# Glen Eira Activity Centre Parking Management Strategy

Final Report

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# Revision Schedule

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# Executive Summary

Glen Eira City Council's existing policies and strategies acknowledge that the current trend of car use in Glen Eira is unsustainable and that the traditional transport planning approaches are not working. The policy documents recognise the role that parking plays in Glen Eira's activity centres. The 2020 Parking Policy calls for a new approach to parking that ensures appropriate parking is provided to support the economic vitality of shopping strips. This involves better management of parking supply and demand. The ITS underscores the need to optimise car parking to create accessible and attractive places while recognising the contentious nature of parking removal.

The expected increase in population growth and development in and around activity centres in Glen Eira highlights the importance for good parking management. Increasing pressure on finite parking resources will become more urgent, making it vital to use all available tools to manage parking effectively to maintain liveability within Glen Eira.

Council acknowledges that access to high quality public transport facilities is a key factor influencing car use and recognises that access to high quality public transport facilities in Glen Eira is not spread equally. The major activity centres are well served by public transport, however driving and walking are the preferred mode of travel to activity centres.

Parking occupancy surveys highlighted locations which are currently operating near or at capacity, with very high demands recorded in both Carnegie and Elsternwick, and moderate demands recorded in Bentleigh. This will likely result in further congestion as vehicles circulate trying to find available parking, impacting the experience of those visiting activity centres. These characteristics collectively point to the need for a suitable parking management approach for the activity centres. In the context of the parking management tools and the graduated application process discussed above, a move toward the further use of technology and user pays parking would represent the likely next steps in advancing the management of parking across key activity centres.

There are three key recommendations that form the basis for change in these centres. Recommendation 1 refers to the existing ongoing activities that Council is currently undertaking related to reviews and monitoring. Recommendation 2 relates to the installation of parking sensors to collect parking occupancy and duration-of-stay data to support parking management activities, as well as support enforcement activities and allow for coordination with wayfinding and real-time information sharing. Recommendation 3 relates to the introduction of user pays parking. Options within each of these recommendations have been provided for consideration, offering a range of benefits, impacts and limitations.

The report outlines the findings of financial modelling which estimates revenue generation over time. The results indicate a 5-year net cumulative profit in the order of $52,300,000, based on the user pays parking program being applied in full across the three activity centres. Alternative scenarios have also been tested, indicating 5-year net cumulative profit ranging from $2,900,000 to $20,100,000. These considerations may assist to further balance the revenue generation objectives with community / user expectations and should be further explored as part of the future strategic planning stages of the program should Council deem it appropriate to proceed.

In summary, this report aims to help Council proactively manage parking in the future as its population grows. The report looks at how Council manages parking in its activity centres now, considers whether

current management practices will be sufficient to manage increased parking demand in the future and makes a series of recommendations that Council can choose from to manage future parking.

# Table of Contents

**1 Introduction ..... 1**
1.1 Overview ..... 1
1.2 Purpose and Scope of Report ..... 1
1.3 Objectives ..... 1
1.4 Principles ..... 2
1.5 Study Area ..... 2
1.6 References ..... 3

**2 Strategic Context ..... 5**
2.1 State Government Policy Context ..... 5
2.1.1 Plan Melbourne 2017-2050 ..... 5
2.1.2 Plan for Victoria ..... 5
2.2 Glen Eira Strategic Policy Context ..... 6
2.2.1 Glen Eira Integrated Transport Strategy 2018-2031 – 2024 Refresh ..... 6
2.2.2 Glen Eira Parking Policy 2020 ..... 6
2.2.3 Community Engagement ..... 7
2.2.4 Other Relevant Documents ..... 9
2.2.5 Summary of Policy Review Findings ..... 9
2.3 Trends and Challenges ..... 10
2.3.1 Population Growth ..... 10
2.3.2 Development Patterns ..... 10
2.3.3 Climate Change ..... 10
2.3.4 Parking Management Implications ..... 11

**3 Transport Context ..... 12**
3.1 Road Network ..... 12
3.2 Public Transport Network ..... 13
3.3 Cycling Network ..... 15
3.4 Movement and Place ..... 16
3.5 Summary of access to activity centres ..... 17

**4 Parking Context ..... 18**
4.1 Current Approach to Parking Management ..... 18
4.2 Existing Usage ..... 19
4.2.1 Aerial Imagery Sample Counts ..... 19
4.2.2 Daytime Parking Demand Spot Counts ..... 19
4.2.3 Evening Parking Demand Surveys ..... 25
4.3 Surrounding Areas ..... 26
4.3.1 Parking Management in Surrounding Councils ..... 26
4.3.2 Major Activity Centres in Adjacent Local Government Areas ..... 27
4.3.3 Nearby Private Major Shopping Centres ..... 28
4.4 Factors Affecting Future Approach to Parking Management in Glen Eira ..... 30

**5 The Parking Management Task ..... 32**
5.1 Overview of Parking Management ..... 32
5.2 Parking Management Tools ..... 33
5.3 Parking Restriction Assessment ..... 35
5.4 Parking Technology ..... 36
5.5 Paid Parking ..... 37
5.5.1 Parking Management ..... 37
5.5.2 Travel Demand Management ..... 38
5.5.3 User Pays ..... 39
5.5.4 Mechanisms to Support User Pays Parking ..... 40

**6 A Rationale for Parking Management Change ..... 41**

**7 Recommendations for Parking Management in Glen Eira ..... 44**
7.1 Overview ..... 44
7.2 Recommendation 1 – Reviews and Monitoring ..... 44
7.3 Recommendation 2 – Parking Sensors ..... 45
7.3.1 Parking Sensors Option 1 ..... 45
7.3.2 Parking Sensors Option 2 ..... 45
7.4 Recommendation 3 – User Pays Parking ..... 46
7.4.1 User Pays Parking Option 1 ..... 46
7.4.2 User Pays Parking Option 2 ..... 47
7.4.3 User Pays Parking Option 3 ..... 47
7.4.4 User Pays Parking Option 4 ..... 47
7.4.5 User Pays Parking Option 5 ..... 48

**8 Application of User Pays Parking to Glen Eira ..... 49**
8.1 Temporal Application of User Pays Parking ..... 49
8.2 User Pays Parking Fee Structure ..... 49
8.3 User Pays Parking Payment Infrastructure ..... 51
8.4 Supporting User Pays Parking Management Mechanisms ..... 52
8.4.1 Managing Parking Overspill ..... 52
8.4.2 Enforcement ..... 52
8.4.3 Community and Stakeholder Engagement ..... 54

**9 Financial Considerations ..... 55**
9.1 Overview ..... 55
9.2 Base Financial Model ..... 56
9.2.1 Spatial Extents ..... 56
9.2.2 Operating Characteristics ..... 56
9.2.3 Payment Structure ..... 57
9.2.4 Model Outcomes ..... 57
9.3 Scenario Testing ..... 60
9.4 Limitations and Assumptions of the Model ..... 60
9.5 Recommendations from Financial Modelling ..... 61

**10 Stakeholder Outcomes ..... 62**
10.1 Community Response ..... 62
10.2 Engagement ..... 64
10.3 Reinvestment of Parking Revenue ..... 64
10.4 Mitigating Measures ..... 64
10.5 Examples of Success ..... 65

**List of Tables**

Table 4-1: Parking Occupancies (Nearmap)
Table 4-2: Adjacent Councils Parking Management Approach
Table 4-3: Major Activity Centres in Adjacent LGAs
Table 4-4: Activity Centre Projected Changes
Table 5-1: Supporting Mechanism Options
Table 6-1: Application of User Pays Parking Principles to Three Major Activity Centres
Table 8-1: Paid Parking Fee Structures and Locations in Nearby LGAs
Table 8-2: Payment Infrastructure Options
Table 9-1: Spatial Extent of Parking
Table 9-2: Revenue Summary – Base Case
Table 9-3: Cost Summary – Base Case
Table 9-4: Cumulative Total Summary – Base Case
Table 9-5: Sensitivity Testing

## List of Figures

Figure 1-1: Glen Eira Study Area
Figure 2-1: Kerbside Hierarchy in Major Activity Centres
Figure 3-1: Road Network Key Routes
Figure 3-2: Glen Eira Public Transport Network
Figure 3-3: Transport Precincts
Figure 3-4 – Glen Eira Cycling Network
Figure 3.5: Movement and Place Framework Street classification
Figure 4-1: Parking Occupancy – Bentleigh Activity Centre
Figure 4-2: Parking Occupancy – Carnegie Activity Centre
Figure 4-3: Parking Occupancy – Elsternwick Activity Centre
Figure 4-4: Parking Occupancy – Bentleigh Activity Centre
Figure 4-5: Parking Occupancy – Carnegie Activity Centre
Figure 4-6: Parking Occupancy – Elsternwick Activity Centre
Figure 4-7: Major Shopping Centre Location Relative to Glen Eira Map
Figure 5-1: Parking Management Approach
Figure 5-2: Kerb Parking Diagram
Figure 9-1: Base Case – 5-Year Cumulative Revenue and Costs
Figure 9-2: Base Case – Year End Financial Position
Figure 10-1: Culture Shock Curve

## List of Appendices

**Appendix A Parking Survey Data**
**Appendix B Financial Model Assumptions**
B.1 Revenue Inputs
B.2 Cost Inputs
B.2.1 Staff
B.2.2 Ongoing Operating Costs

# 1 Introduction

## 1.1 Overview

Glen Eira's population is growing. The introduction of housing targets by the state government in Plan for Victoria proposes an additional 63,500 dwellings in Glen Eira to 2051. While much of this development will be directed to activity centres to capitalise on the transport infrastructure and provide an opportunity for travel by public transport, it will still inevitably bring more cars.

Effective parking management is essential to ensure that activity centres remain focused on people, allowing them to shop, meet friends, dine, and access services conveniently. Furthermore, these centres must facilitate easy pedestrian and cyclist access. Excessive traffic congestion can significantly diminish the appeal of these areas.

Parking management is becoming increasingly complex as the demand for limited parking spaces grows. The current road network and parking facilities cannot support a substantial rise in car usage.

## 1.2 Purpose and Scope of Report

Stantec was engaged by Glen Eira City Council to prepare a strategy that focuses on the management of parking within its activity centres, including:

1. Understanding the strategic context, transport context and macroeconomic trends affecting transport and parking in Glen Eira.
2. Consideration of Council's current approach to parking management.
3. Introduce a range of parking management tools, including time restrictions, paid parking concepts, and parking technology.
4. Evaluate how best to implement these tools in Glen Eira's key activity centres (Bentleigh, Carnegie, and Elsternwick), including financial considerations and scenario testing.
5. Provide a set of recommendations with the objective of achieving the best transport and parking outcomes for the LGA.

## 1.3 Objectives

The overall objectives of this parking management study include:

- Review parking restrictions within the municipality and consider their relative effectiveness.
- Provide rationale and recommendations for the implementation of additional parking measures to effectively manage parking in the key activity centres.
- Provide recommendations for the use of parking related technology, including rationale and proposed locations for the installation of in-ground sensors.
- Provide recommendations for consideration of additional paid parking locations.
- Provide a summary of the potential revenue benefits of a user pays parking scheme.
- Provide recommendations for the implementation of the strategy.

## 1.4 Principles

The guiding principles for the management of public parking within activity centres are:

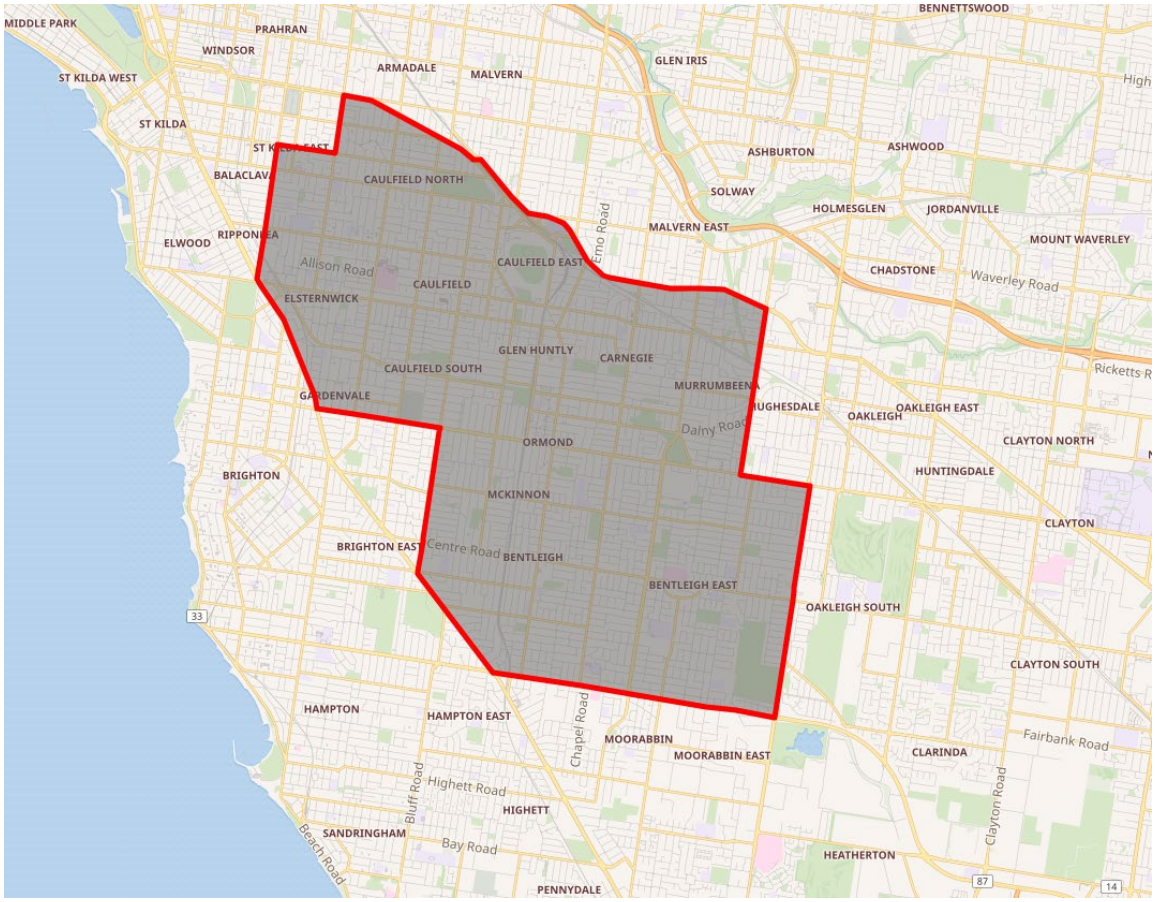
- efficient use of space
- traffic congestion reduction
- encouragement of sustainable transport
- economic viability
- environmental impact reduction
- accessibility and equity
- safety and security
- technology integration
- land use optimisation.

## 1.5 Study Area

The Glen Eira Local Government Area (LGA) is located approximately 10 kilometres southeast of Melbourne's Central Business District (CBD) and forms part of Melbourne's inner southeast region. Glen Eira has a population of 158,717, with this number projected to grow rapidly over the next twenty years. Glen Eira's growing population is placing increasing pressure on Council's infrastructure and services. It is bordered by five other local government areas (LGAs): Port Phillip, Stonnington, Monash, Kingston, and Bayside.

Glen Eira has six major activity centres that provide services, employment, housing, transport and social interaction. These centres are Bentleigh, Carnegie, Caulfield, Elsternwick, Glen Huntly and Moorabbin Junction.

*Figure 1-1: Glen Eira Study Area*




*Source: OpenStreetMap*

## 1.6 References

In preparing this report, reference has been made to the following:

- Plan for Victoria
- Plan Melbourne
- Austroads Guide to Traffic Management
- Glen Eira Activity Centres Community Engagement Summary (2017)
- Glen Eira City Council Parking Policy (2020)
- Glen Eira Integrated Transport Strategy 2018-2031 – 2024 Refresh
- Glen Eira Council Plan 2021-2025
- Glen Eira 2040 Community Vision
- Climate Emergency Response Strategy 2021-2025
- Integrated Transport Strategy Action Plan 2024-2025
- Parking Policy Engagement Findings
- Parking Service Plan 2024 (Pilot)
- Better Streets Better Places 2023-2033
- Local Structure Plans:

  - » Carnegie Structure Plan 2022
  - » Caulfield Major Activity Centre Structure Plan 2022
  - » Elsternwick Structure Plan 2023
  - » Glen Huntly Structure Plan 2021-2036
  - » Bentleigh Major Activity Centre Structure Plan 2024.
- Parking survey data as referenced throughout the report (as collected by Stantec and Council)
- other documents as nominated.

# 2 Strategic Context

## 2.1 State Government Policy Context

### 2.1.1 Plan Melbourne 2017-2050

Plan Melbourne is a strategic plan to guide the growth and development of Melbourne over 35 years. The plan aims to support jobs, housing, and transport while enhancing Melbourne's distinctiveness, liveability, and sustainability. It envisions Melbourne as a global city of opportunity and choice, with a focus on creating inclusive, vibrant, and healthy neighbourhoods. It also calls for development of 20-minute neighbourhoods and the need to green the city to mitigate and adapt to climate change.

Plan Melbourne 2017-2050 forms the basis of regional planning policy in all metropolitan planning schemes and has guided Melbourne's development over many years.

### 2.1.2 Plan for Victoria

The recently released Plan for Victoria is a community-led strategic land use plan for all Victoria. It will likely replace Plan Melbourne 2017-2050 and existing regional growth plans as a unified, long-term strategy for the entire state. The Plan is structured around five pillars: self-determination and caring for Country; housing for all Victorians; accessible jobs and services; great places, suburbs and towns; and sustainable environments. To achieve its overall housing goals, Plan for Victoria has set housing targets for LGAs, with a housing target of 63,500 new dwellings by 2051 applying to Glen Eira.

Plan for Victoria includes an activity centre program that aims to facilitate more housing in existing, well-connected areas by identifying and planning for growth around public transport, jobs, and services. The program includes planning for 60 activity centres throughout Melbourne, with an objective of more than 300,000 new homes to be built around these activity centres by 2051. Nine of these activity centres are located in Glen Eira: Caulfield, Carnegie, Murrumbeena, Hughesdale, Elsternwick, Glen Huntly, Ormond, Elsternwick, and Bentleigh (classified as neighbourhood activity centre). In addition, Chadstone and Malvern, activity centres located on the boundaries of Glen Eira and boundary LGAs, have walkable catchments that extend into Glen Eira. The proposed increases in development around these activity centres will be supported by well-managed parking facilities, but due to their well-connected locations, will rely upon high usage of public transport and active travel modes.

#### Activity Centre Planning

The state has prepared an Activity Centre Plan for Moorabbin as one of the first ten 'pilot' activity centres for which the state government has commenced detailed planning. The plan was recently approved and new controls were included in the Bayside, Kingston and Glen Eira planning schemes.

The state is preparing activity centre plans for Carnegie, Murrumbeena and Hughesdale (although Council has an adopted amendment based on an adopted structure plan for Carnegie). The state will undertake activity centre plans for Caulfield, Glen Huntly, Ormond, Bentleigh and Elsternwick late 2025 or early 2026. Council has adopted structure plans for all of these centres except Ormond and anticipates the state will use the adopted structure plans as the basis for their activity centre plans. These plans anticipate significant growth in these centres.

These plans will guide what the activity centres could look like over the next 10, 20 and 30 years. They seek to increase housing density within the activity centre core. The increased population density around the activity centres will put further demands on transport infrastructure and services in the area, including parking. It is important that a well-considered parking management approach is implemented in the major activity centres in Glen Eira, to ensure that the right amount of parking continues to be available for visitors and residents of the centres.

## 2.2 Glen Eira Strategic Policy Context

### 2.2.1 Glen Eira Integrated Transport Strategy 2018-2031 – 2024 Refresh

The Glen Eira Integrated Transport Strategy (ITS) 2018-2031 – 2024 Refresh envisions “a city of child-friendly neighbourhoods that are connected to a network of vibrant and well-designed walkable activity centres”.

This strategy recognises that continued growth of car use will contribute to further traffic congestion and parking concerns (Principle 3 discussed in the ITS). This growth is unsustainable as Glen Eira is a middle/inner ring municipality with limited/no opportunity to increase road capacity. The recent community travel survey shows that most people recognise the challenges associated with relying on cars, although some more than others. People want alternatives to cars but would like these options to be more attractive, such as more frequent bus services and safer cycling conditions.

Principle 4 highlighted in the ITS recognises that parking will continue to play an important role and complement Glen Eira’s transport system. Given the role private cars continue to play in people’s lives, parking is an important part of the overall transport system. Optimising car parking is important when creating accessible and attractive places for our businesses and residents. Glen Eira recognises that removing car parking can be highly contentious.

Principle 11 recognises that urgent climate change action is essential to realise the Glen Eira 2040 Community Vision. The council seeks to embed climate change action in everything they do. Further, the Climate Emergency Response Strategy 2021–2025 calls for transport to support the sustainability agenda, including encouraging the uptake of active and public transport, as well as EVs.

The ITS has an objective to create walkable activity centres throughout Glen Eira to encourage people to visit and stay within attractive local precincts. A walkable activity centre is an attractive and exciting destination that encourages residents and visitors to visit, shop and stay within these precincts, rather than driving to a shopping centre. These streets should be designed to balance the needs of diverse users and create an environment that ensures easy access, safety, comfort and enjoyment for all. Infrastructure improvements associated with walkable activity centres include: widened footpaths and quality pedestrian networks, street furniture, decluttering, shared zones and road closures, safe and high-quality connections, consolidated parking, needs-based short-term parking, safe connections to cycle paths and lanes, and optimised road and public space based on needs at each location.

### 2.2.2 Glen Eira Parking Policy 2020

The Glen Eira City Council Parking Policy aims to address increasing demands for access and parking in Glen Eira while reducing traffic congestion. It prioritises the safe and efficient movement of people, services, and goods, and provides a framework for managing parking to benefit the entire community.

The policy introduces innovative parking initiatives, restrictions, and updates to the Residential Parking Permit System, all to balance the needs of residents and businesses and support the Council's vision for transport and movement as outlined in the Integrated Transport Strategy 2018–2031.

Since car ownership and usage started to grow in the 1950s and 1960s, many cities have tried to support their usage and accommodate ever increasing traffic volumes. In more recent decades, including in Europe since the 1960s and 1970s, there has been some critique to this approach; that instead of supporting cars, cities should base transport planning around people, with mass transit able to move large volumes of travellers efficiently while bikes and walking are often effective for shorter distance trips. The Council is seeking to improve transport for people, including a review of how it manages its car parks.

The Glen Eira Parking Policy recognises that parking demand grows with car usage, primarily due to increasing population growth, lack of high-quality public transport, and easy access to parking facilities. This parking policy focuses on both managing the supply of parking and curbing the demand on parking. Measures include managing parking supply through restrictions, permits, and new technology, and reducing demand by encouraging active and public transport modes, reducing car ownership, and promoting car-sharing.

The policy provides a clear user group hierarchy for activity centres, prioritising safety for all road users, pedestrians and public transport (see Figure 2-1). It seeks to always provide a safe and comfortable walking environment and create attractive places that encourage people to visit and stay longer. Further, it seeks to ensure that appropriate parking is provided in suitable locations to support the economic vitality of the shopping strip.

### 2.2.3 Community Engagement

In recent years, Glen Eira Council has consulted with the community across a range of engagement programs, including the annual Victorian Community Satisfaction Survey (CSS), the *Our Priorities, Our Future* online survey and community priorities panel, the *Our Place, Our Plan* online survey and community priorities panel, and a broad community survey associated with the Integrated Transport Strategy 2024 refresh.

Community sentiment is typically mixed about approaches to parking.

- Broad engagement revealed mixed support for increased parking fees and charges through *Our Priorities, Our Future.*
- The Community Priorities Panel for *Our Priorities, Our Future* revealed high support for paid parking fees as a means for Council to raise revenue.
- The Community Priorities Panel for *Our Place, Our Plan* focused on improving the environmental impact of parking facilities.
- The Integrated Transport Strategy refresh 2024 showed general community support for the ITS approach to parking, including the need for a review and management.
- The Community Satisfaction Survey shows that parking is an area of relatively low performance, and relatively low importance compared to Council’s other services.
- General community sentiment about parking has remained somewhat negative over time, as found in sentiment analysis of engagement programs from 2017 to 2024.

*Figure 2-1: Kerbside Hierarchy in Major Activity Centres*

| Priority | User group | Comments |
|---|---|---|
| Highest | Safety and other conditions | To improve safety for all road users and to provide access for emergency vehicles, waste collection and street cleaning. |
| | Pedestrians | Widen footpaths to increase safety awareness and cater for a rise in footpath activity.<br>Reduce intersection crossing lengths via treatments such as kerb outstands and continuous footpath treatments at minor junction crossings.<br>Parking may need to be replaced. |
| | Public transport zone | Typically tram/bus stops. Includes taxi/rideshare set down and pick-up parking. |
| | Accessible parking | On-street medium-term parking bays for people with a disability or empathetic parking needs (two to four hour parking). |
| | Drop-off/pick-up | Short-term parking for drop-off/pick-up (such as at train stations). |
| | Bike parking | An area dedicated to parking for bicycles at key destinations such as train stations and community facilities such as the libraries. |
| | Car sharing | Where high scheme membership and demand in particular locations justify the allocation of bays. |
| | Customers | Short and medium-stay private vehicle parking for business and retail activities in the area (such as one or two hour restrictions). |
| | Loading Zones | Short-term parking associated with servicing of businesses within the area. |
| | Local employees | Encourage employees to come by public transport. |
| | Residents and their visitors | Encourage use of off-street parking contained within private developments. |
| Lowest | Commuter parking | Long-term commuter parking will be provided within specific off-street locations ie. train station car parks. On-street parking will be prioritised for local users rather than commuting. However, where excess parking exists in areas with no residential or commercial interface, longer term commuter parking will be allowed. |

Source: Glen Eira Parking Policy, 2020

### 2.2.4 Other Relevant Documents

Other Council plans and policies that were reviewed as part of this study and inform the strategic policy context for this study include:

- Local Policy – General
  - » Council Plan 2021-2025
  - » 2040 Community Vision
  - » Climate Emergency Response Strategy 2021-2025
- Local Policy – Transport Focus
  - » Integrated Transport Strategy Action Plan 2024-2025
  - » Parking Policy Engagement Findings
  - » Parking Service Plan 2024 (Pilot)
  - » Better Streets Better Places 2023-2033
- Local Structure Plans
  - » Carnegie Structure Plan 2022
  - » Caulfield Major Activity Centre Structure Plan 2022
  - » Elsternwick Structure Plan 2023
  - » Glen Huntly Structure Plan 2021-2036
  - » Bentleigh Major Activity Centre Structure Plan 2024

### 2.2.5 Summary of Policy Review Findings

Glen Eira City Council's existing policies and strategies acknowledge that the current trend of car use in Glen Eira is unsustainable and that the traditional transport planning approaches is not working. The Integrated Transport Strategy (ITS) and activity centre structure plans aim for a 50/50 modal split between car and non-car modes by 2031, aligning with the Council's Climate Emergency Response Strategy that supports zero or low emissions transport. This vision aligns with the overall community goal of creating "a thriving and empowered community working together for an inclusive and sustainable future".

Glen Eira's policies emphasise the integration of transport and land use, focusing on enhancing the place value of activity centres and making them desirable destinations. The City Plan encourages accessibility to these centres by non-car modes as a preferable transport planning approach that supports residents to switch from cars to other modes, especially for short local trips.

The policy documents recognise the role that parking plays in Glen Eira's activity centres. The 2020 Parking Policy calls for a new approach to parking that ensures appropriate parking is provided to support the economic vitality of shopping strips. This involves better management of parking supply and demand. The ITS underscores the need to optimise car parking to create accessible and attractive places while recognising the contentious nature of parking removal.

Overall, transport sustainability and placemaking are key components of Glen Eira's policies, and must be supported by appropriate parking management strategies which are part of an integrated approach to reducing private vehicle travel, promoting sustainable travel choices, and making activity centres attractive places to spend time. This policy base justifies a clear rationale for the travel demand management approach as part of the overall parking management approach in Glen Eira.



## 2.3 Trends and Challenges

### 2.3.1 Population Growth

Metropolitan Melbourne is experiencing rapid population growth, with a projected population of approximately 8 million people by 2051. Victorian Government policy says every council area, particularly inner Melbourne, must take its share of this growth. It is vital that government policies consider this growth and address the associated challenges of demographic change.

Glen Eira's population is forecast to grow from 158,717 in 2025 to 198,431 in 2046, a 25% increase over a 20-year period[1]. For Glen Eira, this means around 30,260 new residents, 14,020 new households, 9,502 jobs, and up to 22,432 additional cars[2]. But as documented within the Parking Policy, Glen Eira already has the least amount of open space of any local government area in Victoria, streets are heavily congested, and parking is highly contested. This population growth will increase the number of people that Glen Eira's activity centres serve and will also increase pressure on Glen Eira's transport network.

The impact of in the order of 22,000 more cars on local streets means more congestion, a less safe environment, especially for children, and the erosion of the amenity that typifies Glen Eira's neighbourhood streets.

### 2.3.2 Development Patterns

The Glen Eira LGA is largely a residential municipality. Detached houses make up 37% of Glen Eira's current housing stock, with 29% apartments, 25% units/small townhouses and 9% side-by-side dual occupancy townhouse[3]. There has been a recent shift in housing types, with the number of detached houses decreasing and being replaced by units/small townhouses and apartments. Due to restrictions with residential zoning such as the Neighbourhood Residential Zone, which covers 70% of all land in Glen Eira, high density apartments have been concentrated to activity centres.

Housing development in Glen Eira will continue to grow to accommodate population growth. Achieving this objective will require significant urban infill development throughout the municipality, putting extra pressure on existing transport infrastructure and requiring a proactive response with regards to transport planning.

### 2.3.3 Climate Change

The impacts of climate change such as increased average temperatures, increased frequency and severity of extreme weather events and sea level rise are prompting governments to take action to mitigate greenhouse gas emissions and introduce policies that adapt to changed environmental conditions. Many governments have introduced environmental sustainability objectives in policy, as well as increasing societal preference for sustainable policies, products and services.

[1] https://forecast.id.com.au/glen-eira/about-forecast-areas
[2] Glen Eira City Council – Parking Policy 2020
[3] Glen Eira City Council – Housing Strategy 2022

Glen Eira City Council's Climate Emergency Response Strategy seeks to embed climate change action to achieve net zero community emissions by 2030. Council's ITS strives to increase sustainable transport modes and aims to improve the mode share of non-car trips by 2031.

### 2.3.4 Parking Management Implications

The expected increase in population growth and development in and around activity centres in Glen Eira highlights the importance for good parking management. Increasing pressure on finite parking resources will become more urgent, making it vital to use all available tools to manage parking effectively to maintain liveability within Glen Eira.

Further, environmental sustainability objectives related to climate change highlight the need for a shift towards sustainable and affordable transport modes such as active and public transport. Good parking management practices can assist with achieving this modal shift. Sustainability also refers to minimising transport's adverse impact on the environment, where building more roads and parking spaces is not sustainable from a land availability perspective and growing car congestion can have negative impacts on the economy and the community's quality of life.

# 3 Transport Context

This section outlines the transport networks for the various transport modes available within Glen Eira, and how this supports access to the major activity centres.

## 3.1 Road Network

Key vehicle routes within the Glen Eira LGA are the Nepean Highway, Dandenong Road, South Road, Centre Road, North Road, Warrigal Road, Murrumbeena Road, Kooyong Road, Glen Eira Road, Poath Road, East Boundary Road, Neerim Road, Grange Road, Jasper Road and Hotham Street. These key routes carry high vehicle traffic volumes with the aim of ensuring movement of vehicle traffic is as efficient as possible (Figure 3-1).

These key routes are supported by the local road network, which provides a network of walking and shopping streets that provide good access to the activity centres. Key streets within the local road network include Centre Road, Glen Huntly Road, McKinnon Road, Patterson Road, Neerim Road, Balaclava Road, Hawthorn Road, Koornang Road, North Drive, Sir John Monash Drive and Derby Road.

*Figure 3-1: Road Network Key Routes*




Source: Integrated Transport Strategy, 2024

## 3.2 Public Transport Network

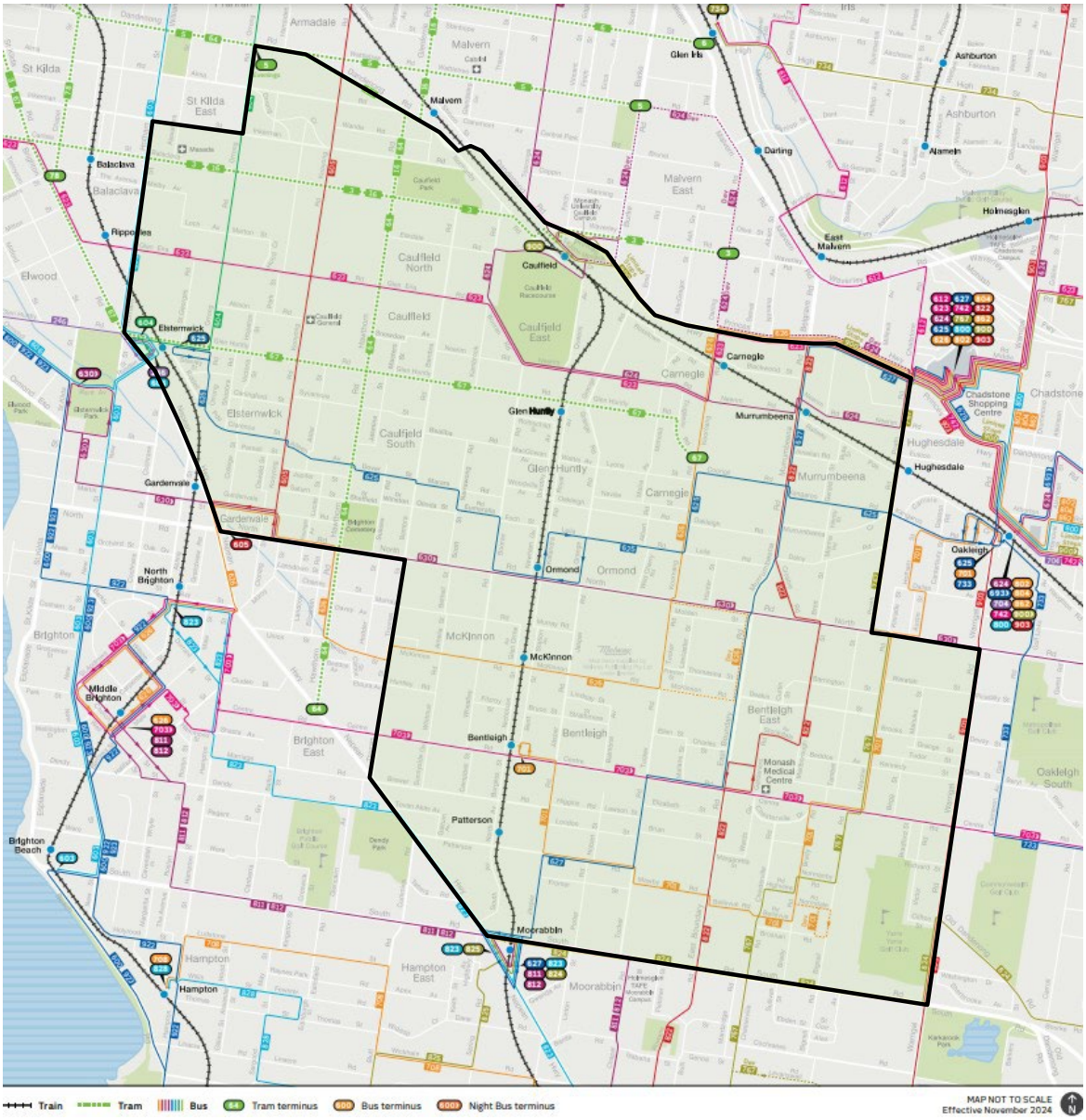
The Glen Eira LGA is served by a variety of public transport options, including trains, trams and buses (refer Figure 3-2).

Three train lines service stations in Glen Eira – Sandringham, Frankston and Cranbourne/Pakenham lines.

- Tram routes #3, #5, #64, #67 and #16 operate across Glen Eira.
- Bus routes #605, #623, #627, #630, #703 and #822 travel through the municipality.

These public transport routes connect to major activity centres in Glen Eira, with all major activity centres being accessible by at least a bus service, and some by train, tram and bus.

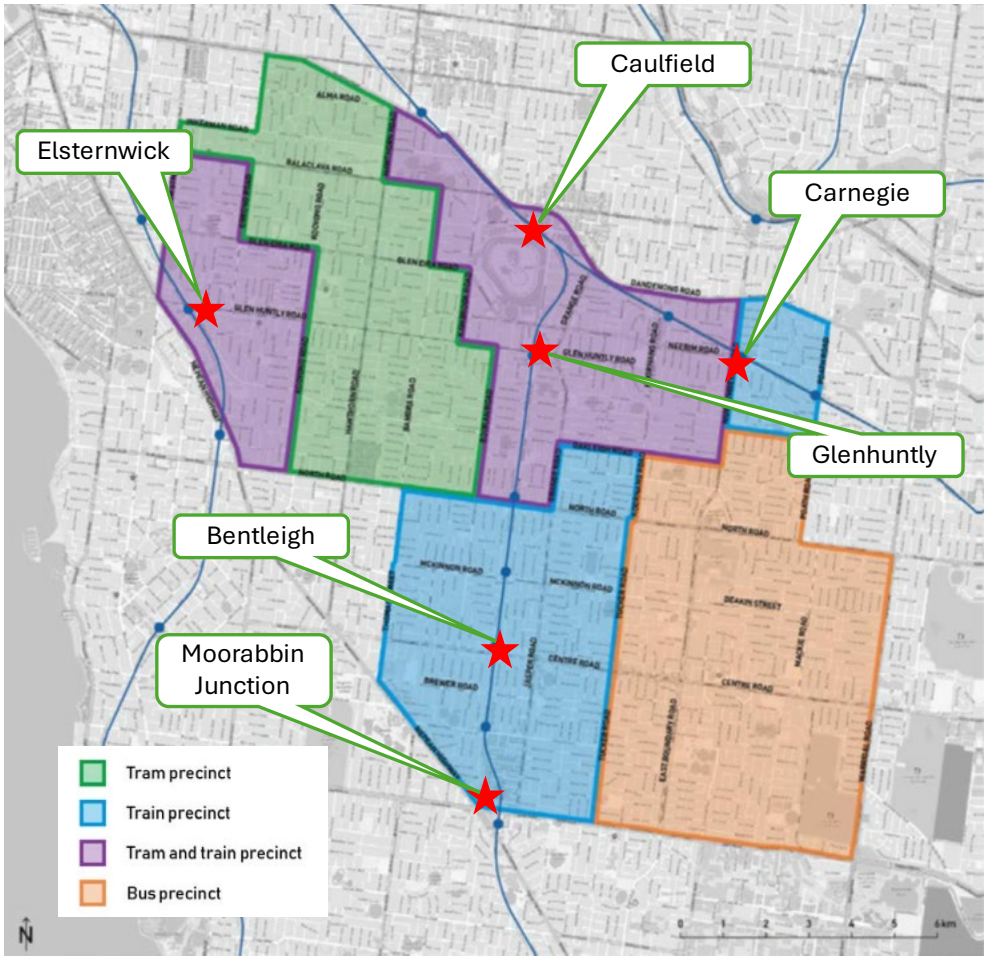
*Figure 3-2: Glen Eira Public Transport Network*



Council's Parking Policy considers Glen Eira to have four types of transport precincts (refer Figure 3-3):

- Train and Tram Precinct
- Train Precinct
- Tram Precinct
- Bus Precinct

*Figure 3-3: Transport Precincts*




Base map source: Glen Eira Parking Policy

The transport precincts in which the six major activity centres within Glen Eira are located are as follows:

- Elsternwick – Tram and train precinct
- Carnegie – Train precinct (located on the eastern boundary of train and tram precinct)
- Bentleigh – Train precinct
- Caulfield – Tram and train precinct
- Glenhuntly – Tram and train precinct
- Moorabbin Junction – Train precinct

A key purpose of the transport precincts is to inform decision-making when determining on-street parking restrictions (timing and days/hours of operation) and to ensure that there is a consistent treatment based on 'land use' and 'use and access' principles. All major activity centres in Glen Eira have at least tram or train access (or in some cases, both) as well as bus services. These public transport options indicate that residents have greater transport modal choices beyond the car, highlighting the opportunity to induce higher rates of sustainable transport to reach activity centres. This modal shift is encouraged through the ITS. Less reliance on driving will assist the parking management task by reducing demand.

## 3.3 Cycling Network

The following routes are recognised by the Glen Eira City Council as "key routes" for cycling: Rosstown Rail Trail, Nepean Highway, South Drive, Crosbie Road, Deakin Street, Bignell Road, Mackie Road, Thomas Street, McKinnon Road, Riddle Parade, Tucker Road, Koornang Road, Bambra Road, Orrong Road, Inkerman Road. These corridors have varying levels of safe cycling infrastructure. Most of these cycling routes have painted on-road bike lanes, which provide no protection from moving vehicles, or no cycling infrastructure.

Council's ITS sets out Council's commitment to providing a comprehensive network of safe local routes for walking and riding bikes, connecting key points of interest such as schools, activity centres, railway stations, Council facilities and open space. Actions include improvements to footpaths, signs and crossings, and incremental improvements to on-road cycling space.

There is an opportunity to improve the quality of the Glen Eira cycling network and ensure all activity centres are accessible by bike. Improved infrastructure will assist with the behaviour change needed to achieve modal shift towards active transport. Increased active transport rates will help the parking management task by reducing demand for car parking in activity centres.

*Figure 3-4 – Glen Eira Cycling Network*




Source: Integrated Transport Strategy, 2024

## 3.4 Movement and Place

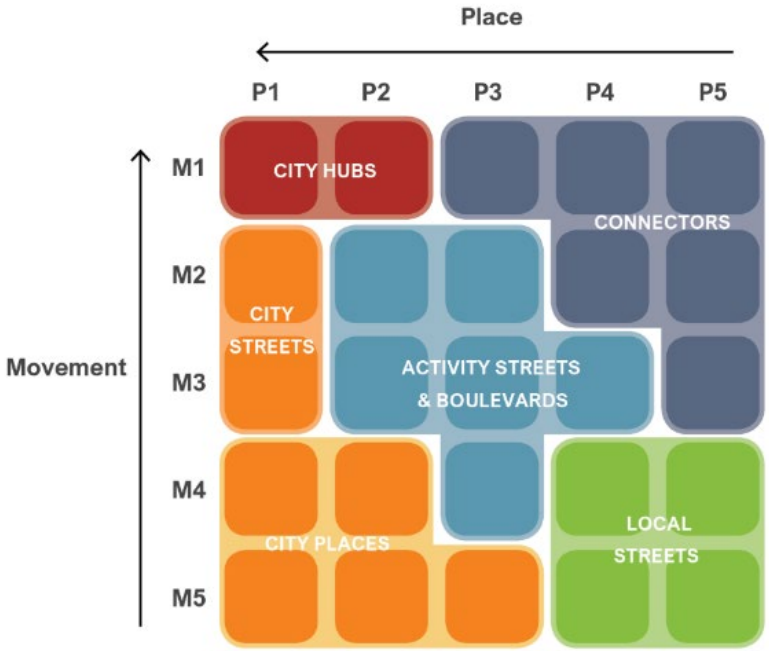
The Movement and Place Framework (Department of Transport, Victoria, 2019) takes a future-focused, multi-modal approach to transport network planning. It takes into consideration the diverse role places play in planning the types of transport modes appropriate to a local road or street. In this new language, roads and streets are defined by the context of a local place and assigned various ‘movement’ and ‘place’ classifications. The framework offers a common language for coordinated transport planning between transport and planning agencies and local governments. It also provides a consistent approach to assessing the performance of the road and transport network, identifying project requirements and assessing project solutions.

Within the context of parking management, movement and place is a useful tool in developing parking plans and strategies. The movement and place framework categorises streets into an order of hierarchy that dictates parking policies and guides demand management tools for specific corridors. Different parking restrictions or technologies can be suitable for some or all of the aforementioned street types and can be used to enhance or support them.

In an activity centre setting, there is high demand for movement together with access to shops and services by all modes. This demand will increase as the activity centres see more development. Activity streets and boulevards need to balance these competing demands whilst aiming to provide a high-quality public realm that supports businesses, traders and neighbourhood life. Where a high place value is defined for a street or area, there may be a greater likelihood of removing car parking to facilitate

place improvements. Alternatively, where a high movement value is defined for a street or area, there may be a greater likelihood of parking bans to facilitate vehicle movement on road.

*Figure 3.5: Movement and Place Framework Street classification*




Source: Department of Transport, Victoria, 2019

## 3.5 Summary of access to activity centres

Council acknowledges that access to high quality public transport facilities is a key factor influencing car use and recognises that access to high quality public transport facilities in Glen Eira is not spread equally. The major activity centres are well served by public transport; they all have a railway station and Caulfield, Elsternwick and Glen Huntly have trams as well. While the Djerring Trail has improved cycling access to Carnegie, cycling access more generally needs to be improved if it is going to contribute to mode shift. There is a comprehensive and well-maintained network of footpaths that support walking. Driving and walking are the preferred mode of travel to activity centres.

# 4 Parking Context

## 4.1 Current Approach to Parking Management

Council's Glen Eira Parking Policy 2020 sets the current approach to managing parking in activity centres. It is based on the principle that parking will be managed to provide best access for higher-priority users, with the user group priorities set out in the parking hierarchy for each land use type.

The measures used to manage supply and demand, as documented in the policy, include:

- *Supply:*
  - » *Parking restrictions are used to manage the parking in areas of high demand.*
  - » *Parking permits provide tailored access to parking for particular user groups.*
  - » *New technology can direct drivers to vacant parking spaces.*
  - » *Specifying parking requirements associated with land-use development.*
- *Demand:*
  - » *Supporting and encouraging people to walk, cycle and use public transport.*
  - » *Reducing the need for car ownership (as car ownership has a direct relationship to car use).*
  - » *Car share that provides access to a vehicle when necessary, without the need to own a car.*

For on-street parking in major activity centres, higher priority is given to pedestrians, public transport, accessible parking and high-turnover drop-off/pick-up spaces, with lower priority for commuters, employees and residents and their visitors. For off-street parking, higher priority is given to accessible parking and medium to long-stay customer parking, with lower priority for residents and commuters

Timed parking restrictions are in place in all major activity centres (on-street and off-street), with restrictions outlined in the hierarchy based on users and their needs. The key restriction types are:

- Pick-up/drop-off = No Parking or <15minP
- Customers on-street = 1P or 2P
- Customers off-street = 2P to 4P
- Commuters and traders = unrestricted (off-street within the centre and on-street outside of the centre).

Restrictions typically apply on Monday to Friday (predominantly 8:00am to 6:00pm) and Saturday (8:00am to 12:00pm or 6:00pm). The majority of spaces are typically unrestricted in the evenings after 6:00pm and on Sundays. It is noted that Council is currently reviewing the days and times of parking restrictions within the major activity centres to manage increasing demand for parking outside of existing timed restrictions.

The parking policy states that Council will include parking sensors and guidance systems as part of all off-street car parks above 100 spaces. There are no sensors currently in place.

With regards to any potential for reductions in the supply of parking, Council's current aim is to avoid the loss of commercial on-street parking and retain parking where possible. Where parking is required to be

removed, measures may include reinstatement of restricted parking to adjacent spaces, redesign of parking layout to minimise parking loss, or creation of new off-street parking (where significant and high-demand parking is lost).

## 4.2 Existing Usage

### 4.2.1 Aerial Imagery Sample Counts

Sample parking demand information was collated via historical aerial imagery sourced from Nearmap[4]. Suitable days and times were selected to represent a variety of daytime activity centre operating periods, as follows:

- Sunday Oct 13, 2024, 12:30pm-1:00pm
- Thursday Aug 04, 2024, 11:30am-12:15pm
- Monday May 13, 2024, 10:15am-10:45am

Table 4-1 has been prepared to summarise the findings of the aerial imagery parking demands. It shows that the centres of Bentleigh, Carnegie and Elsternwick all demonstrated high occupancies either on-street, off-street or both.

*Table 4-1: Parking Occupancies (Nearmap)*

| Parking Occupancy % | Sun 13/10/24 | | Thu 04/08/24 | | Mon 13/05/24 | |
|---|---|---|---|---|---|---|
| | On-street | Off-street | On-street | Off-street | On-street | Off-street |
| Bentleigh | 75% | 75% | 80% | 77% | 72% | 52% |
| Bentleigh East | 75% | 91% | 63% | 66% | 70% | 78% |
| Carnegie | 72% | 73% | 71% | 96% | n/a | n/a |
| Elsternwick | 89% | 90% | 87% | 65% | 87% | 66% |
| Glenhuntly | 58% | 45% | 78% | 47% | 44% | 36% |

### 4.2.2 Daytime Parking Demand Spot Counts

Parking demand spot counts at the major activity centres of Bentleigh, Carnegie and Elsternwick were undertaken by Stantec on Wednesday 19 February and Thursday 20 February 2025. Two spot counts were collected at each of the centres, consisting of one count in the morning (9:00am-11:00am) and one count during the middle of the day (11:00am-2:00pm).

These results were supplemented by daily counts undertaken by Council in these same centres from Wednesday 5 February to Tuesday 11 February 2025, where hourly demands were collected between 5:00pm and 11:00pm.

It should be noted that off-street private parking areas, such as car parks associated with specific commercial sites or sites not accessible to the general public (i.e. private basement car parks, residential dwellings, and private commercial carparks) were not included in the surveys.

[4] https://view.nearmap.com/

A summary of the findings for the Wednesday, including the spot counts undertaken by Stantec and the evening surveys undertaken by Council, is provided in Figure 4-1, Figure 4-2 and Figure 4-3, with full survey outputs provided in Appendix A.

*Figure 4-1: Parking Occupancy – Bentleigh Activity Centre*

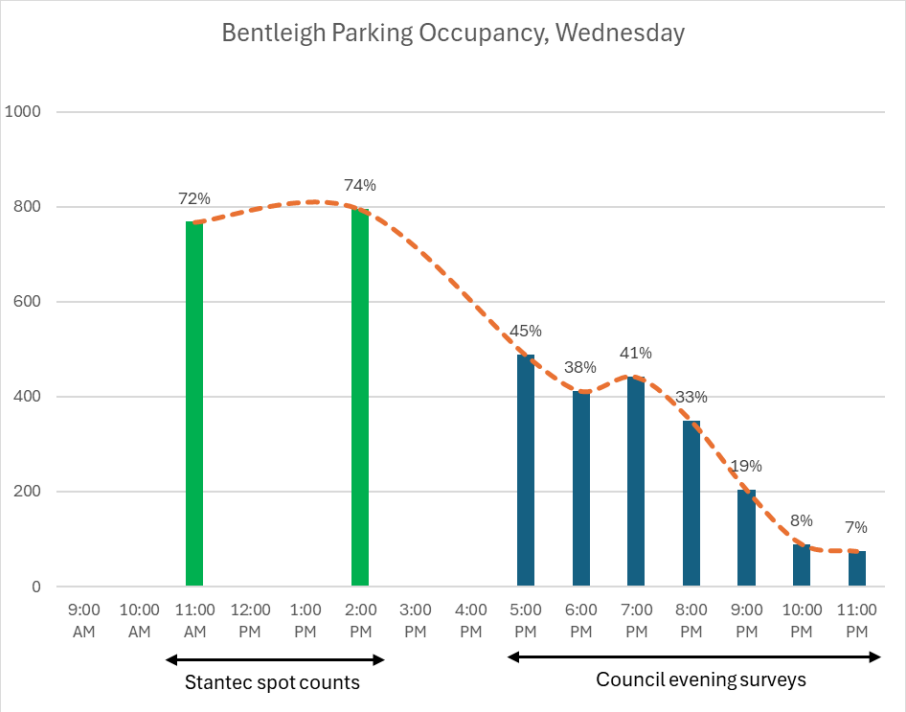



*Figure 4-2: Parking Occupancy – Carnegie Activity Centre*

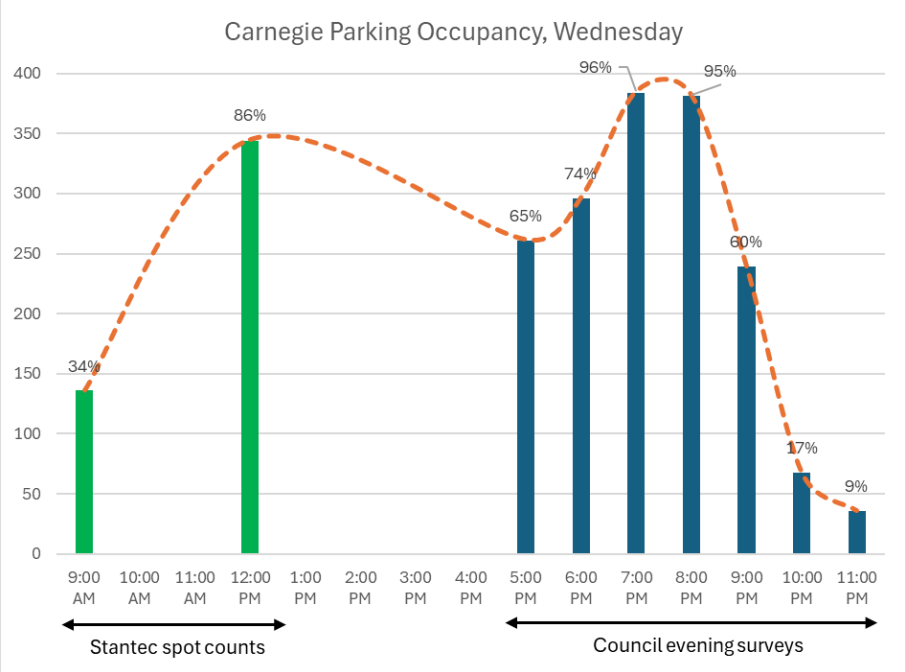
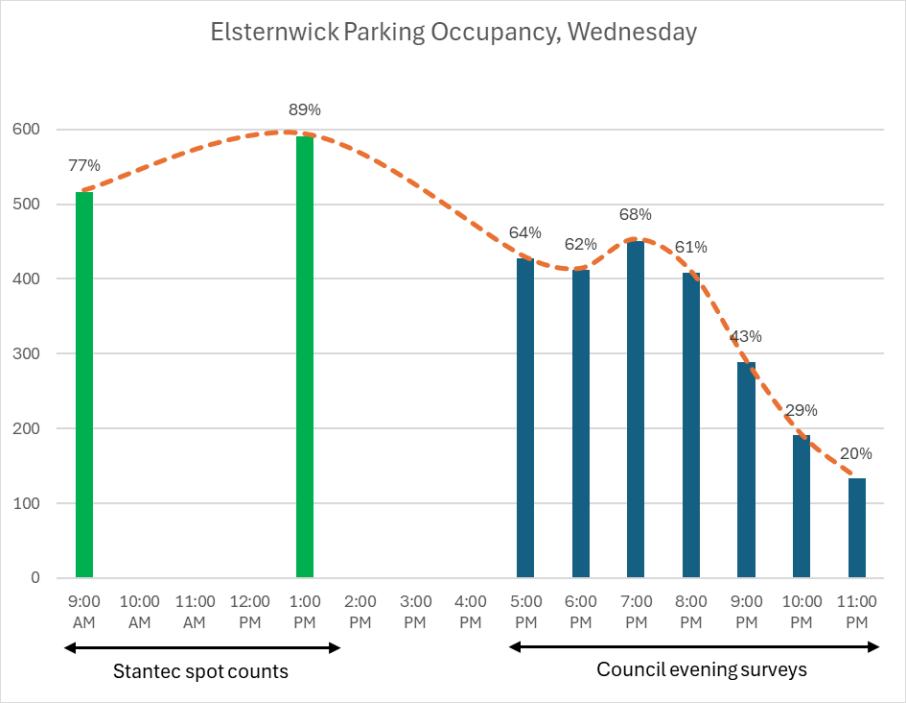


*Figure 4-3: Parking Occupancy – Elsternwick Activity Centre*




The results from the surveys are typically in line with the results obtained through the aerial photography review, with recorded daytime peak occupancies of 74% in Bentleigh, 86% in Carnegie (increased to 96% in the evening) and 89% in Elsternwick.

The peak recorded daytime occupancies by location are presented in the study area maps shown in Figure 4-4, Figure 4-5 and Figure 4-6. Some of the key findings observed from a review of these maps are:

- Parking occupancies in Bentleigh vary greatly by location. Off-street parking areas range from low demand up to moderately high demands, with usage typically higher around the train station. On-street demands range from low to very high, with a number of locations at 100% occupancy. Overall, on-street occupancy was observed to be 75% and off-street occupancy was observed to be 74%.
- On-street and off-street parking occupancies were very high in Carnegie, with only 55 available vacancies across the centre at the midday peak. On-street parking has a peak occupancy of 83%, whilst off-street parking had an even higher occupancy of 86%.
- Elsternwick also had very high observed occupancies in both on-street and off-street areas, with a peak on-street occupancy of 88% and a peak off-street occupancy of 90%.

*Figure 4-4: Parking Occupancy – Bentleigh Activity Centre*



*Figure 4-5: Parking Occupancy – Carnegie Activity Centre*



*Figure 4-6: Parking Occupancy – Elsternwick Activity Centre*



The collected data provides information on the likely daytime peak demands that can be used to justify further investigation. Targeted data collection could be collected at a later date in order to provide additional justification and support for any proposed changes.

### 4.2.3 Evening Parking Demand Surveys

O'Brien Traffic was engaged by Council to undertake a review of the evening and weekend parking demands and restrictions in five activity centres – Bentleigh, Bentleigh East, Carnegie, Elsternwick and Glen Huntly. Parking occupancy surveys were conducted at each centre between 5pm and 11pm from Wednesday 5 February to Tuesday 11 February 2025, and also between 11am and 2pm on Sunday 9 February 2025.

The key findings from the parking demand surveys for Bentleigh, Carnegie and Elsternwick include:

- In Bentleigh, whilst higher demands for parking were observed along Centre Road, in the Vickery Street (Coles) car park and the Daley Street car park, overall parking demands only reached around 50% occupancy, including on Friday and Saturday evenings.
- The parking areas south of the railway line in Carnegie are at or exceeding full capacity at peak times (i.e. 7pm on a Friday and Saturday evening). Whilst peak demands occur on Friday and Saturday evenings, all other evenings across the week also had high observed demands, particularly south of the railway line.
- In Carnegie, observations on the Friday and Saturday evenings indicated congestion occurring with motorists circling in car parks looking for a parking space and parking demands spilling into surrounding streets.
- Many of the parking areas surveyed in Elsternwick were full or almost fully occupied at the peak period on a Saturday evening (i.e. 8pm), with overall demands at 74%.
- Recorded parking demands in Elsternwick were higher towards the western end of the centre and along the full length of Glen Huntly Road. On Friday and Saturday evenings, the areas at the western end of the centre (west of Staniland Grove and Carre Street (including Carre Street)) were fully occupied or almost at capacity.

Duration of stay surveys were also undertaken on the Friday, Saturday and Sunday. These surveys found that the substantial majority of vehicles parking in all centres did so for 2 hours or less and typically 1 hour or less along the main road.

The O'Brien Traffic report provided a range of recommendation options related to changes to parking restrictions. Based on the duration of stay findings, which indicated that most vehicles are already parking for short periods, extending the existing 1 and 2-hour parking restrictions to apply in the evenings and the weekend was concluded as being unlikely to make any significant improvement to these parking conditions. Other options that were offered to address the very high demands at some locations included:

- Extend the existing restrictions to apply on all days from 8am to 6pm in all centres to provide consistent restrictions across all days.
- Extend the existing restrictions to apply on all days from 8am to after 8pm in Bentleigh, Carnegie and Elsternwick due to the high parking demands at peak times.
- Apply ¼ hour restrictions at all other times to Loading Zone areas outside of loading zone periods.
- Extend ¼ hour restrictions to apply at all times.

## 4.3 Surrounding Areas

### 4.3.1 Parking Management in Surrounding Councils

It is useful to understand how surrounding Councils manage their parking in comparison to Glen Eira since they are likely to be experiencing similar issues. Identifying consistencies can be valuable, but it is also good to identify where more complex intervention may already be in place, such as paid parking or permit schemes. Learning from the approaches adopted by others, whether successful or not, can provide useful insights.

A summary of the approach to parking and the associated parking policies for surrounding Councils is provided in Table 4-2.

*Table 4-2: Adjacent Councils Parking Management Approach*

| LGA | Approach | Parking Policy |
|---|---|---|
| Bayside | Adopted Parking Strategy – Parking Sustainably 2023-2033 in 2023.<br><br>Relies on timed parking controls in activity centres, supported by enforcement.<br><br>Most on-street parking in residential areas is unrestricted. Some residential areas have parking controls to protect amenity and access.<br><br>Paid parking implemented in foreshore areas – permit system provided for residents. | Bayside City Council Parking Strategy Parking Sustainably 2023-2033 |
| Port Phillip | Adopted Parking Management Policy in 2020, updated in 2024.<br><br>Provides hierarchy of parking allocation for use throughout LGA.<br><br>Residential parking permit areas are in place, eligible permit holders are exempt from parking restrictions adjoining residential properties in the street of permit issue, any intersecting streets and any immediately parallel streets.<br><br>Paid parking exists across the municipality (on-street and off-street). | City of Port Phillip Parking Management Policy |
| Stonnington | Relies on timed parking controls with enforcement and resident parking permits to manage on-street parking in activity centres and residential areas.<br><br>Off-street council-owned car parks require payment.<br><br>Currently working on a Parking Action Plan that is seeking to implement paid parking for on-street as they have many underutilised off-street spaces and drivers circulate to find free on-street parking. | Parking Action Plan (Draft) – the most recent consultation window closed on Sunday 15 September 2024. |
| Kingston | Adopted Parking Management Policy in 2024.<br><br>Provides user hierarchy for different contexts within LGA such as activity centres/commercial areas, railway stations, residential areas, schools, and industrial areas. | City of Kingston Parking Management Policy |

| LGA | Approach | Parking Policy |
|---|---|---|
| | Relies upon a combination of parking permits, timed parking controls with enforcement, and paid parking to manage parking. | |
| Monash | Relies upon a combination of timed parking controls with enforcement and residential/trader parking permits to manage parking. Paid parking is currently not in place in any of the activity centres.<br><br>In-ground sensors are installed at many of their shopping areas to assist with enforcement and promoting turnover in line with signposted restrictions. | None |

Several surrounding Councils have introduced paid parking in their activity centres as part of their parking management approach. The introduction of paid parking in these areas demonstrates there is a willingness for motorists to pay for convenient parking spaces in an activity centre environment.

### 4.3.2 Major Activity Centres in Adjacent Local Government Areas

There are many major activity centres in the local government areas (LGAs) adjacent to Glen Eira (see Table 4-3). The presence of these major activity centres in close proximity to Glen Eira reinforce the variety of options for shopping, dining and entertainment residents have available to them outside of the own local area.

*Table 4-3: Major Activity Centres in Adjacent LGAs*

| LGA | Activity Centre | Parking Characteristics |
|---|---|---|
| Bayside | Bay Street, Brighton | Timed restrictions |
| | Church Street, Brighton | Timed restrictions, parking sensors |
| | Hampton | Timed restrictions |
| | Cheltenham | Timed restrictions |
| | Sandringham | Timed restrictions, parking sensors |
| Port Phillip | Acland Street, St Kilda | Timed restrictions |
| | Bay Street, Port Melbourne | Timed restrictions |
| | Carlisle Street, Balaclava | Timed restrictions |
| | South Melbourne Central | Timed restrictions<br>Paid parking at South Melbourne Market on Mondays, Tuesdays, and Thursdays. |
| | Fitzroy Street, St Kilda | Mix of paid parking and timed restrictions |
| Stonnington [1] | Chapel Street, Prahran/South Yarra | Timed restrictions |
| | High Street, Armadale | Timed restrictions, parking sensors |
| | Glenferrie Road, Malvern | Timed restrictions, parking sensors |
| | Chadstone | Mix of free parking and paid parking. Majority free for first two hours, then paid after that period elapses. |
| Kingston | Cheltenham-Southland | Cheltenham activity centre streets: timed restrictions<br>Southland shopping centre: Mix of free parking and paid parking. Parking free for first three hours, then paid after that period elapses. |
| | Mordialloc | Timed restrictions<br>Paid parking at foreshore off-street car parks only |
| Monash | Mount Waverley | Timed restrictions |

| LGA | Activity Centre | Parking Characteristics |
|---|---|---|
| | Clayton | Timed restrictions, parking sensors |
| | Brandon Park | Timed restrictions |
| | Glen Waverley | Timed restrictions, parking sensors |
| | Oakleigh | Timed restrictions, parking sensors |

[1] Stonnington is currently preparing a Parking Action Plan that may see paid parking implemented in some of their activity centres.

Any changes to the way in which parking is managed in one of the centres in Glen Eira will need to consider the impact as a result of the parking characteristics of the neighbouring centres. If all centres provide a similar level of service, such as parking availability and comparable pricing, then the centres would be equally attractive for a potential visitor.

### 4.3.3 Nearby Private Major Shopping Centres

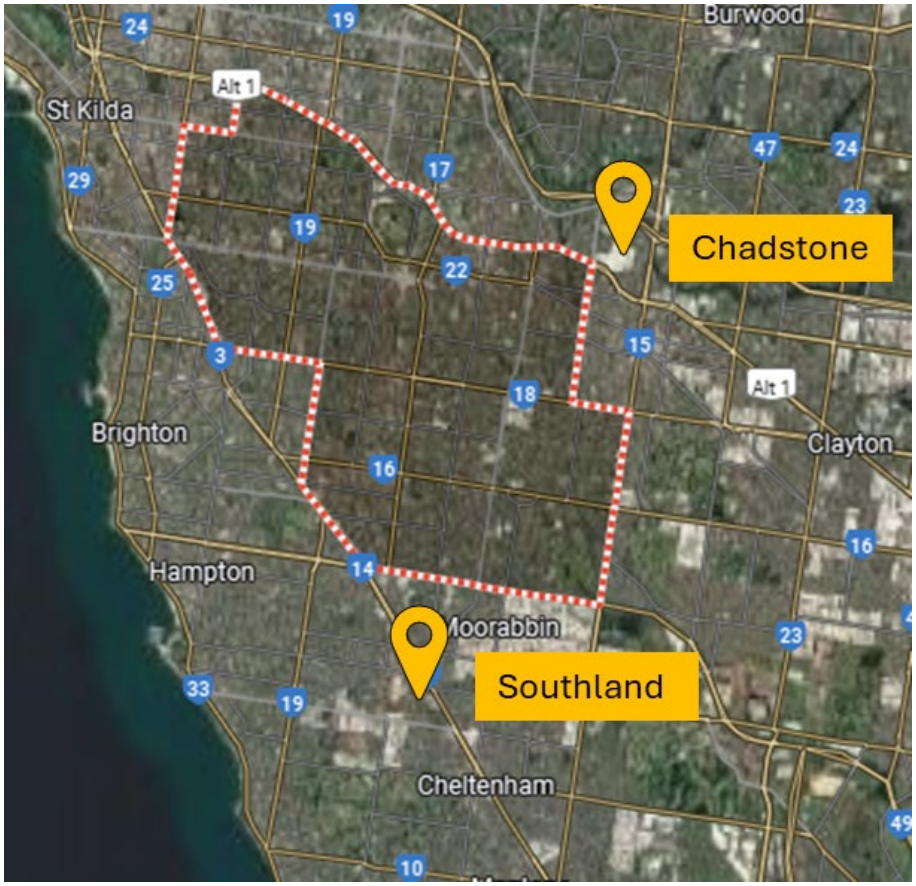
Two major shopping centres are located within the vicinity of Glen Eira – Chadstone and Southland. They are both recognised as major activity centres by the Victoria State Government[5].

Chadstone is located in Malvern East, approximately 300m from the northeastern boundary of Glen Eira. Chadstone is the largest shopping centre in Australia, with 231,497sqm of gross lettable area (GLA), 18.3 million annual customer visits, and 10,000 parking spaces[6]. The majority of parking spaces are free, with some areas attracting a fee for stays longer than two hours.

Southland is located in Cheltenham, approximately 2.5 kilometres from the southern boundary of Glen Eira. Southland has 366 retailers, 129,290sqm of GLA, 12.6 million annual customer visits, and 5,980 car parking spaces with free parking for the first three hours[7].

[5] https://www.planning.vic.gov.au/guides-and-resources/guides/all-guides/activity-centres-guidance
[6] https://www.vicinity.com.au/portfolio/our-properties/chadstone#/
[7] https://www.scentregroup.com/our-customers/westfield-destinations/westfield-southland

*Figure 4-7: Major Shopping Centre Location Relative to Glen Eira Map*




Base map source: Google maps

Similar to the activity centres in adjoining LGAs, any changes to the way in which parking is managed in one of the centres in Glen Eira will need to consider the impact as a result of the parking characteristics of Chadstone and Southland. The ongoing availability of free parking for stays less than two to three hours could be attractive where paid parking exists in other activity centres. However, there could already be a preference to visit the larger shopping centres over the major activity centres due to increasing congestion and difficulty finding a car park in these centres. Improvements in the turnover and availability of parking in the activity centres, either through paid parking or other management method, could actually attract more visitation due to the improved level of service and ease of access.

## 4.4 Factors Affecting Future Approach to Parking Management in Glen Eira

Population growth in Glen Eira is projected to increase significantly, with estimates showing a rise from 158,717 in 2025 to 198,431 by 2046. Population growth, increased infill development, and unsustainable levels of car use (currently accounting for 66% of trips) pose a serious challenge for parking management in Glen Eira's activity centres. If existing car mode share and associated demand for car parking persists, activity centres and Glen Eira in general will face heightened traffic congestion, reduced air quality, and diminished accessibility. In addition, the climate emergency and cost of living crisis place further stress the need for action. Without changes to parking management, Glen Eira will struggle to accommodate the growing population and maintain liveability and attractiveness of its activity centres. These factors underscore the urgency for a revised parking strategy that ensures efficient use of parking spaces and promotes sustainable transport modes.

The following table presents information from the major activity centre structure plans published by Glen Eira, as well as the state government's activity centre plan for Moorabbin.

*Table 4-4: Activity Centre Projected Changes*

| Major Activity Centre | Projected Future Changes | Indicative Additional Retail and Commercial Parking Requirements [1] |
|---|---|---|
| Bentleigh<br>(adopted June 2024) | • Population of Bentleigh suburb expected to grow by 10% to 2036<br>• Capacity in and around Bentleigh major activity centre for future apartment development and greater housing diversity<br>• To 2036, demand for additional 12,800 sqm of retail floorspace, 1,700 sqm of retail services floorspace, and 5,800 sqm of commercial floorspace | 682 new spaces |
| Carnegie<br>(adopted 2022) | • Capacity for 3,900 additional apartments and 100 additional units/townhouses in Carnegie Major Activity Centre area, with projection of 2,400 net increase in dwellings by 2036<br>• Increased space for office and retail required within activity centre area. To 2036, demand for additional 10,100 sqm of retail floorspace, 2,000 sqm of retail services floorspace, and 4,600 sqm of commercial floorspace<br>• 15% population growth expected in suburb of Carnegie by 2036, approx. 2,962 new residents | 562 new spaces |
| Elsternwick<br>(adopted August 2023) | • 11% population growth in suburb of Elsternwick expected by 2036, approx. 1,430 new residents<br>• Approx 12,000 sqm of additional floorspace is required | 396 new spaces |

| Major Activity Centre | Projected Future Changes | Indicative Additional Retail and Commercial Parking Requirements [1] |
|---|---|---|
| | • Capacity for residential development in Elsternwick Activity Centre | |
| Caulfield (adopted September 2022) | • An additional 5,350 people by 2036, rapid population growth in the activity centre<br>• Additional retail floorspace of 6,400 sqm by 2036 to support additional residential growth in the Centre<br>• New commercial office floor space of 19,600 sqm within the Centre by 2036 | 812 new spaces |
| Glen Huntly (adopted September 2021) | • Identified as an emerging major activity centre<br>• 19% population growth in suburb of Glen Huntly expected by 2036, approx. 1,004 new residents<br>• Additional housing required to accommodate growth<br>• Increased space for office and retail required within activity centre area | N/A |
| Moorabbin (adopted March 2025) | • Moorabbin is recognised by the VPA as one of the 60 Housing Choice and Station centres with sufficient public transport, facilities and services to be the location for large numbers of new homes<br>• Expected that the Moorabbin activity centre and surrounding catchment area can contribute at least 5,000 new homes | N/A |

[1] These numbers have been calculated using the current statutory parking rate requirements of the Glen Eira Planning Scheme – Clause 52.06 Table 1 (column B rates). Shop (3.5 spaces per 100sqm) and Office (3.0 spaces per 100 sqm) land uses rates have been adopted for the purpose of calculation.

The projected increase in population and development of these activity centres will bring an associated increase in the amount of statutory parking provision. Should the projected levels of development of new retail and commercial space outlined in this table occur, there will be an increase of 1,640 spaces across the major activity centres that Council has undertaken future planning work on (Bentleigh, Carnegie, and Elsternwick). This indicative calculation presents a hypothetical scenario that shows how the development of these activity centres will affect the scale of parking that is provided within the activity centre. Should current rates of car use remain as business-as-usual, there will be a significant increase in the number of cars circulating around these activity centres looking for parking.

Such increase in the context of the limited availability of public parking within these three activity centres, as discussed in Section 4.2.2, highlights the necessity to further consider the available approaches to managing parking resources. It is also noted that the work of the Department of Transport and Planning through their activity centre program may increase the population forecasts from those tabled above and identified in Council's structure planning work. As a result, this will further compound the parking rates and traffic circulation noted in the proceeding paragraphs.



# 5 The Parking Management Task

## 5.1 Overview of Parking Management

### Why does parking need to be managed?

Parking management plays an important role in the function of the overall transport network and is essential for supporting sustainable places and communities. There are many positive benefits that can be attributed to good parking management, such as supporting access to activity centres and businesses, improving access for people with mobility needs and supporting the movement of people and goods. The use of other modes of transport can also be encouraged through good parking management and can include the generation of revenue that can further support the facilities associated with active and public transport.

Motorists "cruising" for available parking near their destination can contribute as much as 30% to the total traffic volumes when parking is at capacity[8], and therefore reducing the available capacity of our road networks. Congestion within activity centres increases the probability of conflict between cars and other modes of transport, including cycling and walking. Studies show that a parking occupancy of 85%[9] provides the best balance of managing demand for parking while maintaining good road network function. As such, by improving parking space availability and reducing the time spent searching for a parking space, the management of parking can have road safety benefits for pedestrians and cyclists through reduced congestion and vehicle circulation. This also has environmental benefits through reduced emissions and improved amenity for all users.

Parking management is a tool for supporting the economic development of an area. The benefits achieved through better use of public space, reduced congestion and promotion of active and public transport modes can all contribute to making it easier for people to access businesses, which can lead to increased sales and profits. A good customer experience will also encourage return visits and continue the support of local businesses. Traders can also be supported by the management of parking through charging and/or time restrictions as this increases turnover and the number of unique visitors to a centre.

### The land used for parking is a finite resource

Car parking requires the specific allocation of valuable land to accommodate vehicles within our activity centres, and its supply and demand can be directly measured. While cities can in theory build more parking, it usually comes at a great cost (financial, environmental and social) to the community. Glen Eira does not have the funds to build new multi-deck car parking, nor is there the policy impetus to do so.

The addition of parking supply may address parking supply issues in the short term, but in the long term it will induce more parking demand and increase traffic within the road network. Activity centres have a high place value, so a people-centric approach is preferred, rather than reinforcing car-dependent

[8] Austroads, 2020
[9] Austroads, 2020

transport habits. A people-centric approach to design seeks to create a public space environment that people can enjoy and move around safely, regardless of transport mode.

Construction of multi-deck car parks is extremely expensive, costing upwards of $65,000 per space[10], making it prohibitive to Council budget constraints. In addition to high financial costs of multi-deck car parks, the construction process and induced increase in car use has a high environmental cost. This high environmental cost is at odds with Council's Climate Emergency Response Strategy, which urges Council to consider the climate impact across all its operations.

### Management of Future Growth

A good parking management approach will contribute positively to the liveability of a centre even as the population grows, and the activity centre population and visitation increase.

As discussed previously, the state's activity centre program and housing targets will potentially see significant increases in population. Whilst this program is based on a transit-oriented development approach, which will likely see a reduction in car ownership rates over time, this will still likely increase pressure for public parking.

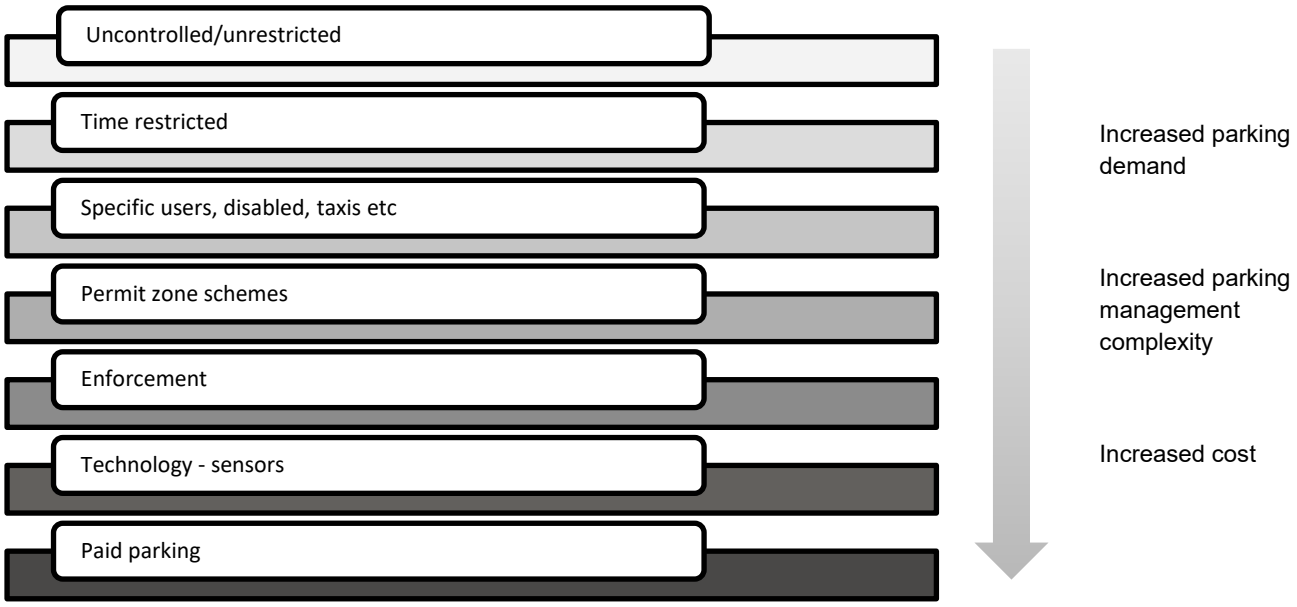
Such increase in the context of the limited availability of public parking within the activity centres, as discussed in Section 4.2.2, highlights the necessity to further consider the available approaches to managing parking resources.

## 5.2 Parking Management Tools

There are a series of steps in the parking management process, ranging from uncontrolled or unrestricted parking (the simplest control suitable for a single land use and user type) through to paid parking (manages high demands, competing demands, and multiple users with different parking needs). Progression through the levels of parking management responds to increasing and competing parking demands and the need to allocate parking between different user groups. Inevitably the progression through the parking management steps sees increasing complexity in management of these issues and an increase in the cost of implementation. This is illustrated in Figure 5-1 and discussed further following.

[10] https://theconversation.com/500m-for-station-car-parks-other-transport-solutions-could-do-much-more-for-the-money-114908

*Figure 5-1: Parking Management Approach*




**Unrestricted Parking**

Unrestricted parking provides, at the most basic level, access for vehicles to park. The use of unrestricted parking is relevant where demand does not exceed supply and where it relates to a single user group and prioritisation and turnover of spaces are not required.

Some unrestricted is provided in the off-street car parks of Glen Eira's major activity centres to meet the needs of traders, employees and commuters.

**Time Restricted**

This is the first step in managing parking by placing time limits on parking spaces to induce turnover and increasing accessibility by creating 'open' spaces closer to the motorists' destination. Time limits provide the first level of prioritisation of parking to specific typical user groups according to the length stay they typically require to undertake their relevant activities.

Time limits, including days of week, may be adjusted to improve efficiency, and off-street parking should support longer term stays where available.

Time restricted parking is already in place in all of the major activity centres in Glen Eira.

**Allocated**

Parking Zones allocate parking spaces by way of parking restriction signage. An example of this would be a 'Permit Zone', a 'Loading Zone', or similar, and provides exclusive access to that user group to access the parking spaces.

There are allocated spaces for a range of user groups within the major activity centres, including bus zones, taxi zones, loading zones, accessible parking spaces, parents with prams, seniors parking, mail zones and car share.

**Permit Schemes**

Permit schemes can create a permit holder exemption, whereby a particular user group, usually residents, have access to permits which exempt them from timed parking restrictions. This system provides residents with an advantage, but not a guarantee, to find a park near their property.

There are no permit schemes operating within the major activity centres. A resident permit scheme would not be appropriate for a commercial centre as it would which would limit access for shoppers and visitors to the centre and discourage high turnover.

**Paid Parking**

Paid parking introduces a cost to parking to prioritise parking allocations and act as a demand management tool. Charging for parking can be a highly effective tool in managing both on and off-street parking, particularly where demand outstrips supply.

Some paid parking spaces already exist in the Caulfield activity centre. These spaces are for long-stay parking and service the needs of commuters and workers in the vicinity of Caulfield Racecourse and Monash University. There are currently no publicly provided short or medium stay parking spaces in Glen Eira which are subject to parking fees.

## 5.3 Parking Restriction Assessment

***A parking restriction assessment evaluates the effectiveness, necessity and impact of parking restrictions in each area. It ensures that restrictions align with the broader transportation, economic and environmental goals.***

Council's traffic engineers undertake parking restriction assessments from time to time. The most recent one was completed in February 2025 following a Councillor request in 2024 to better understand the current parking time limits in activity centres and whether increasing time limits could provide any benefits. Council's assessment focussed on Bentleigh, Bentleigh East, Carnegie, Elsternwick and Glen Huntly.

Council conducted surveys for a week in early February 2025 between 5pm and 11pm from Monday to Saturday and between 11am and 2pm on the Sunday. They also conducted surveys of the duration of stays on the Friday and Saturday nights to find out how long cars were staying. Their methodology aimed to reflect a typical week outside holiday periods.

In summary, Carnegie was found to have the highest occupancy rates, at times ranging from 92% to 97% including on midday on Sunday. They also found between 81% and 84% of cars were parked for between one to two hours, whilst longer stays were observed on Sundays. The results for a typical weekday have been included in Section 4.2.2 of this report (Parking Demand Spot Counts).

The study considered whether to extend restrictions to 11pm but concluded that it would likely shift staff parking into nearby residential streets which could cause problems for residents looking for parking after 6pm.

Council looked at neighbouring Councils to see what restrictions they had in place. They looked at Oakleigh and Glen Waverley, Chapel Street and Toorak Road in South Yarra and Camberwell.

The study recommended some parking restriction changes for Glen Eira to ensure consistency between the centres, and not to extend the restrictions until 11pm. Before any changes to the timed restrictions are implemented, key stakeholders will be consulted, including traders, and further studies will be undertaking during the AFL season to see whether there is increased demand and longer stays during the football season.

## 5.4 Parking Technology

In recent years parking technology has evolved significantly to improve efficiency, convenience, and to allow for the provision of data collection. While parking technology has been used for many years to manage enforcement, payment systems and collect data, in recent years many parking providers are adopting more advanced parking technologies enabled by apps and licence plate recognition (LPR).

Within an activity centre setting, parking management technology could include:

- In-ground sensors (or Parking Overstay Detection System (PODS)) – facilitates collection of parking occupancy and duration-of-stay data to support parking management activities, as well as support enforcement activities and allow for coordination with wayfinding and real-time information sharing.
- Licence plate recognition (LPR) – cameras that automatically read license plates for logging, enforcement, or payment.
- Parking Guidance Systems – digital signage or app-based systems that guide drivers to available spaces.
- Smart parking meters – digital meters that accept multiple payment methods (card, app, contactless) and often connect to a central system.
- Parking apps – mobile apps for finding and paying for parking.

PODS consists of individual parking bay sensors installed either below ground or above ground which monitor the occupancy of the space. The system relies on vehicles parking over or under the sensor, which is detected by the hardware, sending live information on the availability of each parking space to a receiver. This information can then be communicated to parking users on variable message signage and/or a mobile application, which collates the live occupancy information from a network of sensors.

Smart parking technology, which includes a combination of sensors and signage, provides several benefits to parking management including:

- Improving user experience in finding and using car parking within an activity centre.
- Enhancing the operational efficiency of existing parking supply to increase vehicle turnover.
- Reducing vehicle emissions caused by drivers searching for car parking.
- Maximising the use of existing parking capacity (vacancies) within the study area.
- Collecting real-time parking utilisation and duration data to inform future decision making in regard to parking restrictions and enforcement, such as the introduction of paid parking.
- Improving the level of compliance and reducing the costs of monitoring and enforcement.

Council already utilises licence plate recognition (LPR) technology to recognise licence plates associated with ePermits for residential parking permits and to manage ticketless digital payments for paid parking sessions at Caulfield Station. There are currently no locations where in-ground sensors are installed.

## 5.5 Paid Parking

**Paid parking has the combined benefit of encouraging people to choose sustainable modes of transport whilst recouping the cost of providing parking and generating revenue from people who choose to drive**

Paid parking can increase turnover, improving driver compliance with timed restrictions (where applicable), and altering driver mode splits away from the private car. This represents an opportunity to maximise the capacity of a fixed parking resource and increase the number of people who access the area.

Austroads guidance recommends that there must be an established justification of a paid parking proposal so that it is not seen as solely for the purposes of revenue raising. A careful balance needs to be struck between car parking management and revenue generation in the implementation of paid parking systems to ensure the perceived social and political impacts can be managed effectively.

As such, paid parking must therefore be justifiable by one or all of the following:

- Parking Management – improving parking operations
- Transport Demand Management – encouraging travel mode shift
- User Pays System

Typically, the decision to implement paid parking is based on the combination of at least two of the above elements. Careful consideration should be given to proper implementation to ensure that key stakeholders (local residents, commercial visitors, and traders) are not adversely affected by the scheme.

### 5.5.1 Parking Management

**Turnover**

Where existing timed parking restrictions exist, and parking usage is approaching its effective capacity (i.e. occupancy greater than 85%), paid parking can improve turnover. A price on parking can reduce the amount of time the parking bay is occupied and hence allow other users the opportunity to utilise that bay.

It can also be effective in reallocating long-term parking used by commuters and employees, especially where other methods of parking management have failed to have impact, thus improving access to short and medium stay parking. Overall, the objective is to regulate parking space usage and ensure availability.

**Enforcement**

Paid parking has a higher compliance rate and is easier to enforce than simple timed restrictions that require regular and frequent enforcement by officers. In paid parking areas, enforcement is simple and accurate, as the officer must only sight the ticket or meter with a valid time and date.

A ‘paid’ parking system can also be implemented where drivers are not required to display a physical ticket, where officers can utilise licence plate recognition (LPR) technology to determine the validity of a

paid parking session. This approach is currently implemented in Caulfield East in conjunction with the 'Pay Stay' model.

Motorists who pay for parking are less likely to overstay given most parking systems operate on a pre-purchase or app system to utilise a parking space for a given period of time and motorists are more likely to purchase only the time they require and avoid overstay. Off-street gated systems provide 100% compliance as exit is not granted without payment. In this case, the variable cost structure sets the expectation of parking duration. New technologies now allow drivers to pay and even top up by phone, further improving compliance.

**Allocation**

Where other methods of parking management have not been successful in the allocation of parking to particular user groups, paid parking can be effective in the reallocation of long stay parking from commuters and employees and hence improving access to short and medium stay parking for customers in locations most proximate to their destination.

### 5.5.2 Travel Demand Management

Paid parking functions as an effective travel demand management tool by recognising that car parking provides an end of trip facility for a private car trip, and therefore placement of a price on car parking can reflect the scarcity of the good (land for parking) and influence a user to select a different mode of travel. When parking comes with a cost, rather than being free or subsidised, it prompts people to consider the convenience of driving against the cost and increases the likelihood of the use of sustainable transport modes like walking, cycling, or public transport. Overall, the objective is to manage and reduce the demand for car travel while encouraging the use of more sustainable and efficient transportation modes.

It is important to consider the integrated transport network when using paid parking as a travel demand management tool, to ensure that users are not disadvantaged by the lack of reliable alternative modes of transport.

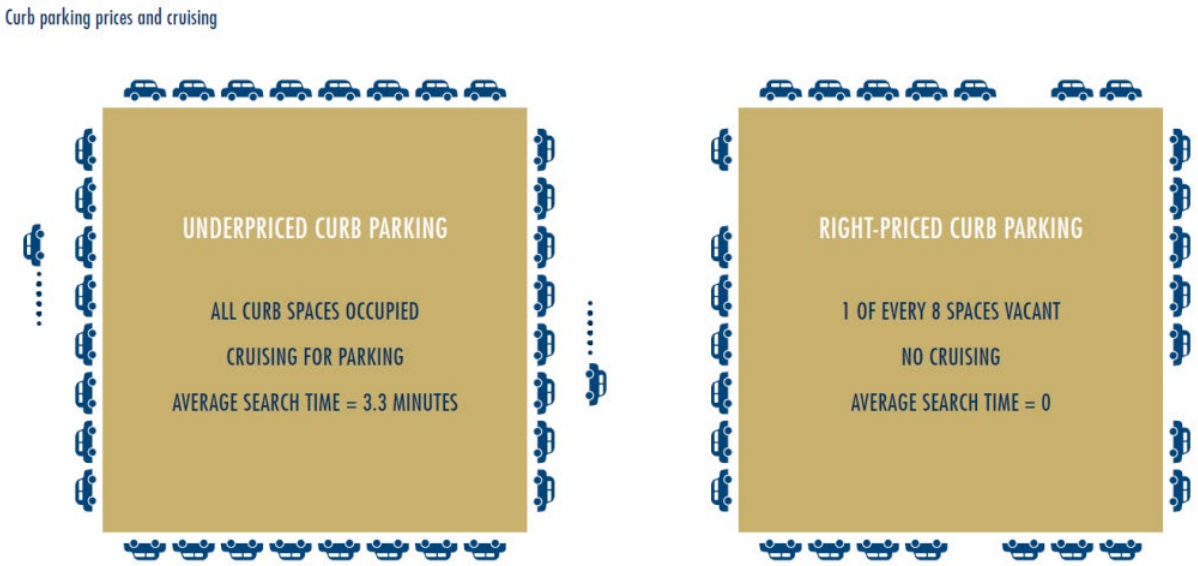
**Congestion**

As discussed earlier, when parking is at effective capacity, up to 30% of traffic volumes can be attributed to vehicles circulating and looking for an empty parking space. Congestion on our roads creates significant environmental and financial impacts on the community. Where paid parking is introduced appropriately, vehicle volumes can reduce significantly as there are more parking spaces available in convenient locations. Furthermore, where traffic volumes are reduced, there is also the opportunity to re-allocate road space to other uses, including dedicated public transport bicycle lanes, or even wider footpaths. Studies[11] have also shown that traffic congestion can have negative health effects on road users ranging from stress due to longer travel times and respiratory issues due to reduced air quality.

[11] Such as: Matz, C.J., Egyed, M., Hocking, R. et al. Human health effects of traffic-related air pollution (TRAP): a scoping review protocol. Syst Rev 8, 223 (2019)



*Figure 5-2: Kerb Parking Diagram*[12]




### 5.5.3 User Pays

Implementation of user pays parking involves charging users based on how long they park, with these fees often used for parking facility maintenance and/or urban infrastructure projects. This approach ensures a fairer and more equitable system by making only users of the parking space responsible for the costs, rather than having this cost incurred by non-car users too.

The lifecycle cost of infrastructure can be funded through direct charges from the beneficiaries or from local governments. When an infrastructure investment is expected to generate public benefits to the wider community, or when it is difficult to distinguish between users and non-users, a mix of user pays and LGA-funding can be applied to fund the provision of the infrastructure. This approach has been commonly seen in land transport infrastructure.

**Application of 'User Pays' to Car Parking**

The provision of car parks involves some form of upfront construction cost as well as operating and maintenance costs. People who use the parking facilities benefit from being able to access their destinations more easily and quickly. The introduction of user charges can also improve the efficiency of the parking facilities. By imposing a correct pricing signal to users, parking turnovers can be increased which means more users can find a parking space at the right time and at the right place.

**Co-Benefits of 'User Pays'**

While a user pays concept is justifiable for car parking facilities, local government funding may be warranted as car parks can also generate benefits to the public in addition to the direct users. For example, the funds raised can be used to directly improve the activity centres through placemaking projects or improve access to other transport modes.

[12] Shoup, Cruising for Parking, 2007

### 5.5.4 Mechanisms to Support User Pays Parking

**There are a number of supporting mechanisms that need to be considered in order to successfully implement user pays parking**

The implementation of user pays parking within activity centres makes up only one part of the complex parking system. To fully support its implementation, consideration must be given to other mechanisms that can mitigate the potential impacts of user pays parking. The impacts of user pays parking must be considered at a holistic level and across multiple activity centres.

*Table 5-1: Supporting Mechanism Options*

| Category | Mechanisms |
|---|---|
| Parking Controls | • Residential Parking Restrictions (and potential exemption or reduction of fees)<br>• First period free (e.g. 2 hours)<br>• Time-of-day/week considerations<br>• Kiss-and-ride |
| Technology | • Pay-by-phone<br>• Ticketless parking<br>• Parking wayfinding<br>• Parking locator apps<br>• Parking overstay detection system |
| Integration | • Variable pricing<br>• User experience<br>• Integrated technologies<br>• Holistic approach |
| Amenities | • Reinvest surplus funds into improving community infrastructure<br>• Invest in safety and security improvements<br>• Using user pays parking revenue as a funding source for consolidated and renewed parking facilities |
| Community Engagement | • Explain the parking management story to the community<br>• Explain the community benefits for using user pays parking<br>• The initial impacts will be resolved over time<br>• Consider the needs of all road users |
| Active and public transport | • User pays parking can empower the transition towards active transport modes<br>• Improved accessibility to active and public transport modes |

# 6 A Rationale for Parking Management Change

This report highlights that Glen Eira's population will grow, and this growth will bring more cars with a corresponding demand for public car parking. It is also clear from the initial investigations at key activity centres that public parking facilities are nearing capacity which will result in further congestion as vehicles circulate trying to find available parking, impacting the experience of those visiting activity centres. These characteristics collectively point to the need for a suitable parking management approach for the activity centres.

Extensive parking restrictions are currently in place across Glen Eira activity centres. In the context of the parking management tools and the graduated application process discussed above, a move toward the further use of technology and user pays parking would represent the likely next steps in advancing the management of parking across key activity centres.

Council's Parking Policy envisages user pays parking as one approach to managing parking. It states that managing parking is an integral part of this broader transport plan and the policy base encourages mode shift towards public and active transport modes and optimisation of parking in activity centres. The introduction of additional user pays parking presents a viable option that will assist council in achieving these objectives.

An equitable approach to user pays parking would involve introduction of additional user pays parking at all major activity centres within Glen Eira. This approach would limit the potential for trip relocation to avoid paying for parking and eliminate the risk of unequal treatment across the Council's major activity centres, ensuring that all activity centres are faced with the same conditions. However, consideration to the three justifications of user pays parking (travel demand management, parking management, and user pays) should be given when assessing which activity centres within the municipality could be suitable.

Important factors to consider include existing parking occupancy, future parking demands and transport mode accessibility. Justification for implementation of user pays parking is highest in activity centres where parking occupancy rates regularly exceed 70% (as per Austroads guidance) and suitable and reliable public and active transport options are available. Austroads guidance also suggests that user pays parking could be considered where insufficient turnover is resulting in poor compliance and where there are insufficient parking facilities within reasonable walking distance of high short-term parking trip generators.

One of the key inputs to establishing the rationale for activity centres in Glen Eira is existing parking demand and duration-of-stay information. As noted in Section 4, the centres of Bentleigh, Carnegie and Elsternwick were selected as being feasible for further investigation from a parking management perspective due to their observed high peak parking demands. Glenhuntly was the other major activity centre where parking demands were reviewed but were found to be typically below 60% across a number of observed periods and therefore unlikely to be feasible from a parking management perspective.

Glen Eira's transport precincts breakdown serve as an indication for transport access and have been considered as part of the activity centre review process for all seven activity centres. The centres of Bentleigh, Carnegie and Elsternwick all have multiple public transport options available for visitors, with Elsternwick located within a tram and train precinct, Bentleigh within the train precinct and Carnegie



located at the boundary of a train and tram and train precinct. Each of these precincts are also located on the bus network and are accessible by bus.

Of the remaining three major activity centres:

- Glenhuntly has a high level of public transport accessibility, being located within a tram and train precinct, but has relatively low parking demands compared to the other centres.
- Moorabbin Junction is located within a train precinct but has not been considered as part of this study due to its location on the LGA boundaries to Kingston and Bayside.
- Whilst Caulfield has a high level of accessibility, being located within the tram and train precinct, it has not been considered as part of this study since paid parking already exists within the activity centre.

Table 6-1 provides a summary of the assessment for the three shortlisted activity centres against the three user pays parking rationales.

*Table 6-1: Application of User Pays Parking Principles to Three Major Activity Centres*

| Major Activity Centre | Indicative Additional Retail and Commercial Parking Requirements [1] | Parking Management Rationale | Travel Demand Management Rationale | User Pays Rationale |
|---|---|---|---|---|
| Bentleigh | 682 new spaces | Peak occupancy of parking spaces approximately 74% during peak periods. Expected highest future land use and parking growth. | Alternate access to precinct available by public and active transport. Located in 'train precinct'. | Car parking is currently free – users do not directly contribute to the cost of provision, maintenance and enforcement. |
| Carnegie | 562 new spaces | Peak occupancy of parking spaces approximately 86% during peak periods, and up to 97% on Friday and Saturday evenings. | Alternate access to precinct available by public and active transport. Located in 'train precinct' and boundary of 'train and tram precinct' shows additional access to activity centre via tram. | Car parking is currently free – users do not directly contribute to the cost of provision, maintenance and enforcement. |
| Elsternwick | 396 new spaces | Peak occupancy of parking spaces approximately 89% during peak periods, and more than 90% on Friday and Saturday evenings. | Alternate access to precinct available by public and active transport. Located in 'train and tram precinct'. | Car parking is currently free – users do not directly contribute to the cost of provision, maintenance and enforcement. |

[1] Refer Table 4-4.

Legend:

| | |
|---|---|
| Green | meets rationale |
| Orange | partially meets rationale |
| Red | does not meet rationale |

The results presented in this comparison table show that Elsternwick and Carnegie could be a candidate for user pays parking implementation given it meets the criteria for all three rationales of user pays parking implementation. Carnegie also benefits from being located adjacent to the Djerring Shared Use Path Trail, which enhances its accessibility by active transport modes by linking Carnegie with neighbourhoods to the southeast. Bentleigh has the lowest existing rates of car parking occupancy of the three activity centres, resulting in it partially meeting the parking management rationale. However, it also has the highest predicted future increases to parking demands and as a result could be reasonably expected in the future to meet the rationale.

# 7 Recommendations for Parking Management in Glen Eira

## 7.1 Overview

Given the anticipated population growth in Glen Eira and the fact that Council car parks in Carnegie and Elsternwick are already operating beyond effective capacity in the evenings, a move toward the further use of technology and user pays parking would represent the likely next steps in advancing the management of parking across major activity centres. The previous section also identified that Bentleigh, Carnegie and Elsternwick could be considered for additional parking management methods based on the rationales of parking management, travel demand and user pays.

There are three key recommendations that form the basis for change in these centres. Recommendation 1 refers to the existing ongoing activities that Council is currently undertaking related to reviews and monitoring. Recommendation 2 relates to the installation of parking sensors to collect parking occupancy and duration-of-stay data to support parking management activities, as well as support enforcement activities and allow for coordination with wayfinding and real-time information sharing. Recommendation 3 relates to the introduction of user pays parking.

Options within each of these recommendations have been provided for consideration, offering a range of benefits, impacts and limitations.

## 7.2 Recommendation 1 – Reviews and Monitoring

There are a number of activities that Council is already undertaking that relate to the review and monitoring of parking management practices. Section 5.3 of this report outlines a recent parking restriction assessment undertaken by Council that looked at parking restrictions and management techniques in the activity centres. This and future assessments will ensure that the parking restrictions will continue to meet the needs of Council and the community. These practices also will identify any emerging issues and inform the need for specific changes.

Future reviews and monitoring need to:

- Ensure all parking restrictions comply with the relevant Australian Standard AS 1742.11:2016 Manual of Uniform Traffic Control Devices - Parking Controls - Victoria
- Ensure time restrictions remain appropriate.
- Determine if weekend restrictions need to align with Monday to Friday restrictions.

## 7.3 Recommendation 2 – Parking Sensors

### 7.3.1 Parking Sensors Option 1

**In-ground sensors installed on-street and in carparks with high occupancy**

Parking Sensors Option 1: In-ground sensors in all on-street spaces and in off-street areas with an occupancy rate above 80%.

Benefits:

- It provides an activity-centre wide level of implementation that targets optimising the use of all high-demand spaces.
- Likely to be well received by the community due to the improved user experience and assistance in navigating to an available parking space.
- Parking utilisation and duration data collected as part of this option could be used to inform future decision making in regard to parking restrictions, enforcement and additional management measures such as the introduction of user pays parking.

Risks:

- There may be some concerns that the extra monitoring and increase in enforcement could increase the chance of receiving an overstay infringement.

### 7.3.2 Parking Sensors Option 2

**In-ground sensors installed on-street only**

Parking Sensors Option 2: Installation of in-ground sensors in all on-street spaces only. It is targeted at the high-demand and high-turnover parking spaces on the main street. This option may encourage drivers to seek longer stay parking in off-street car parking areas.

Benefits:

- As for Option 1, this option is also likely to be well received by the community and traders because it could make it easier to find a car park and provide more efficient turnover of high demand car spaces.

Risks:

- Has limited ability to encourage drivers to consider a mode change.

## 7.4 Recommendation 3 – User Pays Parking

User pays parking options are provided on the basis that one of the two parking sensor options would already be in place. It is recommended that in ground parking sensors are installed outside of the allocated user pays parking spaces.

This would facilitate collection of parking occupancy and duration-of-stay data to support parking management activities, as well as support the monitoring of time restricted car spaces and allow for coordination with wayfinding and real-time information sharing. This data can also be used to support parking management decision making and any future augmentations of user pays parking.

### 7.4.1 User Pays Parking Option 1

**User pays parking for all on and off-street parking areas (short- and long-stay) in Elsternwick, Bentleigh and Carnegie**

User Pays Parking Option 1 presents a best practice approach to demand management and parking management, which would be for user pays parking to apply across all on and off-street parking areas in all three candidate locations and to both short and long stay visitors. From a policy perspective, this reiterates that the public space used by all types of parking spaces in an activity centre is valued highly and encourages users of all types to be considerate of their mode of travel to a centre.

This has the greatest potential for mode change, as it requires drivers to compare the cost of parking against the cost of alternative travel modes.

The highest value spaces are those located most proximate to the commercial land uses, predominantly those located along the main street. As such, pricing structures in this scenario would be set with a higher fee applying to on-street parking to reflect:

1. the premium nature of these spaces in respect of location and proximity to destinations
2. the desire for these spaces to turn over more frequently to enable access to this parking by more people
3. the desire to push to more users to off-street car parks to reduce circulation of drivers searching for parking contributing to road network congestion and emissions.

In creating greater turnover of spaces it also enhances availability of parking and creates potential opportunities for some spaces to be removed in the future to support ‘place’ and sustainable transport outcomes.

It provides an income stream that would pay for improvements to activity centres. These works would provide upgraded footpaths, new street furniture, tree planting, make the activity centres more attractive and encourage more people to visit.

One disadvantage of this approach is that it may discourage short-stay customer visits to a centre and could lead them to seek alternative retail locations where user pays parking does not exist. This may be the more difficult approach for the community to accept, particularly for traders who may be concerned that they would lose customers and that user pays parking would have a negative impact on their businesses.

### 7.4.2 User Pays Parking Option 2

**User pays parking for on-street spaces only in Elsternwick, Bentleigh and Carnegie**

User pays Parking Option 2 is for user pays parking to apply to on-street spaces only, in all three candidate locations. From a policy perspective, this would introduce a charge for the highest value spaces, which reiterates that the public space used by on-street parking spaces in an activity centre is valued highly and encourages users of all types to be considerate of their mode of travel to a centre.

Similar to Option 1, it enhances availability of parking and creates potential opportunities for some spaces to be removed in the future to support 'place' and sustainable transport outcomes. Also, the income stream would pay for improvements to activity centres

An advantage of this option over Option 1 is that if visitors to a centre want to avoid the parking charges, they can still seek fee-free parking in the off-street parking areas.

### 7.4.3 User Pays Parking Option 3

**User pays parking for all car parks with occupancy rate higher than 80% (off-street only) in Elsternwick, Bentleigh and Carnegie**

User pays Parking Option 3 is for user pays parking to apply to all off-street car parks with a peak occupancy rate higher than 80%. All on-street parking would remain free of charge, including 1P and 2P time-restricted spaces. The fee structure would be consistent for all restriction types within the off-street parking spaces. This benefits short-stay customers and reflects the greater difficulty and less attractiveness in changing mode for very short stay trips. Instead, it applies a charge to the longer parking stays where a change to another travel mode would be considered a feasible alternative.

From a policy perspective, there is some contradiction in applying a fee to the less valuable parking spaces. In the best practice approach, it is acknowledged that the higher value spaces are those that are located closest to a destination, which in the case of the activity centres is on the main street. However, in the option where charges only apply to off-street car parks, the highest value spaces attract no charge.

There are some operational issues associated with this approach, including that it would likely increase the level of vehicle circulation within a centre from searching for conveniently located and free-of-charge parking spaces, to avoid charges for spaces on the side-streets and off-street parking areas. However, this option would be likely to be looked upon more favourably by traders, who can be reassured that the spaces on the frontages of their businesses remain free of charge and would be less of a deterrent for their customers.

### 7.4.4 User Pays Parking Option 4

**User pays parking for all car parks with occupancy rate higher than 80% (off-street only) in Elsternwick and Carnegie**

User pays Parking Option 4 is the same as Option 3 but excludes the Bentleigh activity centre. This acknowledges that recorded peak parking occupancies in Bentleigh are the lowest of the three activity

centres, resulting in it partially meeting the parking management rationale. In addition, less than half of the parking spaces meet the 80% occupancy threshold.

Like User pays Parking Option 3, there is a contradiction in that the most valuable spaces do not attract a fee for their use, and on-street vehicle circulation would likely increase from drivers looking to avoid the off-street parking fees. It does however continue to recognise that longer stay customers and staff have a greater ability to change travel mode given the longer duration of their stay.

From a customer and trader perspective, this is likely to be an acceptable option due to parking remaining free of charge on the retail frontages.

### 7.4.5 User Pays Parking Option 5

**User pays parking for a single off-street car park with an occupancy rate higher than 80% in Elsternwick and Carnegie**

User pays Parking Option 5 focuses on introducing user pays parking in just one off-street car park in Elsternwick and Carnegie, where parking occupancy is higher than 80%. This would represent a small percentage of the total activity centre parking supply, with the bulk of the parking spaces to continue to be free of charge.

This option would likely act as a first step into activity centre user pays parking, with the aim of rolling out further user pays parking in other locations after an initial period of monitoring and review.

The benefits and limitations of this option are like User Pays Parking Option 4, including from a policy and operational perspective, but with fewer spaces being subject to a fee.

In Elsternwick and Carnegie, demands across all off-street car parks are high and there are limited available vacancies. As such, there are fewer opportunities for drivers to park in other locations to avoid the parking fees.

Whilst this option will retain a large number of fee-free parking spaces, it doesn't reflect the financial and environmental costs of providing car parking.

# 8 Application of User Pays Parking to Glen Eira

The previous sections outlined options for the introduction of user pays parking in the major activity centres and concluded that Bentleigh, Carnegie and Elsternwick could be considered for implementation based on the rationales of parking management, travel demand and user pays.

While each centre has its own unique characteristics from a policy perspective, application of user pays parking would be assumed to be the same across the three centres. A consistent approach to the type of parking to which user pays parking would apply, as well as factors such as timing, days of operation, fee structure and payment methods, will improve the user experience and general understanding of the system.

The Gender Impact Assessment undertaken for this strategy recommends there be no charge for disabled and empathetic parking (e.g. seniors, parents with prams).

## 8.1 Temporal Application of User Pays Parking

User pays parking would be expected to apply during the same times that timed restrictions are currently in operation. This is typically between 8:00am and 6:00pm on a weekday and between 8:00am and 12:00pm on a Saturday. User pays parking would apply all year round.

As part of a separate study, and as discussed previously, Carnegie and Elsternwick have strong nighttime economies and are currently operating near or at capacity during the evenings. Whilst the extension of timed restrictions into the evenings is still being reviewed by Council, it would be appropriate to consider the extension of user pays parking into the evenings and on weekends past the current timed restriction as a measure to manage high demand for parking. As such, it has been assumed that a user pays parking scheme in Carnegie and Elsternwick would operate from 8:00am to 8:00pm on all days of the week.

## 8.2 User Pays Parking Fee Structure

The price set for user pays parking will influence (amongst other influences) whether people choose to park at an activity centre. If other nearby centres also charge for parking, then visitors are less likely to avoid the centre to avoid paying for parking. Surrounding price structures will therefore influence on how much Council should charge for parking and may not necessarily reflect the true value of parking or the price required to bring about mode shift.

Parking prices should also be determined in accordance with supply and demand principles and not influenced by the level of income or expenditure required to meet budgetary requirements.

Council already operates user pays parking within Caulfield in the vicinity of the racecourse and the university. The parking is not time-restricted, but is subject to payment between 8:00am and 6:00pm, Monday to Friday. Current payment rates for this parking is a minimum of 2 hours at $3.40 followed by $1.70 per hour up to a maximum daily rate of $14.00.

A review of surrounding and similar Councils indicates that there are some other Councils also charging for parking. Table 8-2 has been prepared to show the current fees in these areas, including on- and off-street locations.

*Table 8-1: Paid Parking Fee Structures and Locations in Nearby LGAs*

| LGA | Paid Parking | Comment |
|---|---|---|
| Bayside | 19 foreshore parking areas | Residents exempt from paying |
| | On-street bays on Beach Road | Price is $6.50 per hour, $15.20 for 4 hours, $19.50 all day |
| Port Phillip | 6,000 on-street bays and 1,100 off-street bays. | Price starting from $2.50 per hour, on-street typically around $4.70 per hour and up to $17.50 for all-day off-street parking |
| Stonnington | Charges for parking at a number of council-owned multi-deck and street level, open air car parks throughout the LGA | Multi-deck parking price starts from $3.60 for first hour, $16 maximum daily rate. Paid hours mostly 24 hours.<br><br>Street level, open air parking price ranges from $1-$2.30 per hour. Paid hours mostly from 9am-6pm. |
| | No paid on-street car parking | Stonnington is currently working on a Parking Action Plan that is seeking to implement paid parking for on-street parking. |
| Kingston | Some paid off-street parking – 5,580 bays | Price is $5 per hour or $17 for all day parking. |
| | Trader Parking Permit Schemes implemented in Chelsea, Cheltenham and Mordialloc shopping precincts | The terms of the scheme are outlined in the Trader Parking Permit Scheme Conditions, including eligibility and fees. |
| | No paid on-street car parking | |
| Monash | No paid parking on public land | |
| Yarra | Paid on-street parking in the following major activity centres: Smith St (Collingwood/Fitzroy) and Brunswick St (Fitzroy). One hour free, followed by paid parking in Swan St (Richmond), Bridge Rd (Richmond), and Victoria St (Richmond) major activity centres, Paid on-street parking in one neighbourhood activity centre: Gertrude St (Fitzroy). | Paid parking is typically priced between $2.70 and $5.40 per hour across both short-(i.e. 1P and 2P) and long-term parking. |
| Boroondara | Paid on-street parking in Camberwell Junction major activity centre – largest in LGA | Price for on-street parking is $3.50 per hour. In some off-street car parks price is $7 per day. |
| Maribyrnong | Paid off-street parking in Raleigh Street car park in Footscray Activity Centre | Price is $2.30 per hour, or $9.60 all day, from 8am-6pm Monday to Friday.<br><br>Justification used: “Due to high levels of occupancy, parking meters are being introduced to increase parking turnover. This will make more spaces available for customers to visit our traders and services throughout the day.”[13]<br><br>Mayor Lam quote: “We’ve kept the cost of tickets as low as possible with revenue being used to support the delivery of key services and infrastructure our community is asking us to deliver – including improved roads and footpaths”.[14] |

[13] https://www.maribyrnong.vic.gov.au/Residents/Transport-Parking-and-Road-Safety/Parking-Management-Policy-2017
[14] https://www.maribyrnong.vic.gov.au/News/Paid-parking-introduction-to-support-growing-demand-for-parking

Having regard to pricing structures of the surrounds the following fee structure could be adopted for the 'best practice approach' scenario discussed above:

- On-Street Parking – $3.50 per hour
- Off-Street Parking – $2.50 per hour with a maximum daily fee of $12.50 (therefore maxing out at 5 hours

This fee structure reflects the premium nature of on-street parking being the most convenient parking where the highest turnover is sought. The reduced off-street fee seeks to encourage the use of off-street parking ahead of on-street parking to reduce circulating traffic and congestion.

It is recognised that this fee structure is higher than that adopted within Caulfield currently however is reflective of the shorter stay nature of parking within these centres compared with Caulfield.

## 8.3 User Pays Parking Payment Infrastructure

There are a number of ways in which a user pays parking system can be operated.

- Pay-and-Display
- Pay-by-Space
- Pay-by-Plate
- Pay-by-Phone
- Access Control

Each of these are further described within Table 8-2.

*Table 8-2: Payment Infrastructure Options*

| Method | Explanation |
|---|---|
| Pay-and-Display | Motorists purchase a ticket from a machine and place on their dashboard. There is no requirement for parking to be formalised. |
| Pay-by-Space | Motorists pay at a parking meter, selecting the space they have parked in. All spaces must be line marked and allocated to a particular meter. |
| Pay-by-Plate | Motorists enter their number plate at a pay station. Automatic number plate recognition is required to properly enforce. |
| Pay-by-Phone | Motorists purchase parking time through a phone based user interface. Users insert their number plate to validate their stay and can top-up remotely. |
| Access Control | Boom gate (or gateless parking controlled by video recognition) access to off-street car parks. Ensures 100% compliance but would require in some instances significant capital costs. Likely to create queuing problems where abutting roads in high demand scenarios. |

Currently parking payments for Caulfield are facilitated by a pay-by-phone system – PayStay phone app – as well as physical ticket machines. It is recommended that a similar pay-by-phone system be implemented as part of an expansion of user pays parking within Glen Eira.

It is also recommended that a secondary physical payment method be provided in the form of a physical ticket machine which caters for drivers that may not own a mobile phone. It can also provide an additional visual cue to drivers that payment is required. This would be of benefit in the retail activity centres where a greater mix of visitor groups will exist compared with Caulfield where the user pays



parking is primarily targeted at regular users (university students and commuters). If preferred, the secondary provision could be limited to off-street car parks, adopting a Pay-by-Plate or Pay-and-Display type of system.

## 8.4 Supporting User Pays Parking Management Mechanisms

As discussed in Section 5.5.4, consideration must be given to other mechanisms which can support and mitigate the potential impacts of user pays parking. Below are details of the supporting mechanisms which are considered appropriate to support user pays parking implementation in Glen Eira.

### 8.4.1 Managing Parking Overspill

Implementing user pays parking in the activity centres could result in some parking overspill into adjacent streets by visitors seeking free parking.

A time-controlled parking 'buffer zone' already exists in some of the residential streets around the activity centres of Bentleigh, Carnegie and Elsternwick, which provides some protection against customer and trader long term parking. This is typically provided as time-controlled parking spaces with a 2P restriction on one side of the street only, with the other side remaining as unrestricted. Residents living adjacent to these restrictions are required to comply.

Council should monitor and review parking demands in surrounding residential streets and consider expansion of the time-controlled buffer zone if warranted. This would consist of regular observations in the surrounding residential streets on how far the parking demands extend into the residential area, as well as monitoring any parking-related resident complaints for properties located in close proximity to the activity centres.

In order to protect parking for local residents, such as where both sides of a street are required to have time restrictions in place and where off-street parking is not available, Council may need to consider the introduction of a resident permit scheme which would exempt eligible residents from any new on-street timed-restrictions within the street of their property.

### 8.4.2 Enforcement

Enforcement is important to ensure a parking system operates as designed. In general terms, without effective enforcement, drivers will become aware of the low probability of consequences and not seek to adhere to the system. Ensuring that driver compliance is maintained helps to improve the safety of pedestrians and cyclists, encourage equitable use of spaces, create turnover of high demand spaces and reduce vehicle circulation. This in turn supports local business by allowing more customers to access businesses more easily.

Council Parking Policy states that the aim of parking enforcement is to:

- *Enhance safety of pedestrians and drivers*
- *Ensure the equitable use of limited parking spaces*
- *Ensure effective travel flow.*

Regular compliance activities can assist in identifying areas with repeated compliance issues where it may be necessary to review the appropriateness of existing controls. It can also be used as a parking management tool when demands in an area are high and an increased level of parking control is being considered.

Technology, particularly in high turnover areas, can be used to support this process by improving the level of compliance and reducing the costs of monitoring. Technology can improve the efficiency of compliance activities where the method of 'tyre-chalking' is easily evaded, whilst also making the task less labour intensive. Technologies that can be used to improve the level of compliance and reduce the costs of monitoring and enforcement include:

- **Parking Sensors**

  Parking sensors installed as part of Smart Parking initiatives can record the length of time a vehicle has occupied a space and trigger an alert to the parking officers once they have stayed beyond the allowable time.
- **Handheld Devices**

  These assist enforcement officers to monitor vehicle parking compliance with the regulations and restrictions in each bay. They can be used to issue and print an infringement (with accurate location information), take a picture of an offending vehicle, record a conversation with a driver and check back to base data for a vehicle's history of offences. Council officers currently use a handheld device system called PinForce.
- **Mobile Camera Only Systems**

  These vehicle-mounted cameras record vehicle registration numbers of parked cars, also known as License Plate Recognition (LPR) or automatic number plate recognition. Occupancy data is collected to record parking turnover and to pass on information about violators to parking officers. The occupancy data can also be relayed to web interfaces and smartphone applications for end users to access.
- **Fixed Camera Systems**

  In addition to security purposes, fixed CCTV cameras can be used to monitor the illegal use of restricted areas such as bus lanes and loading zones. These same cameras can also detect the occupation and duration of stay of individual spaces in a defined area and with the use of LPR can identify overstay activity.

The benefits of using these systems specifically to enforce parking restrictions include:

- Aid with monitoring the parking activity of areas to determine effective patrols where non-compliance most impacts turn-over rates and availability.
- Provide for efficiency of patrols allowing more time for officers to patrol other areas and respond to customer requests.
- Reduce infringement disputes for over-stay offences based on the quality of the data.
- Reduce OH&S hazards for officers associated with traditional patrols and mark-up of vehicles.

Enforcement as it relates to the activity centres and the user pays parking system will exist in the following forms:

- Enforcement relating to drivers who have not paid for parking
- Enforcement of drivers who have overstayed the posted time period.



As this relates to current enforcement practices, existing enforcement relates solely to drivers overstaying posted time restrictions. A level of overstay may no longer occur with increased monitoring capacity via the presence of user pays parking, however this may be offset by the enforcement of drivers who have not paid for parking.

It is noted that while non-compliance of drivers and the ability to issue infringements is a reality of most parking systems to improve parking efficiency, compliance will likely improve over time which would result in a reduction in total enforcement-related revenue.

### 8.4.3 Community and Stakeholder Engagement

It is important to involve the community when looking to implement changes such as the introduction of user pays parking. Whilst the idea of user pays parking may initially have a negative connotation, the right engagement approach can inform and educate to communicate the benefits of such a scheme. It is also important to bring Councillors on a journey to ensure they have the right information on the potential impacts of any changes so that they can make an informed decision.

A community and engagement plan should be prepared to set out the required activities and associated key stakeholders for the agreed activities. Activities could include:

- In-person workshops – external (business owners, associations, community groups) and internal (council staff, Councillor briefings)
- Pop-up stands within the activity centres – one-on-one conversations, information sharing
- Social media posts – polls, promotion
- Online platform via Council website – platform for community to share issues and opportunities, mapping tools could be used
- Information shared through rates notices and newspapers
- Hard copy materials that could be shared by businesses to their customers.

Activities should look to target a wide range of stakeholders, including:

- Residents
- Ratepayers
- Local businesses
- Community groups
- Committees of management
- Customers.

A key part of the engagement would be to create awareness in the community about the potential changes and to share information on the benefits and impacts of the introduction of user pays parking.

Engagement should occur at the beginning of the implementation process, prior to the selection of a preferred scheme. It is best to bring proposals to the community that provide enough detail for them to be able to provide comment on but not so far developed that it appears that a decision has already been made without their input. A selection of possible options could be provided, each with a level of flexibility remaining that allows community input to be incorporated.

# 9 Financial Considerations

## 9.1 Overview

Stantec has undertaken financial modelling to gain a high-level understanding of the revenue and cost implications of the implementation of user pays parking.

A bespoke financial model has been developed which considers parking revenue along two dimensions:

- Parking operations
- Enforcement operations

Each of these dimensions generates its own revenue stream and can be measured independently in terms of operational performance.

There are several variables that influence the parking and enforcement dimensions of a parking system in terms of financial and operational performance. Some variables are unique to one of the dimensions, while others are common to both. These variables are identified in the following.

**Space Characteristics**

- Regulated Hours (Per Day)
- Regulated Days (Per Week)
- Regulated Weeks (Per Year)
- Parking Restriction (e.g., 1P, 2P, etc.)

**Driver Characteristics**

- Occupancy
- Driver Fee Compliance
- Duration of Stay
- Driver Time Compliance
- Resident Exemption Adjustment
- Proportion Daily Rate Payers

**Enforcement Characteristics**

- Infringement Issuing Rate
- Infringement Payment Rate

**Fee Structure**

- Parking Tariff Rate (Per Hour)
- Parking Tariff Rate (Daily Cap)
- Infringement Value
- Resident Permit Fee

**Technology Characteristics**

- Meter Uptime

Costs relating to Council staff resourcing, service provider costs, infrastructure set up costs and recurring and maintenance costs are included in the model.

The values for variables contained within the parking system model are established through either policy settings, as may be determined by the parking administrator from time to time, or through operational characteristics that reflect various motorist and staff behaviours, as well as technology performance.

Within the range of underlying variables, some are more amenable to modification than others.

Variables driven by public policy, such as the Parking Tariff or Regulated Hours, can be influenced directly by parking administrators within the ambit of their responsibilities. Others, such as Occupancy or Compliance, are less able to be directly influenced by parking administrators.

Understanding the relative sensitivities of these variables to the financial and operational performance of a user pays parking system, therefore, provides a blueprint for prioritising and approaching planning or change management initiatives that are both feasible and likely to deliver the best results.

## 9.2 Base Financial Model

A base financial model has been developed to reflect what could be considered a 'probable outcome' of the future expansion of user pays parking and is described in the following. This base financial model reflects User Pays Parking Option 1 described in Section 7.4.1.

### 9.2.1 Spatial Extents

The base financial model assumes an application across three activity centres Bentleigh, Elsternwick and Carnegie. This includes off-street parking areas managed by Council and on-street parking serving the centres (having a commercial frontage).

The total number of car parking spaces within each location has been informed by an estimated mapping process undertaken by Council and provided to Stantec for the purposes of this assessment, as summarised in Table 9-1.

*Table 9-1: Spatial Extent of Parking*

| Centre | On-Street Main Road | On-Street Minor Road | Off-Street |
|---|---|---|---|
| Bentleigh | 125 | 0 | 881 |
| Carnegie | 77 | 46 | 281 |
| Elsternwick | 133 | 171 | 353 |
| **Total** | **335** | **217** | **1515** |

For the purposes of informing the base model, it has been assumed that user pays parking would be implemented across each centre in Year 1.

### 9.2.2 Operating Characteristics

Input values and assumptions relating to each of the operating characteristics along with cost elements are defined in Appendix B.

### 9.2.3 Payment Structure

A payment structure, has been adopted for modelling purposes as follows as discussed earlier in this report:

- On-Street - $3.50 per hour.
- Off-Street - $2.50 per hour with a daily cap of $12.50.

### 9.2.4 Model Outcomes

The financial modelling is summarised with the tables and figures below identifying estimations of:

- Yearly revenue (parking fee and parking infringement)
- Yearly costs
- Net parking revenue
- Net cumulative revenue over the first five years of operation
- Expected payback period.

Further financial modelling details are shown in Appendix B.

The model indicates an initial set-up cost occurring prior to the generation of any parking revenue. This is reflective of the resourcing and infrastructure costs required to develop and implement the system. The model accounts for a basic interest cost associated with 'borrowing' to fund these initial project phases prior to revenue being generated. In Year 1, revenue generation begins with the activation of the parking areas. Net revenue stabilises in Years 4 and 5 with the set-up costs having been established and provides a reasonable estimation of the level of net revenue that could be anticipated in future years.

The base model identifies a net cumulative profit after year 5 in the order of $52,300,000 with an expectation of growth in the order of $11,100,000 per year thereafter.

While recognising the initial set-up costs, it is estimated that the system would be paid back (through revenue generation) mid-way through the first year of operation (assuming that revenue to that point is invested in paying back the system). A longer payback period could be expected should Council choose to invest a portion of the revenue generated during year 1 immediately into the upgrading of parking facilities. On balance, such an approach may be reasonable to demonstrate some of the benefits of the system back to the community, however, would be dependent on Council's repayment preferences.

Infringement revenue could also be reduced in Years 1 and 2 if Council decides to take a slightly softer approach to enforcement during the initial roll out of the program (i.e. a greater issuing of warning notices rather than infringement notices). This would however be dependent upon Council's enforcement preferences and as such has not been reflected in the modelling at this time.

*Table 9-2: Revenue Summary – Base Case*

| | Year 0 (,000) | Year 1 (,000) | Year 2 (,000) | Year 3 (,000) | Year 4 (,000) | Year 5 (,000) |
|---|---|---|---|---|---|---|
| Net Total Fee Revenue (excl GST) | | $7,900 | $7,900 | $7,900 | $7,900 | $7,900 |
| Net Total Infringement Revenue | | $2,200 | $2,200 | $2,200 | $2,200 | $2,200 |
| **Net Total Revenue (excl GST)** | **$0** | **$10,100** | **$10,100** | **$10,100** | **$10,100** | **$10,100** |

*Table 9-3: Cost Summary – Base Case*

| | Year 0 (,000) | Year 1 (,000) | Year 2 (,000) | Year 3 (,000) | Year 4 (,000) | Year 5 (,000) |
|---|---|---|---|---|---|---|
| Staffing Requirement | $400 | $600 | $600 | $200 | $200 | $200 |
| Recurring Operating Costs | $700 | $500 | $400 | $500 | $300 | $300 |
| Infrastructure | | $700 | | | | |
| Interest Incurred from Borrowing | $100 | | | | | |
| **Total Cost** | **$1,200** | **$1,800** | **$1,000** | **$700** | **$500** | **$500** |

*Table 9-4: Cumulative Total Summary – Base Case*

| | Year 0 (,000) | Year 1 (,000) | Year 2 (,000) | Year 3 (,000) | Year 4 (,000) | Year 5 (,000) |
|---|---|---|---|---|---|---|
| Cumulative Total Revenue (excl GST) | $0 | $11,600 | $23,200 | $34,800 | $46,400 | $58,000 |
| Cumulative Cost | $1,200 | $3,000 | $4,000 | $4,700 | $5,200 | $5,700 |
| Cumulative Net Profit (excl GST) | -$1,200 | $8,600 | $19,200 | $30,100 | $41,200 | $52,300 |
| Yearly Profit (excl GST) | -$1,200 | $9,800 | $10,600 | $10,900 | $11,100 | $11,100 |

Table 9-4 identifies a stabilised net yearly profit of $11,100,000 per year from year 4 onwards, with a cumulative net profit of $52,300,000 over the first 5 years of operation.

Figure 9-1 shows the cumulative revenue and costs as calculated by the model. This identifies a larger portion of the revenue being contributed by parking fees followed by infringement revenue. Costs are shown to exceed revenue in Years 0 before being paid back during year 1.

*Figure 9-1: Base Case – 5-Year Cumulative Revenue and Costs*

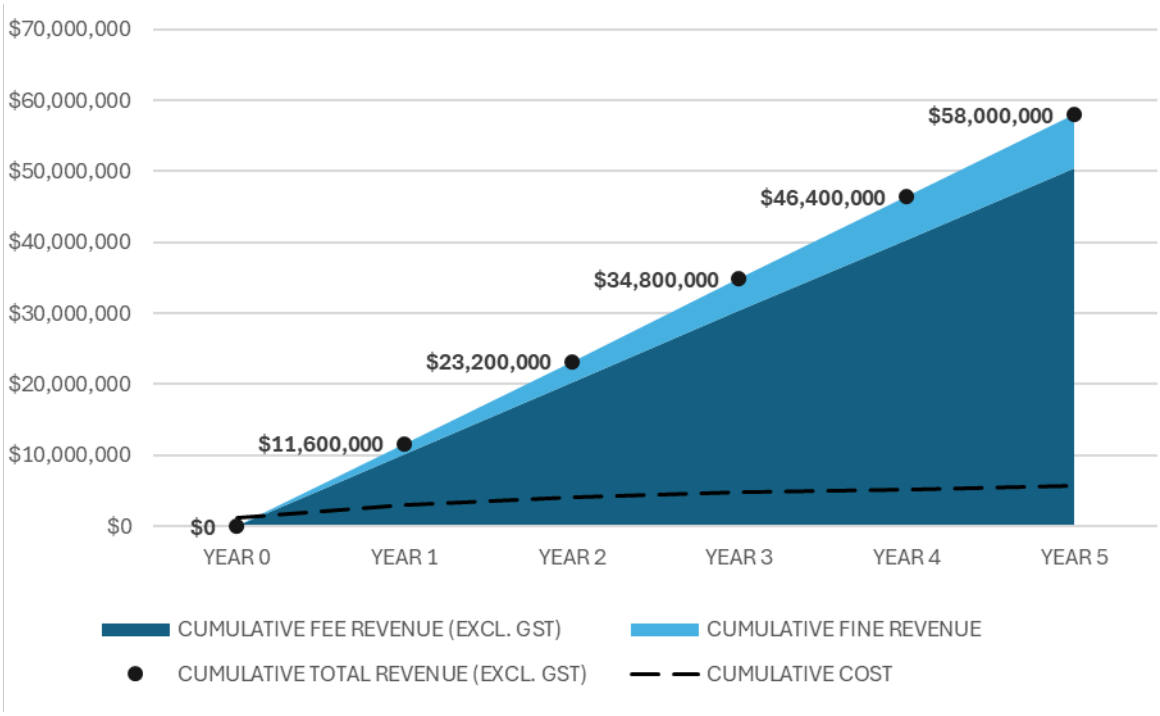
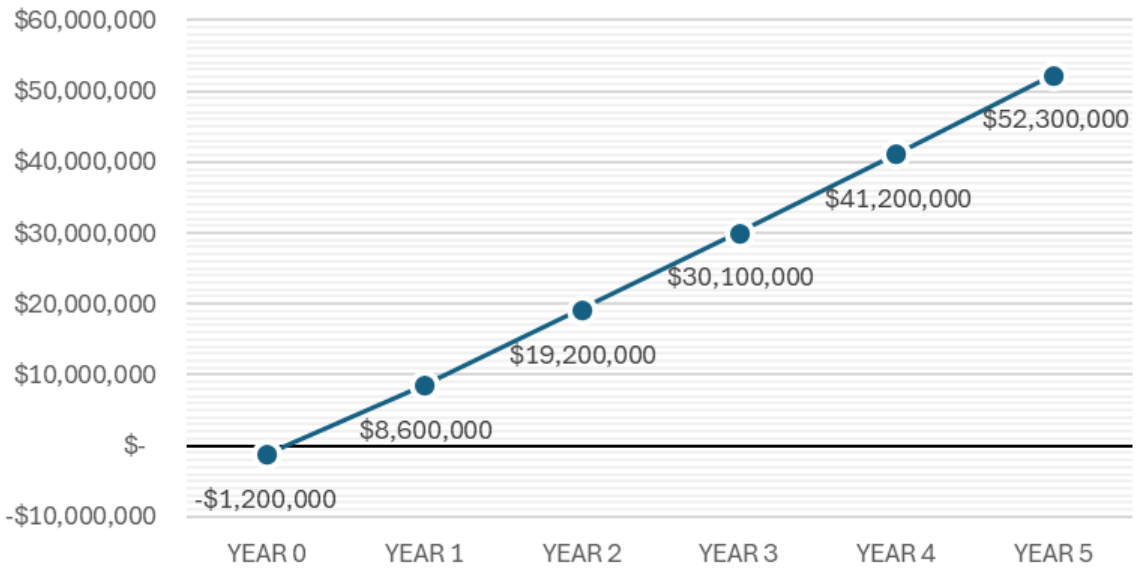



*Figure 9-2: Base Case – Year End Financial Position*



## 9.3 Scenario Testing

Scenario testing has been undertaken to understand the sensitivity of the potential changes to the spatial extent to which user pays parking is implemented as described in Section 7.4.2, Section 7.4.4, Section 7.4.5 and Section 7.4.5 and as follows:

- User Pays Parking Option 2: On-street spaces only in Elsternwick, Bentleigh and Carnegie
- User Pays Parking Option 3: All car parks with occupancy rate higher than 80% (off-street only) in Elsternwick, Bentleigh and Carnegie
- User Pays Parking Option 4: All car parks with occupancy rate higher than 80% (off-street only) in Elsternwick and Carnegie
- User Pays Parking Option 5: Single off-street car park with an occupancy rate higher than 80% (off-street only) in Elsternwick and Carnegie.

Table 9-5 presents the financial impacts of these options compared against the base scenario.

*Table 9-5: Sensitivity Testing*

| Scenario | Year 5 Net Profit | Cumulative Net Profit Years 0 – 5 (% diff to base) | Payback Timeline |
|---|---|---|---|
| **Option 1:** Base Scenario (all parking paid) | $11,100,000 | $52,300,000 | Year 1 |
| **Option 2:** On-Street Spaces (Elsternwick, Bentleigh and Carnegie) | $4,100,000 | $17,500,000 (-66%) | Year 1 |
| **Option 3:** Off-Street parking >80% occupancy (Elsternwick, Bentleigh and Carnegie) | $4,600,000 | $20,100,000 (-62%) | Year 1 |
| **Option 4:** Off-Street parking >80% occupancy (Elsternwick and Carnegie) | $3,100,000 | $12,700,000 (-76%) | Year 1 |
| **Option 5:** Single Off-Street car park >80% occupancy (Elsternwick and Carnegie) | $800,000 | $2,900,000 (-94%) | Year 1 |

Variations (i.e. spatial reductions) in user pays parking areas will naturally result in reductions to the net revenue achieved by the system. While reductions in revenue can be seen in the scenarios tested, they continue to result in net positive profit outcomes and as such could be considered by Council if compromises to the best practice management approach are required to balance community and trader expectations.

## 9.4 Limitations and Assumptions of the Model

While not built into the modelling, a number of other factors exist which should at least be recognised in the context of this study and considered as part of further stages.

It is acknowledged that while each would individually impact the modelling undertaken, these factors are likely to balance out and counteract each other, therefore not significantly impacting the modelling undertaken to date.

**Price escalation:** Price escalation can occur when labour costs or costs of materials rise. A number of cost items associated with user pays parking would be subject to price escalation. For example, costs of staff to maintain or enforce user pays parking or costs of user pays parking infrastructure (machines, cameras, etc).

**Increases in parking fees over time:** The financial model assumed no change to the hourly user pays parking rates over the modelled period. However, it is possible that these rates would increase over time.

**Interest relating to the payback of parking infrastructure:** The financial model assumes that an interest rate of 10% would apply to the initial upfront costs required to establish the system, prior to it generating revenue to pay these costs back.

**Price elasticity relating to displacement of parking due to introducing price:** The financial model assumes that demands for user pays parking areas will not change with the introduction of user pays parking. However, it is a reasonable assumption that some people will choose not to park in locations where user pays parking is introduced.

**Growth in visitation:** It is reasonable to expect that growth in visitation to these centres would occur over coming years which could result in a higher demand for parking across all locations.

**Time restriction compliance:** For the purpose of this model it has been assumed that driver time compliance is 100% compliant. While in reality this is not the case, these infringements types are already being captured by Council in each centre. While the implementation of a user pays parking system will make it easier to identify such infringements, these infringements have not been included within this model to avoid a double counting of potential revenue to Council.

**Infringement follow-up:** Costs associated with infringement follow-up, including sourcing of driver address information, have not been specifically accounted for within the model. This is instead reflected by the adoption of conservative assumptions (on the low side) relating to the infringement payment rates.

## 9.5 Recommendations from Financial Modelling

The base financial modelling clearly identifies the opportunities of revenue generation over time with a 5-year net cumulative profit expected in the order of $52,300,000, based on the user pays parking program being applied to three activity centres.

The sensitivity scenarios also present an opportunity for further consideration to be given to the exact future roll out of a user pays parking program and the merits of application to short stay parking and on-street parking.

These considerations may assist to further balance the revenue generation objectives with community / user expectations and should be further explored as part of the future strategic planning stages of the program should Council deem it appropriate to proceed.

# 10 Stakeholder Outcomes

## 10.1 Community Response

Introducing user pays parking in an activity centre area is a complex decision that can have widespread impacts. It can influence parking availability, transport modal selection, traffic patterns, and economic activity within the area as well as providing Council with revenue that can be spent directly on needed community infrastructure and parking facility maintenance and upkeep.

The Glen Eira Parking Policy 2020 acknowledges that changes around parking can be difficult. The policy affirms Council's commitment to consulting with the community throughout the planning process. The policy includes an objective to ensure anyone who is affected by proposals to introduce changes to parking is provided with appropriate opportunities to engage with the process. Council recognises there are many competing desires and needs within the community. It aims to provide a platform so that residents' views on proposals can be shared.

The Glen Eira Activity Centres Community Engagement Summary results showed that parking is an important topic for residents. This finding suggests that there will be widespread community interest in any proposal to introduce user pays parking in Glen Eira activity centres, which is something Council should be prepared for.

Response Spectrums

People's response to user pays parking will vary. Surveys across various locations[15] indicate that people often value the amenity of the centre more than the provision of car parking. The increase of valet and premium parking options at shopping centres and airports indicates that people are often willing to pay for convenience and premium options.

The way in which people will respond to the introduction of user pays parking can be best described through a number of response spectrums. Those users who continue to drive and park will obtain a direct benefit of being able to park closer to their destination and spend less time looking for a parking space. This also decreases the time vehicles spend circulating town centres for free parking and thus reduces congestion by improving the availability of parking within the local road network.

Others will choose to respond differently by changing their transport mode or accepting a longer walking distance to avoid paying parking.

Not everyone is affected

Only those who drive will be impacted by the introduction of user pays parking. Indeed, at present everyone contributes (indirectly) to the cost of parking provision, maintenance and enforcement of parking, whether they drive or not. Based on existing mode share, 34% of the community is currently

[15] Acland Street, St Kilda; High Street, Northcote; Boundary Street, Eagle Street and Caxton Street, Brisbane; Graz, Austria; Bristol, UK; and Edinburgh, UK.

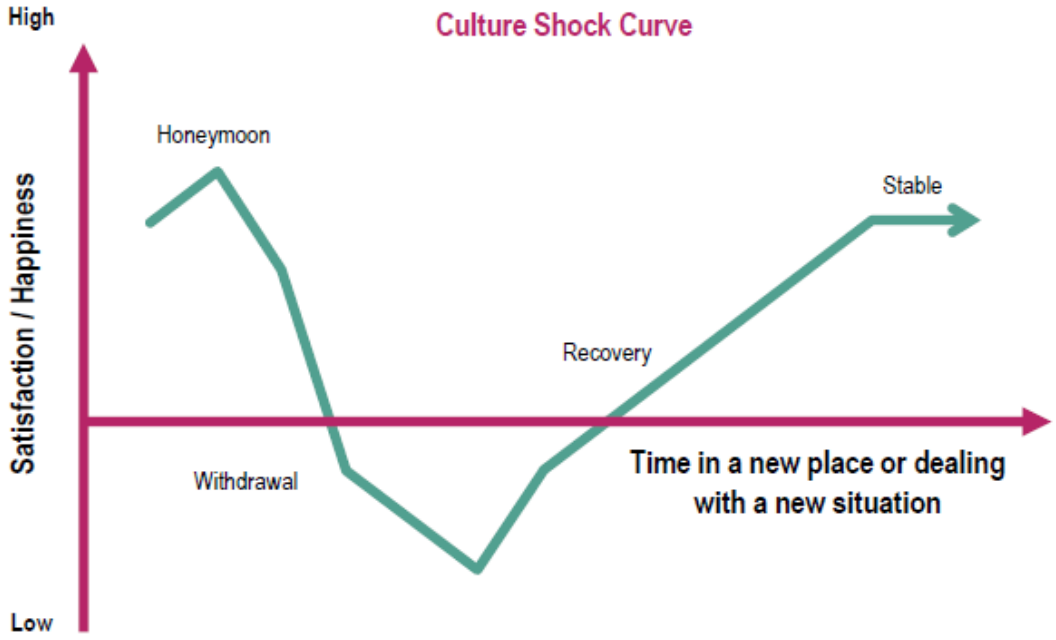


contributing to the cost of parking but are not making use of these facilities. A parking price to contribute to these existing costs allows for the indirect financial burden on those who do not drive to be reduced.

Initial Impacts

Following the implementation of user pays parking, there would be an initial shock to the parking and transport system followed by a period of settling and adjustment of parking characteristics prior to seeing the real benefits (see Figure 10-1). While these impacts should not be ignored as they will provide the ability to track if things are going to plan, hitting the panic button to fix issues and community angst should be avoided to ensure the long-term success of any such scheme.

*Figure 10-1: Culture Shock Curve*



## 10.2 Engagement

**An approach which engages the relevant members of the community and stakeholders at the right time throughout the journey will ensure a fair and balanced approach, resulting in the long-term success of user pays parking being implemented**

Community engagement is a critical component in the development of a paid parking strategy for a council. By actively involving residents, business owners, and other stakeholders, the council can ensure that the strategy is tailored to the unique needs and preferences of the community. This collaborative approach is key to earning trust from the community, identifying potential issues and developing solutions that are both effective and equitable. Engaging the community also helps to build consensus and support for the strategy, which is essential for its successful implementation and long-term sustainability.

## 10.3 Reinvestment of Parking Revenue

Public perceptions of paid parking can be improved by reinvesting parking revenue into services and facilities that benefit the local area, such as:

- creating, maintaining and enforcing parking infrastructure
- improving access opportunities by all modes of transport, including public transport
- improved public spaces and other community facilities
- generally improving the amenity of the area.

## 10.4 Mitigating Measures

Stakeholder groups likely to be impacted in some way by the introduction of paid parking include customers, traders, employees, Council, and residents. It is important that Council gives appropriate levels of consideration to the potential impacts and how they may affect these stakeholder groups.

Actions that should be considered to mitigate potential impacts associated with user pays parking introduction:

- Providing useful real time information to assist user decision making.
- Providing improved community infrastructure within and around activity centres.
- Delivering a placemaking program to improve the amenity of the activity centre shopping strip in order to attract more customers.
- Launching marketing campaigns to promote the activity centre and highlight the benefits of shopping locally, independent of the introduction of user pays parking.
- Improving active transport infrastructure and end-of-trip facilities to increase viability of cycling and walking to activity centres.
- Offering public transport incentive program to help to enable transport modal shift.
- Developing strategies to manage spillover parking into residential areas.
- Providing additional resources to address queries or feedback received.

## 10.5 Examples of Success

The below examples have been provided to demonstrate successful outcomes following the introduction of paid parking.

City of Ballarat

Parking meters were installed in Ballarat's CBD in February 2020 as part of the City of Ballarat's Smarter Parking Plan. All visitors are eligible for one hour of free parking each day, with the option to pay for additional time by coin, debit/credit card or phone app. This scheme was introduced to better balance the needs of residents, workers and shoppers for Ballarat's growing CBD.

The meters were switched off shortly afterwards, in the wake of the COVID-19 pandemic. However, in June 2020, with businesses reopening and the return of people to the CBD, Council chose to turn the meters back on. Traders had specifically requested the paid parking be reinstated to encourage turnover, as it had become difficult for their customers to access their stores.

This example highlights the benefits that paid parking can have on promoting turnover in a CBD setting.

City of Dandenong

In 2022, parking meters on Lonsdale Street in Dandenong were switched on following a three-year trial of free parking. Traders reported during the trial that tenants, staff and owners used the spots as "convenient free parking", which made it hard for customers to park nearby (as reported by Council).

The paid parking revenue was used to help fund the Council and Victoria Police's Safer Streets Program, including more police presence, more CCTV cameras, temporary art installations, and shopfront activations. These measures were designed to attract more shoppers and help business recover.

This example highlights paid parking as a tool to encourage turnover and the opportunities to fund other projects through paid parking revenue.

Blue Mountains City Council

Blue Mountains City Council is currently implementing a Visitor Pay Smart Parking project, which commenced in July 2023. The scheme was introduced to manage traffic demand and congestion while providing revenue for visitor and resident infrastructure. Parking income is intended to contribute to maintaining, renewing and upgrading City infrastructure, funding parking management operating costs and investing in visitor parking infrastructure.

As a paid parking scheme for visitors, residents are exempt from parking charges but must still abide by the timed restrictions.

Community support for the scheme was gained by highlighting that the revenue raised through parking payments is linked to the ability to pay for services, facilities and infrastructure. Locals were also more likely to support the proposal if they had access to permits and were excluded from paying.

City of Perth

The City of Perth equipped over 10,000 parking bays with smart parking sensors in the CBD. Real-time data was used to guide drivers to available spots. This improved traffic flow, reduced emissions and resulted in a 28% reduction in parking-related congestion.

City of Adelaide

The City of Adelaide undertook a smart parking trial using in-ground sensors and mobile app integration, with real-time availability and digital payments. The trial received positive feedback from businesses and residents and resulted in a 21% increase in parking turnover. The parking usage data that was collected was used to inform future transport planning.

Parking Pricing Implementation Guidelines, Victoria Transport Policy Institute, Oct 2024

This report provides guidance on parking pricing implementation, including benefits and costs, common obstacles and objections and examples of successful schemes. Parking pricing (or paid parking) is noted as one of a range of parking management strategies, which has the potential to reduce the amount of parking required by 10-30%, as well as reducing vehicle traffic.

The report contains some important discussion on the economic impacts of introducing paid parking and points towards research that illustrates a positive relationship between parking prices and regional economic productivity (Litman, 2024). One study from the Netherlands found that parking fees are largely associated with positive effects on the local economy over the long term, though over the short term there may be a drop in the number of visitors to such an area (Van der Waerden and Timmermans 2009).

Some of the examples of success documented within the report include:

- San Diego
    - » A mixture of on-street parking policies and technologies targeted a 15% vacancy rate.
    - » Parking fees were raised in high demand areas to $1.25 per hour, and kept as low as $0.50 in peripheral areas.
    - » Resulted in the doubling in on-street parking turnover and total parking meter revenue.
- Downtown Pasadena Redevelopment
    - » A Parking Meter Zone (PMZ) was established within which parking was priced and the revenues invested.
    - » Supported by traders as they benefited from the improvements to the area.
    - » Parking revenue funded community improvements that attracted more visitors, which increased parking revenue allowing further improvements.
- Aspen Downtown Parking Pricing
    - » Charging for on-street parking using multi-space meters.
    - » Parking fees are highest in the centre and decline with distance from the core.
    - » Initial objections but pricing proved effective at reducing parking problems.
    - » Most downtown traders now support pricing to ensure that convenient parking is available for customers and to help finance city programs.

- Austin Parking Benefit District
    - » A Parking Benefit District (PBD) is created by charging for on-street parking and dedicating the revenue towards improvements in the neighbourhood that promote walking, cycling and transit use (footpaths, kerb ramps, bicycle lanes)
    - » Charging for parking and promoting alternatives help to reduce the number of people parking in the neighbourhood, but those who park and pay the meter benefit the neighbourhood with additional revenues.



# Appendices

# Appendix A Parking Survey Data

## Bentleigh Survey Area

| Ref | Car Park Location | Parking Restriction | Capacity | Wednesday | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Time | | | | | | | | | | | | | |
| | | | | 11:00 AM | 12:00 PM | 1:00 PM | 2:00 PM | 3:00 PM | 4:00 PM | 5:00 PM | 6:00 PM | 7:00 PM | 8:00 PM | 9:00 PM | 10:00 PM | 11:00 PM | AVERAGE |
| **Off Street** | | | | | | | | | | | | | | | | | |
| **Northern side** | | | | | | | | | | | | | | | | | |
| A | Btw Jasper Rd & Godfrey St | 2P / 4P (8am-6pm Mon-Sat) | **150** | 103 | | | 101 | | | 63 | 59 | 62 | 49 | 16 | 9 | 7 | 38 |
| | | | | 69% | | | 67% | | | 42% | 39% | 41% | 32% | 11% | 6% | 5% | 25% |
| B | Btw Godfrey St & Vickery St | 2P / 4P (8am-6pm Mon-Sat) | **143** | 126 | | | 109 | | | 66 | 51 | 45 | 41 | 21 | 5 | 3 | 33 |
| | | | | 88% | | | 76% | | | 46% | 36% | 31% | 29% | 15% | 3% | 2% | 23% |
| C | Btw Vickery St & Bent St & | 2P (8am-6pm Mon-Sat) | **110** | 82 | | | 94 | | | 74 | 44 | 66 | 48 | 39 | 19 | 21 | 44 |
| | | | | 75% | | | 85% | | | 67% | 40% | 60% | 44% | 35% | 17% | 19% | 40% |
| D | Bent St (west side) | 2P / 4P (8am-6pm Mon-Sat) / Unrestricted | **140** | 112 | | | 115 | | | 45 | 27 | 26 | 23 | 15 | 6 | 4 | 21 |
| | | | | 80% | | | 82% | | | 33% | 20% | 19% | 17% | 11% | 4% | 3% | 15% |
| E | Oak St / Bleazyby St | 2P / 4P (8am-6pm Mon-Sat) / Unrestricted | **160** | 88 | | | 97 | | | 77 | 59 | 52 | 29 | 22 | 10 | 11 | 37 |
| | | | | 55% | | | 61% | | | 48% | 37% | 33% | 18% | 14% | 6% | 7% | 23% |
| **Southern side** | | | | | | | | | | | | | | | | | |
| F | Jasper Rd Library | 2P (8am-6pm Mon-Sat) | **67** | 45 | | | 52 | | | 28 | 20 | 16 | 13 | 4 | 2 | 1 | 12 |
| | | | | 67% | | | 78% | | | 43% | 31% | 25% | 20% | 6% | 3% | 2% | 18% |
| G | Mitchell St (east side) | 2P (8am-6pm Mon-Sat) | **15** | 10 | | | 14 | | | 8 | 8 | 10 | 6 | 3 | 2 | 2 | 6 |
| | | | | 67% | | | 93% | | | 57% | 57% | 71% | 43% | 21% | 14% | 14% | 43% |
| H | Btw Mitchell & Daley St | 2P (8am-6pm Mon-Sat) | **45** | 35 | | | 34 | | | 14 | 19 | 24 | 21 | 9 | 3 | 2 | 13 |
| | | | | 78% | | | 76% | | | 31% | 43% | 53% | 46% | 20% | 7% | 5% | 29% |
| I | Btw Daley St & Bendigo Av | 2P / 4P (8am-6pm Mon-Sat) | **51** | 33 | | | 36 | | | 15 | 22 | 27 | 23 | 10 | 4 | 3 | 15 |
| | | | | 65% | | | 71% | | | 31% | 43% | 53% | 46% | 20% | 7% | 5% | 29% |
| J | Bendigo Av (west side) | 4P (8am-6pm Mon-Sat) | **28** | 16 | | | 19 | | | 7 | 2 | 4 | 3 | 2 | 0 | 1 | 3 |
| | | | | 57% | | | 68% | | | 25% | 7% | 14% | 11% | 7% | 0% | 4% | 11% |
| K | Burgess St (west side) | 2P / 4P (8am-6pm Mon-Sat) | **21** | 16 | | | 17 | | | 8 | 5 | 7 | 3 | 2 | 0 | 0 | 4 |
| | | | | 76% | | | 81% | | | 40% | 25% | 35% | 15% | 10% | 0% | 0% | 20% |
| **On-Street (Centre Rd)** | | | | | | | | | | | | | | | | | |
| **Northern side** | | | | | | | | | | | | | | | | | |
| L | Jasper Rd & Godfrey St | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **15** | 7 | | | 9 | | | 8 | 10 | 12 | 8 | 6 | 2 | 0 | 7 |
| | | | | 47% | | | 60% | | | 57% | 71% | 86% | 57% | 43% | 14% | 0% | 47% |
| M | Godfrey St & Vickery St | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **9** | 7 | | | 6 | | | 6 | 8 | 7 | 8 | 4 | 1 | 0 | 5 |
| | | | | 78% | | | 67% | | | 67% | 89% | 78% | 89% | 44% | 11% | 0% | 54% |
| N | Vickery St & Bent St | 1P (8am-5pm Mon-Fri, 8am-12noon Sat), 1x loading zone 7am-5pm, 1/4P other times | **6** | 4 | | | 6 | | | 5 | 5 | 5 | 5 | 4 | 1 | 0 | 4 |
| | | | | 67% | | | 100% | | | 71% | 71% | 71% | 71% | 57% | 14% | 0% | 51% |
| O | Bent St & Nicholson St | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **2** | 0 | | | 0 | | | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| | | | | 0% | | | 0% | | | 50% | 50% | 50% | 0% | 50% | 50% | 0% | 36% |
| P | Nicholson St & Oak St | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **28** | 23 | | | 25 | | | 14 | 13 | 13 | 11 | 7 | 4 | 3 | 9 |
| | | | | 82% | | | 89% | | | 45% | 42% | 42% | 35% | 23% | 13% | 10% | 30% |
| Q | Oak St & Wheatley Rd | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **7** | 7 | | | 7 | | | 4 | 7 | 7 | 7 | 6 | 6 | 3 | 6 |
| | | | | 100% | | | 100% | | | 57% | 100% | 100% | 100% | 86% | 86% | 43% | 88% |
| R | Wheatley Rd & Rose St | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **4** | 3 | | | 3 | | | 3 | 0 | 4 | 4 | 0 | 0 | 2 | 2 |
| | | | | 75% | | | 75% | | | 75% | 0% | 100% | 100% | 0% | 0% | 50% | 46% |
| **Southern side** | | | | | | | | | | | | | | | | | |
| S | Jasper Rd & Robert St | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **5** | 4 | | | 5 | | | 3 | 4 | 5 | 5 | 1 | 1 | 1 | 3 |
| | | | | 80% | | | 100% | | | 43% | 57% | 71% | 71% | 14% | 14% | 14% | 41% |
| T | Robert St & Mitchell St | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **8** | 7 | | | 6 | | | 5 | 7 | 7 | 7 | 8 | 0 | 0 | 5 |
| | | | | 88% | | | 75% | | | 63% | 88% | 88% | 88% | 100% | 0% | 0% | 61% |
| U | Mitchell St & Daley Street | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **6** | 3 | | | 4 | | | 5 | 5 | 5 | 3 | 4 | 0 | 0 | 3 |
| | | | | 50% | | | 67% | | | 83% | 83% | 83% | 50% | 67% | 0% | 0% | 52% |
| V | Daley Streey & Bendigo Av | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **10** | 10 | | | 8 | | | 5 | 7 | 8 | 9 | 4 | 2 | 1 | 5 |
| | | | | 100% | | | 80% | | | 50% | 70% | 80% | 90% | 40% | 20% | 10% | 51% |
| W | Burgess St & Loranne St | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **10** | 5 | | | 4 | | | 7 | 6 | 6 | 5 | 6 | 4 | 2 | 5 |
| | | | | 50% | | | 40% | | | 78% | 67% | 67% | 56% | 67% | 44% | 22% | 57% |
| X | Loranne St & Mavho St | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **10** | 9 | | | 5 | | | 5 | 7 | 4 | 2 | 3 | 3 | 2 | 4 |
| | | | | 100% | | | 50% | | | 56% | 78% | 44% | 22% | 33% | 33% | 22% | 41% |
| Y | Mavho St & Campbell St | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **11** | 10 | | | 10 | | | 8 | 7 | 9 | 5 | 2 | 1 | 1 | 5 |
| | | | | 91% | | | 91% | | | 67% | 58% | 75% | 42% | 17% | 8% | 8% | 39% |
| Z | Cambell St & Gilbert Gv | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **2** | 1 | | | 2 | | | 2 | 2 | 2 | 2 | 1 | 0 | 0 | 1 |
| | | | | 50% | | | 100% | | | 100% | 100% | 100% | 100% | 50% | 0% | 0% | 64% |
| AA | Gilbert Gv & Cairnes Gv | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **8** | 3 | | | 8 | | | 2 | 7 | 9 | 9 | 4 | 3 | 4 | 5 |
| | | | | 38% | | | 100% | | | 22% | 78% | 100% | 100% | 44% | 33% | 44% | 60% |
| AB | Cairnes Gv & No. 246 | 1P (8am-5pm Mon-Fri, 8am-12noon Sat) | **2** | 2 | | | 0 | | | | | | | | | | |
| | | | | 100% | | | 0% | | | | | | | | | | |
| **Total Off-Street** | | | **930** | 666 | | | 688 | | | 405 | 316 | 338 | 259 | 143 | 60 | 55 | 225.7142857 |
| **Total Off-Street %** | | | | 71.61% | | | 73.98% | | | 43.55% | 33.98% | 36.34% | 27.85% | 15.38% | 6.45% | 5.91% | 24.27% |
| **Total On-street MAIN** | | | **143** | 103 | | | 108 | | | 83 | 96 | 104 | 90 | 61 | 29 | 19 | 69.28571429 |
| **Total On-street MAIN %** | | | | 72.03% | | | 75.52% | | | 58.04% | 67.13% | 72.73% | 62.94% | 42.66% | 20.28% | 13.29% | 48.45% |
| **Total On-street M** | | | **0** | | | | | | | | | | | | | | |
| **Total On-street M %** | | | | | | | | | | | | | | | | | |
| **Grand Total** | | | **1073** | 769 | | | 796 | | | 488 | 412 | 442 | 349 | 204 | 89 | 74 | 295 |
| **Grand Total %** | | | | 71.67% | | | 74.18% | | | 45.48% | 38.40% | 41.19% | 32.53% | 19.01% | 8.29% | 6.90% | 27.49% |
| | | | MAX | 1073 | 1073 | 1073 | 1073 | 1073 | 1073 | 1073 | 1073 | 1073 | 1073 | 1073 | 1073 | 1073 | 1073 |

# Carnegie Survey Area - Occupancy %

| Ref | Car Park Location | Parking Restriction | Capacity | Off Street | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Wednesday | | | | | | | | | | | | | | | |
| | | | | Time | | | | | | | | | | | | | | | |
| | | | | 9:00 AM | 10:00 AM | 11:00 AM | 12:00 PM | 1:00 PM | 2:00 PM | 3:00 PM | 4:00 PM | 5:00 PM | 6:00 PM | 7:00 PM | 8:00 PM | 9:00 PM | 10:00 PM | 11:00 PM | AVERAGE |
| A | Kokaribb Rd (north of Woolies) | 2P (8am-6pm Mon-Sat) | 67 | 15 | | | 53 | | | | | 48 | 49 | 67 | 67 | 48 | 8 | 8 | 42 |
| | | | | 22% | | | 79% | | | | | 72% | 73% | 100% | 100% | 72% | 12% | 12% | 60% |
| B | Kokaribb Rd (south of Woolies) | 2P (8am-6pm Mon-Sat) | 92 | 29 | | | 87 | | | | | 72 | 82 | 97 | 91 | 43 | 19 | 5 | 58 |
| | | | | 32% | | | 95% | | | | | 70% | 80% | 94% | 88% | 42% | 18% | 5% | 58% |
| C | Shepparson Ave (south of Library) | 2P (8am-6pm Mon-Sat) | 119 | 34 | | | 105 | | | | | 55 | 78 | 118 | 115 | 74 | 24 | 14 | 68 |
| | | | | 29% | | | 88% | | | | | 45% | 64% | 98% | 95% | 61% | 20% | 12% | 57% |
| D | Shepparson Ave (north of Library) | 3P (8am-6pm Mon-Fri) | 9 | 8 | | | 6 | | | | | 8 | 8 | 5 | 7 | 5 | 1 | 1 | 5 |
| | | | | 89% | | | 67% | | | | | 89% | 89% | 56% | 78% | 56% | 11% | 11% | 61% |
| **On-Street (Koornang Rd)** | | | | | | | | | | | | | | | | | | | |
| **Eastern side** | | | | | | | | | | | | | | | | | | | |
| E | Dandenong Rd & Arawatta St | 1P (9am-4pm Mon-Fri, 8am-12noon Sat) | 6 | 0 | | | 3 | | | | | 0 | 1 | 5 | 4 | 5 | 2 | 2 | 3 |
| | | | | 0% | | | 100% | | | | | 0% | 13% | 63% | 50% | 63% | 25% | 25% | 34% |
| F | Morton Av & Neerim Rd | 1P (8am-6pm Mon-Fri, 8am-12noon Sat) | 23 | 17 | | | 21 | | | | | 16 | 23 | 26 | 26 | 22 | 7 | 0 | 17 |
| | | | | 74% | | | 91% | | | | | 62% | 88% | 100% | 100% | 85% | 27% | 0% | 66% |
| G | Neerim Rd & No.182 | 2P (8am-6pm Mon-Fri, 8am-12noon Sat) | 9 | 3 | | | 4 | | | | | 6 | 5 | 8 | 7 | 4 | 0 | 0 | 4 |
| | | | | 33% | | | 44% | | | | | 67% | 56% | 89% | 78% | 44% | 0% | 0% | 48% |
| **Western side** | | | | | | | | | | | | | | | | | | | |
| | | | 15 | 3 | | | 12 | | | | | 5 | 5 | 8 | 12 | 5 | 2 | 1 | 5 |
| H | Dandenong Rd & Egan St | 1P (8/9am-4/6pm Mon-Fri, 8am-12noon Sat) | | 60% | | | 80% | | | | | 33% | 33% | 53% | 80% | 33% | 13% | 7% | 36% |
| | | | 29 | 9 | | | 29 | | | | | 23 | 28 | 29 | 28 | 28 | 1 | 2 | 20 |
| I | Rosstown Rd & Neerim Rd | 1P (8am-6pm Mon-Fri, 8am-12noon Sat) | | 31% | | | 100% | | | | | 79% | 97% | 100% | 97% | 97% | 3% | 7% | 68% |
| **On-Street (Egan St)** | | | | | | | | | | | | | | | | | | | |
| J | Egan Street (south side) | 1P (7am-11pm All Days) | 3 | 2 | | | 2 | | | | | 2 | 2 | 1 | 2 | 1 | 0 | 1 | 1 |
| | | | | 67% | | | 67% | | | | | 67% | 67% | 33% | 67% | 33% | 0% | 33% | 43% |
| K | | 1/4P (7am-11pm All Days) | 2 | 1 | | | 0 | | | | | 2 | 1 | 1 | 2 | 0 | 1 | 0 | 1 |
| | | | | 50% | | | 0% | | | | | 67% | 33% | 33% | 67% | 0% | 33% | 0% | 33% |
| L | | 2P (7am-11pm All Days) | 21 | 11 | | | 18 | | | | | 20 | 11 | 15 | 12 | 3 | 1 | 0 | 9 |
| | | | | 52% | | | 86% | | | | | 95% | 52% | 71% | 57% | 14% | 5% | 0% | 42% |
| M | | 4P (7am-11pm All Days) | 4 | 4 | | | 4 | | | | | 4 | 3 | 4 | 8 | 1 | 2 | 2 | 3 |
| | | | | 100% | | | 100% | | | | | 21% | 16% | 21% | 42% | 5% | 11% | 11% | 18% |
| **Total Off-Street** | | | 287 | 86 | | | 251 | | | | | 183 | 217 | 287 | 280 | 170 | 52 | 28 | 173 |
| **Total Off-Street %** | | | | 30% | | | 87% | | | | | 64% | 76% | 100% | 98% | 59% | 18% | 10% | 60% |
| **Total On-street MAIN** | | | 82 | 32 | | | 69 | | | | | 50 | 62 | | | | | | |
| **Total On-Street MAIN %** | | | | 39% | | | 84% | | | | | 61% | 76% | | | | | | |
| **Total On-street M** | | | 30 | 18 | | | 24 | | | | | 28 | 17 | | | | | | |
| **Total On-Street M %** | | | | 60% | | | 80% | | | | | 93% | 57% | | | | | | |
| **Grand Total** | | | 369 | 118 | | | 320 | | | | | 233 | 279 | 287 | 280 | 170 | 52 | 28 | 196 |
| **Grand Total %** | | | | 32% | | | 87% | | | | | 63% | 76% | 78% | 76% | 46% | 14% | 8% | 53% |
| | | | MAX | 369 | 369 | 369 | 369 | 369 | 369 | 369 | 369 | 369 | 369 | 369 | 369 | 369 | 369 | 369 | |

# Elsternwick Survey Area

| Ref | Car Park Location | Parking Restriction | Capacity | Wednesday | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Time | | | | | | | | | | | | | | | |
| | | | | 9:00 AM | 10:00 AM | 11:00 AM | 12:00 PM | 1:00 PM | 2:00 PM | 3:00 PM | 4:00 PM | 5:00 PM | 6:00 PM | 7:00 PM | 8:00 PM | 9:00 PM | 10:00 PM | 11:00 PM | AVERAGE |
| **Off Street** | | | | | | | | | | | | | | | | | | | |
| **Northern side** | | | | | | | | | | | | | | | | | | | |
| A | Btw Orrong & Staniland Gv | 2P (8am-6pm Mon-Sat) | **68** | 46 | | | | 51 | | | | 45 | 33 | 39 | 36 | 31 | 31 | 24 | 34 |
| | | | | 68% | | | | 75% | | | | 64% | 47% | 56% | 51% | 44% | 44% | 34% | 49% |
| B | Staniland Library | 2P (8am-6pm Mon-Sat) Unrestricted | **84** | 70 | | | | 81 | | | | 30 | 16 | 17 | 10 | 7 | 4 | 4 | 13 |
| | | | | 83% | | | | 96% | | | | 35% | 19% | 20% | 12% | 8% | 5% | 5% | 15% |
| **Southern Side** | | | | | | | | | | | | | | | | | | | |
| C | Stanley St (East) | 2P / 4P (8am-6pm Mon-Sat) | **113** | 60 | | | | 103 | | | | 39 | 27 | 31 | 23 | 13 | 4 | 4 | 20 |
| | | | | 53% | | | | 91% | | | | 31% | 22% | 25% | 18% | 10% | 3% | 3% | 16% |
| D | Stanley St (West) | 2P / 4P (8am-6pm Mon-Sat) / Unrestricted | **78** | 47 | | | | 72 | | | | 46 | 38 | 59 | 70 | 44 | 22 | 4 | 40 |
| | | | | 60% | | | | 92% | | | | 61% | 50% | 78% | 92% | 58% | 29% | 5% | 53% |
| **On-Street (Glen Huntly Rd)** | | | | | | | | | | | | | | | | | | | |
| **Northern side** | | | | | | | | | | | | | | | | | | | |
| E | Beavis St & Orrong Rd | 1P (8am-6pm Mon-Fri, 8am-12noon Sat) | **13** | 11 | | | | 11 | | | | 12 | 13 | 13 | 12 | 11 | 9 | 9 | 11 |
| | | | | 85% | | | | 85% | | | | 92% | 100% | 100% | 92% | 85% | 69% | 69% | 87% |
| F | Orrong Rd & Staniland St | 1P (8am-6pm Mon-Sat) | **15** | 11 | | | | 15 | | | | 7 | 12 | 14 | 10 | 2 | 1 | 1 | 7 |
| | | | | 73% | | | | 100% | | | | 41% | 71% | 82% | 59% | 12% | 6% | 6% | 39% |
| G | Stanilan St & St Georges Rd | 1P (8am-6pm Mon-Sat) | **9** | 9 | | | | 9 | | | | 8 | 7 | 9 | 7 | 2 | 0 | 0 | 5 |
| | | | | 100% | | | | 100% | | | | 80% | 70% | 90% | 70% | 20% | 0% | 0% | 47% |
| H | St Georges Rd & Selwyn St | 1P (8am-6pm Mon-Sat) | **19** | 15 | | | | 18 | | | | 13 | 15 | 19 | 16 | 10 | 5 | 1 | 11 |
| | | | | 79% | | | | 95% | | | | 68% | 79% | 100% | 84% | 53% | 26% | 5% | 59% |
| I | Ripon Gv & McCombie St | 2P (8am-6pm Mon-Sat) | **20** | 18 | | | | 19 | | | | 19 | 20 | 19 | 18 | 12 | 10 | 14 | 16 |
| | | | | 90% | | | | 95% | | | | 90% | 95% | 90% | 86% | 57% | 48% | 67% | 76% |
| J | McCombie St & Nepean Hwy | 2P (8am-6pm Mon-Fri, 8am-12noon Sat) | **4** | 4 | | | | 2 | | | | 3 | 4 | 4 | 3 | 2 | 0 | 1 | 2 |
| | | | | 100% | | | | 50% | | | | 75% | 100% | 100% | 75% | 50% | 0% | 25% | 61% |
| **Southern side** | | | | | | | | | | | | | | | | | | | |
| K | Downshire Rd & Orrong Rd | 1P (8am-6pm Mon-Fri, 8am-12noon Sat) | **12** | 10 | | | | 11 | | | | 10 | 11 | 9 | 11 | 10 | 9 | 3 | 9 |
| | | | | 83% | | | | 92% | | | | 71% | 79% | 64% | 79% | 71% | 64% | 21% | 64% |
| L | Orrong Rd & Carre St | 1P (8am-6pm Mon-Sat) | **14** | 14 | | | | 12 | | | | 12 | 10 | 13 | 13 | 4 | 2 | 0 | 8 |
| | | | | 100% | | | | 86% | | | | 80% | 67% | 87% | 87% | 27% | 13% | 0% | 51% |
| M | Carre St & Riddell Pd | 1P (8am-6pm Mon-Sat) | **20** | 18 | | | | 18 | | | | 10 | 13 | 15 | 14 | 11 | 0 | 3 | 9 |
| | | | | 89% | | | | 89% | | | | 53% | 68% | 79% | 74% | 58% | 0% | 16% | 50% |
| N | Riddell Pd & Horne St | 1P (8am-6pm Mon-Sat) | **6** | 1 | | | | 5 | | | | 2 | 5 | 6 | 6 | 5 | 4 | 3 | 4 |
| | | | | 17% | | | | 83% | | | | 20% | 50% | 60% | 60% | 50% | 40% | 30% | 44% |
| O | Horne St & Nepean Hwy | 1P (8am-6pm Mon-Sat) | **11** | 8 | | | | 8 | | | | 7 | 11 | 11 | 7 | 7 | 7 | 7 | 8 |
| | | | | 73% | | | | 73% | | | | 58% | 92% | 92% | 58% | 58% | 58% | 58% | 68% |
| **On-Street - angled parking** | | | | | | | | | | | | | | | | | | | |
| P | McCombie St, 90-degree | 2P (8am-6pm Mon-Sat) | **11** | 11 | | | | 11 | | | | 11 | 11 | 11 | 10 | 9 | 8 | 8 | 10 |
| | | | | 100% | | | | 100% | | | | 100% | 100% | 100% | 91% | 90% | 89% | 100% | 96% |
| Q | Ripon Gv, angled | P45Mins (8am-6pm Mon-Sat) / Unrestricted | **58** | 58 | | | | 50 | | | | 56 | 58 | 55 | 41 | 31 | 21 | 15 | 39.57142857 |
| | | | | 100% | | | | 86% | | | | 97% | 100% | 95% | 71% | 53% | 36% | 26% | 83% |
| R | Gordon Street, angled | 2P / 4P (8am-6pm Mon-Fri, 8am-12noon Sat) / Unrestricted | **56** | 54 | | | | 43 | | | | 54 | 55 | 56 | 55 | 54 | 41 | 20 | 48 |
| | | | | 96% | | | | 77% | | | | 96% | 98% | 100% | 98% | 96% | 73% | 36% | 85% |
| S | St Georges Rd, angled | 2P (8am-6pm Mon-Sat) | **16** | 16 | | | | 16 | | | | 14 | 15 | 16 | 13 | 5 | 1 | 3 | 10 |
| | | | | 100% | | | | 100% | | | | 88% | 94% | 100% | 81% | 31% | 6% | 19% | 60% |
| T | Riddell Pd, angled | 2P(8am-6pm Mon-Fri, 8am-12noon Sat) | **19** | 18 | | | | 18 | | | | 18 | 18 | 18 | 18 | 8 | 7 | 4 | 13 |
| | | | | 100% | | | | 100% | | | | 100% | 100% | 100% | 100% | 44% | 39% | 22% | 72% |
| U | Carre St, angled | 2P (8am-6pm Mon-Sat) | **20** | 17 | | | | 18 | | | | 11 | 20 | 17 | 15 | 11 | 5 | 5 | 12 |
| | | | | 85% | | | | 90% | | | | 55% | 100% | 85% | 75% | 55% | 25% | 25% | 60% |
| **Total Off-Street** | | | **343** | 223 | | | | 307 | | | | 160 | 114 | 146 | 139 | 95 | 61 | 36 | 142 |
| **Total Off-Street%** | | | | 65% | | | | 90% | | | | 47% | 33% | 43% | 41% | 28% | 18% | 10% | 41% |
| **Total On-street MAIN** | | | **143** | 119 | | | | 128 | | | | 103 | 121 | | | | | | |
| **Total On-street MAIN %** | | | | 83% | | | | 90% | | | | 72% | 85% | | | | | | |
| **Total On-street M** | | | **180** | 174 | | | | 156 | | | | 164 | 177 | | | | | | |
| **Total On-street M %** | | | | 97% | | | | 87% | | | | 91% | 98% | | | | | | |
| **Grand Total** | | | **486** | 342 | | | | 435 | | | | 263 | 235 | 146 | 139 | 95 | 61 | 36 | 195 |
| **Grand Total %** | | | | 70% | | | | 90% | | | | 54% | 48% | 30% | 29% | 20% | 13% | 7% | 40% |
| | | | MAX | 486 | 486 | 486 | 486 | 486 | 486 | 486 | 486 | 486 | 486 | 486 | 486 | 486 | 486 | 486 | |

# Appendix B Financial Model Assumptions

## B.1 Revenue Inputs

A summary of the model revenue inputs is presented in Table B-1.

*Table B-1 – Model Inputs*

| Variable | Definition | Base Model Input |
|---|---|---|
| Model period | The number of years modelled. | 5 years |
| Regulated Days | The number of days per year for which parking restrictions are applicable | 260 weekdays a year and 52 Saturdays |
| Regulated Weeks | The number of weeks per year for which parking restrictions are applicable | 52 weeks a year |
| Regulated Hours | The number of hours in a day for which parking restrictions are applicable | Weekday - 10 hours per day (12 hours per day in Carnegie and Elsternwick)<br>Saturday – 5 hours per day (12 hours per day in Carnegie and Elsternwick)<br>Sunday – 12 hours per day (Carnegie and Elsternwick only) |
| Parking Restriction | The parking restriction applicable | • 1hr<br>• 2hr<br>• 3hr<br>• 4hr<br>• 5hr<br>• Unrestricted |
| Hourly Parking Tariff | The rate charged for use of the parking space per hour | On-Street $3.50 per hour<br>Off-Street $2.50 per hour |
| Daily Parking Tariff | The rate charged for use of the parking space per day | $12.50 per day |
| Parking Typology | The car parking typologies where paid parking is applicable. | Three typologies have been assumed:<br>• Off-Street<br>• On-Street (Main Road)<br>• On-Street (Minor Road) |
| Locations included within Program | The locations included within Program, including the number of car parking spaces for each typology at each location. | • Bentleigh<br>• Carnegie<br>• Elsternwick |
| Average Occupancy | The average number of parking spaces that are occupied by motorists across the enforcement period | Average occupancy has been estimated based on occupancy observations undertaken in February 2025 at each centre at three time periods – morning, midday and afternoon. |
| Driver Fee Compliance | The level at which motorists comply with the fee payment requirements of the parking system | 90% compliance |
| Driver Time Compliance | The level at which motorists comply with the time restriction requirements of the parking system | For the purpose of this model it has been assumed that driver time compliance is 100% compliant.<br>While in reality this is not the case, these infringements types are already being captured by Council in each centre. While the implementation of a paid parking system will make it easier to identify such infringements, these infringements have not been |

| | | |
|---|---|---|
| | | included within this model to avoid a double counting of potential revenue to Council. |
| Resident Exemption | The proportion of motorists which are paying visitors (i.e., motorists who do not have a residential parking permit) | No resident exemptions have been applied |
| Meter availability | The proportion of regulated hours during which the parking meters are operational | 95% system uptime |
| Infringement value | The face value of an infringement | $99 (failure to pay) |
| Infringement issuing rate | The proportion of infringements issued relative to all infringement issuing opportunities | 10-20% issuing rate adopted based on typical experience |
| Infringement payment rate | The proportion of infringements issued that are paid | 60% payment rate based on APC evaluation report |

# B.2 Cost Inputs

## B.2.1 Staff

Staff of various levels have been assumed to be required throughout the duration of the project based on discussions with Council.

*Table B-2 – Staff Inputs – Base*

| Staff | Equivalent Full Time Staffing Numbers | | | | | |
|---|---|---|---|---|---|---|
| | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| Total EFT | **3** | **2** | **2** | **2** | **2** | **2** |

## B.2.2 Ongoing Operating Costs

The following ongoing operating costs have been assumed, including initial costs related to program implementation which then stabilises from Year 1 onwards.

*Table B-3 – Ongoing Operating Cost Inputs – Base Case*

| Item | Rate | Measure | Quantity | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| Surveys | $75,000 | Per Survey | 2 | 2 | 1 | 0 | 0 | 0 |
| Maintenance | $100,000 | Flat Rate | 1 | 1 | 1 | 1 | 1 | 1 |
| Service Provider Contract | $200,000 | Flat Rate | 1 | 1 | 1 | 1 | 1 | 1 |
| Service Provider Contract Increase | $200,000 | Flat Rate | | | | | | |
| Tap & Pay Machine Maintenance [1] | $255 | Per Unit | 0 | 22 | 22 | 22 | 22 | 22 |
| e-system | $200,000 | Flat Rate | 1 | | | 1 | | |

[1] Assumes 2 machines for each off-street car park (Bentleigh – 10 areas, Elsternwick – 8 areas, Carnegie – 4 areas). No machines assumed on-street

*Table B-4 – Infrastructure Requirements – Base Case*

| Item | Rate | Measure | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|---|---|
| Tap & Pay [1] | $10,000 | Per machine | 0 | 22 | 0 | 0 | 0 | 0 |
| Fixed LPR Camera | $4,000 | Per unit (each unit assumed to service 75 parking spaces) | 0 | 0 | 0 | 0 | 0 | 0 |
| Camera Pole Supply and Installation | $12,500 | Per unit (assuming 1 pole per 2 cameras) | 0 | 0 | 0 | 0 | 0 | 0 |
| Camera Pole Associated Equipment | $15,000 | Per unit | 0 | 0 | 0 | 0 | 0 | 0 |
| Signage, Line Marking and Ancillary | $200 | Per space | 0 | 2,067 | 0 | 0 | 0 | 0 |
| Mobile LPR Cameras | $15,000 | Per unit | 0 | 2 | 0 | 0 | 0 | 0 |
| LPR Vehicle | $40,000 | Per unit | 0 | 2 | 0 | 0 | 0 | 0 |

[1] Assumes 2 machines for each off-street car park (Bentleigh – 10 areas, Elsternwick – 8 areas, Carnegie – 4 areas). No machines assumed on-street

The cost inputs as outlined above were applied to User Pays Parking Options 1 and 2.

For User Pays Parking Options 3 and 4, the number of paid parking spaces was reduced to 968 and 563, respectively, the number of Tap & Pay machines was reduced from 22 to 18, and the LPRX resources were reduced to one camera and vehicle.

Due to the greatly reduced number of spaces to which paid parking applies to in User Pays Parking Option 5 (i.e. 182 spaces across two locations), the costs were further reduced as follows:

- Staffing requirements reduced by 50%
- Recurring operating costs reduced by approximately 50%, including surveys, maintenance and service provider costs
- Number of Tap & Pay machines reduced from 22 to 6.

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