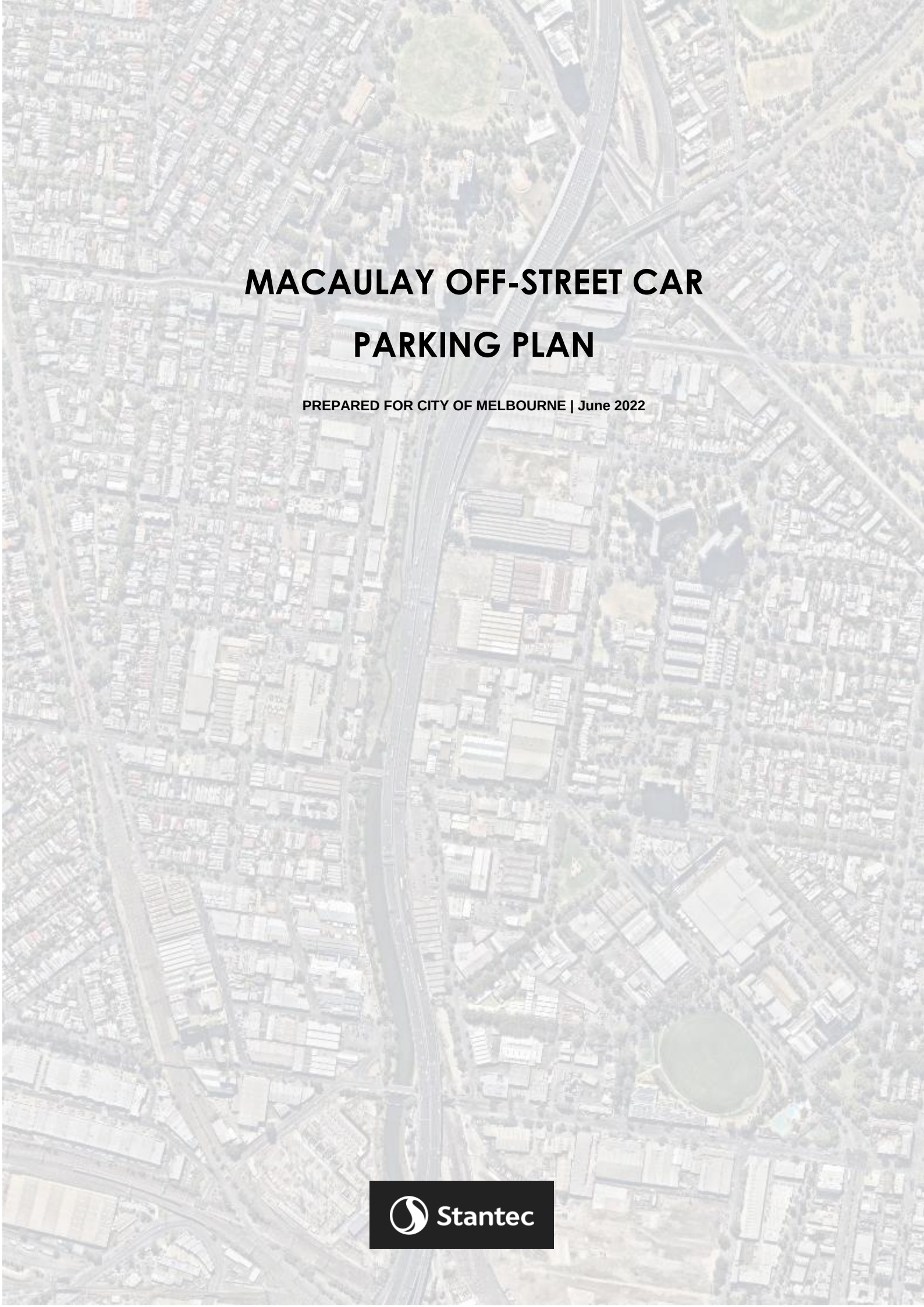


An aerial photograph of the Macaulay area in Melbourne, Australia. The image shows a dense residential neighborhood with numerous houses and streets. A major highway, the Monash Freeway, runs diagonally through the center of the image. To the right of the highway, there are several large industrial or commercial buildings, including a large warehouse-like structure. In the bottom right corner, there is a large, circular, green field, likely a sports ground or park. The overall scene is a mix of urban development and green space.

MACAULAY OFF-STREET CAR PARKING PLAN

PREPARED FOR CITY OF MELBOURNE | June 2022

Revision schedule

Rev No	Date	Description	Prepared by	Checked by	Reviewed by	Approved by
1	21/03/22	Draft	AF / TK	WF	WF / CC	WF
2	08/06/22 (07/05/24)	Revised draft Minor revisions	AF / TK / NM TK	WF WF	WF WF	WF WF)

This document entitled Macaulay Car Parking Plan was prepared by Stantec Australia Pty Ltd ("Stantec") for the account of City of Melbourne (the "Client"). The material in it reflects Stantec's professional judgment in light of the scope, the Client's brief (if any) and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published. In preparing the document, Stantec may have relied on information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. No liability is accepted by Stantec or any employee or sub-consultant of Stantec with respect to its use by a third party.

Acknowledgment of Country

Stantec would like to acknowledge the Traditional Owners of the lands on which this report was prepared, the Wurundjeri people of the Kulin Nation and pays respect to Elders past, present and emerging.

Quality statement

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Executive summary

Delivering the Macaulay Structure Plan

Macaulay precinct has been earmarked for development into a vibrant, mixed-use, mid-rise neighbourhood. The Victorian Government expects that Macaulay will become home to 10,000 residents and 9,500 jobs by 2051.

Based on policy and analysis of the transport networks, a target mode share for Macaulay for 80% of trips to be made by sustainable (non-car) modes by 2051 is established.

Integrated land use and transport planning

This car parking plan is intended to realise state and local policy to support desired development patterns and deliver sustainable travel patterns, and therefore there is need for car parking controls that enable modern inner city development patterns across the whole of Macaulay. This will also provide better consistency and clarity of expectations for the development sector and community.

Accordingly, this car parking plan aims to:

- Deliver on the objectives of the Macaulay Structure Plan, including reduced car ownership (per dwelling) and dependence and support for sustainable transport modes (including walking, cycling and public transport)
- Reduce reliance on on-street car parking for long-term private and residential car parking
- Unlock public street space for other uses and enable wider city design outcomes
- Improve efficiency of car parking provided, including reducing barriers to co-locating and sharing residential car parking across buildings and uses, and unbundling car parking
- Incentivise stronger sustainable transport facilities (e.g. car share, electric charging, cycling facilities) to be delivered on-site
- Maximise adaptability of car parks, including in terms of types of car parking and facilities provided, and ability to repurpose structures for other uses

The policy and likely outcome of a future low car mode share means that the overall number of car parking spaces that will be required in Macaulay is low, which is reflected in this policy. In addition, a policy has been developed to decouple parking from land use and consolidate it in centralised parking stations within the precinct. The intent of this policy is to deliver a range of outcomes aligned with City of Melbourne policies for integrated transport and land use planning. The policy contained in this strategy builds on similar policies recently applied across inner Melbourne (Arden and Fishermans Bend) and provides clear performance based guidance to strongly promote consolidated parking, when, and if required based on the development meeting the wider objectives of the planning scheme. Performance based policy is recommended over mandatory rates as it allows the Responsible Authority to respond to the precincts diversity (ownership and lot sizes) by providing some flexibility to accommodate specific site needs and/or innovative approaches to meeting policy.

Application of maximum car parking rates with a rate set at zero

The need to minimise parking leans toward maximum parking provision rates; however, revenue collection to fund centralised car parks has traditionally been via cash-in-lieu of parking. Cash-in-lieu only works with minimum parking requirements – if there is a maximum rate, a developer can legitimately provide zero parking, which removes the cash-in-lieu lever. Instead, developers must be encouraged to consolidate parking, rather than forced, or provide means for it to take place in future as the precinct grows. There must also be flexibility to provide private parking, again, particularly in the short term, or for wider precinct benefits.

The objectives of the precinct are long ranging (up to 2051). Opportunities that may come about over this timeframe should not be stifled, or the full value go unrealised, based on a narrow approach to car parking that seeks to lock-in one outcome now. This places additional importance on flexibility. Ideally a parking policy that is “*self-transitional*” is sought.

The solution is to implement a policy of zero single use private car parking. This means any proposal to provide this type of parking must be accompanied by a permit application to exceed the zero rate. It allows the responsible authority to consider what an appropriate amount of parking is on a case-by-case basis.

Decision guidelines if parking is required

A set of decision guidelines within a parking overlay schedule will control how such decisions are made in view of the objectives of the parking policy.

To achieve Macaulay's adopted mode-share target for 20% of all trips by private vehicles, parking rates for the proposed residential and non-residential land uses within the precinct are:

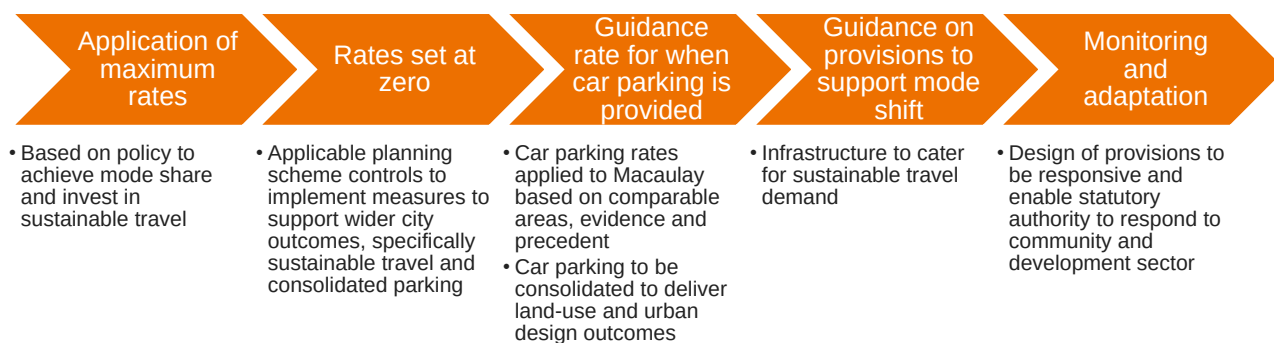
- 1-bedroom dwelling: 0.3 spaces per dwelling
- 2-bedroom dwelling: 0.45 spaces per dwelling
- 3-bedroom dwelling: 0.6 spaces per dwelling
- Everything else: 0.58 spaces per 100sqm

This parking plan also makes provision for progressive rates of parking for people with disabilities (DDA parking), bicycle, motorcycle, car share and electric vehicle parking. Key recommendations include:

- **DDA Parking** 5% of all relevant parking provision
- **Bicycles** 1 bicycle space for every bedroom in a dwelling
- **Motorcycles** 1 motorcycle space per 40 car spaces
- **Car Share** 5% of total car parking provision (not in addition to)
- **Electric Vehicles** Ability for all off-street parking spaces to be capable of providing EV charging in future

The measures set out in this parking plan can be implemented in the Melbourne Planning Scheme via planning controls, including a schedule to the parking overlay (PO), a design and development overlay (DDO) or within a planning zone, such as a special use zone (SUZ).

Summary of car parking policy in Macaulay



Contents

Revision schedule	i
Quality statement.....	i
Executive summary.....	ii
1 Identifying the issues	3
1.1 Introduction.....	3
1.2 Current travel behaviour	4
1.3 Policy direction	6
1.3.1 Macaulay Structure Plan, City of Melbourne (2021) ²	6
1.3.2 Transport Strategy 2030, City of Melbourne (2019)	6
1.3.3 Plan Melbourne 2017-2050, Victorian Government (2017) ¹	7
1.3.4 Melbourne Planning Scheme	7
1.4 Summary of community feedback	8
1.5 Summary of Macaulay Transport and Access Study (2019)	8
1.6 First principles car parking assessment	10
1.6.1 Study area	10
1.6.2 Current car parking situation in Macaulay	10
1.6.3 Estimated future car parking situation in Macaulay	12
1.7 Role of car parking in addressing these issues	14
1.8 Objectives of this car parking plan	15
1.9 Area to which this car parking plan applies	15
2 Strategies to deliver on the objectives.....	16
2.1 Delivering mode shift targets.....	16
2.2 Unbundling and consolidating car parking.....	16
2.2.1 Case for change	17
2.2.2 Implementation	18
2.3 Reduced statutory car parking rates.....	19
2.3.1 Case for change	19
2.3.2 How can car parking supply be controlled?.....	21
2.3.3 What is an appropriate car parking rate?	22
2.3.4 What parking rates are appropriate, and should they be mandatory or discretionary for permit applications to provide parking?	23
2.3.5 What will be the wider impacts of these changes?.....	23
2.3.6 Implementation	24
2.4 An equitable amount of parking for people with disabilities.....	25
2.5 Better bicycle parking and end-of-trip facilities	25



2.5.1	Implementation	26
2.6	Car share as an enabler for low car ownership	27
2.7	Enabling adaptability for future uptake of electric vehicles	28
2.8	Creating better walking environments by shifting motorcycle parking away from footpaths 29	
2.9	Summary	29
3	Monitoring and next steps	30
3.1	Monitoring	30
3.2	Next steps	30

1 Identifying the issues

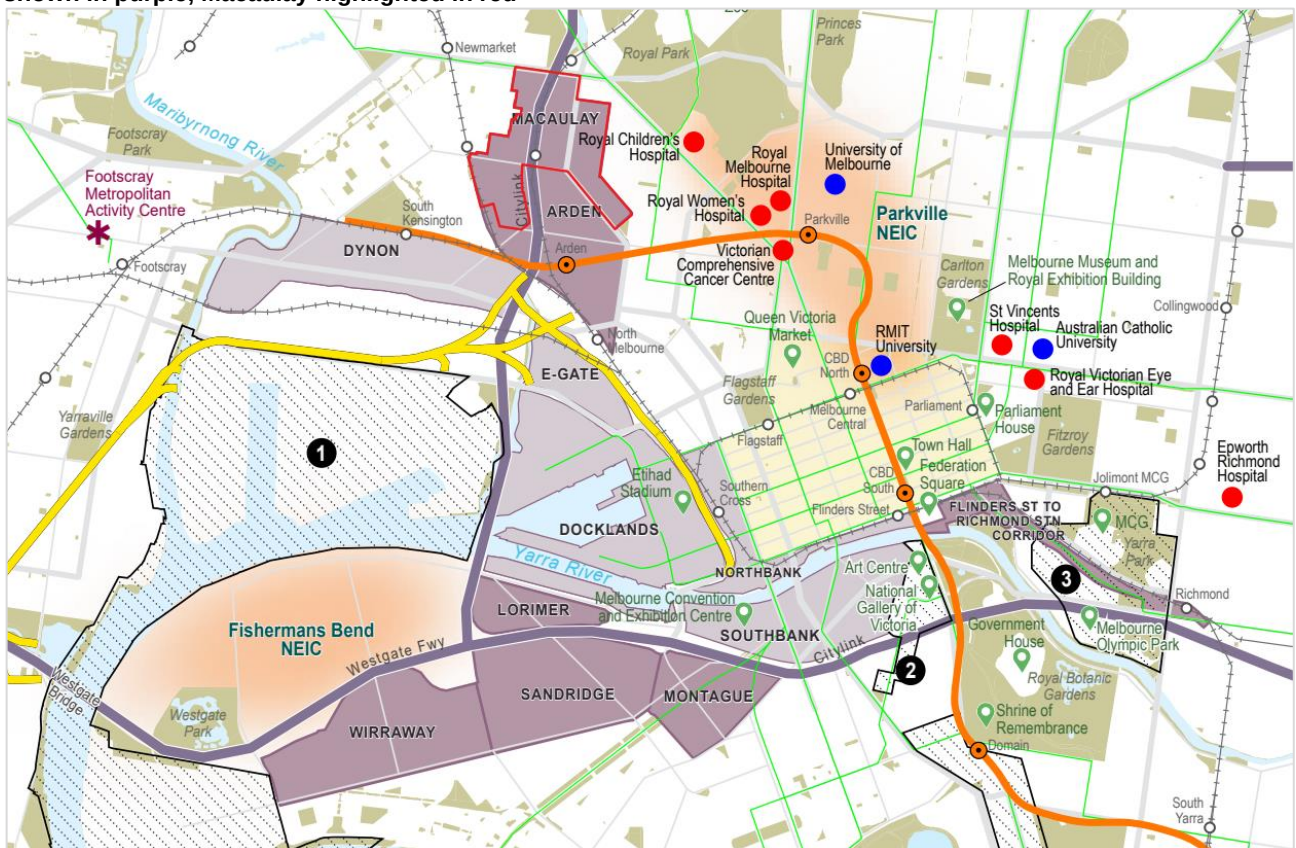
1.1 Introduction

Macaulay is planned to grow and develop over the coming decades.

Melbourne is rapidly transforming to become Australia's most populous city, envisaged to grow to a population of more than eight million people over the coming decades.¹ Accommodating growth of this scale will depend on maximising use of existing infrastructure and underutilised areas which are close to jobs, daily needs and transport services.

The Macaulay urban renewal area is located in Melbourne's inner north-west, approximately three kilometres from Melbourne Central Business District (CBD). The area has evolved over time and currently supports a wide range of uses, from larger industrial lots to small 'terrace-style' workers cottages and high-rise public housing. Macaulay is a designated 'priority precinct' for urban renewal in Plan Melbourne (see **Figure 1**).

Figure 1 – Location of Macaulay relative to the CBD and other designated 'priority precincts' for urban renewal, shown in purple, Macaulay highlighted in red¹



As such, the Macaulay precinct has been earmarked for transformation into a vibrant, mixed-use, mid-rise neighbourhood. The Victorian Government expects that Macaulay will become home to 10,000 residents and 9,500 jobs by 2051².

However, the City of Melbourne has estimated that there is capacity in the precinct for approximately **18,200 residents** (within 9,200 dwellings) and **10,000 jobs** (within 292,000sqm of employment floor space).³ These latter estimates have been used as the basis for this report.

¹ [Plan Melbourne 2017-2051](#), Department of Environment, Land, Water and Planning, 2016

² [Macaulay Structure Plan 2021](#), City of Melbourne, November 2021, as included in [Report to Future Melbourne Committee](#), City of Melbourne, November 2021

³ City of Melbourne capacity modelling, April 2022 (provided for consultant information purposes only)

1.2 Current travel behaviour

Currently, most people who work in Macaulay drive to work. Local residents travel by a high share of walking, cycling and public transport, comparable to other inner-urban settings.

As shown in **Figure 4**, people currently⁴ living in Macaulay travel to work in many different ways, with about two-fifths using public transport, another two-fifths taking the car and the remaining one-fifth travelling by foot or bicycle.

However, people working in Macaulay overwhelmingly travel to work by private vehicle, with more than three-quarters of workers travelling by car or truck (refer **Figure 3**). Specifically, 75 per cent travel by vehicle as driver and 3 per cent by vehicle as passenger. A smaller share also travel to the area by public transport, walking and cycling.

Figure 3 – Mode share – Macaulay residents travelling to work (regardless of destination)

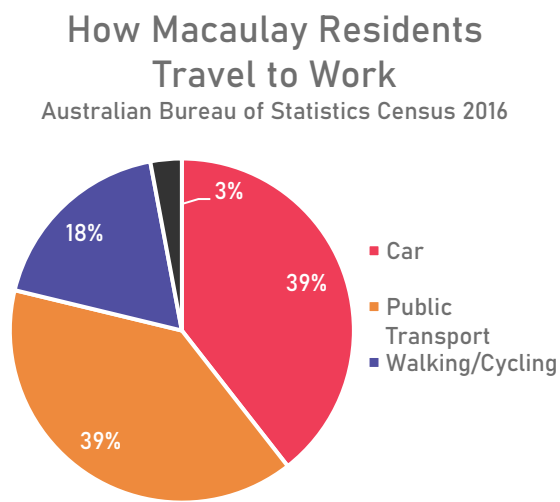
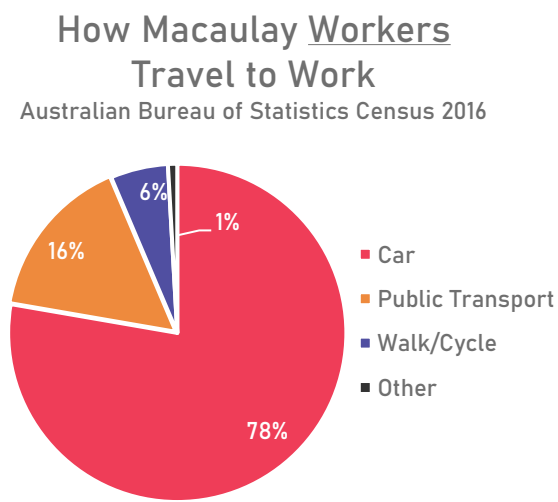
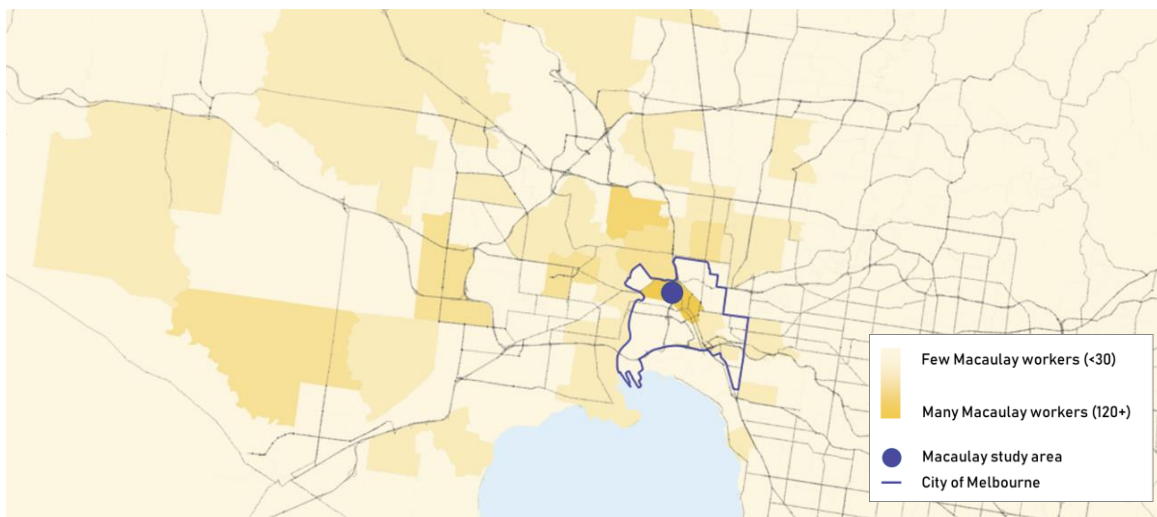


Figure 3 – Mode share – People travelling to a workplace within Macaulay (regardless of origin)



Although some workers travel from nearby (such as Kensington or North Melbourne), most travel from other areas of Melbourne, including areas in the inner north and the outer north and west, where car dependence is high.

Figure 4 – Origin of Macaulay residents travelling to work⁵



⁴ 'Currently' refers to 2016 ABS Census data. While new Census data will be available this year (2022), the results are likely to be challenging to compare to the 2016 results due to the impacts of Government restrictions in response to COVID-19.

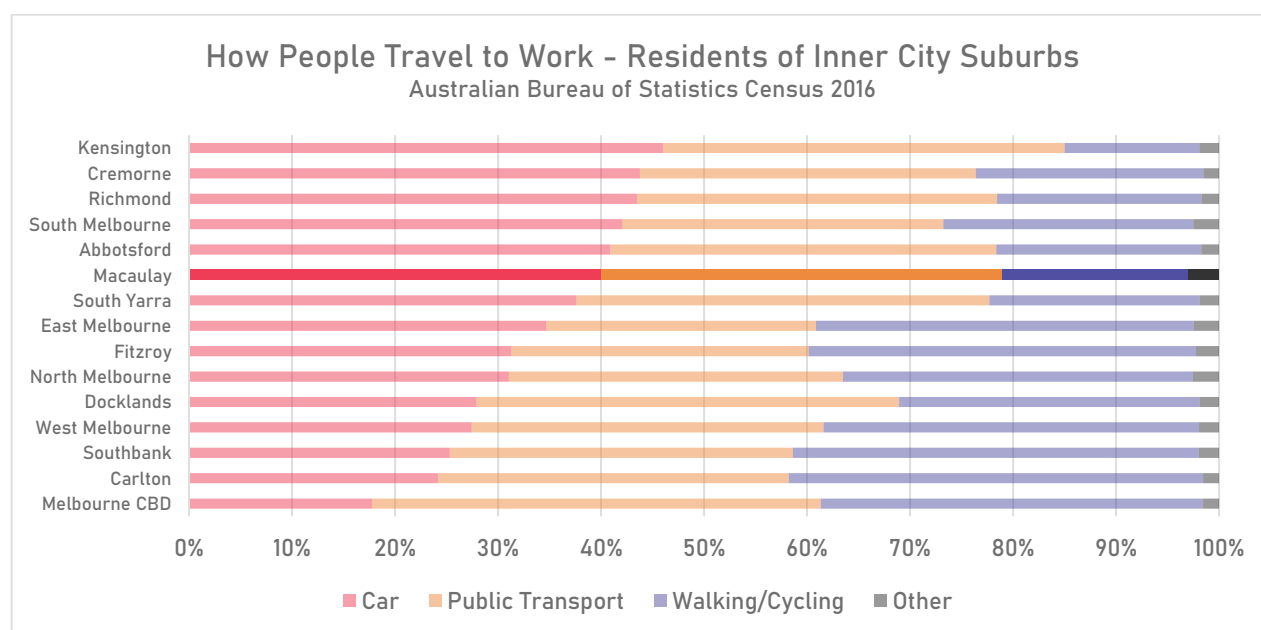
⁵ Stantec analysis based on ABS Census 2016 – SA2 origins for DZN destinations which most closely spatially represent the Macaulay urban renewal precinct. 'Car' includes car as driver, car as passenger and truck. 'Public transport' includes bus, tram, train and ferry. 'Other' includes taxi, motorbike/scooter and other. Excludes people who worked from home, did not work or had 'not stated' or 'not applicable' responses.

As the area transforms, it is envisaged that the industrial and heavy commercial uses will subside over time, transitioning to knowledge, service and retail employment sectors. This shift will likely bring change in the way that people access the area for work, both in terms of propensity to use public transport, walk or cycle and the areas from which people are attracted to work. There may even be a greater shift towards people living and working locally within the neighbourhood, supporting the shift towards public transport, walking and cycling and away from car use.

How does this mode share compare to similar neighbourhoods?

The way people travel in Macaulay has been compared to a range of other similar suburbs. These suburbs have been chosen as they are broadly similar in distance from the CBD (and its jobs, education and social opportunities), and provide a 'mix' of different levels of housing density, maturity in uses and access to transport networks. Comparison against these suburbs will provide an understanding of where Macaulay is placed now, and the types of areas it could aspire towards in the future in terms of levels of sustainable transport access.

Figure 5 – Mode share comparison – Macaulay vs other inner-city Melbourne suburbs⁶



As shown, people living in Macaulay currently travel to work in similar ways to people living in South Yarra, South Melbourne and Abbotsford. These areas are all about three kilometres from the CBD and have good access to public transport, particularly the rail network (South Yarra, Abbotsford) and tram network (South Melbourne). Abbotsford and South Melbourne are also similar in that they are rapidly densifying, but still have a mix of commercial uses.

By comparison, people living in the CBD, or its fringe, typically drive to work less, and walk or catch public transport more often. These behaviours are generally reflective of an ability to service daily needs within a short distance, higher living and working densities, measures which constrain car ownership or parking, good public transport access and a safe, comfortable walking and cycling environment.

⁶ Stantec analysis of ABS Census 2016. 'Car' includes car as driver, car as passenger and truck. 'Public transport' includes bus, tram, train and ferry. 'Other' includes taxi, motorbike/scooter and other.

1.3 Policy direction

As the Macaulay precinct evolves, policy at all levels supports a transition towards more sustainable, non-car travel.

1.3.1 Macaulay Structure Plan, City of Melbourne (2021)²



The *Macaulay Structure Plan* (herein 'Structure Plan') was refreshed in 2021. The *Structure Plan* highlights that the Macaulay precinct will face increased pressure as the population, jobs and activity grow over the coming decades, and that use of space will need to be re-evaluated to ensure it is providing the best use to residents, businesses and visitors.

The *Structure Plan* notes that current car parking settings can incentivise undesirable outcomes (such as long-term on-street car parking, or inflated parking demand), which have wider impacts, such as reduced road network reliability or poor urban design outcomes.

The document sets out a 'vision' for the future of the precinct, including (amongst others):

- *"Macaulay will transition into a mixed use, mid-rise neighbourhood with a distinct inner urban character"*
- *"New development will be high quality and deliver amenity for residents, workers and visitors."*
- *"Improvements to public transport services, walking and cycling will be prioritised to support sustainable modes of travel."*
- *"Public and private investment will deliver community infrastructure to meet the needs of a growing and diverse neighbourhood."*
- *"Macaulay will be a climate ready precinct that supports accelerated action in reaching the City of Melbourne's goal of zero emissions by 2040."*

These aspirations are supported by a series of objectives and actions which support uptake of walking, cycling and public transport and reduce reliance on car use, including:

- *Objective 10: Prioritise active transport by designing streets that are safe and accessible for people walking and riding bikes*
- *Objective 11: Advocate for, and help deliver, public transport that meets the needs of the Macaulay population*
- *Objective 12: Improve car parking requirements to support a less car dependent transport system*

Specifically, the *Structure Plan* proposes to introduce maximum car parking rates, review on-street and off-street car parking supply and settings and investigate consolidated car parking solutions, such as precinct car parking stations.

1.3.2 Transport Strategy 2030, City of Melbourne (2019)⁷



Council's *Transport Strategy 2030* is oriented towards delivering safer and more accessible streets for walking and cycling, reducing non-essential vehicle traffic, improving reliability for public transport and better management of kerb space. This strategy builds on the previous *Transport Strategy 2012*, which had a similar direction and was considered successful, based on the Strategy broadly achieving desired transport mode share targets.

The *Strategy* outlines several vehicle and parking related challenges for the municipality, including demand for the road network, the impact of through-traffic, increasing demand for kerbside space, delays and impacts of on-street parking on other elements of city streets.

The actions aspire to:

- *reduce by half the number of people killed or seriously injured on our streets*
- *reduce by half the proportion of central city through-traffic*
- *increase public transport, walking and cycling mode share to 70 per cent of all trips*
- *increase proportion of women cycling to 40 per cent.*

The *Strategy* notes that there is currently an oversupply of off-street car parking in the municipality (as a whole), which has knock-on impacts on transport and urban design outcomes, and potentially housing prices. As a result, Council has outlined its support for (amongst others):

- removing minimum parking requirements for new developments
- implementing precinct-based parking more widely across the municipality
- reviewing the Planning Scheme to ensure that development supports transport of residents and community

⁷ [Transport Strategy 2030](#), City of Melbourne, October 2019

- reducing barriers to unbundling, sharing residential parking across buildings and uses.

1.3.3 Plan Melbourne 2017-2050, Victorian Government (2017)¹



Plan Melbourne is the state government's long-term plan and will guide the growth of Melbourne up to 2050. It sets out the strategy for supporting jobs and growth, while building on Melbourne's legacy of distinctiveness, liveability and sustainability.

The Plan identifies Macaulay as a priority 'major urban renewal precinct', earmarked for redevelopment to capitalise on good location and access to public transport and provide new housing, jobs and services. The Plan notes that delivery of these precincts "needs to be in sync with policy drivers, market demand and the delivery of infrastructure and services".

Macaulay is located close to other priority urban renewal precincts, including Arden and Fishermans Bend, as well as key employment and educational opportunities at the Parkville National Employment and Innovation Cluster (NEIC). The Plan envisages that these areas will become "a network of connected places, linking to each other and their surrounding neighbourhoods". Together, these precincts are expected to receive substantial investment, including in city-shaping infrastructure projects such as West Gate Tunnel and Metro Tunnel, as well as localised transport network improvements associated with urban revitalisation, as can be expected in neighbouring Arden.

Relevant to car parking in Macaulay, *Plan Melbourne* sets out the following policies:

- *Policy 2.5.1: Facilitate housing that offers choice and meets changing household needs*
- *Policy 3.1.3: Improve arterial road connections across Melbourne for all users*
- *Policy 3.1.4: Provide guidance and certainty for land-use and transport development through the Principal Public Transport Network and the Principal Freight Network*
- *Policy 3.1.6: Support cycling for commuting*
- *Policy 3.3.1: Create pedestrian-friendly neighbourhoods.*

1.3.4 Melbourne Planning Scheme



The Melbourne Planning Scheme provides a framework that contains policies and provisions that control land use and development within the City of Melbourne municipality.

Clause 21.09 of the Melbourne Planning Scheme promotes an integrated and sustainable transport system, generally seeking to ensure the provision of car parking is suitable for the context and reduce reliance on car travel where appropriate⁸. Key directions include:

- *Support the reduction or waiving of car parking for new uses and developments, which have good access to public transport*
- *Support the provision of adequate, safe public transport, pedestrian and bicycle facilities and car parking, in the City to suit 24-hour activity.*
- *Encourage the co-location and sharing of car parking facilities*
- *Ensure that the cumulative traffic and parking impact of developments on an area are considered.*
- *Ensure that traffic and parking impacts from new development is minimised.*

Similarly, Clause 52.06 is intended to (amongst others):

- *Ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality*
- *Support sustainable transport alternatives to the motor car*
- *Promote the efficient use of car parking spaces through consolidation of car parking facilities*
- *Ensure that car parking does not adversely affect the amenity of the locality.*

To realise this, Clause 52.06 provides a series of decision guidelines which the relevant authority will consider when determining the suitability of proposed car parking provision, including (amongst others)⁹:

- Availability of public transport, cycling and walking access, including provision of bicycle parking
- Anticipated car ownership rates of occupants and visitors
- Availability of alternative car parking, including efficiencies gained by sharing car parking spaces
- Local traffic management, and impacts on the local environs and amenity

⁸ Clause 21.09 of the [Melbourne Planning Scheme](#)

⁹ [Clause 52.06](#) of the Melbourne Planning Scheme



Other Clauses, Overlays and Schedules provide relevant planning controls to support implementation of various initiatives. This includes maximum car parking rates, provisions for bicycle parking, motorcycle and car share parking requirements and stronger consideration of consolidated car parking.

1.4 Summary of community feedback

Based on early engagement, the community generally supports the policy direction for transport planning set out in the Structure Plan, but is also concerned about the impacts of growth.

Community consultation was sought during the development of *Macaulay Structure Plan* Refresh between July and September 2020, with 177 respondents providing feedback.

The community was largely in favour of the direction of travel for transport planning. Seventy-seven per cent of survey respondents agreed with the actions and objectives outlined under the Structure Plan theme of 'Movement and Access' (including those outlined in Section 1.3 of this report).

The need for better connected and safer walking and cycling infrastructure was a recurring theme in the feedback, with the community seeking that active transport be prioritised in Macaulay including the construction of wider footpaths and separated bike paths.

However, respondents also had concerns about current traffic congestion in Macaulay and the possibility of worsening congestion as new developments come online and growth occurs in the area.

There were differing views on parking, with some respondents in favour of reduced car parking and others against it. One respondent stated that "reducing parking just creates problems in other local streets where residents already have limited access to parking".¹⁰

1.5 Summary of Macaulay Transport and Access Study (2019)

Higher levels of demand for the road network across Melbourne will result in more demand for the local road network, greater traffic congestion and reduced road network reliability in Macaulay. Planning for Macaulay is responding to this by supporting alternatives to car travel, and thereby mitigating increases in congestion and softening the impacts of development on the road network.

In 2019, Stantec (authors of this report) were commissioned by the City of Melbourne to prepare the *Macaulay Transport and Access Study*,¹¹ which explored the impacts of various levels of future land use development on the vehicle road network. The findings of the report were an input to the Structure Plan.

A key finding of the modelling and analysis was that while many roads could cope with the expected increase in traffic, parts of the road network are approaching capacity during the peak hours on some key links, including Boundary Road and Arden Street under existing conditions. As further development comes online, traffic is expected to increase further on key links including Macaulay Road and Racecourse Road, generally increasing with the level of development delivered (see **Figure 6** for example of medium-development scenario).¹²

¹⁰ [Macaulay Draft Structure Plan Refresh Consultation Analysis: Summary Report](#), City of Melbourne, 2020

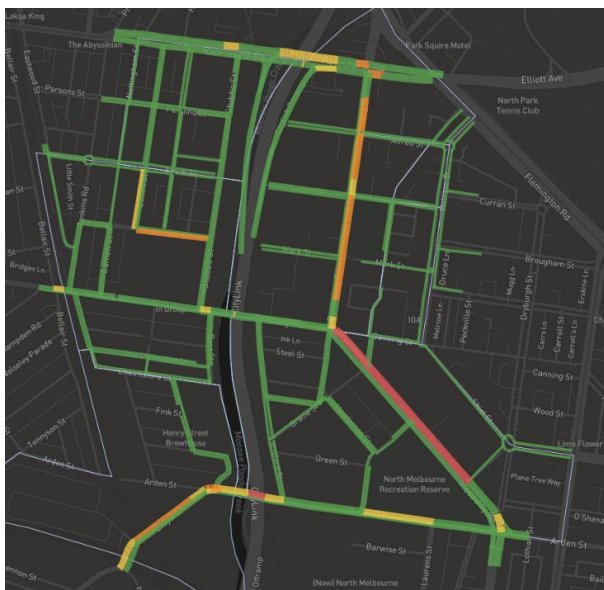
¹¹ Macaulay Transport and Access Study, GTA Consultants (now Stantec), May 2019

¹² Note that the proposed street network has changed since the report was prepared in 2019, but key narrative remains unchanged



Figure 6 – Reliability on some key roads is expected to worsen (red = higher traffic volume vs road capacity) as development increases, assuming no interventions¹¹

V/C Existing – AM Peak



V/C Future Medium Scenario (4:1 FAR) – AM Peak



The report broadly recommended that the higher the level of development, the greater the need to reduce vehicle demand to preserve reliability on the road network. Reducing demand for car trips to and from Macaulay (e.g. excluding through-trips) by about 10-20 per cent would remove many of the pinch points under the lower-development scenario, up to 50 per cent for the higher-development scenario. For context, the residential population capacity aligns with the 'medium' scenario, while the worker target is between the 'medium' and 'high' scenario.

Recommendations

The report's recommendations focussed on interventions which reduced *local* trips (e.g. those with an origin or destination in Macaulay), as these are within the scope of influence of Council planning. By comparison, through trips are more difficult to reduce as they require a broader whole-of-network perspective and more strategic responses.

The recommendations included:

- Local infrastructure upgrades to connect area into the wider sustainable travel network
- Reducing on-street car parking
- Introducing maximum car parking rates (proposing an initial rate of 0 to 0.5 spaces per dwelling)
- Unbundling car parking and delivering precinct parking structures
- Car share and walking and cycling improvements.

As Melbourne and Macaulay grows, vehicle demand for the road network in and through Macaulay is also expected to increase. Without intervention, this was evidenced by modelling to cause many roads within the local area to approach capacity, reducing reliability and potentially increasing travel times and uncertainty for both vehicles and other road users, such as buses.

1.6 First principles car parking assessment

Given the high density of development planned for the area, high levels of car parking will need to be constructed if a minimum-rate approach is maintained.

To inform this car parking plan, Stantec undertook analysis of car parking demand and supply, to provide an evidence base to accompany the policy intent that has been outlined earlier in this report.

1.6.1 Study area

The Macaulay urban renewal area is broadly bounded by Racecourse Road to the north, Melrose Street and Macaulay Road to the east, Macaulay Road and Arden Street to the south and an irregular border to the west. The *Macaulay Structure Plan* divides the area into four 'sub-precincts', each with distinct characteristics and economic functions – Stubbs, Chelmsford, Boundary and Melrose.

DATA NOTE:

The analysis presented in this report draws upon data from the *Australian Bureau of Statistics Census of Population and Housing* (herein 'ABS Census') and the City of Melbourne's *Census of Land Use and Employment* (CLUE)¹³. The data zones used by the ABS Census and CLUE data sources align relatively well with one another (e.g. the small zones used in CLUE match fairly well within ABS Statistical Area 1 zones), however they do not neatly align with the boundaries of the Macaulay urban renewal area or its sub-precincts.

For the purposes of this analysis, the Macaulay area has been divided into five 'data zones', which aim to best align the data sources with the sub-precincts identified in the *Structure Plan*.

A summary of expected implications is outlined for context in **Appendix A** and discussed throughout the following sections. The base year for the subsequent analysis is 2016, which represents the latest availability of Census data (as data for the 2021 Census is not yet available).

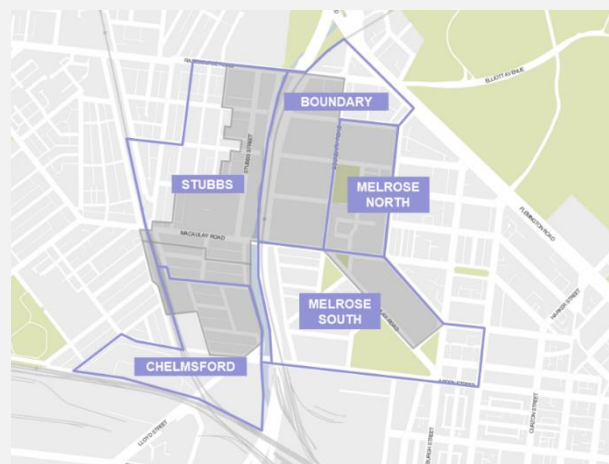


Figure 7: Comparison of Macaulay Structure Plan sub-precincts (grey) against data zones used within this report (purple)

To provide context for the subsequent analysis, the general characteristics of each sub-precinct are summarised in **Table 5** in Appendix A.

1.6.2 Current car parking situation in Macaulay

1.6.2.1 Existing characteristics

Currently (per 2016 data), there are more than 4,500 residents living in more than 2,200 dwellings, and more than 5,700 workers in the data zones which broadly represent the Macaulay study area, as summarised in **Table 1**.¹⁴

¹³ *Census of Land Use and Employment (CLUE)*, City of Melbourne, used under Creative Commons Attribution 4.0 International ([CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)), custom analysis undertaken.

¹⁴ Australian Bureau of Statistics (2016), *2016 Census QuickStats*, accessed 11 January 2022. Throughout this report, 'Stubbs' refers to SA1 codes 2112102, 2112103 & 2112104. 'Chelmsford' refers to 2112101. 'Boundary' refers to 2112320. 'Melrose North' refers to 2112321, 2112322, 2112326 & 2112337. 'Melrose South' is 2112324.

Table 1 – Existing number of residents, dwellings and jobs by data zone (ABS Census 2016)¹⁴

Data zone	Number of residents (2016)	Number of dwellings (2016)	Number of jobs (2016)
Stubbs	1,466	744	1,769
Chelmsford	27	15	1,413
Boundary	525	297	1,242
Melrose North	2,103	944	37
Melrose South	447	281	1,267
TOTAL	4,568	2,281	5,728

The high number of residents in the Stubbs data zone largely reflects the terrace-style housing west of the Moonee Ponds Creek, including most of that within the Chelmsford sub-precinct. The Melrose North data zone has the highest existing population and housing stock, likely due to the relatively higher-density public housing lots.

There are high numbers of jobs in Stubbs, Chelmsford, Boundary and Melrose South, noting that the data zones overestimate the current number of jobs compared to the Macaulay Structure Plan area (particularly in Melrose South and Chelmsford), as described in sections 1.6.1 and Appendix A.

1.6.2.2 Existing supply and demand

Existing residential car ownership (demand)

Excluding 'not stated', 'not applicable' and 'other' responses in the 2016 Census, there are 1,646 dwellings and 1,573 vehicles¹⁵ in the data zones comprising Macaulay, equating to a car ownership rate of approximately one vehicle per household (**0.95 vehicles/dwelling**). Further breakdown by dwelling type is provided in **Table 6** in Appendix A.

Extrapolating this rate across all 2,281 dwellings in Macaulay (to account for the dwellings excluded above), there are approximately **2,166 vehicles** owned in Macaulay, as an estimate.

Existing commercial / employment vehicle demand

According to ABS Census data, there are 5,728 workers in the data zones comprising Macaulay. As outlined in Section 1.2, three-quarters (75%) of workers drive to work in a private vehicle (excluding as a passenger). As a high-level starting point to understand demand, this could equate to car parking demand of **4,296 vehicles** for workers in Macaulay.

DATA NOTE

This estimate is conservative for several reasons:

- The data zones used for this analysis are larger than the *Macaulay Structure Plan* area, particularly with respect to employment-type land uses in Melrose South and Chelmsford. Therefore, the above figure for current jobs and parking demand are overestimated. City of Melbourne data shows 2,569 (72%) full time and 434 (12%) part time jobs in Macaulay.¹⁶ This also means that the amount of growth between current conditions and the capacity model estimate at full build-out is underestimated.
- This simplified approach also assumes that all workers will be present in Macaulay at the same time – in reality, demand for car parking may be lower due to staggered work times, working from home or a portion of staff not working on a given day. For example, North Melbourne Football Club is likely to have several hundred staff, but staff will likely have variable schedules.¹⁷ Collective lifestyle changes following COVID-19 may follow similar trends, where people are no longer on-site for a full working day as more flexible and remote working occurs.

Although the demand for car parking is likely overestimated, if this assumption is applied consistently over current and future scenarios then it is valid for comparison purposes.

¹⁵ Based on Australian Bureau of Statistics Census of Population and Housing, used under Creative Commons Attribution 4.0 International ([CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)), copyright Commonwealth of Australia administered by the ABS. Custom analysis undertaken. 'House' comprises separate house, Semi-detached, row or terrace house, townhouse (of any height). 'Low-rise flat/apt' comprises flat or apartment up to three-storey block. 'High-rise flat/apt' comprises flat or apartment four or more storeys. Other types, not stated and not applicable responses excluded – dwelling numbers differ to other sections of this report for this reason.

¹⁶ <https://participate.melbourne.vic.gov.au/macaulay-profile>

¹⁷ It is noted that NMFC is also located outside of the Macaulay Structure Plan area, but within the data zones used to reflect the area.

Existing car parking supply

The supply of car parking covers on-street and off-street parking. According to City of Melbourne Census of Land Use and Employment (CLUE) data,¹⁸ there was a supply in 2016 of:

- 1,182 off-street residential car parking spaces
- 3,447 private off-street car parking spaces (non-residential building for use by staff, customers or visitors)
- No commercial off-street car parking spaces (publicly accessible, paid parking facility)
- This equates to a total of **4,629 off-street car parking spaces**.

There was also a total of **3,462 on-street car parking spaces**. Note that the 'effective' amount of car parking in this area is likely lower due to spaces be repurposed for other uses (such as garages being used for storage).

Existing supply vs demand

Using the conservative estimates for demand outlined above, and assuming all vehicles are parked within their designated off-street car parks, there are **984 more residential vehicles** and **849 more commercial/employment vehicles** than available off-street car parks. It is assumed that these vehicles park within the available capacity on-street, given there are minimal car parking restrictions on many streets in Macaulay and vehicles can generally be stored on the street indefinitely.

In theory, this leaves approximately **1,629 spaces available on-street** (~50% of on-street supply) for other users. In reality, there will be greater complexity and nuance – for example, some users with access to an off-street space will opt to park on the street due to convenience (e.g. easier than accessing off-street car parking) and/or use off-street car parking for other purposes (such as storage). There will also be day-to-day variation in demand for car parking, as well as supply (e.g. any applicable car parking restrictions). These factors add further layers of conservatism to the analysis.

1.6.3 Estimated future car parking situation in Macaulay

Estimated growth in demand – supplying car parking to meet future demand

Council's capacity model envisages that Macaulay will become home to approximately 18,200 residents and 10,000 jobs at full build-out, representing an increase of 13,600 residents and 4,300 workers compared to current (2016) figures.^{3,14}

Under a business-as-usual scenario, adopting the same assumptions and rates as presented earlier, this equates to an increase in demand of 2,243 resident vehicles and 2,829 worker vehicles being stored in Macaulay, a total of more than 5,000 additional vehicles.¹⁹

There is a preference for parking to be accommodated off-street because remaining on-street car parking will be allocated for relevant uses, such as movement functions, localised visitor car parking where alternatives are not available and permit car parking (see below). Furthermore, there is reduced flexibility in the use of public space if on-street car parking is relied upon for long-term vehicle storage (e.g. makes future changes more difficult).

The following analysis presents the existing supply vs demand for residential and worker parking, compared with future needs under a business-as-usual scenario (where parking is provided to meet demand)

Table 2 – Car Parking supply and demand under BAU scenario

	Residential	Employment/worker	Total
Existing vehicles parked	2,166 vehicles	4,296 vehicles	6,462 vehicles
How does this align with supply?	1,182 off-street spaces Assume remaining 984 vehicles use on-street spaces	3,447 off-street spaces Assume remaining 849 vehicles use on-street spaces	Off-street at capacity. 1,629 spaces available on-street
Future business-as-usual vehicles parked	4,409 vehicles (+2,243 from existing)	7,125 vehicles (+2,829 from existing)	11,534 vehicles (+5,072 from existing)
How does this align with existing supply?	Need additional 2,243 off-street spaces to meet new demand (+190%)	Need additional 2,829 off-street spaces to meet new demand (+82%)	Need up to 5,072 off-street spaces (+110%) to meet new demand (would leave 1,629 spaces on-street)

¹⁸ [Off-street car parks with capacity and type](#), City of Melbourne, used under Creative Commons Attribution 4.0 International ([CC BY 4.0](#)), custom analysis undertaken.

¹⁹ Assume population growth of approx. 5,432 residents (to reach 10,000 residents by 2051), average household size of 2.3 (per [Overview of Macaulay](#), City of Melbourne) and car ownership rate of 0.95 vehicles/dwelling

This high-level analysis clearly shows that **if** car parking continues to be supplied assuming business-as-usual, the magnitude of additional car parking (more than doubling current off-street parking supply) is significant. This would have implications for space requirements, urban design outcomes, cost of construction and increased demand for the road network.

Changing societal / city trends will likely soften this increase in demand

Melbourne, and Macaulay, is expected to undergo substantial change over the coming decades and a range of factors have potential to reduce demand for car parking, including:

- Greater dwelling diversity (mainly smaller dwelling types and higher densities), which deliver lower car ownership (see Table 3).
- Changes to the types of jobs within Macaulay, which may have a higher propensity for people being able to access them by walking and cycling (including a shift to the knowledge economy)
- Growth in surrounding central city neighbourhoods, with jobs and residents closely co-located and travel distances well-suited for travel by more sustainable modes
- Increasing strategic demand for the road network (including as a result of the West Gate Tunnel project)²⁰, reducing road network reliability (longer closure times due to safety...etc) and general changes to how cars are used (including the implications of the sharing economy)
- Improvements to walking, cycling and public transport, including Metro Tunnel and investments as part of respective Structure Plans
- Increasing availability of transport alternatives, such as e-scooters and share bikes
- Increase in number and quality of destinations (e.g. cafes, shops) near where people live - making walking and cycling more appealing.
- Wider factors, such as rising fuel prices and increasing environmental awareness

Notwithstanding, even if these factors were to reduce demand by a substantial amount (e.g. say, by 20 to 30 per cent for discussion), supplying parking at these levels, under a business-as-usual approach, would still result in a high amount of new car parking being constructed, e.g. in the order of 3,500 to 4,000 spaces. Indeed, delivering current minimum car parking requirements would result in the delivery of approximately 3,000 additional spaces for residential uses alone.

Table 3 – Minimum car parking requirements in Macaulay, with current rates of car ownership for comparison²¹

	One bedroom or less	Two bedrooms	Three bedrooms or more	Overall ('blended')	Requirement to meet growth
Current car ownership in Macaulay	0.54 cars/dwelling (20% of stock)	0.95 cars/dwelling (51% of stock)	1.25 cars/dwelling (29% of stock)	0.95 cars/dwelling	2,243 additional spaces
Minimum car parking requirement ²²	1 space/dwelling	1 space/dwelling	2 spaces/dwelling	1.29 cars/dwelling (assuming same dwelling stock mix)	3,046 additional spaces

Further, achieving reductions in demand requires reductions in car parking supply to 'lock in' the benefits of improved sustainable transport uptake. Abundant availability of car parking will undermine the effectiveness of the above trends and induce car-based travel as people will be confident of finding a space at their destination, or of having space to store a purchased vehicle, especially at workplaces.

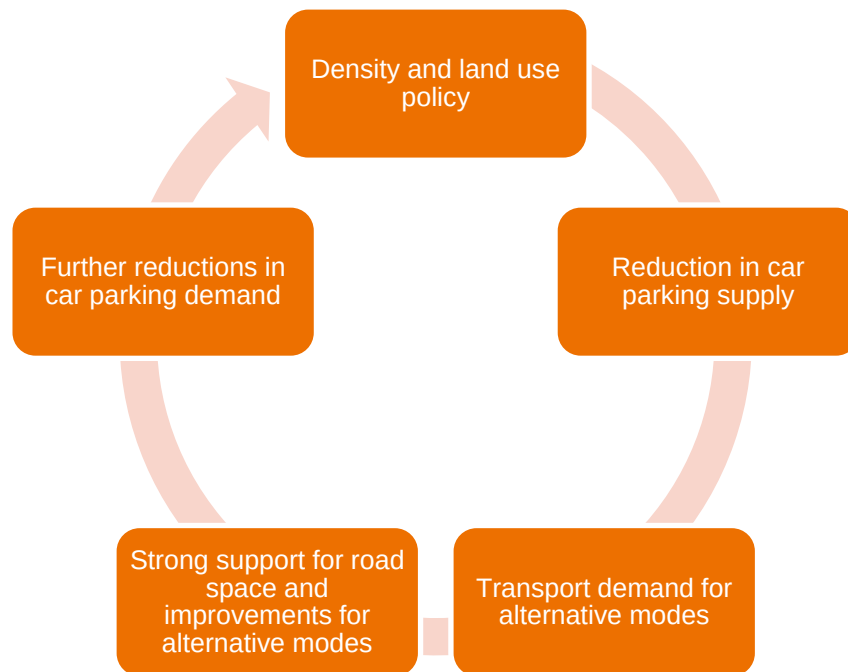
On the flip side, having good sustainable transport provision, coupled with appropriate parking controls, will encourage people to make use of the sustainable transport options, which will 'lock in' the reduction in demand for car parking, as depicted in **Figure 8**. Further discussion on how these controls can be achieved is outlined in Section 2.3.

²⁰ Figure 160, [West Gate Tunnel Transport Impact Assessment](#), GHD, May 2017

²¹ Based on Australian Bureau of Statistics Census of Population and Housing, used under Creative Commons Attribution 4.0 International ([CC BY 4.0](#)), copyright Commonwealth of Australia administered by the ABS. Custom analysis undertaken. Responses of 4+ vehicles assumed as 4 vehicles for purposes of analysis (noting this reflects 0.6% of responses, so is not likely to impact results). Not stated and not applicable responses excluded – dwelling numbers may differ to other sections of this report for this reason.

²² Per Column B of Clause 52.06-5 of the Melbourne Planning Scheme, as most of Macaulay falls within the Principal Public Transport Network area.

Figure 8 – Relationship between land use, car parking and mode shift



Note: Road space allocation policy to support sustainable modes is not presented as it is seen as a critical policy to support density and land use policy

1.7 Role of car parking in addressing these issues

Car parking is a lever in influencing future transport and urban outcomes

The Macaulay precinct is already undergoing growth and change, with several planning permits for substantial developments sought in recent years. As the area undergoes urban renewal, it will be critical to have suitable mechanisms in place to safeguard Macaulay from adverse impacts (such as reduced amenity, delays to public transport, decreased road transport reliability, poor urban design outcomes and poor use of valuable urban space) and better align development with community aspirations and city planning policy.

Car parking is a broad-reaching lever which has the potential to impact on a range of outcomes, from local factors such as visual amenity, air quality and urban design, to strategic factors such as network reliability/efficiency, mode share, costs of housing and health outcomes.²³

This car parking plan aims to better align the Melbourne Planning Scheme with the issues being faced in Macaulay and modern demands for car parking provision to ensure that the area has the best chance of delivering on policy objectives through its evolution and growth.

A car parking plan provides the basis for informed and integrated decision-making around the appropriate provision of car parking and type of facilities for Macaulay. Drawing on the guidance provided in *Practice Note 57: The Parking Overlay (April 2013)*²⁴, this car parking plan:

- Explores the issues and challenges for Macaulay and needs for the precinct (Section 2)
- Outlines a set of objectives for car parking in Macaulay (Section 3.1)
- Provides a set of strategies for the provision of car parking facilities which support the aspirations for the precinct (Section 3.3)

²³ [Planning Committee Report – Amendment C133 – Maximum Residential Car Parking Rate](#), City of Melbourne, 2 September 2008

²⁴ [The Parking Overlay](#), Department of Planning and Community Development, April 2013

Figure 9 – Relationship between car parking plan and other mechanisms, and the scope of this report shown in orange (adapted from *Practice Note 57: The Parking Overlay*²⁴)



In turn, this report will inform development of planning controls to implement the proposed strategies through the Melbourne Planning Scheme.

1.8 Objectives of this car parking plan

Based on local and state policies and based on the issues identified above, this car parking plan aims to:

- Deliver on the objectives of the Macaulay Structure Plan, including reduced car ownership (per dwelling) and dependence and support for sustainable transport modes (including walking, cycling and public transport)
- Reduce reliance on on-street car parking for long-term private and residential car parking
- Unlock public street space for other uses and enable wider city design outcomes
- Improve efficiency of car parking provided, including reducing barriers to co-locating and sharing residential car parking across buildings and uses, and unbundling car parking
- Incentivise stronger sustainable transport facilities (e.g. car share, electric charging, cycling facilities) to be delivered on-site
- Maximise adaptability of car parks, including in terms of types of car parking and facilities provided, and ability to repurpose structures for other uses

1.9 Area to which this car parking plan applies

The car parking plan is intended to realise state and local policy as these changes unfold (for example, to engrain positive travel habits from the outset), and therefore there is equal need for modern car parking controls across the **whole of Macaulay**. This will also provide better consistency and clarity of expectations for the development sector and community.

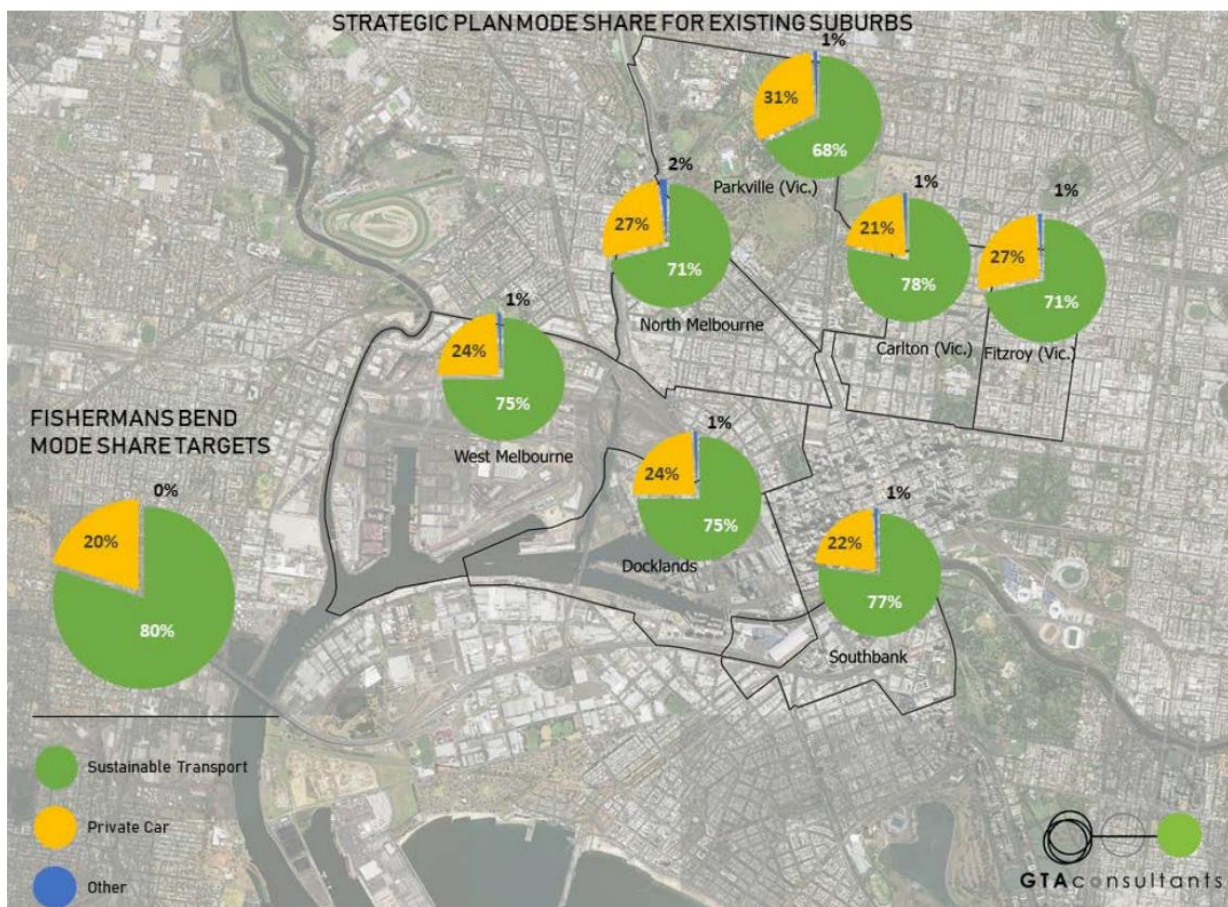
2 Strategies to deliver on the objectives

2.1 Delivering mode shift targets

Based on policy and analysis of the transport networks, a target mode share for Macaulay for 80% of trips to be made by sustainable (non-car) modes is proposed. The rationale for this is:

- To achieve an overall target of 70% for the City of Melbourne, urban renewal areas (such as Macaulay) need to aim above the target to compensate for lower-density, lower-change areas in other parts of the municipality
- Fishermans Bend sets a target for 80% of all trips to be made by sustainable transport, which reflects modern planning aspirations for a less-accessible area. Arden sets a target for 90%.
- Analysis of comparable areas suggests this target is reasonable and achievable and is an important tool to reduce network congestion, as shown in Figure 10.

Figure 10 – Existing mode shares demonstrate an 80% target for sustainable transport is aligned with other areas across other inner city suburbs²⁵



2.2 Unbundling and consolidating car parking

Unbundling and consolidating car parking will provide resilience and efficiency in supply as Macaulay evolves. Where car parking is provided, both the allocation of spaces and the future use of the building should be adaptable.

²⁵ [Fishermans Bend Planning Review Panel – Framework Peer Review Expert Witness Statement](#), GTA Consultants (now Stantec), March 2018

2.2.1 Case for change

Car parking is the third largest land use in the City of Melbourne, accounting for more than 460 hectares of space.²⁶ Car parking structures are expensive to construct and can occupy a substantial amount of space. The cost of car parking is going up and is regularly paid for by the consumer, noting recent research by Infrastructure Victoria showed only 17% of people that drive in the AM peak pay for parking²⁷.

Transport patterns will continue to change over coming decades as Macaulay grows, but also through wider societal shifts, such as increased working from home, increased choice in mobility (including ride share and scooter share), different types of vehicles and fuels, increases in petrol prices and investment which focuses on increasing walking, cycling and public transport uptake. As travel patterns change, so too will demand for car parking – however typical car parking structures are not designed to be adapted as readily.

There is increasing focus on the importance of designing car parking facilities so they are resilient and adaptable as transport demands shift. Per the Office of the Victorian Government Architect, “areas occupied by car parks today are likely to become valuable community assets in the future”.²⁸ If demand for car parking reduces, there is potential to convert part of the structure to other uses, such as hotels, offices or entertainment spaces. Planning for both Arden and Fishermans Bend promotes adaptability and reuse of buildings. There are several components to this, including:

- Design of the structure to ensure columns, roof heights etc. are flexible to re-use before it is constructed. It is noted that there are some inherent issues with this, including less efficient delivery of car parking (due to taller roof heights), longer ramps (due to taller roof heights) and difficulty retrofitting ramps.⁴⁵
- **Unbundling car parking** from land use so that there is flexible occupancy of car parking as demand changes once it is constructed. Depending on management, this may also reduce the level of ownership fragmentation and enable adaptation without impact on the associated land use (e.g. can adapt the car park without needing to purchase all owners’ apartments)
- Consolidating car parking within **precinct parking stations** (rather than on-site with a specific land use) so that there is greater scope for adaptability. For example, one larger precinct parking structure may remain in use for longer than several smaller basement car parks, and may also have a greater range of options once it is adapted. There are a range of other benefits, including minimising vehicle crossovers and making better use of smaller sites and limited urban land.⁵⁵

The latter concepts are explored further below.

Unbundling car parking from land use

At present, car parking is often titled and sold (i.e. ‘bundled’) with a dwelling, particularly in the case of apartment complexes. This means that the car park is typically useable only by the owner of the corresponding apartment (unless private arrangements are made) and there is no choice as to whether or not that dwelling comes with a car space. Like minimum car parking rates, bundling car parking represents an inefficient use of resources because more car parks need to be provided so that dwelling owners have a designated car parking space, whether they need it or not.

Unbundling car parking enables developers to sell or lease parking independently of residences or commercial leases. This makes more efficient use of parking resources by providing people with a choice as to whether they need car parking with their dwelling or not – not only as an upfront decision when the property is purchased or rented, but throughout their tenure in the property.

That is, unbundled car parking allows people to choose to rent a car space separately to an apartment, which means that one can be discontinued without the other, and also provides ongoing decision-points where people can choose whether they still need to occupy a car park. Unbundled car parking can be provided either within an apartment building (where the car parking pool is generally accessible to building tenants, but may also be available to broader users), or in the form of a ‘precinct parking station’ (where the car parking pool is accessible to the public).¹¹

Unbundled parking can also help prepare for increased uptake of new and emerging technologies. For example, it can help prepare for increased electric vehicle use, by not ‘locking-in’ bays equipped with chargers to specific apartments.

²⁶ [Rethinking Melbourne's carpark for future use](#), Bates Smart via Committee for Melbourne, April 2021

²⁷ [Five-year-focus-immediate-actions-to-tackle-congestion-April-2018](#), Infrastructure Victoria 2018

²⁸ [Design principles: multi-deck commuter car parks](#), Office of the Victorian Government Architect



Consolidating parking through precinct car parking stations

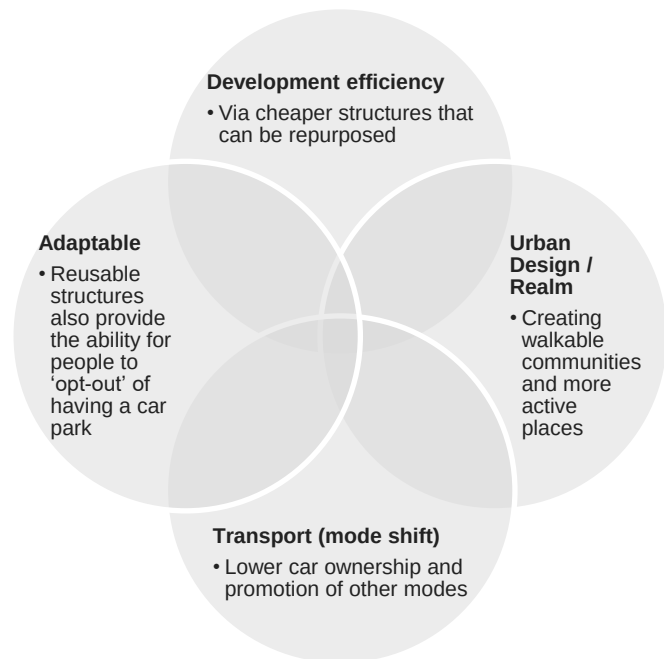
Precinct parking structures (typically publicly-available off-street car park facilities) represent an efficient car parking solution in that they provide the ability to share car parking between different uses that have peak parking times that do not coincide. Such facilities can also cater for both long term (staff/resident) and short term (customer/visitor) demands. Off-street, off-site spaces could be leased from the parking operator, individually strata-titled and sold or leased or charged on a per use per day basis (like typical commercial paid parking structures).

The provision of new public off-street car parking facilities are, however, costly, and as such, must be carefully planned to ensure that the facility will be effectively used to justify the construction cost and the value of the land which it uses, which, like any car parking, could be potentially used for other, more productive purposes.¹¹

The Minister for Planning's *Part A Response* for Fishermans Bend notes the benefits of Precinct Parking Stations, including influencing travel demand, improving urban design, future adaptability and creating conditions for development efficiency, especially for smaller sites.²⁹

Together, these initiatives provide a resilient approach to car parking that is aligned with modern urban and transport planning, particularly in higher-density inner-city locales such as Macaulay, where there is stronger potential to group car parking together and destinations are generally in closer proximity.

Figure 11 – Benefits of consolidated precinct car parking



2.2.2 Implementation

Approach in Fishermans Bend³⁰

Regarding precinct parking and adaptable reuse, the following were included in the decision guidelines for permit applications, within Schedule 13 to Clause 45.09 Parking Overlay in the Melbourne Planning Scheme:

- "The future adaptability of the car parking areas and ability to transition to future uses over time"
- "Whether car parking is to be provided in a stand-alone building to be used for precinct car parking."
- "If any parking is proposed to be provided off-site, whether the recipient site is located within convenient walking distance (200 metres) of the subject site, and is part of a precinct based parking facility."

These were also supported under decision guidelines for car parking plans in the same Schedule:

- "The extent to which the car parking areas (not located within a basement) are designed for future adaptation and repurposing."
- "The availability of car share vehicles and precinct parking facilities in the locality"

Further, the requirement to seek a permit to exceed the maximum car parking rates does not apply where additional car parking is allocated for car share or precinct based parking, to the satisfaction of the responsible authority.

The above wording "does not specifically require Precinct Parking Stations (PPS) but neither does it preclude them".²⁹

Approach in West Melbourne

Adaptability of car parking is covered under proposed decision guidelines in the Schedules to the Parking Overlay and Special Use Zone. The expert witness also proposed additional application requirements to ensure spaces are utilised efficiently.

²⁹ [Fishermans Bend Draft Planning Scheme Amendment GC81, Minister for Planning Part A Response](#), Department of Environment, Land, Water and Planning

³⁰ Schedule 13 to Clause 45.09 Parking Overlay in the Melbourne Planning Scheme

2.3 Reduced statutory car parking rates

As discussed in Section 1.6, better management of new parking supply will reduce the rate of car parking demand, which will, in turn, reduce the need for new car parking to be constructed – in this way supply and demand is integrated and ‘positive cycle’ is created that supports COM’s policy.

2.3.1 Case for change

An alternative approach – reducing parking demand (and therefore supply) through mode shift

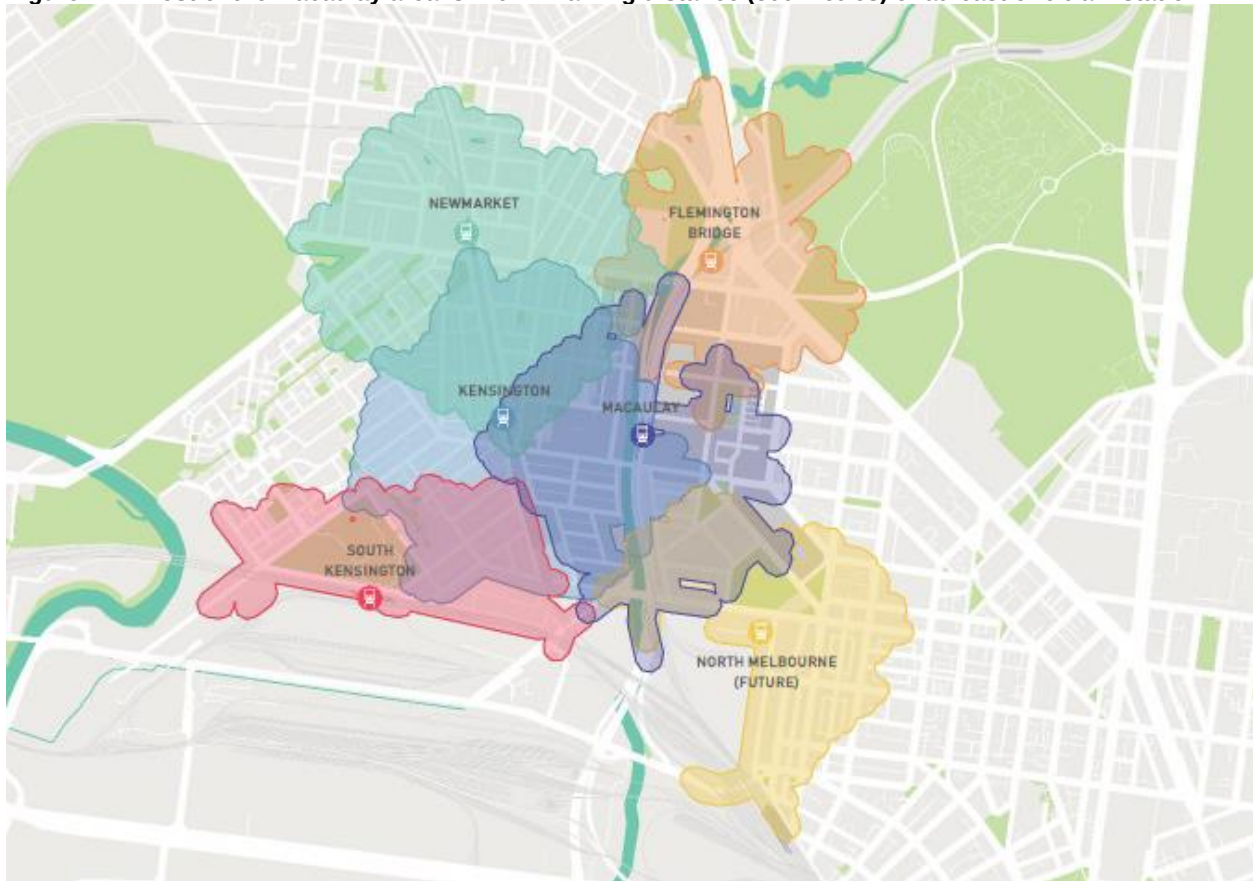
An alternative approach to the business-as-usual, predict-and-provide approach is to take action to reduce the parking demand rate compared to current levels, which will commensurately reduce the amount of additional supply that needs to be added. This can be achieved through parking controls, which support lower levels of car ownership (by removing mandatory car parking) and ‘lock in’ the mode shift outcomes outlined above as alternatives. In many cities this approach is being adopted and evidence suggests it is highly successful, furthermore it is policy in some parts of the City of Melbourne via the Capital City Zone.

This approach is suitable in Macaulay as it is close to many services, benefits from excellent existing local transport options (e.g. walking and cycling networks) as well as wider metropolitan access options, including car share and good existing public transport. The area benefits from several nearby tram services (routes 57, 58 and 59), a bus route and two train lines (Upfield and Craigieburn). Most areas of Macaulay are within a 10-minute walk of a train station, with some areas within walking distance of several train stations (see **Figure 12**). Spatial Network Analysis for Multi-Modal Urban Transport Systems (SNAMUTS)³¹ analysis found that the area has ‘average’ to ‘good’ public transport accessibility in 2016, mainly held back due to service frequency which will be improved as infrastructure upgrades come online.³² It is also worth noting that the accessibility modelling assumes good connectivity (limited severance) between the region and the stations.

³¹ More about SNAMUTS can be found here: <http://www.snamuts.com/more-info.html>

³² *City Analytics – Public Transport Accessibility – Arden Snapshot* (document provided). Score of ‘Above Average’ as reported elsewhere was scaled down to ‘Average’ as Macaulay Station is modelled from the Flemington Bridge node, which has more direct connections to tram services and therefore overestimates Macaulay’s accessibility. Note that 2036 assumes projects are delivered which do not currently have planning status, such as Melbourne Metro 2 and City Loop Reconfiguration.

Figure 12 – Most of the Macaulay area is within walking distance (800 metres) of at least one train station³³



Sustainable transport options are expected to improve as local and state government invests in the area and development unfolds in Macaulay and beyond. Many commuters in the area also have a choice of multiple options, especially as it relates to out-commuting (rather than inbound). For example some-one in Macaulay will be able to travel to the Airport via South Kensington, Essendon via Kensington or Moreland via Macaulay.

The *Macaulay Structure Plan* proposes Boundary Road as north-south public transport capable corridor, as well as new pedestrian and cycling links, including better permeability through large sites (as seen through recent planning applications), and advocacy for improved links over the Moonee Ponds Creek².

The *Arden Structure Plan* proposes an extension of the Boundary Road public transport corridor along Henderson Street and Laurens Street, as well as along Arden Street to the east. Many streets in the core of the precinct are proposed as pedestrian priority zones and several streets are designated as Strategic Cycling Corridors or local cycling links.³⁴

SNAMUTS modelling of public transport accessibility estimates that Macaulay Station will improve to 'above average' access in 2026 and 2036, boosted by the fact that part of the precinct will be within a walkable catchment to North Melbourne Station with the opening of Melbourne Metro.³²

Further to policy to change travel patterns being implemented, as a result of technology, the way that people travel appears to be getting more complex – by mode, purpose and time of day. While many see aspects of this occurring there is limited holistic research that connects land use planning to new mobilities. The ability to share resources has continued to evolve beyond car share and ride share, with the City of Melbourne being part of the ongoing shared e-scooter trials. New fuels are also maturing, and different types of bicycles (including e-bikes) are gaining popularity rapidly.³⁵

³³ Stantec analysis undertaken in 2019 using Targomo. Basemap elements based on Department of Environment, Land, Water and Planning and City of Melbourne, used under Creative Commons Attribution 4.0 International ([CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)), custom styling applied. Other basemap data sourced from, or based on, OpenStreetMap® - open data, licensed under the Open Data Commons Open Database License (ODbL) by the OpenStreetMap Foundation (OSMF), see <https://www.openstreetmap.org/copyright>. © OpenStreetMap contributors.

³⁴ *Arden Structure Plan*, VPA & Department of Transport, August 2021

³⁵ *Australis's ebike fever set to continue in 2021*, The Fifth Estate, February 2021

2.3.2 How can car parking supply be controlled?

The City of Melbourne has been limiting car parking in the CBD since 1981,³⁶ an approach which has been extended to other central city areas and surrounds, including Southbank, Docklands, Fishermans Bend and parts of Footscray, Carlton, East Melbourne and West Melbourne. Following on from the discussion in Section 1.6, there are three key approaches to limiting the growth in off-street car parking through planning controls, as outlined in **Table 4**.

Table 4 – Key options for reducing growth in off-street car parking through the Planning Scheme (orange reflects key factor influencing car parking provision)

Approach	Implication on lower bound for car parking	Implication for upper bound for car parking	Example application
1) Reducing the minimum rate Reduce the minimum requirement (lower bound) for car parking to a lower level (with no maximum rate)	Developers must still provide a certain 'minimum' level of car parking, however that level is now reduced. A permit is required to provide less than the minimum level of car parking.	There is no upper limit to the amount of parking that can be provided. ³⁷ No permit is required to provide more than the minimum level.	This is the default arrangement across most of Victoria where there is not a Parking Overlay or other local provisions in place.
2) Applying a maximum rate in addition to the minimum rate Reduce (or maintain) the minimum requirement for car parking and impose a maximum rate (upper bound)	Developers must still provide a certain 'minimum' level of car parking (which may be reduced or remain the same).	The Planning Scheme also outlines a 'maximum' level of car parking which can be provided. A permit is required to exceed the maximum level of car parking.	Footscray Metropolitan Activity Centre has both minimum and maximum parking rates in place. It is less common elsewhere.
3) Replacing the minimum rate with maximum rate Remove the minimum car parking requirement and impose only a maximum car parking rate (upper bound)	There is no lower limit to the amount of car parking that can be provided. ³⁷ No permit is required to provide less than the maximum level, including zero car parking.	The Planning Scheme also outlines a 'maximum' level of car parking which can be provided. A permit is required to exceed the maximum level of car parking.	Many central city areas, including the CBD, Fishermans Bend, Carlton, Docklands and East Melbourne. Other case studies include London and Auckland.

Maintaining a minimum-rate arrangement (option 1) still enables developers to freely provide higher levels of car parking and requires a permit to provide lower levels of car parking, which is inconsistent with policy. Providing a minimum rate in addition to a maximum rate (option 2) is redundant, as it is desirable to preserve the ability for developments to provide zero car parking (particularly given precinct parking approaches are being pursued). In this way, the minimum rate is effectively zero, the same as option 3.

It is proposed to replace the current minimum rate with a maximum rate (option 3), as this will enable a low level of car parking or zero car parking to be provided 'as of right' and require developers to seek justification to provide higher levels of car parking. This approach has been successfully implemented in many areas in Melbourne; there does not appear to be any compelling reasons for adopting a hybrid or other alternative approach for Macaulay.

Introducing maximum car parking is rapidly becoming 'the norm' for creating liveable, sustainable communities, particularly in inner-city areas where there is good public transport, walking and cycling access, close proximity to daily needs and higher propensity to live, learn and work locally.

"A study in London found that planning regulations forcing developers to provide a minimum level of car parking resulted in an oversupply of car parking, which was underutilised. When this requirement was removed, parking continued to be provided, but at a rate approximately 40 per cent lower.³⁸ Another study found that residential parking supply reduced by 49 per cent when minimum rates were replaced with maximum rates.³⁹

³⁶ [The Elephant in the Planning Scheme: How Cities Still Work Around the Dominance of Parking Space](#), The Conversation

³⁷ Subject to the satisfaction of the responsible authority

³⁸ Guo, Z & Ren, S. (2012), [From Minimum to Maximum: Impact of the London Parking Reform on Residential Parking Supply from 2004 to 2010](#)

³⁹ Guo, Z & Li, F. (2014), [Do Parking Standards Matter? Evaluating the London Parking Reform with a Matched Pair Approach](#)

It is worth noting that during the period that the study covered London saw strong economic growth (20% above UK average) and productivity gains (50% above UK average), which were especially evident across inner city areas such as Macaulay⁴⁰.

2.3.3 What is an appropriate car parking rate?

Supporting implementation of precinct parking structures

As outlined in section 2.1, building-in adaptability through consolidating and unbundling car parking will provide a greater degree of flexibility and efficiency as Macaulay evolves. There are a range of models for delivering consolidated car parking outcomes, summarised in **Figure 13**. This considers policy and funding mechanisms to realise consolidated parking.

Figure 13 – Range of models for delivering consolidated precinct car parking structures

Policy for the Provision of Car Parking	Facilitated in Public Sector Investment	Private Sector Parking Development (Market)
Zero on-site parking	Funded by Council Development is 'car-free' – zero car parking is policy. Construction of car parking at the expense of Council, which provides flexibility on the design of a precinct parking solution (e.g. a mobility hub that reflects Council aims). Certainty that car parking is provided.	Delivered by market Development has a maximum rate of '0'. Car parking is only permitted where proposals align with policy and not 'as of right'. Could be supported by site/area specific controls to promote precinct parking, with the inclusion of decision guidelines when providing parking. No certainty of provision of car parking.
Maximum rate, provided on-site with policy to consolidate	Enabled by policy, Council funded Maximum parking rates are applied through a parking overlay to reduce car use. Council would invest in precinct parking, but this would be independent of Planning.	Enabled by Policy Consolidated parking is supported by policy in a maximums environment. Creates the potential for market to consolidated parking provisions while allowing for on-site parking outcomes
Minimum rate, provided on-site with policy to consolidate	Council funded cash-in-lieu scheme Council receive cash to contribute to a consolidated car park paid for by Council. Contributions are diminished where allowing parking to be provided on-site. Partial cost recovery.	VPP provisions Parking provided on-site by developer. Consolidation limited to within larger sites. Reflects status quo approach of VPS. Significant private sector consolidated parking investment unlikely

Under a traditional 'minimum statutory car parking' arrangement, the private sector could opt to provide a financial contribution towards a consolidated car parking station in lieu of providing car parking on-site. Under the proposed maximum car parking arrangement, this is no longer an option, as developers are able to provide zero car parking as-of-right, as intended by policy.

In his Part A response to Fishermans Bend, the Minister for Planning noted that due to "high cost of land acquisition [public-sector funded parking stations were] perceived to be a poor use of public funds which would be better directed to delivering new and upgraded public transport options, active transport provision and community infrastructure/open space."²⁹ It is also understood that it is Council's preference that precinct car parking structures are delivered by the private market.

The premise of consolidating car parking relies on individual sites 'pooling' the demand for on-site provision within a larger, central structure, in lieu of providing smaller car parking supplies on-site. Implementing a **maximum car parking rate of zero** would achieve this outcome – enabling developers to exclude car parking from their site whilst still providing a mechanism (via planning permit) to enable specific sites to deliver car parking on-site where required, according to a set of decision guidelines. This approach will maximise the demand for precinct car parking structures and, likewise, the viability for the private sector to develop structures to capitalise on the demands.

For developers wishing to provide consolidated parking, it should be capped using maximum car parking rates to ensure the sustainable transport goals of the precinct are achieved. The maximum rates can then be referred to in decision guidelines for permit applications to exceed the zero rate for single use parking (i.e. unconsolidated parking).

⁴⁰ [London's economic activity 1998-2019](#), London Data Store

Supporting mode shift aspirations

Implementing a maximum car parking rate of zero is also advantageous in that:

- The 'default' / as-of-right requirement is to provide zero car parking, rather than a certain minimum level, aligning with policy to reduce car parking provision. Planning approval is required to provide car parking, rather than reduce amount of car parking which is also better aligned with policy direction.
- It provides a mechanism through which any provision of car parking can be leveraged to also increase levels of sustainable transport provision as part of the planning permit process on a site-by-site basis (including beyond bicycle parking and end-of-trip facilities).
- It provides Council with flexibility in approval of car parking provision in the short-term, before precinct parking is established.

Despite introducing a maximum car parking rate of zero, some developments will seek to provide a certain level of car parking on-site. Where this is the case, and as noted above, it is proposed that a permit is required to provide parking on the land. The permit application will refer to a set of guidance rates are included within the Planning Scheme to provide clarity in expectations and reaffirm the intent to reduce car ownership and limit on-site car parking provision.

2.3.4 What parking rates are appropriate, and should they be mandatory or discretionary for permit applications to provide parking?

Recommended car parking rates

To achieve Macaulay's adopted mode-share target for 20% of all trips by private vehicles, parking rates for the proposed residential and non-residential land uses within the precinct, are:

- 1-bedroom dwelling: 0.3 spaces per dwelling
- 2-bedroom dwelling: 0.45 spaces per dwelling
- 3-bedroom dwelling: 0.6 spaces per dwelling
- Everything else: 0.58 spaces per 100sqm

Defining detail is provided in Appendix B.1 of this report.

It is recommended these parking rates are discretionary but controlled via decision guideline in a parking overlay schedule. This is in the context of wider planning schemes in Victoria that are generally performance-based as the aim is to promote development that aligns with objectives. There are limited instances where requirements are mandatory which ensures that planning schemes can account for individual site circumstances, evolving uses, and/or innovations delivered by the market. A discretionary rate delivers a clear signal to the market but also provides some flexibility planning decisions as the area evolves.

2.3.5 What will be the wider impacts of these changes?

Protecting on-street car parking from overspill

While the focus of this study is on off-street car parking, on-street car parking is inherently connected, and cross-impacts need to be carefully considered.

Introducing zero-maximum car parking rates means that developers are able to provide zero on-site car parking as-of-right. Given much of the car on-street car parking in Macaulay is currently uncontrolled, this encourages residents and workers to own a vehicle and simply park on-street, undermining the effectiveness of the parking controls, resulting in substantial on-street car parking concerns.

To prevent these outcomes, on-street car parking in Macaulay needs to be managed in accordance with parking management principles, as per the City of Melbourne Transport Strategy⁷. This may include fees, time limits and/or resident parking permits.

Enabling existing residents to access controlled on-street parking

In the short-term, parking permits could then be used to enable existing residents to retain access to car parking on-street in lieu of alternative arrangements, per City of Melbourne's current scheme. All areas of Macaulay are covered under the existing North Melbourne and Kensington permit areas.⁴¹ In the longer-term, once precinct car parking stations come online, access to a car parking permit could be revisited, subject to Council's permit policy. Residents or workers in new developments would not have access to on-street permits, as per City of Melbourne's policy.

⁴¹ Residential parking permits, City of Melbourne [\[Link\]](#). Accessed by Stantec in May 2022.

Some car parking will still be provided

Introducing maximum car parking rates does not mean 'no car parking', as is evident from current circumstances in Melbourne CBD, Southbank, Docklands, Carlton, East Melbourne, West Melbourne where maximum rates apply and car parking still exists and is still constructed. Rather, it means that more appropriate levels are provided and risk of oversupply can be reduced."¹¹

Providing appropriate levels of car parking brings a range of benefits, including reduced construction (and therefore housing) costs, better use of limited space and reducing the incentive to own or drive a vehicle due to high likelihood of available parking.

Need for transport alternatives to support reduced car use

In addition to the 'stick' of reduced car parking provision, a 'carrot' in the form of improved sustainable transport modes is required to ensure a good level of accessibility and liveability is maintained. As discussed in earlier sections, Macaulay has good existing public transport, walking and cycling networks, which are expected to improve further over time.

The balance of this report focusses on how these areas can be enhanced on-site (including through planning controls) to complement wider public realm improvements.

2.3.6 Implementation

Comparison to the approach adopted for Arden

Changes to car parking in Arden are proposed to be implemented through a Schedule to the Parking Overlay.⁴² The intent is summarised within Ms Dunstan's expert witness statement:

"f) The Parking Overlay can be summarised as follows:

- i. A permit is required to provide any car parking on a site*
- ii. The maximum car parking rate for all uses is zero*
- iii. Car parking can be provided on a site and is subject to a comprehensive set of application requirements and decision guidelines. This includes the car parking rates recommended in the Parking Plan, as a guide as to what level of car parking may be appropriate in the circumstances where it is provided. I am satisfied that the Parking Overlay provides adequate flexibility to allow on-site car parking to be provided in applications where it is appropriately required.*
- iv. Car parking if provided, it is encouraged to be in the form of consolidated/public parking (but not limited to) and adaptable to future technology and reuse*
- v. It provides additional requirements for car parking plans and carpark design requirements that are relevant to planning for Arden."*⁵⁵

Proposed implementation

For reasons described earlier, the same approach adopted in Arden is proposed for Macaulay – introducing a maximum rate of zero for all uses in a new schedule to the Parking Overlay for the Macaulay Structure Plan area and including discretionary rates within the decision guidelines of the Parking Overlay, to be considered when planning permission is sought to provide car parking.

It is noted that the Planning Scheme Amendment process for Arden is ongoing and Council should adapt their implementation approach based on the approach adopted in Arden.

As a further development of the policy for Arden, where consolidated parking is proposed, it should be capped using maximum car parking rates to ensure the sustainable transport goals of the precinct are achieved. The maximum rates can then be referred to in decision guidelines for permit applications to exceed the zero rate for single use parking (i.e. unconsolidated parking).

⁴² An initial version of the proposed Parking Overlay was exhibited, however it is understood that it was "substantially altered" as part of the Panel process. Stantec has not reviewed the full revised version of the Parking Overlay (referred to as 'Part A Parking Overlay') however key points are summarised in the expert witness statement.

2.4 An equitable amount of parking for people with disabilities

Parking for people with disabilities should be provided in accordance with the National Construction Code / Building Code of Australia as a minimum to comply with Disability Discrimination Act (DDA) requirements. This results in a parking provision of around 1-2% specifically for people with disabilities.

In Victoria, approximately 320,000 people with disabilities need a parking permit. Given there are approximately 4,000,000 issued drivers licences in Victoria, the number of permits for people with disabilities is approximately 8% of all drivers.

Proposed rate of parking for people with disabilities

It is noted that Planning Scheme Amendment C309 (West Melbourne) required 5% of all parking to be provided for use by people with disabilities.

Providing 5% of all parking spaces for people with disabilities would elevate Macaulay to the top of precincts that more equitably provide for these users.

Heightening awareness of the availability of parking permits for this user group will lead to greater uptake and the need for further parking provision.

If more parking is needed beyond 5% of total provision, these can be easily retrofitted into the existing parking supply by converting a group of 3 standard car spaces into 2 DDA compliant parking spaces and a central shared area, set out in accordance with AS 2890.6

2.5 Better bicycle parking and end-of-trip facilities

A key aspiration for the precinct is delivery of improved walking and cycling conditions. The benefits of these improvements can be extended beyond the public realm and into new developments by strengthening requirements for walking and cycling facilities in the Planning Scheme.⁴³ Improving facilities will ensure that walking and cycling remain attractive and viable travel choices for users.

Increased uptake of walking and cycling (compared to car travel) yields a range of benefits, including health (e.g. increased physical activity), economic (e.g. reduced cost of road repairs, increased retail spend), and environmental (e.g. improved air quality and reduced emissions).

⁴³ *Off-street Bicycle & Motorcycle Parking Review*, Phillip Boyle & Associates, March 2016, as attached to [Report to the Future Melbourne \(Planning\) Committee – Off-street Bicycle and Motorcycle Parking Review](#), City of Melbourne, April 2016

Proposed rates for bicycle parking and end-of-trip facilities

The rates proposed in the *Off-Street Bicycle and Motorcycle Parking Review* appear to broadly reflect modern practice in Planning Scheme Amendments within the City of Melbourne (with some subtle variations). Adopting a similar level of provision in Macaulay would provide consistency in expectations across the municipality.

These rates are broadly consistent with the elevated bicycle parking requirements (compared to current) proposed in recent permit applications and in other comparator areas and providing higher levels of bicycle parking is consistent with policy. The *Review* also provides justification of rates for broader uses and suitable level of provision of end-of-trip facilities.

It is proposed to adopt the rates of bicycle parking and end-of-trip facilities outlined in the *Off-Street Bicycle and Motorcycle Parking Review* in Macaulay.

Bicycle parking:

- Dwellings: 1 space for each **one bedroom in a dwelling** (with studies or studios that are separate rooms counted as a bedroom), and 2 visitor spaces for every 5 dwellings
- Office and Retail: 1 space for each 100sqm net floor area and 4 visitor spaces plus 1 additional space to each 100sqm net floor area

End-of-trip facilities (incl. retail and office):

- Showers: If 20 or more employee bicycle spaces are required, then 1 shower for the first 20 employee bicycle spaces, plus 1 shower for each 10 employee bicycle spaces thereafter.
- Change rooms: If 20 or more employee bicycle spaces are required, personal lockers are to be provided with each bicycle space required. If more than two showers are required – more than 30 bicycle spaces – then a change room must be provided with direct access to each shower. The change room may be a combined shower and change room.

Defining detail is provided in Appendix B.2 of this report.

2.5.1 Implementation

The Planning Scheme Amendment for Fishermans Bend attempted to include rates for bicycle parking as a requirement within the car parking plan (Clause 6.0) in the Parking Overlay.⁴⁴ However, the Panel report found that “bicycle parking cannot be addressed in the Parking Overlay, because there is no power in the head clauses, Clauses 52.06 and 45.09”.⁴⁵

Instead, the designated rates were removed from the Parking Overlay and shifted to the Schedule 4 to Clause 37.04 Capital City Zone under ‘requirements’ (Clause 4.2).⁴⁶ Bicycle parking appears as a consideration in the decision guidelines for permit applications to exceed the maximum car parking rate and car parking plans in the adopted schedules.⁴⁷

Planning Scheme Amendment C376 also proposes to embed new bicycle parking requirements under the Schedule to Clause 37.04 Capital City Zone.⁷³

⁴⁴ [Draft Schedule 13 to Clause 45.09 Parking Overlay – Melbourne Planning Scheme](#)

⁴⁵ [Fishermans Bend Planning Review Panel Reports](#), Planning Panels Victoria, July 2018

⁴⁶ [Schedule 4 to Clause 37.04 Capital City Zone – Fishermans Bend Urban Renewal Area – Melbourne Planning Scheme](#)

⁴⁷ [Schedule 13 to Clause 45.09 Parking Overlay, Melbourne Planning Scheme](#)

Proposed implementation

In lieu of state-wide changes (as proposed in the PBA report)⁴³, bicycle parking requirements should be inserted into the Planning Scheme in a Schedule to the respective zone in Macaulay, with commensurate changes to 'Requirements' and 'Decision Guidelines' in various sections of the Planning Scheme to enable the desired level of bicycle parking provision, facilities and qualities (e.g. security) to be mandated.

The *Off-Street Bicycle and Motorcycle Parking Review* provides further guidance around some of these qualities and decision guidelines.

2.6 Car share as an enabler for low car ownership

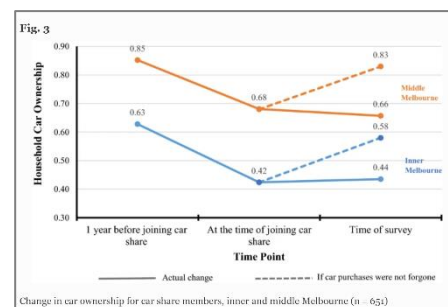
Car share has the potential to displace car ownership by enabling residents (and visitors) to hire from a central fleet of vehicles on an as-needed basis, generally from convenient locations within short travel distance. In this way, residents can travel by walking, cycling and public transport for most trips, but also have access to a car when required, without the need for ownership or cumbersome traditional hiring arrangements.

One Australian study found that each car share vehicle replaces 7 to 10 cars owned by members.⁴⁸ Another recent study found that one in three car share member households in inner and middle Melbourne sold or avoided a car purchase. This same study concluded that (amongst others):

- “car share is more effective at helping people maintain low levels of car ownership, rather than reverse high car ownership”
- “car share operators should aim to market their services to people who are undergoing life events which are likely to precipitate selling a car”
- “it is imperative that car share is spatially, temporally and technologically accessible to as many people as possible...”⁴⁹

Car share is consistent with the aspirations in Macaulay to reduce car ownership and associated impacts (e.g. demand for a constrained road network, need for car parking facilities, use of limited space). As new developments unfold and new residents and workers move in, there is an opportunity to establish new travel habits, with car share a part of the overall ‘sustainable transport’ package.

Figure 14 – Car share enables people to maintain low levels of car ownership⁴⁹



⁴⁸ Shaheen, S.A. & Cohen, A.P. (2013): *Carsharing and Personal Vehicle Services: Worldwide Market Developments and Emerging Trends*, International Journal of Sustainable Transportation, 7:1, 5-34

⁴⁹ Jain, T., Rose, G. & Johnson, M. [Changes in private car ownership associated with car sharing: gauging differences by residential location and car share typology](#). Transportation (2021)

Proposed rate and implementation

Given the abundance of on-street car parking in Macaulay, it would be preferred that a higher proportion of car share spaces are provided on-street where they are more visible, accessible and convenient for users. Providing car share spaces on-street also preserves the security of off-street spaces for residents and tenants (e.g. if no visitor parking is provided on-site). It is also more aligned with the intent of the maximum car parking rate to provide zero on-site car parking in the first instance. Where on-site car parking is proposed, the schedule to the parking overlay should include a permit decision guideline that covers the extent to which the amount of proposed parking is to be allocated for car share.

Notwithstanding, it is appreciated that it is current Council policy to provide a portion of car share spaces off-site. Like EV charging, demand for car share will likely evolve over time, including spatially (e.g. some sites may be more popular than others). Therefore, a similar 'adaptable' approach is proposed whereby, in the instance that a site proposes to provide on-site car parking, a portion of the site's car spaces should be able to be converted to car share spaces as demand and market need dictates. Unbundling and precinct car parking approaches will be key to implementation of this in practice.

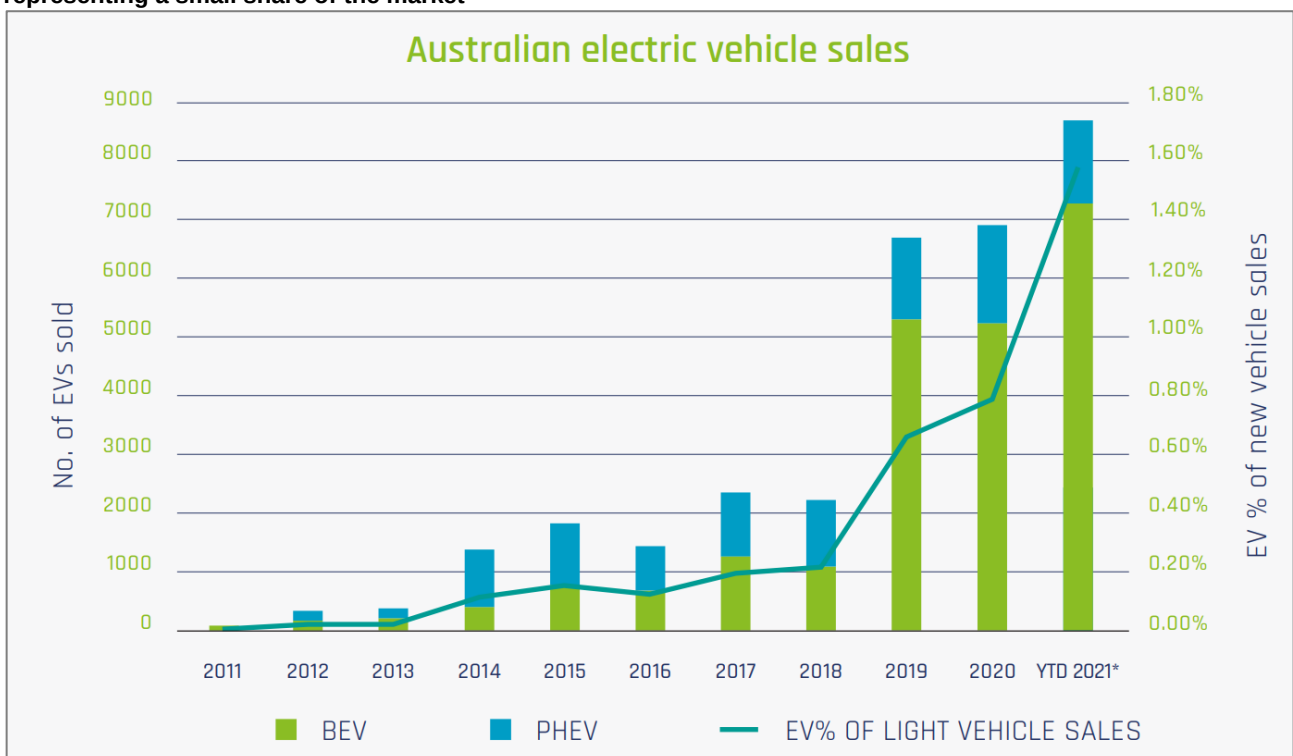
In terms of planning controls, the expert witness statement for Arden indicates that "the requirement for 5% of provided car spaces to be car share vehicles could be in the SUZ or PO. This is a legal/planning question that I do not have a definitive opinion on" – the same view is taken for Macaulay, this requirement may be implemented through the Schedule to the relevant zone or Parking Overlay and is a matter best answered by statutory planners.

Defining detail is provided in Appendix B.3 of this report.

2.7 Enabling adaptability for future uptake of electric vehicles

Though a low proportion of market share currently, ownership of electric vehicles is slowly growing in Australia, representing approximately 1.5% of new vehicle sales (see **Figure 15**).

Figure 15 – Electric vehicle sales have grown as a proportion of new vehicles in Australia, albeit still representing a small share of the market⁵⁰



⁵⁰ [State of Electric Vehicles](#), Electric Vehicle Council, August 2021

Proposed rate and implementation

Electric vehicle uptake will evolve over the coming decades, however the rate of evolution is less clear. Ensuring all car parking spaces are **capable** of providing EV charging is logical and allows developments to adapt and provide a suitable level of EV charging facilities as needs change, without the need for substantial redevelopment.

Consistent with the expert evidence for Arden, all off-street car parking spaces in Macaulay should be **capable** of providing EV charging in the future, with installation of EV charging facilities to be based on demand.

In Arden, the requirement for all car spaces to be able to be provided with EV charging facilities is proposed to be included under the Design Standards within the Schedule to the Parking Overlay.⁵⁵ The same approach is proposed in Macaulay (or alternative if agreed as part of Arden Panel process).

Defining detail is provided in Appendix B.4 of this report.

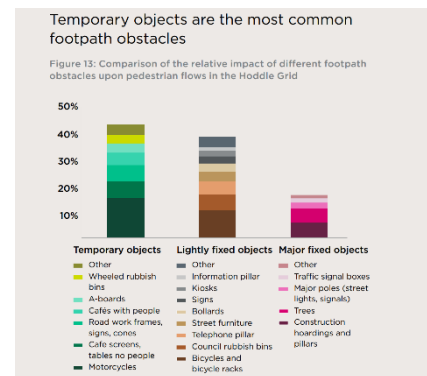
2.8 Creating better walking environments by shifting motorcycle parking away from footpaths

City of Melbourne's *Transport Strategy 2030* identifies congested footpaths pace as a key challenge, with obstacles impeding on pedestrian access, particularly for people with higher mobility needs (such as people using wheelchairs). Motorcycles parked on the footpath are the single greatest cause of impact on pedestrian flows in the Hoddle Grid, according to a footpath obstacle survey (see **Figure 16**).

The *Transport Strategy 2030* includes actions to increase off-street parking for bicycles and motorcycles and minimise footpath obstructions to free up more space for walking.

Providing space off-street for motorcycle parking in Macaulay is consistent with policy and with broader strategic direction to enhance uptake of walking within the precinct.

Figure 16 – Motorcycles are the single greatest cause of impact on pedestrian flows



Proposed rate and implementation

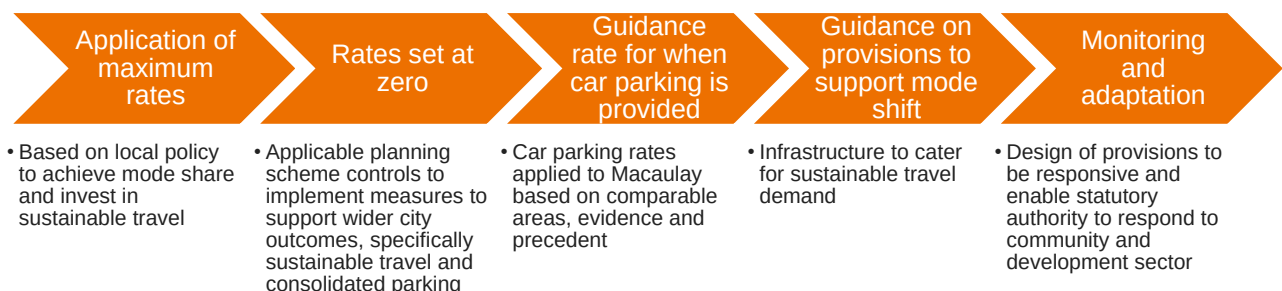
The rate of 1 space per 40 car spaces is also proposed in Macaulay, given the findings of the *Off-Street Bicycle and Motorcycle Parking Review* and adoption of this rate in Arden.

Wording the motorcycle parking rate as a ratio of car parking spaces is preferred over basing the rate off dwellings/land use, as this means that motorcycle parking is only required if car parking is provided, consistent with the intent of the zero maximum car parking rates.

It is proposed that this requirement be implemented in the Schedule to the relevant zone, as has been the case in Amendment C376 and Fishermans Bend.

Defining detail is provided in Appendix B.5 of this report.

2.9 Summary



3 Monitoring and next steps

3.1 Monitoring

The measures proposed in this report allow for a high level of adaptability over time:

- The zero-maximum car parking rate means that Council has flexibility in approval of car parking rates, in line with the relevant decision guidelines. This works in both directions – e.g. if development is being constrained by a lack of car parking, there is a mechanism for the responsible authority to respond to the local community.
- Unbundling car parking and providing precinct car parking stations will elevate the flexibility of accessible parking, car share and motorcycle parking provision.
- Proposed approach to electric vehicle parking is adaptable to future needs
- There are a range of tools available to deploy with respect to on-street car parking to help manage parking in the precinct overall

Notwithstanding, consistent with *Practice Note 57: The Parking Overlay*, the car parking plan is a living document and should be regularly reviewed and updated to ensure that the changes to the Planning Scheme and proposed rates remain appropriate and that there are no unintended adverse consequences.

3.2 Next steps

This car parking plan will be used to inform planning controls, including a Schedule to the Parking Overlay and Schedule to the relevant land use zone (such as Special Use Zone, or Capital City Zone). Other controls may also contain parking-related content.

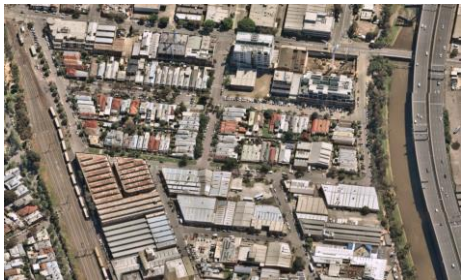
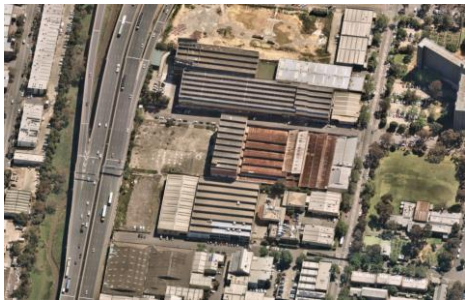
The next step will be for Council to draft these controls, which should include definitions to support ordinance (for instance ‘shared parking’, ‘unbundled ownership’).

These controls will then be proposed as a Planning Scheme Amendment which will include necessary public exhibition processes and if necessary, will be tested through a Minister-appointed Planning Panel process.

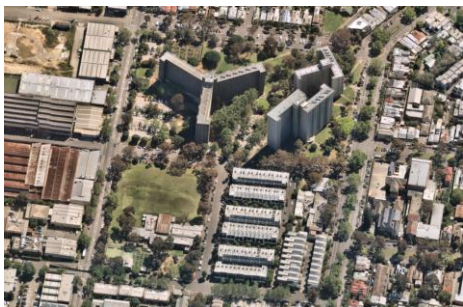
Appendix A Supporting data and tables

A.1 Context - characteristics of each sub-precinct

Table 5 – Characteristics of each sub-precinct, and differences between what is used as data zones in this report, compared to the actual Macaulay precinct, as context for analysis

Precinct ⁵¹	Characteristics of sub-precinct (per Structure Plan boundary)	How data zone boundaries differ to Structure Plan sub-precincts
Stubbs 	The eastern and southern parts of Stubbs are a mixture of light industrial and commercial uses, including a brewery, bike shop, coffee roasters and iconic Mexican restaurant, as well as larger commercial uses. The western part is largely residential, featuring predominantly terrace-style workers cottages and smaller detached and semi-detached homes.	Compared to the Structure Plan, the data zone includes almost the entirety of the residential area in Chelmsford as well as a larger western extent, and so residential data is overrepresented. It also includes some of the commercial and light industrial uses within Chelmsford.
Chelmsford 	The southern part of Chelmsford is predominantly industrial and commercial, including various suppliers and manufacturers, but undergoing some change with proposed residential developments. The northern part is largely residential, typically characterised by smaller terrace-style housing.	Most of the residential area is within the Stubbs data zone, and so residential data is underrepresented. The Chelmsford data zone also includes a larger southern extent than the Structure Plan, including some large commercial/industrial uses and a business park.
Boundary 	Primarily industrial- and commercial-style lots, with a mix of uses housed within (e.g. gyms, places of assembly, education, entertainment, industry). Area is changing rapidly, with planning applications ongoing for residential and commercial uses.	The data zone includes an additional small pocket with further commercial premises and some residential dwellings to the north-east.

⁵¹ Images sourced from Nearmap under licence, copyright Nearmap Australia Pty Ltd

Precinct ⁵¹	Characteristics of sub-precinct (per Structure Plan boundary)	How data zone boundaries differ to Structure Plan sub-precincts
Melrose North 	Largely comprises medium- and high- density public housing, with community facilities and a small pocket of retail and commercial uses in the south-east.	None – subset of 'Melrose' sub-precinct.
Melrose South 	Office-type uses (Public Record Office, National Archives), as well as high-density residential (Arden Gardens, Reflections) apartment complexes and some ground-floor retail.	Data zone captures a much larger area, including some low-density residential, North Melbourne Recreation Reserve and industrial uses closer to the river, and so likely overestimates residential and commercial numbers.

A.2 Existing car ownership by dwelling type

Residents in stand-alone and attached 'houses' on average own more vehicles than those in flats or apartments, hence in areas such as Stubbs and Chelmsford (which have a higher proportion of dwellings), car ownership is generally higher as the area is characterised by mixed-era single/double story housing. By comparison, higher-density apartments and flats typically have a lower car ownership (on average 0.74 cars/dwelling), as summarised in Table 6.

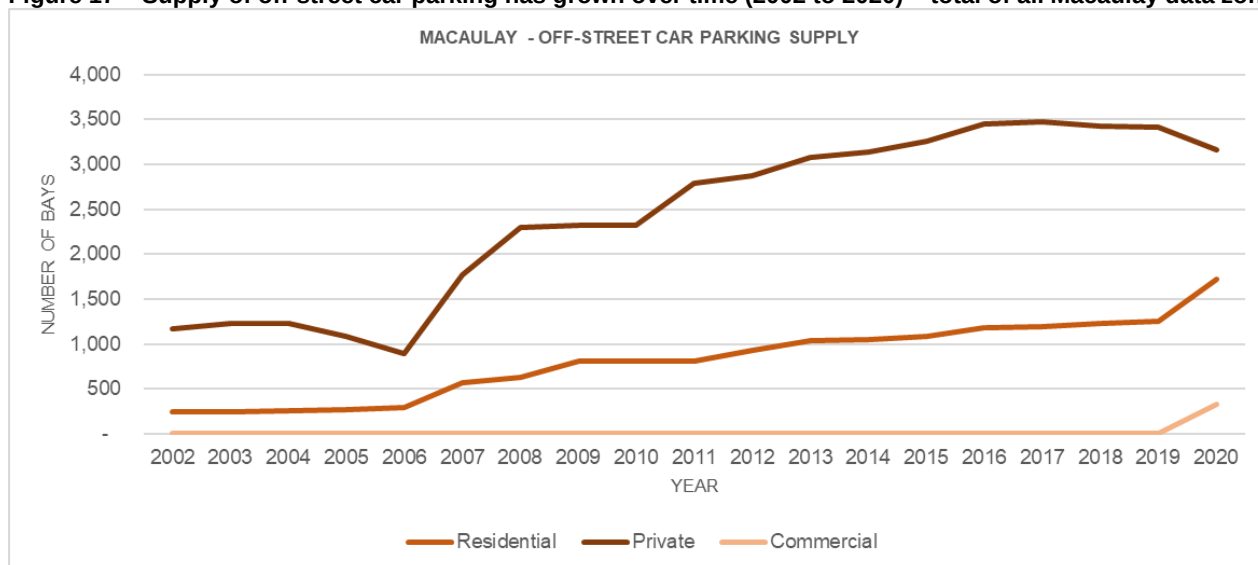
Table 6 – Current rates of car ownership in Macaulay by dwelling structure, and composition of housing stock in each sub-precinct (excludes 'not applicable', 'not stated' and 'other' responses)¹⁵

Sub-precinct	House	Low-rise flat/apt	High-rise flat/apt	Total
Stubbs (589 dwellings)	1.31 cars/dwelling (72% of stock)	0.95 cars/dwelling (18% of stock)	1.41 cars/dwelling (10% of stock)	1.25 cars/dwelling
Boundary (213 dwellings)	1.21 cars/dwelling (18% of stock)	1.00 car/dwelling (2% of stock)	0.65 cars/dwelling (80% of stock)	0.76 cars/dwelling
Chelmsford (11 dwellings)	1.27 cars/dwelling (100% of stock)	<i>None</i>	<i>None</i>	1.27 cars/dwelling
Melrose North (618 dwellings)	0.99 cars/dwelling (25% of stock)	0.84 cars/dwelling (8% of stock)	0.67 cars/dwelling (67% of stock)	0.76 cars/dwelling
Melrose South (215 dwellings)	1.31 cars/dwelling (21% of stock)	0.40 cars/dwelling (9% of stock)	0.78 spaces/dwelling (70% of stock)	0.86 cars/dwelling
Macaulay (1,646 dwellings)	1.23 cars/dwelling (41% of stock)	0.86 cars/dwelling (11% of stock)	0.74 cars/dwelling (48% of stock)	0.95 cars/dwelling

The rate of car parking ownership in Melrose North (which includes a substantial amount of social housing in high density buildings) is comparable to Boundary and Melrose South. As such, it does not appear to materially skew the car ownership rate for Macaulay precinct as a whole.

A.3 Change in off-street car parking supply over time

Figure 17 – Supply of off-street car parking has grown over time (2002 to 2020) – total of all Macaulay data zones



Appendix B Supporting Technical Evidence

B.1 What are appropriate discretionary car parking rates?

This sub-section navigates determining appropriate discretionary rates for Macaulay, drawing on a range of benchmarks and considering the precinct's sustainable transport aspirations.

Destination (Employment) Parking Demand and Rate

The City's population capacity model indicates that approx. 292,000sqm of employment floor space could be delivered, corresponding to approx. 10,000 jobs. A methodology is required to convert this into car parking supply.

The methodology used to estimate trips for Macaulay is similar to that used by Transport for London to estimate travel volumes during peak hours, as set out in a City of Melbourne best practice review on pedestrian level of service⁵². This methodology was used in Arden for the same purpose.

For a variety of reasons, not everyone turns up to work every day at their listed place of employment. TfL uses a factor of 85% of employees turning up at work each day (due to working from home, sick leave, working elsewhere, annual leave or for other reasons). These are the total people arriving to work each day. The car mode share target can then be applied to determine the number of car spaces to be supplied.

The process is set out below:

- Begin with the number of employees
- Reduce to 85% to account for those not working at their place of employment. This factor can be revisited as work travel patterns settle post-COVID to understand if increased working from home remains higher than historic levels over the long term.
- Apply the mode share target of 20%.

This indicates about 8,500 employees are likely to turn up to work each day. The 20% mode share implies that up to 1,700 car spaces can be supplied while continuing to meet the mode share target. This is a rate of **0.58 car spaces per 100sqm**.

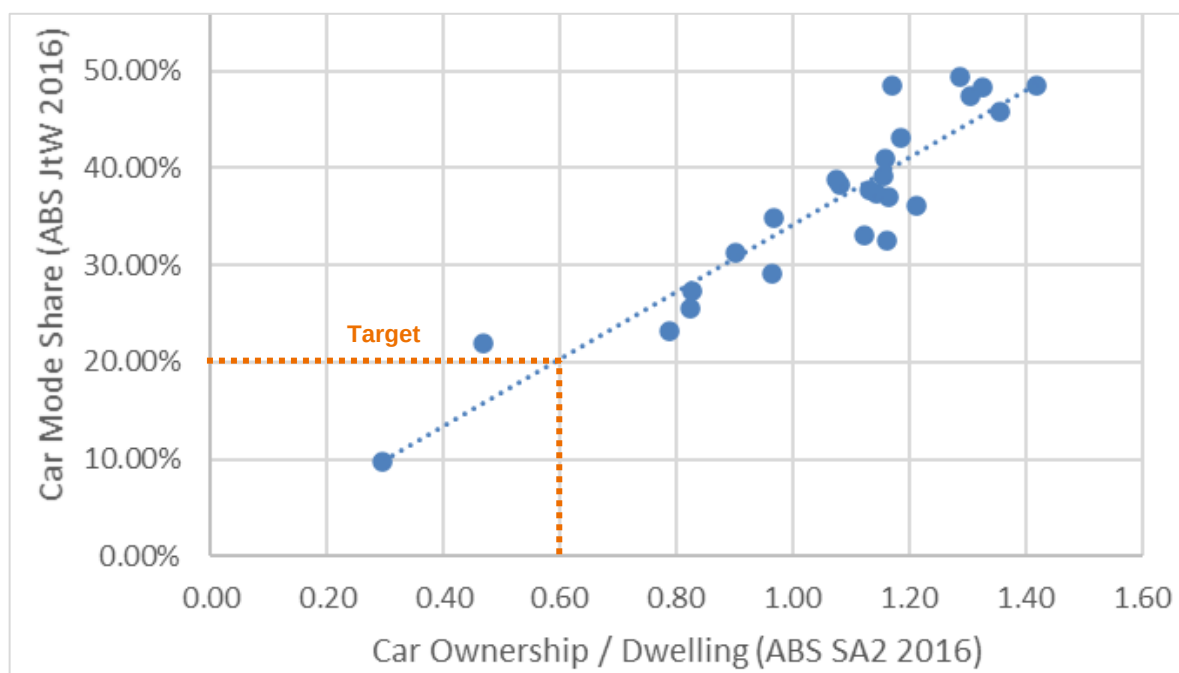
Relationship between car ownership and mode share for Residents

Analysis of ABS Census data shows that there is a relationship between car ownership and mode share – as car ownership increases, car mode share generally increases proportionally. At lower car ownership levels, the rate is approximately 10% car mode share for every 0.3 cars owned by a household. At a broad level, this indicates that a 20% mode share target could be achieved with a parking provision of 0.6 car spaces per household. Car ownership data was last collected at the 2016 census. While it is reasonable to compare Macaulay in future with how people in similarly accessible centres travel, it is still current travel behaviour, and it has no regard for specific local characteristics or marketing/uptake of dwellings with low parking provision.

⁵² Pedestrian Level of Service and Trip Generation, City of Melbourne, 2012



Figure 18 – Relationship between car ownership and mode share: CBD, Inner City and Surrounds⁵³



Benchmarking against Arden

A similar approach has been proposed in neighbouring urban renewal area Arden, pursuing a maximum car parking rate of zero with discretionary rates included in the decision guidelines. Arden is a relevant comparator to Macaulay due to its similar central-city aspirations and vision for sustainable transport outcomes.

The proposed guidance rates are (based on the *Arden Precinct Parking Plan*):

- 0.2 spaces per dwelling for one-bedroom dwellings
- 0.3 spaces per dwelling for two-bedroom dwellings
- 0.5 spaces per dwelling for three-bedroom dwellings
- 0.32 spaces per 100sqm GFA (all other uses)

These rates were determined on the basis that car parking provision needs to be low to achieve the ambitious mode share aspirations for the precinct. An average parking provision of 0.3 cars per dwelling aligns with trends of decreasing car ownership and tendency to travel by car, based on analysis of ABS Census data. This average rate was split across different sized dwellings, weighted by current apartment mix⁵⁴.

In the case of Arden, the mode share target is ambitious at 10%, and there is little data to no to indicate how the property development and homebuyer market would react to a parking rate of 0.3 car spaces per dwelling, or if going lower than this would be possible. The nearest point of comparison was the Melbourne CBD (0.29 cars per dwelling and a car mode share of 10%). This methodology was considered suitable in that type of scenario.

The proposed controls are currently subject to an ongoing Planning Scheme Amendment process (Amendment C407). In written evidence, the expert witness, Ms Dunstan (on behalf of the Victorian Planning Authority), is satisfied that the proposed Parking Overlay “provides adequate flexibility to allow on-site car parking to be provided in applications where it is appropriately required”.⁵⁵

Benchmarking against West Melbourne

West Melbourne is a relevant comparator to Macaulay due to its inner-urban locale, relatively similar build form intent and good existing public transport. Draft Amendment C309 (now Amendment C385) proposed to introduce new maximum car parking rates in the West Melbourne area of 0.3 spaces per dwelling (residential) and 0.005 spaces per net sqm floor area (all other uses).

The Panel accepted that a mix of apartments requires a mix of parking space provisions (e.g. marginally higher car ownership associated with larger apartments). The expert witness, Mr Hunt (on behalf of Council), proposed rates of:

⁵³ Stantec analysis of ABS Census 2016 data

⁵⁴ *Arden Movement and Parking Study*, GTA Consultants (now Stantec) on behalf of the Victorian Planning Authority, December 2020

⁵⁵ *Amendment C407 to the Melbourne Planning Scheme*, Traffix Group on behalf of the Victorian Planning Authority, January 2021

- 0.3 spaces per dwelling for one-bedroom dwellings
- 0.45 spaces per dwelling for two-bedroom dwellings
- 0.6 spaces per dwelling for three-bedroom or more dwellings
- 0.5 spaces per 100sqm of net floor area (all other uses)

The residential rates were based on current car ownership and applying a “consistent suppression rate of approximately 25 per cent of demand, to reduce the current oversupply”, noting that the rates are higher than the rate initially proposed (0.3 spaces per dwelling). The Panel and Council were supportive of these changes.⁵⁶ The Amendment is currently before the Minister for determination.

Benchmarking against other inner-city areas

More recently, inner-city car parking has generally been implemented as maximum car parking rates (see **Figure 19**), with generally lower rates in more recent years (see **Figure 20**).

Figure 19 – Other central city areas neighbouring Macaulay are pursuing maximum car parking rates⁵⁷

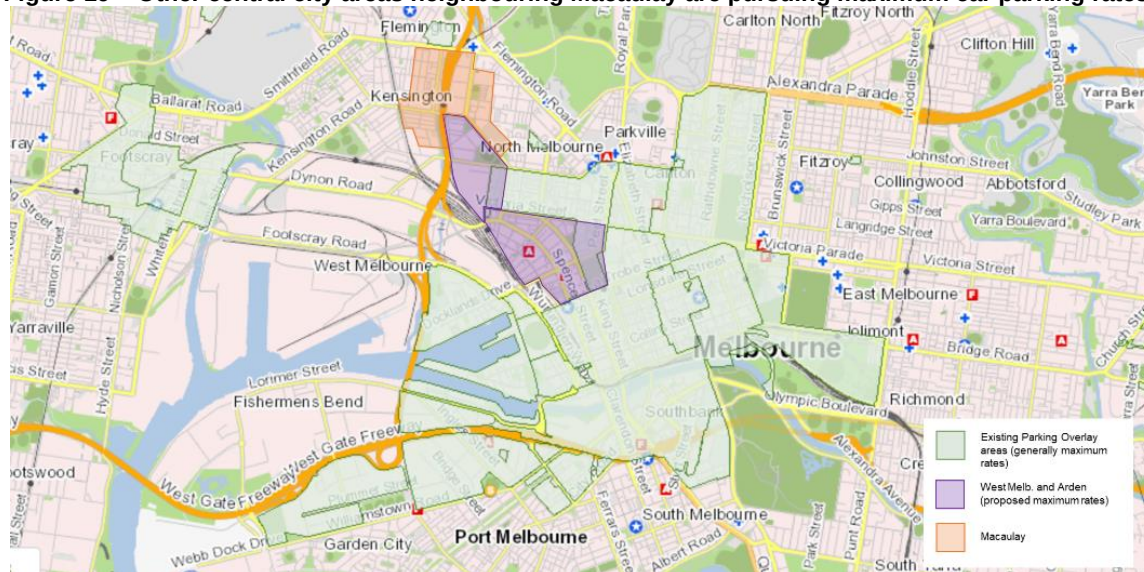


Figure 20 – Maximum car parking rates for other comparison areas in the inner-city⁵⁴

Overlay	Date	Planning Scheme	Residential	Employment	Retail
PO 14 (West Melbourne) ^[1]	2018	Melbourne	1-bed 0.3 spaces 2-bed 0.45 spaces 3-bed 0.6 spaces	0.5 spaces per 100sqm NFA	
PO 13 (Fishermans Bend)	2018	Melbourne	1/2-bed 0.5 spaces 3-bed 1 space	1 per 100sqm GFA	2 per 100sqm GFA
PO 1 (Fishermans Bend)	2018	Port Phillip	1/2-bed 0.5 spaces 3-bed 1 space	1 per 100sqm GFA	2 per 100sqm GFA
PO 11 (Yarra's Edge)	2013	Melbourne	2 per dwelling	2 per 100sqm GFA	4 per 100sqm GFA
PO 12 (Inner City Residential)	2013	Melbourne	1 per dwelling	-	-
PO 1 (CCZ)	2013	Melbourne	1 per dwelling	0.5 spaces per 100sqm NFA	
PO 10 (Docklands Business Park)	2013	Melbourne	1.5 spaces per DU	3 per 100sqm	4 per 100sqm
PO 6 (Docklands Victoria Harbour)	2013	Melbourne	2 per dwelling	2.5 per 100sqm GFA	2-4 per 100sqm GFA
PO 7 (Docklands Batman's Hill)	2013	Melbourne	2 per dwelling	1.5 per 100sqm GFA	1 per 100sqm GFA
PO 8 (Docklands Stadium Precinct)	2013	Melbourne	1.5 per dwelling	1 per 100sqm GFA	

[1] Before the Minister for approval

⁵⁶ Melbourne Planning Scheme Amendment C309 – West Melbourne Structure Plan, Planning Panels Victoria, 11 October 2019

⁵⁷ Based on [VicPlan](#), Department of Environment, Land, Water and Planning and respective Structure Plans. Boundaries approximate only.

Following the publication of the research that informed the *Transport Strategy 2030*, including specific, in-depth research into car parking oversupply, the City of Melbourne has decreased its car parking requirements in recent years relative to other municipalities in the wider metropolitan area.

Benchmarking against recent permit applications

Recent planning permit applications indicate that several key residential or mixed-use developments in the Macaulay area are seeking to provide lower levels of car parking than the current minimum statutory requirements, on the basis of policy drivers and good existing public and on-site sustainable transport alternatives.

Planning applications to reduce the level of car parking below statutory minimum requirements have generally been sought (and granted) on the basis of:

- Good access to sustainable transport alternatives (public transport, cycling connections, car share) and services (activity centres, community infrastructure, open space)
- Other measures which support use of sustainable transport alternatives (such as good bicycle parking and walking/cycling access, on-site car share) and disincentivise car parking (e.g. limited car parking options, or significant fees for car parking, inability for residents of new developments to access on-street parking permits)
- Low existing car ownership in the City of Melbourne and local suburbs
- Various uses (e.g. retail, art studio, gym) catering for local customer base, with on-street car parking suitable to cater for other visitors
- Policy direction to reduce car dependence and increase uptake of non-car, sustainable modes^{60, 61, 58}

A sample of recent planning permit application outcomes provided by City of Melbourne is summarised below.

Table 7 – Effective rate of car parking provision for various developments in Macaulay

Site and sub-precinct	Statutory car parking requirement	Proposed car parking provision (incl. Council feedback)	Effective rate of car parking provision
86 – 96 Stubbs Street, Kensington (Stubbs)⁵⁹	1-br / 2-br: 161 spaces 3-br+: 76 spaces Retail: 3 spaces Office: 42 spaces TOTAL: 282 spaces	Dwellings: 86 spaces Retail: 1 space Office: 15 spaces TOTAL: 102 spaces (64% reduction)	Dwellings: 0.43 spaces / dwelling Retail: 1.12 spaces / 100sqm Office: 1.06 spaces / 100sqm
	Other key points: Proposed 434 bicycle parking spaces (vs statutory requirement to provide 66 spaces). According to the traffic report, "all residential car parking will be managed by the build-to-rent operator and leased to tenants on an application basis" ⁶⁰		
87-105 Racecourse Rd & 103 Alfred Street, North Melbourne (Boundary)⁶¹	Dwellings: 72 spaces Office: 46 spaces Art studio: 8 spaces Gym, serviced apts, outdoor rec: to RA satisfaction TOTAL: 126 spaces	Dwellings: 34 spaces Serviced apt: 10 spaces Office: 20 spaces Gym: 5 spaces Art studio: 1 space Car share: 1 space Visitors: 10 spaces TOTAL: 81 spaces (35% reduction)	Dwellings: 0.47 spaces / dwelling Serviced apt: 0.09 spaces / apt Office: 1.29 spaces / 100sqm Art studio: 0.42 spaces / 100sqm
	Other key points: Council requires that the development provides at least two bicycle parking spaces per dwelling to meet current demand and support the reduction of car parking, on top of other uses (e.g. a total of 238 bicycle spaces). 5% of spaces will be provided with a General Purpose Outlet for electric vehicle charging, to be future-proofed to enable future installation of fast-charge units.		
2-50 Elizabeth Street, Kensington (Chelmsford)⁶²	Food & Drink: 17 spaces Office: 440 spaces Retail: 12 spaces Manufacturing sales: to RA satisfaction TOTAL: 469 spaces	Overall: 118 spaces (75% reduction)	Not known
	Other key points: Proposed 170 bicycle parking spaces (vs statutory requirement to provide 69 spaces).		
346-350 Macaulay Rd,	1-br / 2-br: 476 spaces Retail: 12 spaces TOTAL: 488 spaces	Overall: 545 spaces TOTAL: 545 spaces (12% increase)	Not known

⁵⁸ Delegate Report – 87-105 Racecourse Road and 103 Alfred Street, North Melbourne (TP-2018-770)

⁵⁹ Delegated Report – Ministerial Planning Referral – 86-96 Stubbs Street Kensington (TPM-2021-9)

⁶⁰ Traffic Engineering Assessment – Proposed Mixed Use Development – 86-96 Stubbs Street & 15 Thompson Street, Kensington, Traffix Group, June 2020

⁶¹ Delegate Report – 87-105 Racecourse Road, 103 Alfred Street and the crown land to the west, North Melbourne (TP-2019-196)

⁶² Delegate Report – Ministerial Planning Referral – 2-50 Elizabeth Street, Kensington ('Stage 2 of Younghusband Redevelopment Project') (TPM-2020-63)



Site and sub-precinct	Statutory car parking requirement		Proposed car parking provision (incl. Council feedback)	Effective rate of car parking provision
Kensington (Stubbs) ⁶³	Other key points: Proposed 476 bicycle parking spaces meets the statutory requirement of 143 spaces.			
14-22 Bruce St, Kensington (Chelmsford) ⁶⁴	Office: 175 spaces	Office: 60 spaces (66% reduction)	Office: 1.02 spaces / 100sqm	
	Other key points: Proposed 54 bicycle parking spaces (vs statutory requirement to provide 25 spaces). End-of-trip facilities also exceed statutory requirements.			
15-17 Racecourse Road, North Melbourne (Boundary) ⁶⁵	1-br / 2-br: 65 spaces Visitor: 12 spaces Retail: 4 spaces TOTAL: 81 spaces	Dwellings: 51 spaces Retail: 2 spaces TOTAL: 53 spaces (35% reduction)	Dwelling: 0.78 spaces/dwelling (all) Retail: 1 space/34sqm	
	Other key points: Proposed 19 bicycle parking spaces meets the statutory requirement of 19 spaces.			
77-83 Sutton St, North Melbourne (Boundary) ⁶⁶	1-br / 2-br: 188 spaces 3-br+: 30 spaces Food & Drink: 3 spaces Office: 3 spaces TOTAL: 224 spaces	Dwellings: 216 spaces Food & Drink: 4 spaces TOTAL: 220 spaces (2% reduction)	Dwelling: 1.06 spaces/dwelling (all) Retail: 1 space/32sqm	
	Other key points: The development provides 222 bicycle spaces which well exceeds the statutory requirement of 60 spaces.			
69-75 Racecourse Road, North Melbourne (Boundary) ⁶⁷	1-br / 2-br: 94 spaces 3-br+: 4 spaces Place of Assembly: 24 spaces TOTAL: 122 spaces	Dwellings: 43 spaces Electric car share: 2 spaces Place of Assembly: 2 spaces TOTAL: 47 spaces (61% reduction)	Dwelling: 0.45 spaces/dwelling (all) Place of Assembly: 1 space/96sqm	
	Other key points: 2 of the parking spaces will be for electric car share vehicles Council did not object to the reduction of car parking subject to the provision of 3 motorcycle parking spaces. The development provides 215 bicycle parking spaces, compared to a statutory requirement of 29. 2 car share spaces have been proposed.			
69 Hardiman Street, Kensington (Stubbs) ⁶⁸	1-br / 2-br: 8 spaces Visitors: 1 space TOTAL: 9 spaces	Dwellings: 8 spaces TOTAL: 8 spaces (11% reduction)	Dwelling: 1 spaces/dwelling (all)	
	Other key points: 3 bicycle parking spaces have been provided, while the planning scheme only requires 1.			

As shown, recent development applications and reviews from the Council traffic engineering team propose residential rates of provision are **between 0.43 and 1.06 spaces per dwelling**, which are generally lower than current car ownership and align with rates in other parts of the City of Melbourne. These are 'blended' rates encompassing all dwellings on a site – some dwellings in a given site will have a lower provision (e.g. those with fewer bedrooms), and others (e.g. those with more bedrooms) will have a higher provision.

Introducing parking supply targets

Based on:

- objectives City of Melbourne's policy and investment to reduce influence mode share
- evidence of relationship between mode share and car ownership, comparison areas, recent permit activity
- exceptional alternative modes of transport that allow the area to limit its contribution to network congestion
- market data from permit applications indicating that while for the existing housing stock the ABS trend implies a parking rate of 0.6 cars per household for a 20% car mode share, there is has been a recent trend for new dwellings within Macaulay to be provided with much less parking, down to 0.43 car spaces per dwelling as noted in Table 8.

⁶³ Ministerial Planning Referral - 346-350 Macaulay Road, Kensington (TPM-2019-30)

⁶⁴ Delegate Report - 14-26 Bruce Street, Kensington (TP-2019-587)

⁶⁵ Delegate Report - 15-17 Racecourse Road, North Melbourne (TP-2015-191)

⁶⁶ Ministerial Planning Referral – Delegate Report - 77-83 Sutton Street, North Melbourne (TPM-2020-54)

⁶⁷ Delegate Report - 69-75 Racecourse Road, North Melbourne (TP-2020-460)

⁶⁸ Delegate Report - 69 Hardiman Street, Kensington (TP-2016-225)



The proposed guidance rates are:

- 0.3 spaces per dwelling for one-bedroom dwellings
- 0.45 spaces per dwelling for two-bedroom dwellings
- 0.6 spaces per dwelling for three-bedroom or more dwellings
- 0.58 spaces per 100sqm of net floor area (all other uses)

Based on current mix of dwellings, this results in a blended rate of 0.46 vehicles per dwelling. There is potential that the dwelling mix will change into the future, but it is difficult to forecast. A rate of 0.46 vehicles per dwelling is suitable for the purposes of this analysis.

Applying these assumptions:

- Demand for worker vehicle parking is estimated to decrease to 1,700 spaces (reduction of 2,596 vehicles compared to current).
- Demand for resident parking is estimated to increase by 1,086 vehicles compared to current.

Table 8 – Summary – existing supply vs use of residential and worker parking, compared with future needs under a ‘mode shift’ scenario (where demand is suppressed through strong parking controls and sustainable transport measures)

	Residential	Employment/worker	Total
Existing parked vehicles	2,166 vehicles	4,296 vehicles	6,462 vehicles
How does this align with supply?	1,182 off-street spaces Assume remaining 984 use on-street spaces	3,447 off-street spaces Assume remaining 849 use on-street spaces	Off-street at capacity 1,629 available on-street
Future parked vehicles w/ mode share target met	3,252 vehicles (+1,086 from existing)	1,700 vehicles (-2,596 from existing)	5,152 vehicles (-1,310 from existing)
How does this align with existing supply?	Additional 1,086 off-street resident spaces required	Frees up 849 on-street spaces and 1,747 off-street spaces	Need up to 1,086 off-street spaces to meet new demand (would leave 2,478 spaces on-street) 1,747 off-street worker spaces made available

Notes on assumptions made:

- the reduced parking rates, noted in the text preceding the table, apply across all land uses, including any existing buildings and associated land uses
- existing on-street parking remains broadly unchanged, leading to any additional parking required to be provided in off-street locations. If changes are made to the on-street parking supply (likely reduced due to road space reallocation) then more off-street parking will be needed to accommodate the same number of parked cars.

Pursuing aspirational mode shift results in a lower level of demand, and consequently, a lower level of off-street car parking is required to be supplied compared to a predict-and-provide approach. This is consistent with policy intent to reduce car parking and will result in better urban design outcomes, as well as a softer increase in demand for the road network.

B.2 Bicycle parking and end-of-trip facilities

B.2.1 Review of Similar Policy and Rates

Current rate

The current statutory requirement for bicycle parking in Macaulay is per Clause 52.34 of the Melbourne Planning Scheme⁶⁹:

- Dwellings: in developments of four or more storeys, minimum of 1 space to each 5 dwellings for residents and 1 space to each 10 dwellings for visitors
- Office: if the net floor area exceeds 1000sqm, minimum of 1 space to each 300sqm of net floor area for employees and 1 space to each 1000sqm net floor area for visitors
- Retail: 1 space to each 300sqm of leasable floor area for employees and 1 space to each 500sqm of leasable floor area to visitors/shoppers (note different rates for specific uses, such as Shop)

⁶⁹ [Clause 52.34 of the Melbourne Planning Scheme](#). Residential, office and retail uses have been listed throughout this section as key land uses, however other rates exist for more specific uses.

Clause 52.34 of the Melbourne Planning Scheme also sets requirements for end-of-trip facilities as follows (for all land uses):

- Showers: If 5 or more employee bicycle parking spaces are required, then 1 shower for the first 5 employee bicycle spaces, plus 1 shower for each 10 employee bicycle spaces thereafter
- Change rooms: 1 change room or direct access to a communal change room to each shower. The change room may be a combined shower and change room

Findings from *Off-Street Bicycle and Motorcycle Parking Review 2016 (PBA)* / *West Melbourne Structure Plan*

The City of Melbourne in 2016 commissioned a review of off-street bicycle and motorcycle parking. As part of this study, a survey found some buildings (typically residential) do not provide enough bicycle parking, while other buildings (typically office) have an overprovision. The report recommends the following rates of provision:⁴³

Bicycle parking:

- Dwellings: 1 space for each **one bedroom in a dwelling** (with studies or studios that are separate rooms counted as a bedroom), and 2 visitor spaces for every 5 dwellings
- Office and Retail: 1 space for each 100sqm net floor area and 4 visitor spaces plus 1 additional space to each 100sqm net floor area

End-of-trip facilities (incl. retail and office):

- Showers: If 20 or more employee bicycle spaces are required, then 1 shower for the first 20 employee bicycle spaces, plus 1 shower for each 10 employee bicycle spaces thereafter.
- Change rooms: If 20 or more employee bicycle spaces are required, personal lockers are to be provided with each bicycle space required. If more than two showers are required – more than 30 bicycle spaces – then a change room must be provided with direct access to each shower. The change room may be a combined shower and change room

Action 25 of the *West Melbourne Structure Plan* is to ensure that “all new developments provide suitable levels of bicycle parking and storage facilities with appropriate design controls” in line with the *Off-Street Bicycle and Motorcycle Parking Review*.⁷⁰

Benchmarking against Arden

The *Arden Structure Plan* proposes bicycle parking rates broadly consistent with (and based off) the *Off-Street Bicycle and Motorcycle Parking Review* (2016):

- Residential: minimum of 1 resident space **per bedroom** and 2 visitor spaces per every 5 dwellings
- Commercial: 1 employee space for every 100sqm net leasable area and a minimum of 4 visitor spaces plus 1 space for every 100sqm net leasable area.

Benchmarking against Fishermans Bend

- Strategy 1.3.8 of the Fishermans Bend Framework is to “ensure developments provide a minimum of one bicycle space **for each dwelling** and one space per 10 dwellings for visitors”.
- Strategy 1.3.9 of the Fishermans Bend Framework is to “provide one bicycle space per 50m² for workers and one space per 1000m² for visitors in non-residential areas”.⁷¹

These rates were adopted and are included in Schedule 4 to Clause 37.04 Capital City Zone.

Benchmarking against London

London is generally considered a progressive comparator city with respect to cycling uptake. As an input to the London Plan, Transport for London proposed elevated bicycle parking rates for areas with high cycling activity where existing standards are not suitable for future demand. The following rates were proposed:⁷²

- Dwellings: 1.5 spaces **per unit**
- Office: 1 space per 75 sqm of floor space
- Student accommodation: 1 long-term space per bedroom

⁷⁰ [West Melbourne Structure Plan](#), City of Melbourne, February 2018

⁷¹ [Fishermans Bend Framework](#), Victorian Government, October 2018

⁷² [Cycle Parking](#), Part of the London Plan evidence base December 2017



Benchmarking against Amendment C376: Sustainable Building Design

In 2020, Council endorsed a new Planning Scheme Amendment C376 which seeks to ensure that new buildings in the municipality respond to climate change. The Amendment is awaiting Ministerial authorisation for community consultation.⁷³ The Amendment proposes the below rates, which are similar to the *Off-Street Bicycle and Motorcycle Parking Review* (2016), but with a lower resident provision and higher end-of-trip facility requirements:⁷⁴

Bicycle parking:

- Dwelling: a minimum of one secure bicycle parking space **per dwelling**. Two secure visitor bicycle spaces per 5 dwellings.
- Retail or Office (incl. buildings and works greater than 1000sqm additional GFA): a minimum of one secure bicycle space per 100sqm of net floor area. One secure bicycle visitor space per 100sqm of net floor area, with a minimum of four visitor spaces provided.

End-of-trip facilities:

- Dwellings: none required specifically by the planning scheme
- Retail or Office (incl. buildings and works greater than 1000sqm additional GFA): If 5 or more employee bicycle spaces are required, 1 shower for the first 5 employee bicycle spaces, plus 1 to each 10 employee bicycle spaces thereafter. 1 change room or direct access to a communal change room to each shower. The change room may be a combined shower and change room. If 20 or more employee bicycle spaces are required, personal lockers are to be provided with each bicycle space required. If more than 30 bicycle spaces are required then a change room must be provided with direct access to each shower. The change room may be a combined shower and change room.

Benchmarking against recent permit applications

- In Council's assessment of the recent planning permit application for 87-105 Racecourse Road & 103 Alfred Street, North Melbourne, Council noted that "while the bicycle parking provision is more than the standard, the development should provide **at least two spaces per dwelling** to meet the likely demand and support the reduction of car parking"⁶¹
- In Council's assessment of the recent planning permit application for 69 Hardiman Street, Kensington, Council's traffic engineering comments noted that "it would be preferable to provide **one bicycle parking space for each dwelling**, however it is accepted that the proposed number complies with Planning Scheme requirements"⁶⁸.

B.3 Car share

B.3.1 Review of Similar Policy and Rates

City of Melbourne policy

In July 2015, Council approved a motion which requires car share providers to "find one new off-street car park (rather than two) for every one on-street car park approved by Council".⁷⁵

Transport Strategy 2030 notes this policy is the key barrier to delivering more car share spaces, as reported by car share providers. *Transport Strategy 2030* commits to a new car share policy which includes "providing more on-street parking for car share vehicles in the central city, where it is currently capped", "opportunities to leverage the significant supply of off-street car parking for car share" and "policies to enable more off-street spaces for car share vehicles, such as amending the Melbourne Planning Scheme".

Council is currently trialling a new policy which enables car share providers to provide one off-street space for every two on-street spaces (e.g. half the ratio of off-street to on-street spaces compared to the previous policy).⁷

Benchmarking against Arden

The *Arden Precinct Parking Plan* proposed providing at least 5% of spaces to registered car share vehicles.⁷⁹ The expert witness statement agrees that the controls should require 5% of any off-street car spaces to be allocated to car share.⁵⁵

Benchmarking against Fishermans Bend

Schedule 4 to Clause 37.04 of the Melbourne Planning Scheme (Fishermans Bend Urban Renewal Area) includes the following car share requirements:⁴⁶

- Developments of more than 50 dwellings: 2 spaces plus 1 **per 25 car spaces**

⁷³ [Amendment C376: Sustainable Building Design](#), Participate Melbourne, City of Melbourne

⁷⁴ *Melbourne Planning Scheme Amendment C376 Explanatory Report*, as attached to *Report to the Future Melbourne (Planning) Committee – Planning Scheme Amendment C376: Sustainable Building Design*, City of Melbourne, September 2020

⁷⁵ [Council Meeting Minutes - Meeting Number 36](#), City of Melbourne, July 2015

- Developments with over 10,000sqm non-residential floor space and more than 120 car spaces: 1 per 60 car parking spaces

Benchmarking against Amendment C376: Sustainable Building Design

The proposed planning controls under Amendment C376 are similar to Fishermans Bend, with slight nuances (e.g. based on dwellings, not proportion of car spaces):

- Developments of more than 50 dwellings: 2 spaces plus an additional 1 space **per 25 additional dwellings**
- New Retail or Office development, Place of Assembly or Education Centre, including buildings and works which result in more than 1000sqm additional gross floor area: 1 per 60 car parking spaces

B.4 Electric Vehicles

There are several factors which may result in an increased uptake in electric vehicles over coming years, including:

- Electric vehicles expected to be economically-competitive with internal combustion vehicles this decade⁷⁶
- International policy trends banning sales of internal combustion engines by 2035.⁷⁷ Recent advice from Infrastructure Victoria has also recommended that Victoria should cease registrations of petrol and diesel vehicles by 2035 “at the latest”.⁷⁸
- Increasing petrol prices and more holistic shifts in the energy market towards renewable electric energy.
- Continued investment in EV infrastructure, such as charging networks.
- Consumer awareness and policy sentiments around environmental impacts and air quality. This includes developers pursuing Green Star accreditation.

It would be prudent for planning in Macaulay to consider the likelihood of increased electric vehicle uptake and ensure that design of car parking (where provided) makes allowance for electric vehicle charging over the coming decades. This will reduce the need for building redevelopment to retrofit infrastructure and reduce some of the barriers to electric vehicle uptake.

B.4.1 Similar Policy and Rate of Provision

The *Arden Precinct Parking Plan* recommended that “all off-street parking is capable of being retrofitted for electric vehicle charging... Initially, 5% of all off-street parking should be provided with electric vehicle charging equipment. This can be revised through the monitoring and review of the precinct parking plan”.⁷⁹

The expert witness statement for traffic and transport in Arden is similar, but excludes the nominated initial provision – “it is my view that all car spaces should be capable of providing EV charging in the future (maximising adaptability), instead of mandating a set percentage of spaces to be fitted with EV.”

In Arden, the requirement for all car spaces to be able to be provided with EV charging facilities is proposed to be included under the Design Standards within the Schedule to the Parking Overlay.⁵⁵

B.5 Motorcycle Parking

B.5.1 Review of Similar Policy and Rates

Findings from *Off-Street Bicycle and Motorcycle Parking Review 2016 (PBA) / Arden Precinct Parking Plan*

The *Arden Precinct Parking Plan* proposes the rate recommended in the *Off-Street Bicycle and Motorcycle Parking Review* report of 1 motorcycle parking space per 40 car spaces.⁷⁹ The expert witness for Arden has “no issues with this rate”. It is noted that the motorcycle parking rate is worded as ‘should’, rather than ‘must’ and is therefore not mandated.⁷³

⁷⁶ [Charging up the Australian EV Market](#), KangaNews Sustainable Finance and Clean Energy Finance Corporation, October/November 2021

⁷⁷ [Survey of Global Activity to Phase Out Internal Combustion Engine Vehicles](#), The Climate Center, March 2020

⁷⁸ [Driving down emissions: accelerating Victoria's zero emission vehicle uptake](#), Infrastructure Victoria, August 2021

⁷⁹ [Arden Precinct Parking Plan](#), GTA Consultants (now Stantec), August 2021



Benchmarking against Fishermans Bend⁴⁶

Schedule 4 to Clause 37.04 of the Melbourne Planning Scheme proposes the following provision of motorcycle parking:

- Developments of more than 50 dwellings: 1 per 50 dwellings
- Developments with over 10,000 sqm non-residential floor space: 1 per 100 car parking spaces

Benchmarking against Amendment C376: Sustainable Building Design

The proposed motorcycle parking requirements under Amendment C376 are:⁷³

- New dwellings: A minimum of one space per 50 dwellings.
- New Place of Assembly, Minor sports and recreation facility or Education Centre development: A minimum of one space per 40 car parking spaces.

