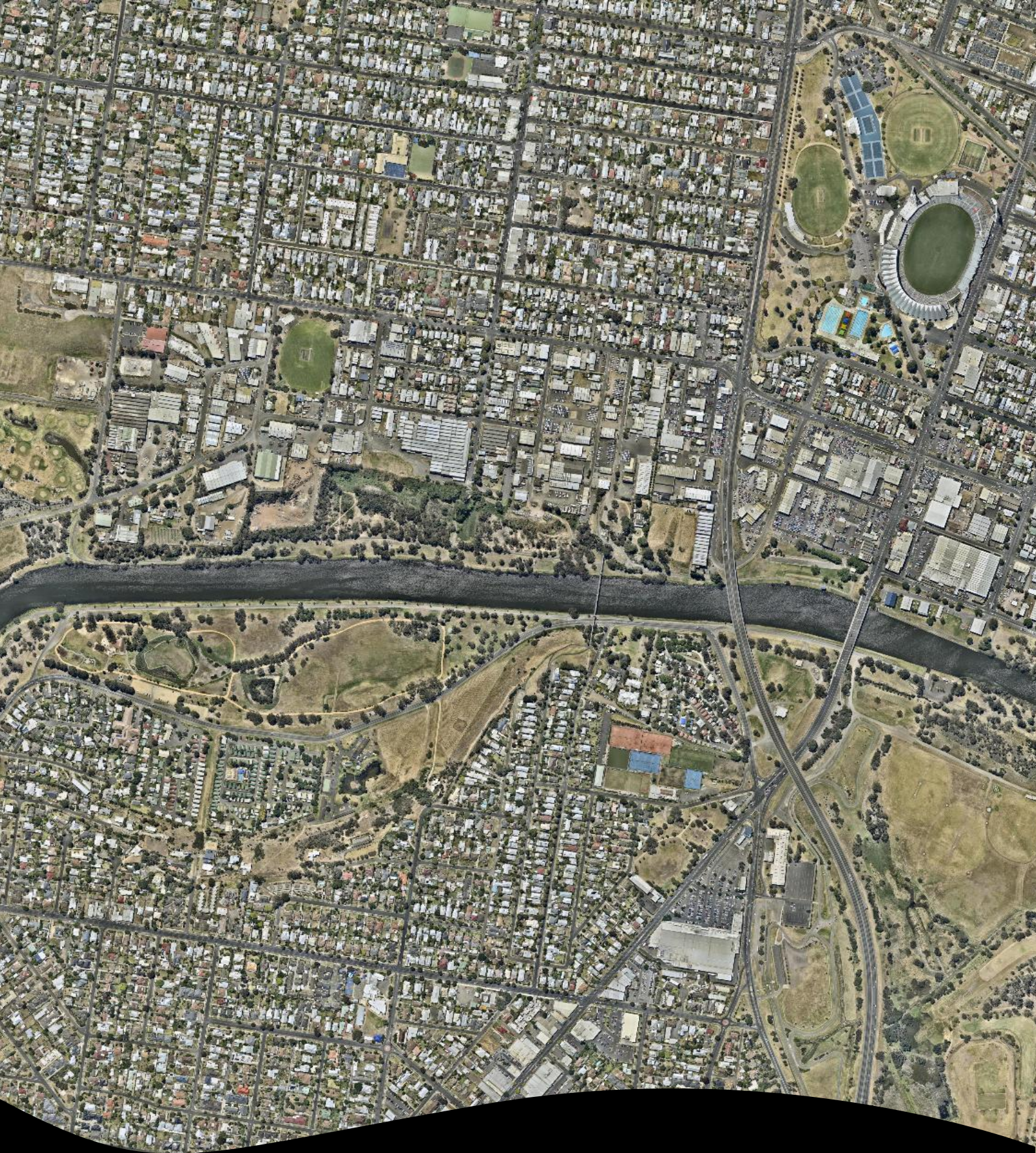




Draft West Fyans/Fyans Street Precinct Structure Plan Bicycle and Car Parking Assessment

May 2026

Institute for
Sensible Transport



The Institute for Sensible Transport acknowledges the people of the Wurundjeri Woi Wurrung language group of the eastern Kulin Nation on whose unceded lands we work.

We respectfully acknowledge their Ancestors and Elders, past and present.

We also acknowledge the Traditional Custodians and their Ancestors of the lands and waters across Australia where we conduct our business.



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1. Introduction and background



Greater Geelong City Council has identified the need for advice on detailed bicycle and car parking requirements to inform a refresh of the West Fyans/Fyans Street Precinct Structure Plan. The outcomes of this Assessment will inform the development of a Parking Overlay Schedule and associated provisions within the updated Structure Plan.

The West Fyans/Fyans Street Precinct is a 118-hectare urban renewal area in Geelong, Victoria. West Fyans is currently transitioning from an industrial focused precinct dating back from Geelong's early settlement to a higher-density, mixed-use residential neighbourhood. Located approximately 1.5 kilometres south of Central Geelong, it sits on the northern banks of the Barwon River. The area is close to major sporting facilities, the Pakington Street strip shopping centre and road connections. Part of the precinct is within 500m of the newly upgraded South Geelong Railway Station and a protected on-road and part off-road bike route is provided on Moorabool Street linking to Geelong CBD.

The redevelopment of the area from industrial to mixed-use set-out in the existing Structure Plan and development scenarios in the *2025 Issues and Opportunities Structure Paper* are expected to see up to 1,000 new dwellings and as many as 5,300 jobs.

The redevelopment of the West Fyans/Fyans Street area is expected to see up to 1,000 new dwellings and as many as 5,300 jobs.

Setting the right amount of bicycle and car parking will support land use intensification that is accompanied by a transition from existing car-dependent travel towards increased active and sustainable transport mode share.

Understanding how bicycle and car parking rates can influence sustainability and support land use transition is important to the redevelopment of the precinct. Having the ability to store a bicycle securely and conveniently is fundamental to the bicycle friendliness of a precinct. While car parking rates have historically been overly generous, there is an increasingly acknowledgement that default rates can lead to an oversupply of car parking. This oversupply can lead to a loss of amenity, higher housing costs and greater levels of car dependence.

As development and population increases, demand for existing parking will intensify, while supply may decrease due to the reallocation of road space. Ensuring the right mix of parking settings at the right time will maximise the potential for positive and strategically aligned outcomes. Delaying major reforms until after redevelopment occurs would significantly constrain the potential for transformative change.

Therefore, rather than adopting a traditional '*predict-and-provide*' approach, a '*debate-and-decide*' method is the best approach to parking management linked with sustainable mode-share targets. Travel-demand management to reduce the number of car trips is also an integral part of effective parking management approaches.

Rather than adopting a traditional '*predict-and-provide*' approach, a '*debate-and-decide*' method is the best approach to parking management linked with sustainable mode-share targets.

1.1 Project objectives

Council understand that parking is an important part of city planning, and that parking requirements can support land use change and mode shift. This project undertakes the following:

- Review existing conditions in the West Fyans/Fyans Street Precinct including analysis of relevant strategic planning and transport policy

documents, an audit of existing parking supply, occupancy, and demand patterns.

- Assess future parking demand generated by land-use intensification and test alternative parking scenarios relating to parking minimums and maximums, and behavioural change assumptions.
- Benchmark bike and car-parking rates for residential and non-residential uses against current planning scheme requirements.
- Evaluate the feasibility of implementing shared or precinct-wide parking models across redevelopment sites, including relevant best practice, and potential staging, governance frameworks, and implementation mechanisms.
- Provide guidance on visitor bicycle parking, long-term secure bike storage, end-of-trip amenities and micromobility storage flexibility.
- Identify short- and medium-term parking management measures as redevelopment progresses such as time-based restrictions,

permit systems, and demand-responsive controls.

- Assess EV charging infrastructure needs and how EV charging influences future parking supply, design and management.
- Provide policy ready recommendation to inform a Schedule in a new Parking Overlay and a Precinct Parking Plan provision within the revised Structure Plan.

1.2 Study area

The West Fyans/Fyans Street Precinct Structure Plan area is shown in Figure 1. The precinct is bounded by West Fyans Street and Fyans Street to the north, Shannon Avenue in the west, Swanston Street to the east and the Barwon River to the south.

The precinct represents an infill urban renewal context with an established transport network, existing land use patterns and legacy on-street and off-street parking supply.

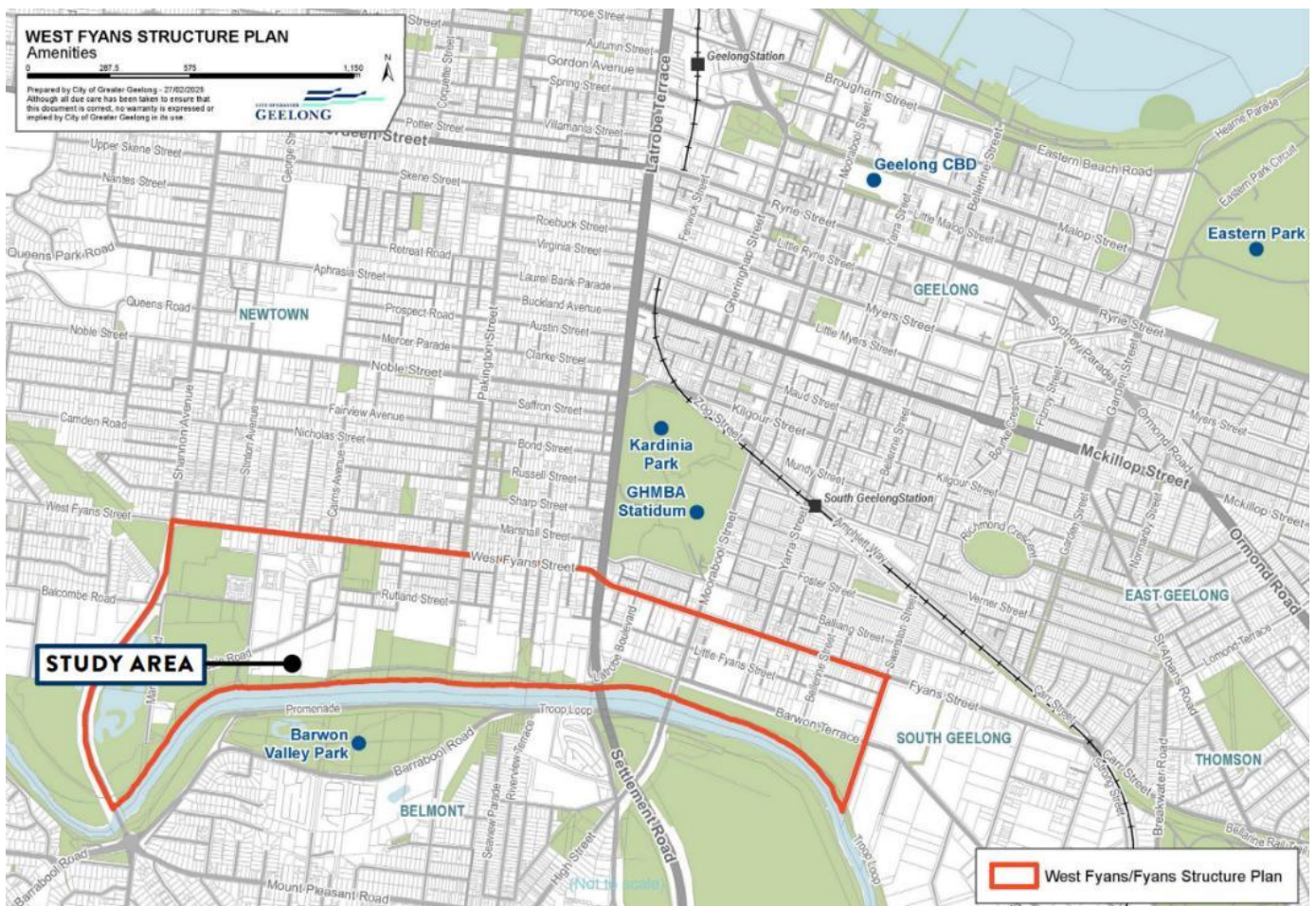


Figure 1 West Fyans/Fyans Street Precinct Structure Plan area

Source: City of Greater Geelong

1.3 What does this report cover

This report is focused on examining future bicycle and car parking requirements in the West Fyans/Fyans Street Precinct Structure Plan area and making recommendations for the level of parking which should be required. The report consists of three key components outlined in Figure 2.



Figure 2 What this Report covers

2. Background



This section offers an assessment of key planning documents and other material related to transport and bicycle and car parking requirements in the West Fyans/Fyans Street Precinct.

2.1 Policy Review

2.1.1 Local Policies

2.1.1.1 West Fyans/Fyans Street Precinct Structure Plan 2009

The *West Fyans/Fyans Street Precinct Structure Plan 2009* was developed to identify strategic planning issues and determine future directions for the precinct. The Plan focused on directing new urban growth to the precinct, whilst protecting natural and industrial heritage values. Other stated objectives include providing the growing population with public transport connectivity and diverse housing choices.

The Plan categorised land within the study area according to precinct strategic objectives (Figure 3

and Table 1) based off existing land use, topography and parcel size, and proximity to transport.

Table 1 West Fyans/Fyans Street Precinct Structure Plan

Zone	Precinct Strategic Objective
1	Open Space Precinct
2	Business Park Precinct
3A	Residential Interface Precinct
3B	Mixed Use Precinct
4	Mixed Use – High Density Precinct
5	Business Precinct
6	Industrial Precinct
7	Mixed Use/ High Density Residential Precinct
□	Commercial Node

Source: West Fyans/ Fyans Street Precinct Structure Plan 2009

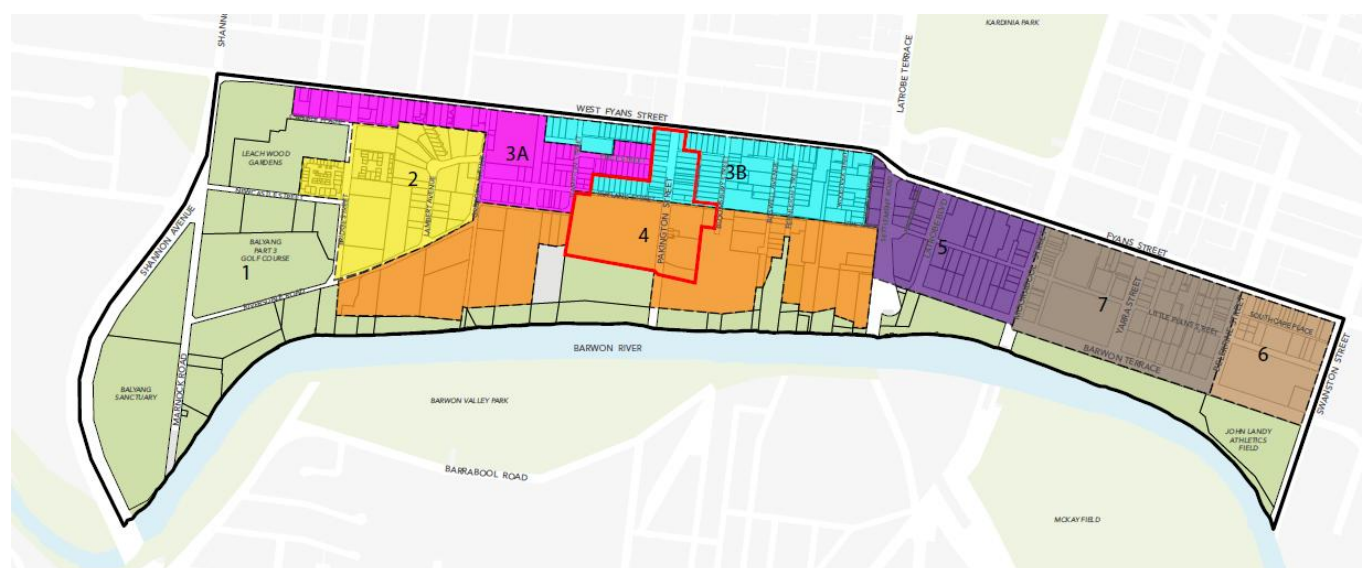


Figure 3 West Fyans/Fyans Street precinct map from the original Structure Plan 2009

Source: Urban Design Package 2025

The Plan identified several relevant recommendations including;

- Intensification of urban density around public transport
- Improve pedestrian and cycling network connectivity and amenity
- Streetscape upgrades to improve visual amenity
- Investigate installing clearways and no standing zones at key intersections along West Fyans Street.

The Plan also identified future direction on promoting intensification of mixed-use density around public transport routes. This includes medium and high density residential development to accommodate a diverse range of living environments. The Plan defined 'High Density Development' as above 3 storeys in height and 40+ dwellings per hectare. Controls such as Design and Development Overlay were proposed, with the objective of facilitating cohesive urban form to 'encourage' developments of 2-5 storeys in Precincts 4 and 7, and detailed site analysis of all developments above 4 storeys.

The Plan notes that private vehicle as driver or passenger is the prevailing mode of travel to work at 65% and 5.4% respectively. Creating opportunities to encourage sustainable modes of travel are recognised options to reduce reliance on private vehicles, such as promoting off-road cycling and pedestrian links to connect residential areas to community facilities and retail precincts. Recommendations include improving active transport connections across the Barwon River via the Macintyre Bridge.

Car parking is a challenge identified with all new developments within the precinct. The Plan recommends that new developments seeking car parking requirement reductions should not be supported unless justified. Additionally, all planning applications should be accompanied by traffic impact assessments, and multi-storey developments to provide underground car parking.

2.1.1.2 West Fyans/Fyans Street Precinct Structure Plan Review - Issues and Opportunities Paper 2025

The West Fyans/Fyans Street Precinct Structure Plan Review - Issues and Opportunities Paper 2025

reviews the 2009 Structure Plan. This is to review shifts in population and employment trends, and development objectives that may have changed since 2009.

Growth has been slower than expected. Against a population target of 2,200, the precinct population shrunk to approximately 215 by 2024, even while 60 new dwellings were added.

Minimal mixed-use development and unclear commercial identity were noted as the main reasons reducing the attractiveness of investment in the area. Through one-on-one interviews between council and relevant stakeholders, developers noted that current building height restrictions outlined in the Design and Development Overlay 26 limit the feasibility of development.

Reforms to commercial and industrial zoning in 2013 allowed a wider range of land uses and removed certain permit requirements, reducing Councils ability to limit restricted retail in the precinct. Changes to these zoning types provide opportunities to create complimentary commercial and industrial uses to support a mixed-use precinct.

The 2009 report places a focus on the steady provision of car parking in all new developments. A pertinent issue in the review was the increase in requests to waive car parking requirements. It also notes the ongoing issues with on-street parking in the area, and the need for developments to have required parking spaces on site.

State Government changes to car parking requirements in *Clause 52.06* (see Section 2.1.2.2) have brought about reduced parking minimums in certain areas. This includes adaptive reuse of existing buildings which may not be required to provide additional parking in some instances. This will reduce Council's ability to require new developments to provide off-street parking and

highlights the importance of supporting non-private vehicle transport modes.

Active transport network issues remain, with Latrobe Terrace limiting east-west movements, and indirect and often steep connections to and along

the Barwon River. Opportunities identified to promote active transport connectivity include an ‘Urban Design Package’, as well as enhancing north-south connections, widening laneways and improved wayfinding (Figure 4).

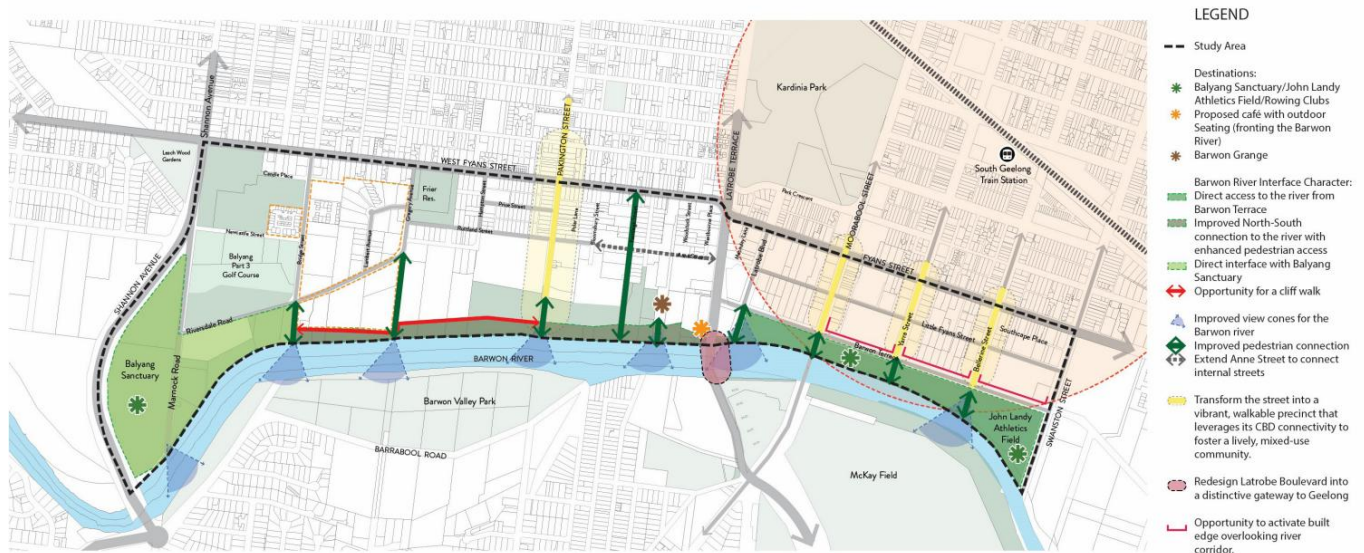


Figure 4 West Fyans/Fyans Street opportunities map

Source: West Fyans/Fyans Street Precinct Structure Plan Review - Issues and Opportunities Paper 2025

2.1.1.3 West Fyans/Fyans Street Precinct Future Population, Housing and Economic Update 2024

The *Future Population, Housing and Economic Update 2024*, is a detailed review of the housing, population, employment, land supply and development trend data.

Whilst there has been some medium density development in Geelong, population growth is concentrated in detached housing on the urban fringe, which provides relatively accessible, affordable and spacious housing options for middle income households. Future population growth is expected to remain concentrated on Geelong’s coastal growth areas without intervention. The West Fyans/Fyans Streets precinct is subject to several developments in various stages.

The Precinct is noted to be well positioned to attract a niche housing market and support job agglomeration due to its inner urban location and large sites.

Transport accessibility is noted as an issue in the precinct. There is easy access to the precinct via several arterial roads providing convenient access from the coast and to the City’s north. Limited public transport accessibility is noted. Higher provision of parking supply at other sites that could compete with the precinct (both residential and employment precincts) are also noted.

Addressing issues such as lowering the cost of providing housing through reducing parking requirements could assist in supporting development in the precinct.

The *Future Population, Housing and Economic Update* provides an analysis of the barriers to faster development of the West Fyans/Fyans Streets precinct. Urban development in greenfield areas is widespread in Victoria due to State Government policy, developer activity, and consumer preference. Consequently, this has suppressed demand and provision of medium-high density residential in precincts such as West Fyans/Fyans Street. Encouraging housing diversity is supported by Geelong in its *Housing Diversity Strategy 2007* but

significant challenges remain due to competition with the available pipeline of detached housing.

The existing bus network includes five routes operating via Moorabool Street to the city centre which together can provide useful frequency during peak times in that part of the precinct (see Figure 5). Individually however route frequency varies from every 15-20 minutes in the case of route 53 (to Torquay), 41 and 42 (to Deakin University, Waurn Ponds), up to 35-40-minute frequencies for routes 24 (to North Geelong via Newtown) and route 55 (to Ocean Grove). In the western portion of the precinct, there are only routes 24 and route 43, and due to near-synchronised 40-minute frequencies at some times of the day, bus accessibility is much lower (see Figure 6). This lack of coordination limits the use of buses along West Fyans Street and contributes to car dependency for daily commutes.



Figure 5 Bus network map along Moorabool Street

Source: Transport Victoria



Figure 6 Bus network map in the precinct

Source: Transport Victoria

2.1.1.4 Gap Analysis – West Fyans/Fyans Street

The purpose of this document is to undertake a gap analysis of the existing West Fyans/Fyans Street Precinct Structure Plan 2009 to identify additional work needed. Much of the recommended future work and relevant findings are included under other headings in this section.

Of relevance to parking, the Analysis calls for clarity around the role and function of the commercial node in terms of parking and access. It also calls for a review of the Design and Development Overlay (DDO26) to ensure the area remains an attractive place to live and supporting a pedestrian friendly environment where car movements and parking do not dominate streets.

Many of these gaps were considered in the *GTA Traffic Report 2019* (see Section 2.1.1.5).

2.1.1.5 Parking and Traffic Study – West Fyans/Fyans Street 2019

The *Parking and Traffic Study 2019* provides an analysis of the existing transport conditions and trends within the study area. It draws on the *Issues and Opportunities Summary* also prepared by GTA Consultants in 2018. The Study notes that since the original PSP was developed, several policy related changes have come about including VicRoads' Movement & Place, Safe Systems and SafeRoads frameworks.

The Study notes that South Geelong Railway Station is within walkable distance of much of the precinct east of Latrobe Terrace and that bus routes

operate along the arterial roads and Moorabool Street. These public transport options provide access to the CBD and other activity centres within reasonable walking distance of most of the precinct. The Study notes minimal scope to substantially improve public transport in future aside from stop upgrades and the potential for on-road priority measures.

Active transport is noted as being constrained in the precinct. Existing active transport infrastructure is a deterrent for existing users with major roads such as West Fyans Street and Fyans Street having poor levels of perceived and real safety.

The Study also looked at parking conditions within the precinct and emphasised the need to have an integrated car parking policy approach to support transport mode changes. Residential car parking policy recommendations are included in a framework (Figure 7) which outlines how parking should be managed across residential and commercial zoning. This included:

- Short stay time restrictions for on-street parking, allowing permits for applicable locals without off-street parking
- On-street parking permits not to be given to residents of new developments that haven't supplied parking
- Reductions to parking requirements to be considered on the basis of no on-street parking for residents.

Recent changes to *Clause 52.06* mean that recommendations relating to residential parking requirements are no longer as applicable, however

the rest of Figure 7 still provides a good baseline conceptual approach to managing car parking requirements.

The Study also estimated future visitor and customer parking demand over a 20-year horizon for the area west of Latrobe Terrace. This assumed that future resident and employment parking would be accommodated within redevelopment sites. On this basis, the Study identified a surplus of 151 spaces, although this did not account for any loss of parking associated with the formalisation of street design.

The analysis also did not consider the estimated reduction in parking demand associated with redevelopment-related declines in existing commercial and industrial floorspace. When the reduction in commercial/industrial floorspace from 130,627 m² to 80,840 m² was considered, the Study found that future on-street parking demand was likely to decrease by 195 spaces.

Future demand and parking supply east of Latrobe Terrace was considered to be balanced into the future. This is due to minimal change in floor area and significant existing on-street car parking supply. Proximity to South Geelong Station and the separated bicycle link on Moorabool Street to Central Geelong also support options to reduce car usage.

Furthermore, the Study considered the impact of likely future street cross-sections and found that while locally there would be a change to parking supply, that there was a considerable surplus of parking when considered at larger precinct levels, which was considered adequate for future estimated demand.

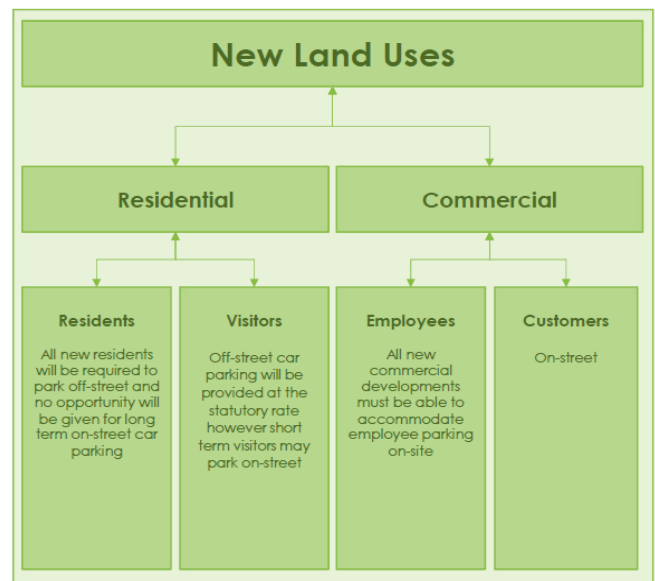
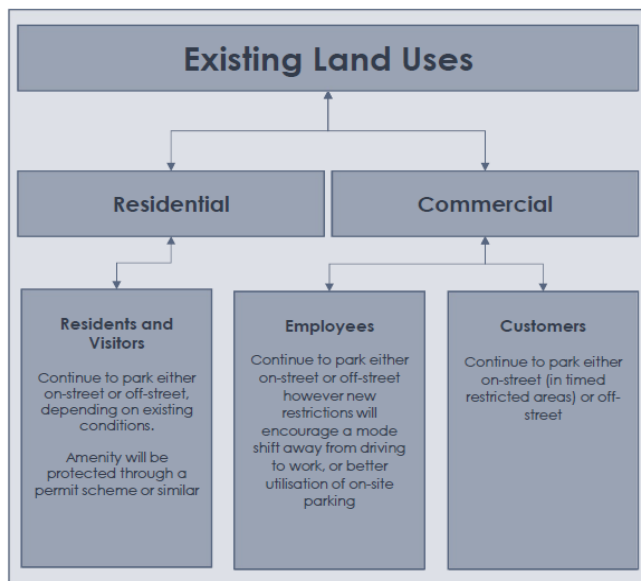


Figure 7 Parking allocation principles

Source: Parking and Traffic Study – West Fyans/Fyans Street 2019

2.1.1.6 Barwon River Urban Renewal Area (Flood investigation area study)

The *Barwon River Urban Renewal Area Study* investigates the impacts of flooding risks on new developments within the West Fyans precinct. Two planning overlays, *Land Subject to Inundation* (LSIO), and *Flood Overlay* (FO) are in effect along the Barwon River. The Study recommends consolidation of the existing *Design and Development Overlays* (DDO 20, 26) and rewrite to advise on specific issues within the site. Some of the recommendations include:

- Remove the suggestion to direct vehicle access to the rear or side of properties where flood risk is higher
- Encourage below-ground parking access from the north
- Discourage providing at-grade parking in flood-prone areas, including within existing flooding overlays
- Exclude at-grade parking along Barwon Terrace.

Overall, recommendations for car parking and vehicle access are for consolidation to Little Fyans, Yarra and Bellarine Street, and reducing vehicle exposure to flooding overlays.

2.1.1.7 Newtown Closed Landfills - Revised Buffer Distance

The *Newtown Closed Landfills - Revised Buffer Distance 2023* report is a technical evaluation of several closed landfill sites in Newtown (Figure 8). A *Buffer Area Overlay* was previously in place, limiting developments within 500 metres without a 'Landfill Gas Risk Assessment' to protect sensitive receptors and local amenity.

A risk assessment was completed in 2019, which identified no residual, or unacceptable landfill gas risks. Additional investigations were undertaken which confirmed the risk from the landfill sites to be low and acceptable and having impact to existing developments in close proximity.

This report recommended the removal of the Buffer Area Overlay. Developments immediately on the landfill site, or with habitable structures more than 1.5 below ground within or adjacent to the landfill site would require a Landfill Gas Risk Assessment. This has the potential to impact the economic viability of developments with below-ground car parking or precinct parking, with a Landfill Gas Risk Assessment adding additional costs to developers.



Figure 8 Newtown closed landfill sites

Source: Newtown Closed Landfills - Revised Buffer Distance

2.1.1.8 Urban Design Package

The Greater Geelong *Urban Design Package* reviews the urban design of the *West Fyans/Fyans Street Precinct Structure Plan*. The Urban Design Package largely follows the built-environment concerns discussed in Section 2.1.1.2, with further specificity to the various planning controls including:

- Significant Land Overlay (SLO2, SLO16)
- Land Subject to Inundation Overlay (LSIO)
- Special Building Overlay (SBO)
- Environmental Audit Overlay (EAO)
- Floodway Overlay (FO)
- Public Acquisition Overlay (PAO)
- Design and Development Overlay (DDO20, DDO26)
- Heritage Overlay (HO).

Implementation of the two Design and Development Overlays have had varying degrees of success. The Review notes that DDO20 provides little quantitative guidance on building height and massing, whilst DDO26 is very prescriptive on building design without adequate guidance on integration with the river corridor.

The restrictive building height maximums were noted as limiting the feasibility of developments and disincentivising investment. This Strategy highlights the potential to revise the settings of the 2009 Precinct Plan.

The Package highlights the role that transport management can have on car parking in the precinct. Notably, parking pressures creating a

need to prioritise provision of public and active transport early-on to establish positive long-term transport behaviours and prevent car dependency forming.

There is an emphasis on retaining car parking within the precinct, and consolidation into off-street parking in new developments to reduce pressures on the street network.

Although removing on-street parking aligns with stated streetscape design objectives, this can contribute to rising costs of development by enforcing car parking minimums and strengthens car dependency.

The Package also details several planning permit applications to show the trends and gaps in the existing built form controls. Figure 9 shows a development application at 550 La Trobe Boulevard, which retains heritage with adaptive reuse on the waterfront site, providing space for 350 patrons for a mixed restaurant/office use. It is required to deliver 228 car parking spaces, but only plans 49 representing a significant reduction.



Figure 9 Proposal - 550 La Trobe Boulevard

Source: Greater Geelong Urban Design Package

2.1.1.9 Housing Diversity Strategy 2007

The *Housing Diversity Strategy 2007* provides strategic direction on the location and diversity of housing within Greater Geelong. It categorises medium density housing as less than 4 stories and a residential density of 20-40 dwellings per hectare, and higher density more than 3 storeys with 40+ dwellings per hectare. These measures are adopted in the *West Fyans/Fyans Street PSP 2009*.

The Strategy provides several recommendations for managing housing in Geelong including:

- Reducing urban sprawl with consolidation of housing in existing urban areas
- The Strategy provides several recommendations for managing housing in Geelong including: Reducing urban sprawl with consolidation of housing in existing urban areas,
- Retaining neighbourhood character whilst providing new developments.

The Strategy notes that increased density of residential development can lead to reduced car parking demand. The Housing Diversity Strategy refers to importance of the West Fyans Key Development Area as an example of how housing diversity could be provided in an inner-city mixed-use environment.

2.1.1.10 Settlement Strategy 2020

The Greater Geelong *Settlement Strategy 2020* outlines recommendations on how to accommodate an increasing population whilst retaining unique environmental values. Recommendations within the Strategy include:

- Distribution of growth and land supply
- Housing diversity
- Managing growth
- Settlement boundaries
- Urban consolidation.

The Settlement Strategy highlights the need to provide early delivery of public and active transport into growth areas. This is proposed in conjunction with local employment and social infrastructure to reduce reliance on private vehicles from day one.

Identifying the West Fyans development area as a future high-density residential precinct, the strategy supports future population growth and housing diversity in line with the *West Fyans/Fyans Street Precinct Structure Plan 2009*.

2.1.1.11 Retail Strategy 2020.

The City of Greater Geelong *Retail Strategy 2020* was developed to provide strategic direction to guide retail development within existing retail centres. Included in this report are

recommendations such as proposing floor space caps to reduce adverse impacts on existing retail from new developments.

The Retail Strategy describes several centres within the *West Fyans/Fyans Street Precinct Structure Plan*, most operating as restricted retail areas with significant amounts of land dedicated for car parking. In Gregory Avenue, Newtown it notes previous Victorian Government reform saw the area rezoned to Commercial 2, encouraging *restricted retailing* that is counterinitative to the original long-term objectives of the Structure Plan. *Restricted retail* refers to large-footprint retail with independent car access, synonymous with big-box stores.

For the Moorabool-Fyans Street and West Fyans Street centres, the Strategy recommends reclassifying the precinct to 'dispersed' restricted retail, not a dedicated restricted retail centre to support the shift towards residential development.

2.1.2 Victorian Planning Provisions

2.1.2.1 Victorian Planning Provisions Transport – Clause 18

Clause 18 Transport sits in the Planning Policy Framework, providing overarching guidance. It states that 'planning should ensure a safe, integrated and sustainable transport system'.

Clause 18.02-2S discusses cycling and contains a strategy to 'support increased cycling by providing bicycle parking and related end of trip facilities.' Car parking is discussed in clause 18.02-4S which has a strategy to 'plan an adequate supply of car parking'. This car parking should 'protect residential areas from the effects of road congestion created by on-street parking' and 'allocate land for car parking considering the demand for off-street car parking'.

2.1.2.2 Car Parking - 52.06

State-wide car parking provision requirements are set out in Victorian Planning Provision Clause 52.06. Clause 52.06 has the following six purposes:

- To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.

- To 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.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not adversely affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

Any development or land use change which triggers Clause 52.06 is required to provide car parking spaces in accordance with its land category in Clause 52.06-5. The car parking requirement set out in table 1 of the planning scheme sets out the minimum and maximum car parking requirements that apply to a land category identified in the Car Parking Requirement Maps (Department of Transport and Planning, 2025) (CPR maps).

The CPR maps were made using the *Public Transport Accessibility Level* (PTAL) methodology which allocates accessibility levels based of the proximity to public transport and service frequency. The land categories were changed through Amendment VC277 in 2025 to better align car parking rates with demand and reduce the number of car parks required in locations well-served by public transport.

Residential parking requirements are now determined by location and proximity to public transport, rather than just the number of rooms or bedrooms.

There are 46 different land uses which have parking rates stipulated in the Clause 52.06, each with rates specified under the four categories.

Clause 52.06-3 stipulates permit requirements, which include the provision for a permit

application to 'reduce (including reduce to zero) the number of car parking spaces required under Clause 52.06-5 or in a schedule to the Parking Overlay'. This gives applicants and Councils the option for fewer car parking spaces than would be required by Clause 52.06-5, where appropriate. Any land uses not listed in 52.06-5 are covered by 52.06-6, which states that 'car parking spaces must be provided to the satisfaction of the responsible authority'.

Clause 52.06-3 has provisions which effectively 'grandfather' reduced parking in existing non-residential uses. A permit is not required to reduce parking requirements where the following requirements are met:

- The building is in the Commercial 1 Zone, Commercial 2 Zone, Commercial 3 Zone, Activity Centre Zone or Precinct Zone.
- The building gross floor area is not increased.
- The reduction does not exceed 10 parking spaces.
- The building is not in a Parking Overlay with a schedule that allows a financial contribution to be paid in lieu of the provision of the required car parking spaces for the use.

2.1.2.3 Planning Scheme and the study area

A selection of land uses and dwelling parking requirements relevant to the study area are outlined in Table 2. There is no longer any requirement for visitor parking.

Much of the study area is in Category 1 of PTAL for 52.06, the lowest category, meaning standard minimum parking rates apply (Figure 10). Category 2 of PTAL offers reduced minimum parking rates for areas closer to existing transport options. Category 1 is shaded white in Figure 10 and Category 2 shaded blue. In the study area, Category 2 takes in the east of the precinct between Latrobe Terrace and Bellerine Street which are within walking distance of South Geelong Railway Station. These areas also have access to the bus corridor on Moorabool Street. It also includes areas along West Fyans Street west of Pakington Street where overlapping bus services provide better transport access.

Table 2 Car parking requirements

Land use	Measure	Category 1 (minimum)	Category 2 (minimum)	Category 3 (min & max)	Category 4 (maximum)
Dwelling	To each dwelling	1.2	1	0 - minimum 2 - maximum	2
Food and drink premise	To each 100 square metres of net floor area	4	2	0 - minimum 2 - maximum	1
Industry - other than specified in this table	To each 100 square metres of leasable floor area	2.9	0.4	0 - minimum 0.8 - maximum	0.8
Office - other than specified in this table	To each 100 square metres of net floor area	3.5	0.45	0 - minimum 0.9 - maximum	0.45
Trade supplies	Per cent of site area	10	5	5 - minimum 10 - maximum	10

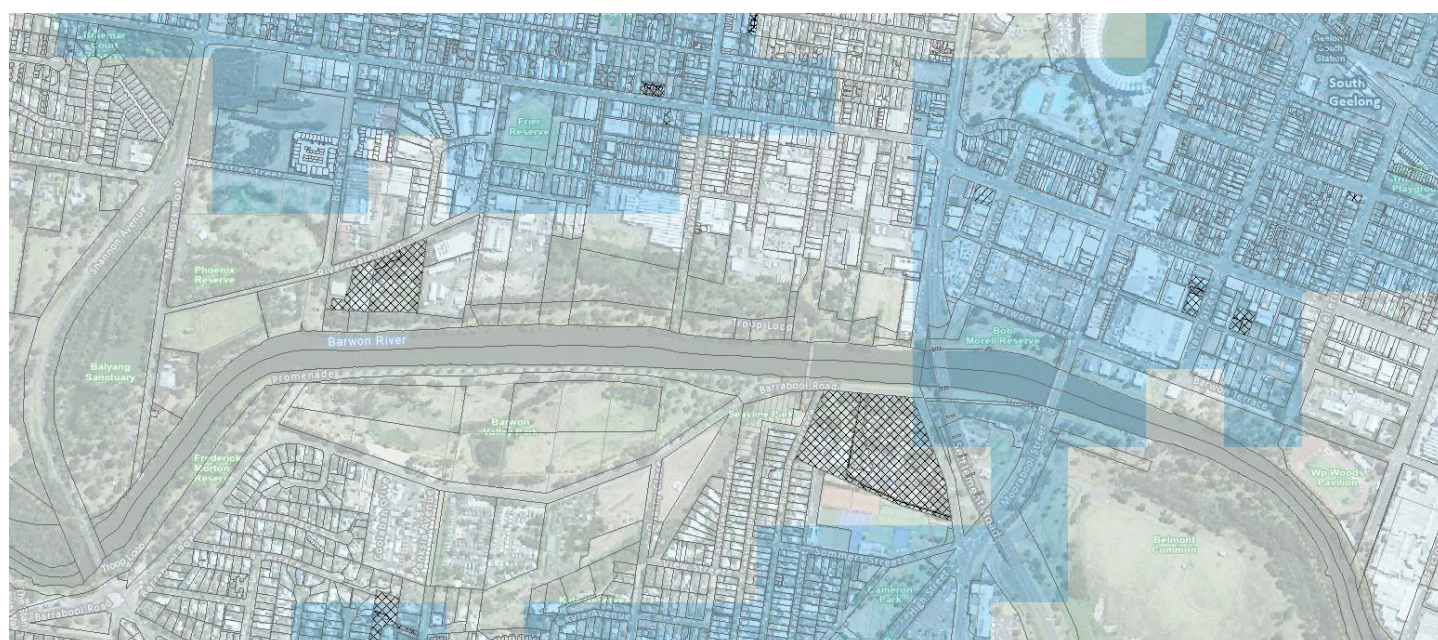


Figure 10 Categories for Clause 52.06 showing Category 1 (shaded white) and Category 2 (shaded blue)

Source: VicPlan

2.1.2.4 Bicycle Facilities - 52.34

State-wide bicycle facilities provisions are set out in Victorian Planning Provision Clause 52.34.

Clause 52.34 has the following two purposes:

- To encourage cycling as a mode of transport.
- To provide secure, accessible and convenient bicycle parking spaces and associated shower and change facilities.

As with Clause 52.06, developments or land use changes which trigger 52.34 are required to provide bicycle facilities accordingly. Bicycle facilities include bicycle parking spaces, showers and change rooms. The number of spaces required for

select uses is set out in Table 3, with separate rates for employees and residents and one for visitors. Showers are required where five or more employee spaces are required. Change rooms are required where showers are required. There are 23 different land uses which require the provision of bicycle facilities.

Dwellings only require bicycle facilities in developments of four or more stories, where one bicycle parking space is required for every five dwellings.

Table 3 Bicycle facilities requirements (selected zones only)

Use	Employee/ Resident	Visitor/Shopper/ Student
Dwelling	In developments of four or more storeys, 1 to each 5 dwellings	In developments of four or more storeys, 1 to each 10 dwellings
Office	1 to each 300 sq m of net floor area if the net floor area exceeds 1000 sq m	1 to each 1000 sq m of net floor area if the net floor area exceeds 1000 sq m
Restaurant	1 to each 100 sq m of floor area available to the public	2 plus 1 to each 200 sq m of floor area available to the public if the floor area available to the public exceeds 400 sq m.
Retail premises other than specified in this table	1 to each 300 sq m of leasable floor area	1 to each 500 sq m of leasable floor area
Shop	1 to each 600 sq m of leasable floor area if the leasable floor area exceeds 1000 sq metres	1 to each 500 sq m of leasable floor area if the leasable floor area exceeds 1000 sq metres

Analysis of 2021 ABS Census data reveals that there is an average of 1.5 residents per dwelling in a flat of four or more stories in Greater Geelong, compared with 1.7 residents per dwelling in a flat of four or more stories in Greater Melbourne. This means that Clause 52.34 effectively requires one bicycle parking space for every 7.5 residents of taller residential buildings in Geelong and has no requirement at all for apartment buildings below four floors.

Clause 52.34 effectively requires one bicycle parking space for every 7.5 residents of taller residential building, and no requirements for apartment buildings below four floors.

2.1.2.5 Parking Overlay - 45.09

Councils may vary parking requirements of 52.06 through the implementation of a *Parking Overlay*. Parking Overlays have the following four purposes:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To facilitate an appropriate provision of car parking spaces in an area.
- To identify areas and uses where local car parking rates apply.
- To identify areas where financial contributions are to be made toward shared car parking.

Geelong's Planning Scheme currently has one Parking Overlay, Schedule 1 covering Armstrong Creek. The changes under clause 52.06 have in many cases made new parking overlays to reduce parking requirements unnecessary, however they may still be necessary to further vary minimum or maximum required parking rates.

Examples of parking overlays in Melbourne that have been applied to manage future change associated with residential and commercial development are outlined below. Brimbank City Council applies Parking Overlay 1 to the Sunshine Metropolitan Activity Centre, approx. 12 km west of Melbourne CBD. This Parking Overlay reduces the minimum number of spaces (Table 4).

Table 4 Brimbank Parking Overlay 1

Use	Rate	Measure
Dwelling	0.7	To each 1 bedroom dwelling
	0.9	To each 2 bedroom dwelling
	1.3	To each 3 bedroom dwelling
Office	2	To each 100 sqm of net floor area
Restricted retail	1.8	To each 100 sqm of leasable floor area
Restaurant	2.5	To each 100 sqm of leasable floor area
Shop (other than listed)	2.5	To each 100 sqm of leasable floor area
Supermarket	3.5	To each 100 sqm of leasable floor area

Source: Brimbank Planning Scheme

Similarly, the City of Manningham applies Parking Overlay 1 to the Doncaster Hill Major Activity Centre to reduce the minimum required parking rates (Table 5).

Table 5 Manningham Parking Overlay 1

Use	Rate	Measure
Office	2.5	To each 100 sq m of net floor area.
Office, if in Precinct 4A of the Activity Centre Zone (Westfield Doncaster)	3.5	To each 100sqm of net floor area.
Dwelling	1	To each one or two bedroom dwelling, plus
	2	To each three or more bedroom dwelling (with studies or studios that are separate rooms counted as a bedroom), plus
	1	For visitors to every 10 dwellings.
Restaurant	0.36	To each seat available to the public.
Restricted retail premises	1.5	To each 100 sq m of leasable floor area.
Shop, if in Precinct 4A of the Activity Centre Zone (Westfield Doncaster)	4.17	To each 100sqm of leasable floor area based on a whole-of-centre shop assessment at each nominated stage of the development.

Source: Manningham Planning Scheme

The existing public and active transport in and around the precinct and its location close to Geelong CBD could support conditions for developments with reduced car parking requirements for both residential and non-residential uses in some instances.

2.2 Review of previous engagement

2.2.1 West Fyans/Fyans Street Precinct Structure Plan Review Community Engagement Report

To support the review of the *West Fyans/Fyans Street Precinct Structure Plan*, stakeholder engagement was undertaken with landowners and occupiers. Online surveys conducted between April and March 2025 resulted in 20 responses, four written submissions, and two phone discussions. Additionally, six one-on-one meetings with major landowners were conducted. Stakeholders were specifically asked about the three development scenarios included in the *Future Population, Housing and Economic Update* (Figure 11).

Major landowner feedback provided positive engagement with the vision focused on transitioning the site from its current uses. Stakeholders supported with the mixed-use vision, suggesting consideration of expanded rezoning of the remaining industrial zoned land and improving the interface with the Barwon River.

Major landowner feedback supported transitioning the site from its current uses.

60% of survey respondents did not believe the initial Structure Plan vision was still relevant, however 65% favoured the Inner Urban Bounce Back development scenario (Figure 11). Support for this scenario was driven by its transformative vision to transition the area into a more urbanised precinct. Stakeholders expressed confidence that rezoning will facilitate rapid growth.

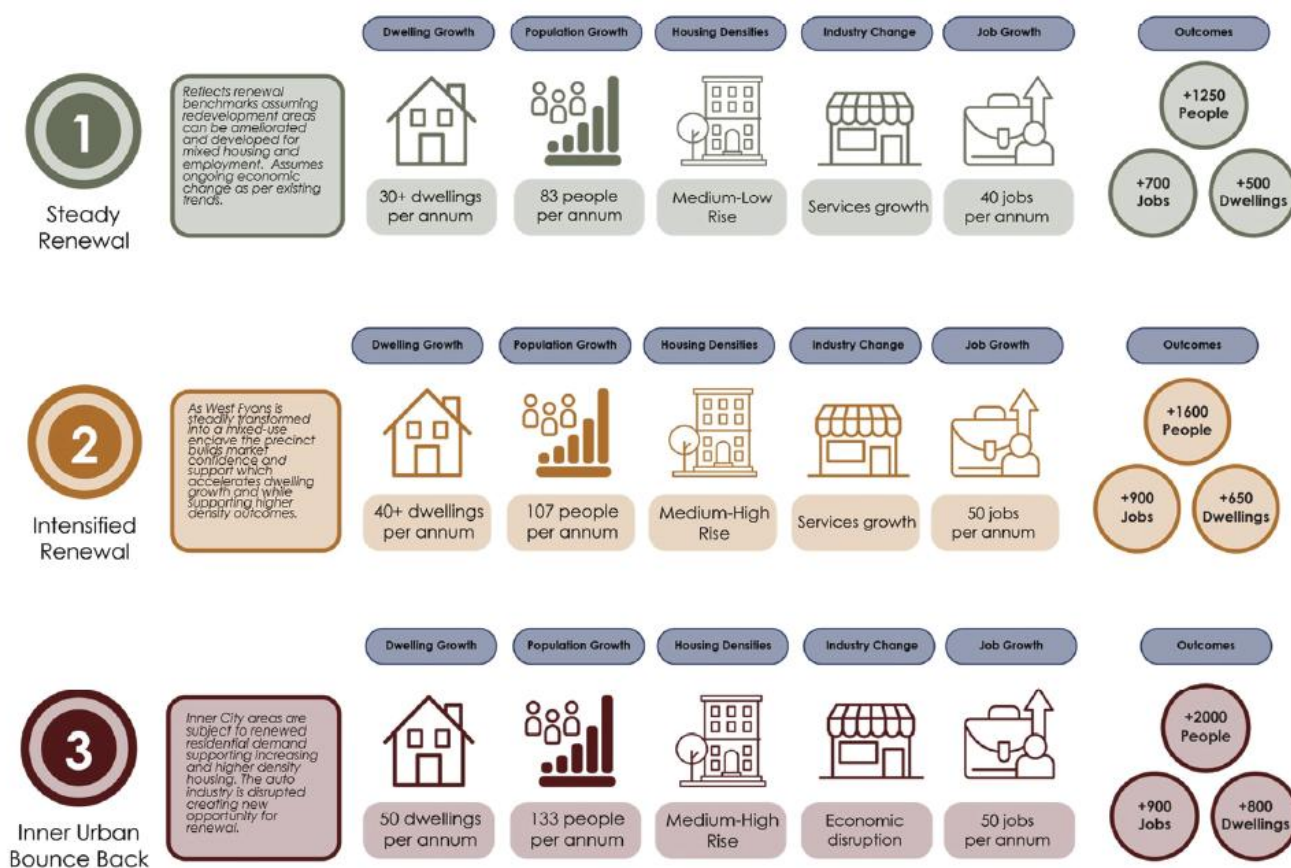


Figure 11 Development scenarios

Source: Future Population, Housing and Economic Update

Several key themes were identified through the social mapping element of engagement including:

- Safety and traffic
- Connectivity
- Infrastructure and development
- Amenity and environment.

Infrastructure improvements and better traffic and parking management were common themes within the social mapping activity. There was support for traffic calming measures and speed reduction, improvement of the Gregory Avenue intersection, and widening Boswell Avenue to manage future traffic demand. Responses also suggested sealing laneways between West Fyans Street and Price Street to encourage off-street car parking.

There was strong support for improving pedestrian access and safety including:

- safer pedestrian crossings near the St Lords pub due to frequent near misses
- improving the gradient of the pedestrian link between Riversdale Road and Newcastle Street

- improved access to the precinct from GMHBA stadium and the river.

The findings of the engagement highlight support for a transformation of the West Fyans/Fyans Street precinct from landowners and occupiers. There is also an appreciation that improvements must extend beyond traffic and parking improvements to encouraging conditions that enable more trips by sustainable modes of transport.

2.2.2 Greater Geelong Integrated Transport Strategy 2025: Phase 1 and 2 Engagement

The *Greater Geelong Integrated Transport Strategy 2025* is currently being developed. Phase 1 Engagement focused on existing issues and opportunities for improvement, and long-term vision for getting around. Phase 2 asked what would encourage people to choose active travel more often for their everyday travels, including feedback on the Principle Bicycle Network (PBN) and Strategic Cycling Corridors (SCC).

Phase 2 engagement ran for 6 weeks over April-May 2025 via Councils *Yoursay* platform. The online survey received 175 responses, with an additional 352 contributions on an interactive map, and 24 contributions on the PBN and SCCs.

Whilst this project encompasses the broader area of Greater Geelong, the key themes remain relevant to the West Fyans precinct. Community feedback can be grouped into several key themes including:

- The community recognises the health, environment, and community benefits of active transport
- Distance, time and weather are key barriers to walking and riding
- There is support for active transport to school
- There is a need to improve cycling infrastructure, footpaths and safe crossings
- There are safety concerns due to traffic volumes and speed
- More bicycle parking and secure bicycle parking is needed at busy destinations

Contributions through interactive mapping found concentrations across different suburbs in Geelong, as shown in Figure 12.

Notably, pedestrian safety at crossings was highlighted as a significant concern, with the most upvoted pins specifically mentioning conflicts with cars. The community made several comments on reducing speed limits, increasing footpath widths, and providing physical barriers. A specific reference is made to Fyans Street at and around Hopkins Street, with both being noted as dangerous for pedestrians despite being heavily used. Comments suggested that narrowing road widths and adding pedestrian priority crossings should be considered.

“Cars entering the park here do not look for pedestrians, often turning at high speeds and risking a dangerous collision with a pedestrian”

Missing connections, wayfinding and bike parking were common contributions to the interactive maps. Survey responses complement the contributions made in the interactive mapping task. 56 survey responses listed ‘safety’ as a barrier

to active transport with ‘lacking pedestrian crossings’ and ‘missing or unsuitable footpaths’ following (32 and 26 responses, respectively).

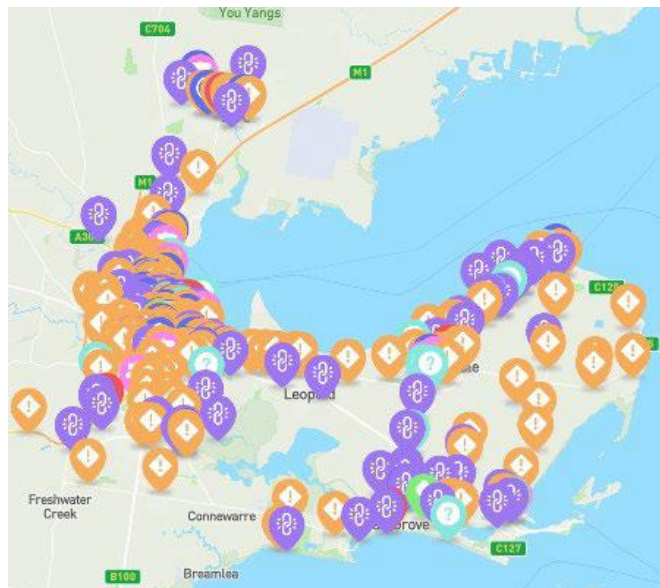


Figure 12 Result from ITS interactive mapping

Source: Integrated Transport Strategy active travel feedback map

Survey responses complement the contributions made in the interactive mapping task. 56 survey responses listed ‘safety’ as a barrier to active transport with ‘lacking pedestrian crossings’ and ‘missing or unsuitable footpaths’ following (32 and 26 responses, respectively).

The Geelong Waterfront and the Barwon River were commonly listed as favoured locations for walking and cycling. Reasons for this are:

- Safety and separation from traffic
- Quality and design of paths
- Scenery and connection to nature
- Accessibility and connectivity to amenities.

In relation to the West Fyans/Fyans Street Precinct, only minimal feedback was received for the interactive mapping across both rounds of engagement. General findings on active transport accessibility and safety can however be considered.

3. Review of existing conditions



This section describes the existing on and off-street parking in the West Fyans/Fyans Road precinct, including restrictions, parking behaviour, occupancy and implications for the future Structure Plan revision.

3.1 Review of car parking existing conditions

3.1.1 Methodology

The location, type and relevant restrictions of on-street and off-street parking within the precinct was determined through a desktop review of Nearmap (dated Sunday 22 March 2026) and Google Street View (dates varying from April 2023 to Oct 2024). Findings were further verified with a physical site assessment to account for any outdated Street View data and signage data. Parking obscured by canopy cover was also assessed for occupancy.

3.1.2 Site assessment

Two transport planners from the Institute for Sensible Transport conducted a site assessment on Monday 20 April 2026. This date was chosen with input from Council Officers who noted parking

demand was generally high throughout the week. The objective was to verify data from desktop analysis on existing restrictions, location and occupancy of parking. In addition, the site assessment informed how parking currently operated across the precinct, noting there was significant non-compliant parking behaviours. Beyond vehicle parking, the site assessment provided an opportunity to confirm existing active and public transport infrastructure and how they support current and future transport mode choices.

The site assessment was completed using a customised mobile App known as Fulcrum. The App allows for the recording of an observation at a specific location. Each team member was equipped with the App and documented key issues and opportunities. Observations were grouped into one of the following categories:

- Existing conditions – parking location/restriction
- Existing conditions – Issues or General Notes
- Area of opportunity.

Each record included evidence of existing conditions with photos tagged to the record. A total of 60 observations were recorded in Fulcrum throughout the site visit. Figure 13 shows the distribution of observations, across the study area.



Figure 13 Distribution of observations on Fulcrum

Source: Institute for Sensible Transport

3.1.3 On-street parking

Table 6 shows the number of on-street parking spaces in the study area, while Figure 14 outlines the existing on-street parking restrictions.

It is worth noting that in several instances the number of spaces or equivalent is a guide only for several reasons. Firstly, loading bays are often provided longer than a single vehicle space to account for longer delivery vehicles. There is also double counting in the case of some non-compliant parking behaviours and unrestricted parking bays as during our assessment we only counted unrestricted bays that could be formalised. There are also examples of non-compliant parking that cannot be formalised including those where drivers had chosen to angle park where this was not specifically sign-posted. Lastly, most unrestricted parking is unmarked meaning supply is dependent on driver parking behaviour on any given day. The basis for counting bays was dividing the available space by standard bay dimensions.

Table 6 Count of existing parking restrictions

Parking type	Number of spaces or equivalent
Loading bay	10
DDA parking bay	4
1/4P	21
1/2P	2
1P	39
2P	299
Unrestricted	1,523
Non-compliant	448
Total	2,342

Across the study area most parking is unrestricted (65%).



Figure 14 Existing car on-street parking restrictions

Source: Institute for Sensible Transport

Across the study area most parking is unrestricted (65%), with smaller amounts of 2P (13%). All other signposted restrictions account for less than 2% of parking supply. Short term restrictions were concentrated in the commercial area and those areas with retail and hospitality where increased turnover is required. This includes areas such as West Fyans Street, Rutland Street, Latrobe Boulevard and Little Fyans Street.

These locations also coincide with the location of loading bays (10 indicative spaces), however many other sites undertake loading and unloading off-street (see Section 3.1.4 where off-street parking is discussed). Short-term parking of 1/2P or less is only 1% of parking supply.

3.1.3.1 Non-compliant parking

There is a prevalence of non-compliant parking in the study area, accounting for 19% of parking space equivalents (see Figure 16). In this study, non-compliant parking refers to parking on the verge over footpaths or on a gravel road shoulder or off-road area where no signage or line marking indicates this is permitted or the preferred parking layout. This was noted during desktop investigation via Nearmap and Google Street View and on-site.

On roads such as Little Fyans Street, this is done as the road width is insufficient (6.6m) to provide for parking on both sides of the street and accommodate through traffic, and existing signage does not prohibit parking. In other instances, such as Grenville Street, parking on the kerb is done where there is sufficient on-road width (8.2m) to park without limiting vehicle movement. In these instances, this behaviour is assumed to reflect longstanding habits, lack of enforcement, to support the movement of larger vehicles or reflecting low-volume of pedestrians.

Figure 15 provides an example of some of the non-complaint parking behaviours observed in the precinct. A lack of enforcement is also assumed due to the presence of private parking signs. Flexible bollards have also been installed on the kerb in Lambert Avenue and Hampton Street. Council has advised the installation is to advise of assets but there appeared to be a clear reduction in kerb parking where bollards had been installed.

Nearly one fifth of parking being non-compliant limits Council's ability to manage parking in the precinct and ensure it is operating in a way that supports its transition to a mixed-use precinct.



Figure 15 Non-compliant parking behaviours observed within the precinct

Source: Institute for Sensible Transport



Figure 16 Non-compliant parking in the study area

Source: Institute for Sensible Transport

3.1.4 Off-street parking

The West Fyans/Fyans Street precinct has a large portion of landowners with businesses related to car dealerships, vehicle servicing and associated vehicle storage. In addition, there is an abundance of off-street parking in some areas. In many instances, it is difficult to determine whether vehicles parked off-street are short-stay or being stored long term as part of a business. In an industrial precinct such as West Fyans, the distinction is often unclear.

NearMaps was used to assess the paved non-building areas in the precinct where vehicles were parked and determined an extent of 119,503m² or 10.1% of the precinct (see Figure 17). It is likely that this is an underestimate of the off-street vehicle parking and storage area due to undercover parking and difficulty in accurately assessing over such a large area, representing a methodology limitation. Of this area, 59,234m² was assessed to be vehicle storage, where one or more of the following were noted:

- Vehicles where parked in a stacked fashion (front to end)
- Vehicles were of similar make and model
- Minimal line marking and circulation areas.

Other off-street parking was estimated at 60,269 m² and was determined to be locations where one or more of the following applied:

- Clear parking layout without stacked parking
- Line marking and circulation areas
- Business signage.

Using an established space per vehicle measure of 35m² (including parked area and circulation space) indicates a supply of 1,721 spaces. It is unlikely that there are this many off-street parking spaces in this precinct. The established space per vehicle measure is likely a poor measure in this precinct noting the inefficient and informal layout of many parking areas. An example of this occurs at 20 Little Fyans Street, which has an estimated 97 spaces using this measure versus a counted 57 spaces.

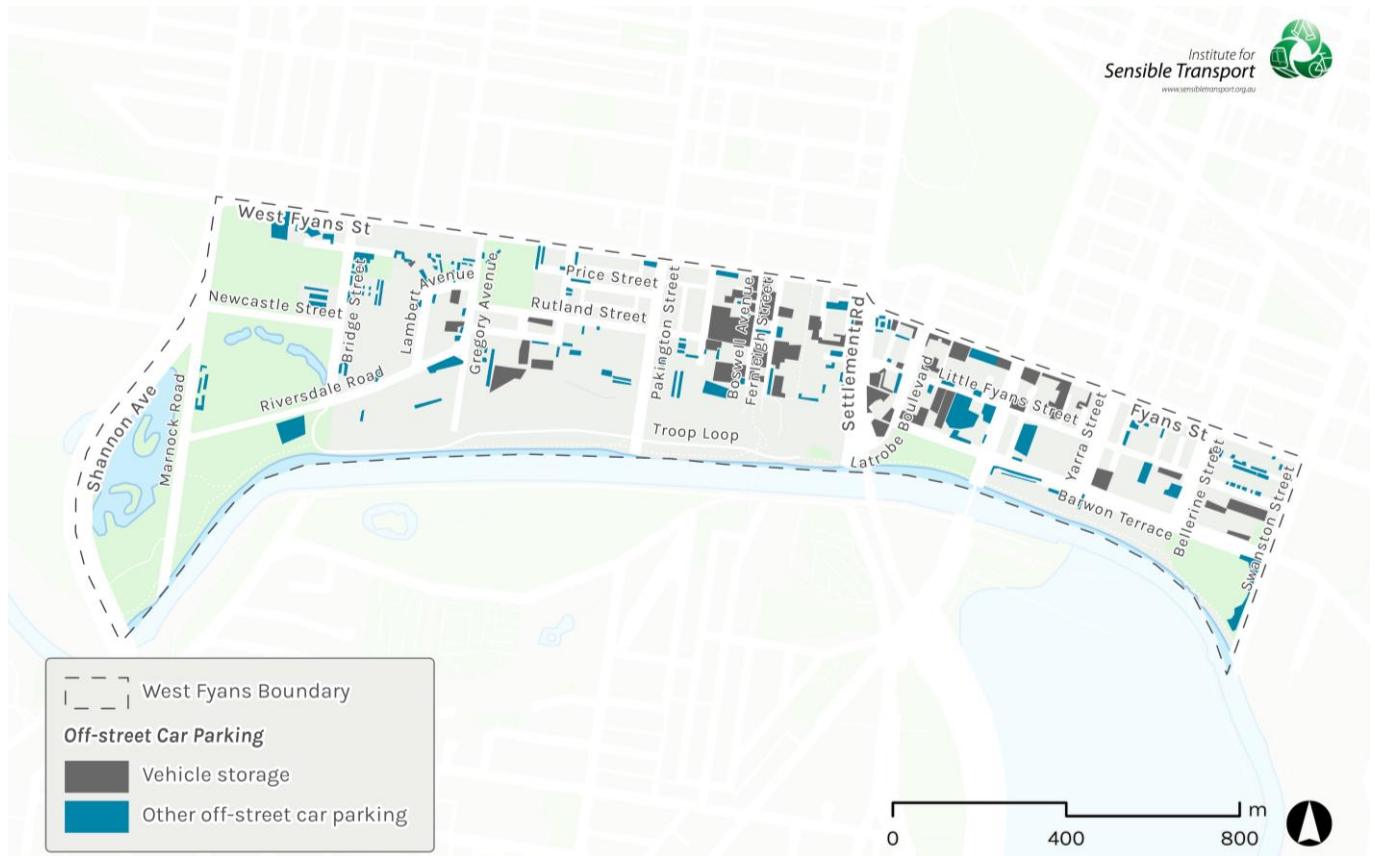


Figure 17 Off-street parking and vehicle storage in the precinct

Source: Institute for Sensible Transport

An important consideration is that the space attributed to long-term off-street vehicle storage and the number of off-street parking spaces will see significant change as the precinct develops. The part of the precinct most dominated by vehicle storage is between Bloomsbury Street and Yarra Street, all of which is zoned mixed use or Commercial 2 Zone. It is likely that future development in the precinct in these zones will see vehicle storage replaced with higher order uses and off-street parking integrated within buildings to support higher development yields.

Such a transition has already occurred in some instances. The *West Fyans 2024 Population, Housing and Economic Update* notes that adaptive re-use of historic industrial buildings (see Figure 18) has attracted new knowledge-based, personal service and hospitality uses, including 30 professional service firms. This has helped to maintain employment even while heavy industry and retail employment have seen a decline. This Study also notes that many professional and white-collar workers live in suburbs surrounding the study which has implications for their ability to travel to work without a car. Council previously

estimated that commercial/industrial floorspace could significantly reduce from 130,627m² to 80,627 m² within 20 years in the area west of Latrobe Terrace as outlined in *Parking and Traffic Study – West Fyans/Fyans Street 2019*.

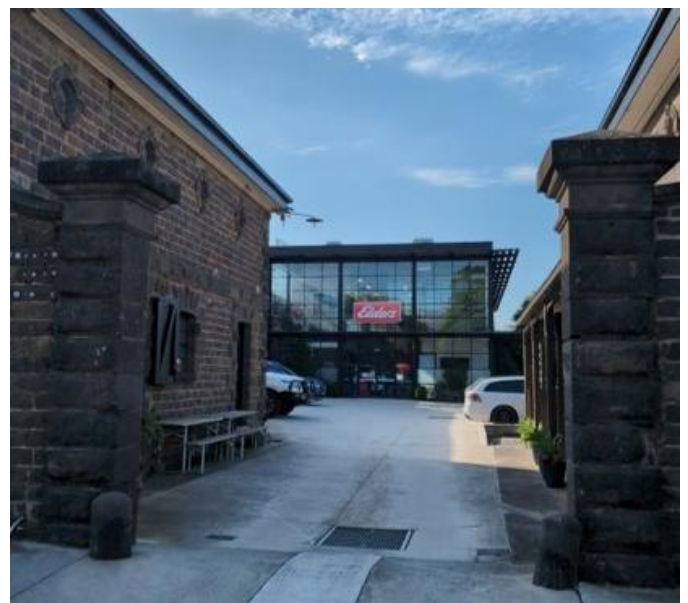


Figure 18 Adaptive re-use at 400-408 Pakington St

Source: Institute for Sensible Transport

Adaptive re-use development is likely to have the greatest impact on ongoing or new on-street parking demand as approval with low or no parking possible under Clause 52.06-3 (see Section 2.1.2.2 for more discussion).

For the off-street parking that Council does manage it was noted that formalisation, enforcement and wayfinding could be greatly improved. For Frier Reserve there is little formalised parking although some signage does exist to help manage parking (see Figure 19). Formalising parking in Frier Reserve could assist to clearly define access, protect assets such as tree, landscaping and fences and improve provide pedestrian access.



Figure 19 Existing parking at Frier Reserve

Source: Institute for Sensible Transport

During the site assessment it was also noted that some off-street parking was underutilised. Near the rowing clubs off Barwon Terrace east of Moorabool Street, there is an off-street parking area close to an area of high occupancy parking surrounding Willis Place where Council has permitted parking on the footpath through signage. This parking is within public land and yet there is no signage to indicate that this parking could be used at times when it is not required by the rowing clubs. This approach could also be considered for the parking at John Landy Athletic Field however this parking is further from key destinations in the precinct

3.1.5 Occupancy and demand patterns

Parking occupancy in the precinct was determined using aerial imagery from Nearmaps to count all visible vehicles. Across all dates, visibility of some cars parked on Pakington Street and Barwon

Terrace were obscured due to canopy cover. To account for this, spot occupancy counts were undertaken during the site visit on Monday 20 April 2026 and data noted. Pakington Street was noted to have occupancy close to 100% during the site visit, with Barwon Terrace less than 25% occupied. This data was not combined with the occupancy data set from Nearmap to ensure data integrity. Therefore, a recognised limitation is that the occupancy from the top-half of Pakington Street underestimates occupancy, with the southern end, providing a better guide.

Occupancy was determined during three agreed upon peak periods which aimed to capture a selection of parking demand scenarios across weekdays, weekends during school term, and school holidays:

- Sunday 22 March 2026 – providing the most recent occupancy estimate (see Figure 20)
- Wednesday 29 October 2025 – providing a recent weekday peak (see Figure 21)
- Wednesday 16 April 2025 – providing a school holiday peak (see Figure 22).

The highest levels of occupancy are consistently in the west of the precinct centred on Bloomsbury Street, Lambert Avenue, Pakington Street (noting this occupancy rates are likely an underestimate) and Price Street, particularly on weekdays. These streets have diverse light industrial, retail, hospitality, commercial uses and residential. This mixture of uses supports a high level of occupancy, pedestrian movement, and coincide with existing parking restrictions on Bloomsbury Street, Pakington Street and Rutland Street.

The highest levels of occupancy are consistently in the west of the precinct centred on Bloomsbury Street, Lambert Avenue, Pakington Street, Price Street, particularly on weekdays.

Weekend occupancy (Figure 21) was higher in the eastern part of the precinct on Yarra Street, Barwon Terrace and Bellerine Street compared to weekday.

This area is a walkable distance to Kardinia Park and GMHBA Stadium, a major sporting facility in Geelong which was also hosting an event on the date assessed. It is likely that higher occupancy reflects overflow parking. This impact should be noted when assessing restrictions in future. Occupancy was also over 50% on Marnock Road on the weekend where there is parking for Balyang Sanctuary and a meeting spot for Park Run events.

Weekend occupancy was also higher in the eastern part of the precinct on Yarra Street, Barwon Terrace and Bellerine Street compared to weekday.

Occupancy during the school holiday period was also assessed around Frier Reserve based on Council feedback that this was an occupancy

hotspot. Lambert Avenue, Grenville Street and Hampton Street were noted to be above 100% occupancy on the date surveyed as there is minimal formalised parking on these streets and it was considered that more cars were parked than could be legally permitted if bays were formalised. Gregory Avenue, Riversdale Road and West Fyans Street all had occupancy of between 51% and 75%.

Across all three occupancy counts it is important to recognise the limitations of counts based on snapshot data. As outlined above, there can be several factors that can contribute to high or low occupancy on any given day including special events. As such the occupancy levels found here should be used as a guide to when and where demand can be highest and where future targeted surveys should be undertaken. Any changes to parking restrictions should be supported by longer-term occupancy studies over multiple days at a minimum.

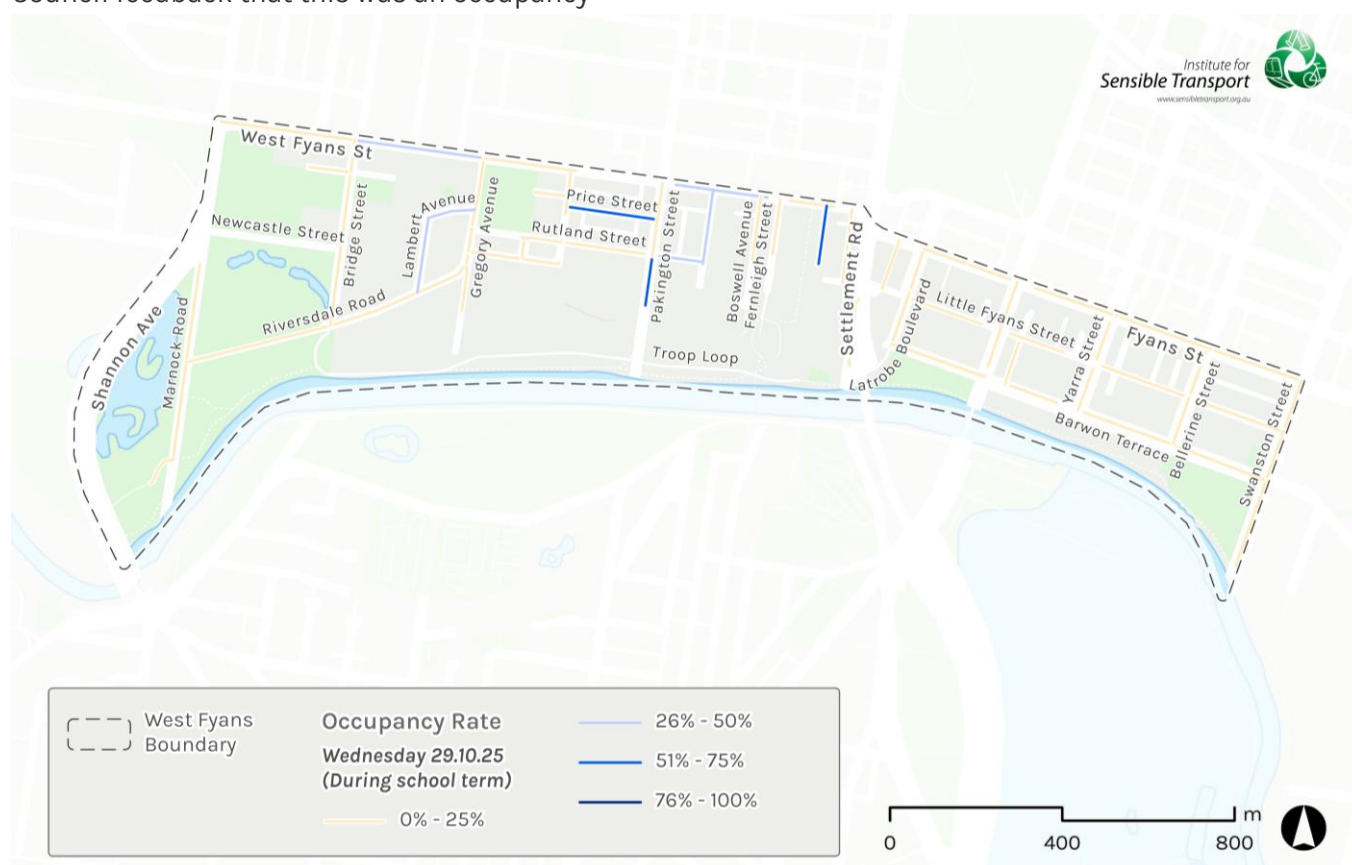


Figure 20 Parking occupancy – weekday during school term

Source: Institute for Sensible Transport

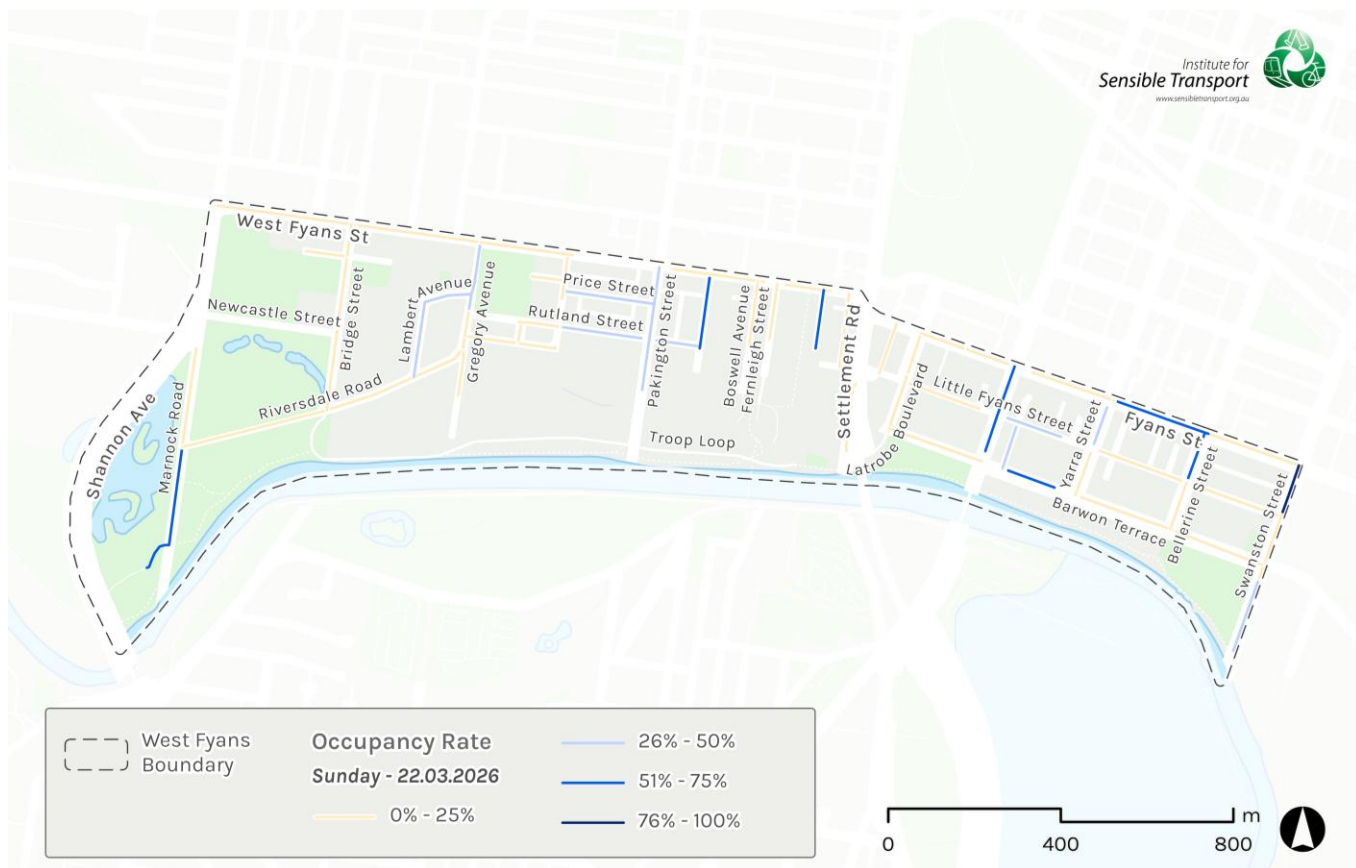


Figure 21 Parking occupancy - weekend

Source: Institute for Sensible Transport

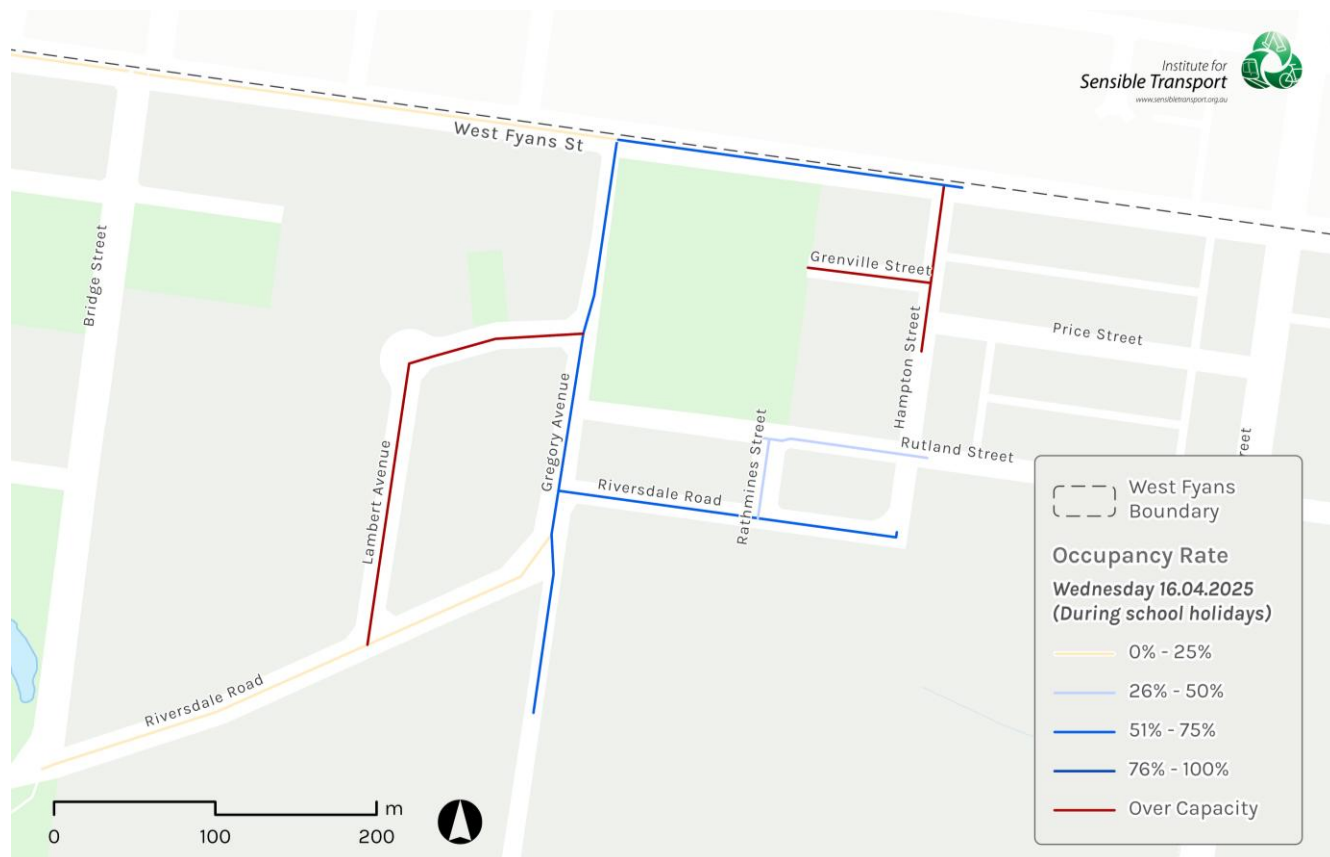


Figure 22 Parking occupancy - weekday during school holidays

Source: Institute for Sensible Transport

3.1.6 Opportunities and constraints for the revised structure plan.

The West Fyans precinct is transitioning from heavy industry and retail to service-based employment and mixed-use residential. As a result, the space attributed to long-term off-street vehicle storage, and the number of off-street parking spaces, will change as development progresses.

This transition means that management of land currently used for these purposes is best managed through planning-based approaches. Such approaches should aim to require parking matched closely to likely demand, with both oversupply and undersupply of parking having consequences (discussed further in Section 6.2). Planning approaches can include appropriate minimum parking rates and unbundled parking mechanisms to better match demand (further discussed in Section 4 and Section 5).

Off-street parking managed by Council should see more immediate and direct intervention, however. Frier Reserve and off-street parking near the rowing sheds off Barwon Terrace should be managed and signposted to make more efficient use of the assets throughout the week and not just when sporting events are taking place. This is further outlined in Section 7.1.4.

When considering on-street parking, initial findings indicate several constraints and opportunities. These include:

- Addressing non-compliant parking
- Formalising parking bays
- Introducing more short-term parking restrictions in busier areas.

During the stakeholder workshop it was noted that a status-quo approach to parking management is used in the much of the precinct, whereby if there are no complaints, non-compliant parking behaviours are not proactively addressed. This approach, with nearly a fifth of parking being non-compliant, limits Council's ability to both manage parking in the precinct and to ensure it is operating in a way that will support the objectives of the area.

Addressing non-compliant parking is a clear priority for parking management in the precinct.

Parking on the footpath acts as a barrier to pedestrian movement and accessibility. It also limits the ability of many streets to act as a place - the local identity and amenity of the street as a destination in its own right - further outlined in the Movement and Place Framework (see below box). This is most problematic in a location such as Little Fyans Street, an important east-west pedestrian connection yet is blocked by parked vehicles forcing pedestrians onto the roadway.

Movement and Place Framework

The Movement and Place Framework has been adopted by the Victorian government to inform street design and policy decisions. Movement and Place outlines the dual role streets perform in terms of being both movement corridors and places themselves. The Movement and Place framework acknowledges that in previous decades, the role of the motor vehicles (including parking) and vehicle throughput has been the primary goal underpinning street design. In some instances this has been detrimental to the place function that many streets perform and their ability to support active modes and economic development.

Parking on the footpath acts as a barrier to pedestrian movement, accessibility, and streetscape amenity.

An important aspect of parking management is that future outcomes should align with the Movement and Place Framework. For several streets in the precinct, the reduction or removal of car parking can support both improved movement and place outcomes such as wider footpaths, bike lanes, increased street greening, and the ability to support on-street dining and trade. The potential removal of parking to support place outcomes has been modelled for several streets in the *Parking and Traffic Study 2019*. For Pakington Street, Rutland Street, and Hampton Street, that Study

notes that street improvements could require removal of on-street parking on one side, totalling 83 parking spaces from available supply west of Latrobe Terrace. In the context of approximately 1,203 compliant parking spaces from the current methodology, this represents 7% of supply. As these roads were also noted to have among the highest occupancy in Section 3.1.5, this highlights the needs to prioritise management in these areas.

The implementation of short-term parking restrictions appears to be well aligned to the areas of the highest occupancy such as on and around Rutland Street, Pakington Street, West Fyans, Fyans Street and Willis Place. This approach should continue and be expanded to help manage occupancy to appropriate levels that balance high utilisation with adequate opportunities to find parking in a reasonable amount of time. A proactive survey program should be implemented to identify and manage emerging areas of high demand for management.

Maintaining some unrestricted parking for workers further away from their destination, within an 800m walking distance is also recommended in the short term to support existing businesses. In the long term and more generally, parking should be proactively reassessed to ensure it is being used in a way that advances Council's strategic objectives for the future. Shared or precinct parking may also be useful for worker parking where there is sufficient demand and varying residential and commuter demand, for example where residential demand is higher overnight, but commuter is higher during the day, leading to higher use. This is further discussed in Section 6.3.

In Bloomsbury Street, Price Street and Pakington Street with existing residential properties, parking is generally already restricted on one-side to 2 hours, meaning residents are eligible for residential parking permits. This approach should be proactively expanded to all existing residential properties for consistency. Permit eligibility should be carefully assessed to ensure properties remain for residential purpose.

Residential parking permits should be proactively expanded to all existing residential properties for consistency.

Further recommendations on how to leverage these constraints, opportunities and travel demand management is discussed in Section 7.

3.2 Review of existing bicycle infrastructure and parking

Existing cycling infrastructure in the study area includes a separated bi-directional cycleway from Moorabool Street to the Geelong CBD via GMHBA Stadium and Gheringhap Street. There is also a shared path along the along Barwon River with several connections to Belmont. There are painted kerbside lanes on Pakington Street that connect into Newtown, and on Yarra Street that connect to the CBD. Painted kerbside lanes on Swanston Street transition to protected bike lanes north of the Bellarine Highway.

This level of infrastructure provides a starting point to encourage higher levels of cycling to and from the precinct, however further infrastructure improvements would see greater uptake in cycling for everyday uses. Further discussion of current and

future latent demand for cycling is provided in Section 3.2.1.

Existing bicycle parking is minimal in the precinct. Two public bicycle parking hoops are provided on Rutland Street and one on Yarra Street as part of a recently completed development. Bike parking is also provided in three off-street locations that could be used by visitors and employees, at 18-20 Riversdale Rd, Newtown, 101 West Fyans St, Newtown VIC 3220 and 5 Bridge St, Newtown (Figure 23). It is likely that there is additional off-street bicycle parking throughout the precinct and instances of informal parking, such as to fences and within buildings.

Existing bicycle parking is minimal in the precinct.

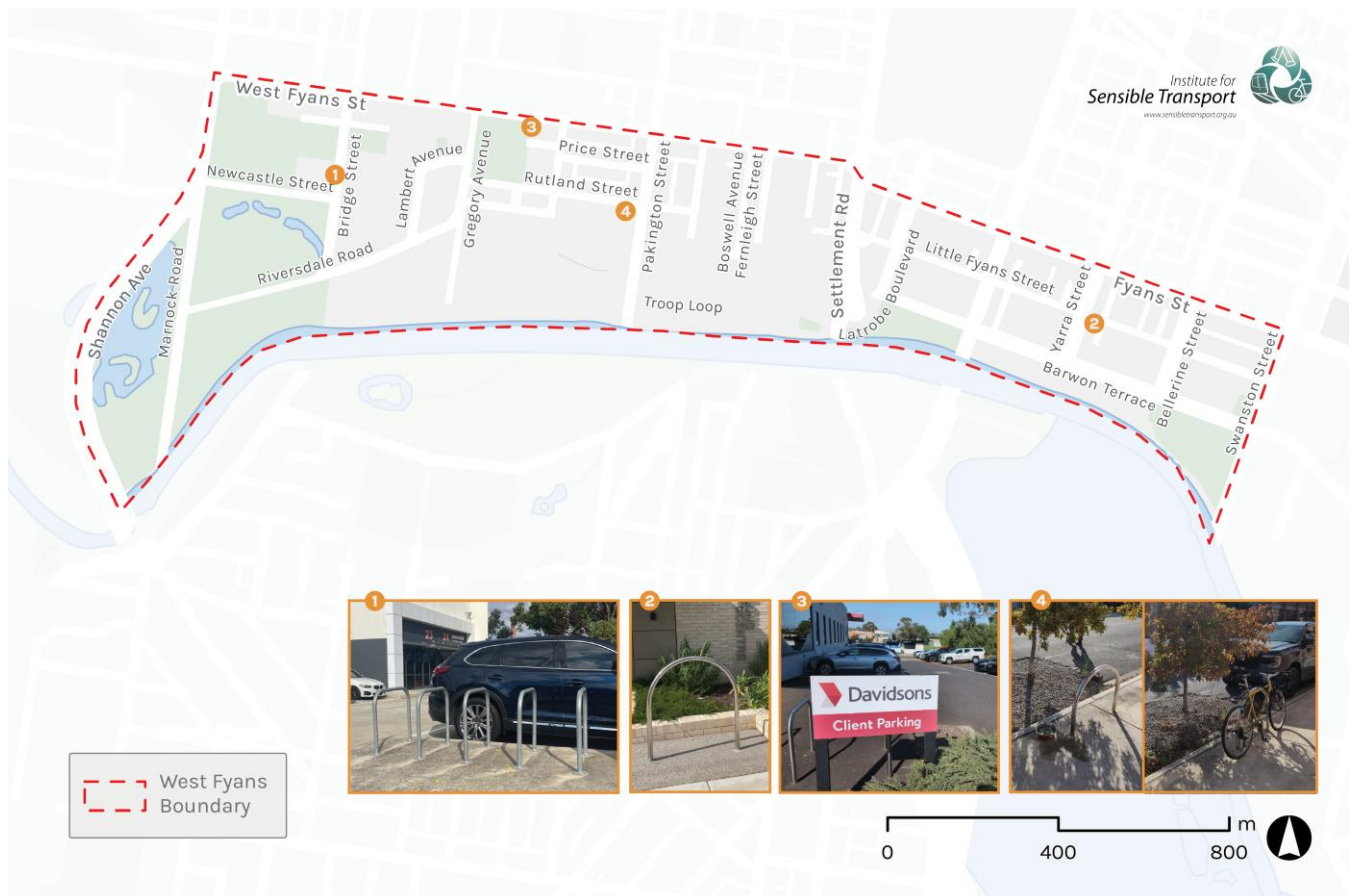


Figure 23 Existing bike parking within the precinct

Source: Institute for Sensible Transport

3.2.1 Bike and Micromobility Use Propensity Index

High-quality bicycle infrastructure can be expensive to deliver, and government budgets are often limited. It is therefore essential to understand the spatial variation in latent demand for riding. This ensures that investment is directed to areas with the greatest potential to increase ridership.

To support this, a customised *Bike and Micromobility Use Propensity Index* has been developed for the study area. The Index draws on seven Census variables that identify demographic characteristics statistically linked to higher rates of bike and micromobility use.

Peer-reviewed research identified the seven Census collected variables as statistically significant predictors of bike and micromobility use. These seven variables are shown in Figure 24, with a brief overview of the relevant measure. The resulting maps illustrate the spatial variation in latent demand in the study area and surrounds, highlighting where future investment in active transport infrastructure is most likely to be effective.

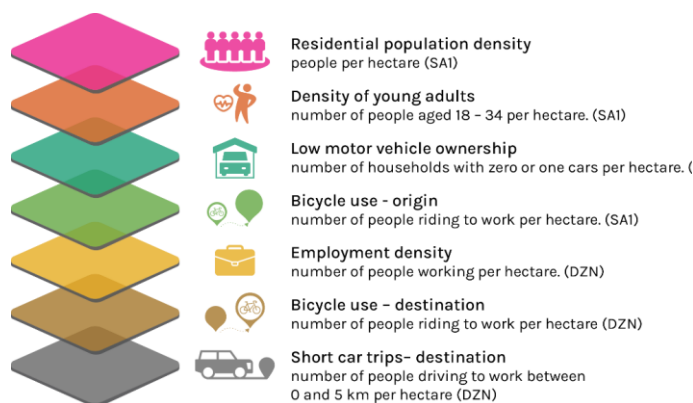


Figure 24 Variables for Bike Use Propensity Index

Source: Institute for Sensible Transport

3.2.1.1 Results

Overall

The overall *Bike and Micromobility Use Propensity Index* results as well as the existing cycling network in the study area are shown in Figure 25. The highest levels of latent demand are within the central Geelong north of the study area, including Geelong, South Geelong and Newtown. Belmont, south of the Barwon River also shows high levels of latent demand characterised by factors such as higher population density, lower car ownership, and a greater proportion of residents commuting by sustainable modes, all of which contribute to higher latent demand.

Latent demand for riding is highest immediately north and south of the precinct.

There is relatively strong alignment between areas of higher latent demand to the north of the precinct and the existing cycling network, which also provide links to the study area itself. There is a major gap in infrastructure between West Fyans and Fyans Street as it approaches the intersection with Settlement Road/Latrobe Boulevard. Similarly, there are no clear east-west links through the precinct apart from the riverside off-road path which provides some connectivity but is difficult to access for much of the area due to gradients. There is an existing Public Acquisition Overlay to connect to Fernleigh St and Bloomsbury Street which would somewhat assist in addressing this, however it would need to extend to Anne St and include crossing infrastructure to link to Little Fyans Street. Links south across the river to Belmont are generally lower quality and intermittent with cyclists having to dismount to cross John Macintyre Bridge.

The existing infrastructure is generally well-located, and it is likely that with additional improvements there would be higher levels of everyday cycling.

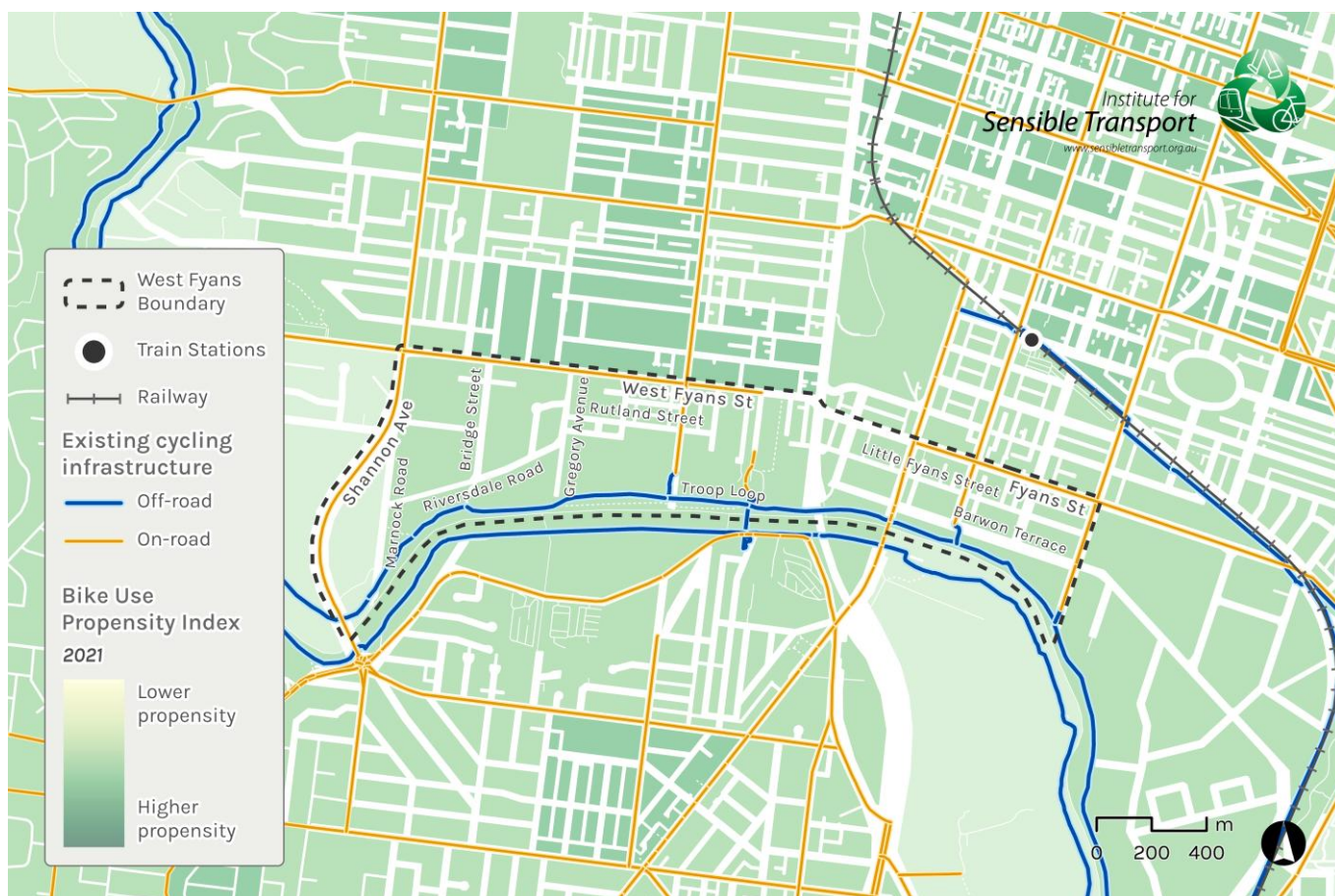


Figure 25 Bike and Micromobility Use Propensity Index – Overall

Source: Institute for Sensible Transport using ABS Census

Destination

The score for destination variables is shown in Figure 26, highlighting areas with the highest latent demand for bike trips to end. The study area shows strong latent demand as a destination, highlighting its importance as an employment area.

Key destinations in the area that show high latent demand include the Geelong CBD, Geelong South and Geelong railway stations, and the suburbs of Newtown and South Geelong. West Geelong (north of Aberdeen Road) also shows higher destination demand. The Belmont area shows lower propensity, reflecting the fewer destinations.

Strengthening the connections between key destinations and surrounding residential areas will help to maximise the potential for local bike trips to and from the precinct now and as it develops.

Major education, employment and service hubs throughout the area are key destinations for bike trips from the study area and would benefit from improved infrastructure.

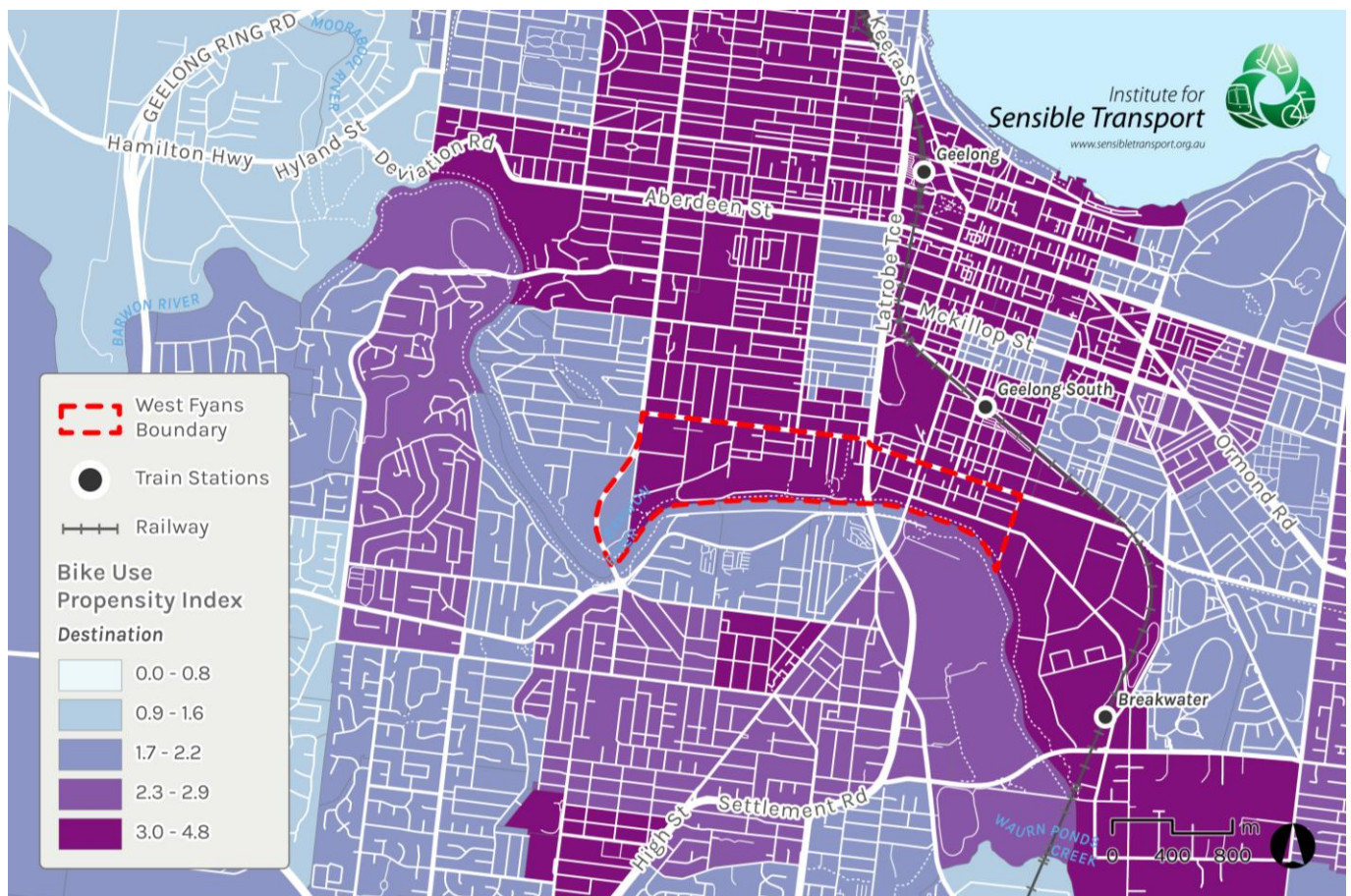


Figure 26 Bike and Micromobility Use Propensity Index - Destination

Source: Institute for Sensible Transport using ABS Census

Future

Utilising a *Bike Use Propensity Index Forecast* tool that was developed for Infrastructure Victoria, forecasted latent demand for cycling has been undertaken to 2036. This considers how propensity is likely to change in the precinct.

The following origin factors have been incorporated:

- Residential population density of people per hectare from *Small Area Land Use Projections* (SALUP) data, projected into future
- Density of young people aged 15 to 35 per hectare from SALUP data, projected into future
- Number of households with zero or one car per hectare data from ABS data, not projected into future
- Number of people riding to work per hectare from ABS data, not projected into future

The following destination factors have been incorporated:

- Number of people working per hectare from SALUP data, projected into future
- Number of short car trips – 5km and under – per hectare from VITM data, projected into future
- Number of people riding to work per hectare from ABS data, not projected into future

The output is shown in Figure 27. Future bike use propensity will be highest in the eastern portion of the study area and the surrounding suburb of Geelong South and in Belmont on the south side of the Barwon River.

When compared with current propensity, Newtown is lower. This is likely due to how the tool assumes the population will change in Newtown compared to the other areas in future. This tool would also not fully consider the likely faster redevelopment and population change in the study area. It also forecasts at an SA2 level reflecting the likely stable urban form and low development of the remainder of the Newtown SA2.

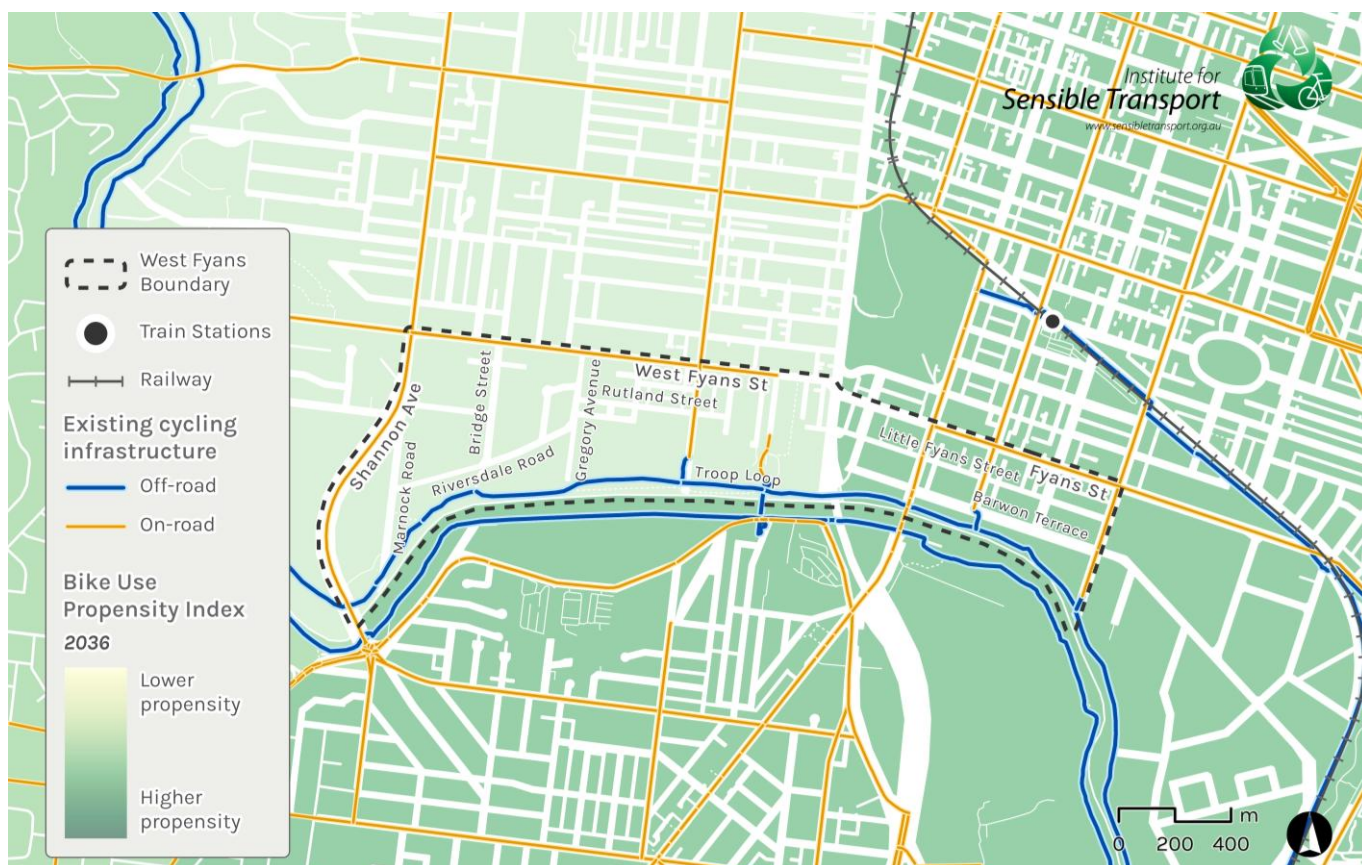


Figure 27 Bike and Micromobility Propensity Index - Future

Source: Institute for Sensible Transport using Infrastructure Victoria Bike Use Propensity Index Forecast 2021 - 2036

3.2.2 Opportunities and constraints for the revised structure plan

The study area sits within areas of high cycling propensity and is already well serviced by existing cycling infrastructure, albeit of varying quality.

Recognising that infrastructure that is suitable for all-ages and ability to cycle will be an important component of transitioning the precinct to a mix-used area. As shown in Figure 28, different types of cycling infrastructure provide varying levels of comfort and perceived safety. This will become increasingly important as residential activity within the area grows, resulting in more trips being undertaken by people who may be less confident riding, including women, children and older adults.

A revised Structure Plan should focus on the following improvements:

- Shared path along the Barwon River to improve east-west connections with improved linkages to Belmont over the river

- Protected or separated infrastructure on Pakington Street that connects to the shopping strip to support local trips
- Protected or separated infrastructure on Yarra Street that connects to the CBD
- Protected or separated infrastructure on Swanston Street connecting to the protected bike lanes north of the Bellarine Highway that link to the Geelong Waterfront.

Maintaining the existing Public Acquisition Overlay mid-block from Fernleigh St to Bloomsbury Street, and extent to Anne St with a view to building an east-west connectors through the precinct with a crossing over Latrobe Boulevard is also important and supported in the *Urban Design Package*.

Ensuring there is adequate provision of both on-street and off-street bicycle parking is a key focus of this Report. Additional on-street bicycle parking should be delivered as part of future urban design and streetscape upgrades. Bicycle parking should be provided frequently within high-demand areas and at key destinations, with careful consideration

given to accessibility, convenience and overall user experience.

Ensuring adequate provision of both on-street and off-street bicycle parking is also a key focus of this report.

Off-street bicycle parking is currently managed under the requirements of Clause 52.34. In many cases, the current requirements may be insufficient to support a substantial increase in cycling mode share. Recommended amendments to these requirements are discussed in Section 4.4.2, 5 and 5.3 and other considerations outlined in Section 6.4., before being summarised in Section 9.4.2.



Figure 28 Cycling treatments and level of comfort

Source: Institute for Sensible Transport

4. Parking demand and scenario testing



This section provides an assessment of Victorian data (Census and VISTA), to identify real world bicycle and car ownership rates in areas comparable to the future of the West Fyans/Fyans Street precinct.

An assessment of anticipated parking demand associated with the planned future intensification of land uses in the area has been undertaken. This assessment used the information in the *West Fyans 2024 Population, Housing and Economic Update* and other information provided by Council. The following scenarios and assumptions underpin this assessment:

- There are 4,400 current jobs in the precinct and 189 dwellings with 215 residents. The existing dwelling number is rounded up to 200 in all subsequent calculations in line with the methodology of the *West Fyans 2024 Population, Housing and Economic Update*.
- There are three future growth scenarios (Three Original Scenarios) for the precinct in 2041:
 - Steady renewal +700 jobs, +1,250 people and +500 dwellings
 - Intensified renewal +900 jobs, +1600 people and +650 dwellings
 - Inner urban bounce back +900 jobs, +2,000 people and +800 dwellings
- Council envisages a fourth possible future growth scenario (2026 Revision) of 2,500 people – due to proposed zoning changes and increased developer interest. This equates to 1,250 dwellings (+1,050) with an assumed household size of 2 people per dwelling (consistent with other scenarios).
- Mixed use zoned land of 27.9 hectares under the existing Planning Scheme; and 35.7 hectares under an expanded rezoning proposal. Residential growth zone land is 2.5 hectares under the existing Planning Scheme and 7.8 hectares under an expanded rezoning proposal.
- Information contained in the *Fyans/West Fyans Precinct Structure Plan Parking and Traffic Study* has also been utilised, which included Council-provided data on the estimated change in

commercial/industrial floor area west of Latrobe Terrace. This Study noted:

- The existing commercial/industrial floor area is estimated at 130,627m²
- Commercial/industrial floor area is estimated to reduce to 80,841m² in 2039

In addition, it is assumed that car parking requirements based on 52.06 are applicable to the following precinct area:

- Category 1 PTAL: 60% or 19.78 hectares; and
- Category 2 PTAL: 40% or 13.19 hectares.

4.1 Car use and car ownership: implications for parking requirements

It is important to distinguish between car use and car ownership. A family may own four bikes but only ride once a year. They have the same bicycle parking requirement as a family that rides every day. Similarly, even if residents living in the precinct have 10% less car use than other locations, they may well have the same level of car ownership (and therefore parking needs).

For non-residential parking, demand is less fixed as a workplace may have a proportion of employees non-attending work or working from home on any given day.

4.2 Census insights on bicycle and car parking requirements for dwellings

Analysis of Census data reveals the relationship between dwelling density and car ownership, as shown in Figure 29 for SA2s of Victoria.

There is a statistically significant relationship between these dwelling density and car ownership (p value <0.001). This means that dwellings per hectare is an indicator of vehicles per dwelling. However, this is likely acting as a surrogate for many other determinants of travel choice, including a density of destinations. The number of vehicles per dwelling also changes based on dwelling type, with flats and apartments generally having fewer motor vehicles than separated and semi-detached housing, as shown in Figure 30 and Figure 31.

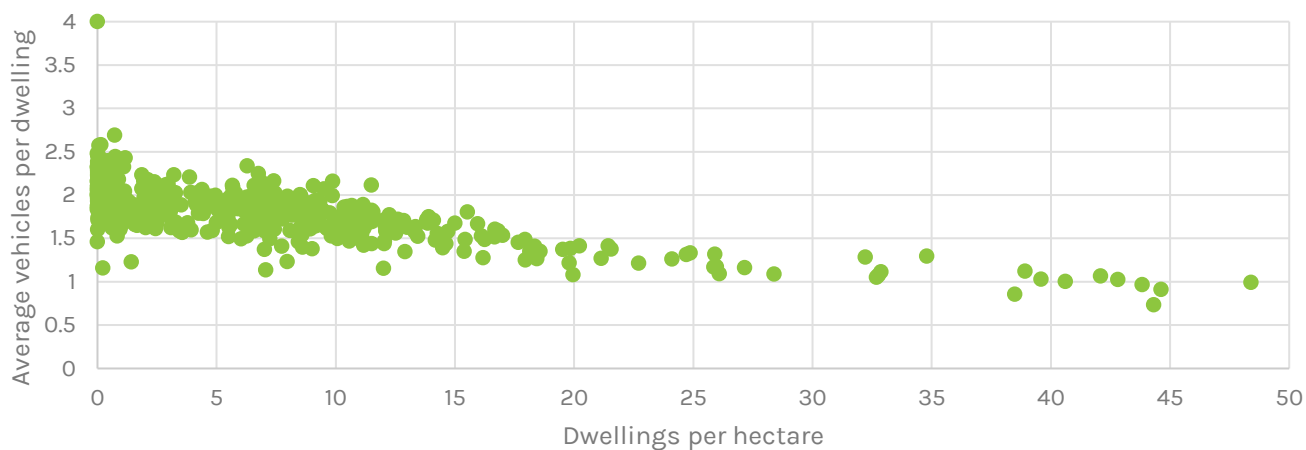


Figure 29 Average number of vehicles per dwelling and dwelling density for SA2s of Victoria

Note: Excludes nine SA2s with dwelling densities above 50.

Source: ABS

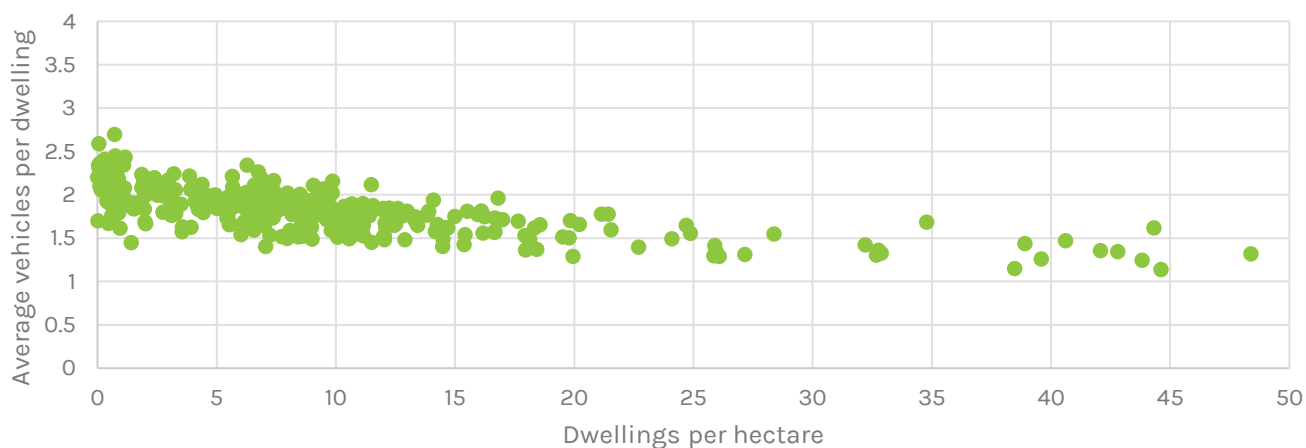


Figure 30 Average number of vehicles per separated or semi-detached dwellings and dwelling density for SA2s of Victoria

Note: Excludes nine SA2s with dwelling densities above 50.

Source: ABS

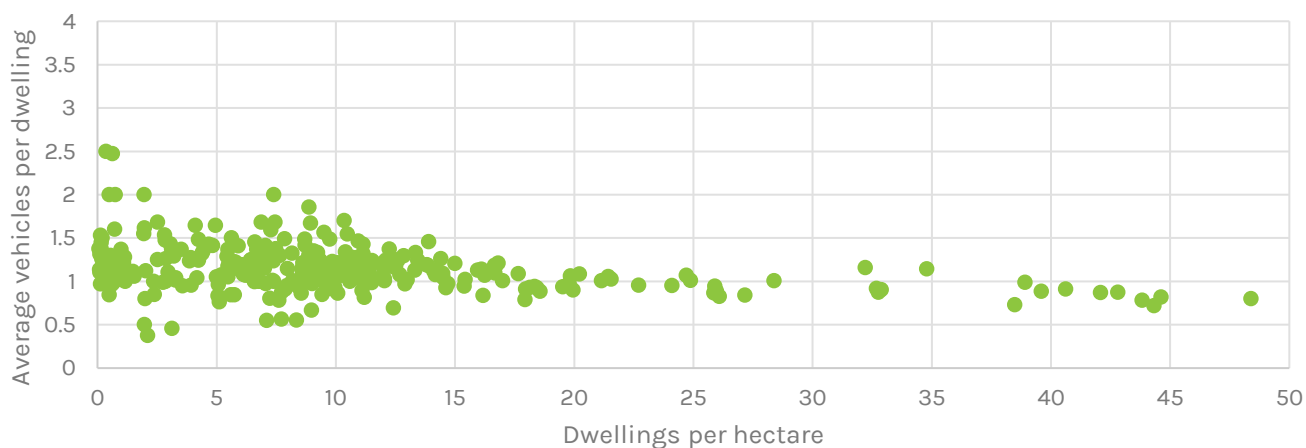


Figure 31 Average number of vehicles per flat or apartment and dwelling density for SA2s of Victoria

Note: Excludes nine SA2s with dwelling densities above 50.

Source: ABS

The *West Fyans 2024 Population, Housing and Economic Update* proposes three development scenarios for the precinct ranging from an additional 500 to 800 dwellings, with a further Council-supplied scenario of 2,500 people, the equivalent of 1,050 extra dwellings.

Based on discussions with Council, it has been estimated that residential development relating to the above four scenarios will be, in hectares of Mixed Use Zone lane:

- Three Original Scenarios: 27.9 hectares;
- 2026 Revised estimation: 35.7 hectares.

Four development scenarios envision 700 to 1,250 dwellings across 27.9 to 35.7 hectares.

This analysis focuses on mixed use land as this will attract the highest densities and see the greatest change in urban form. Calculating dwelling density indicates an average of between **25.1 to 35.8** dwellings per hectares depending on the development scenario, shown in Table 7. Across the entire precinct area of 118 hectares, this would result in results in an average of between **5.9 to 10.6** dwellings per hectare, shown in Table 7.

Table 7 Dwelling density per scenario

Scenario	Dwelling density in residentially zoned land	Overall dwelling density
Steady renewal	25.1	5.9
Intensified renewal	30.5	7.2
Inner urban bounce back	35.8	8.5
2026 Revision	35.0	10.6

This total precinct area density is comparable to current detached housing dominant suburbs of Geelong, Newtown and outer growth area suburbs of Melbourne. Noting the desired medium to high density outcome for the precinct and that the residential area will be concentrated and adjacent

to established urban areas, the dwelling density calculated on the developable mixed use land rather than the entire area is more appropriate. The remainder of the precinct includes commercial and industrial zoned land, with the balance open space.

The dwelling density and car ownership rates of suburbs and locations in City of Greater Geelong with a similar urban form to the precinct are shown in Table 8. Locations chosen contain medium density developments, and mixed-use areas of residential, industrial, retail, office and hospitality in the inner suburbs of Geelong.

In these comparable areas, car ownership ranges from 1.4 to 1.7 cars per dwelling, with an average of 1.6 cars per dwelling. Separated housing and semi-detached housing average 1.6 cars per dwelling, while flats and apartments average 1.2. There is higher variability for car ownership for flats and apartments which is highest for East Geelong and South Geelong with an average of 2 and lowest in Geelong West with an average of 1.

There are 15 SA2s in Victoria which have a dwelling density between 25 and 40 dwellings per hectare. This density is similar to the future dwelling density for West Fyans/Fyans Street under the development scenarios. These SA2s are shown in Table 9, along with the average number of vehicles per dwelling, segmented by dwelling type. This shows a range from 0.9 vehicles per dwelling in North Melbourne to 1.3 in Abbotsford, Elwood, Fitzroy North and Kensington. Most of these suburbs are on the fringe of Melbourne's CDB and have a mixture of higher density, industrial, commercial and open space. They also have good access to shops and services, being in such close proximity to Melbourne CBD. This is a comparable context to what is planned in the West Fyans/Fyans Street precinct, given the internal aspirations, and location being close to central Geelong.

As there is likely to be some variation in the average number of cars per dwelling based on dwelling type and size, data for 15 SA2s is shown in Table 10. All the SA2s have less than one car per one bedroom flat. The average number of cars for three-bedroom apartments dwellings exceed what is required under Clause 52.06 in 75% of the SA2s considered, highlighting where parking demand may exceed expected supply.

Table 8 Vehicles per dwelling of comparator suburbs in the City of Greater Geelong

Suburb or location	Part of Greater Geelong	Dwellings	Hectares	Dwellings per hectare	Average vehicles per dwelling		
					All dwellings	Separated and semi-detached	Flats and apartments
Belmont	Urban	6,948	899.8	7.7	1.6	1.6	1.0
East Geelong	Urban	1,836	337.5	5.4	1.7	1.7	2.0
Geelong	Urban	3,266	331.1	9.9	1.4	1.6	1.1
Geelong West	Urban	3,622	235.3	15.4	1.5	1.6	1.0
Newtown	Urban	4,518	580.8	7.8	1.7	1.7	1.1
South Geelong	Urban	486	242.3	2.0	1.6	1.6	2.0

Source: ABS

Table 9 Vehicles per dwelling of SA2s with a dwelling density between 40 and 25 dwellings per hectare

SA2	Dwellings	Hectares	Dwellings per hectare	Average vehicles per dwelling		
				All dwellings	Separated and semi-detached	Flats and apartments
South Melbourne	7,482	189	39.6	1.0	1.3	0.8
St Kilda East	9,393	241.4	38.9	1.1	1.4	1.0
North Melbourne	9,333	242.5	38.5	0.9	1.1	0.7
Elwood	8,883	255.3	34.8	1.3	1.7	1.1
Brunswick East	7,129	216.8	32.9	1.1	1.3	0.9
Flemington	5,180	158.1	32.8	1.1	1.4	0.9
Abbotsford	5,689	174.1	32.7	1.3	1.4	1.2
Port Melbourne	8,986	278.9	32.7	1.1	1.3	0.9
South Yarra - West	4,266	150.3	28.4	1.2	1.3	0.8
Brunswick - North	6,543	240.9	27.2	1.1	1.3	0.8
Brunswick - South	7,133	273.3	26.1	1.2	1.3	0.9
Fitzroy North	6,505	250.5	26.0	1.3	1.4	0.9
Seddon - Kingsville	4,352	168	25.9	1.2	1.3	0.9
Kensington (Vic.)	5,552	214.7	25.9	1.3	1.6	1.0
Carnegie	9,464	380.5	24.9	1.0	1.3	0.9

Source: ABS

Table 10 Vehicles per dwelling type and bedroom count of SA2s with a dwelling density between 40 and 25 dwellings per hectare

SA2	Flat and apartment – average vehicles by number of bedrooms				Separated and semi-detached house – average vehicles by number of bedrooms		
	Studio	One bed	Two Bed	Three Bed	One bed	Two Bed	Three Bed
South Melbourne	0.3	0.7	0.9	1.2	0.7	1.1	1.4
St Kilda East	0.6	0.8	1.1	1.3	0.9	1.2	1.5
North Melbourne	0.2	0.5	0.8	1.1	0.7	1.0	1.3
Elwood	0.7	0.9	1.2	1.5	0.8	1.4	1.7
Brunswick East	0.2	0.8	1.0	1.4	0.8	1.1	1.4
Flemington	0.2	0.7	0.9	1.2	0.2	0.7	0.9
Abbotsford	0.6	0.7	1.0	1.4	0.9	1.1	1.4
Port Melbourne	0.3	0.9	1.2	1.5	0.8	1.2	1.5
South Yarra - West	0.5	0.7	1.0	1.5	0.9	1.2	1.5
Brunswick - North	0.2	0.7	0.9	1.5	0.6	1.0	1.4
Brunswick - South	0.2	0.7	0.9	1.1	0.8	1.1	1.4
Fitzroy North	0.3	0.6	1.0	1.3	0.7	1.1	1.4
Seddon - Kingsville	0.2	0.8	1.0	1.0	0.8	1.2	1.5
Kensington (Vic.)	0.3	0.6	1.0	1.2	0.7	1.1	1.4
Carnegie	0.3	0.8	1.1	1.4	0.9	1.2	1.6

Source: ABS

Development in the West Fyans/Fyans Street precinct is benchmarked against this Census analysis of SA2s. Under this benchmark, there would be approximately 1.1 cars per dwelling in the West Fyans/Fyans Street precinct. However, this is based on all dwelling types, while the development in the precinct is likely to be largely flats and apartments. Benchmarking against flats and apartments would result in an estimated 0.9 cars per dwellings for flats and apartments. As such, it is likely that there will be 0.9 cars per dwelling in the West Fyans/Fyans Street precinct.

This estimated ratio of cars per dwelling is well below the 1 or 1.2 minimum parking requirement under updated Clause 52.06 rates which apply to the study area, meaning there is a potential oversupply of parking being required.

Based on Census data, it is likely that there will be approximately 0.9 cars per dwelling in the West Fyans/Fyans Street precinct.

4.3 What does VISTA data tell us about bicycle and car ownership?

Like the ABS Census, the Victorian Integrated Survey of Travel and Activity (VISTA) contains data about the number of vehicles per household. VISTA also contains data about the number of bikes per household in Melbourne and Geelong. VISTA data

reveals a similar trend to ABS Census data, with increased dwelling density leading to a generally decreased level of car ownership, as shown in Figure 32.

VISTA data also contains information about bike ownership, as shown in Figure 33. However, the relationship between bike ownership and density shows only weak significance (p value 0.06).

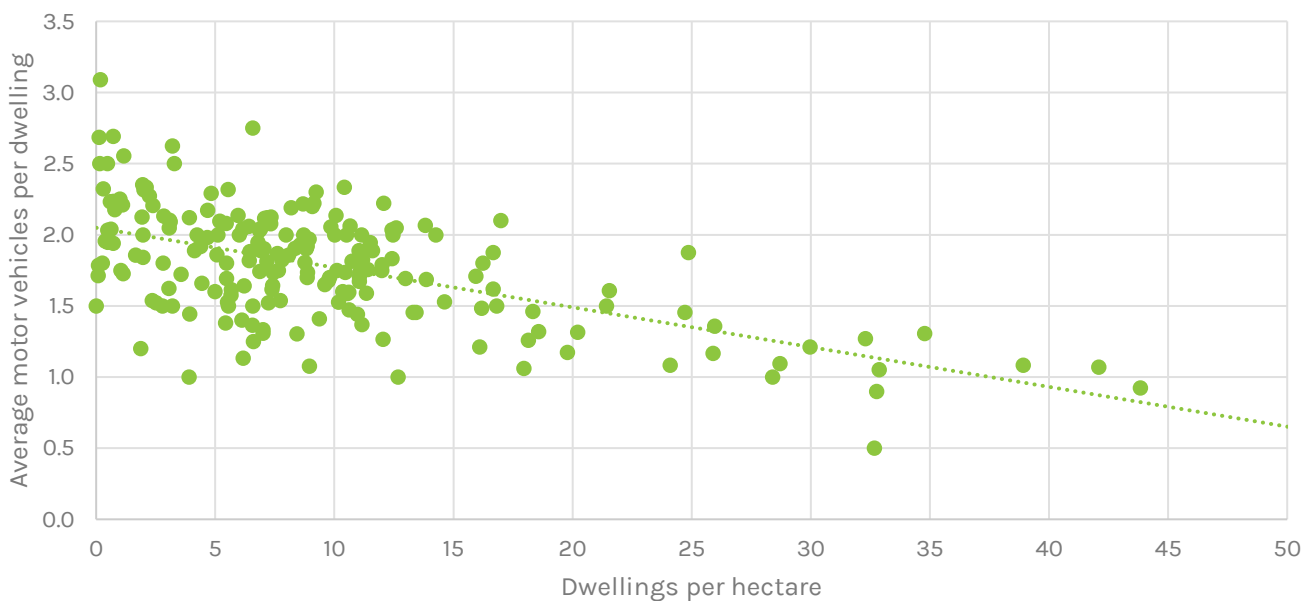


Figure 32 Average number of vehicles per dwelling and dwelling density for SA2s of Melbourne and Geelong

Source: VISTA and ABS

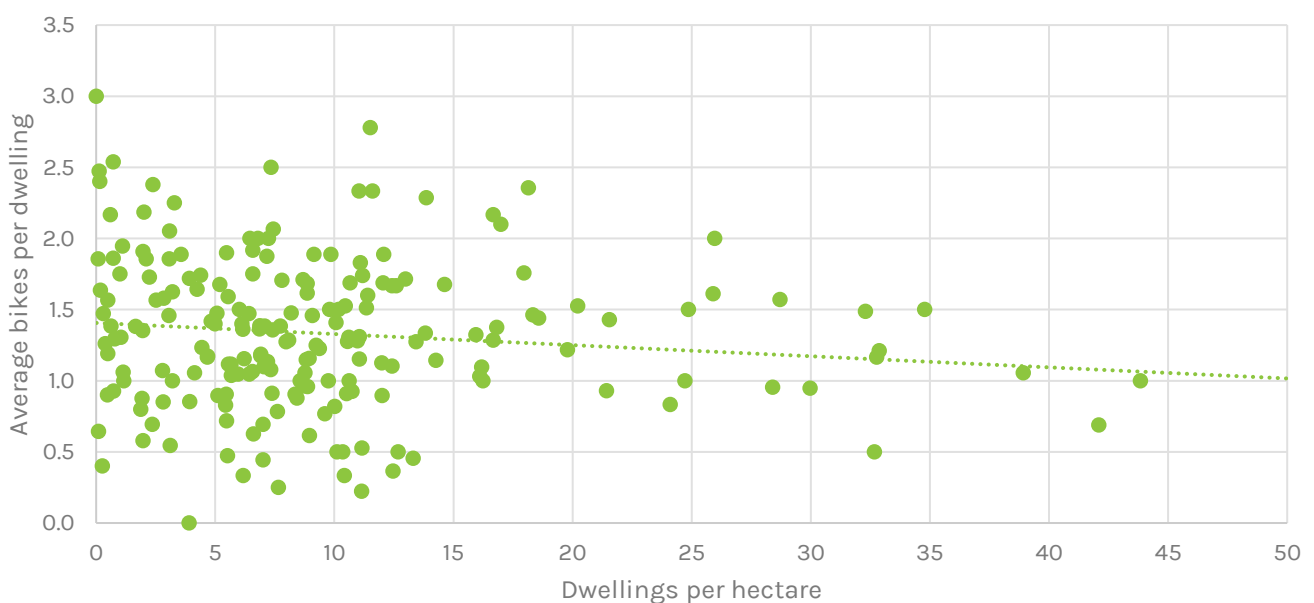


Figure 33 Average number of bikes per dwelling and dwelling density for SA2s of Melbourne and Geelong

Source: VISTA and ABS

4.4 Estimating vehicle ownership rates in West Fyans/Fyans Street

Using ABS data and VISTA supplied data for vehicle ownership and considering the relationship between dwelling density and vehicle ownership, we have determined the likely number of vehicles and parking spaces required in the precinct in 2041 against the four development scenarios (see Table 11). The average number of vehicles ranges from 1.4 vehicles per dwelling under the 'Steady renewal' scenario where development is slower and density remains lower, to 1.1 for the 'Inner urban bounce back' where total dwellings are approximately 40% higher than in the 'Steady renewal' scenario in 2041.

We have then compared the parking space demand to the clause 52.06 requirements assuming 60/40 split in developable land between Category 1 and Category 2 parking space requirements. This finds a shortfall of 196 parking spaces under the 'Steady renewal' scenario and a surplus of 20 spaces under the 'Inner urban bounce back'. The 2026 Revised scenario sees the highest number of dwellings, however due to expanded rezoning of land to mixed use, a slightly lower dwelling density to that for the 'inner urban bounce back' scenario.

The average number of vehicles is presented as a range as, like the SA2s analysed to determine the trend between vehicle ownership and dwelling density, the actual number of vehicles owned depends on various factors including socio-economic factors, the site context and policy

settings in future. Better provision of local amenities and alternative travel options support lower demand for private vehicles, but the converse is also true.

The likely parking demand of 1.1 to 1.4 determined from VISTA vehicle ownership rates and the four development scenarios, compares to the ABS likely parking demand of 1.1 for all dwellings and 0.9 for flat and apartments. Council has advised that, considering recent development applications, it is likely that a higher population and therefore density outcome is likely for the study area, which indicates a vehicle ownership rate of 1.1 or less. These rates exceed the requirements of 1.2 parking spaces per dwelling for Category 1 under clause 52.06. This likely vehicle ownership rate also aligns with the objective of the future West Fyans/Fyans Street study area to transition towards increased active and sustainable transport mode share.

Parking demand above 1.1, for example for three-bedroom apartments where ABS data indicates an average requirement of 1.3 parking spaces, can be addressed through developers providing additional parking as there are no parking maximums applicable in the precinct study under clause 52.06.

Parking space demand can also be managed through provision of the options assessed in Section 6 such as precinct parking or unbundled parking or travel demand management to reduce parking demand. This Section also notes the impacts associated with overprovision of parking and the importance of providing parking at close to the expected demand.

Table 11 Residential parking demand of total dwellings in 2041 focused on mixed-use developable areas of the precinct

Scenario	Total dwellings	Dwelling density	Average number of vehicles per dwelling	Parking space demand	52.06 Requirements	Difference
Steady renewal	700	25.1	1.4 (0.9 to 1.4)	980 (630 to 980)	784	-196 (+152 to -196)
Intensified renewal	850	30.5	1.2 (0.9 to 1.4)	1,020 (765 to 1,190)	952	-68 (+187 to -238)
Inner urban bounce back	1,000	35.8	1.1 (0.9 to 1.4)	1,100 (900 to 1,400)	1,108	+20 (+220 to -280)
2026 Revised scenario	1,250	35.0	1.2 (0.9 to 1.4)	1,500 (1,125 to 1,750)	1,400	-100 (+275 to -350)

4.4.1 VISTA Trip Destinations data for non-residential parking demand

VISTA can also be used to determine the future vehicle parking demand in the study area for non-residential trip destinations based on how similar trips have been undertaken elsewhere. VISTA data for non-residential trips in inner, middle and outer Melbourne Local Government Areas has been used to determine what future parking demand could look like and then consider how this aligns to strategic ambitions for the study area.

Table 12 outlines the proportion of trips undertaken by private vehicle for trip purposes including to the workplace, shops, place of personal business, social place and recreational places. There is a substantial difference in the proportion of trips by vehicle driver between an inner and outer urban context, for example 40.7% compared to 86.6% for workplace trips. This provides a clear justification to aim for an inner urban type outcome for the study area that supports alternative transport options and reduces parking demand.

Table 13 applies the vehicle driver rates in Table 12 to the employment projections of the study area. This also shows the workplace parking demand for the different urban contexts (inner, middle and outer Melbourne). Additional parking demand refers to parking for additional jobs in this precinct noting that there were estimated to be 4,400 jobs in the precinct in 2023. We have assumed each job will be full-time equivalent and requires a carpark.

It is worth noting that workplace attendance and work from home rates mean that not all employees are at work every day. ABS Census data indicates that 11% did not go to work on Census day in Greater Geelong in 2016 and 12% in 2021. Similarly, 4% worked from home on Census day in 2016 which increased to 19% in 2021 due to COVID-19. We have assumed an 80% workplace attendance in scenario testing for total jobs in Table 13.

Table 13 reveals that there is a more than doubling in the number of additional carparks required in a workplace setting between an inner and outer urban car parking scenario. Therefore, it is advantageous to aim for a more inner-urban type development approach and transport system for this precinct to limit the additional parking required. For the purposes of scenario testing, we

have assumed that a middle Melbourne is the mode share expected to be seen in the study area in future.

Clause 52.06 outlines car parking requirements for 'Industry - other than specified in this table' and 'Office - other than specified in this table' on a per 100 square metre of floor area basis. Utilising this and Council's estimated reduction in floor space for commercial and industrial land uses (from 130,627m² to 80,841m²) for the area west of Latrobe Terrace in 2039, we have determined the total amount of parking required (Table 14). We have also calculated the difference between the parking required for clause 52.06 Category 1 and 2 and the likely demand in Table 13 for both the 'Steady renewal' and the 'Intensified renewal and Inner urban bounce back' (which have the same employment prediction) scenarios. This finds a future shortfall of between 550 and 3,188 parking spaces dependent on the scenario and whether Category 1 or 2 is being considered.

If future demand is more aligned to inner urban type parking demand, then there is a surplus of parking under the three scenarios if Category 1 parking rates are considered. If Category 2 rates are considered, there is a shortfall for all scenarios due to the large step-down in the rate. Lower Category 2 rates largely apply in the Commercial 2 and Mixed Use zoned land east of Latrobe Street, where on-street parking is generally considered to be in balance and with better access to South Geelong Station and the Moorabool Street separated bikeway. Small areas of Commercial 2 and Mixed Use zoned land along West Fyans Street, with its higher bus access, are also within Category 2. As previously discussed, developers can readily include parking above the minimum rates. Development with adaptive re-use of heritage building fabric with low or no parking is possible due to Clause 52.06-3, however.

These findings compare against 1,203 compliant on-street parking bays in the west of Latrobe Terrace. The surplus and shortfall outcomes highlight the impact of varying approaches for the study area, and also the importance of careful management of the on-street parking supply. Parking space demand can also be managed through provision of the options assessed in Section 6 such as precinct parking and travel demand management to reduce parking demand.

Table 12 Proportion of trips by vehicle driver in various urban contexts based on VISTA

Trip purpose	Proportion of trips by vehicle driver - Inner	Proportion of trips by vehicle driver - middle	Proportion of trips by vehicle driver - Outer
Workplace	40.7%	82.8%	86.6%
Shops	38%	59.7%	62.2%
Place of Personal Business	46%	60.8%	61.2%
Social Place	22.8%	45.7%	49.8%

Table 13 Workplace parking demand for the development scenarios based on different contexts

Scenario	Total jobs (attending work per day)	Parking demand scenario	Additional employee parking demand	Total employee parking demand
Steady renewal	5,100 (80% - 4,080)	Inner	285	1,659
		Middle	580	3,379
		Outer	607	3,532
Intensified renewal and Inner urban bounce back	5,300 (80% - 4,480)	Inner	366	1,724
		Middle	745	3,512
		Outer	779	3,670

Note: Middle, shown in bold, is the mode share expected to be seen in the study area in future and used in Table 14

Table 14 Clause 52.06 outlines car parking requirements for non-residential land uses

Land use	Measure	Parking required under 52.06		Total amount of parking required		Difference from table 13 (Steady - Intensified)	
		Category 1 (minimum)	Category 2 (minimum)	Category 1 (minimum)	Category 2 (minimum)	Category 1 (minimum)	Category 2 (minimum)
Industry - other than specified in this table	To each 100 square metres of leasable floor area	2.9	0.4	2,344	323	-1,035 to -1,167	-3,056 to -3,188
Office - other than specified in this table	To each 100 square metres of net floor area	3.5	0.45	2,829	364	-550 to -682	-3,015 to -3,148

Note: Estimates are based on the total amount of floor space of 80,841 square metres projected in 2039 in the area west of Latrobe Terrace in *West Fyans/Fyans Street Precinct Structure Plan Parking and Traffic Study*.

4.4.2 VISTA Bike Parking

VISTA data also shows dwelling type, allowing for an analysis of bike ownership rates by dwelling type, shown in Figure 34 and Figure 35. This shows that flats and apartments have consistently lower rates of bike ownership compared to separated housing. For separated housing, there is a median of 1.5 bikes per dwelling, while this decreases to a median of 0.5 for flats and apartments. For one third of SA2s there are an average of zero bikes per apartment.

The average number of bikes per flat or apartment appears to be lower in SA2s with higher dwelling density. This is a counterintuitive finding, as cycling participation increases as dwelling density increases. While this could be in part an artefact of low response rates from some areas, it is also likely

to reflect the difficulties which apartment dwellers may face in finding suitable bike storage, compared with those living in separated housing. Therefore, it is likely that low cycling parking rates of VPP 52.34 are acting to restrain bicycle ownership and therefore cycling participation, in direct contradiction of the clause's purpose 'to encourage cycling as a mode of transport'.

It is likely that low cycling parking rates of VPP 52.34 are acting to restrain bicycle ownership and therefore cycling participation.

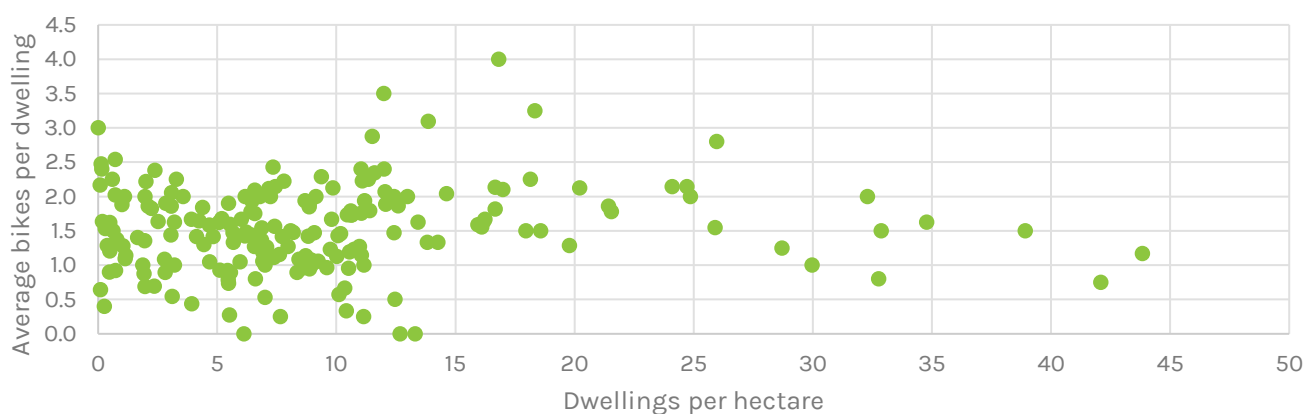


Figure 34 Average number of bikes per separated dwelling and dwelling density for SA2s of Melbourne and Geelong

Source: VISTA and ABS

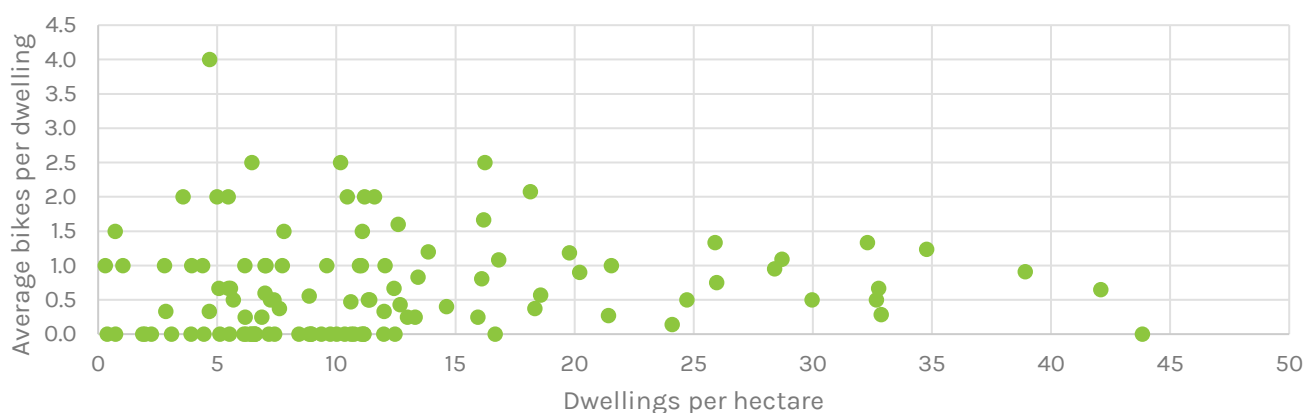
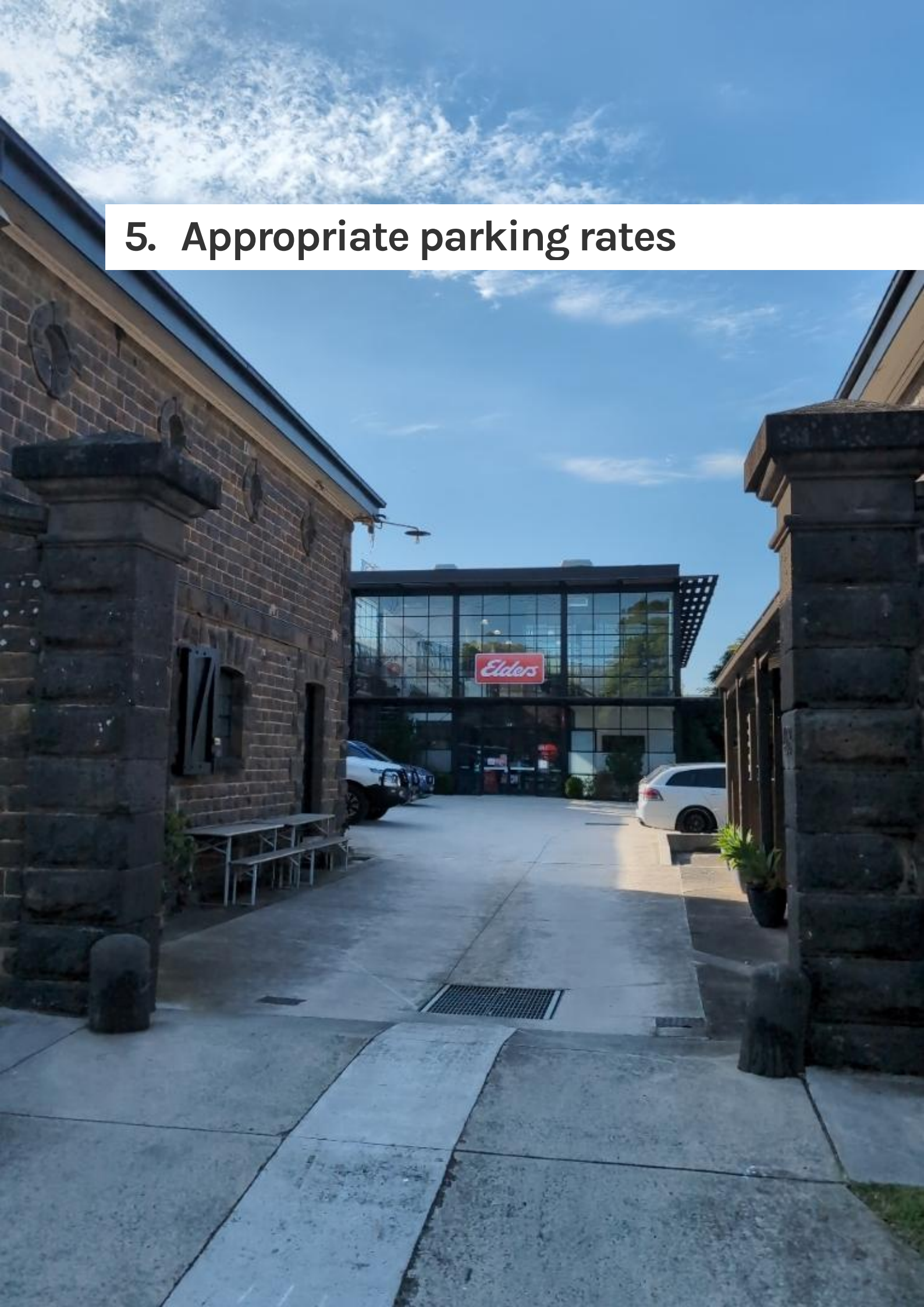


Figure 35 Average number of bikes per flat or apartment dwelling and dwelling density for SA2s of Melbourne and Geelong

Source: VISTA and ABS

5. Appropriate parking rates



This section outlines what car and bike parking rates should be in West Fyans/Fyans Street, based on benchmarking and best practice examples.

5.1 Residential car parking

Flats and apartments will be the predominant housing typology in future development within the West Fyans/Fyans Street precinct.

5.1.1 Flats and apartments

Development within the precinct is envisaged to contain medium to high-density dwellings in a mixed-use context. For these dwelling types, based on analysis of Census and VISTA data, there are likely to be an average 0.9 to 1.2 vehicles per dwelling; benchmarked against areas of Melbourne with a dwelling density and locational context comparable to the precinct.

There will be variation based on bedroom count, however, only in the case of three-bedroom apartments dwellings does the expected vehicles per dwellings exceed what is required under Clause 52.06.

It is appropriate to be conservative with minimum parking requirements for apartments of all sizes to avoid significant oversupply of parking in new developments. It is recommended that a minimum of 0.9 car parking spaces per dwelling be applied to the precinct. This is in line with the estimated amount of parking rate shown in Table 15 and with no maximum specified, allowing the market to provide above this rate.

Table 15 Likely car ownership for flats and apartment housing in study area

Dwelling type	Average cars per household
All dwellings	0.9 (ABS), 1.1-1.2 (VISTA)
Flat and apartments	1.1 (ABS)

Recommendation

- That a minimum of no more than 0.9 car parking spaces per dwelling be required.

Implementation mechanism

- Parking Overlay.

5.2 Residential bike parking

Access to a bicycle is a prerequisite to cycling with however, those living in flats require dedicated parking spaces to be provided.

As discussed in Section 2.1.2.4, current bicycle facility requirements for bicycle parking in Clause 52.34 fail to support all residents of apartments to own a bicycle. Clause 52.34 only requires bicycle parking in apartment buildings over four floors. Further, the required amount of bicycle parking only provides one space for every 7.5 residents. This is likely the explanation for why around one third of SA2s in Melbourne have an average of zero bikes per apartment dwelling (see Section 4.4.20).

To provide all residents the choice to ride a bicycle, the amount of bicycle parking required needs to be increased. Requiring one bicycle parking space per bedroom for all apartment dwellings would provide an appropriate amount of parking. This would allow roughly one bike per person, which is the observed bicycle ownership rate among those living separated housing in areas with higher cycling participation such as: Clifton Hill, Fitzroy North, South Yarra, Toorak, Brunswick, Ascot Vale, and St Kilda, which all have above 0.8 bikes per resident.

Visitor parking is best provided on the street near the main entrances of multi-unit dwellings (as occurs in shopping strips in inner Melbourne and Geelong).

Recommendation

- That 1 bicycle parking space per bedroom be required.

Implementation mechanism

- Schedule to Zone. See Melbourne Planning Scheme SUZ7 (Schedule 7 to Clause 37.01 Special Use Zone), Section 4, Table 2 for an example.

Design requirements

- Secure location, shelter from elements, within building and close to main entrance.
- Minimum of 80% located on ground (e.g., no more than 20% being wall mounted).
- At least 20% of ground parking locations to accommodate cargo bicycles (minimum dimension of 265cm long and 65cm wide).

5.3 Non-residential car parking

The West Fyans/Fyans Street PSP 2009 and subsequent review documentation highlights the importance of comprehensive, quality, public transport network to support future development of this precinct. This is further supported by our analysis. A significant portion of the site is Category 2 under the revised car parking requirements Clause 52.06, meaning transport accessibility is higher and a lower minimum parking rate is in effect.

Given the ultimate goal for the precinct is one with lower private vehicle mode share and increased active and sustainable transport mode share, the current Category 1 and 2 parking rates under Clause 52.06 are appropriate across the relevant areas for all non-residential uses. This aligns with current real-world parking demand similar to inner-urban areas of Melbourne. This approach still provides parking while allowing flexibility for the market in determining if more parking is required as Category 1 and 2 in Clause 52.06 have no parking maximum specified. As has been demonstrated around the world, the market will determine the appropriate amount of parking required and then provide that within development applications.

Some areas of the precinct have similarities to areas in inner Melbourne or Geelong which were built in a pre-car era and place significant emphasis on protecting a finer grain sense of place, above the provision of parking. For this reason, Clause 52.06-3 specifically grandfathers reduced parking (with considerable leeway for changed uses) and should be maintained. These developments can make use of existing public transport access and on-street parking remaining after parking upgrades. This does, however, highlight the need to formalise and carefully manage on-street parking with appropriate timed and special-use restrictions.

Additional support to active transport should be provided and there is scope for off-street parking to be provided in a precinct parking approaches as outlined in Section 6.

Recommendation

- Implement timed restrictions on all on-street parking spaces to ensure they are used by visitors and not residents or employees.
- Schedule to the Parking Overlay for precinct parking provisions (Section 6.3.3) so that parking objectives, requirements, application requirements, decision guidelines, and design standards are required considerations in assessing future permits.

Implementation mechanism

- Parking Overstay Detector Systems be installed in high use areas; and
- Parking controls be effectively enforced across the entire study area.

5.4 Non-residential bike parking

Appropriate provision of bicycle facilities is required to support transport sustainability across the precinct. For many customer needs, bicycle parking is best provided on the street near the main entrances of shops (as occurs in shopping strips in inner Melbourne and Geelong). For smaller shops it is appropriate to permit development without any visitor/shopper/student bicycle parking.

It is recommended that all non-residential uses with a net floor area of 200 sqm or below be exempt from visitors/shopper/student parking, with Council assuming responsibility and providing on-street bicycle parking on footpaths of sufficient width. For all non-residential uses above 200 sqm rates under 52.34 should be required.

To meet the Greater Geelong's *Clever Creative Future* target of 50% journey to work mode share by public transport, walking, or cycling, a rate of one bicycle parking space for every 10 employees is appropriate for all non-residential land uses. This would allow for up to 10% of employees to bike to work.

Analysis of 2021 ABS Census data reveals that the highest cycling rates of around 10% journey to work

(at destination) are found in the inner northern suburbs of Melbourne. These areas have a total active and public transport mode share of approximately 50%, aligning with the above target.

Providing sufficient bicycle parking for 10% of all journeys to each workplace to be cycled will ensure those who wish to ride a bike to work will be able to.

Recommendation

- All non-residential uses with a net floor area of 200 sqm or below be exempt from visitors/shopper/student parking, with Council assuming responsibility
- Employee rate of 1 bicycle parking space to each increment listed in Table to Clause 52.35, above a minimum of 200 sqm.

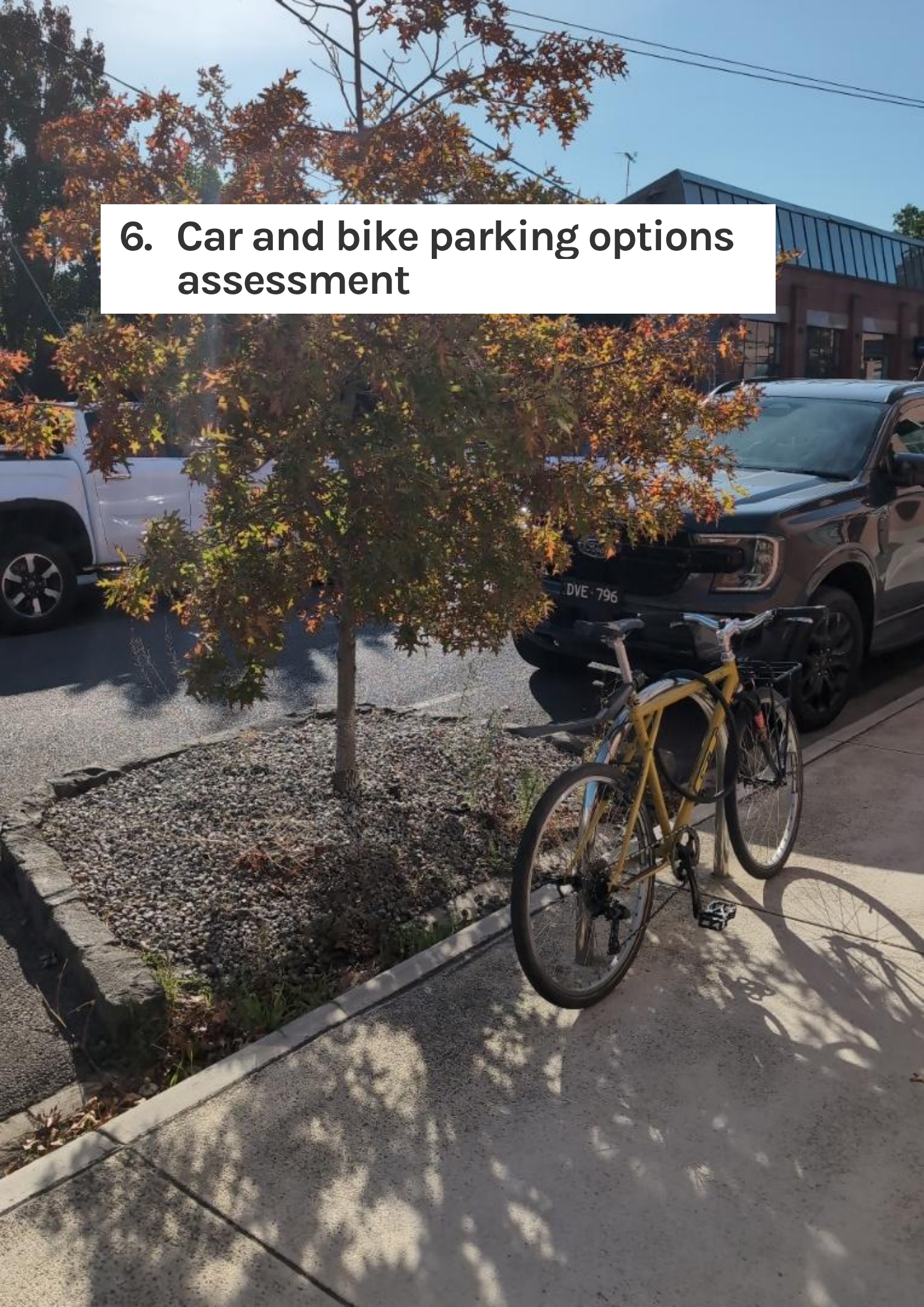
- Visitor/shopper/student rates aligned with Table 1 to Clause 52.34-5 Bicycle spaces, above a minimum of 200 sqm.

Implementation mechanism

To achieve a consistent level of bike parking on-street, Council should work towards providing:

- A minimum of two bike parking hoops every 100m of either side of the street in high pedestrian activity areas (e.g. smaller activity centres).
- A minimum of two bike parking hoops outside community facilities.
- A minimum of four bike parking hoops at tourist destinations.

6. Car and bike parking options assessment



Effective planning and management of car parking can make use of a variety of tools and approaches. This section considers several options including parking minimums, maximums and precinct parking and assesses what role they could play West Fyans/Fyans Street Precinct against a key aim of how to increase the use of non-car transport options and support sustainable development of the precinct.

Before assessing different approaches to spatially provide parking in a precinct, it is important to recognise that these can be different ways of providing the same parking requirements.

6.1 Planning Scheme changes

As outlined throughout this report, there have been recent changes to *Clause 52.06*, (VC277), which are designed to better align car parking requirements with public transport provision. Further details are discussed in Section 2.1.2.2 and 5. In areas of the West Fyans/Fyans Street precinct closer to existing transport options, this broadly means reduced minimum parking rates will apply.

Lower minimum parking rates are well supported. De Gruyter, Davies and Truong (2021) critiqued minimum residential parking requirements for their contribution to increased development cost, oversupplying parking and leading to increased car ownership and associated environmental concerns of GHG and particulate emissions. Additionally, they noted a lack of empirical justification for current parking requirements in high density and mixed-use areas.

The aforementioned study also compared off-street car parking requirements against residential parking demand and creating an index to support the establishment of suitable parking overlays. Using household car ownership data as a proxy for off-street residential car parking demand, the research accounted for factors such as average household size and income, employment status and sector, and ownership/rental status. It compared dwellings impacted by state-wide minimum car parking requirements pre-2025

changes (*Clause 52.06*), and those specified within various parking overlays (*Clause 45.09*).

The research found several important takeaways:

- Dwellings outside parking overlays (control sites) had lower car ownership rates than specified in state-wide parking requirements.
- Dwellings within parking overlays had lower car ownership rates than specified in their respective parking overlays.

The findings conclude that existing parking controls result in off-street car parking in excess of demand, and parking policy follows a ‘supply-side’ approach rather than satisfying demand. Yet in some areas, car parking demand was significantly below minimum requirements, particularly for apartments with three or more bedroom.

The findings of this research align with those in Section 5 and have informed it, with the proviso that the study was published before the recent changes to clause 52.06. The lowered minimum rates in 52.06 in areas of built environment, public transport, demand management and socio-demographic variables are well-aligned with the findings of this study in aiming to better align parking requirements with demand.

6.2 Bundled vs unbundled parking approach

Unbundled car parking is where parking spaces are sold or leased independently from an apartment. This compares to the standard approach where car parking is permanently bundled with an apartment. In both instances sufficient car parking would need to be provided in accordance with the planning scheme requirements or reduced if sufficiently justified.

Unbundled car parking provides greater transparency in the price of off-street car parking prices and allows resident choice to how much car parking they will need to rent/buy.

Unbundled car parking also provides the opportunity to buy/lease off-street car parking space/s as an added cost. Alternatively, excess car parking can be sold/leased to the open market. Unbundled car parking can also reduce overall rates of car ownership, increase public transport usage, and increase housing affordability. Figure 37 provides a simplified representation of bundled vs unbundled parking and how it can improve parking allocation in a mixed-use precinct.

In the unbundled car parking scenario, there are broader precinct benefits whereby surround on-street space is no longer used for on-street parking, either through well-managed on-street restrictions, or the space being used for other precinct benefits through a plan of the local Council or precinct. In this way we can see how unbundling could combine with a precinct parking approach.

It is critical to realise that this scenario is reliant on management of on-street parking, to reduce the overflow effect from residential and office building. Failure to do so would mean people would be very likely to park in unrestricted on-street car parking spaces rather than pay extra for parking within the building.

Unbundled car parking has been considered in the Greater Melbourne context through a recent study

by De Gruyter, Butt, and Davies (2024). This study investigated the potential for providing bundled and unbundled car parking in residential apartment buildings, including the perception of residents. The research found that 42% of apartment residents were receptive to unbundling off-street car parking. This compares with 35% of households which were found to have a mismatched parking supply in a bundled parking context (Figure 36). Households with higher car use were found to be less receptive to unbundled car parking, and heavier reliance on on-street parking.

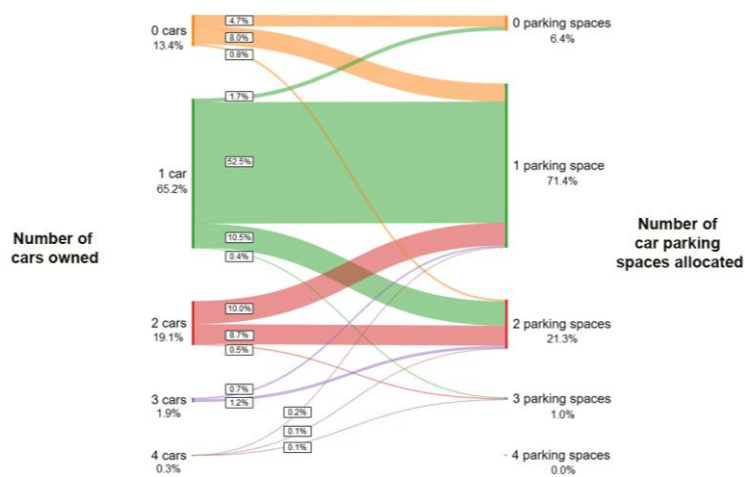


Figure 36 Sankey diagram comparing car ownership vs car parking space allocation

Source: De Gruyter, Butt, and Davies (2024)

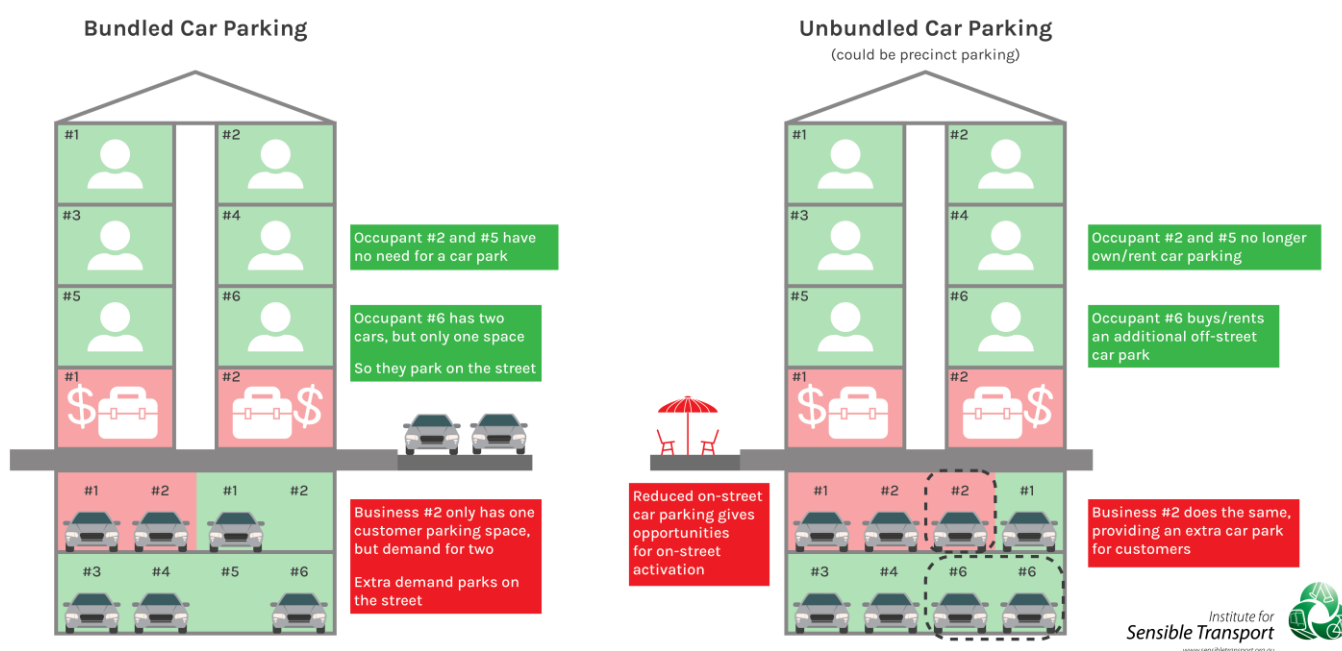


Figure 37 Simplified representation on bundled vs unbundled parking and how it can improve parking utilisation in a mixed-use precinct

Source: Institute for Sensible Transport

On risk associated with unbundled parking surrounds the 're-allocation' of parking by strata or body corporate management in the case of resale of an apartment. Build-to-rent is an emerging dwelling product that could be well suited to addressing issues of parking ownership, where a professional building manager can facilitate distribution and leasing of car parking.

Facilitating new residential or residential mixed-use developments in the West Fyans/Fyans Street Precinct to supply parking with an unbundled approach could better match demand and supply for parking spaces. In the study area this could account for the likely undersupply of parking for three bedroom apartments and the likely small oversupply likely for one bedroom apartments. An unbundled approach could also reduce the cost of renting and owning by removing the cost of unnecessary parking. Facilitating build-to-rent developments with unbundled parking would be especially useful noting scope for better management by a professional building manager compared to strata or body corporate management. A professional building manager may also be able to address oversupply through providing parking for surrounding commuter uses part way to a precinct parking approach.

It should be noted that if the primary goal of this project and study area is to encourage active modes then more direct initiatives can have better results. Consistent on-street management, active and public transport infrastructure and the presence of local services can drive down parking demand and also assist in suitable residents self-selecting to live in the study area.

In many cases residents can self-manage imbalances in car parking through formal and informal mechanisms (known as secondary markets). This secondary market that can provide a matching service between those who have excess car parking and those who need car parking spaces. One such peer-to-peer platforms is Parkhound, while often building social media pages are also used. These methods can then continue to be used to manage over and under provision of parking in the fewer instances this will occur after clause 52.06 changes and any overlays bought in as part of this project. It should be noted that this already happens, as is visible in De Gruyter, Butt, and Davies (2024) and Figure 36 which shows that a

sizeable number of people have more cars than parking spaces.

Recommendation

- That unbundled car parking is best suited to build-to-rent residential projects where it's long-term operation could be supervised by a professional building manager.
- That unbundled car parking approaches are discussed with developers, especially of build-to-rent housing at pre-application stage and that materials are developed to outline the approach and the potential benefits.

Implementation mechanism

- Council engagement with developers at pre-application meetings.

6.3 Precinct car parking feasibility

Precinct car parking is a parking management approach whereby car parking is consolidated across a precinct into a single structure (or for large precincts multiple structures) rather than within the development buildings themselves. Parking within such a structure can be for commuters, visitors and for nearby residential developments. Precinct parking structures are generally provided to achieve the following objectives:

- Reducing car commuting and promoting active and public transport usage;
- Consolidating car parking site frontages to improve urban realm outcomes;
- Ensuring development isn't restricted by the need to provide car parking especially in locations where there are alternative transport options;
- Improve adaptability of precincts to accommodate changing demands with appropriately designed parking structures under singular management that could be adaptively reused.

Precinct parking structures are essentially unbundled parking, which may satisfy demand from nearby residential developments. Unbundling parking may incentivise developers to supply

precinct parking in areas where there is varying residential and commuter demand, for example where residential demand is higher overnight, but commuter is higher during the day, leading to higher use.

6.3.1 Case study: EXO Building, 852 Collins Street

The EXO Building in the Victoria Harbour precinct of Docklands has been described as a precinct parking structure by Coath and Fooks. Comprising of 96 apartments and nine shops, the 12-floor building has eight overground floors of car parking for residents of nearby building and for short-term storage. Casual parking rates Monday to Friday are currently \$10 for 0 – 0.5 hours and \$80 for the daily maximum.

Figure 38 highlight how this structure developed alongside the broader precinct from 2011 to now. Before this structure was developed there was both significant development occurring and significant at-grade off-street parking in the precinct.

Once the EXO Building was developed, parking in the vicinity was subsequently redeveloped to office, residential and commercial. In this way, the precinct parking structure supported additional development by providing necessary parking in a centralised location with flexibility between difference users and uses. It also supported superior urban design outcomes by consolidated off-street parking in the area, car park access points. The structure has also created a more active frontages to the street, with the parking and entry sleeved by shops, as shown in Figure 39.

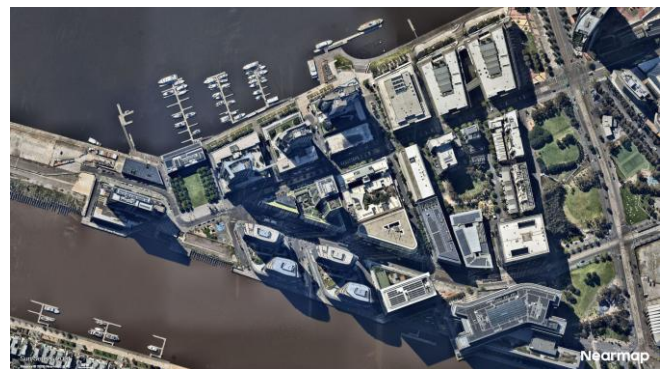
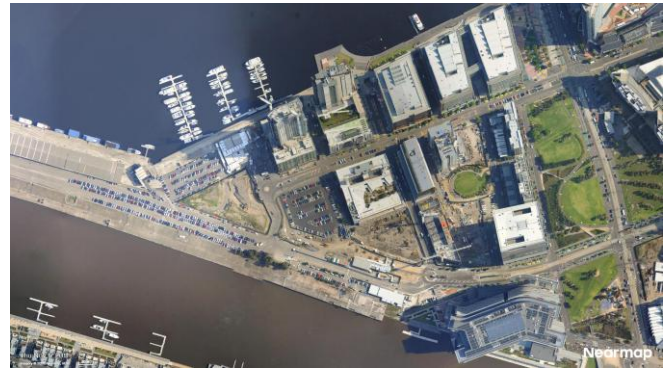


Figure 38 EXO Building – 2011, 2016, 2025

Source: Nearmap

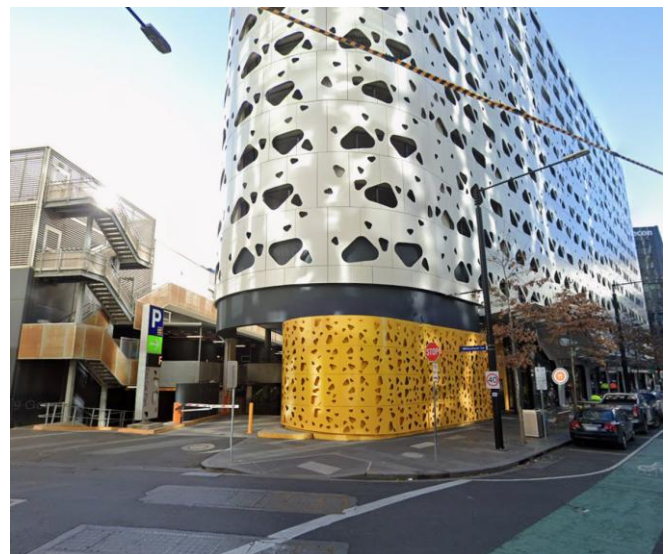


Figure 39 EXO Building precinct parking interface

Source: Google Street View

6.3.2 Arden Macaulay Structure Plan

In the Structure Plan for Arden Macaulay gazetted in 2022, no significant new on-street parking is proposed. This is due to a design preference for streets designed for people and where most parking is in consolidated hubs. Streetscape works for sustainable travel infrastructure will likely also reallocate on-street parking space across the precinct to other road users. This is similar to the likely future development of the West Fyans/Fyans Streets precinct.

The *Arden Precinct Parking Plan* notes that consolidated car parking will help to mitigate the public realm impact of car parking by:

- Providing a more efficient car parking strategy that reduces the total number of car parking spaces and floor area used for car parking;
- Consolidates the negative impacts of car parking structures (seen throughout areas like Docklands and Southbank) into fewer, concentrated locations as opposed the distributed impacts of a larger number of smaller on-site car parks;
- Futureproofs the network to respond to change as demand for car parking reduces and the use of streets by pedestrians and other users increases.

For this reason, the Design and Development Overlay (DDO) interacts with the Parking Plan.

This plan notes that public sector provision of consolidated parking stations is most likely along with allocated parking for businesses and residents. It notes that while a fully direct cost-recovery model is unlikely, consolidated parking stations can support wider precinct benefit, such as urban realm improvement; or use of land that is less attractive to private development.

The delivery of consolidated car parking cannot be mandated within a planning scheme, as this can potentially undermines the precinct's ability to develop in the short term. However, it should be prioritised over on-site parking in the planning permit decision-making process.

The Arden Parking Overlay (PO14/PO15) deals with this issue by through Schedule 14 which includes decisions making guidelines and encouraging developers to either create a pool of on-site parking that can be shared or deliver planned parking in a

consolidated off-site car park nearby. Figure 40 outlines this approach including a conceptual plan to have centralised parking within a 250m walking distance of users.

The Arden Parking Overlay implements a strict, low-parking, sustainable transport approach for the Arden urban renewal precinct. It sets maximum car parking rates to encourage consolidated, public parking over individual on-site bays, aiming for 90% of trips to be made via sustainable transport.

Figure 3.2: Protecting the Primacy of Consolidated Parking

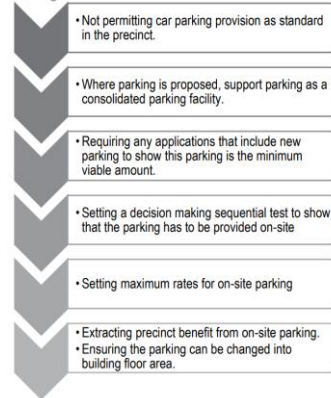


Figure 3.3: Conceptual consolidated car parking coverage at 250m walk distance



Figure 40 Conceptual centralised parking plan within a 250m walking distance of users

Source: Arden Precinct Parking Plan

6.3.3 Potential implications for the West Fyans/Fyans Street precinct

There are several factors which have supported the EXO Building's development in Docklands, including:

- High demand for off-street parking;
- Heavily constrained and tightly managed on-street parking;
- A significant pipeline of both residential and commercial high-density development; and
- A high willingness to pay for parking.

It is unclear whether these same conditions exist in the study area. While there are some well-utilised on and off-street car parking in the precinct, the scale on informal parking and low levels of parking restriction make it difficult to ascertain the demand and willingness of users to pay for parking, especially at the high rates that would support a privately-owned precinct parking facility. Slow rates of development in the study area noted in the *Future Population, Housing and Economic Update*

2024 are also unlikely to support precinct parking in the short term unless overcome in future. On this basis it is unlikely that precinct parking developed by the private sector as per the EXO Building are likely in the short to medium term.

This finding is backed up by a similar study by Fooks and Coath 2017 which found that there are few examples where off-street car parks were used to off-set parking requirements in nearby developments and that few examples effectively engaged with the private sector. In their study they identify two scenarios for the implementation of Precinct Parking Structures:

- Market led delivery with precinct parking mandated off-site;
- Clustering of precinct parking in key strategic areas through incentives supported by public sector incentives (i.e. parking limits), although precinct parking are not mandated.

Noting that the pipeline of dwelling products for the precinct is largely higher-end apartments maximising amenity aspects and location, it is unlikely that prospective buyers would support a product where parking was provided separately. There is also the uncertainty of whether parking would be permanent if precinct parking could ultimately be redeveloped.

Therefore, whilst the business case is highly uncertain, we see precinct parking as most likely to be delivered through a public sector supported approach like that undertaken for the Arden Macaulay Structure Plan.

Were a formalised precinct parking to be considered, two potential locations have been identified. The first is on Bloomsbury Street close to the intersection with Rutland Street. Effective implementation of this precinct parking structure would require the implementation of a continuous east-west connection from Rutland Street through to Anne Street (via extension and implementation of the existing Public Acquisition Overlay from Fernleigh St to Bloomsbury Street) to ensure accessibility to a sufficient user base. A second location would be within the block bordered by Fyans Street, Yarra Street, Little Fyans Streets and Moorabool Street.

Like Arden Macaulay, these locations could provide centralised parking within a 250m walking distance of a large pool of potential users. There are also several large development lots where a developer could provide broader precinct parking whilst still having sufficient scope to viably develop residential and commercial aspects. These locations are also generally outside of existing flood-prone land and that which was previously used for the Newtown Landfill.

Recommendation

- That parking objectives, requirements, application requirements, decision guidelines, and design standards be required considerations in assessing future permits included in a Schedule to the parking overlay.
- That a West Fyans/Fyans Street Precinct Parking Plan is prepared, building on relevant aspects of this document and clearly outlining the key principles and objectives of parking management in the precinct.

Implementation mechanism

- Schedule to the Parking Overlay. See Schedule 15 to Clause 45.09 Parking Overlay Arden Precinct

6.4 Bicycle and micromobility parking and storage

Having a safe place to store a bicycle when not in use is an essential element of active transport infrastructure. People require on-street parking for short term uses (e.g. visiting shops, community facilities) as well as off-street parking for longer stays (e.g. strata/multi-dwelling developments and workplaces).

6.4.1 On-street bike parking

A consistent approach to the provision of bike parking in public places should be adopted. The bicycle parking hoop to be used in public places is shown in Figure 41. This design is consistent with Austroads guidelines and enables a wide selection of bicycle types to be locked, using the frame rather than the wheels. This helps to reduce theft, maximises user friendliness, and a uniform approach increases cost effectiveness.



Figure 41 On street bike hoop

Source: Institute for Sensible Transport

Visitor parking is best provided on the street near the main entrances of multi-unit dwellings (as occurs in shopping strips in inner Melbourne and Geelong).

In order to achieve a consistent level of bike parking in areas likely to require it, Council should work towards providing:

- A minimum of two bike parking hoops every 100m of either side of the street in high pedestrian activity areas (e.g. smaller activity centres).

- A minimum of two bike parking hoops outside community facilities.
- A minimum of four bike parking hoops at tourist destinations.

6.4.2 Off-street bike parking

Ensuring people have a safe and convenient place to park a bike at a residential or work location is important to achieve an increase in walking, wheeling and riding. Sufficient end-of-trip facilities are also required to ensure workers that ride to work have the option to shower and storage for their personal items at the end of their journey. Minimum requirements are outlined under clause 52.34 of the planning scheme which is discussed in more detail in Section 2.1.2.4, however these requirements are often insufficient to encourage cycling.

6.4.2.1 Residential off-street bike

To provide all residents the choice to ride a bicycle, the amount of bicycle parking required needs to be increased. Requiring one bicycle parking space per bedroom for all apartment dwellings would provide an appropriate amount of parking. This would allow roughly one bike per person, which is the observed bicycle ownership rate among those living separated housing in areas with higher cycling participation such as: Clifton Hill, Fitzroy North, South Yarra, Toorak, Brunswick, Ascot Vale, and St Kilda, which all have above 0.8 bikes per resident.

Therefore, our advice is that the following should be required relating to new off-street bicycle parking

- That 1 bicycle parking space per bedroom be required.
- Secure location, shelter from elements, within building and close to main entrance.
- Minimum of 80% located on ground (e.g., no more than 20% being wall mounted).
- At least 20% of ground parking locations to accommodate cargo bicycles (minimum dimension of 265cm long and 65cm wide).

We have undertaken a previous study with the University of NSW of end-of-trip facilities and have used insights gained from this to support the below recommendations. This highlighted the following relevant findings:

- Safe and direct bike infrastructure is the key factor influencing demand for cycling
- Convenient parking and passive surveillance are more important than security and weather protection.
- A well distributed set of bicycle parking opportunities is important.
- E-bike parking and charging may not be necessary.

We therefore recommend that non-residential bike parking is provided in accordance with Section 5.4. End-of-trip facilities outlined in clause 52.34 relating to showers and change rooms are considered to be adequate as demand for these facilities is often overestimated.

Council should carefully consider if e-bike specific parking and charging is necessary. The UNSW study found most users did not require specific parking with most e-bike batteries now able to be removed for charging. Charging batteries can pose a fire risk and so if there is to be unattended battery charging, fire suppression systems would be required.

7. Interim parking management



As the West Fyans/Fyans Street Precinct develops, demand on existing parking will intensify. To effectively manage supply and demand, a range of approaches will be needed, ranging from formalising existing parking to changed parking restrictions, and travel demand management.

The transition from an industrially focused precinct to a higher-density, mixed-use residential neighbourhood will be accompanied by a reduction in on-street parking supply due to the reallocation of road space for urban design initiatives. Setting the right amount of bicycle and car parking will support land use intensification that is accompanied by a transition from existing car-dependent travel towards increased active and sustainable transport mode share.

7.1 Car Parking Framework

To support Council's vision for the precinct, the *Car Parking Action Framework* (see Figure 42) was produced to provide a transparent process for determining actions to improve car parking management. The Framework sets out how appropriate actions should be determined, including responses to feedback from the community and visitors. It also provides a staged approach to managing parking as development progresses, with later interventions—such as increased parking supply—aligned to growth over time.

The framework steps and initiatives are outlined below. Following the process in Figure 42 will help Council ensure car parking decisions align with broader strategic objectives and best practice.

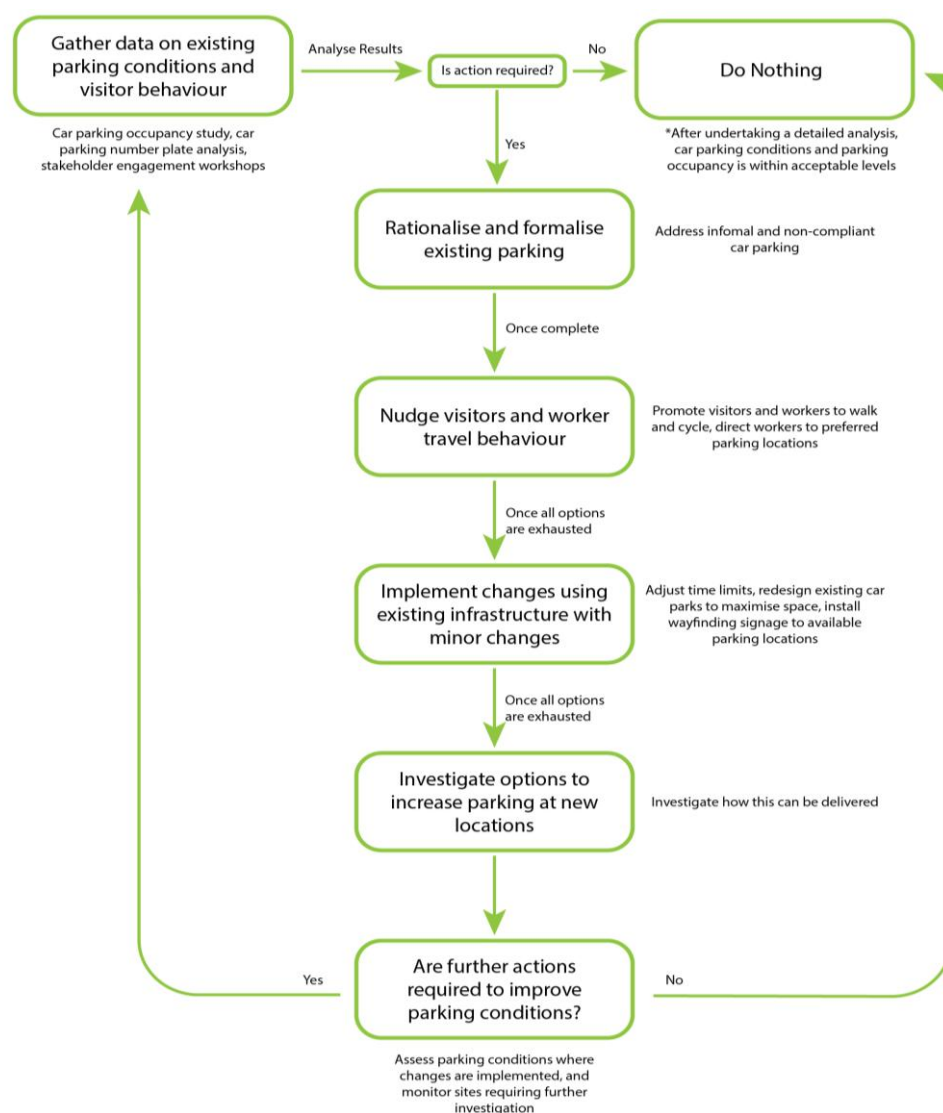


Figure 42 Car parking action framework

Source: Institute for Sensible Transport

7.1.1 Gather data on existing parking conditions and visitor behaviour

Following feedback from residents or traders, Council should commence monitoring car parking in, and around the area of concern. The necessary data can be collected from:

- Car parking occupancy study;
- Car parking number plate analysis.

Council should also consult with the community at this stage to develop a solution. A stakeholder engagement workshop should also be held when the subsequent steps described in the Car Parking Framework are exhausted, and further measures are still required.

As the precinct develops and development impacts available parking supply through construction impacts and once building are occupied, Council should consider taking a more strategic proactive approach to gathering data, considering not just area where there is feedback from the community but a broader area, to ensure that problems are not just shifted to the next unrestricted street. The impending completion of the Barwon Business Park at 45-53 Riversdale Road should be an upcoming trigger.

7.1.2 Rationalise and formalise existing parking supply

The West Fyans/Fyans Street Precinct is dominated by informal or non-compliant parking, a legacy of its industrial land-uses and vehicle focused access whereby pedestrian demand was minimal and the desire to maximise parking supply was paramount. The impact of these behaviours is now being felt as increasing development means increased need for pedestrian access, the need to prevent damage to kerbs and footpaths, and also to generally bolster development prospects in the precinct.

As a result, the most immediate interim parking management response will be to formalise existing parking. Action will generally be required to address the impacts of informal or non-compliant parking, such as blocking of footpaths. Perhaps counterintuitively, formalising of parking will likely lower the number of vehicles that can be stored in the precinct, but it will provide a true measure of available storage. This will then support

subsequent parking management initiatives, as nudging workers to walk to work requires accessible paths.

A program of parking formalisation is outlined below starting with those areas with highest parking and pedestrian demand and network importance:

- Remove kerb parking and formalised permitted parking through enforcement, line marking and signage starting with key pedestrian connections of Little Fyans Street, Hampton Street, Lambert Avenue and Rutland Street (west of Hampton Street). In some instances due to road width and the need to maintain vehicle movement, this approach will mean parking can only be provided on one side. Initial focus should be on the side of the road with a footpath, for example the south side of Little Fyans Street east of Yarra Street.
- Formalise angle parking through line marking and signage with an initial focus on Bellerine Street, Swanston Street, Latrobe Street and Gregory Avenue. Angle parking can provide the most supply if properly managed.
- Formalise and rationalise parking in Frier Reserve to clearly define access, protect assets and provide pedestrian access on the east, west and southern sides.

7.1.3 Nudge residents, workers and visitor travel behaviour

When a response to manage car parking is required, Council should encourage behavioural change before embarking on other measures.

As behaviour changes can take time, Council should take the necessary actions prior to periods of intense car parking demand. These actions include using direct and indirect communication to:

- Promote and encourage walking, cycling, and public transport to the study area;
- Direct workers to preferred parking locations which in the study area are likely to be unrestricted parking bays further from the key activity nodes but still within walkable distance.

Another key element to support nudging users to alternative modes is ensuring appropriate infrastructure is in place. For example, ensuring

footpaths are kept clear from parked vehicles as discussed above. Providing adequate and safe crossing points can also increase access to parking and should be considered on Barwon Terrace where there is underutilised parking on the south side of the road but few safe places to cross, particularly with the high vehicle speeds noted.

It is also important to tie public infrastructure provision to private development. The Barwon Business Park at 45-53 Riversdale Road, Newtown is approaching completion yet there are no linking footpaths on surrounding street meaning it is unlikely that any workers will walk there. Whilst 60 bicycle and motorcycle parking spaces are to be provided as part of the development, there is no connecting cycling infrastructure meaning these are likely to be underutilised.

As discussed in Section 3.2 there is a good core layout of cycling connections, with the quality of infrastructure the main limiting factor. As noted in Figure 43, very few people ride with confidence on painted on-road bike as are currently seen on roads like Pakington Street. Upgrades to protect and separate people cycling will see confidence increase from around 6% to 83% and encourage higher levels of cycling.

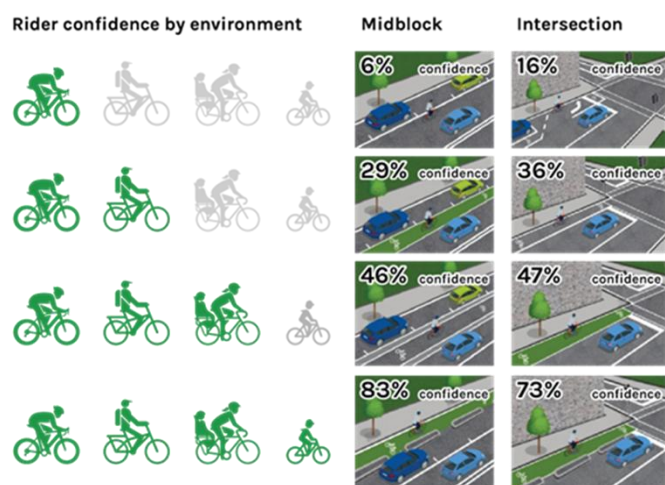


Figure 43 Riding confidence - different infrastructure

Source: CDM Research & ASDF Research (2017)

7.1.4 Implement changes using existing infrastructure with minor changes

This step improves gaps in the existing infrastructure by implementing cost effective measures such as:

- Adjusting time restrictions to suit demand and discourage long duration parking in high demand areas with quick turnovers. In the study area this should focus on the area around the activity nodes of Rutland Street and Pakington Street;
- Installing wayfinding signs to nearby car parking that may be underutilised;
- Consider installing Parking Overstay Detectors (PODS) in car parks with moderate levels of use;
- Install real time digital signage showing the supply of car parking available, well situated to direct motorist to available parking.

In the study area it was also noted that some off-street parking was underutilised. Near the rowing clubs there is a large off-street parking area close to an area of high occupancy including Willis Place where Council has permitted parking on the footpath through signage. Council advises this is public land and yet there is no signage to indicate that this parking could be used at time when it is not required by the rowing clubs. The exception to this is the small amount of off-street parking managed by Council which should be formalised and carefully managed, to ensure it is seeing high levels of utilisation throughout the week and not just when sporting events are taking place.

7.1.5 Investigate options to increase parking at new locations

When all other steps have been exhausted, Council should investigate options to develop new off-street carparks. As this step will be the costliest and most difficult, a business case should be built, considering the options for:

- Private market to fulfill the demand
- Other levels of government to deliver more car parking.

It is in this stage that a precinct parking approach should be considered. This was discussed in more detail in 6.3.

7.2 Technology to better manage car parking

As the study area develops, it is likely there will be increasing competition for parking spaces. Rather than increase supply in the first instances, introducing technological solutions, such as those outlined below, should be considered as part of the 'Implement changes using existing infrastructure with minor changes' stage of the *Car Parking Action Framework*. This will help preserve land for other uses and reduce frustration associated with finding a car park in commercial areas.

7.2.1 Parking Overstay Detection System (PODS)

PODS are small in-ground sensors linked to a central computer system that provides Council with precise data on the length of time spent by each car in a PODS parking space. It is used to increase parking enforcement and improve parking compliance. It is also useful for providing Council with detailed occupancy data for high-demand areas.

7.2.2 Real time parking availability information

PODS can be integrated with real-time parking information. This can improve the efficiency of existing parking supply by directing drivers to available parking spaces. This reduces congestion caused by cars cruising for a free space and provides the community with an accurate and up-to-date understanding of car occupancy in the area. Other cities have integrated real-time parking information into apps and websites, improving the parking experience.

Figure 44 provides an illustration of PODS, which have become a popular method for local government to monitor occupancy and vehicle overstay.

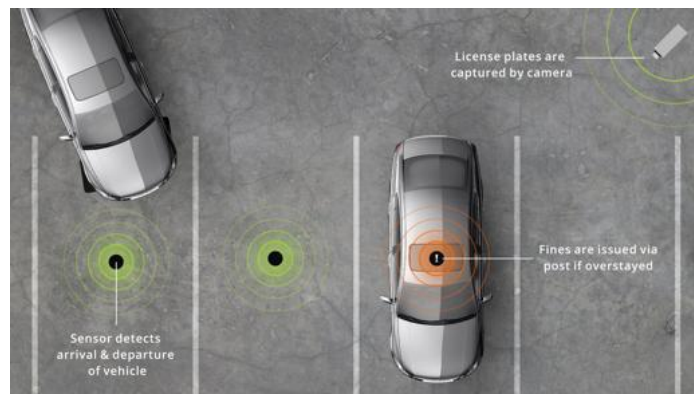


Figure 44 Better management of parking with technology

Source: ESmart 21

Figure 45 illustrates the use of real time parking displays. These require the installation of parking sensors in individual bays.



Figure 45 Real time information displays

Source: Northern Beaches Council

7.2.3 Travel demand management

As outlined in Section 7.1.3, nudging residents, workers and visitors to use other forms of travel is an appropriate response should suitable infrastructure exist. Aside from active transport infrastructure, car share in both new private developments of sufficient scale and in the public realm should be considered. There is unlikely to be sufficient demand in the precinct at present but development of major sites provide a suitable trigger.

8. Electric Vehicles



As the number of electric vehicles grow as a proportion of the total vehicle fleet, supporting a diversity of charging options will be important. This section provides background on electric vehicles and charging and a discussion of the types of charging likely to be needed in the study area. **What is an electric vehicle?**

There are several distinct categories of vehicle drive train, and it is important to identify the main types, as shown in Figure 46.

	Energy Sources	Consumption	Emissions
Conventional 			
Hybrid 			
Plug-In Hybrid 			
All-Electric 			

Figure 46 Different types of consumption and electric vehicles (EVs)

Source: Adapted from Adnan et al (2017)

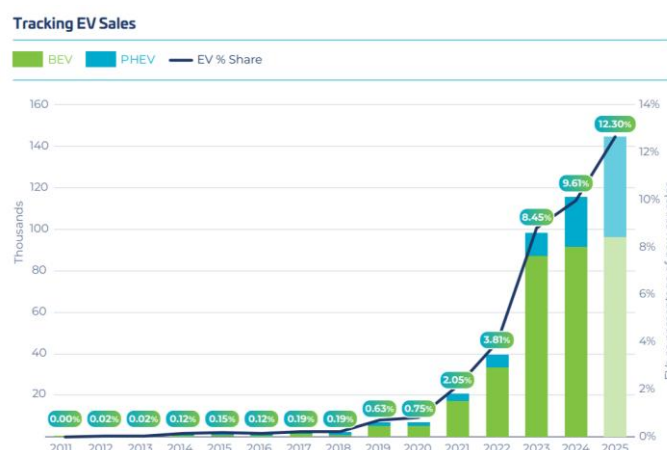
The following provides a brief description of each of the vehicle categories listed in Figure 46.

- *Conventional vehicle* – also referred to as an Internal Combustion Engine (ICE) vehicle, is the standard vehicle type widely known and used since the invention of the motor vehicle. It is *not* an EV.
- *Hybrid vehicle* – a vehicle that uses petrol/diesel as its only fuel source, but also has an electric motor and battery that can store energy from regenerative braking. A *Toyota Prius* is a common example of a hybrid vehicle.
- *Plug-in Hybrid Electric Vehicles (PHEV)* – combines a mixture of fuel combustion and electricity. It is like the hybrid vehicle described above; however, it can take electricity from a socket and can store this in a battery. A *Mitsubishi Outlander* is an example of a model available as a PHEV.
- *Battery Electric Vehicles (BEV), or All-Electric*, take electricity from a socket and rely entirely on the electricity stored in an on-board battery for

propulsion. A *Tesla Model 3* and a *BYD Atto 3* are two common models of BEV.

8.1 Electric vehicle sales in Australia

While Australia has among the lowest levels of EV adoption in the OECD, it has begun to increase rapidly, from around 2% of new vehicle sales in 2021, to over 12% in 2025. Figure 47 captures recent EV sales in Australia as a percentage of light vehicle sales.



Sources: EVC Vehicles Sales Report, AAA EV Index, VFACTS. Includes projections for full year 2025.

Figure 47 EV sales in Australia

Source: Electric Vehicle Council, 2025

Several surveys have found around 50% of consumers are considering an EV for their next vehicle purchase.

Around half of consumers are considering an EV for their next vehicle purchase.

8.2 Electric vehicle advancements

Electric vehicle technology has advanced rapidly in recent years. Electric vehicles avoid the tailpipe emissions of ICE vehicles, have lower running and servicing costs, and last longer. Compared to just five years ago, EVs:

- Have become cheaper;
- Offer longer battery range; and

- Are available in a wider variety of vehicle types.

Electric vehicles also now have access to more chargers, including publicly available fast chargers, at some locations in and around Geelong and this is set to grow in coming years. Range anxiety is still a key stated barrier to the greater uptake of EVs and more chargers will reduce this barrier.

The next 12 months are set to see the introduction of several lower cost models that, while still more expensive to purchase than their ICE equivalents, will compete strongly in terms of *whole of life* costs.

Electric vehicles are important because they:

- Improve local air quality;
- Eliminate tailpipe GHG emissions;
- Reduce noise pollution;
- Reduce vehicle running costs.

8.3 Key trends

Several trends are identified that are important to understand:

- Greater range of vehicle types
- Extended range and battery size
- Vehicles capable of Ultra-Fast Charging
- Vehicle to Grid (V2G), Vehicle to Home (V2H) and Vehicle to Load (V2L) capabilities, enabling greater flexibility, enhanced resilience and grid stability. This also has implications for soaking up excess solar power during the middle of the day.
- Vehicles with towing capabilities, including a potential need for 'drive-thru' bays for long vehicle charging.

8.4 EV Chargers

The three main EV charging equipment characteristics that differentiate chargers from one another include (International Energy Agency, 2018):

1. Level: the power output range of the EV charging outlet. The maximum is lower for Alternative Current (AC) for most cars.
2. Type: the socket and connector used for charging.

3. Mode: the communication protocol between the vehicle and the charger.

The number of chargers and the speed with which a battery can be changed has improved significantly over recent years. Victoria is building networks of fast chargers to facilitate long distance travel, Table 16 provides a snapshot of different charging types.

One critically important observation from EV owners regarding their charging habits is that *over 90% of charging happens at home, or work*. This has implications for the selection of appropriate sites for charging infrastructure, and the speed of charger selected. It also has particularly important implications for the study area, with large numbers of future dwellings likely to have access to on-site (at home) charging.

Table 16 EV Charging types

	 Power	 Range added per hour	 Charging Time	 Typical Application
Level 1 - single phase (domestic)	2.4 - 3.7kW	10 - 20km range / hour	5 - 6 hours	Home
Level 2 - slow single phase (domestic or public)	7kW	30 - 45km range / hour	2 - 5 hours	Home, work, shopping centres, car parks
Level 2 - fast three phase (public)	11 - 22kW	50 - 150km range / hour	30mins - 2 hours	Urban roadside
Level 3 - fast charge (public)	50kW	250 - 300km range / hour	20 - 60 mins	Activity centres, and near highways, motorways and key routes
Level 4 - super-fast charge (public)	120kW	400 - 500km range / hour	20 - 40 mins	Highways, motorways and key routes
Ultra fast charge (public)	350kW	1,000+ km range / hour	10 - 15 mins	Major highways and motorways

Note: Relatively few cars can use full capacity of three phase AC chargers.

Vehicle manufacturers are continuing to upgrade their cars to accept high-capacity chargers. What this means from a usability perspective is that an EV can be fully charged in as little as 15 minutes. It is important to recognise that this will be rare (few vehicles will be able to) and expensive (it is based on a battery optimised for high-speed charging with other downsides). The reality is that most fast-

charging sessions, even now, are only ~30 minutes – enough to get you to where you are going.

Over 90% of EV charging occurs at home or work.

8.4.1 EV Charging in the National Building Code

The Commonwealth Government announced changes to the National Construction Code (NCC) in 2022 to support increased sustainability outcomes in new buildings. The NCC is Australia's primary building and construction code. It sets the minimum standards which buildings must meet, regarding a variety of factors including safety, health, amenity and sustainability. The NCC is produced and maintained by the Australian Building Codes Board on behalf of Australian Commonwealth, State and Territory governments.

The NCC 2022 contains provisions for EV charging, which are expected to come into force in 2024. The National Construction Code 2022 contains two provisions which support EV charging. J1P4 states that 'a building must have features that facilitate the future installation of on-site renewable energy generation and storage and electric vehicle charging equipment.' As part of this, all new multi-dwelling units (apartment buildings) are required to facilitate the future installation of EV charging equipment (see section J1P4 and J9D4 of Volume 1 of the Code).

The Building Code stipulates that a separate distribution board be provided to serve EV charging and fitted with a control system that can manage and schedule charging in response to total building demand. Separate distribution boards are required for each storey of car parking.

J9D4 lays out the detailed requirements to support J1P4. Car parks in build classes 2, 3, 5, 6, 7b, and 9 (as shown in Table 17), must be provided with the electrical distribution boards and wiring to support EV charging. In effect, this applies to all multi-dwelling units, office buildings, retail, factories and public buildings but not stand alone car parks.

The number of bays which are required to be capable of supporting EV charging varies per building class (as shown in Table 17). The code requires all dwellings in multi-dwelling units to be capable of supporting charging, at 7kW. Further, the code requires one electrical distribution board for every 24 EV car parks, per level of car parking. These changes to the National Construction Code will effectively ensure that future buildings in the study area will be capable of providing EV charging.

These changes to the National Construction Code will ensure that future buildings in the study area will be capable of providing EV charging.

8.4.2 Council environmentally sustainable design recommendations for EV charging

Council has advised that their environmentally sustainable design recommendations for EV charging infrastructure in this precinct are that:

- Residential lots provide a dedicated electrical circuit terminating in a garage or carport that is capable of supporting a minimum 7kW (32A) Electric Vehicle Charging Point (EVCP).
- EV charging infrastructure and signage installed for at least 5% of all off-street parking.
- At least 20 percent of off-street car parking spaces (or at least one space) that are capable of supporting the provision of an appropriate moderate speed EV charging outlet, and appropriate EV infrastructure and cabling to ensure peak demand is managed.

Council recommendations exceed the NCC requirements in all instances. Recognising the recently accelerating uptake of EVs, Council's more ambitious requirements are supported. However, it is also important to note that the NCC requirement in force since 2024 will ensure that future buildings in the study area will be capable of providing EV charging.

Table 17 National Construction Code building classes

Building Class	Details	Charging requirement
Class 1	Housing: • Class 1a: Single dwelling (attached or detached) • Class 1b: Boarding houses, guest houses, or hostels under 300m².	Not required.
Class 2	Apartment buildings.	100% of car parking spaces must support 7kW type 2 chargers.
Class 3	Residential buildings which are not Class 1 or Class 2.	20% of car parking spaces must support 7kW type 2 chargers.
Class 4	Sole dwellings as part of a non-residential building (e.g., caretaker's house).	Not required.
Class 5	Office buildings.	10% of car parking spaces must support 7kW type 2 chargers.
Class 6	Shops, restaurants, and cafes.	10% of car parking spaces must support 7kW type 2 chargers.
Class 7	Storage buildings: • Class 7a: Car parks	Not required.
	• Class 7b: Warehouses and storage	20% of car parking spaces must support 7kW type 2 chargers.
Class 8	Factories	20% of car parking spaces must support 7kW type 2 chargers.
Class 9	Public buildings: • Class 9a: hospitals and like • Class 9b: Places of assembly • Class 9c: residential care	20% of car parking spaces must support 7kW type 2 chargers.
Class 10	Non-habitable buildings: • Class 10a: Sheds, carports, garages • Class 10b: Structures (e.g., fence or pool) • Class 10c: Private bushfire shelter	Not required.

Source: NCC 2022 Volume One J9D4

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Council recommendations exceed the NCC requirements in all instances. Recognising the recently accelerating uptake of EVs, Council's more ambitious requirements are supported. However, it is also important to note that the NCC requirement in force since 2024 will ensure that future buildings in the study area will be capable of providing EV charging.

8.5 Understanding market segmentation for EV charging and implications for the West Fyans/Fyans Street precincts

It can be helpful to consider the different elements of the EV charging market. These can be broadly classified into three different types, as highlighted in Figure 48 illustrating the three most common types for charging customers and their needs.

A charging site catering to the *passing through motorist* will generally be restricted to locations in which one or more motorways/freeways are located. These vehicles will be travelling a large distance and require a fast to ultra-fast charge. The Geelong Ring Road and Princes Highway/Latrobe Terrace, in close proximity to the study area, carries a large amount of traffic at high speeds, over larger distances. This means there may be sites offering suitable locations for the *passing through motorist*.

The *opportunistic charger* is someone that was visiting the location anyway, and is taking the opportunity to charge while they are visiting a business. The charger speed does not have to be very fast as the user is not as time sensitive. This is likely to be a relatively common scenario for the study area noting the number of regionally significant automotive, trade supplies and large format retail uses which will increasingly include their own on-site charging to support their customer base.

A *local resident*, without off street parking, will generally require a public charger close to where they would have parked overnight. An AC charger is generally sufficient, as the vehicle is usually parked for more than 6 hours. As there is little existing housing and all new housing should be provided with NCC compliant off-street parking, there are unlikely to be many residents in this category.

The implication for the precinct is that the need for publicly available EV charging will be focused on fast charging with potential for a small number of ultra-fast charging opportunities.

Figure 49 offers a conceptual illustration of the EV charging ecosystem, showing suitable locations for different types of chargers. This is primarily a function of the typical duration of stay for different land uses.

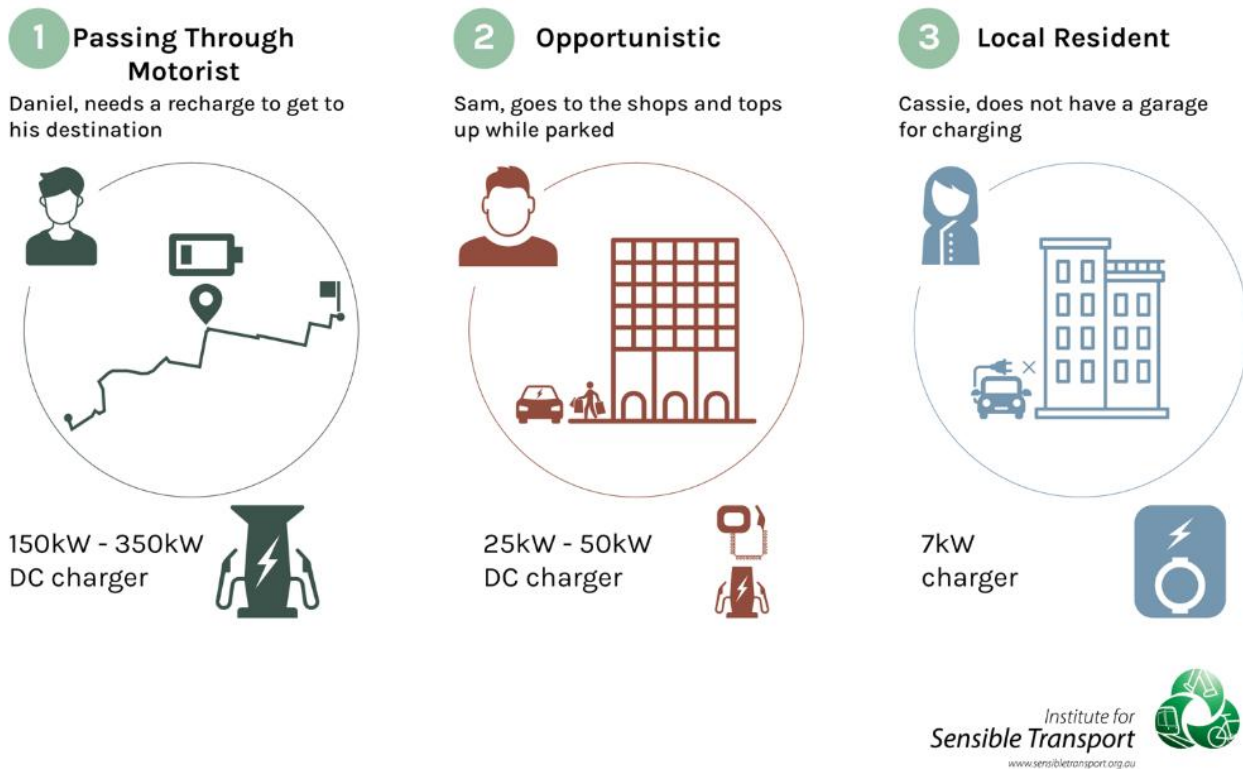


Figure 48 Three types of chargers
Source: Institute for Sensible Transport



Figure 49 Understanding the EV charging ecosystem
Source: Institute for Sensible Transport

8.6 Publicly accessible EV charging governance

There are three key components to an EV charging program: funding; ownership; and operation, highlighted in Figure 50.

Cities need to assess who is best placed to fund the program, who will own the chargers, and who maintains their operation. For the purposes of this document, *government* and *private* are the two approaches to each of the three components identified in Figure 50.

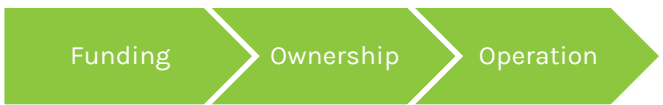


Figure 50 Three components to public access chargers

Table 18 provides four examples of how these different elements can be arranged. The top option is a pure market approach, where all funding is from the private sector, all equipment is privately owned, and operations are free market. At the bottom is a direct provision typology, with governments funding, owning and operating all equipment. The middle two are blended approaches, with governments providing funding and possible retaining ownership, but have the private market operate the equipment.

Table 18 Conceptual approaches to EV charging

Typology	Funding	Ownership	Operations
Pure market	Private	Private	Private
Supported	Government	Private	Private
Contracted	Government	Government	Private
Direct provision	Government	Government	Government

Each option identified in Table 18 has its own strengths and weaknesses. The pure market approach places all risk on the private market but leaves government with little control in selecting locations or end-user elements like pricing. This

can leave certain sub-markets unfulfilled and potentially slow the EV transition (for example, slow or no delivery in lower-SES areas or for slower kerbside charging). Conversely, direct public provision gives government a high level of control over locations and pricing but exposes government to all risk.

The middle two options in Table 18 allow government some control over location and oversight over operations, while shielding government from most risk.

A combination of approaches can also be used. For example, Council may see that fast-charging is being adequately provided by the market at service stations, but that residential areas are not seeing any charging infrastructure being installed. In this case, Council could leave fast-charging to the market, but actively engage in supporting delivery of residential kerb-side charging. Similarly, Council may see that larger shopping centres are having charging equipment installed by centre owners, but that no charging equipment is being installed at smaller activity centres. Here Council could partner with the private sector to delivery destination charging.

It should be noted that if Council embarks on any form of direct provision, it should charge market rates cents per kWh for EV charging. This is for two reasons. Firstly, the private sector cannot compete with free charging, and is likely to be crowded out of the market. Secondly, EV charging equipment is costly to install and has ongoing operating costs (such as electricity and maintenance), and these costs should be passed to the users rather than being borne by ratepayers.

If Council embarks on any form of direct provision, it should charge market rates for EV charging.

9. Policy and implementation framework



This section outlines several planning policy recommendations, and additional recommendations for inclusion in the revised Precinct Structure Plan or for more immediate attention.

9.1 Schedules to support implementation of a parking overlay

The below outlines content to be as a guide for developing content for proposed parking overlay schedule and schedules to zones for the West Fyans/Fyans Street area. Noting that there is currently a Council precinct structure planning process underway that is refining existing zoning, this content has been kept flexible to support future revisions.

A schedule to a parking overlay is the appropriate mechanism to introduce both a change to the number of parking spaces required for residential uses and for precinct parking provisions. See example of Schedule 15 to Clause 45.09 Parking Overlay: Arden Precinct in the Melbourne Planning Scheme.

9.1.1 Residential car parking rates

Flats and apartments will be the predominant housing typology in future development within the West Fyans/Fyans Street precinct. For these dwelling types, based on analysis of Census and VISTA data, there are likely to be an average 0.9 to 1.2 vehicles per dwelling; benchmarked against areas of Melbourne with a dwelling density and locational context comparable to the precinct.

The applicable Clause 52.06 Category 1 and Category 2 rates would likely lead to an oversupply in car parking. There will be variation based on bedroom count. However, only in the case of three-bedroom apartments dwellings does the expected vehicles per dwellings exceed what is required under Clause 52.06. To avoid an oversupply of off-street parking for residential purposes and to encourage mode shift, it is recommended that one car parking overlay for residential uses be introduced in the study area.

9.1.1.1 Parking objectives to be achieved

- To identify appropriate car parking rates for residential use within the West Fyans/Fyans Street study area.
- To encourage mode share shift towards active and public transport.

9.1.1.2 Permit requirement

A permit is required to reduce or waive car parking requirements under the minimum number specified in Clause 3.0 of this schedule.

9.1.1.3 Number of car parking spaces required

The required number of car parking spaces is shown in Table 19 below. The requirement for a use listed in the table is the product of the rate and the measure.

If a use is not specified in the Table below, car parking spaces must be provided in accordance with the relevant Category 1 or Category 2 of Table 1 to Clause 52.06-5 Car parking requirements.

Table 19 Number of car parking spaces

Land use	Measure	Rate
Dwellings	To each dwelling	0.9

9.1.2 Precinct parking provisions

Given the goal for the precinct is one with lower private vehicle mode share and increased active and sustainable transport mode share, the current Category 1 and 2 parking rates under Clause 52.06 are appropriate across the relevant areas for all non-residential uses. These rates align with current real-world parking demand in locations comparable to inner-urban Melbourne.

This approach still provides parking while allowing flexibility for the market to determine whether additional parking is required, as Category 1 and 2 under Clause 52.06 do not specify a parking maximum. In addition, approaches such as precinct or shared parking approaches can be used to provide car parking is consolidated across a precinct into a single structure (or for large precincts in multiple structures) rather than within developments themselves

Precinct parking is supported as it provides another market-based mechanism for the

provision of parking with other recognised benefits including:

- Consolidating car parking site frontages to improve urban realm outcomes;
- Ensuring development isn't restricted by the need to provide car parking in locations where there are alternative transport options;
- Improving adaptability of precincts to accommodate changing demands with appropriately designed parking structures under singular management that could be reused.

The following text has been adapted from the precedent Schedule 15 to Clause 45.09 Parking Overlay: Arden Precinct in the Melbourne Planning Scheme. Design standards for car parking can also be included to require that all bays support electric vehicle charging. Requirements for car share bays, including accessible bays where required, can also be included.

As noted in Section 6.3.3 a West Fyans/Fyans Street Precinct Parking Plan will need to be prepared, building on relevant aspects of this document and clearly outlining the key principles and objectives of parking management in the precinct. This future document is referred to in text as the 'Precinct Parking Plan prepared for the site'.

9.1.2.1 Parking objectives to be achieved

- To encourage a travel mode shift toward 50 per cent of all trips to the precinct being by sustainable transport options.
- To minimise the impacts of on-site car parking and vehicle access on the transport system and the public realm.
- To provide for the future adaptation of car parking areas to other uses and innovations in transport technology and practice.
- To encourage publicly accessible car parks and discourage the provision of on-site car parking.

9.1.2.2 Permit required

A permit is required to provide car parking spaces as part of any use or development.

9.1.2.3 Number of car parking spaces required

None specified

9.1.2.4 Application requirements and decision guidelines for permit applications

Application requirements

The following application requirements apply to an application for a permit under Clause 45.09, in addition to those specified in Clause 45.09 and elsewhere in the scheme and must accompany an application, as appropriate, to the satisfaction of the responsible authority:

A report that demonstrates:

- How the provision of car parking achieves each of the objectives of this Overlay.
- The number of car parking spaces proposed and the proposed ownership structure.
- The purpose and need for car parking being provided on the site, including proportions of car share, bicycle, motorcycle, disabled and loading car parking spaces provided on the site.
- Where private car parking is to be provided, the extent to which it can be adapted for use as a publicly accessible car park.
- The adaptability of the car parking to other land uses.
- Whether existing on-street or consolidated off-street parking spaces are available within 250 metres of the site.
- Whether public transport alternatives are available within 200 metres of the site.
- Alignment with the Precinct Parking Plan prepared for the site.

An application to provide car parking for a Car park must be accompanied by:

- A Car Parking Plan that implements the principles and objectives of the Precinct Parking Plan, and demonstrates the Car park:
- Is held in single consolidated ownership;
- Is publicly available and accessible 24 hours a day; and
- Serves a catchment beyond the site on which it is located.

Decision guidelines

The following decision guidelines apply to an application for a permit under Clause 45.09, in addition to those specified in Clause 45.09 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- Whether the objectives of this schedule have been met.
- The availability and proximity of public transport in the locality and the timing of future improvements to the network.
- The use of the land and the need for the car parking.
- Where a Car park is proposed, whether it is:
 - Held in single consolidated ownership;
 - Is publicly available and accessible 24 hours a day; and
 - Is managed in accordance with a car parking plan that is to the satisfaction of the responsible authority.
- Whether public transport alternatives are available within 200 metres of the site.
- Whether the site is located within 250m of a publicly accessible Car park.
- Whether the car parking spaces are being provided as disabled persons spaces, car share or spaces used for loading.
- The extent to which the car parking could be adapted to allow for other uses in the future.
- The impact of the proposed car parking on local amenity, including pedestrian amenity and the creation of a high quality public realm.
- The impact of the vehicle access on bicycle, public transport and pedestrian infrastructure, on-street parking and loading facilities and traffic movements on the nearby road network.
- The Precinct Parking Plan prepared for the site.

9.1.2.5 Financial contribution requirements

None specified

9.1.2.6 Requirements for a car parking plan

In addition to the requirements of Clause 52.06-8, a car parking plan must contain the following:

- Details of any car parking spaces that are proposed to be made available for shared use.
- Details of the vehicle access point(s) onto the existing and future road network.
- Details of any car share, electric vehicle, bicycle, motorcycle, disabled and loading car parking spaces.
- Details of any electric vehicle charging facilities.

9.1.2.7 Design standards for car parking

The following design standards for car parking and other requirements for the design and management of car parking must be met, in addition to the matters specified at Clause 52.06-9:

- The layout and design of above ground car parking areas to allow for adaptation to alternative land uses.
- The location of vehicle accessways, crossovers and carpark entries to minimise the impacts on the pedestrian network.
- The layout and design of car parking areas should:
 - Include the provision for internal queuing and minimise the need for cars to queue on the street.
 - Allow natural ventilation.
- Vehicle access points wider than 6.1m should provide pedestrian refuges.

9.1.2.8 Decision guidelines for car parking plans

The following decision guidelines apply to car parking plans under Clause 45.09, in addition to those specified in Clause 45.09, and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- The extent that the car parking is adaptable to alternative land uses.
- The extent to which the car parking plan implements the principles and objectives contained in the Precinct Parking Plan.
- The accessibility of car share, electric vehicle, bicycle, motorcycle, disabled and loading car parking spaces.
- Whether the car parking plan encourages sustainable transport use.

- The impact of the proposed vehicle access on the existing or future transport infrastructure and local traffic management.
- The impact of the number, width, location and design of new vehicular access points on the safety and quality of the pedestrian environment, pedestrian amenity and kerbside space for outdoor seating areas.
- Whether alternative vehicle access to the site is constrained and no other access is possible.

9.2 Schedules to zones to support appropriate bicycle parking rates

The below outlines content to be included in schedules to relevant zones to support appropriate bicycle parking. There is precedent to using amended schedules to zones to bring about changes to bicycle parking requirements. See Melbourne Planning Scheme SUZ7 (Schedule 7 to Clause 37.01 Special Use Zone), Section 4, Table 2 for an example.

9.2.1 Residential bicycle parking

Based on current and envisaged rezoning this would apply to Mixed Use and Residential Growth Zone land within the West Fyans/Fyans Street study area.

To make the area more accessible to cycling, it is proposed to increase bicycle parking minimums to better align with future demand. As noted in 4.4.2, people who live in apartment buildings require dedicated bicycle parking spaces to be provided as there is often insufficient room within dwellings. The resulting schedule is therefore proposed to implement minimum bicycle parking provisions above what is stipulated in Clause 52.34 for all apartment style dwellings.

9.2.1.1 Parking objectives to be achieved

- To identify appropriate bicycle parking rates for apartment buildings within the West Fyans/Fyans Street study area.
- To encourage mode share shift towards active and public transport.

9.2.1.2 Permit requirement

Development must provide bicycle parking in accordance with that specified in Table 20, unless the responsible authority agrees to a lesser number

The bicycle parking rates in the below Table supersede the relevant parking rate specified at Clause 52.34.

9.2.1.3 Number of bicycle parking spaces required

If a use is not specified in the Table below, bicycle parking spaces must be provided in accordance with the use under Table 1 to Clause 52.34-5 Bicycle spaces.

Table 20 Minimum bicycle parking

Type of development	Rate requirement	Facility requirements
New Dwelling.	A minimum of one secure bicycle space per bedroom.	None specified.

Design standards for bike parking

- Secure location, sheltered from elements, within building and close to main entrance.
- Minimum of 80% located on ground (i.e. no more than 20% being wall mounted).

Decision guidelines

Before deciding on an application which seeks to reduce the minimum number of bicycle parking spaces, the responsible authority must consider as appropriate:

- Any relevant Local Planning Policies.
- Any empirical analysis which supports a variation in the number of bicycle parking spaces that should be provided.
- The particular characteristics of the proposed use with regard to the likely bicycle parking demands generated.
- The availability of bicycle parking in the locality.

9.2.2 Non-residential bicycle parking

Appropriate provision of bicycle facilities is required to support transport sustainability across the precinct for non-residential purposes. For many customer needs, bicycle parking is best provided on the street near the main entrances of shops (as occurs in shopping strips in inner Melbourne and Geelong).

For smaller shops it is appropriate to permit development without any visitor/shopper/student bicycle parking. It is recommended that all non-residential uses with a net floor area of 200 sqm or below be exempt from employee and visitors/shopper/student bicycle parking, with Council assuming responsibility and providing on-street bicycle parking on footpaths of sufficient width. For all non-residential uses above 200 sqm, visitors/shopper/student bicycle parking rates under 52.34 should be required.

The location of the precinct is near to areas of high latent demand for cycling including central Geelong. The area's transition to service-based employment will likely increasingly draw on workers living in surrounding suburbs existing and planned cycling links could support higher levels of cycling. To meet the Greater Geelong's Clever Creative Future target of 50% journey to work mode share by public transport, walking, or cycling, a rate of one bicycle parking space for every 10 employees is appropriate to allow for up to 10% of employees to ride to work.

9.2.2.1 Parking objectives to be achieved

- To identify appropriate bicycle parking rates for various uses within the West Fyans/Fyans Street study area.
- To encourage mode share shift towards active and public transport.

9.2.2.2 Permit requirement

A permit is required to reduce or waive bicycle parking requirements under the minimum number specified in Clause 3.0 of this schedule.

9.2.2.3 Number of bicycle parking spaces required

If a use is specified in the Table below, the number of bicycle parking spaces required for the use is

calculated by multiplying the Rate specified for the use by the accompanying Measure.

If a use is not specified in the Table 19 below, bicycle parking spaces must be provided in accordance with the use under Table 1 to Clause 52.34-5 Bicycle spaces.

Table 21 Number of bicycle parking spaces

Land use	Measure	Rate
All non-residential uses	Net floor area of 200 sqm or below.	Visitor/Shopper/Student: Not applicable
All non-residential uses	Net floor area above a minimum of 200 sqm.	Visitor/Shopper/Student: Rates aligned with Table 1 to Clause 52.34-5 Bicycle spaces
All non-residential uses	Net floor area of 200 sqm or below.	Employee Rate: Not applicable
All non-residential uses	Net floor area above a minimum of 200 sqm.	Employee Rate: 1 bicycle parking space per 10 employees

9.3 Additional recommendations

9.3.1 Improvement on-street parking management

On-street parking should be managed in a way which supports planning policy including amended minimum parking requirements for residential and non-residential uses. Effective management will help minimise displaced parking demand, encourage greater use of alternative transport modes, and support road space reallocation for future street upgrades aligned with Movement and Place principles. Even so, some on-street parking demand - including visitor demand - is likely to continue well into the future.

The above highlights the need to formalise and carefully manage on-street parking. The following actions are recommended to be actioned and/or included in the Precinct Structure Plan provisions and plans. Changes should be made with consideration of the approach and staging of initiatives outlined in the *Car Parking Action Framework* (Figure 51):

- Remove on-kerb parking and formalise permitted parking through enforcement, line marking and signage starting with key pedestrian connections of Little Fyans Street, Hampton Street, Lambert Avenue and Rutland Street (west of Hampton Street) where this would remove footpath obstructions.
- Formalise angle parking through line marking and signage with an initial focus on Bellerine Street, Swanston Street, Latrobe Street and Gregory Avenue. Angle parking can provide the most supply if properly managed.
- Formalise and rationalise parking in Frier Reserve to clearly define access, protect assets and provide pedestrian access on the east, west and southern sides.
- Direct workers to preferred parking locations through wayfinding, which in the study area are likely to be unrestricted parking bays further from the key activity nodes but still within a 800m walkable distance.
- Progressively implement time restrictions in all on-street parking spaces throughout the study area starting with busier areas including Lambert

Avenue, Grenville Street, Hampton Street and Little Fyans Street.

- Install Parking Overstay Detector Systems (PODS) in moderately used, but still accessible areas. This can improve the efficiency of existing parking supply by directing drivers to available parking spaces. This reduces congestion caused by cars cruising for a free space and provides the community with an accurate and up-to-date understanding of car occupancy in the area.
- Adjust time restrictions to suit demand and discourage long duration parking in high demand areas with quick turnovers. In the study area this should focus on the activity nodes of Rutland Street and Pakington Street
- Parking controls be effectively enforced across the entire study area. This can be supported through the implementation of PODS.

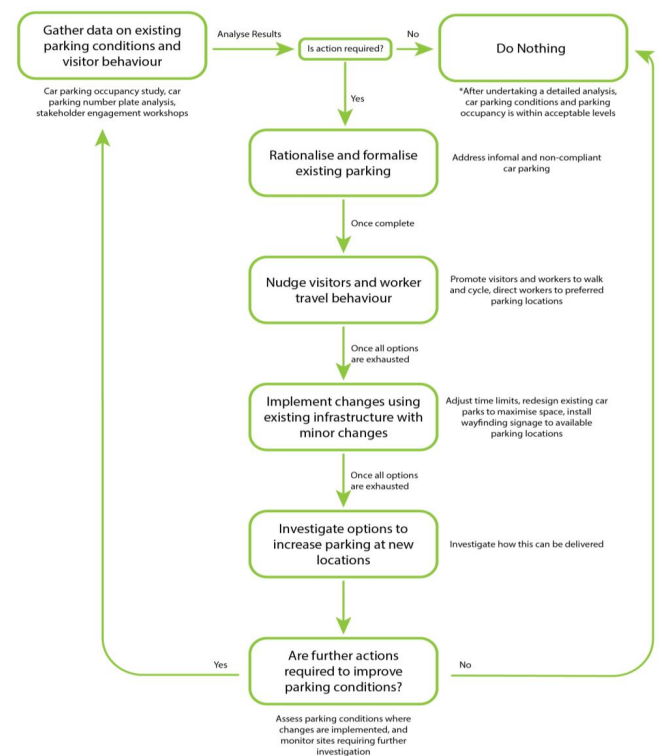


Figure 51 Car parking action framework

Source: Institute for Sensible Transport

9.3.2 Travel demand management

Active transport infrastructure should be provided across the study area and on key connections to surrounding areas. For pedestrians, this can be accomplished by:

- Providing accessible footpaths on both sides of all roads, combined with pram ramps and priority crossings where supported by demand.
- Such upgrades should be prioritised to support new developments to support active transport choices from the start, for example the Barwon Business Park at 45-53 Riversdale Road, Newtown.

For cycling this includes upgrades to off and on-road paths to protected separated infrastructure or off-road infrastructure to provide for all-ages and abilities:

- Upgrade the shared path along the Barwon River to a minimum width of 3m to improve east-west connections and improve the connectivity, quality and gradient of connections north into the street network.
- Protected or separated infrastructure on Pakington Street that connects to the shopping strip to the north to support local trips.
- Protected or separated infrastructure on Yarra Street that connects to the CBD.
- Protected or separated infrastructure on Swanston Street connecting to the protected bike lanes north of the Bellarine Highway that link to the Geelong Waterfront.
- In the longer term, improve linkages over the river to Belmont.
- Maintain the existing Public Acquisition Overlay mid-block from Fernleigh St to Bloomsbury Street, and extend to Anne St with a view to building an east-west connector through the precinct with a crossing over Latrobe Boulevard.

9.3.3 Bicycle parking and end of trip provision

The ability to securely and conveniently park and store a bicycle is fundamental to the use of cycling as a transport mode for residents, workers and visitors. For many customer needs, bicycle parking is best provided on the street near the main entrances of shops (as occurs in shopping strips in inner Melbourne and Geelong). Bike parking for visitors and for smaller shops can be supported by Council through increasing the availability of on-street bicycle parking by installing:

- A minimum of two bike hoops every 100 metres on each side of the street in high pedestrian activity areas (Major activity centres and small commercial areas)
- A minimum of two bike hoops outside community facilities
- A minimum of four bike hoops at major trip attractors (e.g. hospitals etc)
- All installations should prioritise user convenience and bicycle security, with hoop designs consistent with Austroads guidelines. This will include replacing non-compliant styles of bike parking with compliant ones

Longer-term storage bike parking and end-of-trip recommendations include:

- Ensuring non-residential bike parking is provided in accordance with Section 5.4. End-of-trip facilities outlined in clause 52.34 relating to showers and change rooms are generally considered to be adequate as demand for these facilities is often overestimated.

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