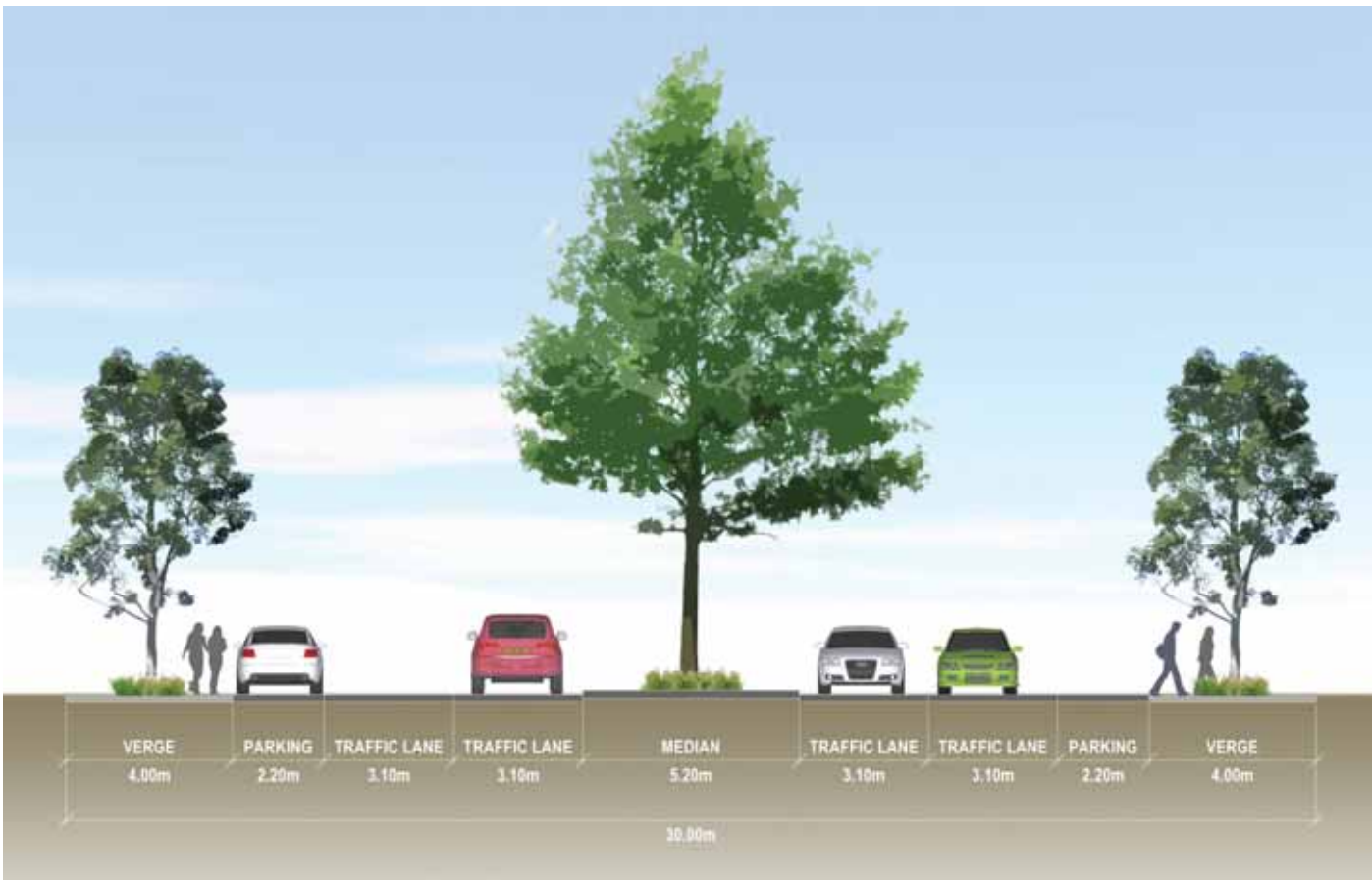




**Figure 37: Cedric Street Conceptual Cross Section (between Ellen Stirling Boulevard and Freeway)**



**Figure 38: Ellen Stirling Boulevard Conceptual Cross Section (between Cedric Street and Howe Street)**





**East West Road Upgrades: Sarich Court, Guthrie Street, and Howe Street**

Sarich Court could be extended beneath the alignment of Stephenson Avenue to connect with Sunray Drive. Sarich Court will therefore provide an alternative east-west link to King Edward Road and beyond to Hutton Street via Hector Street. The cross section for Sarich Court is shown in Figure 39 and includes Copenhagen cycle lanes.

Sarich Court/ Sunray Drive is proposed to be a signalised intersection. This should include a dedicated pedestrian phase because of the proximity to the main station entrance. Guthrie Street and Howe Street could be extended to create new east-west roads between Stephenson Avenue and King Edward Street; Howe Street could also extend through to Ellen Stirling Boulevard. The proposal is to provide Copenhagen cycle lanes on Howe Street.

The cross sections for Guthrie Street and Howe Street between King Edward Road and Stephenson Avenue are shown in Figure 40 and Figure 41. The section of Howe Street between Stephenson Avenue and Ellen Stirling Boulevard also includes provision for routing the light rail; the agreed cross section is shown in Figure 42. This connectivity is subject to further modelling and analysis.

**Telford Crescent**

Telford Crescent is located on the eastern edge of the precinct. A Copenhagen cycle path will be provided and a minimum road reserve width of 22m is specified in the Cycling Strategy (2010).

**Principle Shared Path Cycle Network Improvement**

The Principal Shared Path (PSP) network will be connected so that the route runs adjacent to Mitchell Freeway; currently the PSP deviates from the edge of the freeway in the vicinity of Stirling Station. This improvement is included in the Main Roads WA scheme for the changes to the freeway ramps and construction of the northern section of Stephenson Avenue. This scheme is consistent with the proposals set out in the WA Bicycle Network Plan 2012-2021.

**Figure 39: Sarich Court Conceptual Cross Section**



Figure 40: Guthrie Street Conceptual Cross Section (between King Edward Road and Stephenson Avenue)



Figure 41: Howe Street Conceptual Cross Section (between King Edward Road and Stephenson Avenue)

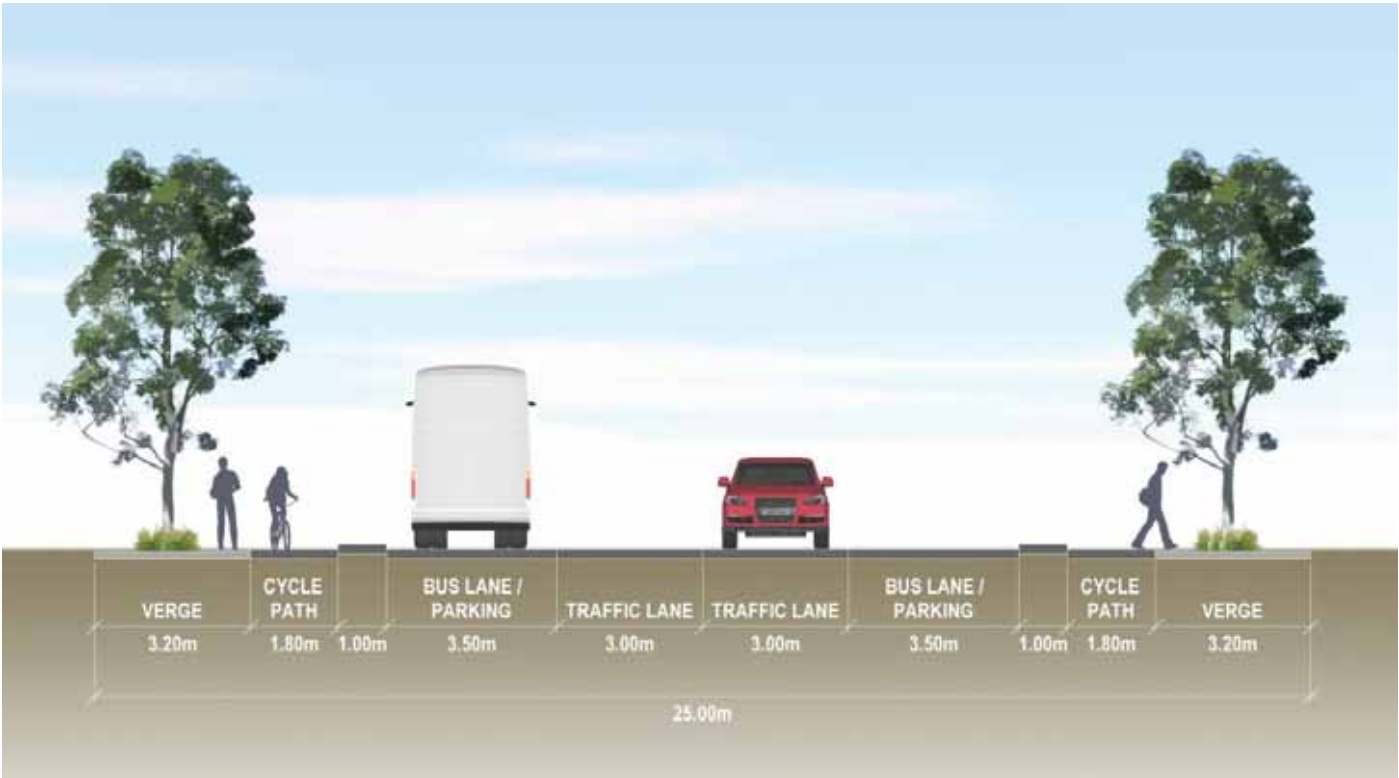
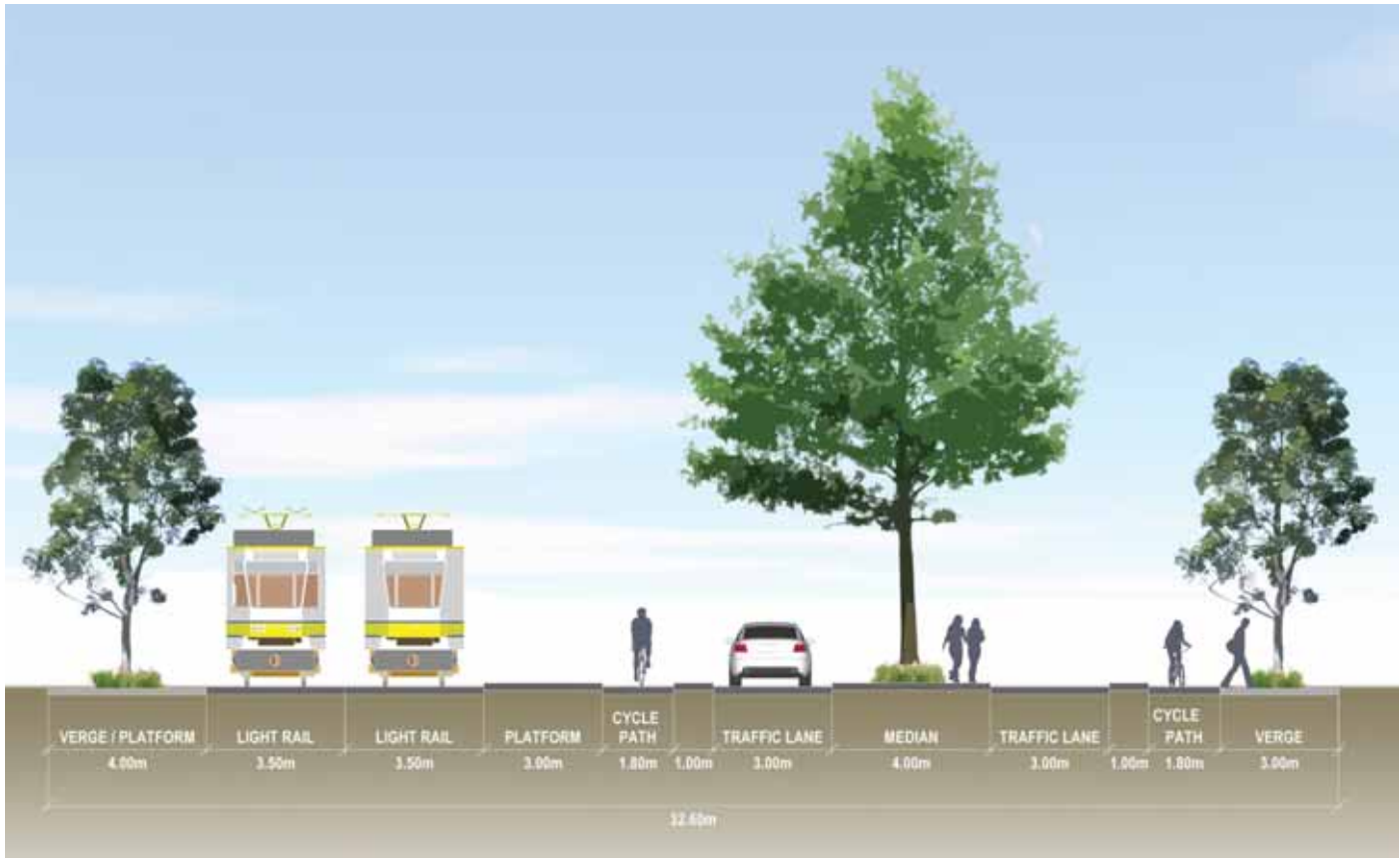
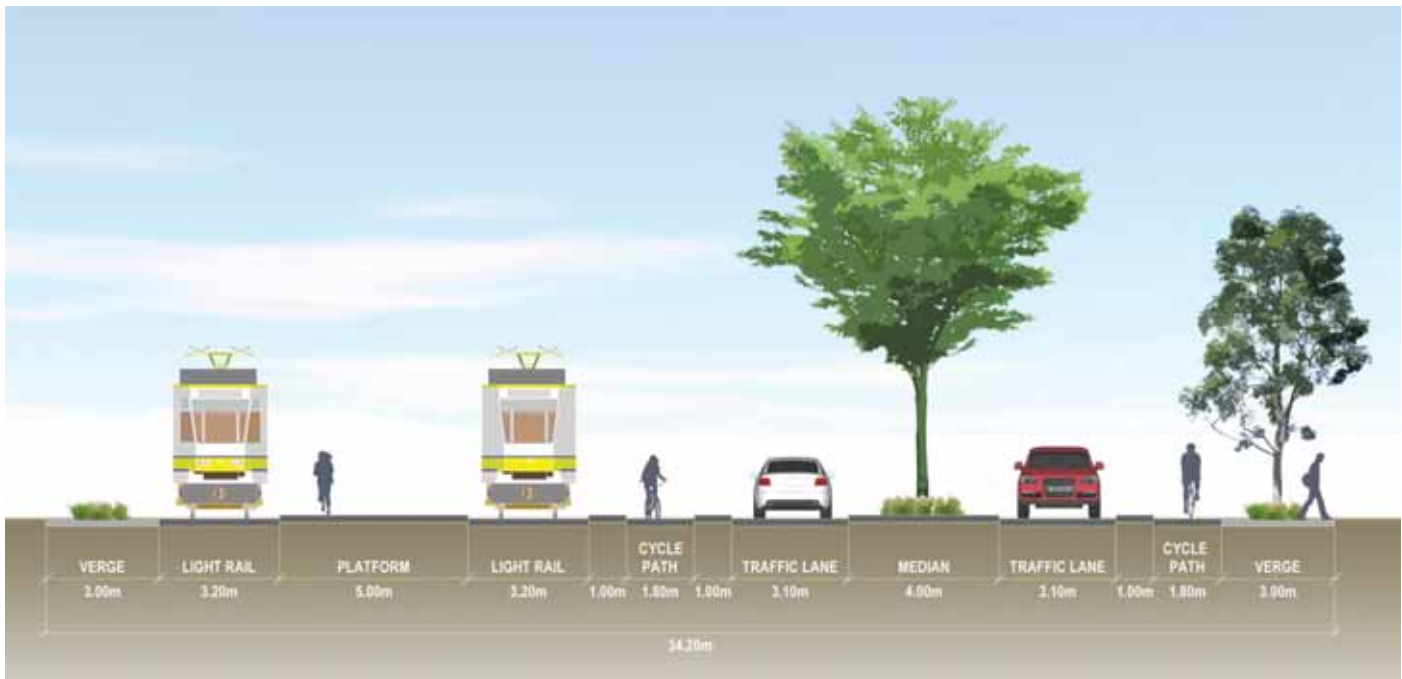


Figure 42: Howe Street Conceptual Cross Section (between Stephenson Avenue and Ellen Stirling Boulevard)

OPTION A



OPTION B





## 8.7 Northern Precinct Area Action Plan

The northern precinct is bounded Karrinyup Road, Mitchell Freeway, and Cedric Street; the area includes Osborne Park Hospital and a low density residential area. The character statement for the area is for the redevelopment of Osborne Park Hospital, an increased density of residential development, and linking the area into the Stephenson Avenue extension, with potential for light rail to extend through this precinct.

### 8.7.1 Development Growth

The development target for this precinct includes:

**Table 17: Northern precinct growth aspirations**

Residential	1,100 dwellings
Office	16,000m <sup>2</sup>
Health/ welfare/ community	27,500m <sup>2</sup>
Retail	500m <sup>2</sup>

### 8.7.2 Maximum Parking Allowance

The Access and Parking Strategy (2010) defines the maximum parking allowances for each precinct. The maximum allowable and preferable/ likely total parking space numbers outlined in the Access and Parking Strategy (2010) are 948 and 900 respectively.

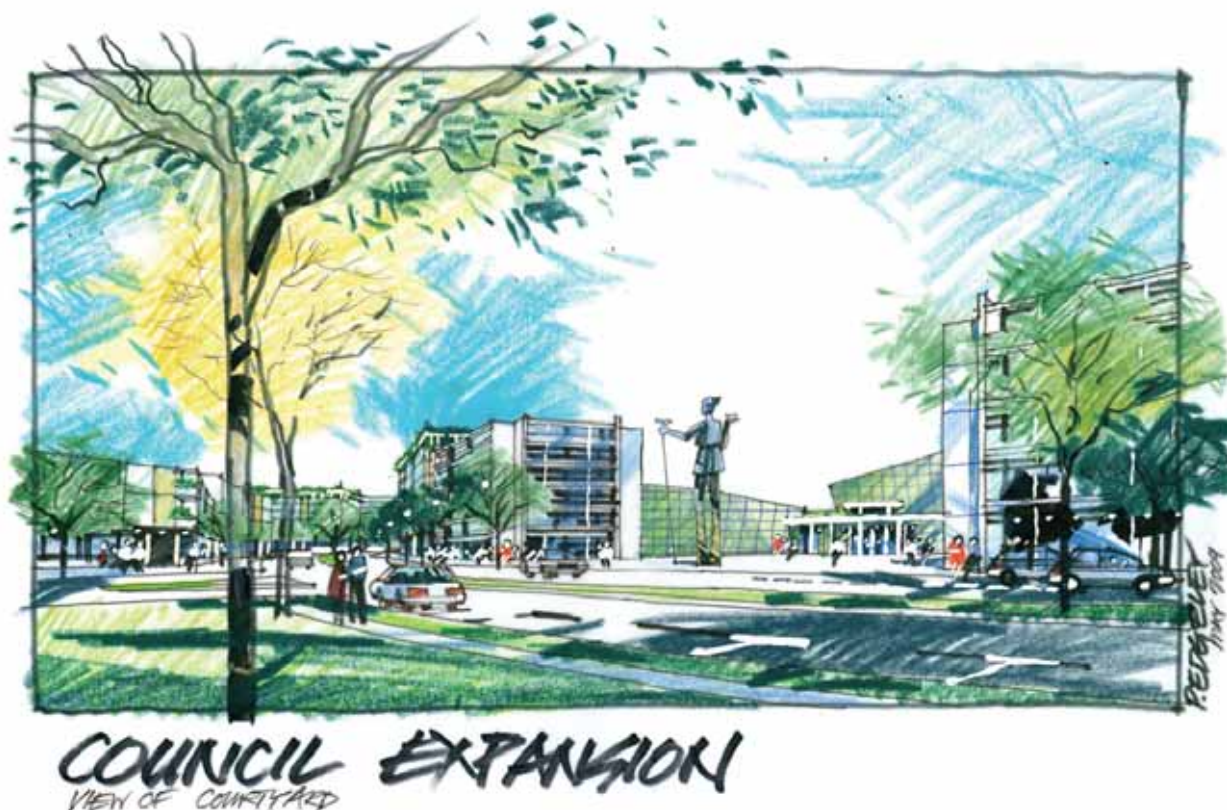
### 8.7.3 Transportation Initiatives

This precinct forms the northern boundary to the structure plan area. The action plan for this precinct needs to consider the following:

- Improved access to/ from the hospital
- Connection between Stephenson Avenue and Karrinyup Road
- Provision of access between the precinct and the city core

#### Stephenson Avenue to Karrinyup Road Corridor

The Stephenson Avenue proposal is to extend Stephenson Avenue to Karrinyup Road as part of an overall strategy to improve north-south connectivity and access to/ from the hospital. This new road will be designed to include active pedestrian frontages, Copenhagen style cycle lanes and provision for a light rail system. An indicative cross section for the northern section of Stephenson Avenue is shown in Figure 43. It is suggested that a northern bus-light rail interchange be provided if the plans ultimately result in the light rail system being extended to Karrinyup Road.





**Karrinyup Road – Mitchell Freeway to Cedric Street**

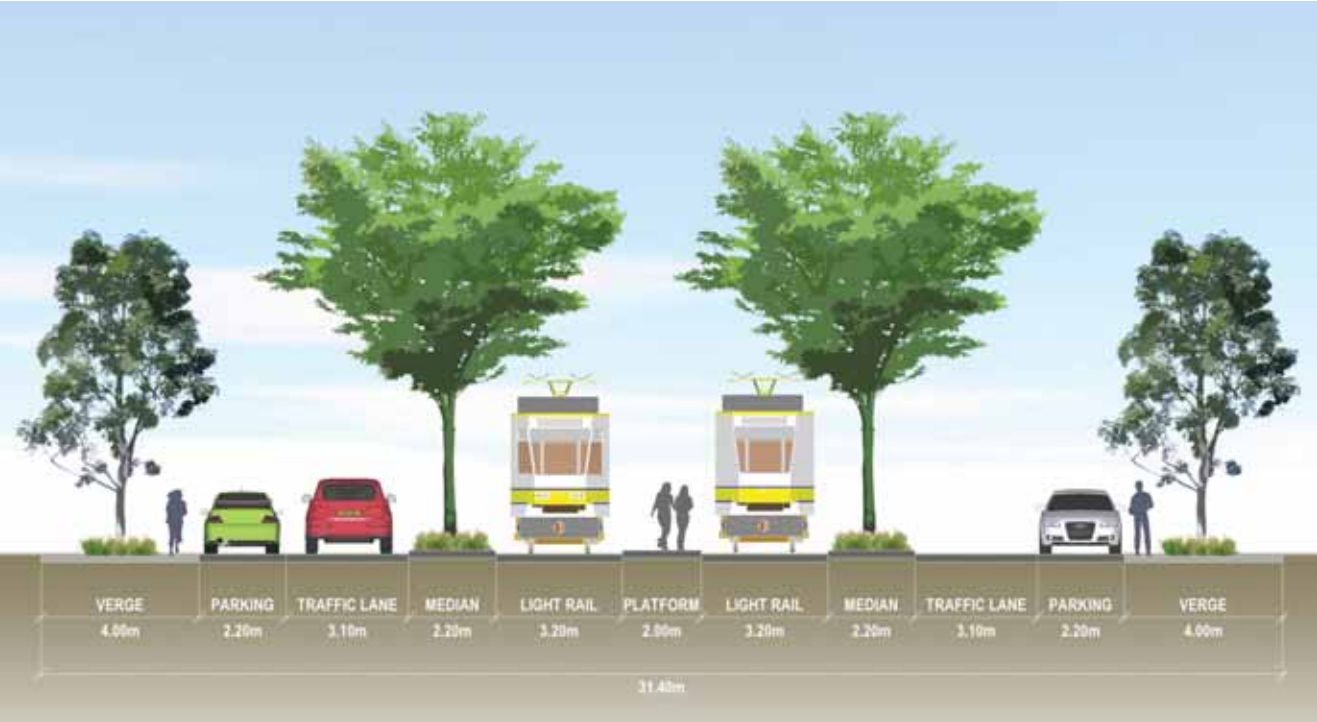
Karrinyup Road is located on the northern boundary of the study area. The road cross section could be upgraded to include Copenhagen cycle lanes; an indicative cross section is shown in Figure 44. Karrinyup Road will need to accommodate the 423, 425 and 427 bus routes; route 427 will also utilise Dennis Street, Osborne Place, Hugo Street and Civic Place are other streets in this precinct which should carry buses.

The intersection between Karrinyup Road and Dennis Street should include facilities for pedestrian, cyclists and buses.

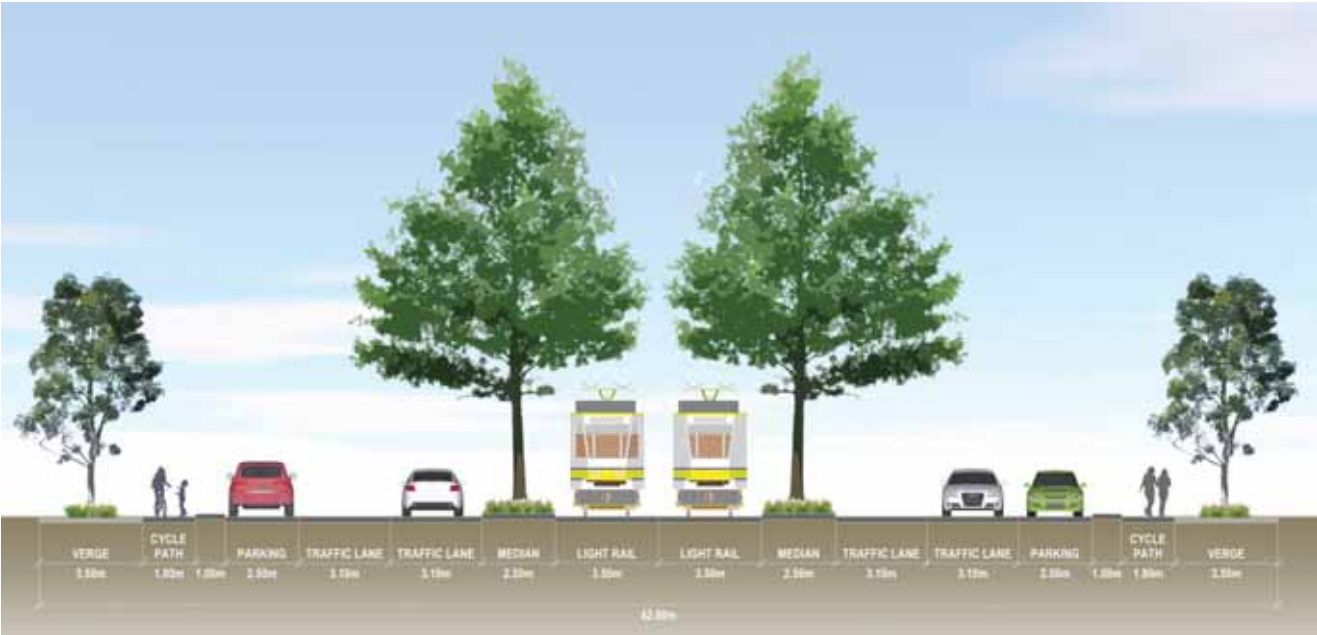
**Cycle Infrastructure: Principal Shared Paths, Recreational Routes**

- Additional cycle infrastructure in this precinct includes:
- Recreational cycle path across the freeway and connecting into the Station Precinct
  - Extension of the Principal Shared Path so that it runs parallel to freeway through the structure plan area
  - Cycle lanes on Stephenson Avenue

*Figure 43: Stephenson Avenue Conceptual Cross Section (Cedric Street to Karrinyup Road)*



*Figure 44: Karrinyup Road Conceptual Cross Section (Freeway to Cedric Street)*



## 8.8 Innaloo Precinct Area Action Plan

This precinct includes an existing medium density residential development focused around the La Grange Dongara Reserve. The location will provide good access to the city core and the Westfield retail area.

The planning of this precinct needs to ensure that there is no adverse impacts on adjoining established housing. Through traffic is a concern for residents of this precinct and the speeds of vehicles should be reduced as part of a strategy to improve the streetscape of this area.

### 8.8.1 Development Growth

The development growth targets for this precinct are:

- 2,500 residential dwellings
- 2,500m<sup>2</sup> health/ welfare/ community floorspace
- 350m<sup>2</sup> retail floorspace

**Table 18: Innaloo precinct growth aspirations**

Residential	2,500 dwellings
Health/ welfare/ community	2,500m <sup>2</sup>
Retail	350m <sup>2</sup>

### 8.8.2 Maximum Parking Allowance

The Access and Parking Strategy (2010) defines the maximum parking allowances for each precinct. The maximum allowable and preferable/ likely total parking space numbers outlined in the Access and Parking Strategy (2010) are 3,528 and 3,300 respectively.

### 8.8.3 Transportation Initiatives

This precinct forms the western edge of the structure plan area and therefore acts as a gateway to the city and as a buffer between the higher density city centre uses and the lower density residential development in the area west of the city. The transportation proposals in this precinct include:

- 'Self explaining' roads
- Copenhagen cycle paths on Odin Road, Cedric Street, Hertha Road and Oswald Street
- Recreational cycle path parallel to Lilacdale Road
- Bus routes on Odin Road and Cedric Street
- Signalised intersection upgrades at the following:
  - Ellen Stirling Boulevard/ Cedric Street (discussed in the station precinct action plan)
- Cedric Street/ Odin Road



## **‘Self Explaining’ Roads**

This follows other global examples including ‘Woonerf’s’ and ‘Home Zones’ where the principle is to reduce vehicle speeds by changing the priority in the street. An overarching principle of this concept is to define roads that are ‘going places’ and ‘are places’. The improvement of the quality of the pedestrian realm will:

- Define road speeds in accordance with the ‘towards zero’ and reduce vehicle speeds to 30km/h
- Support the ‘think 20’ concept to manage the difference in conflict speeds to 20km/h
- Reduce road lane widths to reduce vehicle speeds and allow reconfiguration of the street to provide additional space to pedestrians and cyclists

The ‘self explaining’ roads concept is proposed to be trialled in the Innaloo Precinct, with the view to implementation over a wider area as part of future local area enhancements. The Innaloo proposals are shown in Figure 45.

## **Odin Road**

Odin Road is aligned north-south on the western boundary of the structure plan area. Odin Road also has two of the gateways into the area where the ‘self explaining’ roads concept is proposed to be trialled.

Odin Road will also accommodate the following bus routes: 410, 411, 421 and 426. The Cedric Street/ Odin Road intersection will have a dedicated pedestrian/ cycle phase and should have the facility to ‘call green’ when a bus approaches the intersection; head start facilities for cycles should also be provided. The bus stop provision should be improved so that the bus stops have shelters, seating and real time passenger information.

## **Cedric Street (Ellen Stirling Boulevard to Odin Road)**

This section of Cedric Street will be required to accommodate bus services, Copenhagen cycle lanes and two lanes of traffic in both directions. The cross section for this part of the road is shown in Figure 46.

## **Hertha Road**

The cross section of Hertha Road will depend on whether the freeway ramps are provided. If the preference is to provide ramps here then the cross section of Hertha Road will likely require two lanes in both directions. Copenhagen lanes will be provided on Hertha Road. The cross section without the freeway ramps at Hertha Road are shown in Figure 47.

## **Oswald Street**

Oswald Street is in the self explaining roads trial area; in addition Copenhagen cycle lanes will be provided. The design of this is being developed in consultation with the residents of this area, so is likely to be subject to further refinement.

## **Recreational cycle path parallel to Lilacdale Road**

A recreational cycle path will be retained between the freeway and Lilacdale Road.



Figure 45: Innaloo Precinct - Self Explaining Roads





Figure 46: Cedric Street Conceptual Cross Section (between Ellen Stirling Boulevard and Odin Road)

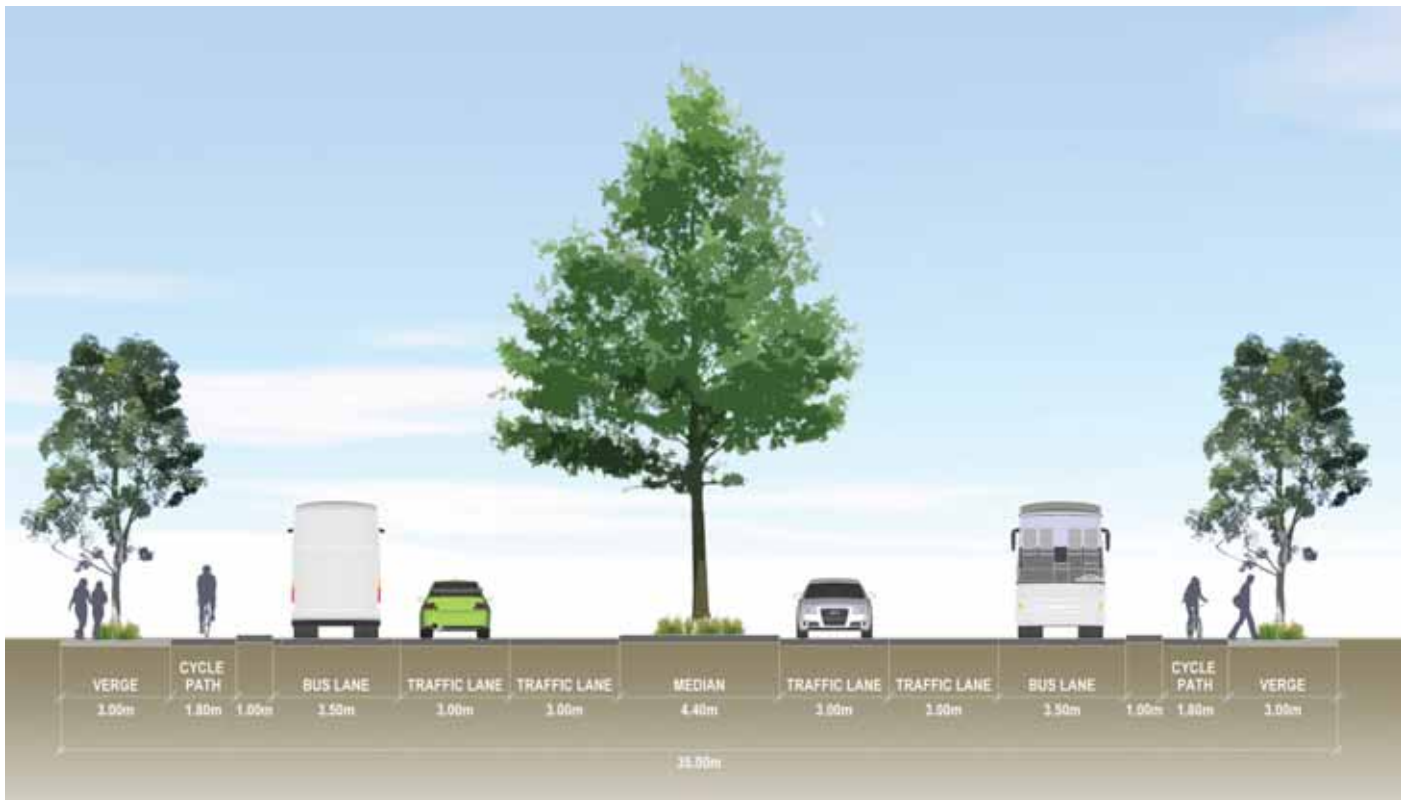
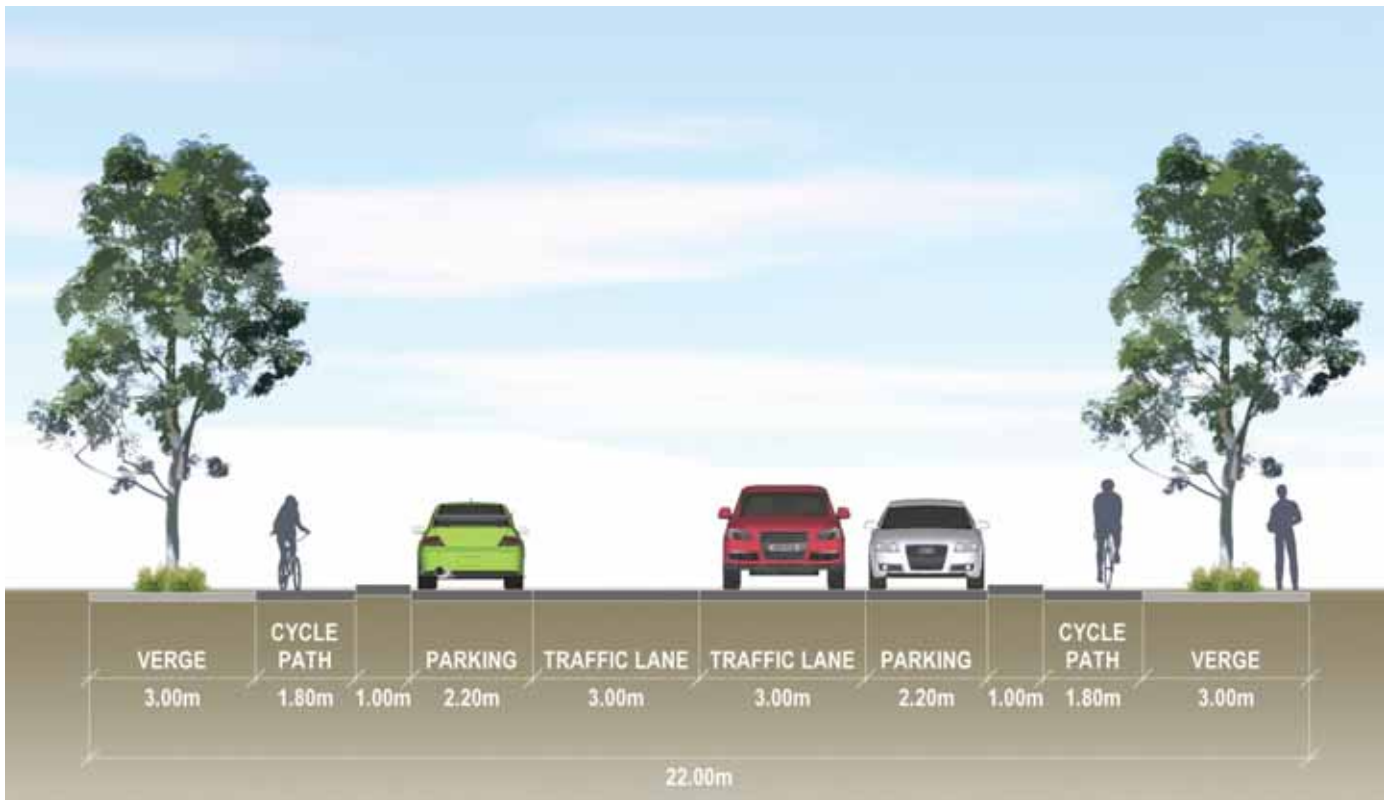


Figure 47: Hertha Road Conceptual Cross Section (without Hertha Road Freeway Ramps)



## 8.9 Osborne Park Precinct Area Action Plan

This precinct includes an area of Osborne Park north and south of Scarborough Beach Road and east of the existing Stephenson Avenue. The northern part of this precinct will need to accommodate the transition between the industrial activities of Osborne Park to the east and the city centre activity of the western precincts.

### 8.9.1 Development Growth

The development growth projected for this area is as follows:

**Table 19: Osborne Park precinct growth aspirations**

Residential	2,500 dwellings
Office	77,000m <sup>2</sup>
Health/ welfare/ community	5,500m <sup>2</sup>
Retail	183,000m <sup>2</sup>
Entertainment/ recreation/ culture	2,500m <sup>2</sup>

### 8.9.2 Maximum Parking Allowance

The Access and Parking Strategy (2010) defines the maximum parking allowances for each precinct. The maximum allowable and preferable/ likely total parking space numbers outlined in the Access and Parking Strategy (2010) are 4,430 and 3,800 respectively.

### 8.9.3 Transportation Initiatives

The Osborne Park precinct forms the eastern gateway to the structure plan area. The focus of the transportation initiatives is to support the regeneration and intensification of the development sites between Stephenson Avenue and King Edward Road.

#### Stephenson Avenue – Southern Section

This section of Stephenson Avenue will be upgraded to accommodate movement by multiple modes. The proposals include reconfiguration of the road to provide dedicated public transport lanes for light rail and buses, Copenhagen cycle lanes, an active street frontage, and a recreational cycle path set back from the edge of the road reserve. The agreed in principle cross section is shown in Figure 48.

#### Selby Street

Selby Street will be upgraded to include Copenhagen cycle paths in both directions. The agreed cross section for Selby Street is shown in Figure 49.

#### Scarborough Beach Road

Scarborough Beach Road extends through the Osborne Park precinct and will accommodate the proposed light rail system and an interchange between the north-south and east-west light rail routes. The conceptual cross section for this part of Scarborough Beach Road is shown in Figure 50.





Jon Sanders Drive

Jon Sanders Drive provides a strategic road connection along the southern extent of Herdsman Business Park. Jon Sanders Drive will connect with the extended Hutton Street, Selby Street, Stephenson Avenue, and Liege Street. The recreational cycle path on the southern side of the road will be retained and buses will route along Jon Sanders Drive.

King Edward Road and East-West Road Extensions

King Edward Road is an important north-south road that passes through and connects the extended Guthrie, Howe, Oswald, and Sarich Streets. King Edward Road will need to accommodate service vehicles. The cross section for King Edward Road is shown in Figure 51.

Figure 48: Stephenson Avenue – Southern Conceptual Cross Section

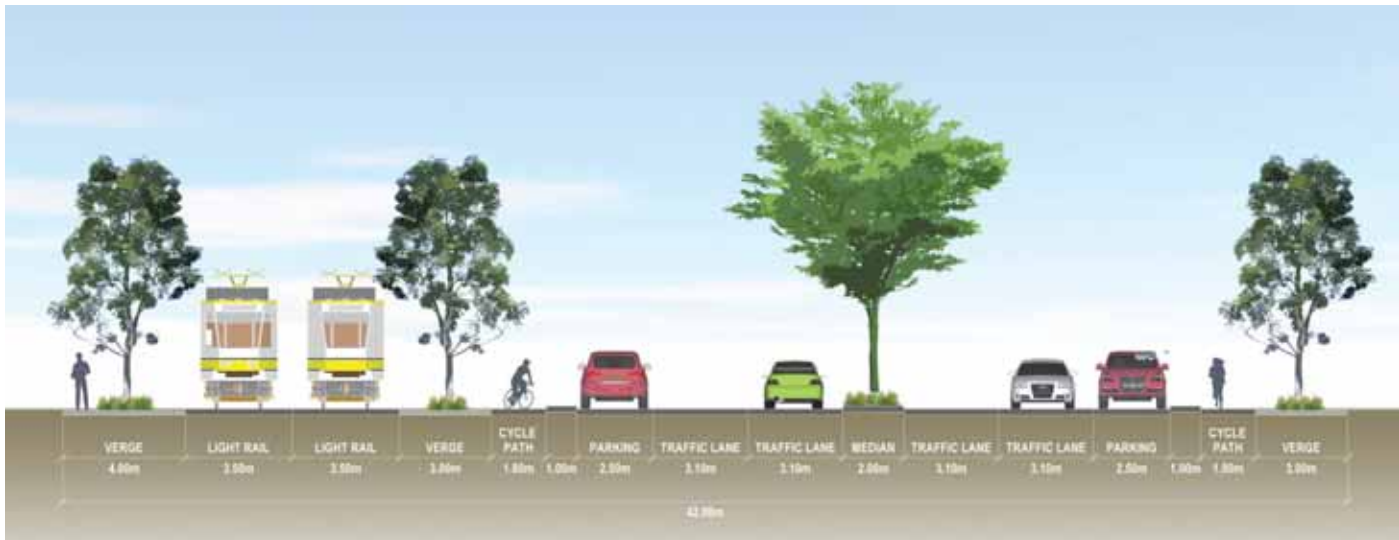


Figure 49: Selby Street Conceptual Cross Section

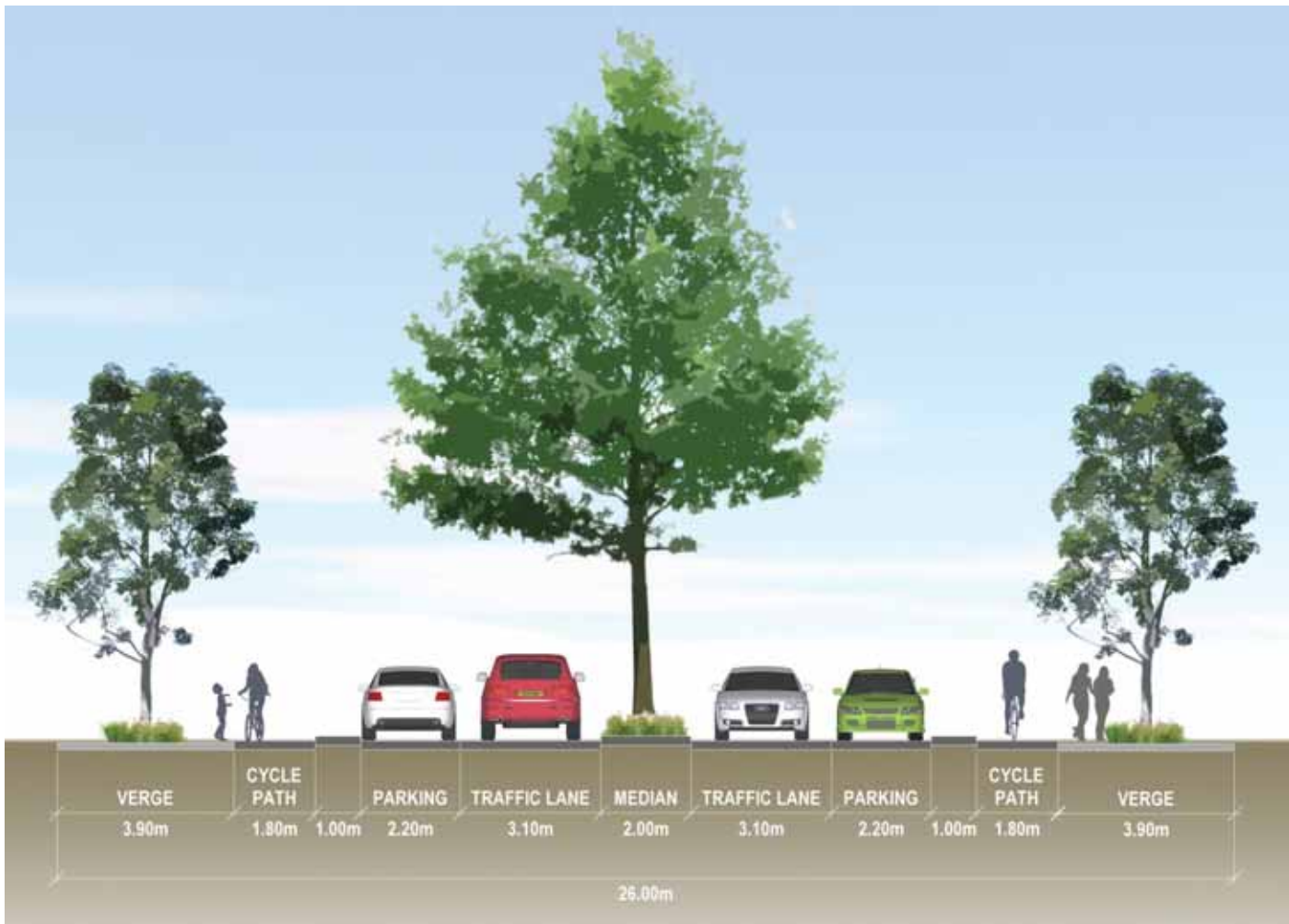


Figure 50: Scarborough Beach Road Conceptual Cross Section (East of Stephenson Avenue)

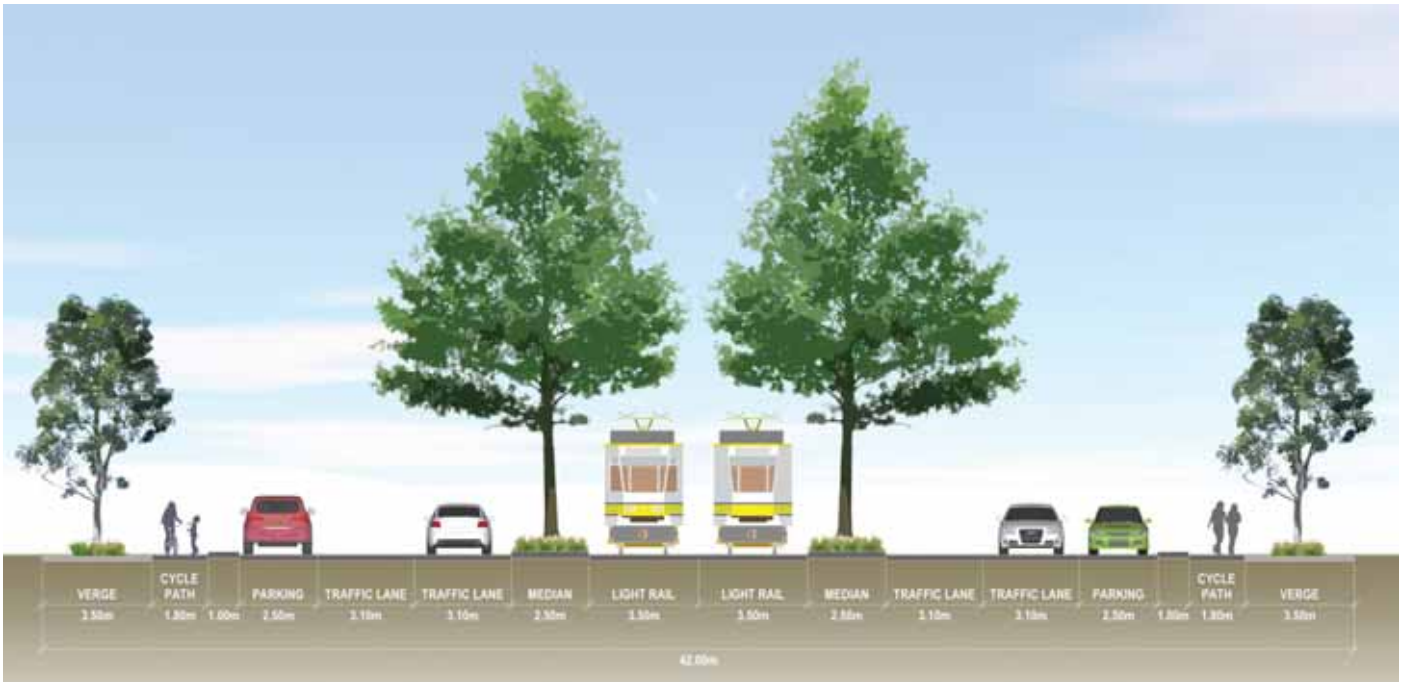


Figure 51: King Edward Road Conceptual Cross Section

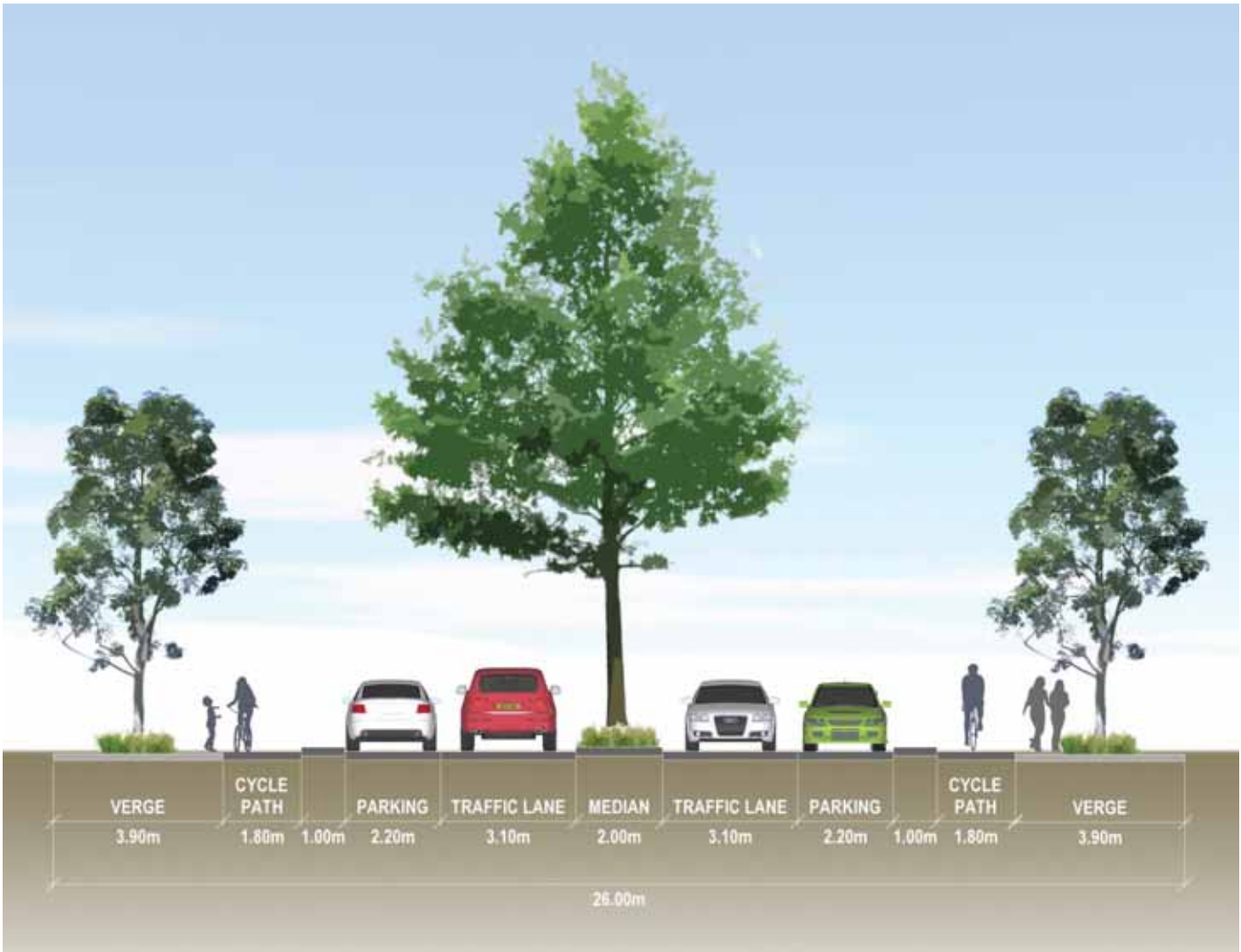




Figure 52: Guthrie Street Conceptual Cross Section



Figure 53: Howe Street Conceptual Cross Section

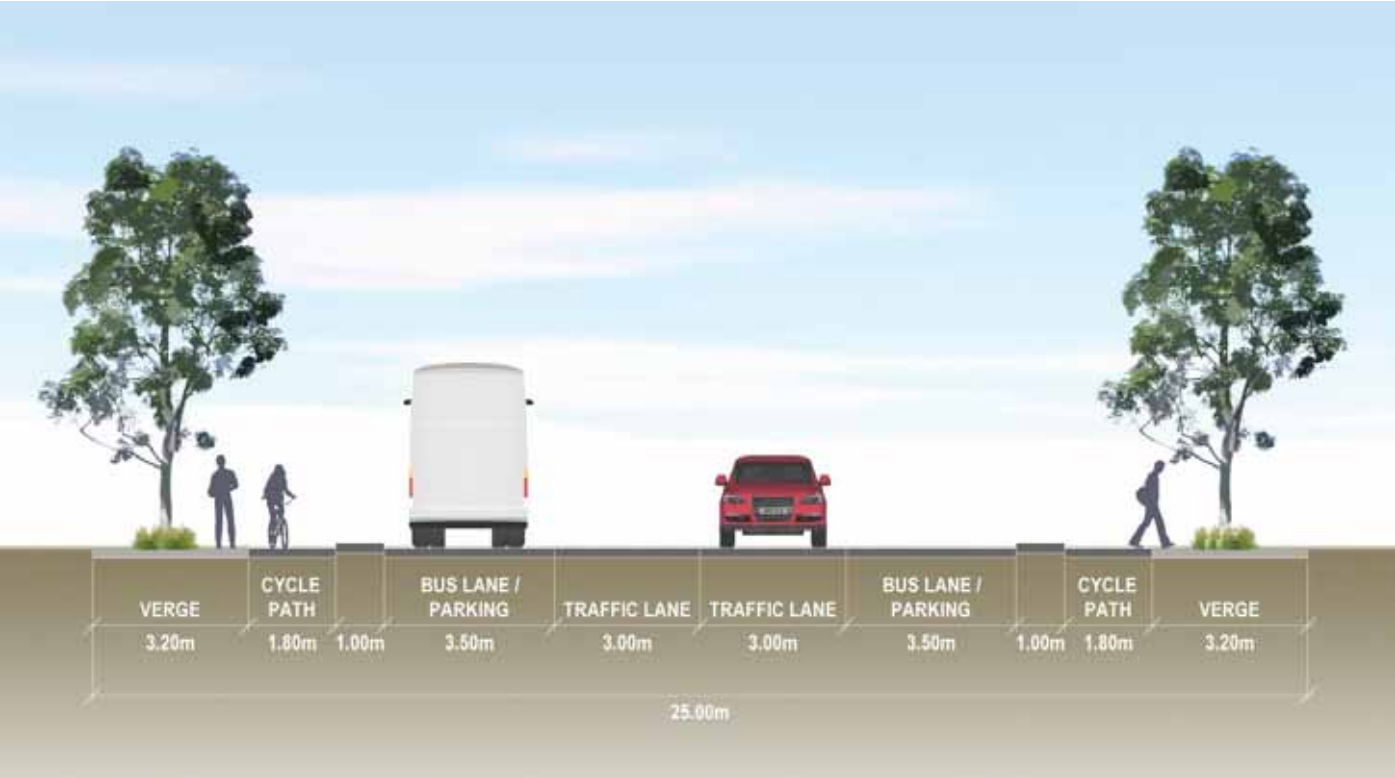


Figure 54: Oswald Street Conceptual Cross Section (East of Stephenson Avenue)



Figure 55: Sarich Court Conceptual Cross Section



## 8.10 Woodlands Precinct Area Action Plan

The Woodlands precinct includes the existing cinema site on Liege Street, south of Scarborough Beach Road and adjacent, largely residential land.

### 8.10.1 Development Growth

The development growth targets for this area include:

**Table 20: Woodlands precinct growth aspirations**

Residential	1,200 dwellings
Office	12,500m <sup>2</sup>
Health/ welfare/ community	2,000m <sup>2</sup>
Retail	13,000m <sup>2</sup>





### 8.10.2 Maximum Parking Allowance

The Access and Parking Strategy (2010) defines the maximum parking allowances for each precinct. The maximum allowable and preferable/ likely total parking space numbers outlined in the Access and Parking Strategy (2010) are 1,226 and 1,200 respectively.

### 8.10.3 Transportation Initiatives

The Woodlands precinct is located in the south west corner of the structure plan area. The area is predominantly residential in character, with the exception of the current cinema site. The precinct does not have a direct frontage to Scarborough Beach Road, but the intersection between Liege Street and Scarborough Beach Road is an important constraint on access and development in this area. Stephenson Avenue and Liege Street both have intersections with Jon Sanders Drive.

#### Liege Street

Liege Street runs north-south parallel to Stephenson Avenue and will be traffic calmed once Stephenson Avenue is constructed. Liege Street will include an active street frontage, Copenhagen cycle lanes, and accommodate bus services operating in both directions. The approved cross section of Liege Street is shown in Figure 56.

#### Little Oxford Street

Little Oxford Street is a proposed link within the redevelopment of the northern section of the cinema site. The design of this street is ongoing and should adhere to the broader principles within this strategy to promote walking and cycling.

#### Cycle Infrastructure, Intersection Treatments and Pedestrian Improvements

The pedestrian and cycle infrastructure improvements in this precinct are:

- Copenhagen cycle paths on the following roads:
- Stephenson Avenue
- Liege Street
- Recreational cycle path parallel to Stephenson Avenue
- Active street frontage to promote good natural surveillance along Stephenson Avenue

Figure 56: Liege Street Cross Section





## 9. Program of Infrastructure Development

### 9.1 Overview

This chapter considers the rationale for infrastructure and redevelopment. The interdependency between infrastructure and development is crucial to the pathway that is taken to reach this strategy's objectives.

### 9.2 Development/ Transport Scenarios (to deliver planned yields)

The pathways to delivery of the objectives of this transport strategy will differ depending on whether the strategy is development or transportation led. A short discussion of these options is included and highlights the issues that the scenarios experience. It should be noted there is no commitment to building transport infrastructure at the Stirling City Centre at the time of publication.

#### 9.2.1 Development led

The development led scenario assumes that the patronage triggers for new public transport infrastructure and changes to parking standards are based on thresholds of road capacity and public transport usage. The modal shares will be influenced by the availability of parking, quality of public transport service, and progress of implementation of other measures within this integrated transport strategy.

The densities, land use and locations would be determined by the market by the emergence of planning applications, and the ability of the road network to accommodate further growth. At the outset, the parking provision at new developments would be based on existing standards. The provision of higher numbers of car parking spaces would result in increased traffic volumes and potentially result in pressure to upgrade roads and intersections to increase capacity. In this scenario the provision of increasing numbers of car parking spaces is driving upwards the need to expand road capacity.

In this scenario, the City would also be able to permit developers to provide on-site parking at the future desired parking ratios and accommodate surplus (in line with parking standards of the time) within offsite parking areas. This would require complex legal agreements to be put in place so that developers would understand the triggers for removal of car parking and be encouraged to implement TravelSmart initiatives to assist with managing down the demand for parking.

The City would need to implement changes in legislation to allow developers the option to provide lower levels of parking without the need to provide cash-in-lieu; the applicant would need to demonstrate the viability of lower levels of car parking. This will require development applications to include a comprehensive transport assessment and applicants would be encouraged to create Travel Plans to promote alternative modes of transport to the private car.

The demand for the public transport upgrades would be triggered by a combination of increasing road traffic congestion and patronage levels on public transport. Patronage thresholds would need to be established at the outset so that the upgrade stimuli are defined and agreed.

The risks with this scenario are:

- developers may be reluctant to develop with the lower onsite parking space provisions and may contest the removal of offsite parking through legal action;
- a significant amount of space would be required for offsite parking – land for this is currently unavailable;
- additional new road space leads to release of latent demand and increased traffic volumes. It would be unpopular to remove road space once it has been constructed;
- ad-hoc road and intersection widening through development applications;
- increased traffic congestion decreases viability and attractiveness of public transport because of delay to vehicles through lack of dedicated infrastructure;
- community backlash over congestion;
- the patronage levels required to trigger the public transport upgrades may not eventuate;
- the patronage levels required to trigger the public transport upgrades may not eventuate because the attractiveness (and therefore potential for mode shift) of buses is not as great as bus rapid transit or light rail; and
- the cost to developers and the City of Stirling to construct and maintain the offsite car parking areas could alternatively have been invested providing the public transport outcome desired by the Stirling Alliance up front.

### 9.2.2 Transport led

The transport led scenario recognises that without viable alternatives it is unreasonable to expect individuals to travel by modes other than private car, and for developers to construct at higher densities with lower levels of on-site parking. The quality of the public realm and multi-modal access is essential to encouraging development that meets the aspirations of the city, private cars are accommodated but do not dominate the streetscape.

The transport led scenario provides light rail infrastructure at the outset and requires initiatives that promote more sustainable modes to the top of the mode hierarchy. Essentially, the transport led scenario requires upfront investment in infrastructure, with costs being recouped through value capture mechanisms.

Improved public transport, walking and cycling facilities would act as a catalyst for redevelopment of existing sites to provide mixed use in the city at higher densities and with lower parking space provision per square metre. This scenario would channel funding directly into public transport, walking and cycling facilities rather than through a two stage process where investment is initially required to construct temporary car parking areas and road infrastructure (widening and intersection capacity upgrades).

The City would need to implement changes in legislation to allow developers to construct lower levels of parking without the need for cash-in-lieu, and require transport assessments to be submitted as part of development applications. The transport led scenario reverses the relationship between available road capacity and number of parking spaces with the capacity dictating the number of spaces.

The strategy requires the supporting multi-modal infrastructure to be implemented to reduce the need to travel by car. As with the development led scenario, the absence of new transport infrastructure could constrain growth in development.

The risks with this scenario are:

- that upfront funding or value capture mechanisms may not be possible;
- developers may not come forward to regenerate the city (although it is understood there is demand for development in the city);
- the light rail/ bus service requirements are diluted and a sub-optimal solution is implemented;
- patronage forecasts are not accurate and are an over-estimate;
- other multi-modal infrastructure does not eventuate and therefore access to, from and in the City by walking, cycling and public transport is compromised.

### 9.2.3 Preferred Scenario

It is understood that the transport led scenario is preferred by the Stirling Alliance. It is suggested that further qualitative 'path analysis' is undertaken with the Alliance members to understand the evolution and impacts of the City under the two scenarios because the actions in support of one mode will affect the others – diversity of access is fundamental to the development of the area.

## 9.3 Transport – Development – Strategy Interdependencies

Owing to uncertainty in the availability and timing of funding, this strategy does not set a specific timetable for the initiatives; rather it is intended to provide an understanding of how the area could evolve and the interdependencies between transport initiatives/ objectives, development, and strategy/ targets is illustrated. This is shown in Table 22 and the transportation initiatives are defined as being short (0 to 5 years), medium (5 to 15 years) and long (greater than 15 years) term projects.

## 9.4 Implementation: Agency Responsibilities

The initiatives in this integrated transport strategy will be promoted and developed by the Stirling City Centre Alliance. The agencies' roles and responsibilities for the different transportation initiatives are summarised in Table 21.

**Table 21: Transportation Initiatives and Agency Responsibilities**

Transport Strategy Component	Agency Responsibility	Timescale*	Interdependencies
Stephenson Avenue extension	City of Stirling, Main Roads	Medium	Mitchell Freeway ramps at Stephenson Avenue, signalised intersections with pedestrian and cycle priority, dedicated public transport lanes, east-west road upgrades, shared street zone on Stephenson Avenue extension, Copenhagen cycle paths, speed reductions, active streets.
Mitchell Freeway ramps at Stephenson Avenue	City of Stirling, Main Roads	Medium	Stephenson Avenue extension, dedicated public transport lanes, access to Stirling Station interchange, Sarich Court road extension, increased road capacity at Hutton Street.
Light rail system	PTA, City of Stirling, other Alliance members	Medium to Long	Stephenson Avenue extension, Scarborough Beach Road upgrade, Stirling Station and multi-modal interchange upgrade
Bus network improvements	PTA, City of Stirling	Ongoing	Road network changes
Cycle paths	City of Stirling, Main Roads, DoT	Short to Long	Stephenson Avenue, Scarborough Beach Road, Cedric Street and other road upgrades, changes to operation of signalised intersections.
Reserve for road/ rail tunnel beneath city	Main Roads, DoP, DoT	Long	None
Increased road capacity at Hutton Street freeway interchange	City of Stirling, Main Roads	Medium	Stephenson Avenue extension, Mitchell Freeway ramps, Hutton Street capacity upgrades and widening for freight, pedestrian and cycle improvements on Hutton Street and freeway interchange
Increased pedestrian and cycle capacity at Hutton Street interchange	City of Stirling, Main Roads	Medium	Hutton Street capacity upgrades and widening for freight, McDonald Street interchange and collector-distributor roads
City gateways to indicate change in road characteristics	City of Stirling	Medium	Road upgrades, changes to speed restrictions
TravelSmart and transport assessment guidance	City of Stirling	Short	None
Increased public transport capacity at Stirling Station	City of Stirling, PTA	Medium	Pedestrian ramps and bridges, increased frequency of heavy rail services and all trains comprising six car sets, interchange layout and design, doubling of bus capacity
Speed reductions	City of Stirling, Main Roads	Short to Medium	Road upgrades, cycle paths, increased pedestrian footfall, self explaining roads and traffic calming, city gateways

\* (Short term = 0 to 5 years, Medium = 5 to 15 years, Long = >15 years)

## 10. Funding Mechanisms and Legislation

### 10.1 Overview

This section discusses the integration of policy, funding mechanisms and legislation required to deliver the objectives of the integrated transport strategy. Implementation methods and enforcement mechanisms are suggested.

### 10.2 Integrating Policy

This integrated transport strategy draws together the different layers of modal analysis and strategy development. The integration of the actions and objectives in this transportation strategy with regional and local policy has been demonstrated throughout this document.

At a higher level delivery of transportation/ development planning and strategy requires integration between strategic policies, multi-agency and cross border collaboration and consultation. Therefore, the work being undertaken to develop the 'Moving People Strategy' and issue specific strategies such as the 'Activity Centre Parking Policy' are essential if consistency in design, standards and requirements are to be achieved.

Further work is required to refine and develop guidance and for transport assessment and travel planning at all new developments and this should become a mandatory component of the development application process. It is suggested that the City of Stirling develop their own policies and guidance to stimulate discussion of this agenda.

### 10.3 Funding Mechanisms

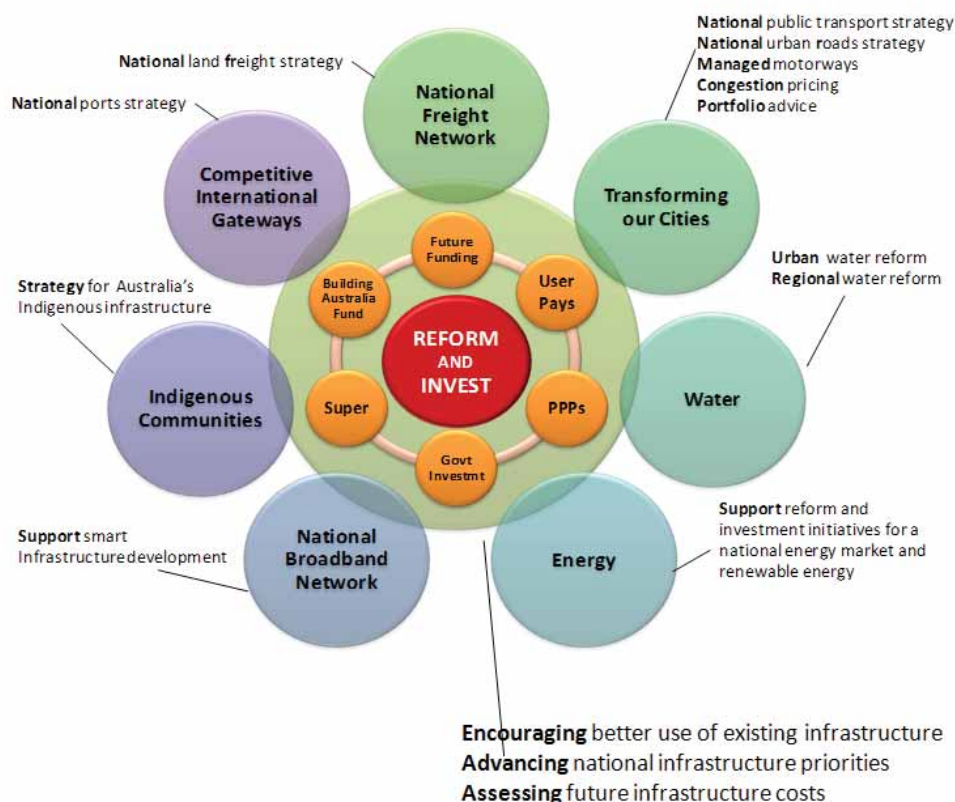
The potential funding mechanisms for the provision of the transportation infrastructure outlined in this integrated transport strategy are:

- WA Government
- Infrastructure Australia
- City of Stirling funding
- Cash-in-lieu/ developer contributions to infrastructure
- Parking levy
- Land/ asset sales and value capture
- Public Private Partnerships

#### 10.3.1 Infrastructure Australia

Infrastructure Australia state that they welcome funding submissions that includes proposals for a long-term package of reforms and investments, which are the direct result of thorough, evidence-based planning. Infrastructure Australia has identified seven national infrastructure themes to provide a framework for action to meet the gaps, deficiencies and bottlenecks in our nation's infrastructure. These are shown in Figure 57.

**Figure 57: Infrastructure Australia - Seven National Infrastructure Themes**



Source: [http://www.infrastructureaustralia.gov.au/themes\\_challenges/](http://www.infrastructureaustralia.gov.au/themes_challenges/)



Infrastructure Australia highlight that there are nine key challenges to the delivery of national strategic and economic benefits with infrastructure reform and investment initiatives, including the following four challenges:

- Better use of existing infrastructure: changes in the operation, pricing or utilisation of existing infrastructure to solve problems without the need for investment in additional capacity.
- Climate change: in addition to requiring a shift to a low carbon economy, climate change is increasing the demand for improved infrastructure, such as efficient public transport systems and low carbon intensive methods of power generation.
- Supporting our cities: improving the livability, sustainability and productivity of Australia's major cities.
- Boosting exports: increasing the productivity of Australia's international gateways, making sure that they can meet the rapidly growing freight task without adverse impacts on community amenity.

The proposed transportation network outlined in this strategy supports the aforementioned challenges. Therefore, the City of Stirling and Stirling City Centre Alliance will develop an Infrastructure Australia submission to support the funding achieved and generated from other sources discussed in this chapter.

### **10.3.2 City of Stirling funding**

The City of Stirling will fund the local area enhancements scheme on Liege Street and the proposed 'self explaining' roads area in the Innaloo Precinct, and provide a contribution towards the funding of the light rail system for the city. This contribution is understood to currently be \$34 million.

### **10.3.3 Cash-in-lieu/ developer contributions – value capture assessment**

The City of Stirling aspires to implement measures to promote more sustainable modes of transport and manage growth in single occupancy car trips to, from and in the city. Developer contributions to fund infrastructure are not a widespread component of the planning system; currently it is the responsibility of the state infrastructure agencies to fund and implement network upgrades that accommodate future growth.

Developers should provide infrastructure to promote alternative modes of transport and support the initiatives within this integrated transport strategy. Cash-in-lieu is a mechanism that allows developers to provide an appropriate financial contribution to the City so that they can implement transport improvements that mitigate the impact of the proposed development.

Calculation of an appropriate level of cash-in-lieu/ developer contribution requires a good understanding of a development's traffic and transport impact/ requirements. Currently Transport Assessments are not a mandatory part of the Western Australian development application process, but are requested by the City of Stirling as part of applications. Transport assessment should become a mandatory component of the planning process to inform the calculation of appropriate cash-in-lieu payments and contributions to offsite road, public transport, walking and cycling infrastructure. Travel plans are a tool to assist managing down demand for car parking and the impact of a development on the road network; these should also become a mandatory component of a development application. Further information is included in section 10.4.

In some circumstances agreement may be reached between the developer and the City to aggregate payments from multiple development sites so that larger cost transport interventions can be delivered. In this instance the developer contribution should be set aside by the City and bonded for up to a ten year period; should the agreed transport intervention not eventuate the developer would be able to reclaim their initial financial contribution from the City.

Developers are encouraged to have lower levels of on-site car parking providing there are alternative modes of transport in place, and there are no detrimental transport impacts on the surrounding area e.g. overspill parking. The proposed parking provision at a development should be accompanied by an analysis of predicted usage and a mitigation strategy (if required). In essence, parking provision should be appropriate to the site and the infrastructure that will be in place at the date of the development being occupied.

The implementation of maximum parking standards, requirement for car parking demand analysis, and cash-in-lieu payments for impact mitigation will require a change to the local planning scheme/ strategy, and existing legislation. The description of cash-in-lieu for parking outlined within the Stirling City Centre Access and Parking Strategy (August 2010) should also be revisited.

### 10.3.4 Parking levy – value capture assessment

The Stirling City Centre Access and Parking Strategy (August 2010) also outlines the parking levy proposals for Stirling City Centre. The levy applies to the Stirling City area, Herdsman Business Park, Osborne Park light industrial area, and the surrounds of Glendalough Station. The principles that the Stirling City Centre Access and Parking Strategy (August 2010) used to determine the area included in the parking levy are:

- The area within 1 km walking distance of Stirling Station
- The area within 1 km walking distance of Glendalough Station
- The area within 600 m of the high quality public transport service (light rail) proposed to operate between Stirling and Glendalough Stations; this should only be implemented once the light rail system is in place.

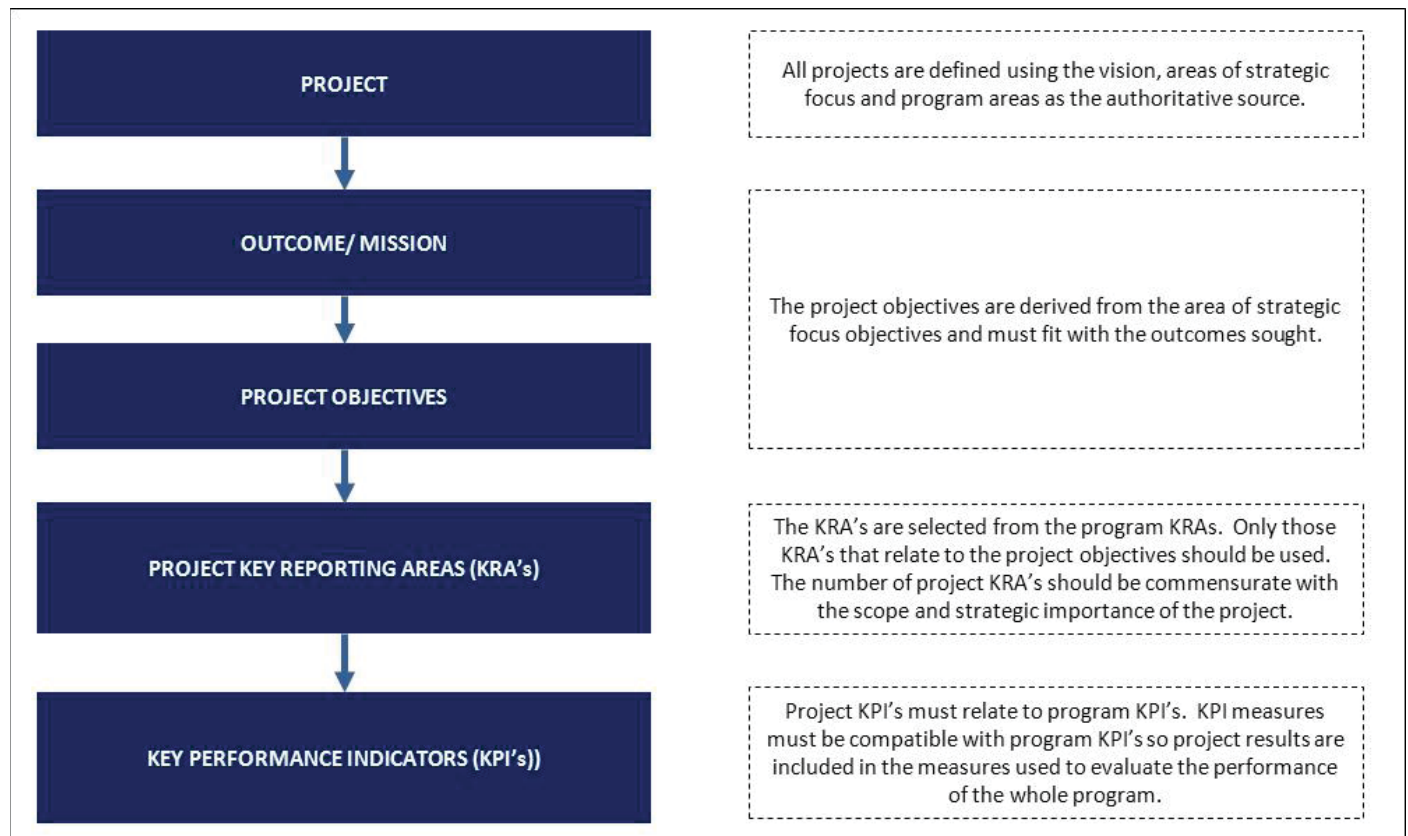
The implementation of a parking levy would require changes to existing legislation.

### 10.3.5 Land/ asset sales and value capture assessment

There is a significant amount of land in the city that is in state ownership and so represents an opportunity to offset some of the cost of the transportation infrastructure with land sales. The mechanism and value of this asset disposal is included in the state business case.

Value capture is a suite of mechanisms that allow authorities to gain additional funds from the increases in land value / benefit to businesses as a result of improved infrastructure. Value capture will form a component of the Infrastructure Australia submission because this is a mechanism that has yet to be used in Australia; it is understood that Infrastructure Australia is keen to understand the benefit and application of this mechanism to larger urban redevelopment projects.

**Figure 58: Project Development Methodology (from the Performance Framework)**



### 10.3.6 Public Private Partnerships (PPP)

The Council of Australia Governments endorsed the National Public Private Partnership (PPP) Policy and Guidelines on 29 November 2008. A PPP is a long-term contract between the public and private sectors where government pays the private sector to deliver infrastructure and related services on behalf, or in support, of government's broader service responsibilities. PPPs typically make the private sector parties who build infrastructure responsible for its condition and performance on a whole-of-life basis. All Australian, State and Territory Government agencies now apply the National Policy and Guidelines when considering public private partnerships. The guidance states:

*"PPPs can make a valuable contribution to the delivery of infrastructure and services throughout Australia and are therefore encouraged, where appropriate, by governments across jurisdictions. The challenge for the public and private sectors is to determine the most effective and efficient means of service delivery in an arrangement that is beneficial to both sectors as well as to users and taxpayers."*

This mechanism should be considered as an option for assisting the funding of infrastructure in the city.

## 10.4 Legislation Requirements/ Changes

The initiatives included in this integrated transport strategy and wider development aspirations require a change in existing legislation at both local and state levels, including:

- Change to infrastructure and development approvals process via the City of Stirling Improvement Scheme
- Application of the projects development and implementation process to deliver projects that address the key reporting areas and are measurable against the performance framework's key performance indicators (further information in Chapter 11 of this report). The project development methodology is shown in Figure 58.
- Require multi-modal transport assessments, statements and travel smart action plans (travel plans) to be submitted for all developments; indicative criteria are shown in Table 22.
- Refine local planning strategy/ scheme to allow developers to offset car parking provision using one or a combination of: cash-in-lieu, offsite car parking, promotion of and/ or funding for alternative modes of transport infrastructure, providing a robust and evidence based transport assessment and travel plan are submitted with the development application.
- Change the car parking standards for development in the local planning strategy/ scheme. Liaise with the state departments to ensure major activity centre parking standards are consistent. Ensure that an appropriate buffer zone is included in the strategy to minimise overspill parking in areas surrounding zones that have more stringent car parking standards.
- Develop a value capture mechanism for existing and future development.
- Develop a methodology for achieving developer contributions towards improving transport provision. Align this with the transport assessment and travel plan process to allow understanding of the transport impact of a development, and therefore calculation of an appropriate contribution.

**Table 22: Indicative Criteria for Requiring a Transport Assessment, Statement and Travel Plan**

Land Use	Size	Transport Statement <sup>1</sup>	Transport Assessment <sup>1</sup>	Travel Plan <sup>2</sup>
Residential units	Units	<40 units and has direct access onto a district distributor road	>40 units	>40 units
Retail	GFA	<1,000 sq. m and has direct access onto a district distributor road	>1,000 sq. m	>1,000 sq. m
Commercial/ Office	GFA	<1,000 sq. m and has direct access onto a district distributor road	>1,000 sq. m	>1,000 sq. m
Hotels	Beds	<75 bedrooms and has direct access onto a district distributor road	>75 bedrooms	Discuss with City of Stirling
Education facilities	Students	<50 students and has direct access onto a district distributor road	>50 students	All sites should have a travel plan
Health facilities	GFA	<1,000 sq. m and has direct access onto a district distributor road	>1,000 sq. m	>1,000 sq. m
Restaurants, cafes, drinking establishments	GFA	<1,500 sq. m and has direct access onto a district distributor road	>1,500 sq. m	Discuss with City of Stirling
Light industrial	GFA	<1,000 sq. m and has direct access onto a district distributor road	>1,000 sq. m	Discuss with City of Stirling
Heavy industrial	GFA	<1,000 sq. m and has direct access onto a district distributor road	>1,000 sq. m	Discuss with City of Stirling
Leisure	GFA	<1,000 sq. m and has direct access onto a district distributor road	>1,000 sq. m	Discuss with City of Stirling
Other <sup>3</sup>	Varied	Discuss with City of Stirling	Discuss with City of Stirling	Discuss with City of Stirling

<sup>1</sup> The contents of a transport statement and assessment are outlined within the City of Stirling Policy Manual (Section 6.7). It is considered that the City of Stirling should develop their own in-depth guidance documents for Transport Statements, Assessments and Travel Plans.

<sup>2</sup> A developer may wish submit a robust and implementable Travel Plan for smaller sites to assist with justifying a lower on-site parking provision.

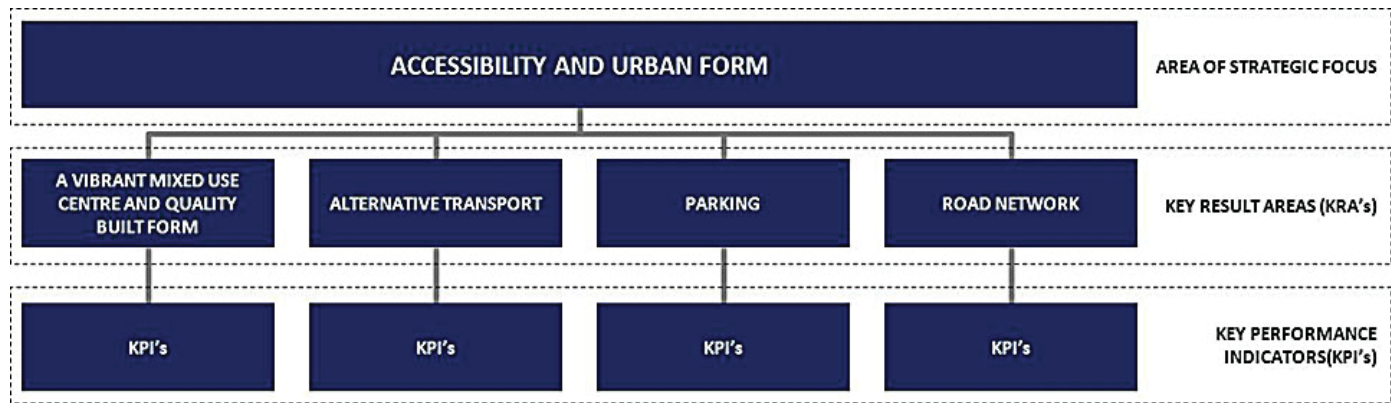
<sup>3</sup> Examples include stadiums, nursing homes, fuel stations, car/ vehicle hire businesses, car show rooms, hairdressers, library, galleries, places of worship, and other uses that do not fit in the aforementioned categories.



11. Measuring Progress

The Stirling City Centre Alliance has developed a performance framework (Performance Framework, Key Performance Areas and Key Performance Indicators, November 2010) to monitor the progress of projects and strategy against the key performance indicators and areas of strategic focus. The key performance indicators and the accessibility key result areas are shown in Figure 59 and Table 23 respectively.

Figure 59: Accessibility and Urban Form Key Result Areas (from the Performance Framework)



**Table 23: Accessibility Key Performance Indicators and Targets**

Key Performance Indicator	Targets			
	Aspired	Agreed	Minimum	Current <sup>1</sup>
Number of pedestrian links with active frontages over the freeway	3	2	2	0
% roads (<5000vpd) with separated cycling paths	100%	80%	70%	0%
% of developments with end of trip facilities	100%	100%	100%	1%
TravelSmart programs in place	Yes	Yes	Yes	No
% cycling mode share	15%	10%	5%	1%
% walking mode share	20%	15%	10%	6%
% of shade areas on footpaths	100%	70%	60%	10%
% of footpaths with continuous weather protection on active streets	100%	80%	70%	5%
% of signalised intersections with a full pedestrian phase on roads over 10,000vpd	100%	80%	70%	5%
% of streets with footpaths	100%	90%	80%	70%
% public transport mode share	20%	15%	10%	8%
% of streets (>20,000vpd) with separate public transport lanes	100%	90%	80%	0%
% of services with <7min frequency (off peak)	80%	70%	50%	0%
% of lots within 200m of high frequency public transport service	100%	80%	70%	60%
% of high frequency services that cannot be moved without major capital costs	100%	80%	70%	60%
Width of crossovers	6m	6m	6m	10m
Maximum number of crossovers per street block	1	2	3	N/A
Number of parking bays per hectare – core area	200	250	280	N/A
Number of bays per hectare – non core area	250	280	300	N/A
Reduce number of parking bays per land use from current standards	Yes	Yes	Yes	No

Key Performance Indicator	Targets			
	Aspired	Agreed	Minimum	Current <sup>1</sup>
Ratio of on street parking relative to length of active streets	66%	50%	40%	0%
% of parking bays allocated for short stay parking	70%	60%	50%	10%
% of public parking to total provision of non-residential parking	100%	80%	50%	0%
% of special purpose bays	10%	8%	5%	5%
% of residential parking that is unbundled from the sale of residential units	100%	80%	50%	0%
% of total public bays that are paid parking	100%	80%	70%	0%
% of commercial parking bays required to pay levy	90%	80%	80%	0%
% of commercial and residential bays in new developments that are subject to a cash-in-lieu payment	100%	100%	100%	0%
% of land for roads	25%	27%	28%	30%
Number of access points to the freeway	4	4	3	2
% of intersections on roads >20,000vpd that have a maximum of three lanes in one direction	100%	90%	80%	28%
% of reduced lane widths that meet the intent of standards and approved by regulatory agency (TBC)	100%	90%	80%	0%
Number of way finders at signalised intersections	100%	80%	80%	0%
Number of fatalities on roads per annum	0	0	0	N/A
% of injuries on roads classified as serious	0%	N/A	N/A	10%
Road safety awareness programs	Yes	Yes	Yes	Yes
Frequency and severity of accidents at intersections	0%	5%	10%	15%
Speed limit of 30km/h on distributor roads <20,000vpd	100%	90%	80%	0%
Speed limit of 40km/h on distributor roads >20,000vpd	100%	90%	80%	0%
Dedicated freight route around/ under the city centre	100%	100%	100%	100%

