



Fishermans Bend Precinct Car Parking Opportunities

Client // Fishermans Bend Taskforce
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Executive Summary

Fishermans Bend

Fishermans Bend is Australia's largest inner urban redevelopment opportunity and is significant on a world scale.

When finished, it will be home to a busy port, 80,000 residents and 60,000 jobs, and the accompanying activities required to make it a vibrant and successful place for the people of Melbourne.

It is an unparalleled opportunity, but also a real challenge as evidenced by the range of work completed to date and the issues identified in the 2015 Fishermans Bend Ministerial Advisory Committee Report.

Parking Precinct Stations (PPS)

Parking Precinct Stations (PPS) to offset parking requirements in developments have been implemented in relatively few cities around the world. However, where implemented they have most commonly been part of pioneering developments and/or regeneration areas. In this context, this study aims to review their relevance and applicability to the Fishermans Bend urban renewal area.

The following objectives for PPS in Fishermans Bend have been established:

- **Influencing travel demand.** PPS should contribute to achieving a pattern of transport use (and mode shares) that helps deliver the wider Vision for Fishermans Bend.
- **Improving urban design.** PPS should ensure that development frontages are not dominated by parking, or access to parking, and that streets are activated by place functions.
- **Create conditions for development efficiency.** PPS should provide parking efficiency, especially for smaller sites (e.g. in the Montague Precinct) that tend to have vehicle and car parking access that is compromised – i.e. relying on car-lifts, inefficient floor plate configuration, access that conflicts with pedestrian access, on-street queuing, and use of traffic signals.

Case Studies

The key theme throughout successful residential PPS case studies is that car parking management is part of a wider sustainability objective (e.g. green housing, low car use, etc.).

City-wide case studies from Europe are particularly relevant for Fishermans Bend as the transport mode shares align with Fishermans Bend's 2051 targets. These case studies illustrate car parking management that aims to achieve wider urban improvement objectives.

There are relatively few examples of PPS in Victoria, but where they have been used, they have generally been successful. Most notably, a PPS has been an effective component of the successful development of Victoria Harbour in the Docklands.

The case studies demonstrate that PPS are also a policy lever that can be designed to deliver a wide range of objectives. In this light, PPS could be an important policy lever to help deliver the wider Vision for the Fishermans Bend urban renewal area.

A Model for Fishermans Bend

Implementing PPS in Fishermans Bend will need to be both directed and encouraged. Simply mandating PPS will slow or stifle development. Subsidising and forward developing PPS to the extent necessary to shift behaviour will be a very high burden on the public sector, at least in the short term.

For the market to embrace PPS as a model and take over its roll out across Fishermans Bend, it will be looking for successful precedent, certainty and a level playing field. The public sector response in both the regulatory frameworks and a commitment to facilitate and subsidise PPS will be key to establishing this model.

The public sector investment to realise a PPS model could be substantial. It may take a long time to get any return and ultimately the financial return alone may not justify the commitment in the first instance. If, however, the wider urban and city design benefits as well as the value of travel behaviour change and future flexibility can be fully measured, the case for a PPS may be strong.

Ultimately, responsibility for delivering PPS and for transfer of already developed PPS to the private sector requires a productive engagement.

The study reviews the wide range of options for implementing PPS and presents two scenarios that are suitable for achieving the PPS objectives and the wider Vision for Fishermans Bend.

Scenario 1 is likely to deliver a 'non-traditional' approach to car parking in Fishermans Bend.

It will likely be challenging to adopt this non-traditional approach due to the scale of Fishermans Bend, the ownership patterns and public transport coverage. Under this option, developers and purchasers at FB may balk at investment if they consider PPS to be too risky, which could ultimately stifle development.

Scenario 2, though a more complex policy, provides a more flexible option that can evolve to meet the needs of a growing community, the development and public transport phasing.

It is recommended that Scenario 2 be progressed to more detailed planning.

These models provide a basis for further detailed work and pave the way for PPS to become a key part of the strategy (transport and urban realm) to deliver the overall Vision for Fishermans Bend.

Implementation

The implementation of PPS shall require the following foundations in order to achieve the desired outcomes:

- PPS will need to be underpinned by early provision of public transport and active transport infrastructure on the ground.
- PPS will require a range of new approaches to owning, leasing, managing parking by either / both body corporates and/or establishment of a quasi-public statutory authority. This will be a challenge for the market and will require a certain determination by government.
- It is unlikely that the private sector will deliver PPS if higher profits can be realised by other types of development. Thus, PPS will need to demonstrate commercial viability as well as represent the highest and best use of land, to ensure developer confidence.

The following figure provides an outline the key steps to realising Parking Precinct Stations in Fishermans Bend.

Figure ES1: Implementation of PPS

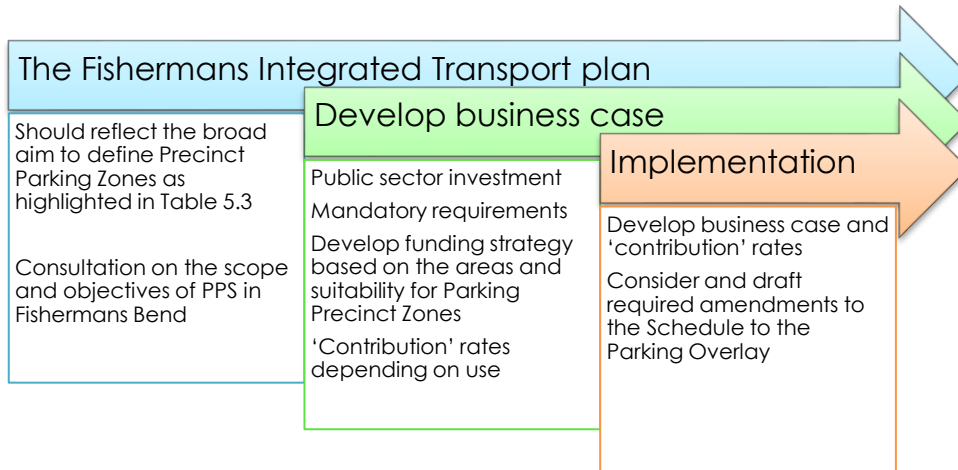


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1. Introduction

1.1 Background

The Victorian Government acknowledges Fishermans Bend as an unparalleled renewal opportunity for Melbourne. Totalling over 480 hectares, it is Australia's single largest inner urban renewal opportunity. The site now includes the employment precinct on the northern side of the Westgate Freeway, in addition to its four existing precincts. Fishermans Bend is adjacent to an expanding Webb Dock and other port activities related to the Port of Melbourne.

The Victorian Government has stated its many aims for Fishermans Bend, including a change in planning that will significantly increase employment opportunities in the area. This is part of a recast exercise that has a greater focus on consultation through mechanisms such as a Ministerial Advisory Committee and enhanced public engagement.

Getting transport right remains a key issue for Fishermans Bend.

In its October 2015 report, the Fishermans Bend Advisory Committee made a number of recommendations that directly relate to the transport network within Fishermans Bend. The key recommendation relating to car parking was:

- *Parking precinct plans should be prepared in accordance with the Parking Overlay as part of Neighbourhood Precinct Plans, including the identification of potential sites for car-parking stations, particularly in the Montague precinct (page 26).*

This recommendation is particularly in relation to concern over a number of approved permits in the Montague precinct that are considered to have compromised vehicle and car parking access that relies on car-lifts, inefficient floor plate configuration and on-street queuing.

The Advisory Committee considered that a consolidated off site, precinct based approach to car parking provision may result in more efficient management and accommodation of car parking and more activity at the lower levels of buildings.

To ensure planning for Fishermans Bend reflects best practice in urban renewal, the Fishermans Bend Taskforce has requested an evidence based investigation be undertaken into the opportunities and options for implementation for precinct parking approaches.

'Fishermans Bend [requires] not the usual traditional approach to planning'
 Minister Wynne at Big Ideas, New Frontiers public conversation July 2016

1.2 Purpose

GTA Consultants (GTA) with Charter Keck Cramer have been engaged by the Fishermans Bend Taskforce (Taskforce) to investigate opportunities for Precinct Parking Stations (PPS) in Fishermans Bend. The purpose of the study is to:

- Identify examples of PPS both in Australia and internationally including key characteristics including:
 - i Ownership
 - ii Planning controls
 - iii Delivery approach

- iv Impacts to sustainable transport usage/uptake.
- Identify constraints and opportunities within the current planning framework for Fishermans Bend for the introduction of PPS.
- Identify costs and benefits of PPS for Fishermans Bend including different delivery mechanisms and how this impacts on costs and benefits.
- Provide recommendations on how best to implement PPS within Fishermans Bend including, if necessary, indicating if planning overlays would be required and how these can be introduced.

1.3 Report Structure

This report is structured in four parts:

- **Part 1:** Background and the transport planning challenge. This provides a short context to the area, identifies the strategic transport planning challenge.
- **Part 2:** Establish a comprehensive understanding of the current parking approach as well as the opportunities and constraints for PPS within the Fishermans Bend development.
- **Part 3:** Undertake research to evaluate case study examples of the use of centralised PPS with particular regard to the use in urban renewal schemes.
- **Part 4:** Investigate the opportunities and constraints for implementing PPS within the Fishermans Bend development.

2. Precinct Context

2.1 Melbourne's Growth Story

Fishermans Bend today is home to 200 residents, 30,000 workers and is adjacent to an operational port. In 2051, it is projected to be home to 80,000 residents, 60,000 workers and an expanded port.

Future planning for Fishermans Bend seeks to support a diverse and vibrant community.

Employment in the area is expected to be varied and from a metropolitan-wide catchment with the employment areas' function evolving over time. In addition, a fully functioning port must continue to operate 24 hours a day, 7 days per week at Webb Dock, directly adjacent to Fishermans Bend.

Fishermans Bend is linked to a city-changing regeneration and infrastructure program that will significantly alter how inner Melbourne looks and works.

2.2 The Transport Planning Challenge for Fishermans Bend

As highlighted in GTA's review of Transport Planning for Fishermans Bend, planning for Fishermans Bend has been based on the key assumption that, similar to Melbourne's CBD (the Hoddle Grid) people must be encouraged not to travel by car in order to prevent congestion both within Fishermans Bend and the surrounding area.

The congested strategic road network around Fishermans Bend led to informing this assumption. As a result, strategic transport planning for Fishermans Bend has been based on mode share targets similar to that of the Melbourne CBD.

This approach was demonstrated to align with international best practice, as mode share targets are globally used as a performance indicator that can be linked to a range of non-transport outcomes, including, but not limited to: CO2 emissions; safety; health, and; productivity.

2.3 Future Development Scale and Land Use Mix

2.3.1 Population and Employment

Population and employment projections have been prepared for the Fishermans Bend precinct to the year 2051 in order to inform the likely infrastructure demands of the future community.

As indicated above, a residential population of approximately 80,000 people and an employment target of 60,000 people by 2051 has been identified. The population and employment targets are separated by precinct in Table 2.1.

Table 2.1: Population and Employment Summary by Precinct

Precinct	Population	Private Dwellings	Jobs
Montague	22,050	12,250	13,475
Lorimer	18,270	10,150	6,090
Sandridge	17,600	8,800	15,840
Wirraway	21,120	8,800	4,400
Employment Precinct	0	0	20,000

Source: Fishermans Bend Population & Demographics, Summary Document

There is a general spread of population, jobs and dwellings across each precinct. The notable exceptions include a lesser spread of jobs within the Wirraway Precinct and no residential population within the Employment Precinct.






2.3.2 Land Use Mix

Having regard to the nature of the existing and future development of the precincts, a mix of land uses could be expected. Common land uses that could be anticipated and may make-up the activity centres within the precincts include:

- Residential
- Commercial – office and industry
- Retail – supermarket, specialty shop, food and drink and service retail
- Education – primary, secondary, tertiary and childcare.

These land uses are further described and broken into user types as presented in Table 2.2.

Table 2.2: Land Use and User Types

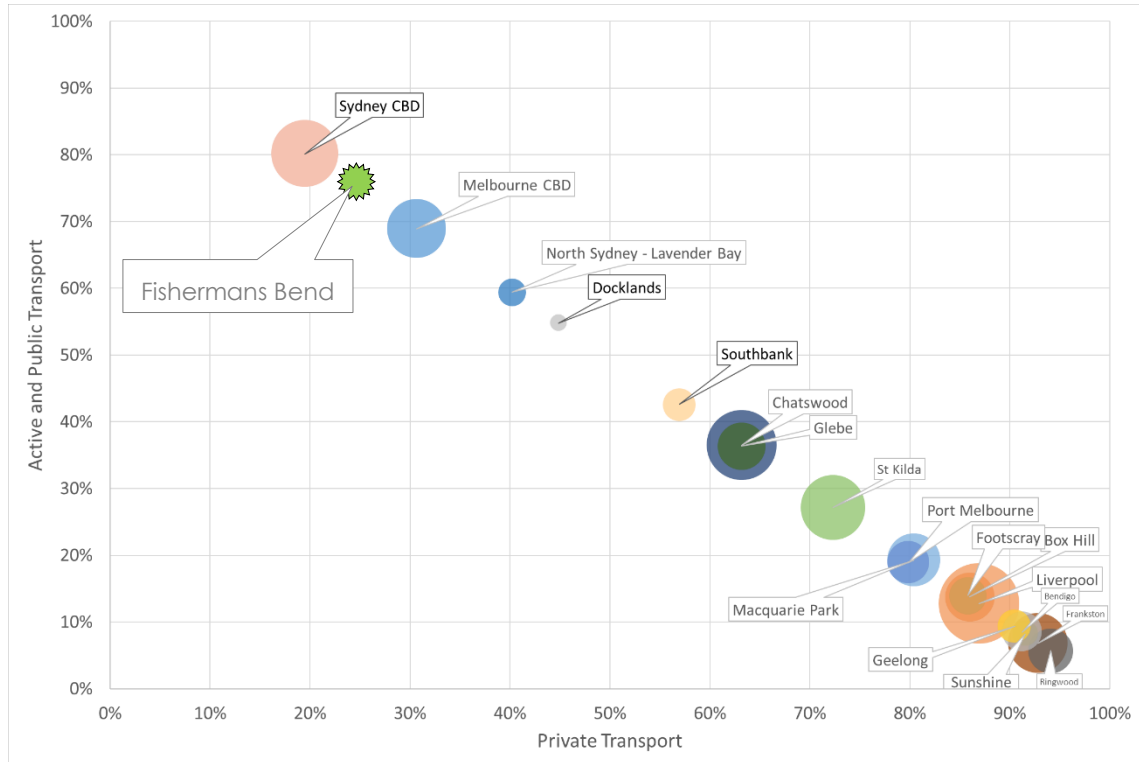
Land Use	User Types
 Residential	Couples, families, lone households, group households, retirement and aged care facilities, and visitors
 Retail	Retail staff, retail customers and loading
 Commercial	Commercial staff, commercial visitors and loading
 Education	Staff, students and drop-off / pick-up
 Services Economy	Staff and visitors for medical, child care and professional services

When considering car parking and its provision, it is important to understand the nature of land uses and, more importantly, the mix of user groups that will be reliant upon parking provision. It is from this understanding that consideration can be given to how car parking can be provided.

2.4 Fishermans Bend Target Mode Shares

As important context, The Fishermans Bend Vision positions it amongst the city areas that have the highest public transport and active travel mode shares in Australia, as illustrated in Figure 2.1.

Figure 2.1: Australian Mode Shares – Active and Public Transport Compared to Car Trips and City Size



However, Fishermans Bend has significantly fewer jobs than other areas with comparable mode shares. It targets a ratio of 0.8 jobs to each resident, in contrast to Melbourne and Sydney CBDs, which both have approximately 10 jobs to each resident. This is illustrated in Table 2.3.

Table 2.3: Ratio of Jobs per Residents in Areas of High Public Transport and Active Travel Mode Shares

	Fishermans Bend	Sydney CBD	Melbourne CBD	North Sydney - Lavender Bay	Docklands	Southbank
Population	80,000	22,760	20,030	9,515	5,791	11,311
Jobs	60,000	251,459	186,141	43,028	32,048	34,000
Ratio of jobs per resident	0.8	11.0	9.3	4.5	5.5	3.0

Fishermans Bend will therefore aim for a major city CBD mode share in the future, but will have a completely different profile of activity given the ratio of jobs to residents.

Notwithstanding this different profile of activity, it is important that these modes share targets are sought to be achieved as it is generally agreed that the current transport network cannot support the long terms aspirations of the area.

2.5 Current Parking Controls

In 2012, the then Minister for Planning rezoned 240 hectares of Fishermans Bend to the Capital City Zone via the Planning Amendment C102.

The Amendment applied the Capital City Zone (CCZ) to land previously zoned Business 3 Zone, Industrial 1 Zone and Industrial 3 Zone within Fishermans Bend in Port Melbourne and South Melbourne, and land zoned Mixed Use Zone at 400 City Road. The C102 Amendment introduced a Parking Overlay and an associated schedule to the overlay for the Fishermans Bend Urban Renewal Area.

The explanatory report supporting Amendment C102 to the Port Phillip Planning Scheme states *"The introduction of a Parking Overlay to the Fisherman's Bend Urban Renewal Area is required to set maximum parameters to ensure sustainability objectives"*. No other significant details are provided.

The shift from minimum parking requirements to maximum limits represents a significant change in parking policy.

The land uses and the maximum parking rate provisions identified within the overlay are shown in Table 2.4.

Table 2.4: Fishermans Bend Parking Overlay Parking Requirements

Use	Rate (Maximum)	Measure
Dwelling	1	To each dwelling
Industry	1	To each 150 sq m of gross floor area
Office	1	To each 100 sq m of gross floor area
Place of assembly	1	To each 100 sq m of gross floor area
Restricted retail premises	1	To each 100 sq m of gross floor area
Retail premises	1	To each 100 sq m of gross floor area
Supermarket	2	To each 100 sq m of gross floor area

The adoption of maximum provisions seeks to address and achieve the target mode splits identified earlier. The adoption of maximum provisions, however, has potential adverse impacts to certain precinct parking approaches.

A review of recent Planning Applications suggests that on average, developers are providing car parking at an average ratio of 0.6 spaces to each dwelling. The cross referencing of the distance to the CBD shows that in the majority of cases these developments are very close to the CBD, enabling developers to sell apartments without parking.

A snapshot of recent apartments and their number of car parking spaces is provided in Table 2.5.

Table 2.5: On-Site Car Parking & Dwelling Numbers, Fisherman's Bend Drawn from a Selection of 2015 Planning Applications

Address	Distance from CBD (km) (as crow flies from Old GPO)	Dwellings	Car Spaces	Ratio
134-150 Buckhurst Street, South Melbourne	2.3	630	570	0.9
228-232,234-238 Normanby Road, Southbank	2.1	518	243	0.47
101 Salmon Street, Port Melbourne	4.0	157	157	1
171-183 Ferrars Street, South Melbourne	2.0	122	42	0.35
166 Buckhurst Street, South Melbourne	2.4	88	63	0.72
15-35 Thistlethwaite Street	2.2	83	67	0.8
6-78 Buckhurst Street	2.2	1312	772	0.59
165-167 Gladstone Street	2.4	45	22	0.49

Address	Distance from CBD (km) (as crow flies from Old GPO)	Dwellings	Car Spaces	Ratio
228-238 Normanby Road	2.1	525	243	0.46
51-59 Thistlethwaite Street	2.3	161	82	0.51
89 Montague Street	2.1	144	77	0.53
15-87 Gladstone Street	2.2	746	596	0.79
Average	2.4	378	245	0.63

Source: City of Port Phillip, Planning Permit Application Register (accessed online via <https://eservices.portphillip.vic.gov.au>)

2.6 Parking Precinct Stations

Before moving forward, it is important to clearly define the term Parking Precinct Station (PPS) in the context of this study.

Centralised parking structures have been constructed since the early 1900s, with the first multi-storey car park being constructed to service a hotel in Chicago in 1918. Since then, centralised parking buildings have been constructed to achieve a wide range of objectives.

For the purposes of this study, Parking Precinct Stations are defined as:

Centralised parking that is provided in lieu of parking within nearby developments.

“Nearby” means that PPS are within easy walking distance (400m) of the development.

The PPS model does not exclude the use of unbundling parking from residential developments; however, PPS could be on-site if the carpark is serving surrounding land uses.

Unbundling parking compels developers to sell or lease parking independently of residences or commercial leases. The unbundling of parking from sales and leases may naturally lead to the market delivering parking precinct stations.

This trend is being observed in the City of Melbourne's CBD and Docklands Parking Plan 2008-2013 makes the following observations:

‘With many new residential buildings applying for less than one space per dwelling, the trend with residential developments in the CBD has been for the amount of car parking as part of the development to be reduced. The signals are mixed though because a market in car spaces in commercial car parks has also emerged with residents hiring spaces allocated to commercial parking. For example, in the Paramount development, there is a 400 space car park which has been sub-divided into individual car space lots and they have been sold on the open market and some bought by owners of residential units. These arrangements will continue to be supported by the City of Melbourne because they involve taking a commercial space presumably used by a commuter and converting to a residential space which is more likely to be used in non-peak periods.’

While this market led approach appears to lead to consolidated parking, it is not explicitly in lieu of car parking on-site. Rather, the car parking services market demands and therefore, similar to a privately owned car park in the CBD, an assessment of the development application (for the car park) must be considered by the Strategic City Planning Policy for the area.

3. Precinct Parking Approach

3.1 Preamble

The development of a precinct parking approach needs to consider a number of components of the overall parking system. These include:

- What outcomes does the provision of parking seek to achieve?
- Who will be using the parking?
- What specific requirements do the expected users have?
- What type of parking provision would best suit these users' needs and achieve the relevant objective?

These are explored in the following sections.

3.2 Objectives of Car Parking Management

Precinct parking approaches can be developed to achieve a number of outcomes. As such, at the outset it is important to understand the problem and to develop a clear set of objectives to enable the varying approaches and outcomes to be assessed.

3.2.1 The Problem

Having regard to the Fishermans Bend area, the following key problems have been established, which a precinct parking approach must consider.

Transport Demand

As identified in Section 2.4, a pattern of transport use is required that is similar or lower to the Melbourne CBD (80% of travel by public transport and active travel). Fishermans Bend, however, has less public transport access and is relatively isolated from much of the city (the west and north). Achieving this transport target is a mechanism to deliver the vision for Fishermans Bend.

Urban Design

In a scenario where all buildings have parking on-site and a very fine grain street network does not already exist, it is highly likely that development frontages could be interrupted and dominated by 3-6 levels of parking and car park access.

Development Efficiency

*"A number of the permits already approved on smaller sites in Montague tend to have vehicle and car parking access which is compromised, relying on car-lifts, inefficient floor plate configuration and on-street queuing."*¹

Technology Impact on Transport

Car parking and land use solutions must be able to respond to changing transport and technology trends to ensure developed infrastructure does not become obsolete and inefficient.

¹ Fishermans Bend Ministerial Advisory Committee

3.2.2 Objectives

In response to the problems identified above, the following objectives have been developed in liaison with the Fishermans Bend Taskforce Transport Working Group.

Transport Demand

- Use car parking management as a means to reduce vehicle kilometres to improve the local environment.
- Use car parking management as a means to promote walking, cycling and public transport, making Fishermans Bend an easy place to get around.

Urban Design

- Ensure site frontages are not dominated by car parking.
- Ensure car parking does not dominate the landscape.
- Provide greater flexibility in road and street design to cater for active modes and urban activation.

Development Efficiency

- Ensure development is not constrained by the need to provide car parking.

Technology Impact on Transport

- Provide flexibility to enable changing demands within the precincts over time.

Overspill into Surrounding Network

- Minimise car parking overspill into the surrounding on-street network.

3.3 User Groups and Preferences

In order to develop precinct parking approaches, regard must be given to the various users of the parking asset and their needs. These are considered below.

3.3.1 Parking User Groups

Section 2.3.2 of this report has considered the potential future mix of land uses and the associated user groups within Fishermans Bend. These are reproduced in the following:

- **Residential:** Couples, families, lone households, group households, visitors.
- **Retail:** Retail staff, retail customers, loading.
- **Commercial:** Commercial staff, commercial visitors, loading.
- **Education:** Staff, students and drop-off / pick-up.
- **Services Economy:** Staff and visitors for medical, childcare, professional services, etc.

3.3.2 User Group Preferences

The car parking users identified above each have differing user preferences, and in some cases requirements, which govern the way in which car parking will be required to be provided. These preferences are dictated by a number of variables, including, but not limited to:

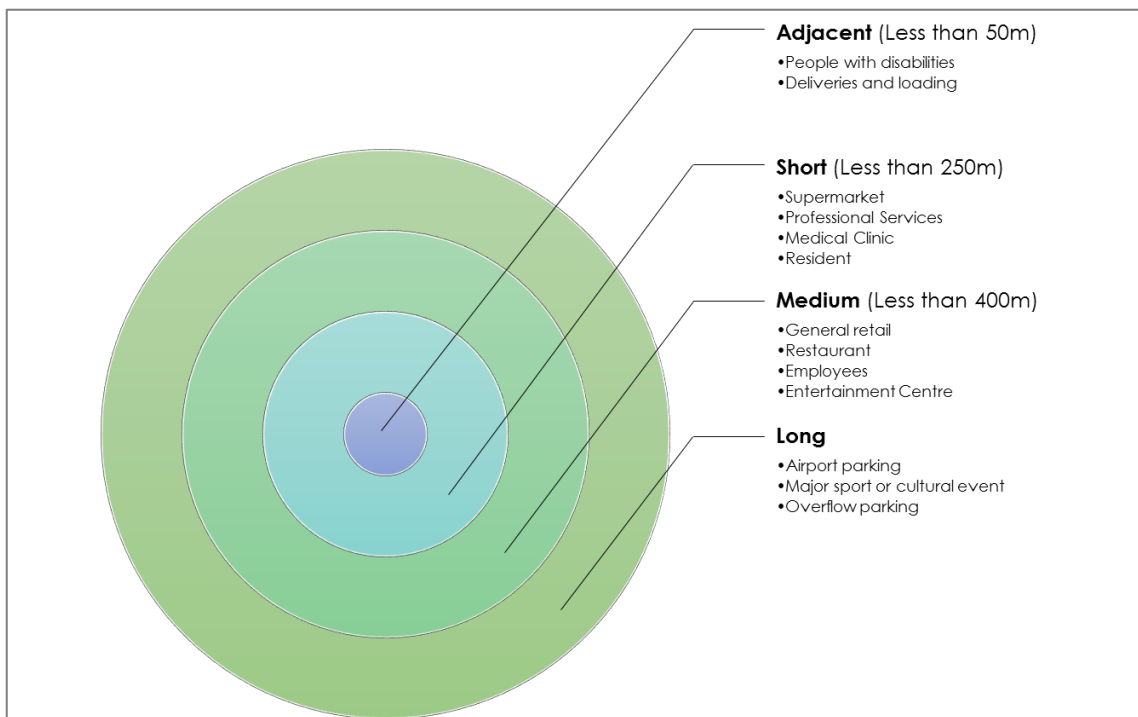
- Walking distance tolerances between parking location and destination.
- Willingness / ability to own a car and purchase a parking space.
- Price sensitivities.
- Ability to interact with technology.

With regard to Fishermans Bend, a number of the above variables could be considered to be held constant, with the walking distance variable being used to inform the appropriateness of how car parking is provided to serve a site.

Generally, the time and distance which drivers are prepared to walk depends on the length of time that will be spent at their destination, as well as the length time spent during the associated car trip. The acceptable walking distance can also be impacted by the quality of the pedestrian environment, climate, line of site (can the destination be seen?), and friction (barriers such as crossing busy roads).

The Victorian Transport Policy Institute (Canada) paper on Shared Parking indicates the following walking distances as a guide for various activities as set out in Figure 3.1.

Figure 3.1: Acceptable Walking Distances (Adapted from the Victorian Transport Policy)



Source: Victorian Transport Policy Institute (Canada) paper on Shared Parking, dated 4 September 2007

Where parking is charged, these tolerances are often increased, with employees and other long stay users willing to walk distances in the order of 600m. As such, the tolerance of drivers and users can have a definitive influence on how car parking needs to be provided to serve development. These tolerances or 'acceptable' walking distances per use were developed in 1994 by Smith and Butcher as 'rules of thumb' and were based on Fruin's *Pedestrian Planning and Design* which outlined human behavioural factors associated with walking access to parking, in that "a given design situation is related to such factors as the trip purpose of the individual, the available time and the walking environment"².

In respect of resident users, Figure 3.1 provides a generalised consideration of all users. It can be further relevant to consider a number of different resident user characteristics and demographic groups.

² http://www.gsweventcenter.com/GSW_RTC_References%5C2008_05_Smith-Butcher.pdf

These walking distance tolerances have been applied by GTA to the user types previously identified, to provide a basis to consider the type of parking facility that will be required to serve each user group. This is shown in Table 3.1.

Although this research is North American centric, it provides a good basis for understanding the issue. It is also worth noting that the current Victorian convention is that residential parking is provided immediately adjacent to housing (and indeed many detached dwelling have access through a garage) but as densities increase, the position of parking relative to dwelling is likely to be reconceptualised.

Table 3.1: User Group Preferences to Parking

User Group	User Type	Length of Stay	Distance Willing to Travel [1]
Residential	Families	Long	Adjacent
	Group households		Medium
	Lone households		Medium
	Couples		Medium
	Disabled		Adjacent
	Visitor	Various	Short
Retail	Staff	Long	Long
	Customer	Short	Short [2]
	Loading	Short	Adjacent
Commercial	Staff	Long	Long
	Customer	Various	Short
	Loading	Short	Adjacent
Education	Staff	Long	Long
	Students	Long	Long
	Drop Off – Pick Up	Short	Adjacent
Services Economy	Staff	Long	Long
	Visitors	Various	Adjacent – Short (typically)

[1] Adjacent = Less than 50m, Short = Less than 250m, Medium = less than 400m, Long = less than 500m

[2] Depending on customer type

Table 3.1 indicates a mix of parking types and a mix of willingness to travel between destination and parking location.

Of particular note are those users that require adjacent parking, as these provide the least flexibility in how these demands can be satisfied. Those users that require adjacent parking include:

- Residential, e.g. Families and Disabled.
- Loading, e.g. Retail, Commercial.
- Drop off and pick up users.
- Some visitors and customers related to the service economy.

3.4 Parking Provision Considerations

At the most basic level, car parking can be provided in the following ways:

- On-street.
- Off-Street – On-site.
- Off-Street – Off-site within purpose built public parking stations.

These options are further discussed in the following sections.

3.4.1 On-Street Car Parking

On-street car parking represents a parking resource that should not be ignored when designing a car parking system. This parking often represents the most proximate and attractive parking for visitors to developments. It can effectively and efficiently be shared between multiple land uses, particularly if land uses have peak parking requirements occurring at different times of the day.

As this often represents the most proximate and attractive parking, to not allow the use of this car parking in satisfying a developments car parking generation calculation, may result in an underutilisation of the car parking provision which is provided on-site.

As such, in establishing the most appropriate way in which to cater for the future car parking demands, some reliance on existing vacant parking could be considered.

In the context of Fishermans Bend, the extent of on-street parking is likely to be limited in the context of the overall parking requirements of the area. In addition, new developments in this precinct will not be eligible for on-street car parking permits. Thus, on-street parking is likely to play a more critical role in respect to pick up / drop off, loading and servicing requirements.

Reducing the number of on-street car parking spaces would also free-up this street space for the benefit of the greater community, for example, through supporting active transport provision with cycle lanes, on-street cafés or improving public domain amenity through linear parks.

3.4.2 Off-Street: On-Site

Some development land uses have required the provision of a discreet parking supply on-site. This supply may typically be used to cater for residents, staff demands and servicing requirements as these demands typically occur across a long time period and cannot be shared between multiple users.

On-site parking in new many new developments is attached to the land use it serves. The unbundling of parking however detaches parking from the land use, enabling tenants or owners to be able to secure only as much parking as they need. Unbundling can be done in several ways:

- Parking can be bought or rented separately when the apartment or office space is bought or leased.
- Renters can be offered a discount on their rent for not using parking spaces.
- Parking costs can be listed as a separate line item in lease agreements to show tenants the cost and enable them to negotiate reductions.
- Unbundling can be encouraged informally by creating a market for available parking spaces – building managers can keep a list of tenants or owners with excess spaces available for rent.

The unbundling of parking could also allow parking not taken by building occupants to be offered over time to users not associated with the building in which it is located. A local example of this is Melbourne CBD, where many office buildings have their basement parking operated somewhat independently of the commercial space above. This could be used as means of reducing parking provisions within other adjacent buildings.

In the context of Fishermans Bend where low mode splits to car usage are to be achieved, it would be expected that should car parking be provided on-site, such parking supplies would be unbundled in order to encourage greater diversity of ownership and use.

In most cases, residential development would not contain unbundled parking due to a major roadblock that the unbundling of parking faces, often during the council assessment process, where there is a reluctance by Local Council officers to unbundle the spaces from the apartment

or land use. To prevent this, registration of the car parking spaces should occur at the subdivision stage to ensure that the development application does not run into difficulties later.

3.4.3 Off-Street: Off-Site

Public off-street parking facilities provide the ability to share car parking between different uses that have peak parking times that do not coincide.

Such facilities can also cater for both long term (staff) and short term (customer/visitor) demands. The provision of new public off-street car parking facilities are, however, costly, and as such, must be carefully planned to ensure that the facility will be effectively used to justify the construction cost and the value of the land which it uses, which could be potentially used for other more productive purposes.

Off-street, off-site spaces can be leased on a monthly or yearly basis from the parking operator, or strata titled and sold or leased via long term multi-year leases (5-50 years) or charged on a per use per day basis.

Should a new public off-street car parking facility be required, consideration must be given to the following:

- Can such facilities be appropriately located?
- How would such facilities be funded?
- Can such facilities be located in a way to serve the areas where developments are to be located?

3.4.4 User Group Parking Provisions

Having regard to the user groups likely to be accommodated within Fishermans Bend and their parking characteristics, consideration has been given to the type of parking that may typically be best suited to providing for their needs. This assessment is set out within Table 3.2.

Table 3.2: User Group Preferences with Parking Type

User Group	User Type	Length of Stay	Distance Willing to Travel [1]	Parking Type Able to Serve User		
				On-Street	On-Site	Off-Site (Off-Street)
Residential	Families	Long	Short		✓	✓
	Group households		Medium		✓	✓
	Lone households		Medium		✓	✓
	Couples		Medium		✓	✓
	Disabled		Adjacent		✓	
	Visitor	Various	Short	✓	✓	✓
Retail	Staff	Long	Long		✓	✓
	Customer	Short	Short [2]	✓	✓	✓
	Loading	Short	Adjacent	✓	✓	
Commercial	Staff	Long	Long		✓	✓
	Customer	Various	Short		✓	✓
	Loading	Short	Adjacent	✓	✓	
Education	Staff	Long	Long		✓	✓
	Students	Long	Long		✓	✓
	Drop Off – Pick Up	Short	Adjacent	✓	✓	
Services Economy	Staff	Long	Long		✓	✓
	Visitors	Various	Adjacent – Short (typically)	✓	✓	✓

[1] Adjacent = Less than 50m, Short = Less than 250m, Medium = less than 400m, Long = less than 500m

[2] Depending on customer type

Table 3.2 indicates that on-site car parking could be used to accommodate all car parking demands (if it is assumed that access by car is the only objective). It also indicates that off-site car parking stations could be used to accommodate a number of the parking demands generated by many user groups within the Fishermans Bend.

It is recognised that on-street parking could be used to satisfy a number of user types; however, as noted above, it has been assumed that in the context of Fishermans Bend, on-street parking will primarily serve as drop-off, pick-up and loading services (a function that is likely to increase with the rise of sharing economy and deliveries). It is also important to consider 'friction; with through travel, inclusive of the impact on vulnerable road users (e.g. car-dooring).

The management of on-street parking should be considered when preparing the local precinct plans.

The following sections of this report further considers, more specifically, how precinct parking stations could be implemented within Fishermans Bend.

3.5 Other Parking Management Approaches

In addition to the considerations of how car parking should be supplied within the Fishermans Bend area, in due course, parking management approaches will need to be considered for the precinct.

These management approaches will need to have regard for, but limited to the following:

Demand management:

- Particularly relevant to the management of on-street parking is implementing a smart parking management system that allocates and prioritises parking by time restriction and to specific user groups of greater needs.

Infrastructure pricing:

- The pricing of parking within the Fishermans Bend precinct will be an important demand management tool to be able to achieve the targeted mode splits.

Wayfinding signage:

- A significant portion of activity centre congestion (up to 30%⁴) can be attributed to vehicles circulating to find a car parking space. As such, a wayfinding system which can minimise vehicle circulation and road network congestion.

⁴ Austroads, A Guide to Traffic Management – Part 11: Parking

4. Learning from Best Practice

4.1 Purpose

The evaluation of case studies provides an insight into the adoption of precinct wide parking stations in other locations, identifying both their successes and weaknesses.

Analysis of case studies will be used to:

- set an international benchmark
- highlight the potential opportunities and issues for Fishermans Bend.

4.2 Criteria for Identifying Case Studies

Case studies were identified based on the following criteria:

- centralised car parking was used to offset parking in nearby development
- examples were generally applicable to Fishermans Bend.

4.3 Case Studies

The identified Case Studies have been separated into three types:

- urban renewal areas
- city-wide management schemes
- Victorian examples.

These are summarised in the following sections.

A majority of case studies are summarised in a tabular form, with further details provided for case studies of particular relevance to Fishermans Bend.

4.4 An Overview of Case Studies

Desktop research was undertaken to review case studies and explore the options for PPS at Fishermans Bend.

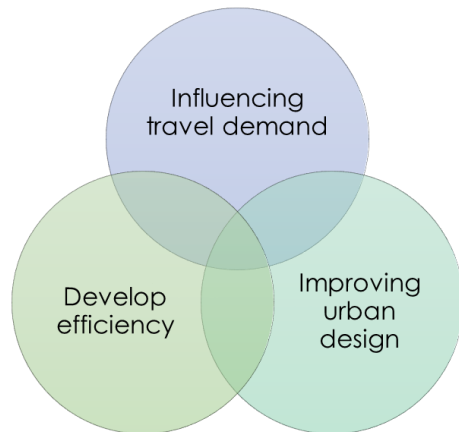
Managed car parks are common, but there are fewer examples of centralised car parks that are used to offset the requirements of a development.

The most common PPS are in eco-residential developments where parking restrictions are an element of the wider eco-philosophy applied to the whole development.

There are two city-wide schemes that provide examples of consolidated parking schemes that have been successfully implemented on a larger scale. There are also a number of examples in Victoria where consolidated parking has been used to offset the statutory planning requirements of developments.

The case studies were implemented for a range of interlinked reasons, which are summarised in Figure 4.1.

Figure 4.1: Centralised Car Park Objectives



4.5 Urban Renewal Case Studies

The most common PPS case studies were those that were incorporated into urban renewal areas, similar to Fishermans Bend.

The following section provides an overview of the following case studies:

- Zibi, Ottawa, Canada
- Battersea Power Station, London UK
- Hammarby Sjöstad development Stockholm
- Vauban, Freiburg, Germany
- Beddington Zero Energy Development, London, UK
- Greenwich Millennium Village, London, UK.

4.5.1 Zibi, Ottawa, Canada

Residential redevelopment of 37 acres of former Domtar lands along the Ottawa River, Canada.

Figure 4.2: Location of Zibi development relative to CBD

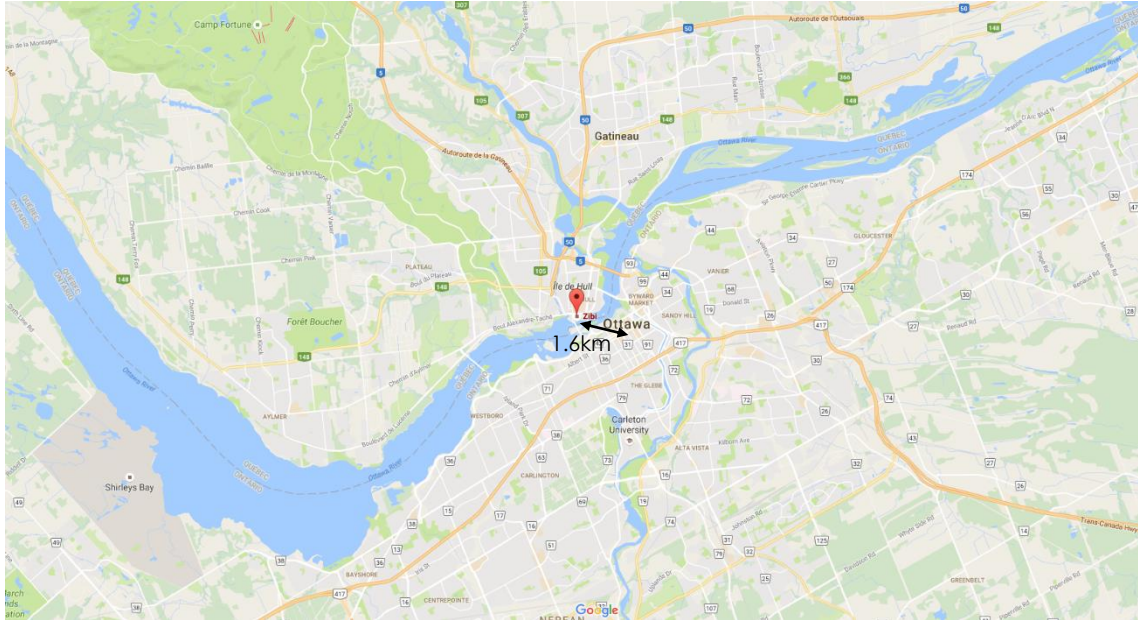


Table 4.1: Zibi, Ottawa, Canada

Scale of development	Parking policy	Outcomes for transport and urban development
<ul style="list-style-type: none"> ○ 3,500 residents ○ 100,000 square feet of commercial and retail space in restored buildings (60% residential, 20% commercial and 20% retail) ○ The development is close to central Ottawa and on a peninsula 	<ul style="list-style-type: none"> ○ Parking consolidated in single building ○ Local provision of short-term parking. Investment in infrastructure to promote walking and cycling ○ Purchasing car parking in centralised stackers is an optional extra at \$32,000 (apartments cost \$200-600k) 	<ul style="list-style-type: none"> ○ Targeted 90% reduction in transport greenhouse gas emissions compared to the regional average ○ Defended High Court challenges to planning permission though holistic commitment to sustainability

4.5.2 Battersea Power Station, London, UK

Battersea Power Station is located on the Thames just outside of central London. Relatively to CBD, its location is similar to Fishermans Bend. Parking is consolidated with retail in basement level 1 and 2, and private, residential and hotel parking in basement level 3.

Figure 4.3: Location of Battersea Power Station relative to Westminster and City of London

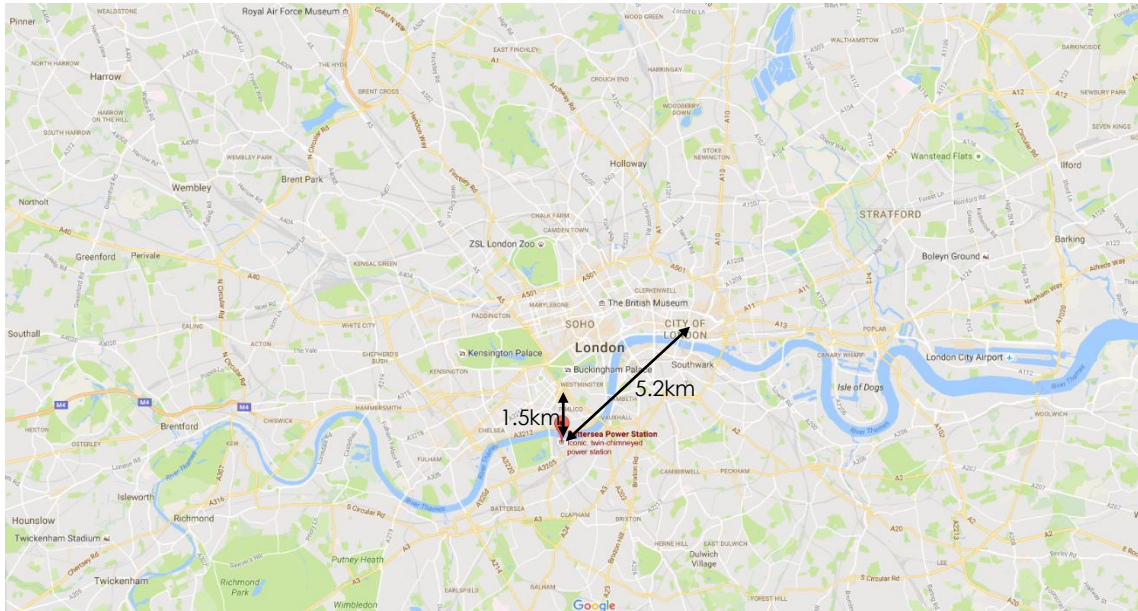


Table 4.2: Battersea Power Station, London, UK

Scale of development	Parking policy	Outcomes for transport and urban development
<ul style="list-style-type: none"> ○ 3,444 units across the whole Battersea Power Station site ○ Expensive apartments in an upmarket area that are targeting the wealthy ○ Single-owner large complex site, which has been under redevelopment for 10years ○ Sits between London's most wealthy and most deprived areas ○ Served by rail into central London, but no connection to the Underground system. 	<ul style="list-style-type: none"> ○ 1500 parking spaces ○ 6,519 cycle parking spaces <p>London Plan policy:</p> <ul style="list-style-type: none"> ○ all developments in areas of good public transport accessibility should aim for significantly less than 1 space per unit ○ Like all planning applications in London, Public transport accessibility is based on a London wide modelling tool. ○ 20 per cent of all spaces must be for electric vehicles 	<ul style="list-style-type: none"> ○ Council approved increases in retail parking. Transport for London were satisfied that it is acceptable given the wider role it plays in supporting the viability of the development ○ An application for an increase in residential parking was not supported as: <ul style="list-style-type: none"> ○ the development is linked to the delivery of the London underground extension and this needed to be the priority. ○ impact on surrounding road network.

4.5.3 Hammarby Sjöstad development Stockholm, Sweden

Hammarby Sjöstad development Stockholm is in an ex-industrial location located near central Stockholm.

Figure 4.4: Hammarby Sjöstad development Stockholm, Sweden

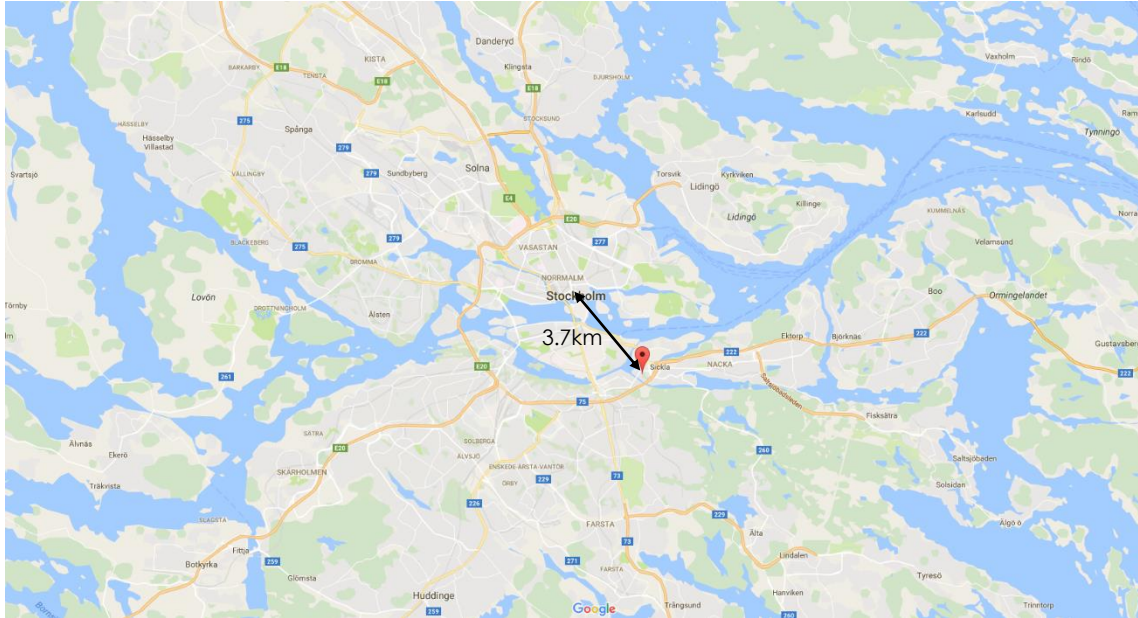


Table 4.3: Hammarby Sjöstad development Stockholm, Sweden

Scale of development	Parking policy	Outcomes for transport and urban development
<ul style="list-style-type: none"> ○ 11,000 apartments ○ 10,000 jobs ○ Development targeted towards family dwellings 	<ul style="list-style-type: none"> ○ Parking was provided at 0.25 spaces per apartment (0.4 if guest and workspace parking was included) ○ A change in policy resulted in increasing parking restrictions to 0.7 spaces (level outside area is 1) 	<ul style="list-style-type: none"> ○ Car accounts for 21 per cent of Hammarby trips, compared with 32 per cent for Stockholm as a whole ○ The city purchased land and used it to coordinate transportation and land use

4.5.4 Vauban, Freiburg, Germany

Vauban is a neighbourhood to the south of the town centre in Freiburg, Southern Germany.

Figure 4.5: Vauban, Freiburg, Germany

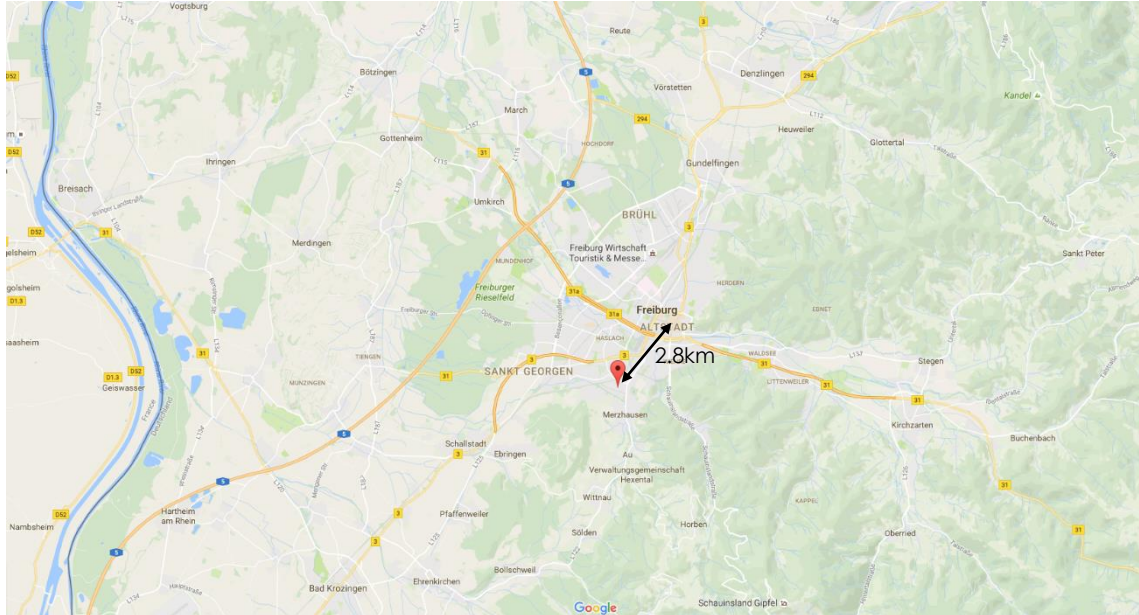


Table 4.4: Vauban, Freiburg, Germany

Scale of development	Parking policy	Outcomes for transport and urban development
<ul style="list-style-type: none"> ○ 5,500 inhabitants, of which 2000 are students ○ Vauban is a planned suburb that has complete consideration of eco-values 	<ul style="list-style-type: none"> ○ Vauban prohibits the building of parking space on private property. Cars are parked at the periphery of the residential area ("parking-free" living). Cars are allowed into the residential area for pick-up and delivery. Low speeds are mandatory (walking speed) ○ Residents pay ~\$30,000 AUD for a space in an underground carpark on the edge of the development, or those that choose to live car-free pay ~\$6,000 to preserve open space on the edge of the development 	<ul style="list-style-type: none"> ○ Vauban residents own 150 cars per 1,000 inhabitants, which is low compared to 420 per 1000 for the City of Freiburg (Melbourne is 600 per 1,000) ○ City of Freiburg divided land into small lots and to allocate it in preference to private builders and co-housing groups

4.5.5 Beddington Zero Energy Development, London, UK

Beddington Zero Energy Development is an environmentally friendly housing development in Hackbridge, London. There is a population of 200 and it is located 650m from a rail station.

Figure 4.6: Beddington Zero Energy Development, London, UK

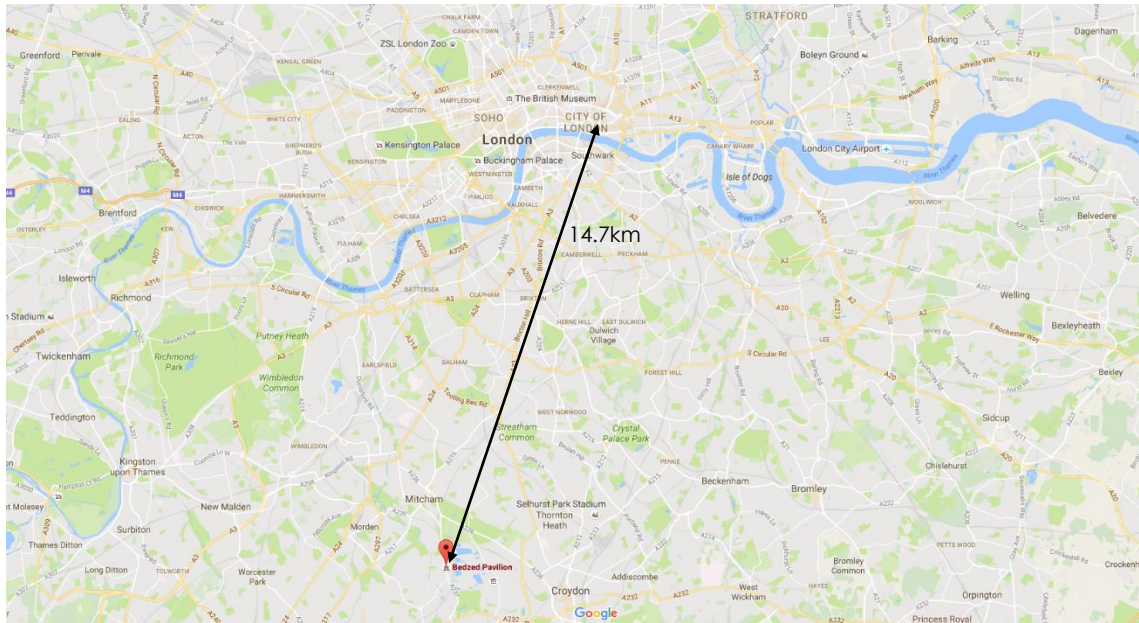


Table 4.5: Beddington Zero Energy Development, London, UK

Scale of development	Parking policy	Outcomes for transport and urban development
<ul style="list-style-type: none"> ○ Outer suburban location ○ 34 dwellings for outright sale ○ 23 dwellings for shared ownership ○ 10 dwellings for key workers and 15 dwellings at affordable rent for social housing. ○ Beddington is middle class suburban area that has good heavy rail links into central London, but is not, like most of South London, connected to the Underground. 	<ul style="list-style-type: none"> ○ Residents are not allocated parking and although residents can choose to buy a parking permit for parking within the development, this is priced at twice the cost of car club annual membership. 	<ul style="list-style-type: none"> ○ Only 17% of work trips by residents were undertaken by car, compared to 49% for the surrounding area (BioRegional 2009) ○ One car club vehicle replaces four to six privately owned vehicles. ○ BedZED is a mixed-use, mixed-tenure development. It is built on reclaimed land owned by the London Borough of Sutton, sold to Peabody at below market value due to the planned environmental initiatives

4.5.6 Greenwich Millennium Village, London, UK

Greenwich Millennium Village is located to the East of the City of London but is close to the second commercial district of Canary Wharf.

Figure 4.7: Greenwich Millennium Village, London, UK

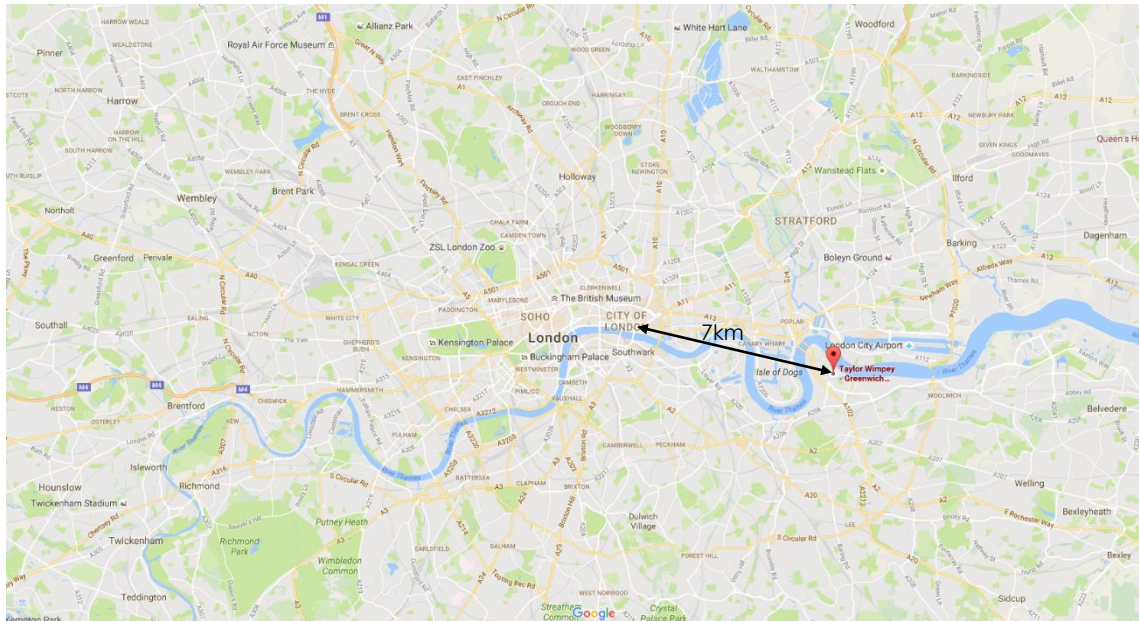


Table 4.6: Greenwich Millennium Village, London, UK

Description of development	Scale of development	Parking policy	Outcomes for transport and urban development
<ul style="list-style-type: none"> Greenwich Millennium Village in London 1.4km to rail station, ferry terminal and cable car station Primary access to the centre is via the Docklands Light Rail system (which passes through Canary Wharf) Near to 50 acres of parkland All apartments are rated as sustainable homes 20% affordable housing Relative wealthy area 	<ul style="list-style-type: none"> 7km from London City Centre 1,100 flats and houses by 2010 2,900 flats and houses planned in total 	<ul style="list-style-type: none"> Total 884 spaces Car parking is restricted and generally located away from individual properties Parking is unbundled from apartments, so owners must pay additional costs for spaces (approx. 17,500GBP) Residents pay for the 'right to park', not an allocated space. They have access to parking, but must find a vacancy No visitor parking within garages, visitors must park on-street or the public parking lot at North Greenwich transit station (800m away) Cycling and walking are encouraged, with routes throughout the village. In addition, 2–3 bicycle parking spaces are available per unit 	<ul style="list-style-type: none"> 18% of residents use a private car (in comparison to 44% Greenwich neighbours, 29% Inner London or 51% Outer London) 79% travel to work by public transport 1/3 residents walk or cycle for weekly shopping trip (<1km for most dwellings)

4.5.7 HafenCity, Hamburg

HafenCity in Hamburg, Germany is a mixed use area developed by the State in the old docks of Hamburg. It is planned for 12,000 residents as well as 40,000+ jobs and is 240ha in size. HafenCity is generally considered to be a very successful development, though some have argued that the separation of uses has resulted in a clinical feel in some areas⁵.

A balanced movement approach has been taken in HafenCity, through the use of public transport (tram and train), walking, cycling and private vehicles. This approach links parking into the wider movement strategy for the renewal area.

Parking in HafenCity

The underground car park 'Überseequartier' in Hamburg has 3,100 spaces spread out over two levels and it is centrally located to facilitate access to the area. The Überseequartier is a mixed-use development containing a five-star hotel, offices, conference rooms, retail, high-end housing and an underground parking garage. Traffic is directed to the parking centre through a range of traffic management methods.

The building and the interior of the carpark is intentionally architecturally designed to a very high standard. The car park is part of the 'HafenCity' experience, which utilises elements of environmental psychology. The parking is for the commercial uses and not the surrounding residential development.

Outside of this, parking requirements are met through basement level facilities, accessible at restricted points and separated from pedestrian thoroughfares. These buildings double as flood-protected bases and provide a total 26,000 underground parking spaces.

There are 90,000 car journeys expected to HafenCity, but the authority aims to reduce the amount of street space provided to parking and vehicle movements.

This is approximately 2.2 spaces per 100sqm of commercial gross floor area. For comparison, Victoria's Capital City Zone outlines the maximum number of car parking spaces for Office as 1 per 100sqm.

Parking policy in HafenCity has been used to achieve transport aims, but has also been an important part of delivering better urban design while improving the areas flood resilience.

Parking policy in Hafencity has been used to achieve transport aims, but has also been an important part of delivering better urban design while improving the areas flood resilience.

Figure 4.8: Überseequartier, Carpark interior and exterior design features



⁵ Othengrafen (2012) Uncovering the Unconscious Dimensions of Planning: Using Culture as a Tool to Analyse Spatial Planning Practices

4.6 City Wide Case Studies

City wide case studies include Antwerp, Belgium and Barcelona, Spain and are discussed in the following sections.

4.6.1 Antwerp, Belgium

Figure 4.9: Antwerp, Belgium parking precincts

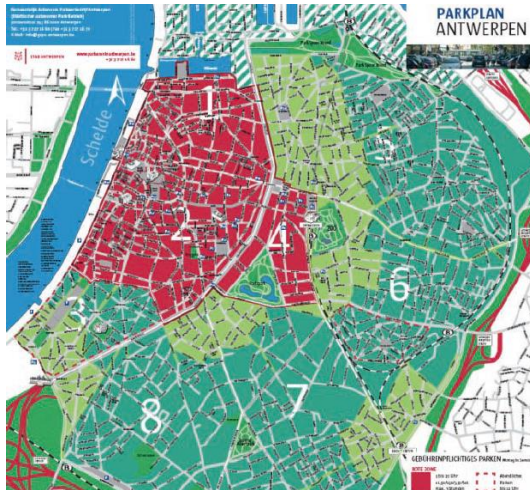


Table 4.7: Antwerp, Belgium

Description of Development	Characteristics	Parking Policy	Outcomes for Transport / Development
Antwerp Belgium, (population 360,000)	GAPA Antwerp manages all parking across all types of parking in the city. GAPA is a public-private partnership. Prices are subject to state approval and GAPA must manage car parks based on defined rules.	Since 2001 Government has transferred all its parking competences to the operator. Including: developing and managing public and private on-street and off-street parking. GAPA aims is to use on-street parking to stimulate the local economy and ensure that the use of off-street parking is for local residents They achieve parking for residents through: <ul style="list-style-type: none"> ○ giving priority to parking spaces for residents and optimize the parking turnover of visitors' cars ○ Making car parks of certain offices and supermarkets available to them during the evening and at night. 	The use of cars in Antwerp since 2003 has dropped 50% whereas the number of pedestrians and cyclists has risen by over 60%. The money raised from Parking fines are hypothecated and invested into sustainable mobility projects in the city.

Centralised parking schemes provide use on-street parking to stimulate the local economy and ensure that the use of off-street parking is for local residents

4.6.2 Barcelona, Spain

Barcelona, Spain's second largest city is home to 1.6 million people within the city limits. The city is known for its innovative transport policy and has a high proportion of active travel and 20% car mode share.

Figure 4.10: Parking network in Barcelona



Table 4.8: Barcelona, Spain

Characteristics	Parking Policy	Outcomes for Transport / Development
<p>Parking is managed by B:SM, the city-owned Barcelona Municipal Services company.</p> <p>B:SM construct and manage all spaces the average cost to construct an off-street parking space is ~\$40,000 to the construction company. Commuters buy season tickets for about \$200 a month.</p>	<p>The agency constructs off-street facilities who lease spaces exclusively for residents. Most residents lease a space for 50 years.</p> <p>Management focused on:</p> <ul style="list-style-type: none"> ○ decreased traffic looking for free parking and is acting as a deterrent for the use of car too. ○ On-street parking consumed too much space so D:SM reduced spaces in lieu of off-street spaces ○ City design forces traffic to move along the periphery of super-blocks and parking inside the zone is prohibited 	<p>Barcelona has 20% private car use. The streets of Barcelona have been transformed and now prioritise walking, cycling and place functions.</p> <p>All the revenue generated by parking fees pay for operation and maintenance of a bike-sharing scheme.</p> <p>The price depends on the location of facility. A monthly space is \$150-200⁶.</p>

⁶ <http://www.aparcamentsbsm.cat/aparcar-al-millor-preu/aparcar-al-millor-preu/cercador/>

4.7 Victorian Case Studies

A number of cash in lieu schemes exist within various Victorian Municipal Planning Schemes, allowing developers to contribute to the construction of public car parking in lieu of on-site provisions. These typically relate to customer and staff parking, and do not result in specifically allocated parking provisions. They rely on Council being responsible for the provision of car parking.

In order to make it attractive for developers to contribute to such facilities, the contribution value is very rarely set to achieve full cost recovery, resulting in Council's requiring to input significant contributions to these facilities.

4.7.1 Edward Street Car Park, Bendigo

Figure 4.11: Edward Street Car Park, Bendigo

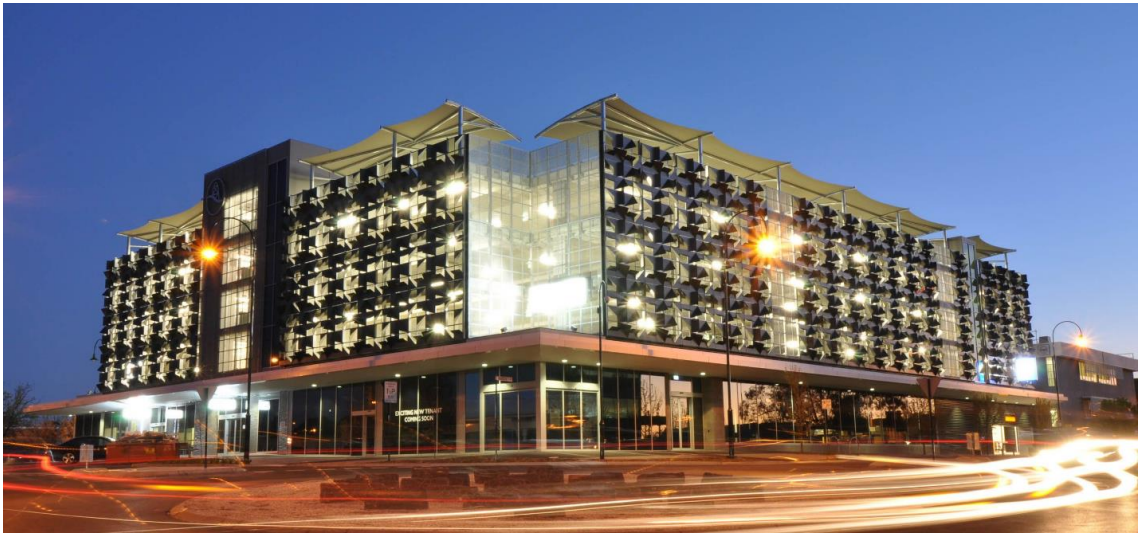


Table 4.9: Edward Street Car Park, Bendigo

Characteristics	Parking Policy	Outcomes for Transport (Car Ownership / Car Use)
<p>420 space public car park primarily serving casual customers.</p> <p>A retail and commercial consolidated parking scheme.</p>	<p>A parking overlay is applied through Clause 45.09 of the Planning Scheme,</p> <p>'Promotes a vibrant and efficient use of urban space, encourages sustainable transport options and reflects the conditions, opportunities and needs of the area'. The car park was constructed by Council to serve future development and allow for on-site parking reductions in lieu of cash contributions. A cash contribution of \$10,600 per space is required which equates to in the order of one third of the overall construction cost per space.</p> <p>The City of Bendigo paid the remaining cost of the car park.</p>	<p>The parking station appears to have limited benefit to transport outcomes at this time. Its key benefit is the ability for smaller sites to be redeveloped with limited on-site parking, to enhance site value capture. It provides council with the potential to redevelop surrounding at grade parking assets for highest and best use. The repayment of the asset will primarily come from the ground level commercial and retail tenancies as compared with parking charge.</p>

4.7.2

4.7.2 EXO Building 852 Collins Street

The 12 storey EXO Building in Docklands comprises eight storeys of car parking, with a total of 642 spaces. Above this is four storeys of apartments.

It was built as a part of the Victoria Harbour Precinct of Docklands, which formed part of the Lend Lease master-planned area of the publicly owned Melbourne Docklands precinct.

The apartments utilise 64 of the car parking spaces, and the remaining bays are now privately managed at rates that are equivalent to Melbourne CBD pricing. The monthly charge is \$500 and there are 100 users who have purchased this membership. The operator reports that the car park is nearly always full by 9am (as a result of the early bird discounts).

The EXO Building was developed as a parking precinct station for the surrounding buildings, which have on-site parking provision that is limited to servicing and disabled parks (Figure 4.12).



The centralised provision of parking has allowed the activation of the street (Figure 4.13). The design of pedestrian priority shared spaces (Figure 4.14) have led to low volumes of traffic accessing the rear of the surrounding buildings, which are seasonally well used by the surrounding offices.

Victoria Harbour is now developed, it is fully tenanted and the surrounding residential market is strong.

Victoria Harbour is home to the head offices of a number of blue-chip firms (ANZ, NAB and KPMG) and the Docklands area is the most expensive rental market in Central Melbourne⁷.

The majority of people in this area either walk or catch public transport to Docklands (currently 54.8% of trips are active travel/public transport), which is likely to increase in response to the areas growth and the significant uplift in new trams services to the area delivered in early 2014⁸.

For comparison, the CBD percentage of active travel and public transport is 69%, for context Southbank is 42.6% and Box Hill is 13.7%.

There are many aspects of Docklands' urban renewal that are successful. Though the public perception of Docklands might be negative, given that it is 15 years into a 25-year plan, when completed this public perception is likely to change.

The City of Melbourne's Parking Plan made the follow general observations about the area:

"Throughout the consultation for this plan, residents from Docklands have expressed their frustration about a lack of residential parking. This relates to the limited on-street parking and the expense of off-street parking for residents who don't have parking spaces as part of their

⁷ (<http://www.jll.com.au/> Melbourne Apartment Market Commentary • July 2016)

⁸ <http://ptv.vic.gov.au/news-and-events/news/new-timetable-delivers-more-than-1-200-extra-trams-to-docklands-effective-from-sunday-26-january/>

apartment allotment. Residents have also reported that on occasions when they have struck a special deal for off-street parking, the car parks had closed due to new development.⁹

Figure 4.12: Parking Provision in Victoria Harbour

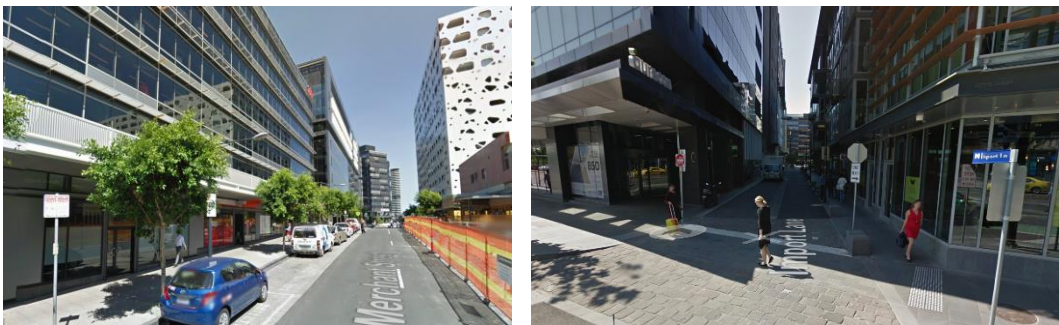


Source: City of Melbourne, Census of Land Use and Employment (CLUE)

There is limited commercial parking in the immediate vicinity to the EXO building. Using Clause 52.06 Car Parking rates, GTA estimates that the buildings in the area would require 1150 spaces, instead of the 688 provided. This represents a reduction in parking of circa 40%.

It is somewhat unrealistic to assume that no parking overlay would apply to a site so close to the CBD, however, it provides an indication of the parking supply that was able to be reduced while still achieving wider development outcomes.

Figure 4.13: Streetscapes Near the EXO Building



The centralised parking in the Exo building preserve the on-street frontage of the surrounding buildings.

⁹ <http://www.melbourne.vic.gov.au/SiteCollectionDocuments/cbd-docklands-parking-plan-2008-2013.pdf>

Figure 4.14: Import Lane Shared Space Behind Adjoining Buildings



Access to the rear of the adjoining buildings is limited to services and therefore the area is pedestrian priority through the use of shared spaces.

4.8 Key Findings

4.8.1 Urban Renewal Areas

There are numerous parking consolidation schemes attached to large residential redevelopment sites. These sites generally have parking policies that are a part of the wider eco-philosophy of the development. These developments usually have less parking and provide incentives to promote sustainable travel e.g. free public transport travel pass or membership to car club.

A key theme running through the residential case studies is that parking management has been considered as a part of the eco-development philosophy and not just an isolated tool to reduce car use and promote mode share.

4.8.2 City-Scale Parking Stations

Antwerp and Barcelona are widely regarded as being best practice in achieving transport policy outcomes. Barcelona is particularly relevant for Fishermans Bend as its current transport mode shares are the same as Fishermans Bend's 2051 targets.

These two successful case studies share similar characteristics:

- Parking management schemes are closely controlled by Government (or quasi-public statutory authority).
- The car parking is managed to achieve holistic outcomes. In the case of Antwerp, the aim is to maximise the use of on-street parking to stimulate the local economy and ensure that the use of off-street parking is for local residents. In the case of Barcelona, the parking policy aims to reduce the amount of on-street parking and then reallocate this space to sustainable modes.

A key theme running through the residential case studies is that parking management has been considered as a part of the eco-development philosophy and not just an isolated tool to reduce car use and promote mode share.

4.8.3 Victorian Examples

The market has positively responded to the urban renewal strategies at Victoria Harbour, including the use of consolidated parking to cater for some of the demand. The EXO Building and the surrounding activation of on-street frontages, including capitalising on the low-trafficked rear of buildings, has had positive urban realm outcomes.

Given that the Docklands area still has 10 years until completion, it is potentially too early to make a full assessment of the development. Based on an initial review, the use of a central parking station appears to have been effective way to improve urban realm outcomes and play a role in achieving transport mode shares that are nearing best Australian practice (50% active/walking).

4.9 Summary

In summary, across the three case studies the key themes are:

- Primarily, parking precinct stations appear to be most effective as a tool to improve urban realm outcomes.
- Parking precinct stations can be effectively used to support a shift to more sustainable travel.
- Parking precinct stations are rarely provided and/or charged in a full cost recovery model, emphasising the need for Government leadership in current models.

5. The Opportunities for Fishermans Bend

5.1 Parking Precinct Options at Fishermans Bend

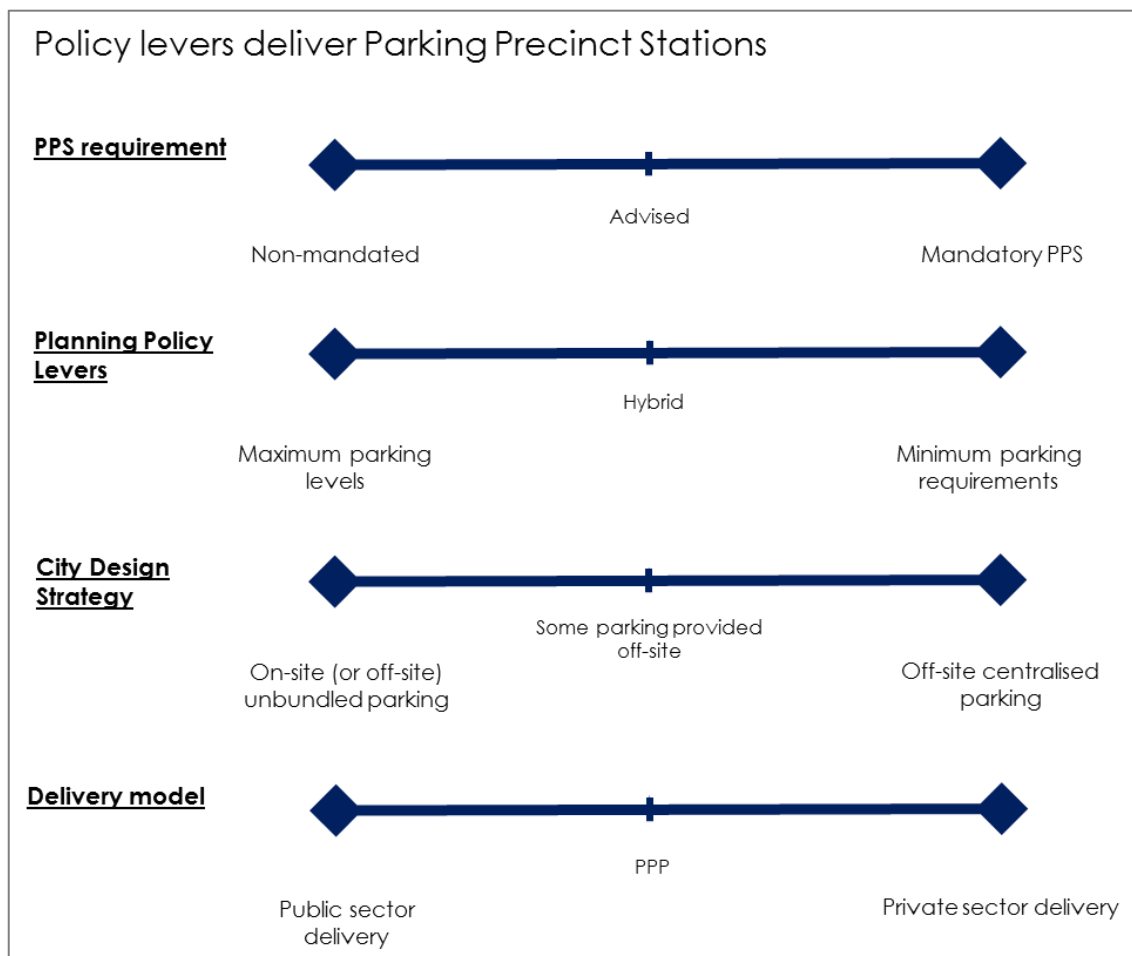
The next section of the report explores the options for PPS in Fishermans Bend, with a view to recommending implementation scenarios.

The case studies illustrate that PPS can be implemented through a range of models. Different models arise as PPS are designed and implemented to achieve a range of objectives.

To help frame the range of decisions, a 'spectrum' of policy options have been developed across key decision areas. The spectrum of policy options is depicted in Figure 5.1.

The figure presents the fact that there are a wide range of implementation models that exist for PPS, which are the result of making different policy decisions (some being dependant of each other and some not). Viewing each of these areas separately helps to define different implementation models to allow the options to be assessed against the objectives for Fishermans Bend.

Figure 5.1: PPS Policy Options



5.1.1 PPS Requirement

A threshold question is whether PPS should be mandated.

Mandating PPS potentially opens a range of transport and urban design opportunities, but is also a challenging model to deliver as a result of the fact that the approach would effectively restructure planning as it relates to Fishermans Bend and development policy.

Not mandating PPS is aligned with current planning controls, including the Victorian PPS case studies.

If PPS are mandated, the impact of this decision cascades through the subsequent decisions, which is illustrated in the implementation Scenario provided later in this report.

5.1.2 Planning Policy Levers

There are a range of existing planning tool mechanisms that can be used in combination to achieve the PPS outcome. This includes:

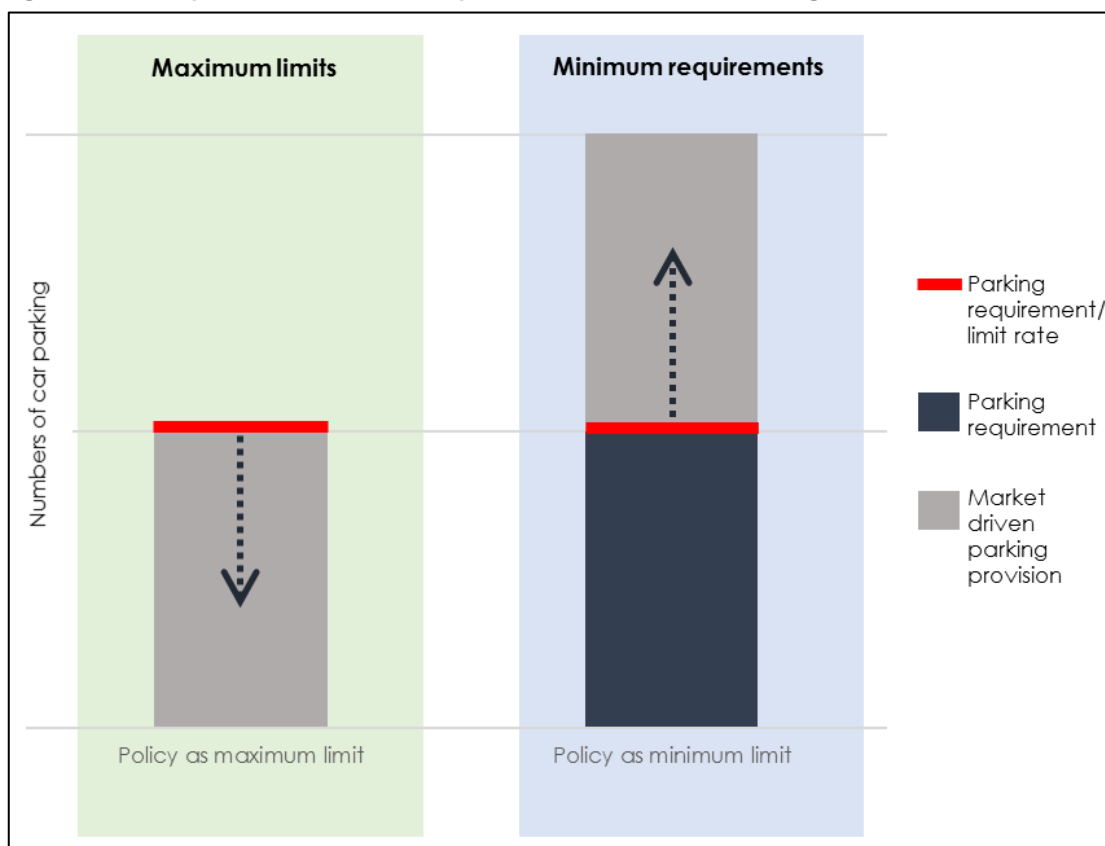
- **Parking Overlays** could be tailored for the purpose of delivering this single issue and deliver the local objectives for Fishermans Bend.
- **Strategic Framework Plan Incorporated Document** will need to provide clear direction about preferred location and/or designated sites, regardless of the delivery approach.
- **Local Policy** implementation would be assisted by the introduction of a new supplementary 'Parking and PPS Policy' to provide further direction and guidance to decision makers on the assessment of permits and use of PPS. It may also include policy direction on use of plot ratio/density bonus for designated PPS sites and land use and urban design guidance. It may also be appropriate to develop this as part of a holistic 'sustainable transport' policy, rather than just for the implementation of PPS.
- **The Schedule to the Capital City Zone** may need to be updated to reflect the recasting of planning for Fishermans Bend (mostly in relation to permit application requirements) but the most appropriate mechanism is via a tailored Schedule to the Parking Overlay rather than a Schedule to the CCZ.

5.1.3 Parking requirements (minimums or maximums)

The current controls in Fishermans Bend apply maximum limits rather than a minimum limit as a demand management tool to reduce the amount of parking provided on-site. The planning tool owing to Fishermans Bend that facilitates this is the Parking Overlay (CCZ1). Broadly, the opposite end of the spectrum is applying parking minimums (the default parking policy in Victoria).

Commentary on both policies (shown in Figure 5.2) is provided in the sections below.

Figure 5.2: Comparison of Maximum Required and Minimum Limit Parking Policies



Applying a maximum limit approach could also be extended, even down to zero, by splitting parking limits between on-site and off-site provision, or restricting parking limits to servicing and disabled parking only. Parking limits could also be varied by location and land use type.

The one Parking Overlay could also, theoretically, use a combination of minimum and maximum rates, or different Parking Overlays could be applied to different areas/locations.

Minimum Parking Requirements

Minimum parking requirements define the minimum number of car parking spaces in a development. They are intended to provide a minimum level of parking, and allow increases in parking supply in response to the market demands.

In accordance with Clause 52.06, parking minimums are the default parking planning control across Victoria.

Parking minimums are often criticised as they generally lead to an oversupply of parking and high private car usage. This can impact the affordability of dwellings as a result of construction costs being passed on to home buyers.

Maximum Limit Parking

Maximum parking limits set the maximum number of parking spaces in a development.

Parking maximisation policy overlays are relatively limited and focused on central/inner Melbourne.

The Impact of Implementing Parking Maximum Limits

There is a significant amount of research into maximum parking limits in the United Kingdom. In response to an increase in congestion, parking maximum policy was introduced across the United Kingdom in the 2000s.

The evidence suggests that parking maximisation limits are effective at reducing car use. London, for example, has seen an ongoing and significant shift away from car use¹⁰.

Furthermore, there is no evidence to suggest that this has had an economic impact on the financial viability of development¹¹. However, in a review of the effectiveness of maximum parking limits, problems of overspill parking were highlighted as particularly acute in historic towns due to the narrow and more restrictive street layout¹².

Generally, however, the sound evidence from the UK concludes that in areas of good transport accessibility parking maximisation limits are an effective lever to promote sustainable transport and reduce congestion.

Sound evidence from the UK concludes that in areas of good transport accessibility parking maximisation limits are an effective lever to promote sustainable transport and reduce congestion

Implementing Parking Precinct Stations with the Current Parking Requirements

The Capital City Zone sets the maximum parking provision for developments in the Fishermans Bend Precinct. This policy aims to reduce the amount of car parking to influence transport demand in favour of more sustainable modes. Any changes to policy (PPS or otherwise) should assess the impact on the amount of car parking and the resulting impact on the Vision for Fishermans Bend.

In the Capital City Zone, an overlay applies where developers could provide zero parking.

It is likely that certain types of development would be less (or more) likely to contribute to car spaces to support development. Contributions also depend on the precinct station 'product' (or offer) in terms of distance and quality. HafenCity illustrates this where significant effort has been made to provide a high quality product.

To provide an estimate of the potential reduction in car parking by use, the theoretical out-turn parking with and without precinct parking off-site is estimated in Table 5.1. This indicates the potential of the policy to support demand management objectives.

Summary of Review of Parking Policy Options

Implementing maximum parking limits is an effective policy to reduce the supply of car parking.

Implementing maximum limits, alongside PPS, is likely to be an even more effective policy to reduce car parking supply. Although there are a range of factors that contribute to the use of car versus other modes, a reduction in the amount of car parking provided in Fishermans Bend is likely to be important to achieving the aspirational mode shares outlined in the Fishermans Bend Vision. The continued maximum policy (developers being able to reduce parking provisions to zero) may create challenges to the way in which PPS are funded.

¹⁰ <http://content.tfl.gov.uk/travel-in-london-report-8.pdf>

¹¹ http://www.camden.gov.uk/ccm/cms-service/stream/asset/?asset_id=3414526

¹² Department for Transport (June 2008) Research into the Use and Effectiveness of Maximum Parking Standards

With maximum parking limits in place, the market provides an amount of parking that is less than the maximum limit. In Fishermans Bend, developers are providing parking at a rate of 0.6 spaces per apartment. These 0.6 spaces are effectively an out-turn of parking as a result of policy and market requirements. If PPS are implemented, it is likely that the market will respond by providing a lower parking out-turn, which will depend on different uses.

An assessment of the level of this impact and indicative impact on parking out-turns is provided in Table 5.1.

Table 5.1: Theoretical Out-Turn Parking With and Without Precinct Parking Off-Site

	Parking overlay (Max rate) e.g. Capital City Zone	Maximum out-turn parking provision with parking on-site	Factors that influence max parking provided with Maximum limits (on-site)	Impact on Maximum out-turn parking (with PPS*)	Factors that influence parking provided with maximum limits where parking is located in PPS (mandatory off-site)
Dwelling	1 (per dwelling)	↓	Quality of alternate transport including the service, proximity, frequency and convenience. Location of the dwellings within the precinct. Purchaser profile – investor and occupant priorities differ.	↓↓	Proximity and convenience of off-site parking location. The relative proximity and convenience of alternate transport. The relative cost of car parking in the area (the decision to purchase alternative sites). The inconvenience is likely to lead to a decrease in the amount of parking, but is likely offset by public transport provision in Fishermans Bend.
Office	1 (per 100sqm)	↓	Only small amounts need to be supplied on site to attract occupants, especially for service industries. Car shares and other innovations are contributing to a reduction in parking. Demand for staff commuter parking depends on convenience of different modes and associated journey to work time.	↓↓	There is precedent for decoupled and precinct based car parking in the CBD with car parks being operated as independent commercial businesses. Demand based on provision of alternative modes. Employers potentially drive laissez faire approach to employee parking. This commercial incentive likely to lead to a reduction in parking.
Retail	1 (per 100sqm)	●	Depends on whether it is destination retail or bulky goods. Unlikely to relate to provision of other modes (other than rail) ¹³ .	↓	There is some appetite for 'precinct' type parking for retail destinations – refer CBD and larger shopping centres where the distance between park and shop can be substantial. While maximum parking policy applied, smaller retailers are likely to provide less parking. The established model is likely to lead to higher uptake.
Super-market	2 (per 100sqm)	●	The amount of car parking that is supplied will depend on: Scale, type and distribution of supermarket. Surrounding dwelling density and type. Quality of alternate transport including the type, proximity, frequency and convenience.	↓	Car parking provision will be similar whether on site or in a centralised facility The provision of car parking in close proximity will determine the nature of the supermarket offering rather than the type and proximity of car parking determining the amount supplied. Likely to be no change to the provision of parking.

↓ - indicates a decrease in the amount of parking provided

● - no change in parking provided for a particular development

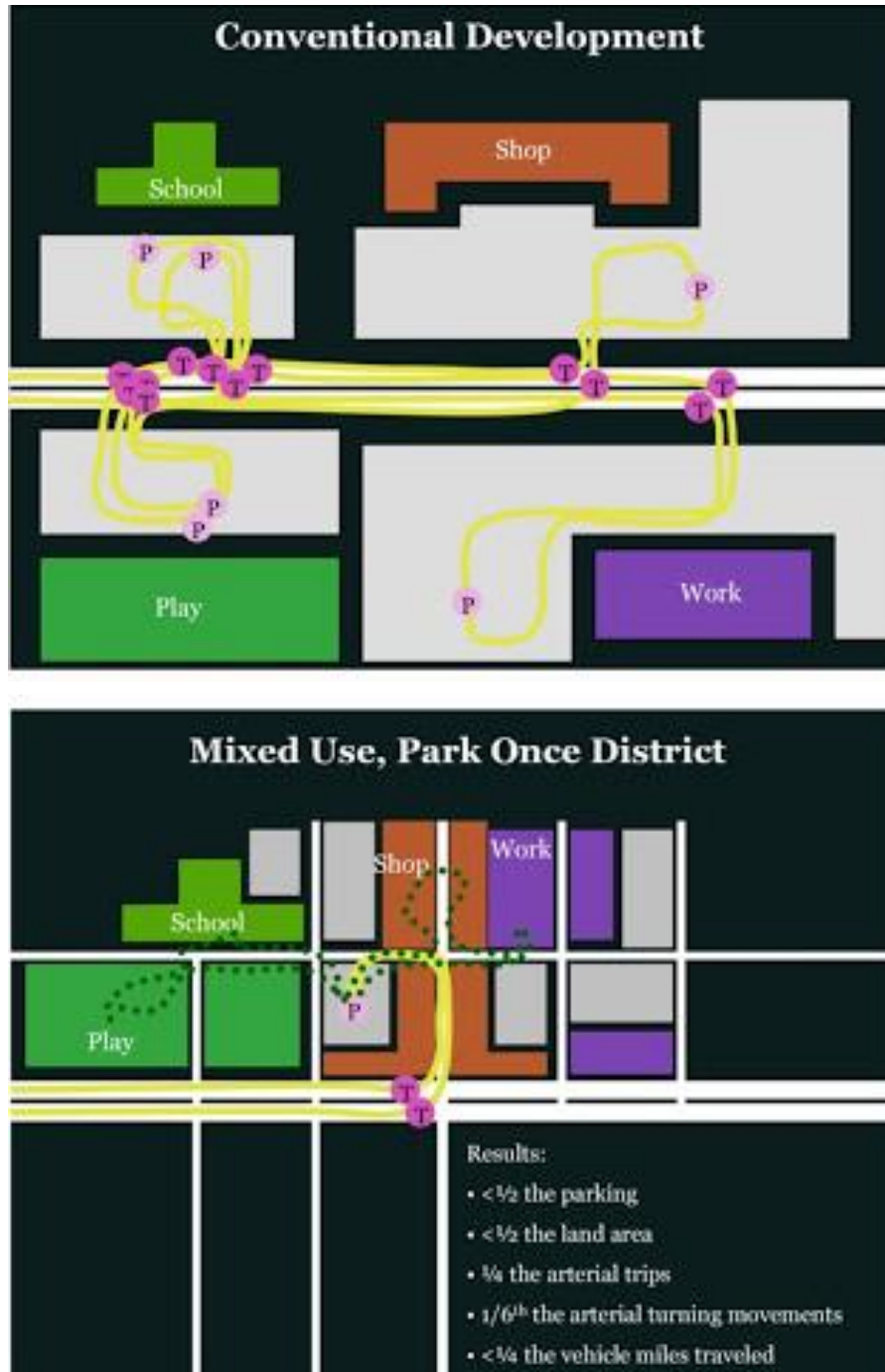
NOTE: symbols highlighting change is provided for illustrative purposes only

¹³ Even in the case of Battersea Power Stations, where a new rail station is being built, the developers have successfully argued that precinct

5.1.4 City Design Strategy: Improving Urban Design

A key aim of PPS at Fishermans Bend is to reduce the impact of parking and access on site frontages and therefore activated streets and create better places. The urban design outcome is illustrated through Figure 5.3.

Figure 5.3: Impact of Parking Access on Frontages



Source: Siegman (2015) Solving Parking Shortages, New Solutions for an Old Problem, Siegman

PPS for a particular use can be provided on- and off-site. The EXO Building in Docklands illustrates this as the parking for the apartments located above the building are in a PPS on-site, whereas the adjoining uses, that provide parking through the centralised facilities, have PPS off-site.

The main consideration for mandating off-site precinct parking is realising urban realm benefits.

These potential urban realm benefits, illustrated by the case studies, include:

- Fewer frontages dominated by parking
- Fewer crossovers across pedestrian access
- Cycle provision services can be located in shared zones (due to lower traffic levels)
- Decreased on street parking, which reduces conflict with other uses (e.g. car dooring)
- Able to direct users to centralised area (reduced amount of crawling for parking).

5.1.5 Delivery Model: for precinct car parking stations.

It is important that the strategic objectives for implementing PPS be articulated early to inform the detailed design and delivery of any PPS model.

Regulatory and policy decisions result in different options being more or less feasible. To assess all the options for implementing PPS at Fishermans Bend, combinations of different models have been reviewed with a view towards creating recommended scenarios for more detailed analysis and further refinement. The options reviewed can broadly be grouped into three categories:

- i **Market Led approach** - Private sector driven through Private funding
- ii **Creating incentives** – Public sector investment to create Public/Private Partnership environment
- iii **Public Sector led** - Public funded where the public sector invests in broader outcomes and therefore invests directly in PPS (an option that does not exclude some longer-term transition to private investment).

The options that exist within these categories are then explored in the following tables.

5.2 Assessing all Options for Precinct Car Parking Stations.

A range of models for delivering PPS were tested through mapping the policy options for PPS. This is presented in the tables below.

The first two options are where the market delivers the solution for providing PPS. The different between the options is that the first is 'left to the market' (the market may provide PPS) and the second is that PPS are mandated (the market must resolve a solution). An assessment of each option is contained in Table 5.2.

Table 5.2: As Assessment of Options for Implementing PPS in Fishermans Bend

	Description	The mandate for provision of PPS	Planning policy levers	Improving urban design	Public/Private sector mix	Outcomes	Assessment for FB
1. Market Led Approach	Precinct car parking evolved through use of policy levers that lead to behaviour change and transition to new models over time.	Not mandated precinct parking.	Minimum or maximum could apply. Land use planning policy should recommend PPS.	As not mandated, the majority of developments are likely to develop underneath existing buildings (as is the current model).	A private sector led approach. Public sector policy simply supports PPS delivery.	This model relies on the market adopting PPS to realise the long term benefits. This is likely in areas where single ownership exists (e.g. Exo building) but it is unlikely where there are diverse landowners.	This option is not recommended for Fishermans Bend.
2. Market Led Approach	Precinct car parking is required via planning scheme/design controls. It is delivered by the market with limited intervention.	Mandated precinct parking	Minimum or maximum could both apply Planning policy needs to mandate PPS	Planning guidance needs to provide direction to the market on efficient means to consolidate parking.	The market is likely to provide both on-site and off-site PPS. Developers may deliver PPS onsite (e.g. parking with residential above) or off-site.	This option requires strong: 1. Commitment by Government to legislative and planning policy change in introducing mandatory precinct parking 2. Supporting the private sector with clear guidance.	This option is applicable to FB and, in the long term, this might lead to a fundamental shift in the way that car parking is provided in denser multi-use areas.

The second options provide delivery models where incentives are provided to encourage PPS (and desired outcomes). The market is then allowed to innovate when providing PPS.

Discussion on possible incentives is provided after this table.

Table 5.2 (cont'd): As Assessment of options for implementing PPS in Fishermans Bend

	Description	The mandate for provision of PPS	Planning policy levers	Improving urban design	Public/Private sector mix	Outcomes	Assessment for FB
3. Incentives	Incentives to encourage developments to adopt a precinct approach either on site or off site to deliver the long term benefits and flexibility of decoupling car parking	Not mandated precinct parking	Parking policy is used as an incentive for PPS. (E.g., more parking is allowed if a developer locates parking in a PPS).	Depending on the level of incentive, the option is likely to lead to clusters of PPS.	The amount of parking located in PPS depends on the level of incentives (associated with public sector investment).	Public sector investment balanced with the wider Vision.	This option is applicable to FB , with targeted public sector investment this will lead to a clustering of PPS in key precincts in Fishermans Bend.
4. Incentives	Incentives to support a shift to off-site precinct car parking to support the realisation of urban design benefits	Mandated precinct parking	Planning policy to provide direction on suitable consolidation strategies	Locates PPS off-site and realises urban realm benefits across the area.	Mandated approach means that Private sector must deliver PPS so no Public sector investment is required.	Options provides urban realm benefits, and benefits to private sector in terms of incentive (e.g. land cost).	Not progress. Mandating unlikely to be required if the incentives are planned correctly

Incentives for the Delivery of PPS

The private sector could be incentivised to deliver a PPS solution. Incentives could be placed (broadly) in three categories: price, rights or intrinsic.

- **Price-based measures** would provide direct financial subsidy for the construction of a car park in a PPS over a PPS in building. The benefit is intended to result in positive financial proposition of constructing PPS (i.e. through a land allocation, or cheap availability of PPS spaces).
- **Right-based measures** would create right to allow additional parking (over limits) is developers agreed to deliver parking in PPS.
- **Intrinsic measures**, are based on an incentivising the 'physiological' aspects of PPS through the use of marketing to encourage the benefits associated with PPS.

The final two models are where the public sector takes the primary role in the delivery of PPS.

Table 5.2 (cont'd): As Assessment of options for implementing PPS in Fishermans Bend

	Description	The mandate for provision of PPS	Planning policy levers	Improving urban design	Public/Private sector mix	Outcomes	Assessment for FB
5. Public Sector Led	Provision of car parking by the public sector that leads to it being adopted as a precinct approach to car parking in lieu of private car parking	Not mandated precinct parking	Policy supports PPS (e.g. through a cash in lieu strategy)	Achieves urban realm benefits if PPS appeal to developers	Requires Public sector investment in PPS. Does not guarantee payback period as developers do not need to adopt the PPS or pay into it	Cash in lieu style model, with not mandatory PPS is a tested model. Could result in long distances to PPS, and financing risks to government	This option is applicable to FB, as it is relatively tested in the Victorian landscape and applicable to Fishermans Bend. However would be first time implementation occurs by government outside of a recognised activity centre.
6. Public Sector Led	Provision precinct car parking by the public sector which the private sector are required to use	Mandated precinct parking	Mandated contribution	Achieve urban realm benefits across the site. The public sectors investment provides flexibility.	Public sector investment is required; however, the mandatory nature on contributions means that there is certainty on the payback period (which opens opportunity for private sector investment streams)	Is likely to lead to a network of PPS across the area.	This option is not recommended as phasing, costs and planning for this (relatively to the other options) is likely to be prohibitive.

5.3 Scenarios for PPS

Shifting to a precinct parking station (PPS) model for car parking in Fishermans Bend could be a fundamental change to the normal expectations and behaviours of both developers and end users/purchasers of property. Indeed, it is a step change for the industry.

While Fishermans Bend has some similarity with conditions in the Melbourne CBD, this context and market considerations are very different. The CBD has evolved a precinct parking model as evidenced by standalone car parking and parking unbundled from the land use. In addition, the CBD has seen development of property with little or no car parking with an acceptance that demand and supply will reach equilibrium, through a combination of parking as a specialist use and behaviour change.

The capacity for the CBD to operate with elements of a precinct model are a function of its historical development, its density, and its combination of land use and other transport options. In simple terms, the CBD, and the way parking is delivered and provided for, has evolved and changed over time.

Fishermans Bend is a different context. It has little established alternative transport of scale. It is proposed to have a different density and mix of uses. It has no established pattern of development of relevance (old industrial that does not relate to its future as a mixed use residential and employment precinct).

A precinct parking approach could be positive for all stakeholders and the urban realm in the long term, the scale of change from 'normal development practice' will make realising it challenging.

Distilling the wide range of options available, this report provides two strategic scenarios for the implementation of PPS at Fishermans Bend.

Both scenarios have been designed to:

- Influence travel demand and contribute to achieve a pattern of transport use (and mode shares) that is similar to Melbourne CBD.
- Improve urban design and ensure that development frontages are not dominated by parking or access to parking.
- Promote development efficiency through supplying parking efficiently.
- Facilitate a flexible parking arrangement to cater to changes in future parking needs.
- Allow for changes in demand and technology such as moving towards autonomous vehicles and shared cars.

Within the detail of the scenarios, there are still options, primarily relating to parking policy and the investment required by the public sector. Some discussion of this is included in the report.

The two scenarios, that illustrate worked examples, are:

Scenario 1 – Market led delivery of PPS

PPS mandated off-site across Fishermans Bend.

Scenario 2 – Clustering of PPS in key strategic areas through incentives

Public sector incentives (i.e. parking limits) for PPS, though PPS are not mandated.

5.3.1 Commercial & Market Considerations

The property sector is relatively slow to evolve and change. There is a general conservatism within the development community where: projects and investment decisions are high cost and long duration; and end user/purchaser expectations are influenced by supply.

The shift required to realise a PPS model will not happen organically. It will need to be either:

- **Directed through regulation.** Simply mandating PPS without the necessary infrastructure and a supporting environment will more likely stifle or halt development rather than delivering the required comprehensive industry change; or
- **Encouraged through incentives, facilitation and risk transfer.** The level of subsidies and support required to trigger a shift from the status quo (in the absence of any requirement to change) will be a high burden on the public sector.

In practice, the shift change required to realise a PPS model will need to be both directed and encouraged. The required mix of these two levers can be expected to change over time as the market matures and precedents are created.

Insight: Melbourne's Parking Congestion Levy

The Victorian congestion levy is an annual levy that aims to reduce traffic congestion in central Melbourne and encourage motorists to frequently use public transport instead. Introduced in 2005, the congestion levy is charged each calendar year to off-street private and public car parking spaces in two specified areas. A parking space may be exempt if it is either:

- Owned by a specific class of owner, and/or
- Used for a particular purpose

The classes or purposes that are exempt include but are not limited to residential (car space used by a resident, whether owned or leased), guest parking at hotels, apartments or similar, parking for maintenance services and loading bays, visitor parking, spaces owned by particular organisations, emergency vehicle parking.

For public car parks, the owner and the operator of the public car park are jointly and severally liable to pay the levy. For private car parks, the owner of premises pays the levy. Every owner or operator of a public or private car park must register with the State Revenue Office of Victoria.

The Potential Application to Fisherman's Bend and PPS

In applying the levy to FB, typically the owner of the PPS (whether government or private) would pay the congestion levy each year (without exemptions applied). Private PPSs would likely recuperate their costs by billing individual owners of unbundled parking each year.

As the area grows and develops, further expansion of the congestion levy zone may be warranted to continue downward pressure on car dependency and the ability to pay for transport infrastructure in the area through hypothecation of the income from the levy.

The congestion levy will generally not owe to residents in FB, even if they own a parking space in a centralised PPS, which has a range of other parking categories available within the structure.

5.3.2 Scenario 1 – Market Led Delivery of PPS

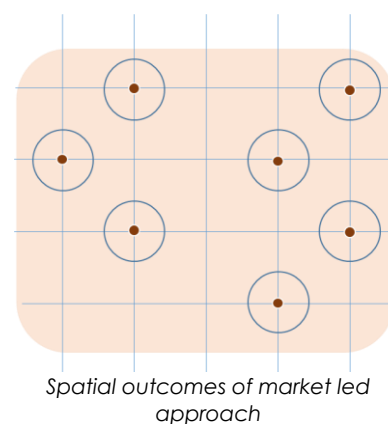
Scenario 1 adopts a market led approach to implementing mandated PPS across Fishermans Bend.

In this scenario, parking policy continues as per the Capital City Zone with the maximum rate, but parking in PPS is mandated (off-site) and relies on market led solutions to deliver it. There is no precedent for this model and therefore the legal and planning implications must be explored further.

However, the approach has a number of potential benefits, including:

- Urban realm improvements
- Market led efficiency in delivering sites
- Likely to reduce supply of parking on site, through any impacts on adjoining neighbourhoods need to be considered fully
- The phasing of development and parking is a challenge that the market will need to resolve.

The likely spatial outcome is PPS being located where developers see economic returns in co-locating PPS. Outside of these areas, the provision of parking is likely to be very low.



Due to the lack of parking provided by developers, this approach may generate investment in commercial parking stations.

Figure 5.4: Scenario 1 SWOT Analysis for Potential Delivery Options for Precinct Parking Stations

	Strengths	Weaknesses
PPS delivered through private sector	Likely to reduce parking and manage demand. Promotes efficiency and innovation through the private sector. Potential for economies of scale. Urban realm outcomes. Reduces public sector investment	It is an untested model in the Victorian market. No existing planning precedent. Likely to result in resistance from the development sector. No certainty for future residents or workers of spaces being delivered Hard to work in fragmented land ownership models
	Opportunities	Threats
	May result in parking providers delivering PPS in response to market.	A new approach that will need planning, political and community support.

The emergence of precinct parking (parking unbundled from development and as a standalone land use) will be slow if left to market forces alone. In a precinct of fragmented landholdings, it will also likely develop without the level of master planning that would ensure it is located to optimise the urban realm and city design benefits.

Even on large, multi-project sites in single developer control (e.g. various Docklands precincts) a PPS model has not materialised through market forces. This indicates that PPS either negatively impacts project financial feasibility or are perceived to affect feasibility, or does not have end-user/purchaser support.

Without any established precedent, there will be significant market reluctance to pursue and embrace the PPS model. A PPS model may not emerge at all. If PPS do materialise, they are unlikely to evolve in a coordinated way to fully capture the benefits of the PPS approach. A combination of push and pull factors will be required, at least in the near term.

Mandating PPS, as proposed, is an obvious reaction and solution to the expected market inertia. However, this mechanism on its own will cause development activity to be stifled if the

mandatory requirement is too difficult or risky to realise or uncompetitive with other development opportunities elsewhere.

Factors that incentivise and facilitate PPS are likely to be required in combination with a mandatory requirement to achieve the desired PPS outcome. To trigger the step change to a PPS environment, some market intervention is likely to be required at least in the short term to establish precedents and demonstrate broad market acceptance.

This intervention needs to address:

- Access to PPS land in the locations where PPS are desired to be delivered. If PPS are not available and unable to be developed because private land ownership does not release appropriately located sites, development will be stifled and will slow or stop.
- Precinct master planning to give certainty about land use and ensure PPS can be sited to contribute to the broader urban Vision.
- Inflexibility that typically requires car parking to be tied to a specific land use through the approved planning permit or agreement on title. For innovative precinct parking models to evolve and a new market in PPS to emerge, and to retain flexibility to change over time, parking needs to be unbundled from other land use.
- The cost and financial feasibility impact.

Development and parking need to be delivered in parallel. If car parking is mandated to be in a centralised facility, no development will occur until there is certainty that the centralised facility will be available. Similarly, if there is insufficient demand to justify a centralised facility, development of it will not commence.

Transitional arrangements are required to address this 'chicken and egg' scenario. These may include utilising existing vacant development land and underutilised buildings for at grade car parking in the short term. This can transition to multi-deck facilities as demand emerges.

The public sector could provide certainty and lead investment by acquiring sites and building precinct car parks with cost recovery through future transfer back to the private sector. Alternatively, sufficient certainty may be achieved by leasing land/buildings to provide interim precinct car parking with a view to the market developing permanent solutions in the medium term.

Worked Example

A large landowner develops a single site with three residential towers and a small mixed use commercial centre. This landowner co-locates parking to maximise floor plates and builds additional car parking spaces to supply neighbouring buildings. The neighbouring residential buildings are sold with car parks as an 'additional-extra' in the centralised facility. This trend also occurs near commercial areas where larger developers invest in PPS.

Outside of these clusters, the majority of residential developments within Fishermans Bend reduce car parking to near zero as parking is not allowed on-site.

5.3.3 Scenario 2 – Clustering of PPS in Key Precincts

This scenario delivers PPS through creating public sector incentives (i.e. decreased/increased parking allowance) to promote PPS. Developers are not mandated to deliver PPS however, incentives are provided to encourage PPS within 'PPS zones'.

The scenario could deliver PPS in areas designated as 'Parking Precinct Zones' and outside of this the Capital City Zone applies where developers can simply provide parking on-site.

Early involvement and investment by the public sector could be used to secure the facilities, provide certainty to the private sector, and unlock an opportunity to deliver a landmark architecture aligned to a precinct. This approach is illustrated with a number of the case studies, including HafenCity and Bendigo.

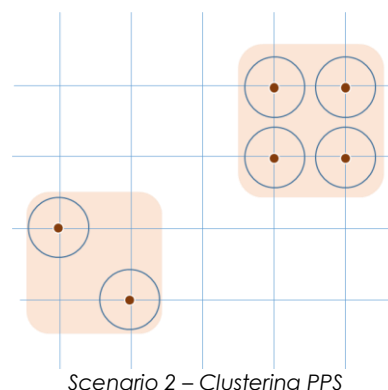


Figure 5.5: Scenario 2 SWOT Analysis for potential delivery options for precinct car parking stations

	Strengths	Weaknesses
PPS delivered through a clusters in key activity areas	<p>Able to construct parking centre in design that matches precincts.</p> <p>Potential for economies of scale if multiple centres exist.</p> <p>Long-term return (via developer contributions) guarantees return on investment.</p> <p>The model is known to supply parking as it is proven.</p> <p>Provides certainty on parking supply for surrounding community.</p>	<p>Requires public investment (cost of construction and land does not equal parking dispensation).</p> <p>Potentially increases parking in the precinct (relative to current provisions), therefore, does not support transport aims.</p> <p>Tested model for non-residential uses.</p> <p>Potentially a BAU outcomes, of which frontages dominated by vehicle access (and crossovers) is a critical one.</p>
	Opportunities	Threats
	<p>A mix of minimum and maximum parking controls can be applied to different uses.</p> <p>Potential for a network of parking precinct stations.</p> <p>Potential to align PPS with certain clusters of uses.</p> <p>Able to supply less on-street parking.</p> <p>Able to provide parking to support certain users/uses (e.g. family access).</p> <p>Able to help deliver local policy (e.g. improved cycling facilities)</p> <p>Opportunity for future conversion to 'higher' uses, including change in use and as new technology is adopted.</p>	<p>In this scenario, the delivery of the parking stations, due to the certainty of investment, could be by the public or private sector. In both models, up-front investment by the public sector is likely required, which carries the risks associated with market take-up.</p>

The clustering of PPS into key precincts is a location and distribution decision that could be delivered through a range of public sector and market mechanisms. The clustering allows the targeting of urban design benefits in areas where they have greatest impact.

If PPS are:

- delivered in advance of or in parallel to development
- convenient to the development
- and available at significantly discounted cost than developing within development.

then they may be an attractive alternative to onsite development car parking, particularly where site size or configuration make parking difficult to design.

Delivery in advance or in parallel requires upfront investment before there is mature demand or sufficient return on investment. As a result, the approach needs to be underpinned by public sector investment, which is likely to be significant given that a good coverage of PPS is required

to deliver some convenience of car parking sites (i.e. relatively close to development). This will require the public sector to designate and possibly secure key sites. Delivering convenient PPS will always be hampered where development is occurring across multiple dispersed sites in individual control without coordinated staging.

Delivering at a significantly discounted cost will require substantial subsidies to the PPS developer, or not full cost recovery in the case of public sector development off PPS.

To minimise the compromises that developers and end users will accept in terms of delivery timing, convenience and cost discount, PPS may need to be made mandatory. This will require developers to select from the car parking options available at the nominated cost, so long as the options are not so poor or so costly as to be a disincentive that stifles development. Alternatively, the developers can compete by controlling the development of their own PPS solution to satisfy the mandatory requirement.

The balance of development land outside the 'Parking Precinct Zone' will evolve with market forces, which for a long time will likely be the status quo of onsite car parking. If however, PPS are effectively mandated across the entire precinct (it could be effectively mandated by a very low or zero maximum car parking rates), a different market would develop inside and outside the Parking Precinct Zones.

In this circumstance, a value transfer mechanism may be appropriate to level the market between areas that have a public sector supported PPS regime and areas that do not.

To maximise the compromises that developers and end users will accept in terms of delivery timing, convenience and cost discount, PPS may need to be made mandatory

5.3.4 Parking Policy Options

Scenario 2 lends itself to using a combination of parking minimums and maximums across Fishermans Bend to achieve different local aims and assists in a clustering of PPS in key areas (or in precincts).

For example:

Capital City Zone Maximum Limits continue to apply to the majority of Fishermans Bend.

In areas designated as 'Parking Precinct Zone':

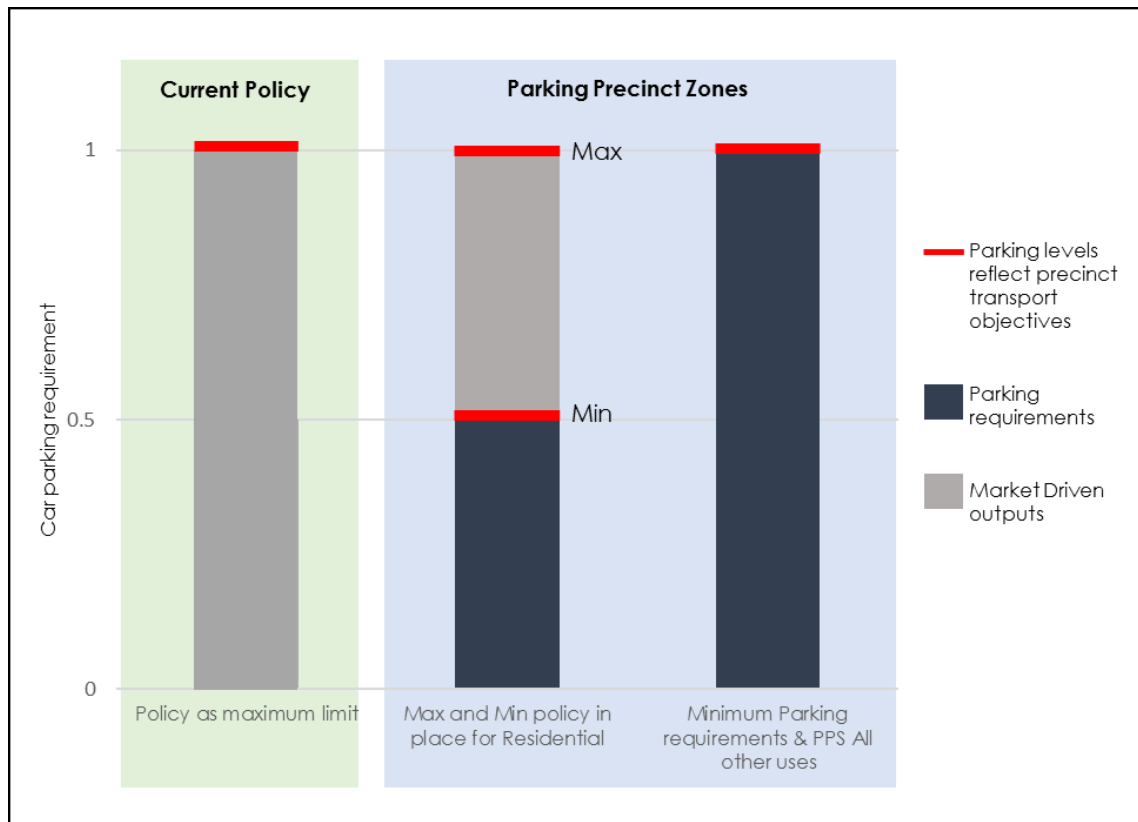
- i Minimum requirements and Maximum Parking Limits applies to residential development
- ii PPS is mandated for all other uses and minimum requirements apply to provide certainty of return on upfront investment.

This is a more complex scenario but it aims to achieve:

- o A continuation of the current demand management strategy outside of PPS zone, using a model that is tested and understood by its current application to the Melbourne CBD.
- o In Parking Precinct Zones, the use of minimums provides certainty of the level of return from investment in PPS. The use of both maximum and minimums results in the ability for developers to reduce car parking and therefore achieve wider transport aims.

The difference between the current policy and Parking Precinct zones is illustrated in Figure 5.6.

Figure 5.6: Capital City Parking Compared Against Indicative Parking Precinct Zones Rates



5.3.5 Costs & Cost Recovery

The application of any controls that affect site development potential or development cost will have an impact on land value. This will obviously be resisted if the impact is negative.

Mandating PPS will not of itself impact land values, but the implementation of this policy would require some sites to be developed for uses without any car parking provision and other sites to be developed with surplus car parking or exclusively for car parking. This change to the development opportunity will impact value as some sites can replace car parking area with sellable/lettable area and other sites are burdened with more car parking.

Value implications are further complicated by different characteristics of car parking and other development uses. For example, a site with poor access to views and daylight may be more suited to car parking; an efficient car park requires particular footprint dimensions and is typically confined to low and midrise levels, unable to efficiently take full advantage of high-rise height limits.

The value at which car spaces are currently being sold in developments does not necessarily reflect the full development cost including land, profit and risk. Car parks are developed to meet purchaser demand and make sales but a not necessarily to generate a return themselves.

Detailed modelling is required to confirm the potential to recover costs of PPS. Any prospect of cost recovery will however require the following:

- Identifying sites for PPS that are unsuited for higher value uses so as not to pay a premium for the land component.
- Maximising the development envelope of PPS sites – a site with high-rise development potential will be underdeveloped if used for parking.
- Capturing value from increased sellable area released by relocating car parking off site.

The value and cost transfer that is necessary to maintain a level playing field in a PPS model can occur through market forces or developer contributions. Where contributions are used, they may need to be site specific to properly reflect the development impact of the PPS environment.

Indicative Costs of the Implementation of PPS

As discussed in the previous sections, the cost of implementing PPS across Fishermans Bend depends on the implementation model.

The traditional approach to this problem would be to multiply the construction cost per space (the rule of thumb being \$20,000 - 30,000) by density of spaces (and land value of suitable sites) needed to provide the coverage across Fishermans Bend (circa seven PPS for a site every 400m). However, given that the model we have developed uses a combination of planning policy and incentives to implement PPS such a simplistic cost model was not deemed a valuable contribution.

The value at which car spaces are currently being sold in developments does not necessarily reflect the full development cost incl. land, profit and risk.

5.3.6 Measuring Success Factors

Success in creating a PPS approach in Fishermans Bend could reasonably be assessed as:

- Positive return on investment for a public sector PPS taking account of the nonfinancial benefits. Full cost recovery would be a desirable aim but perhaps never realised.
- Establishment of PPS as a new property class and land use that is embraced and delivered wholly by the private sector without external subsidies or facilitation.

The key early factors to achieving this success are:

- Establishing precedents as a foundation for proving wider developer/end user acceptance. This will require early investment in demonstration projects.
- Ensuring certainty that parking can be provided through PPS as and when required. In an area of privately held property, this may require strategic acquisitions.
- A level development playing field delivered through value capture and transfer mechanisms.
- Flexibility about how car parking is allocated, secured and operated so that innovative solutions can evolve.

Ultimately a PPS model is about shifting car parking from being an adjunct to other land uses and making it a stand-alone land use that is treated as a piece of urban infrastructure and amenity similar to a school or a park.

6. Conclusions and Implementation

6.1 Conclusions

The analysis demonstrates that Parking Precinct Stations can deliver a range of beneficial outcomes when developing urban renewal areas.

Given this, analysis demonstrates that there are a range of options for implementing PPS in Fishermans Bend. We have represented two scenarios that illustrate worked examples for implementing PPS at Fishermans Bend:

Scenario 1 is likely to deliver a 'non-traditional' approach to car parking in Fishermans Bend.

It will likely be challenging to adopt this non-traditional approach due to the scale of Fishermans Bend, the ownership patterns and public transport coverage. Under this option, developers and purchasers at FB may balk at investment if they consider PPS to be too risky, which could ultimately stifle development.

Scenario 2, though a more complex policy, provides a more flexible option that can evolve to meet the needs of a growing community, the development and public transport phasing.

It is therefore recommended that Scenario 2 be progressed to more detailed planning.

Though a more complex policy [option], it provides a more flexible option that can evolve to meet the needs of a growing community.

6.2 Implementation

The PPS Implementation Plan shall require the following foundations in order to achieve the desired outcomes. These include:

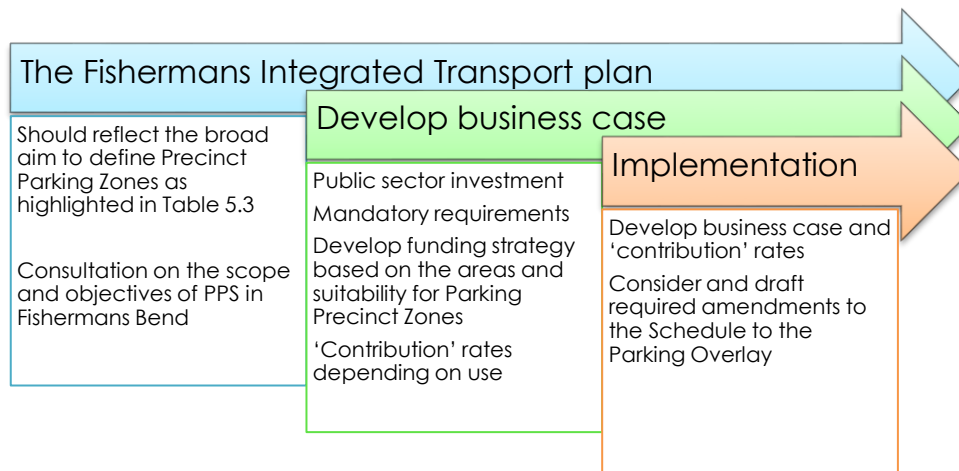
- PPS will need to be underpinned by early provision of public transport and active transport infrastructure on the ground.
- PPS will require a range of new approaches to owning, leasing, managing parking by either / both body corporates and/or establishment of a quasi-public statutory authority. This will be a challenge for the market and will require a certain determination by government.
- It is unlikely that the private sector will deliver PPS if higher profits can be realised by other types of development. Thus, PPS will need to demonstrate commercial viability as well as represent the highest and best use of land, to ensure developer confidence.

The following provides an outline the key steps to realising Parking Precinct Stations in Fishermans Bend:

- i The Fishermans Bend Integrated Transport plan should reflect the broad aim to define Precinct Parking Zones.
- ii Develop in greater detail the potential demands associated with future development within Parking Precinct Zones and identifying potential sites which could facilitate PPS. This provides the basis to further ensure the principles of Need, Nexus, Equity and Accountability can be satisfied.
- iii Develop funding strategy based on the areas and suitability for Parking Precinct Zones, including Spatial analysis at a precinct level to determine appropriate sites and capacities.

- iv Review suitable parking levels (Highlighted as red line in Figure 5.6).
- v Develop business case and 'contribution' rates depending on use and mandatory requirements.
- vi Consider and draft required amendments to the Schedule to the Parking Overlay and incorporate into the Melbourne and Port Philip Planning Schemes through a planning scheme amendment process.

Figure 6.1: Implementation of PPS



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