

## City of Stirling

### STIRLING CITY CENTRE ACCESS AND PARKING STRATEGY

- PB50196
- 13 August 2010



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## Executive Summary

The Stirling City Centre Alliance is planning the development of a City Centre in the area around the Stirling Train Station. The Alliance's vision is **“A sustainable 21<sup>st</sup> century city – a place for everyone”**.

The Stirling City Centre Alliance has requested Sinclair Knight Merz (SKM), in association with Luxmoore Parking Consulting a division of ARRB Group Ltd (ARRB), to develop an access and parking strategy for the City Centre. A key objective is to limit the amount of traffic accessing the City Centre (whilst achieving the desired resident and worker population) to a level that can be accommodated on the proposed street network without unacceptable levels of congestion.

### High Level Access Principles

The health and vibrancy of the Stirling City Centre will be dependent on good accessibility by walking, cycling, public transport and car. It will also be dependent on providing high amenity, particularly for those people walking around or participating in outdoor activity at street level. Amenity will be enhanced by a safe, convenient walking environment with low levels of congestion, noise and pollution, and few barriers to movement.

Accessibility to the centre must be underpinned by high frequency, high quality public transport and a network of safe, convenient and comfortable routes for walking and cycling. There will also be a need for car parking to supplement access by these other modes for people who, for whatever reason, find walking, cycling or public transport inappropriate or inconvenient for some trips.

The following high level principles have been developed to support the Stirling City Centre Access and Parking Strategy:

- High proportion of access to city centre by public transport, walking and cycling;
- Convenient safe cycle parking throughout the city centre;
- Convenient safe, secure cycling, pedestrian and access routes to the city centre;
- Fine-grained street network for access by walking, cycling and cars;
- Direct and legible walking routes to Stirling train station;
- Multiple access options for motorists to car parking;
- Good pedestrian, cycling and vehicle wayfinding signage system
- A legible, easy to comprehend system of public transport routes to, from and between the Stirling and Glendalough train stations and the city centre.



### City Centre Road Network Capacity

The strategic road network within the City Centre and the access to/ from the Freeway has been planned and agreed by the Stirling City Centre Alliance (Refer **Figure 2.2**). This road network has a finite capacity that has been estimated to be about 12,000 vehicle movements per hour within the City Centre. This translates to up to 140,000 vehicle movements per day, including about 30,000 to 35,000 through vehicle movements and 105,000 to 110,000 vehicles accessing the City Centre each day.

### Maximum Levels of Parking

A key finding of the study is that it will be necessary to limit parking supply for office, retail and residential uses as outlined in the following table:

#### ■ Range of Parking and Estimated Daily Traffic

Land Use	Range of Parking	Estimated Daily Traffic Trips
Office	3800-5600	28,000
Retail	5000-7000	48,000
Sub-Total Non-Residential	8800-12,600	76,000
Residential	12,500-17,000	37,000
Other (including residential visitors)	700-1,400	5,000
<b>Total</b>	<b>22,000-31,000</b>	<b>118,000</b>

**If this restraint on parking is not applied it will be necessary to significantly limit the floor space and dwelling units within the City Centre to below that currently envisaged by the City of Stirling and the Stirling City Centre Alliance.**

The strategy contains the following recommendation on the maximum permitted level of parking:

- Residential-1.0 bays per unit on average for each dwelling.
- Office-1.0 bays/100 m<sup>2</sup> GFA
- Supermarket and Large Retail-4.0 bays/100 m<sup>2</sup> GFA
- Small Main Street Retail-2.0 bays/100 m<sup>2</sup> GFA



The strategy also recommends that the sale, lease or rental of parking bays should be unbundled from the sale or rental of residential properties.

The strategy notes that a further level of regulation is required to ensure the total level of parking on an area of developable land does not exceed a threshold level. This is required to ensure very high density office or retail development does not result in excessive levels of parking and traffic, even though parking ratios meet the criteria specified above.

It is proposed that the maximum amount of parking on all land within the city centre be regulated on a hectare of land basis, in a similar manner to the Perth Parking Policy regulations. The strategy recommends a maximum of 250 bays/Ha for all land within the City Centre, except within the proposed high density precinct around the Stirling Train Station where a lower level of 200 bays/Ha is recommended (Refer **Figure 5.1**).

### **Parking Fees and Charges**

Pay Parking is one of the most effective ways to ration parking and constrain travel demand. It can influence parking location, destination, mode, travel time and, in particular, parking duration. This strategy recommends that pay parking be introduced within the City Centre (both on-street and off-street) as soon as possible and that the fees set be high enough to some car drivers to switch to public transport or non-motorised travel at a different less busy time of the day. This will assist in ensuring there is a reasonable level of parking availability at convenient locations as most times.

### **Cash-in-Lieu and Parking Levy**

A Cash-in-Lieu and a parking levy are proposed with a primary purpose to support a demand management framework that reinforces regulations designed to limit supply. A secondary, but nonetheless important purpose, is to provide a source of funds for alternative transport infrastructure and services that will assist in reducing the level of car travel to, from and within the centre to sustainable levels. It is important that the purpose as a funding source is explicitly recognised and that the revenue obtained is hypothecated to specific measures that improve access to and within the City Centre, including by public transport, walking or cycling or in some instances for provision of public parking.

It is clear that the cost for provision of the quality public transport system that will be needed to meet the access needs of business, residents and visitors to the City Centre will be large. It is also apparent that funding of this public transport infrastructure (and meeting a portion of operating costs) is unlikely to be met solely through State Government budget processes within a timeframe likely to influence the scale and form of development at Stirling.

The cash-in-lieu proposal recommended in this report will significantly reduce the overall cost to development, whilst at the same time providing funds for alternative transport including public transport.



### **Management of Parking**

In an environment where the role of parking is to limit the demand for travel and to encourage the use of public transport, walking and cycling, it can be expected that the demand for parking will on occasion be close to the amount of parking provided. Under these circumstances the management of parking assumes a higher level of importance than when there is a plentiful supply of parking at most times of the day.

In addition to pricing and supply issues the following parking management strategies have been proposed:

- 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 visitors 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.



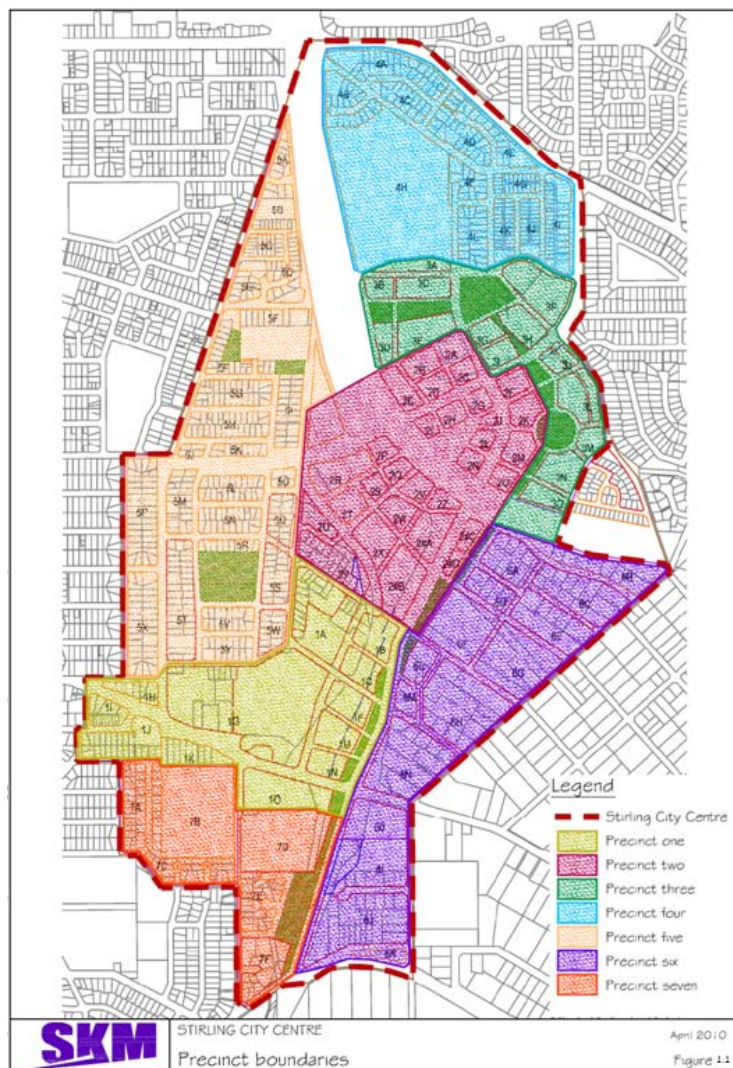
# 1. Introduction

The Stirling City Centre Alliance is planning the development of a City Centre in the area around the Stirling Train Station. The Alliance’s vision is **“A sustainable 21<sup>st</sup> century city – a place for everyone”**.

Because of its location close to the Perth CBD and iconic world class beaches, the Alliance considers Stirling City Centre *“will be a hub for a diverse and prosperous community, offering wellbeing for all”*.

The Stirling City Centre area is shown in **Figure 1.1**. Seven different precincts have been established within the City Centre for planning purposes and these are also shown in **Figure 1.1**.

■ **Figure 1.1– Stirling City Centre Precinct Boundaries**





The Stirling City Centre Alliance has requested Sinclair Knight Merz (SKM), in association with Luxmoore Parking Consulting a division of ARRB Group Ltd (ARRB), to develop an access and parking strategy for the City Centre. SKM acknowledges the contribution made by ARRB in the development of this access and parking strategy for the Stirling City Centre.

A key objective is to limit the amount of traffic accessing the City Centre to a level that can be accommodated on the proposed street network without unacceptable levels of congestion.

### **1.1. Consultation with Key Stakeholders**

Planning for the Stirling City Centre is the responsibility of the Stirling City Centre Alliance. The alliance approach is to ensure a wide range of stakeholders are involved in planning the city centre by giving them opportunities to participate in those aspects of city development that are of interest and concern to them. Stakeholders are encouraged to put forward plans and ideas that best accommodate their needs and these are assessed in a transparent and collegiate way by the Alliance in consultation with business and community representatives.

Two workshops were held (in early 2010) at an early stage of development of the planning and access strategy for the Stirling City Centre. The following groups and agencies participated in the workshops that were facilitated by SKM and ARRB:

- City of Stirling
- Department of Planning
- Department of Transport
- Public Transport Authority
- Stirling City Centre Alliance
- Community Representatives
- Business representatives

The workshop attendees participated in the development of high level principles on access to the city centre, the role of parking and how parking could best be managed to meet a variety of objectives.

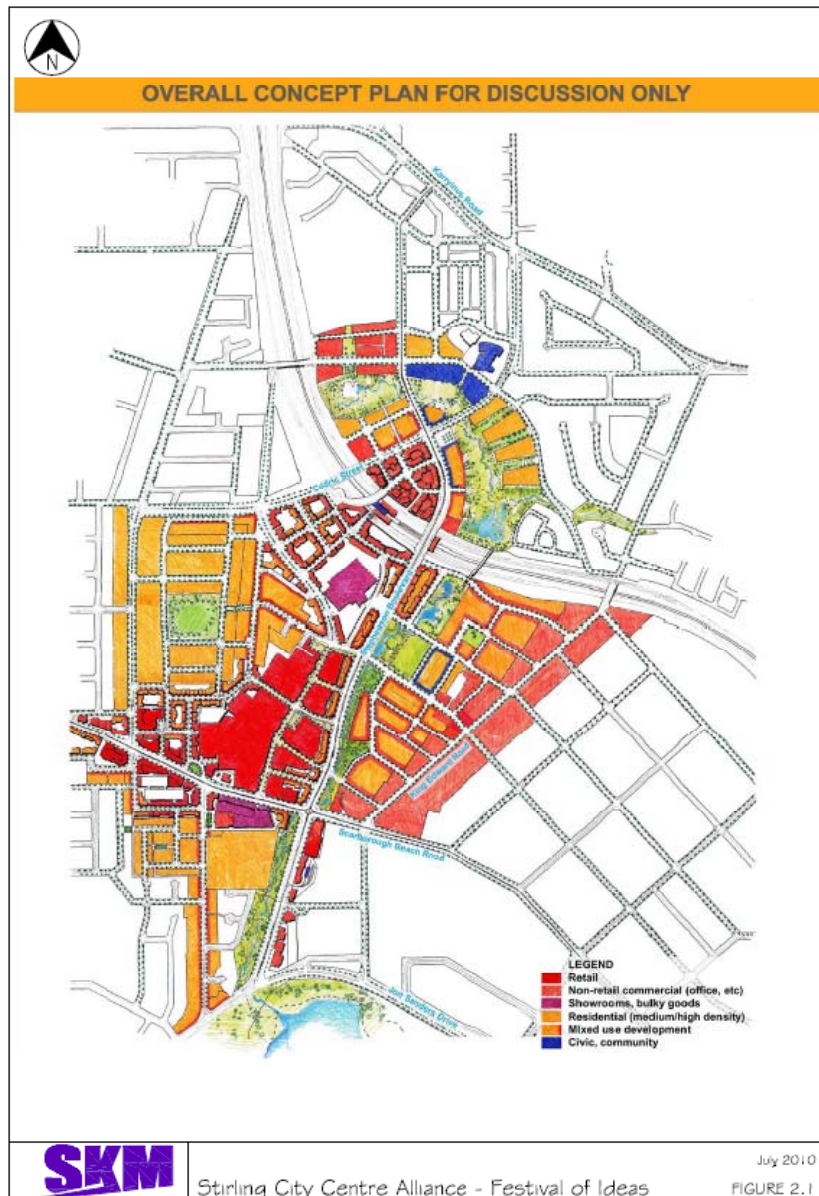
There was general agreement on the need to limit parking to a sustainable level compatible with a level of car movement that could reasonably be accommodated on the proposed City Centre street network. The stakeholder group accepted the premise that more parking results in more traffic and it supported means of reducing traffic through parking pricing and regulations to limit the amount of parking.



## 2. Access to the City Centre

Planning a city centre is a complex process that involves consideration of a wide range of social, environmental and economic issues, including development of the street network and an access and parking strategy. In the case of the Stirling City Centre numerous value management workshops and enquiry-by-design workshops were held to establish a conceptual framework of streets for access to and within the city centre. The concept shown in **Figure 2.1** was developed at the Festival of Ideas workshop held in July 2009.

■ **Figure 2.1 Stirling City Centre Alliance-Festival of Ideas**





The street network concept plan shown in **Figure 2.1** made provision for a mix of land uses at relatively high density designed around a well connected fine grained street network and a living stream. A city centre structure plan is currently being developed by the Alliance.

## **2.1. Long Term Transport Plan**

The long term transport plan was developed in 2009 in response to a number of transport issues that were impacting on the development of a vibrant city centre plan. A major impediment to city centre planning was the existence of the Stephenson Highway road reservation that reserved a large amount of valuable land for major road construction that would have created a significant barrier to movement in the heart of the proposed city. It became obvious that the future Stephenson Highway was incompatible with the development of the Stirling City Centre. As a result, an alternate long term transport plan was developed and adopted by the Stirling City Centre Alliance. The key features of this plan are:

- A dispersed road network providing a variety of routes linking the Mitchell Freeway to Jon Sanders Drive.
- Stephenson Boulevard constructed as a relatively low speed city street through the heart of the city centre between Cedric Street and south of Scarborough Beach Road.
- A series of east-west city streets linking across Stephenson Boulevard linking Ellen Stirling Boulevard with the Osborne Park area.
- Development of Hutton Street as a bypass route for freight traffic between the Mitchell Freeway and Jon Sanders Drive, with provision for a bypass tunnel under the city centre if required in the longer term.
- Development of a network of high quality public transport routes serving the city centre and adjacent areas, including dedicated priority routes, capable of use by light rail, along Stephenson Boulevard and Scarborough Beach Road.
- A comprehensive network of dedicated cycle paths linking to and through the city centre.
- A fine grained network of streets with a safe, comfortable, well connected network of footpaths.

The long term transport plan for the Stirling City Centre is shown conceptually in **Figure 2.2**.



■ Figure 2.2 Long Term Transport Plan





## **2.2. High Level Access Principles**

The health and vibrancy of the Stirling City Centre will be dependent on good accessibility by walking, cycling, public transport and car. It will also be dependent on providing high amenity, particularly for those people walking around or participating in outdoor activity at street level. Amenity will be enhanced by a safe, convenient walking environment with low levels of congestion, noise and pollution, and few barriers to movement.

Accessibility to the centre must be underpinned by high frequency, high quality public transport and a network of safe, convenient and comfortable routes for walking and cycling. There will also be a need for car parking to supplement access by these other modes for people who, for whatever reason, find walking, cycling or public transport inappropriate or inconvenient for some trips.

The following high level principles have been developed to support the Stirling City Centre Access and Parking Strategy:

- High proportion of access to city centre by public transport, walking and cycling;
- Convenient safe cycle parking throughout the city centre;
- Convenient safe, secure cycling, pedestrian and access routes to the city centre;
- Fine-grained street network for access by walking, cycling and cars;
- Direct and legible walking routes to Stirling train station;
- Multiple access options for motorists to car parking;
- Good pedestrian, cycling and vehicle wayfinding signage system
- A legible, easy to comprehend system of public transport routes to, from and between the Stirling and Glendalough train stations and the city centre.

## **2.3. Projected Future Travel Patterns**

As the Stirling City Centre develops into a large mixed use centre that is home to up to 30, 000 residents and a similar number of employees, the proportion of travel by public transport, walking and cycling will increase whilst the proportion of people travelling by car will decrease. There are a number of reasons that make this inevitable:

- The Mitchell Freeway is close to capacity now with only marginal opportunity to cater for more car travel, especially during peak periods
- There is spare capacity (with increased rolling stock) to move two to three times current passenger loading on the northern suburbs railway
- A mixed use high density centre will provide opportunities for many more people to walk for a variety of trips, including home to work, social and business trips and for trips to/from the train station



- Cycling will become more attractive for many as a result of provision of a network of safe cycling routes and adequate cycle parking
- The street network serving the City Centre has limited capacity for car travel
- Car driving will become increasingly expensive and will become unattractive or unaffordable for increasing numbers of people, as supply of cheap oil peaks (peak oil)

Currently in metropolitan Perth, an average of 80% of trips are by car with 58% as car drivers. The percentage of trips as car drivers has decreased in recent years from an estimated 63% to 65% in the early 1990's. This trend to lower levels of car driving, as a proportion of all travel, in Perth and other cities has been driven by a number of factors, including increasing congestion and an increase in the price of petrol. A combination of this general trend to lower levels of car driving and improved options for alternative means of travel to and around the Stirling City Centre is likely to see the proportion of travel by car drivers reduce to about 35% in and around the Stirling City Centre by the time the centre is fully developed in 30 to 40 years time.

Current strategic modelling undertaken by the Department of Planning for the Public Transport Authority is projecting public transport mode share will more than double across Perth by 2031 and car driver mode share will reduce to about 50%. However, studies of travel within city centres and transit orientated developments (TODs) shows that car travel in these centres is about 30% to 50% less than the metropolitan average. Current and projected mode share is shown in **Table 2.1**.



■ **Table 2.1 Current and Potential Future Mode Share for Travel to and Around Stirling City Centre**

	<b>Average Mode Share (%) Metropolitan Perth (2010)</b>	<b>Average Mode Share (%) Metropolitan Perth (2040/50)</b>	<b>Estimated Mode Share Stirling City Centre (2040/50)</b>
Car Driver	58%	48%	35%
Car Passenger	22%	20%	15%
Public Transport	6%	12%	18%
Walking & Cycling	14%	20%	32%

A city centre of the size proposed is likely to generate about 300,000 trips each day. If 35% of these were to be car drivers the total number of car driver trips to/from the centre each day would be 105,000 trips/day. There would also be around 30% of through traffic in City Centre (30% of traffic in Perth City is through traffic). This means that there would be about 140,000 vehicle trips per day and around 12,000 to 13,000 trips per hour during peak periods. Given the street network proposed for the City Centre, this is likely to be close to practical capacity of the street network. As a point of comparison there are currently about 20,000 vehicles trips / hour on Perth city streets during peak hours.

It is clear that it will be necessary to restrict the car driver mode share of trips to, from and within the Stirling City Centre to about 35% of travel by all modes, to limit peak period car movements to that which can be accommodated on the street network. This reduced level of car driving, as a proportion of all trips, will require less car parking than is required under current standards. Also provision of reduced levels of parking will assist in reducing future traffic to a level that can be accommodated on the proposed street network.



### **3. Role of Parking in Stirling City Centre**

A city centre is a place where people visit for work, leisure, business, recreational and other purposes. Those people who walk and / or travel by public transport will not require parking. However, those people who drive or ride a bike will require somewhere to park their vehicle.

In Stirling City, it is estimated there will be up to 30,000 people living in the city centre. For those residents who choose to own a car, parking will also be required. An important role for parking therefore is to cater for the needs of future residents and visitors.

It has been established in section 2 that there will be lower levels of driving to / from the City Centre in the future than exists at present, as the street network will not have sufficient capacity to cater for existing levels of car driving with a major increase in residents and employees. There is a clear nexus between the amount of parking provided, the price of parking and the amount of driving that takes place. Research undertaken at transit orientated developments around train stations shows that mixed use development with reduced levels of parking can reduce vehicle trips by up to 50%. Parking therefore has a role in managing the demand for car travel to / from the centre and in so doing managing congestion.

Price and convenience, in addition to parking supply, can impact on the decision to drive, as can the attractiveness and efficiency of other transport modes such as walking, cycling and public transport. It is reasonable therefore that a charge or tax could apply to parking to discourage the provision of too much parking. This tax would be imposed on the basis that the revenue collected in this way is used to fund improvements to alternative transport infrastructure, facilities and services within the city centre. Parking can therefore have a role as a source of funding for targeted transport infrastructure, facilities and services to support walking, cycling and public transport.

The role of parking in the Stirling City Centre can be summarised as follows:

- Provide prioritised parking for city centre users, including residents;
- Ensure the commercial viability of the centre;
- Manage congestion and travel demand, especially by commuters;
- Encourage modal shift to public transport, walking and cycling.
- Source of funding for alternative transport infrastructure, facilities and services, particularly public transport.



## 4. What is the Right Level of Car Parking to Provide?

There is a need to plan for and deliver the right amount of parking to meet the needs of the Stirling City Centre in the future. Too much parking will result in too much traffic, which will damage the amenity of the centre and make it a less attractive place to visit or to live in. Too much traffic will also result in excessive congestion that will limit accessibility and impact negatively on business. On the other hand, too little parking can have a negative impact on the economic viability of the centre, particularly in the early years when the negative impacts of too much parking may not be immediately obvious to developers or business proprietors.

In this section of the report we examine:

- The amount of parking that will be required at full development of the centre to accommodate car driver access by 35% of all travel to, from and within the centre – estimated at between 100, 000 and 120, 000 trips/day

In sections 5 and 6 of the report we consider:

- Appropriate regulations on both the maximum and minimum levels of parking required as part of the approval process
- Incentives to encourage provision of lower levels of parking that will assist in reducing car travel and consequent congestion

### 4.1. Target Range of Parking Required for Full Development at Stirling

#### Residential Parking Target Range

Across Metropolitan Perth, the average car ownership is 0.7 cars per person. In suburban residential developments, the average occupancy per dwelling is around 2.7 persons per dwelling. This means that the average car ownership per dwelling in suburban areas is 1.89 (0.7 x 2.7). To date, planning authorities have generally responded by requiring two car bays per dwelling for suburban single unit developments.



In a city centre, a number of different circumstances apply:

- reduced average occupancy per unit (1.6 to 1.8 estimated)
- significantly improved public transport and reduced dependency on cars

If the 1.6 to 1.8 persons per unit were to be applied to the current 0.7 cars per person, the number of cars per unit would be in the range 1.1 to 1.25 cars per unit. However, at the Stirling City Centre:

- the quality of the public transport system is significantly better than for metropolitan Perth and it will be improved further in the future
- the location provides a significant opportunity for some people to walk to the city or to cycle
- a mixed use city centre is proposed that will have up to 30,000 residents and 30,000 jobs within a relatively small area, that will encourage walking for many trips within the centre
- affordable housing could comprise between 10% and 15% of total housing as part of a diversity of housing strategy and this will require very low or zero levels of parking

Given these circumstances it is reasonable to expect there will be less car driving and that the demand for parking could be around 25% to 30% less on a per person basis. Given the need to limit parking, the targeted range of parking should be 0.75 to 1.0 per housing unit.

The notional yield for residential dwellings within the city centre provided by the City of Stirling is 16, 885. Thus the target rate for residential parking is 12, 500 to 17, 000 in the entire city centre. The estimated daily car driver trips generated by the residential component of the city centre is 37,000 trips/day – based on 35% car driver mode share and 3.5 total trips / day by 30,000 residents. This is considered to be compatible with the targeted level of parking and results in 2.5 trips for the medium level of car parking within the target range.

#### Office Parking Target Range

Currently in central Perth, the level of office parking provided for major developments ranges from 0.4 to 0.6 bays / 100 m<sup>2</sup> of GFA. In West Perth the office parking provided ranges from 1.0 to 1.5 bays / 100m<sup>2</sup> of GFA. At Stirling the density of the centre is likely to be higher than West Perth and the public transport better. Thus a range of parking somewhere between Perth CBD and West Perth is considered acceptable. The target range for office parking at Stirling should be between 0.6 and 0.9 bays / 100 m<sup>2</sup>. Thus between 3800 and 5600 office parking bays would be required for the estimated potential yield of 627,000 m<sup>2</sup> of GFA office at full development at Stirling. With a utilisation factor about 3 for each parking bay (equivalent to 6 trips to/from each parking bay), and the median level parking of 4,700 bays, around 28,000 trips each day could be expected to, from and within Stirling City Centre.



### Retail Parking Target Range

The City of Stirling has advised the potential retail yield could be 192,000 m<sup>2</sup> of GFA made up of 141,000 m<sup>2</sup> within a major retail centre and 51,000 m<sup>2</sup> spread around other precincts.

The range of parking required in the major retail centre is 3 to 4 bays / 100m<sup>2</sup> with a range of 1.5 to 2.0 bays / 100m<sup>2</sup> in the other precincts. On this basis the range of parking required for total retail in the centre would be between 5000 and 7000 bays. Assuming a utilisation factor of 4 for each parking bay (equivalent to 8 trips to/from each parking bay) about 48,000 trips per day could be generated by the retail car parking bays, assuming the median level of parking of 6,000 bays.

### **4.2. Summary of Parking and Daily Traffic**

**Table 4.1** summarises the range of parking that should be permitted for residential, office and retail uses within the Stirling City Centre to limit daily traffic to and from the centre to less than 120,000 trips per day.

The estimated daily trips of 118,000 in the below table is likely to be an over estimate as some residential trips are also likely to be retail or office trips. A more realistic estimate of total trips is between 105,000 and 110,000 trips/day.

#### ■ **Table 4.1 Range of Parking and Estimated Daily Traffic**

<b>Land Use</b>	<b>Range of Parking</b>	<b>Estimated Daily Traffic Trips</b>
Office	3800-5600	28,000
Retail	5000-7000	48,000
Sub-Total Non-Residential	8800-12,600	76,000
Residential	12,500-17,000	37,000
Other (including residential visitors)	700-1,400	5,000
<b>Total</b>	<b>22,000-31,000</b>	<b>118,000</b>

In addition to this generated traffic there is likely to be about 30,000 to 35,000 vehicles per day travelling through the city centre. A total of about 140,000 trips/day travelling to, from or through the city centre will result in about 12,000 to 13,000 trips per hour during peak periods, which is considered to be close to the capacity of the city centre street network.



**It is clear from this analysis that it will be necessary to restrict parking to within the range shown in Table 4.1. Alternatively it will be necessary to significantly limit the floor space and dwelling units within the City Centre to below that currently envisaged by the City of Stirling and the Stirling City Centre Alliance.**



## 5. Regulations to Control Supply

There can be no guarantee that the market will produce an optimum outcome with regards to parking. Regulations mandating certain levels of parking (maximums and minimums), will be necessary to achieve an appropriate parking supply. Similarly, regulations will be required to guide parking operations, such as pricing, hours of stay and measures to encourage shared parking.

### 5.1. Key Issues and Principles

More parking will result in more traffic, which can have undesirable impacts above certain levels including congestion, pollution and loss of amenity. However, a minimum level of parking is also necessary to provide acceptable levels of accessibility and make sure development is commercially viable. Key principles relating to the provision of parking include:

- Most non-resident parking should be public parking that is shared by a variety of users: i.e. retail customers, commercial business visitors and resident visitors
- Use of on-street parking should be maximised and included in the overall pool of parking supply
- Parking should be time limited to minimise long stay parking and encourage turnover of bays
- Parking should be priced to encourage turnover and maintain a surplus of bays to avoid vehicles cruising looking for spaces

### 5.2. Maximum Level of Supply

There are two regulatory mechanisms proposed to ensure the level of parking provided remains below specified threshold levels. The maximum levels of parking have been determined based on the capacity of the city centre street network to accommodate traffic flows that could be expected with different levels of parking. The link between traffic generation and the level of parking supplied is discussed in **Section 4**.

It is proposed that the maximum level of parking be based on ratios of parking bays per residential unit and parking bays per 100m<sup>2</sup> of non-residential land. This is the primary basis proposed to provide both maximum and minimum levels of parking for the major land uses in the centre. Details of proposed maximum and minimum parking ratios are provided in **Section 5.3**.

A further regulatory control is required to ensure the total level of parking on an area of developable land does not exceed a threshold level. This is required to ensure very high density office or retail development does not result in excessive levels of parking and traffic, even though parking ratios meet the criteria specified in **Section 5.3**.

It is proposed that the maximum amount of parking on all land within the city centre be regulated on a hectare of land basis, in a similar manner to the Perth Parking Policy regulations for the



maximum level of parking permitted in Central Perth. The proposed maximum parking bays/hectare allowance is summarised in **Table 5.1**.

■ **Table 5.1 Maximum Permitted Parking**

	<b>Maximum Parking Allowance (Bays per Hectare)</b>
Zone A	200 bays per hectare
Zone B	250 bays per hectare

Zone A covers precinct 2 and Zone B covers the remainder of the Stirling City Centre (refer to **Figure 5.1**).

These allowances have been selected based on the experience with the Perth Parking Policy. The per hectare maximum allowances are necessary to limit the amount of parking that may otherwise be permitted from a range of very high density buildings. The following two case studies from central Perth highlight the point (Review of Perth Parking Policy, SKM, 2007).

**Case Study 1**

**140 William Street**

- 0.84ha site would permit a maximum of 168 tenant bays.
- 20 storey building on top of train station.
- Approximately 40,000m<sup>2</sup> of GFA = 0.42 bays/100m<sup>2</sup>.
- A suburban scale parking requirement (2.5 bays/100m<sup>2</sup>) would allow around 1,000 parking bays.

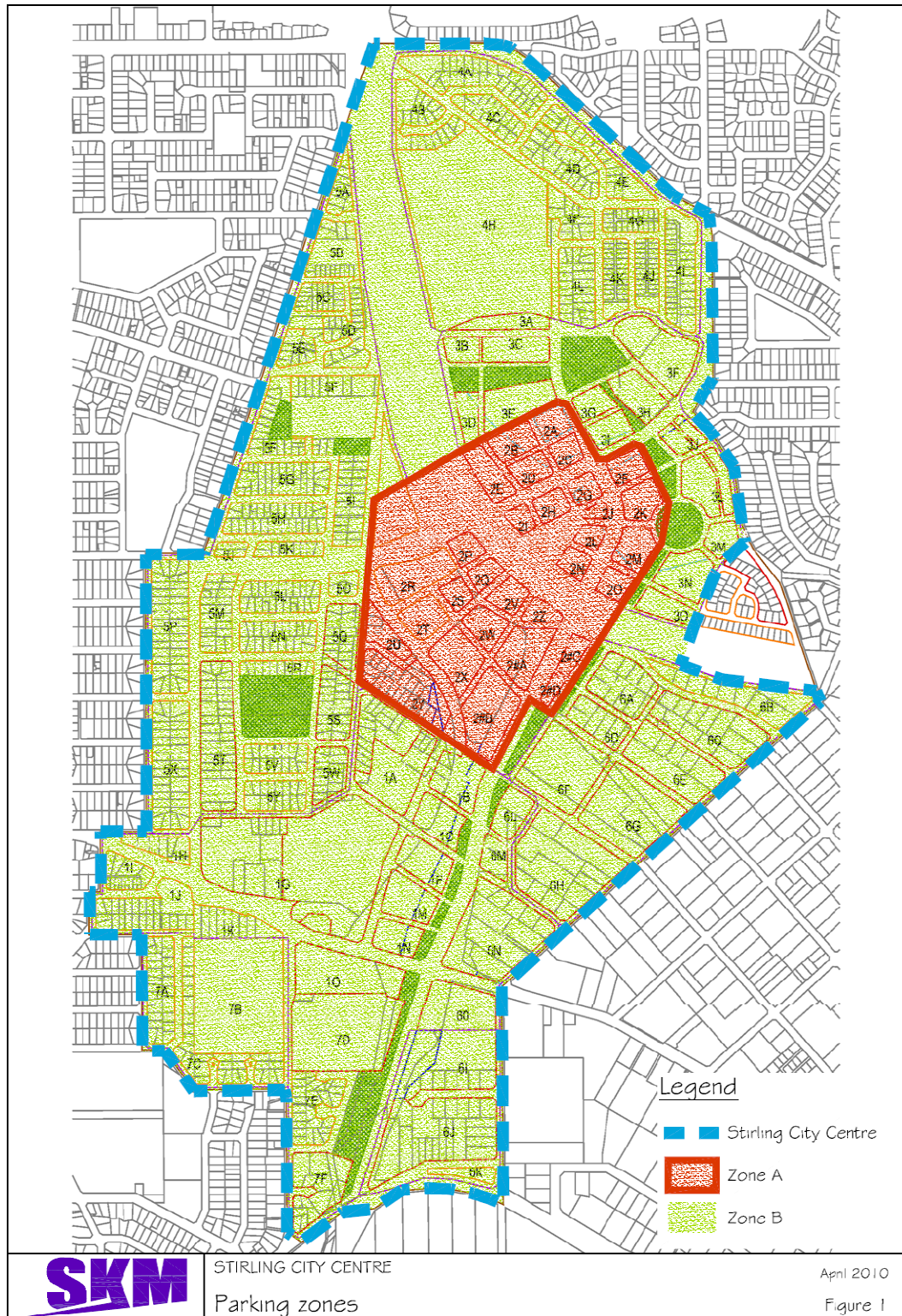
**Case Study 2**

**240 St Georges Terrace (Woodside)**

- 0.9ha site would permit 207 tenant bays.
- 267 bays provided (Ministerial exemption).
- 197 bays currently licenced for use (Jan 07).
- 47,200 m<sup>2</sup> of development
- Policy maximum 0.44 bays/100 m<sup>2</sup>
- Bays approved 0.57 bays/100 m<sup>2</sup>.
- Bays licenced 0.42 bays/100 m<sup>2</sup>.



■ Figure 5.1 Parking Zones A and B within the Stirling City Centre





The maximum parking bays permitted per hectare applies to the sum of parking provided for all uses. If the formula was to be applied for the indicative maximum yield for the Stirling City Centre, the maximum theoretical parking permitted would be shown in **Table 5.2**.

■ **Table 5.2 Maximum Parking Allowances**

	<b>Estimate of Developable Land</b>	<b>Maximum Parking Permitted</b>
Precinct 1	30.1 ha	7,525 bays
Precinct 2	23.3 ha	4,660 bays
Precinct 3	14.7 ha	3,675 bays
Precinct 4	32.6 ha	8,150 bays
Precinct 5	40.6 ha	10,150 bays
Precinct 6	31.7 ha	7,925 bays
Precinct 7	20.6 ha	5,150 bays
<b>Total</b>	<b>193.6 ha</b>	<b>47,235 bays</b>

The maximum levels of parking bays permitted of 47, 235 in all seven precincts would never be achieved, as this assumes the maximum level of parking for each parcel of developable land. In practice some parcels of developable land may result in maximum levels of parking, but there will be others with lower yields where the parking provided is limited more by the parking ratios for different land uses (refer section 5.3). There are also some land parcels where no parking is required (e.g. inner city parks)

### 5.3. Maximum and Minimum Parking Ratios

While the maximum level of parking supply will be regulated based on the area of land being developed (refer section 5.2), there is also a need for regulations on both the maximum and minimum levels of parking to be provided based on the size of the development (i.e. number of residential units or square metres of non residential development)

The following proposed ratios for maximum levels of parking have been developed after taking account of the analysis summarised in section 4. Typically the maximums proposed for each development are 25% to 30% higher than the average target ranges proposed for the different land uses in Section 4. The rationale is that not all developers will provide parking to the maximum allowed after taking account of cost and other matters. However, the actual amount of parking that is being permitted will need to be kept under review. If after, say 10 years of development of the city centre, too much parking overall is being provided, the permitted parking ratios may need to be lowered to avoid excessive congestion resulting from too much traffic generation. If, on the other



hand, the level of parking provided is well below the maximum permitted overall, the maximum ratios could be raised to provide greater flexibility for developers.

### **5.3.1. Residential Apartment Parking in the City Centre**

#### **Policy**

A maximum number of residential parking bays per apartment should be mandated. The total number of bays should be determined based on the average number of bays per residential unit, but the sale, lease or rental of parking bays should be unbundled from the sale or rental of residential properties. This increases flexibility on the number of parking bays that are available to residential units at any point in time. Over time, the value of parking spaces, like residences, will normalise to a market price. Residential parking bays like residential units could be bought, sold or rented for residential use, but should not be made available for use by workers commuting to the City Centre.

#### **Recommended Maximum and Minimum Levels of Parking for City Centre Apartments**

- Maximum level of parking - 1.0 bays/unit on average for development
- Minimum level of parking – zero
- Visitor parking - up to 0.06 bays/unit can be provided (where possible on-street)

The minimum level of parking of zero has been specified to ensure very low or zero levels of parking can be approved for certain demographics (student housing or affordable housing for example). It is unlikely that developers would propose low levels of parking for commercial apartment development as it would potentially affect saleability. The proposed unbundling of parking outlined in the policy above will mean developers will propose a realistic pool of parking from which buyers can choose whether to purchase a parking bay or not. Some unit owners will be able to purchase multiple parking bays.

### **5.3.2. Non-Residential Parking**

#### **Policy**

The majority of parking for office, community, retail and other commercial uses should be public, short term parking targeted at visitors and customers. Shared use of public parking allows for a more efficient and balanced use of parking over different times of the day and week. On-street parking will supplement off-street short term visitor parking (residential and commercial visitors and retail). While a maximum level of overall parking should apply to non-residential uses, a minimum should also apply to the level of public parking.



**Recommended Maximum and Minimum Levels of Parking for Office Developments in the City Centre**

- Maximum level of parking – 1.0 bays/ 100m<sup>2</sup> GFA
- Minimum level of parking – 0.4 bays/ 100m<sup>2</sup> GFA

**Recommended Maximum and Minimum Levels of Parking for Supermarket and Large Retail in the City Centre**

- Maximum level of parking – 4.0 bays/ 100m<sup>2</sup> GFA
- Minimum level of parking – 2.0 bays/ 100m<sup>2</sup> GFA

**Recommended Maximum and Minimum Levels of Parking for Small Main Street Retail in the City Centre**

- Maximum level of parking – 2.0 bays/ 100m<sup>2</sup> GFA
- Minimum level of parking – 1.0 bays/ 100m<sup>2</sup> GFA

**5.4. General Discussion and Conclusions**

The proposed development of Stirling City Centre will result in a busy, bustling urban space with large numbers of people working in, living in and visiting the City each day. This analysis has assessed the following potential ultimate yield for the city centre area provided by the City of Stirling.

- 16,885 residential dwellings (up to 30,000 residents)
- 627,000m<sup>2</sup> GFA of office development
- 192,000m<sup>2</sup> GFA of retail development

In accordance with the policy recommendations for maximum levels of parking the amount of parking permitted in each of the precincts is summarised **Table 5.3**.



■ **Table 5.3 Maximum Parking Permitted in each Precinct in Accordance with Land Use Allowances**

Precinct	Residential	Office	Retail (estimated)	Total
1	1,443	670	5,217 <sup>1</sup>	7,330
2	4,600	2,810	560	7,970 <sup>2</sup>
3	3,300	380	80	3,760 <sup>2</sup>
4	948	-	-	948
5	3,528	-	-	3,528
6	2,050	2,200	180	4,430
7	1,016	210	200	1,416
<b>All precincts</b>	<b>16,885</b>	<b>6,270</b>	<b>6,237</b>	<b>29,392</b>

A number of points are evident from this table:

- Residential parking could comprise up to 57% of all parking in the greater City Centre area. However, this level of parking is unlikely to be achieved, as some developers will choose to limit parking to meet demand for diverse housing needs and demographics and to reduce costs as a result of the park-in-lieu policy
- The total parking for precincts 2 and 3 is more than the gross maximum parking allowances and will not be permitted. For example, in precinct two, developers will need to balance provision of residential and non-residential parking to meet the maximum allowance under the spatial provisions outlined in **Table 5.2**. In precinct two, the maximum level of parking permitted is 4,660 based on 200 bays/ ha of developable land. The allocation of parking in precinct two could be:
  - 2,990 residential bays (0.65 bays/ residential unit)
  - 1,670 bays for office and retail (based on 0.5 bays/ 100m<sup>2</sup> GFA of office and one bay/ 100m<sup>2</sup> GFA of retail and a small allowance for shared parking)

The maximum and most likely level of parking for each precinct is estimated to be as shown in **Table 5.4**.

<sup>1</sup> Assumes a parking rate of 3.7 bays/100m<sup>2</sup> for a mixture of small and large retail.

<sup>2</sup> These allowances are higher than permitted on a maximum of bays/hectare basis. Therefore the maximum stipulated in Table 5.2 will apply.



■ **Table 5.4 Maximum and Most Likely Level of Parking Provided in each Precinct**

Precinct	Residential	Non-Residential	Maximum allowable	Preferred/ Likely Total Parking
1	1,443	5,887	7,330	7,300
2	2,990	1,670	4,660	4,660
3	3,225	450	3,675	3,000
4	948	-	948	900
5	3,528	-	3,528	3,300
6	2,050	2,380	4,430	3,800
7	1,016	210	1,226	1,200
<b>Total</b>	<b>15,200</b>	<b>10,597</b>	<b>25,797</b>	<b>24,160</b>

### 5.5. Provision of Public Parking

Public parking is to be encouraged in preference to private tenant parking to encourage shared use and more efficient use of resources. Public parking can be provided either by the Council or by private owners.

The cash-in-lieu policy discussed in section 6 will enable the Council to receive funds for the variable portion of the cash-in-lieu payment that is associated with a reduced level of private parking. This will enable the Council to construct public car parks using a portion of the variable cash-in-lieu funds. It is recommended that the Council construct these car parks on the periphery of the centre on streets that can accommodate efficient access to the car parks. The construction of public car parks by the Council using variable cash-in-lieu funds will ensure that these car parks do not result in overall limits on car parking being exceeded.

### 5.6. Discretionary Higher Allowances in Short Term

For a period of 5 years from the time of gazettal it is recommended that the Council of the City of Stirling retain discretionary powers to permit higher levels of parking. Some developers may be reluctant to commit to develop with low levels of parking in the short term because they are accustomed to lower parking ratios and because they do not perceive Stirling as a high density mixed use centre at this time. The use of discretionary power to permit some higher level of parking may encourage some developers to bring forward development that will assist in a faster rate of development in the early years than may otherwise occur. This is a generally beneficial outcome, but is important that these discretionary powers do not have an overall detriment impact of permitting too much parking.

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Should discretionary higher parking allowances be permitted, it is recommended they be considered within the following framework:

- Discretionary powers to provide more parking apply to residential and office development only.
- The maximum discretionary increase be 20% above the recommended level
- In the case of office development, all of the additional parking permitted must be public paid parking provided either in a separate parking structure as part of the proposed permanent supply of public parking for the centre or on an adjacent at-grade site as temporary public paid parking.
- All cash-in-lieu payments required under the policy (refer to section 6) must be paid, including the fixed cash-in-lieu component, regardless of the fact that the developer has chosen to provide more parking.

#### **5.7. On-Street Parking Provides and Early Pool of Parkings Supply**

Most of the street network will be provided early in the development of the centre. This policy promotes the construction of a generous amount of on-street parallel paid parking. The provision of this parking early in the development of the centre means that the ratio of parking development will be highest in the early years and reduce as more development occurs. This is desirable as the higher parking ratios will be welcomed by developers in the early years without contributing to higher levels of parking at full development.



## 6. Parking Fees and charges

The development of a city centre at Stirling will be reliant on the development of an excellent public transport system and the development of infrastructure that will support high levels of walking and cycling to and within the city centre. This high level of walking, cycling and public transport will be necessary to ensure the street network on approach to and within the city centre does not become overly congested and to ensure that a high level of amenity can be achieved for residents, businesses and visitors to the city centre, particularly those walking around at street level.

The primary purpose of both a cash-in-lieu system and a parking levy is to support a demand management framework that reinforces regulations designed to limit parking supply. A cash-in-lieu system, as proposed, also significantly reduces the overall cost to development by reducing the cost of parking provision. A secondary, but nonetheless important purpose is to provide a source of funds for alternative transport infrastructure and services that will assist in reducing the level of car travel to, from and within the centre to sustainable levels. It is important that the purpose as a funding source is explicitly recognised and that the revenue obtained is hypothecated to specific measures that improve access to and within the city centre, including:

- Public transport system infrastructure such as light rail, provision for priority access, or provision of quality on-street stations.
- Provision of high quality walking routes between Stirling Station and key centres of activity within the city centre.
- Provision of bicycle infrastructure that will provide for the safe movement of cyclists, to, from and within the city centre.
- Provision of public parking that can be supplied and operated by the City of Stirling or a private operator. This parking would supplement the public parking provided on private property and the limited amount of private tenant parking and would fit within the parking policy cap adopted for the city centre.

It is clear that the cost for provision of the quality public transport system that will be needed to meet the access needs of business, residents and visitors to the city centre will be large. It is also apparent that funding of this public transport infrastructure (and meeting a portion of operating costs) is unlikely to be met solely through State Government budget processes within an acceptable timeframe.



## **6.1. Pay Parking**

### **6.1.1. General Principles**

Pay Parking is one of the most effective ways to ration parking and constrain travel demand. It can influence parking location, destination, mode, travel time and in particular parking duration. The impacts vary depending on the price structure and the relative convenience of alternative parking facilities and modes.

As pay parking generally results in reductions in car use and traffic congestion among other environmental benefits, it is one of the essential transport measures necessary to ensure the viability of the Stirling City Centre.

Pay parking tends to increase equity by charging (user pay) for their parking costs and by reducing the parking costs imposed on non-drivers. Paying directly rather than indirectly benefits consumers because it reduces parking and traffic problems and allows individuals to decide how much parking to purchase giving them an opportunity to save money. Drivers may use a space as long as they want, as long as they are prepared to pay for it.

### **6.1.2. Pay Parking Objectives**

The following objectives are provided to assist in the determination of the fee structure:

- For Traffic Management-peak period fees should be high enough to encourage a shift in travel modes or times.
- For Parking Management-fees during peak demand periods and at the most convenient locations should be high enough to generate a maximum 85%-90% occupancy rate. If prices are too low, parking becomes saturated causing motorists to cruise around in search of a space.

### **6.1.3. Guidelines to efficient pay parking pricing**

- Charge drivers directly rather than indirectly
- Offer convenient locations and several options for payment including acceptance of coin, credit card, eftpos and notes
- Use small time units so drivers can avoid paying for more time than they need, e.g. for short term parking charge in 5 minutes blocks, for long term charge by the hour rather than the day
- Charge higher fees and provide shorter time periods at the most convenient spaces (on-street) to encourage high churn
- Use incremental price structures to favour short term users, e.g. \$1 for first hour then \$1.50 for second hour etc
- Daily rates should be set at >6x hourly rate, and monthly rates at >20x daily rate



- Eliminate weekly and monthly parking passes and earlybird parking which encourage commuting
- Minimise discounts for long term parking
- Ensure that fee structures are flexible and can be amended up or down in order to manage demand. It is inefficient to review fees only once a year in accordance with budget timetables
- Set parking fees with some reference to popular public transport fares, e.g. all day parking should be higher than a two-zone return train fare
- Encourage businesses to price parking and offer alternative discounts or refunds to their bona fide clients
- Provide discount parking to multi passenger vehicles
- Ensure a high level of compliance with regular and unpredictable enforcement
- Expand operating times to include evening and weekend parking
- Minimise the exceptions to pay parking, e.g. all residents, ratepayers, loading vehicles, couriers and Acrod parkers using public parking spaces should pay.

#### 6.1.4. Recommended Fee Structure for the Stirling City Centre

It is essential that Stirling City Council implement paid parking including on-street parking in the Stirling City Centre as soon as possible. Private owners and operators of parking will be reluctant to charge for parking while the City is offering spaces for free.

Based on the maximum fee currently being charged for premium location parking in other town centres, it is recommended that Stirling introduce the fee structure shown in **Table 6.11**.

##### ■ Table 6.1 Recommended Fee Structure for 2011

Current Fees \$ ( for premium parking)	Maximum Fee Charged				Recommended Fee Stirling July 2011
	Perth	Vincent	Fremantle	Joonalup	
<b>On-street</b>					
Per hour	3.20	1.90	1.50	1.00	1.50
<b>Off-Street</b>					
1 <sup>st</sup> hour	3.00	1.90	1.30	0.80	1.30
Daily Rate	25.20	11.00	20.00	3.00	10.00

These fees would be payable in smaller blocks, thus 50c will purchase 20 minutes on-street. They will also be reduced for parking further away from the city centre. It is recommended that long term remote commuter car parks offer parking at \$7.00 per day.

These parking fees would need to be reviewed on a yearly basis to ensure the objectives outlined in section 6.1.2 are achieved.



## 6.2. Cash in Lieu

Cash-in-Lieu is a mechanism that has been employed by councils in Perth and elsewhere in Australia for many years to provide for the access needs in a particular area. Cash-in-Lieu is particularly beneficial where parking needs to be limited and funds are required for alternative forms of access, such as public transport. It can also be beneficial to small commercial developments or retail outlets, where physically it is both impractical and expensive to provide off – street private parking. In these instances, the cash-in-lieu can be used for provision of public transport, walking or cycling provision or for a combination of public parking and public transport.

There are a wide variety of ways in which cash-in-lieu can be applied. This proposal has been developed specifically to meet the needs of the Stirling City Centre and is based on the following principles;

### Principles for Cash – In – Lieu

- All cash-in-lieu revenue shall be hypothecated for improvements to transport infrastructure for public transport walking or cycling, or for the provision of public parking within the city centre.
- The cash-in-lieu payment shall be based on a proportion of the cost of provision of a parking bay, including the cost of land.
- The benefit of the cash-in-lieu payment shall increase as the level of on-site parking is decreased in a manner that ensures the overall cost to the developer is reduced.

### Cost of Parking Bay

In the Stirling City Centre all parking will be provided in deck or underground parking structures. The construction cost of parking in deck structures of more than 2 storeys is estimated to be \$33,000 per bay. The cost of land is estimated at \$1,000 to \$1,500 per square metre. Assuming 30 m<sup>2</sup> per parking bay in a deck structure, the cost of a parking bay could vary as outlined in **Table 6.2**.

#### ■ Table 6.2 Estimated Cost to Provide 1 Parking Bay

Type of Parking	Land Cost		Construction Cost	Estimated Total Cost Per Bay
	At \$1000 per m <sup>2</sup>	At \$1500 per m <sup>2</sup>		
At Grade	\$30,000	\$45,000	\$6,000	\$36,000 to \$51,000
2 Deck	\$15,000	\$22,500	\$25,000	\$40,000 to \$47,500
4 Deck	\$7,500	\$11,250	\$33,000	\$40,500 to \$44,250



For the purpose of apportioning cost for cash-in-lieu it is recommended a discounted total cost of \$35,000 in 2010 dollar costs be applied. This price would be increased annually based on Rawlinson's Australia Construction Handbook building index or as re-set from time to time by the City of Stirling.

### 6.2.1. Residential Cash-in-Lieu

Cash-in lieu for each residential dwelling to be based on a fixed cost and a variable cost. The costs will be taken as a proportion of the discounted cost of a parking bay (\$35,000 in 2010 dollars) and indexed.

- **Recommend** - Fixed cash-in-lieu charge of 10% of the discounted cost of a parking bay (\$3,500 per residential unit in 2010 dollars)
- **Recommend** - Variable cash-in-lieu, which increases as the amount of parking provided decreases below 1 bay/unit. The cash in lieu payment to be set at 30% of the cost saving from the reduced level of parking provided. (For example, if 0.6 parking bays/unit is provided on site, the variable cash-in-lieu of 0.4 bays of the discounted cost of parking bay - \$4,200)

### Examples of Cash-in-Lieu Payments and Cost to Developer of Provision of Parking Plus Cash-in-Lieu Payments

The following examples are based on a discounted cost of parking of \$35,000 per bay. The real cost of parking for different options is shown in **Table 6.2**.

Example 1 – 100 residential units with parking provided in a 2 Deck Structure

Scenario	Scenario 1 – Parking Provided on Site at 1.0 bays/unit	Scenario 2 – Parking Provided on Site at 0.7 bays/unit
Construction Cost	\$2.5 million	\$1.75 million
Land Cost	\$1.5 to \$2.25 million	\$1.05 to \$1.575 million
Total Cost of Parking Provision	\$4.0 to \$4.75 million	\$2.8 to \$3.325 million
Fixed Cash-in-Lieu Payment	\$0.35 million	\$0.35 million
Variable Cash-in-Lieu Payment	\$0.00 million	\$0.315 million
Total Cost to Developer	\$4.35 to \$5.1 million	\$3.465 to \$3.99 million
Revenue Available to Fund Alternate Transport	\$0.35 million	\$0.665 million



A developer opting to reduce the level of parking from 100 bays to 70 bays would reduce their overall cost by between \$0.885 million and \$1.1million. The revenue made available to fund alternative transport options would increase from \$0.35 million to \$0.665 million.

#### Example 2 – 16 Residential Units with Parking Provided At Grade

Scenario	Scenario 1 – Parking Provided on Site at 1.0 bays/unit	Scenario 2 – Parking Provided on Site at 0.875 bays/unit
Construction Cost	\$0.096 million	\$0.084 million
Land Cost	\$0.48 to \$0.72 million	\$0.42 to \$0.63 million
Total Cost of Parking Provision	\$0.576 to \$0.816 million	\$0.504 to \$0.714 million
Fixed Cash-in-Lieu Payment	\$0.056 million	\$0.056 million
Variable Cash-in-Lieu Payment	\$0.00 million	\$0.021 million
Total Cost to Developer	\$0.632 to \$0.872 million	\$0.581 to \$0.791 million
Revenue Available to Fund Alternate Transport	\$56,000	\$77,000

A developer opting to reduce the level of parking from 16 to 14 bays would reduce their overall cost by between \$51,000 and \$81,000. The revenue made available to fund alternate transport options would increase from \$56,000 to \$77,000.

#### 6.2.2. Non Residential Cash-in-Lieu

Cash-in-Lieu for non-residential development would contain a fixed and a variable component.

- Recommend** – Fixed cash-in-lieu payment to be set at 50% of the discounted cost of a parking bay per 100m<sup>2</sup> of land (\$17,500 in 2010 dollars)
- Recommend** – Variable cash-in-lieu increase as the amount of parking is reduced below the maximum level of parking permitted. The variable cash-in-lieu payment to be set at 50% of the saving from the reduced level of parking at the discount rate (i.e. \$17,500 for each parking bay provided less than the maximum permitted level of parking).

#### Examples of Cash-in-Lieu Payments and Cost to Developer of Provision of Parking Plus Cash-in-Lieu Payments

The following examples are based on a discounted cost of parking of \$35,000 per bay. The real cost of parking for different options is as shown in **Table 6.2**.



Example 3 – 10,000m<sup>2</sup> of GFA of office with Parking Provided in a 2 Deck Structure

<b>Scenario</b>	<b>Scenario 1 – Parking Provided on Site at 1.0 bays/100m<sup>2</sup> GFA</b>	<b>Scenario 2 – Parking Provided on Site at 0.6 bays/100m<sup>2</sup> GFA</b>
Construction Cost	\$2.5 million	\$1.5 million
Land Cost	\$1.5 to \$2.25 million	\$0.9 to \$1.35 million
Total Cost of Parking Provision	\$4.0 to \$4.75 million	\$2.4 to \$2.85 million
Fixed Cash-in-Lieu Payment	\$1.75 million	\$1.75 million
Variable Cash-in-Lieu Payment	\$0.00 million	\$0.7 million
Total Cost to Developer	\$5.75 to \$6.5 million	\$4.85 to \$5.3 million
Revenue Available to Fund Alternate Transport	\$1.75 million	\$2.45 million

A developer opting to reduce the level of parking from 100 bays to 60 bays would reduce their overall cost by between \$0.9 and \$1.2 million. The revenue made available to fund alternative transport would increase from \$1.75 million to \$2.45 million.

Example 4 – 10,000m<sup>2</sup> of GFA of large centre retail with Parking Provided in a 2 Deck Structure

<b>Scenario</b>	<b>Scenario 1 – Parking Provided on Site at 4.0 bays/100m<sup>2</sup> GFA</b>	<b>Scenario 2 – Parking Provided on Site at 3 bays/100m<sup>2</sup> GFA</b>
Construction Cost	\$10.0 million	\$7.5 million
Land Cost	\$6.0 to \$9.0 million	\$4.5 to \$6.75 million
Total Cost of Parking Provision	\$16.0 to \$19.0 million	\$12.0 to \$14.25 million
Fixed Cash-in-Lieu Payment	\$1.75 million	\$1.75 million
Variable Cash-in-Lieu Payment	\$0.00 million	\$1.75 million
Total Cost to Developer	\$17.75 to \$20.75 million	\$15.5 to \$17.75 million
Revenue Available to Fund Alternate Transport	\$1.75 million	\$3.5 million



A developer opting to reduce their level of parking from 400 to 300 bays would reduce their overall cost by between \$2.25 million and 3.0 million. The revenue made available to fund alternative transport options would increase from \$1.75 million to \$3.5 million.

### 6.2.3. Potential Revenue from Cash-in-Lieu by 2050

- The potential revenue from cash-in-lieu for residential, office and retail development in the Stirling City Centre is estimated in **Table 6.3**. It is based on the potential ultimate yields for the different uses.
- **Table 6.3 Potential Cash-in-Lieu Revenue**

Land Use	Ultimate Development Yield	Potential Revenue		
		Base Cost Maximum Parking	15% Parking Reduction	30% Parking Reduction
Residential	16,885 units	\$59.0 million	\$85.7 million	\$112.3 million
Office	627,000m <sup>2</sup> of GFA	\$109.7 million	\$126.2 million	\$142.6 million
Retail	192,000m <sup>2</sup> of GFA	\$33.6 million	\$53.8 million	\$73.9 million
<b>Total</b>		<b>\$202.3 million</b>	<b>\$265.7 million</b>	<b>\$328.8 million</b>

Over a period of 40 years total revenue of between \$202 million and \$329 million could be made available to fund alternative transport, depending on the extent to which parking is reduced on site. This amounts to about \$5 to \$8.25 million per annum. This can be balanced against an estimated cost of \$1,378 million (or \$34.5 million per annum) to provide the estimated 29,392 parking bays permitted on site (**Table 5.3**). A reduction of 30% of this parking would save an estimated \$413 million, which would be offset by an estimated payment of \$162 million in additional variable cash-in-lieu payment from the base level (fixed) cash-in-lieu payment of \$202 million.



### **6.3. Levy on Car Parking**

#### **6.3.1. Perth Parking Policy Experience**

The Perth Parking Policy introduced in 1999 by the City of Perth and the State Government included an annual levy or charge on all non-residential parking bays (with some exceptions) within the City of Perth. The then Minister for Local Government, Mr Omodei, in the second reading speech on the Perth Parking Management Bill (Hansard 26 November 1998) stated:

*“The principal objectives of the Perth Parking Management Bill and Perth Parking Policy are to promote a balanced transport system to gain access to central Perth, and to limit the growth of traffic congestion and deterioration of air quality in the central area.”*

An important aspect of the enabling legislation for the Perth Parking Policy and Licensing Scheme was that:

*“The revenue raised through licensing of parking spaces will be spent in the Perth Parking Management Area to give effect to this policy, as determined by the Minister for Transport following consultation with the City of Perth. Matters to be funded by the revenue include the Central Area Transit (CAT) System and improvements to that system, improving public transport access, enhancing the pedestrian environment, supporting bicycle access and other initiative which support a balanced transport system for the City”.*

Western Australian Government Gazette, No 137, 16<sup>th</sup> July 1999

In summary the major objectives of the Perth Parking Policy are to assist in the management of congestion and to improve overall accessibility and the physical environment by utilising revenue collected to improve public transport to and within the city.

A review of the Perth Parking Policy was undertaken by Sinclair Knight Merz in 2007. It found that the Perth Parking Policy has been found to positively contribute to state government land use policies to improve the economic, environmental and social health of central Perth.



The finding of the SKM review included:

- *“The Perth Parking Policy has contributed to lower traffic volumes on city streets with lower levels of congestion than would have been the case without this influence;*
- *restraint on the growth of car parking has not limited the potential of the city centre to grow economically;*
- *along with improvements to the public transport system, the Perth Parking Policy has contributed to an improvement in accessibility to the city centre during the last 6 years”.*

### **6.3.2. Levy Proposal for Stirling City Centre**

Analysis undertaken as part of this study shows that vehicular demand will need to be constrained if serious congestion in the Stirling City Centre is to be avoided. The study team considers that the introduction of a parking levy will have overall beneficial effects on improving accessibility to the centre by reducing demand for car travel and providing a source of funds to improve public transport.

#### **Principles Relating to Parking Levy**

The following principles have been developed by the study team based on the experience in implementing the Perth Parking Policy and its applicability to the Stirling City Centre:

- The levy shall apply to existing as well as future parking in the prescribed area to ensure future development and existing development make an equitable contribution to transport improvements.
- All revenue from a parking levy shall be hypothecated for expenditure on public transport annual operating costs or for infrastructure improvements for public transport, walking or cycling.
- The levy cost shall be set at a dollar cost per parking bay and adjusted annually in accordance with annual Perth CPI, or as adjusted from time to time by the Minister for Transport following consultation with the City of Stirling.
- The levy shall apply to all non-residential parking bays (on-street and off-street) within the prescribed parking area, with the following exceptions:
  - Loading bays, bays used for public transport purposes, by emergency services, or set aside for parking of vehicles used by disabled persons.
  - A parking facility that has 5 parking bays or fewer.
  - A parking bay used solely for servicing, inspecting, repairing, fuelling or maintaining vehicles or used solely for a vehicle that forms part of a stock of a business of a motor vehicle dealer.



It is proposed that the parking levy not apply to residential parking when the levy is introduced. However, consideration could be given to applying the levy to residential parking in the future for these residential unit owners with more than one bay per unit.

### **Prescribed Area for Parking Levy**

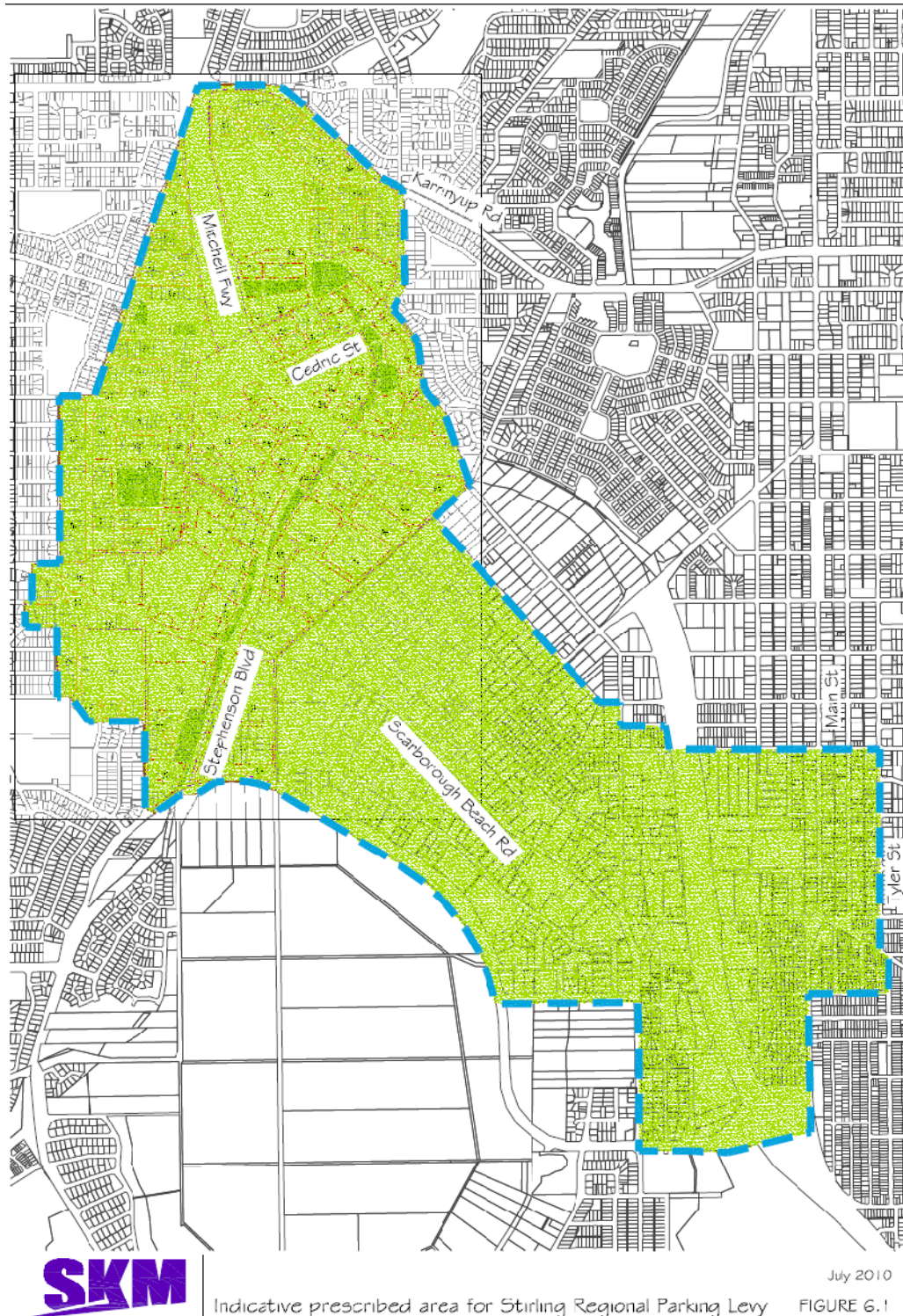
The prescribed area for a parking levy should apply to the Stirling City Centre area, but there is merit in extending it to include the Herdsman Business Park, the Osborne Park light industrial area and the area around the Glendalough Train Station. As a general principle the prescribed area for a parking levy should include the area that will be well served by quality, frequent public transport. This should include:

- The area within 1km walking distance of Stirling Station
- The area within 1km walking distance of Glendalough Station
- The area within 600 metres walking distance of the high quality public transport service linking Stirling and Glendalough stations (Note: this area should only be included in the prescribed parking area for a levy, when the high quality public transport system has been introduced).

The prescribed area for the parking levy is shown indicatively in **Figure 6.1**. Further more detailed analysis may be requested before a precise prescribed area can be agreed.



■ Figure 6.1 Indicative prescribed area for Stirling Regional Parking Levy





### **Preferred Mechanism for the Introduction of a Levy**

The Perth Parking Policy was introduced by an Act of Parliament (The Perth Parking Management Act and Regulations). This act applied specifically to the City of Perth.

If this mechanism were to be used to introduce a parking levy in and around the Stirling City Centre, new legislation would be required to be introduced into State Parliament. The City of Stirling has received advice that other mechanisms could be used to introduce a parking levy. They include:

- Adaption of a local law;
- Introduction through a local planning scheme;
- Use of a specified area rate;
- Use of a differential general rate.

Each of these mechanisms would require further work to ensure it could be legally defended should it be challenged. It is not possible to determine if any of these alternatives offer a practical alternative until prior to the development of a detailed implementation plan for each alternative and further legal scrutiny.

On the other hand, the parliamentary legislative model is well tested and could be introduced with confidence subject to the approval by State Parliament. It is known that State Government planning agencies have shown an interest in expanding the Perth Parking Policy to areas outside of Central Perth where congestion is forecast to become a significant problem unless parking and future traffic growth is constrained. There is merit in expanding the legislative model for implementation in a variety of centres subject to management regulations (similar to the Perth Parking Management Regulations) being developed for each centre.

The legislative model (based on the Perth Parking Policy) is considered to be the preferred mechanism for introduction of a parking levy at Stirling, although alternative mechanisms cannot be discounted at this stage.

### **Levy Rate**

The initial levy rate would be determined by the City of Stirling and the State Government (assuming a legislation model is used for implementation). The information in **Table 6.4** is provided to assist in determining an appropriate rate:



■ **Table 6.4 Parking Levy Rates in Australia**

<b>Location</b>	<b>Type of Bays</b>	<b>Annual Levy per Bay (2010)</b>
Perth	Long Stay	\$598
Perth	Short Stay	\$567
Melbourne (Central Area)	Long Stay	\$860
Sydney (CBD, North Sydney, Milsons Point)	Excludes, on-street and retail customers	\$2000
Sydney (Bondi Junction, Parramatta, Chatswood, St Leonards)	Excludes, on-street and retail customers	\$710

It is the purpose of a parking levy to assist in the management of demand for travel. Therefore the levy in Stirling should be of sufficient magnitude to encourage and support paid parking in the Stirling City Centre and make a contribution to managing the demand for car travel.

Taking account of the above, a car parking levy charge at Stirling, should be set at between \$200 and \$250 per bay if introduced between 2010 and 2012. However the rate of any proposed levy would need to relate to the benefit derived from the public transport improvements implemented.

**Potential Annual Revenue from a Parking Bay Levy**

ARRB (2009) has estimated there are currently about 30, 000 non-residential parking bays in the Stirling, Herdsman, Osborne Park area. However it is not known how many of these bays could be subject to exception from a levy (principally because an owner has 5 bays or fewer).

On the assumption that there are 20,000 non-residential bays in the prescribed area that could be subject to a levy, a levy of \$200 per bay could raise gross revenue of \$4 million per annum. Assuming 10% of this revenue is consumed in administration and compliance, about \$3.6 million per annum could be raised to improve public transport in the region. Over time, the revenue would increase as the Stirling City Centre grows and the number of parking bays in the prescribed area increases.

**Staged Introduction of Parking Levy**

It is likely that the necessary legislative changes and set up the system would take up to 2 years. This time should be used to advise owners of car parking in the area that it is proposed to introduce a parking levy in the area from 1<sup>st</sup> September 2012. This will provide owners with time to negotiate agreements with their tenants to pass on the cost of the parking levy and to ensure businesses have ample opportunity to plan for parking levy payments by including provision in budgets. Also by introducing part way through the year, the opportunity could be taken to provide an annual discount through reducing the annual levy charge to 50% for the year 2012/13. In the following 2013/14 the



full cost of the levy would apply. In following years the levy could be increased in accordance with the CPI or in accordance with fee changes approved by the Minister for Transport.



## 7. Parking Management

In an environment where the role of parking is to limit the demand for travel and to encourage the use of public transport, walking and cycling, it can be expected that the demand for parking will on occasion be close to the amount of parking provided. Under these circumstances the management of parking assumes a higher level of importance than when there is a plentiful supply of parking at most times of the day.

### 7.1. High Level Principles and Goals

The following parking management principles and goals have been developed to support the high level access principles discussed in section 2 and the role of parking outlined in section 3 of this report:

- Establish and implement a uniform policy for the provision and management of parking;
- Reduce (when compared to existing standards) the amount of parking provided in the city centre;
- 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;
- Use price as means of regulating demand and maintaining an adequate supply of available bays;
- Use convenient payment systems with flexible rates to encourage short term public parking;
- 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.

### 7.2. Creation and Management of a Pool of Public Parking

The various roles of parking in the Stirling City Centre are discussed in section 3 of this report. As well as limiting the supply of parking to assist in managing congestion, it is important to ensure there is sufficient parking to ensure the commercial viability of the centre. These apparently opposing needs can be addressed by ensuring that the majority of parking in the centre is public, shared parking that is managed in a way that gives priority to short term users.

Private, commercial tenant parking is, in the main, used by communities who generally travel during peak periods and contribute to congestion more than short term parkers. On the other hand, short term parkers are often business travellers or shoppers that play an important role in ensuring the commercial viability of the centre.



The main users of public parking are people who travel to the city, sometimes infrequently, or for short duration for business, recreation, entertainment, shopping or other purposes, or as visitors to residents in the city centre. These users do not always require parking at the same time and thus a lower level of parking can achieve a higher level of turnover and a greater spread of usage over time, resulting in more efficient usage of a scarce resource. Importantly, it also means that a much higher proportion of visitors to and from the car parks occur outside of peak hours and hence the users of the car parks make a lesser contribution to peak hour congestion.

Public car parks are likely to be constructed either by private operators or by the Stirling City Council using cash-in-lieu contributions. As is the case in the City of Perth a short stay zone for parking will need to be created where a high proportion of the car parking must be operated as short stay parking. It is likely that pricing would be used to discourage long stay parking. It would be achieved by increasing the hourly rate of parking for stays of longer than 4 hours.

### **7.3. Location of Multi-Level Car Parks**

It is proposed that the City Council develop a policy on the provision and location of public car parking. As part of this policy, the majority of the city centre would be declared a short stay zone. Long term parking would only be permitted outside of the short stay zone on the periphery of the core of the City Centre.

Under the Council's policy, a transport assessment and management plan would need to be prepared for all public car parks based on the following principles:

- Car parks be distributed around the city so as not to create points of congestion.
- The larger car parks be on the periphery of the city centre but within convenient walking distance to major activities to enable park and walk along active commercial streets.
- Car parks be sleeved with active uses and driveway access be designed and located so as not to compromise street level activity, including pedestrian and cyclist movement networks.
- Car parks to be an optimal size for integrated mixed use development taking account of efficient commercial operation and capacity of car park entry/exits and the local street system.

### **7.4. Train Station Car Parking**

The Stirling train station is currently located close to a freeway interchange away from any commercial or retail development. As a result, a significant level of park and ride has been developed around the station to provide access to public transport for more people and encourage greater use of public transport. At Glendalough station there are many more business premises in close proximity to the station and a much lower level of park and ride parking has been provided.



As a city centre is developed around the Stirling train station, it is appropriate that the level of parking provided specifically for train users be decreased. It is not good policy to encourage people to drive to a busy crowded city centre to park their car to drive to another city centre.

As the Stirling City Centre develops over time there will need to be a transition, as the at grade car parks are developed and replaced with multi-storey car parks that are used for a variety of purposes. In the short to medium term some of the multi-story parking will be used by train travellers, but this will decline over time as the price becomes less attractive for commuters and as access to Stirling City Centre by bus and/or light rail becomes more attractive.

In the short to medium term, car parks in the vicinity of the railway station should be developed in accordance with the policy on car park location (section 7.3) and managed to include a level of usage by commuters and other train users. The following principles should be applied to these car parks:

- They should be located on the periphery of the city centre within reasonable walking distance of the train station and sleeved with other developments;
- They should be located to channel pedestrian access along retail/commercial streets and provide a legible, secure, convenient and comfortable walk to the station.
- The charge for use for those bays allocated for public transport use should be in accordance with public transport policy, but a commercial charge should apply at other times when not needed for public transport patrons.
- The amount of space dedicated at certain times for public transport users be reduced as the city centre grows in accordance with an agreed transition policy.

## **7.5. Management of Residential Parking**

Residential parking will need to be managed both within the mixed use city centre and in the predominantly residential precincts surrounding the city centre.

In the currently undeveloped area that will comprise the future mixed use city centre, it will be important not to create expectations that future residents of apartments will be entitled to free or convenient use of on street parking. Future owners of residential apartments need to be made aware that all on street parking will be paid short term parking all day with no special allowances for residents. In the evenings, the on street parking could be free initially, but in the longer term there may also be a charge applied, depending on demand.

In the residential precincts surrounding the city centre, the on street parking will need to be managed to create some level of priority for residents. During the day and as necessary in the evenings short stay parking should be provided to ensure the streets are not used by commuters to



the city centre. In addition, a residents parking scheme should be introduced to provide some limited guarantee of kerbside parking space for residents.

## **7.6. Car Clubs and Bicycle Rental**

Car clubs have become increasingly popular in large cities in Europe, North America and more recently in Australia. For a nominal membership fee, people gain electronic access to a vehicle paid for by a credit card. Space to park car club vehicles is made available either on street or off street in an easily accessible location in the city centre.

Experience has shown that car club cars are used by inner city residents, city business people and visitors. The price regime favours use for relatively short hire periods. It is recommended that space be allocated for the parking of car club vehicles within the city centre and that the City of Stirling and the Stirling Alliance use its best endeavours to promote a car club at Stirling.

Bicycle hire, (sometimes free hire) has been introduced in a number of city centres to promote the use of cycling. As with car clubs, this is likely to be a commercial venture supported by Government subsidy. To meet the mode share targets for active transport and to improve accessibility to and within the Stirling City Centre, the promotion of cycling will be important to its increasing popularity and use. It is recommended that the City of Stirling and the Stirling Alliance support bicycle rental in the Stirling City Centre, to be introduced at an appropriate time, and make available convenient, safe, secure space for bicycle hire vehicles in the public space and street design of the city centre.

## **7.7. Wayfinding and Guidance**

Wayfinding is best defined as consisting largely of breaking vital information down into discrete packets so that choices can be made at 'decision points'. A successful wayfinding system gives users a sense of order through effective organisation of the environment by identifying relevant zones, creating traffic paths and presenting a logical progression of information.

The primary objectives of parking wayfinding signage are:

- reduced traffic circulating within the city centre searching for spaces
- consequent reduced travel time, congestion and pollution
- enhanced perception of available parking
- more efficient use of available parking spaces, reducing the need for additional supply
- redistribution of demand between car parks and the alleviation of queues at peak times
- increased occupancy of car parks, therefore improved income and amortisation of costs.

There are a number of different methods of providing information. These include:



- pre-trip information
- static signs
- variable message signs (VMS)
- information dissemination on request e.g. SMS, in-vehicle navigation systems, radio
- parking guidance systems (PGS).

Parking guidance systems may combine several traveller information methods to provide drivers with dynamic information on parking.

The perception of parking availability is important to commuter and casual parkers. Drivers want to know where to look for wayfinding information when they need it, understand the way the information is communicated and obtain the information quickly and without complexity. Parking wayfinding must also be integrated with pedestrian wayfinding, indicating direction and walking times. A clear pedestrian wayfinding system in the Stirling City Centre will assist in reducing the focus on parking spaces close to a drivers' destination.

Stirling must ensure that parking wayfinding is customer-led and not provider-led and avoid each major provider only advertising its own car parking. Published pre-trip information must provide current parking availability. The information should not merely indicate the total capacity of each car park. It should provide detail of alternative options if car parks are full.

Zone-based signage appears to be the most effective. Separating the Stirling city centre into convenient zones will need to be compatible with various planning precinct definitions. There are currently 2 parking zones (**Figure 5.1**) and seven precincts (**Figure 1.1**). A practical parking precinct map could initially incorporate at least a short term parking and a long term parking zone and then as the city grows, the zones could be expanded to more easily identify:

- A Retail zone
- A Commercial zone
- An Office zone.

For a practical and integrated parking and pedestrian wayfinding system to be implemented for the Stirling City Centre, the following is required:

- Traveller information needs to be provided consistently and comprehensively. Relevant, timely data must be obtained and disseminated. Drivers need real-time and predictive information about available vacancy in different parking zones. This data cannot be provided on a static map, but needs to be made available via various outlets such as SMS, radio, in-vehicle navigation systems and VMS on freeways and major arterials leading to the city centre.



- As all parkers become pedestrians, clear pedestrian wayfinding is required showing distances and routes to major icons and destinations. This will encourage more walking and the use of the internal public transport within the city centre
- Pre-trip travel information and other wayfinding should be provided (and marketed) by an independent group to ensure consistency and independence. This will be a small group comprising representatives from Council, the local Chamber of Commerce and MRWA. It must be seen to be providing an independent service and to be maintaining the confidentiality of data provided by all parking suppliers. It must be at arms length from any Council parking authority.
- Pre-trip traveller information and static, VMS and other parking guidance systems must primarily be customer led and focussed on the needs of the traveller to the city centre including pedestrians within the city.
- Some form of zone identification needs to be introduced and eventually expanded.
- Ongoing education of travellers needs to be recognised as an important part of the wayfinding process. An ongoing education program is necessary to ensure that all users of Stirling City Centre become aware of the options to get to a destination. This will reduce the demand for parking and encourage walking cycling and public transport use.

Once parking and pedestrian wayfinding is available, the implementation and management of technologically advanced wayfinding systems for all users will require several actions:

- An independent group to implement and manage the system.
- A commitment by all private parking providers and stakeholders to embrace the parking wayfinding system and to provide the system with relevant, accurate, up-to-the-minute data, and possibly a commitment to funding. This will need to be incorporated into planning approvals.
- Identification and promotion of zones and boundaries.
- Production of driver-friendly, user-focused, interactive maps of parking availability capacity and other transport options in the city centre for short, medium, after-hour and event parking.
- Development of parking and pedestrian wayfinding signage design standards with the input of several authorities and different forms of media for the delivery of the information.
- Development of a staged implementation program.
- Examination of alternative methods of funding to establish the system and to manage it.

The early implementation of parking and pedestrian wayfinding for the Stirling City Centre and the integration of parking, pedestrian and public transport is necessary as it will:

- create visitor-friendly route guidance and improved accessibility for shoppers and tourists



- encourage drivers to park off-street thereby freeing up road space for public transport, cyclists and other users
- reduce cruising for vacant spaces
- create a perception of more parking supply by clearly indicating available capacity at all times
- provide a healthier environment and improved safety for all road users.

The initial capital expense for the establishment of parking and pedestrian wayfinding requires funding by State or Federal government as it is an essential part of ensuring the success of the sustainable transport approach to this project. It is envisaged that funding for the ongoing monitoring of the system and the collation and dissemination of relevant data by the independent group, will be funded from the Stirling City Centre's parking levy, as it encourages more efficient use of the available parking supply.



## 8. City Centre Access and Parking Strategy

Most of the world's great cities were formed many years ago in the era when walking or public transport provided the predominant means of access. As a result, they had and still have low levels of parking. This has not restrained the growth and development of cities like Rome or London or made them less interesting or desirable places to live in or to visit.

### 8.1. Perth City Access and Parking Strategy

In Australia, the city centres of all of our capital cities were established during the era when the ratio of parking bays per square metre of developed land was low. Perth was no exception and in the 1960s the majority of people walked, cycled or used public transport when travelling into the city for work, shopping or leisure. Between 1970 and 1990 planners required high levels of parking to be provided to permit growing numbers of people to drive to the city of Perth. During this period the number of parking bays increased from 30,000 to over 60,000. By the mid 1990s over 100,000 vehicles per day entered the city via the Causeway and over 140,000 vehicles each day crossed the Narrows Bridge and there was growing concern with the level of congestion and the amenity on city streets.

By the mid 1990s the State Government, most local governments and the population at large recognised that the relentless growth of car travel was not sustainable, particularly in city centres. The Metropolitan Transport Strategy released in 1995 set targets which estimated that the mode share of car drivers would reduce from 63% at the time to less than 50% by the year 2029 and that the mode share of public transport would double.

A new parking policy for the City of Perth was introduced in 1999 with the agreement of the City of Perth and the State Government. It:

- Introduced strict maximum limits on tenant parking based on the area of developable land;
- Introduced regulations prohibiting any increase in long term public parking within the central area of the city (short term parking zone);
- Imposed a levy on all non-residential parking in the city centre with limited exceptions.

Two years after the introduction of this policy, the number of licensed parking bays in use in the city has reduced by 10% from 63,000 to 57,000 bays. Ten years later there is still less than 60,000 parking bays in use within Perth City, indicating that the unsustainable growth of city parking has been halted.

Ten years after the introduction of the Perth Parking Policy in 1999 car driving into the city has reduced and public transport use has nearly doubled during a time when there has been growth in commercial, retail and residential uses in the city. Traffic levels across the Causeway are now 20% below that recorded immediately after the opening of the Graham Farmer Freeway and traffic flows

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along Barrack Street and William Street in the city are now less than half what they were in the mid 1990s. Australian Bureau of Statistics figures show that car driver trips for work in Perth CBD has reduced from 50% fifteen years ago to 35% at present, whilst public transport use has increased from 35% to over 50%.

The Perth Parking policy has been hailed a success and it is now recognised that sustainable growth of the Perth City Centre can only be achieved by improving priority for and use of public transport and by gradually increasing the level of cycling to the city. Access within the city is predominantly on foot and the Perth City Council is developing plans to improve pedestrian amenity.

## **8.2. Access and Parking Strategy for Stirling**

There are a number of similarities between Perth City Centre and the future Stirling City Centre. For example, car access to both centres is constrained - in the case of Perth by the Swan River to the South and east and in the case of Stirling by the Mitchell Freeway to the North East and existing development to the West. In both Stirling and Perth there are limited access roads to serve the centre and there is a finite capacity for car based travel. This means that the experience with access and parking constraint in Perth is relevant to Stirling and much can be learned from the implementation of the Perth Parking Policy.

In Stirling the limited capacity of the street system means there is a limit to the amount of traffic that can access the Stirling City Centre in peak periods. The two way capacity of the street system in and around the Stirling City Centre has been estimated to be about 12000 vehicles per hour. This being the case, the access strategy to the city centre must ensure that at least half of all travel to, from and within the city must be by public transport, walking or cycling. The estimated long term access mode share for travel to, from and within Stirling City Centre is:

- Car driver – 35%
- Car passenger – 15%
- Public transport – 15%
- Walking, cycling – 35%

Failure to ensure the car driving mode share is restricted to 35% of all travel by full potential development of the City Centre, would result in the City Centre being developed to less than its full potential of 30,000 jobs and 30,000 residents.

The access strategy for the Stirling City Centre is therefore based on the development of a high quality, high capacity public transport system and excellent network of bicycle paths and foot paths to encourage a high level of walking and cycling. In parallel with this strategy to achieve high levels of walking, cycling and public transport is the strategy to restrict car driving to a level that



can be accommodated on the proposed street network. The strategy of limiting car driving to a sustainable level is based on the development of a parking policy designed to:

- Limit the supply of parking;
- Manage parking in a way that discourages long stay parking in favour of short stay parking

There is a clear nexus between the amount of parking provided and the amount of car driver trips to the centre. Property developers and others have argued that insufficient parking can limit the development potential of a city and have an adverse impact on its commercial viability. However, the experience with the Perth Parking Policy in central Perth has shown that limitations on parking and a vibrant growing city can co-exist. Indeed many of the worlds richest and most vibrant cities have been developed on very limited levels of parking. The parking strategy for the Stirling City Centre proposes:

- Regulations to limit the supply of parking based on maximum levels of parking per residential unit and parking bays per 100m<sup>2</sup> of non-residential land;
- Regulations to ensure that the total level of parking on an area of developable land does not exceed a threshold level;
- A cash-in-lieu policy to encourage developers to reduce the supply of parking below the maximum permitted and to provide funds to assist in developing a quality public transport system;
- Implementation of a levy on non-residential car parking in the Stirling City Centre and adjacent areas to assist in managing travel demand and provide funds for alternative transport options, particularly public transport;
- Parking fees and charges designed to discourage long term parking in favour of short term parking;
- A range of parking management initiatives designed to maximise the proportion of public parking available for short stay users;
- Development of a wayfinding and guidance system to improve visitors access experience and provide more efficient utilisation of resources.

For a period of 5 years following the gazettal of the parking strategy, it is recommended the Council of the City of Stirling retain discretionary powers to permit higher levels of parking. Some developers may be reluctant to commit to develop with low levels of parking in the short term because they are accustomed to lower parking ratios and because they do not perceive Stirling as a high density mixed use centre at this time.



Should discretionary higher parking allowances be permitted, it is recommended they be considered within the following framework:

- Discretionary powers to provide more parking apply to residential and office development only.
- The maximum discretionary increase be 20% above the recommended level
- In the case of office development, all of the additional parking permitted must be public paid parking provided either in a separate parking structure as part of the proposed permanent supply of public parking for the centre or on an adjacent at-grade site as temporary public paid parking.
- All cash-in-lieu payments required under the policy (refer to section 6) must be paid, including the fixed cash-in-lieu component, regardless of the fact that the developer has chosen to provide more parking.