Creamery Road PSP

Parking Strategy

Prepared for: City of Greater Geelong

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Revision

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For and on behalf of

Stantec Australia Pty Ltd

Acknowledgment of Country

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

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Executive Summary

Delivering the Creamery Road PSP

The Creamery Road PSP area has been earmarked for development into a vibrant new neighbourhood. The City of Geelong Government expects that the PSP area will become home to 3,000 dwellings by 2051, and will provide associated local activity centre and education uses.

Based on policy and analysis of the transport networks, a target mode share for the Creamery Road PSP for 40% of trips to be made by sustainable (non-car) modes has been established. This will contribute to the City's wider objective of reducing car mode share and enabling to 50% of journey to work travel across Greater Geelong to be made by sustainable modes by 2047. This is part of the City's Strategy to achieve net zero carbon emissions by 2035, 15 years ahead of the federal government 2050 target.

Integrated land use and transport planning

This parking strategy is intended to realise state and local policy to support desired development patterns and deliver sustainable travel movement. There is need to implement a contemporary approach to providing car parking that enables sustainable development across the whole of the PSP. The car parking aspect of the strategy will be supported by a contemporary approach to the provision of bicycle parking and associated end-of-trip facilities.

Accordingly, this car parking strategy aims to:

- Deliver on the objectives of the Creamery Road PSP, including reduced car ownership (per dwelling), with support for sustainable transport modes (including walking, cycling and public transport)
- Enable public street space to be unlocked for other uses and enable wider city design outcomes
- Improve efficiency of car parking provided, including reducing barriers to co-locating and sharing car parking across buildings and uses, and unbundling car parking
- Incentivise stronger sustainable transport facilities (e.g. car share, electric charging, cycling facilities) to be delivered
- Maximise adaptability of car parks, including in terms of types of car parking and facilities provided, and ability to repurpose structures for other uses.

Removing Car Parking Minimums

Policy tells us the future must be different. A key consideration for this parking strategy is how to manage car parking in the context of a growth area transitioning over time from greenfield to a mature urban environment. A fast pace of change is expected, and policies are not supportive of change if they are continually playing catch-up.

The planning industry has historically set parking requirements in a centralised manner, in a way that does not have regard for individual development site circumstances. The current car parking rates in Planning Scheme Clause 52.06 apply across Victoria, from Melbourne to Mildura, and are formulated to ensure that enough parking will be provide in most circumstances. This means there will be cases when these requirements would result in many more car spaces than would ever be needed. While the planning scheme allows the parking requirement to be reduced, this is not the default policy setting.

Alternatively, removing parking minimum car parking requirements is shown to act immediately to reduce car parking provision, and only provide the amount of car parking that people are willing to pay for – see the case study in Section 5.2. At approx. $45,000 per space, car parking is a cost that cannot be ignored, particularly if it is an unnecessary cost.

Essentially, this is a strategy to let the market decide how much parking should be provided, supported by regulatory controls put in place to manage inappropriate or potentially adverse outcomes.

Putting in place contemporary bicycle parking requirements

The parking strategy will be supported with progressive rates for bicycle parking, based on a review of recently published policies from around the country on this matter. The recommended rates are:

Description	Long-Stay Bicycle Parking	Short-Stay Bicycle Parking
Residential	1 space per 1 or 2-bedroom dwelling 2 spaces per 3-bedroom dwelling 1 space per bedroom for dwellings with no car parking	2 spaces per 5 dwellings
Office	9 spaces per 800sqm	1 space per 800sqm
Retail Premises	1 space per 400sqm	1 space per 100sqm

Source: Stantec

In addition to the above, the provision of bicycle parking will be supported by end-of-trip facilities, wayfinding, and provision for e-bike charging.

The Key Recommendations of this Report

This report contains 11 key recommendations to enable reduced car use and to support travel by alternative modes:

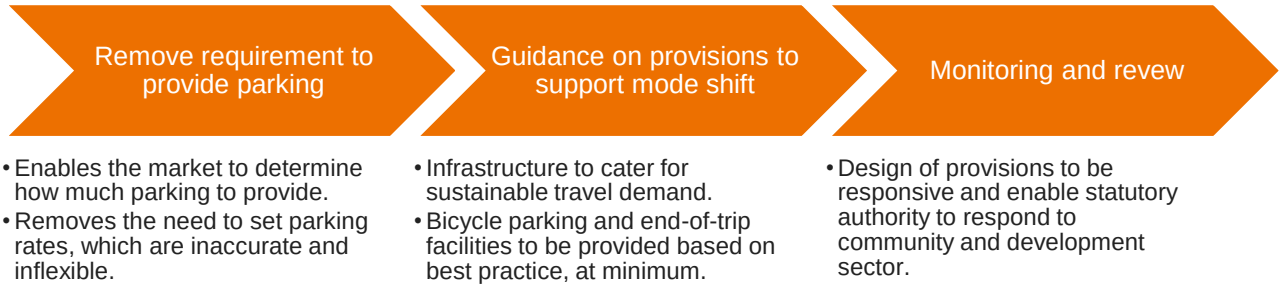
- **Recommendation #1** – Remove the Requirement to Provide Parking
- **Recommendation #2** – Undertake future investigations to control car use using maximum parking rates
- **Recommendation #3** – Council will manage the use of on street parking
- **Recommendation #4** – Provide 5% of all car parking spaces for people with disabilities
- **Recommendation #5** – All off-street car parking to be capable of EV charging
- **Recommendation #6** – Car share spaces to be provided based on market demand
- **Recommendation #7** – Use decision guidelines in the Parking Overlay to control adaptable car park design
- **Recommendation #8** – Better bicycle facilities for multi-unit residential buildings and commercial premises
- **Recommendation #9** – Consider E-bikes within bicycle parking design
- **Recommendation #10** – Prepare Parking Precinct Plans for areas of higher activity
- **Recommendation #11** – Review this parking plan and the Parking Overlay every 5 years

Implementation

The car parking measures set out in this parking plan are to be implemented in the Greater Geelong Planning Scheme via a Schedule to the Parking Overlay (PO), while requirements for bicycle parking and end-of-trip facilities will be set out in the Creamery Road PSP.

Management of parking outcomes on-the-ground can be controlled by the City of Greater Geelong, through its municipal powers.

Parking Strategy Summary



1. Introduction

1.1 Background

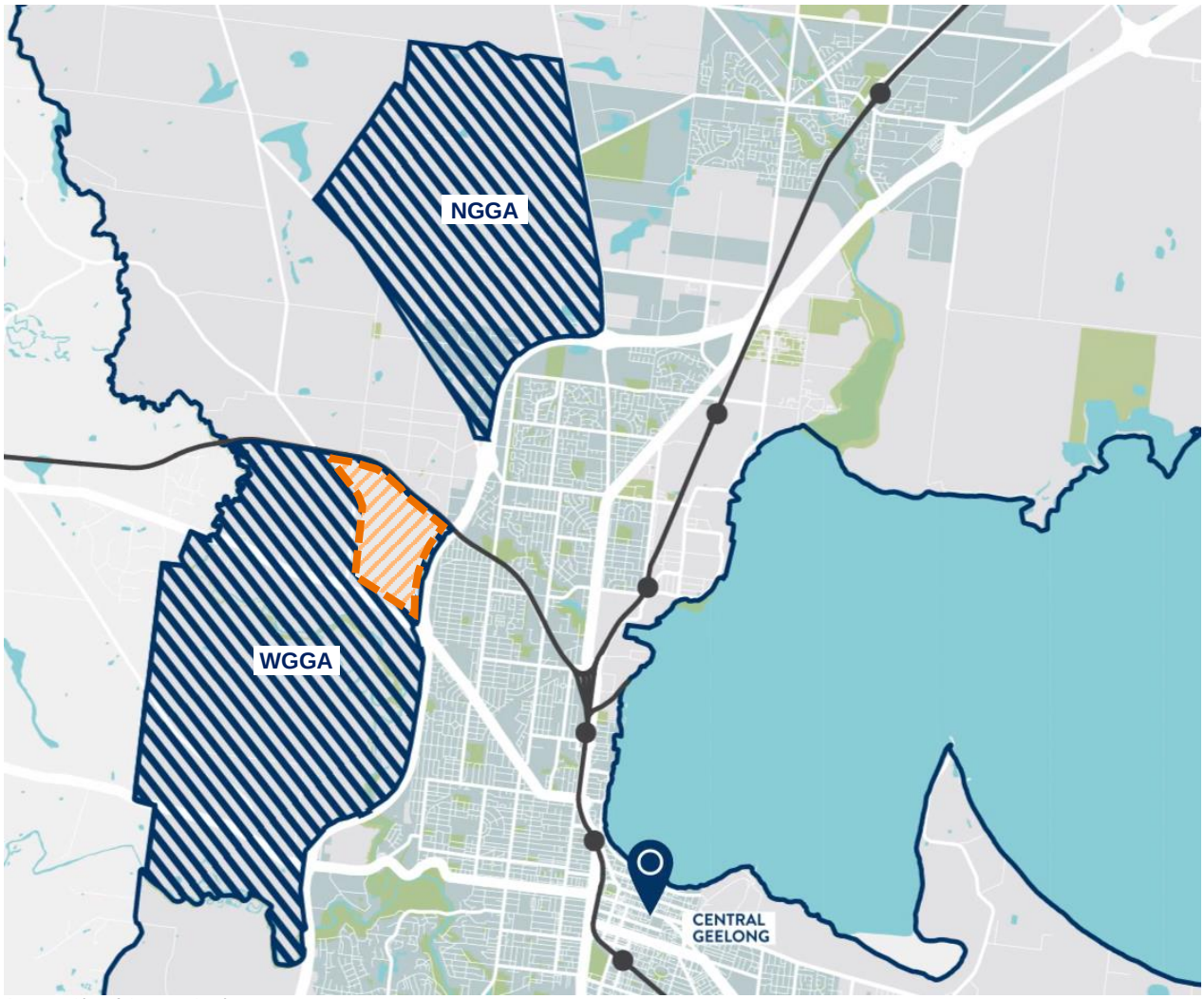
Geelong's population is planned to double over the next 30 years

The City of Greater Geelong has set an agenda for Geelong to deliver metropolitan-scale growth as a regional city. Geelong is already well-known as a city that is growing quickly. The current rate of population growth is about 1.5% per year; through the *G21 Regional Growth Plan* and the *Clever and Creative Vision*, a growth rate of 2.5% per year is targeted.

The Northern and Western Geelong Growth Areas (NWGGA) Framework Plan is the largest greenfield planning project in regional Victoria with the capacity to accommodate 110,000 new Geelong residents. In combination with other areas, such as Armstrong Creek and in the City of Greater Geelong more broadly, a population of 650,000 people by 2051 is envisioned across the City as a whole. This is more than double the existing population of around 260,000 people.

The framework will be delivered via nine Precinct Structure Plans (PSPs), comprising approximately 40,000 houses. The Creamery Road PSP is the first in the Western Geelong Growth Area (WGGA) and will have approximately 3,000 dwellings, along with associated local activity centre and educational uses.

Figure 1.1 – The Northern and Western Geelong Growth Areas with the Creamery Road PSP area highlighted

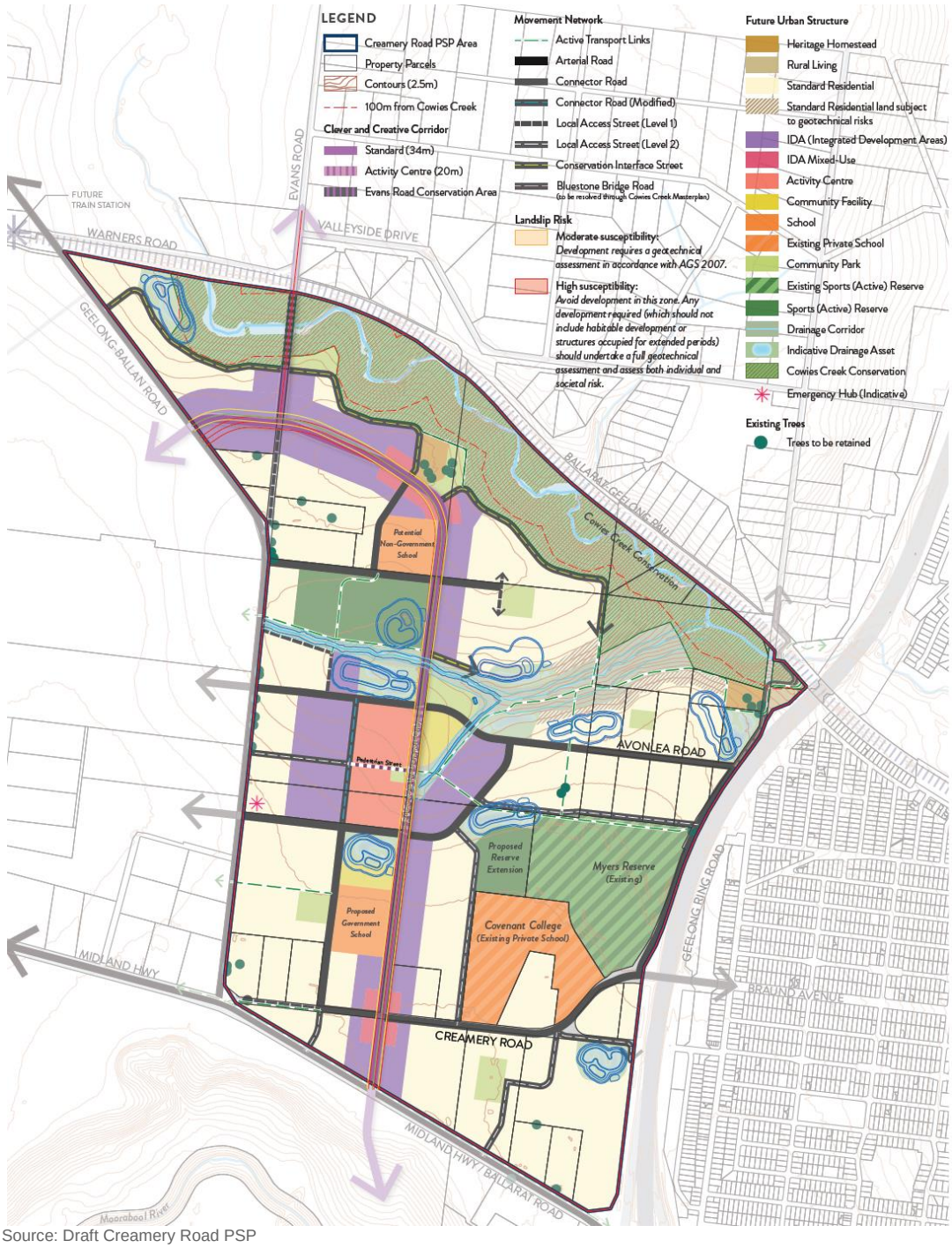


Source: City of Greater Geelong

1.2 PSP Urban Structure

The proposed Urban Structure for the Creamery Road PSP has been prepared by the City of Greater Geelong and is shown in Figure 1.2.

Figure 1.2 – Creamery Road PSP Future Urban Structure (Draft)



Source: Draft Creamery Road PSP

1.3 Purpose and Scope of this Report

This report provides analysis and justification to support a potential Schedule to the Parking Overlay for the Creamery Road PSP and should be read as a Precinct Parking Plan as noted in Planning Practice Note No. 57.

A parking plan provides the basis for informed and integrated decision-making around the appropriate provision of parking and type of facilities for a precinct area, in this case the Creamery Road PSP. Drawing on the guidance provided in *Practice Note 57: The Parking Overlay (April 2013)*[1], this car parking plan:

- Explores the issues and challenges for the Creamery Road PSP and needs for the precinct (Sections 2 & 3)
- Outlines a set of principles for car parking in the Creamery Road PSP (Section 4)
- Provides a set of strategies for the provision of car parking facilities which support the aspirations for the Creamery Road PSP (Sections 5 & 7).

The parking plan will be supported by contemporary levels of bicycle parking provision and end-of-trip facilities to support lower car use (Section 6)

This report sets out a car parking strategy to best manage future car parking within the Creamery Road PSP area. The recommended strategies include a mix of the implementation techniques which will be examined in this report.

A parking plan is defined in PN57 as follows:

"Before a Parking Overlay is drafted, it will generally be necessary to prepare a car parking plan that identifies car parking needs and issues, relates these to broader social, economic and environmental considerations and sets out what car parking objectives a council wishes to achieve and how it will do this. … Once prepared, a car parking plan can provide the basis for, and be implemented by, a Parking Overlay..."

PN57 identifies that a Parking Plan must include the following:

- the objectives of the plan
- the area to which the plan applies
- findings from research and surveys that provide factual material to support the plan
- an assessment of car parking demand and supply
- car parking strategies proposed to facilitate the plan's objectives
- any locational, financial, design or other actions necessary to implement the objectives and strategies.

With regard to *research and surveys*, and *assessment of car parking demand and supply* PN57 states:

"An assessment of car parking demand and supply must be carried out to provide the factual material and analysis needed to justify a Parking Overlay and is a key component of any car parking plan".

These components are aimed at establishing car parking demands and possible areas of impact. The Creamery Road PSP is a greenfield area. This means there is effectively no existing car parking demand and supply, at least in an urban context, and there are also no sensitive areas or uses that need protecting from car parking impacts. In this context, any demand and supply calculations would be purely predictive.

Section 5 of this report investigates how much car parking should be provided. It sets out options for controlling the supply of car parking and the difficulties faced in attempting to correctly predict how much is needed. The recommended solution is to remove car parking requirements and let the market decide how much to provide. This approach is supported by a body of international research, such as Donald Shoup's *The High Cost of Free Parking*[2] and is further underpinned by case study evidence.

Further detail on the alignment of this parking strategy with the other requirements of PN57 is set out in Section 7.2.

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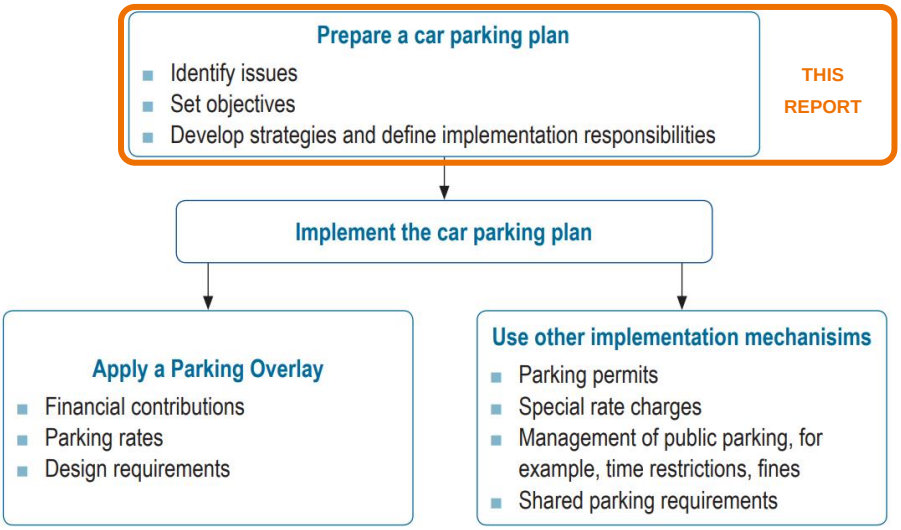
[1] *The Parking Overlay*, Department of Planning and Community Development, April 2013

[2] Shoup, D.C. (2017) *The High Cost of Free Parking*. London: Routledge.

Figure 1.3 – Relationship between car parking plan and other mechanisms, and the scope of this report shown in orange (adapted from *Practice Note 57: The Parking Overlay*[1])



Source: Planning Practice Note 57

1.4 Area to which this car parking plan applies

The car parking plan is intended to realise state and local policy and to engrain positive travel habits from the outset of the PSP delivery. Therefore there is equal need for modern car parking controls across **the whole of the Creamery Road PSP**. This will also provide better consistency and clarity of expectations for the development sector and community.

2. Strategic Policy and the Parking Challenge

2.1 Relevant Policies and Strategies

2.1.1 What is driving the need for new thinking?

The City of Greater Geelong recognises the societal and environmentally challenges we face:

- Climate Change
- Environmental sustainability
- Housing (quantity/affordability)
- Health and wellbeing
- Equitable prosperity

Of these, arguably the biggest challenge is climate change as it will affect practically everything else. In these terms, the City has a target of achieving net zero community carbon emissions by 2035, 15 years ahead of the federal government 2050 target. This necessitates a whole-of-economy change.

To enable a net zero carbon future, the City of Greater Geelong has set a target of **50% of travel to work to be by sustainable travel modes by 2047**. This target was adopted by Council as part of *A Clever and Creative Future* (Council's 30-year vision). City of Greater Geelong has adopted a sustainable travel mode share target of 40% for the Creamery Road PSP.

2.1.2 What is being done to address these challenges?

These challenges are planned to be addressed through the City's strategies and policies, which are listed below, along with the key message/purpose of each.

Policy/Strategy	Key Message and/or Purpose
Clever and Creative Future	*"By 2047, Greater Geelong will be internationally recognised as a clever and creative city-region that is forward looking, enterprising and adaptive and cares for its people and environment."*
Northern and Western Geelong Growth Areas Framework Plan	*"The Northern and Western Geelong Growth Areas will exemplify Geelong's transformation as a clever and creative city by building diverse, localised and sustainable neighbourhoods that prioritise self-sufficiency whilst maximising connections to the Geelong community, economy and identity."* The Creamery Road PSP seeks to address the aspirations, objectives and actions of the Framework Plan and determine final land uses and the urban structure of Creamery Road Precinct.
Geelong Growth Areas Transport Infrastructure Strategy (GGATIS)	The Geelong Growth Areas Transport Infrastructure Strategy (GGATIS) is currently being prepared by the City of Geelong. GGATIS is a strategic transport modelling and transport infrastructure delivery strategy for Geelong and its growth areas. GGATIS indicates that overall car mode share (car and passenger) for Greater Geelong is likely to be 16% higher (66%) than the City's target of 50% by 2051. This is a "bottom up" approach. Other areas of transport related policy need to be reviewed in a "top-down" manner to enable car use to be supressed over time to help meet the 50% target.
Climate Change Response Plan	The City's Climate Change Response Plan 2021-30 establishes a target of net zero community emissions by 2035. The plan sets out 7 principles, the most relevant of which is: **Principle 6 – Embed climate thinking in our decisions** : *"Ensure local planning schemes, standards, codes and policies support the use of best available climate change data and adaptative planning principles as part of decision making, particularly as it relates to infrastructure, development and land use changes."*

A review of the parts of these strategies that are relevant to parking is set out in Appendix A.

A short review of the state government strategies and policies that underpin those at a local level follows.

2.1.3 Underpinning State Government Strategies & Policies

There are a number of key State Government policy documents applicable to the Creamery Road PSP. These provide guidance on appropriate land use and development. Those that are relevant in the context of this parking strategy are as follows:

- Transport Integration Act (2010)
- Plan Melbourne
- Movement and Place in Victoria
- State Planning Policy Provisions in the Greater Geelong Planning Scheme

Further detail on the Victorian Planning Provision is set out below, while the other documents referred to are discussed in more detail in Appendix A.

2.1.4 Victoria Planning Provisions in the Geelong Planning Scheme

The Greater Geelong Planning Scheme provides a framework that contains policies and provisions that control land use and development within the City. The Planning Scheme contains the Victoria Planning Provisions, which apply to all municipalities across the state. Relevant provisions are discussed below.

State Planning Policy Framework:

Clause 18 *Transport* is designed to reflect the intent of State Government guidance and contains objectives in relation to Transport which are relevant to this development, including:

- To create a safe and sustainable transport system by integrating land-use and transport.
- To coordinate development of all transport modes to provide a comprehensive transport system.
- To promote the use of sustainable personal transport.
- To facilitate greater use of public transport and promote increased development close to high-quality public transport routes.
- To manage the road system to achieve integration, choice and balance by developing an efficient and safe network and making the most of existing infrastructure.
- To ensure an adequate supply of car parking that is appropriately designed and located.

Overlays

Overlays impose additional permit requirements on certain areas of land, further to any zone provisions. The VPP provides a set of standard overlays for a local authority to select from and apply to particular areas of land in the municipality, including Clause 45.09 (Parking Overlay).

Particular Provisions

All planning schemes contain state-wide particular provisions which set out requirements (such as whether a permit is required) that apply to a range of specified uses and developments. For example:

- Clause 52.06 (Car Parking)
- Clause 52.34 (Bicycles)

Clause 52.06 (Car Parking)

Relevant to this strategy, Clause 52.06 is intended 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
- Support sustainable transport alternatives to car use
- Promote the efficient use of car parking spaces through consolidation of car parking facilities
- Ensure that car parking does not adversely affect the amenity of the locality.

Important to this strategy, Clause 52.06 sets minimum rates of car parking provision for a variety of different land uses. Two types of parking rates are provided:

- ***Column A*** – default rates intended to apply in most travel and land use circumstances across the state
- ***Column B*** – generally lower rates intended to apply in activity centres and in areas served by high frequency public transport.

This means Clause 52.06 conveys a right to provide parking – there is no upper limit on its provision. A development proponent must apply for a permit to reduce the statutory minimum parking requirement.

To enable this, Clause 52.06-7 provides a series of decision guidelines which the relevant authority will consider when determining the suitability of proposed car parking provision, including (amongst others):

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

Clause 52.34 (Bicycle Parking)

The purpose of Clause 52.34 is to encourage cycling by providing usable bicycle parking and end-of-trip facilities.

This clause sets minimum bicycle parking rates for different land uses, together with requirements to provide end-of-trip facilities (showers and change rooms). The clause also sets bicycle parking design requirements together with requirements for wayfinding signage to direct cyclists to the end-of-trip facilities.

A mechanism to vary, reduce or waive the minimum required amount of bicycle parking is provided at Clause 52.34 *Decision Guidelines*. In this context, the guidelines are focused on meeting the objectives of the clause, if bicycle parking is a realistic requirement given the use and location, or if shared facilities result in fewer bicycle facilities being needed.

The travel mode share implied by the rates of provision of bicycle parking facilities in Clause 52.34 is low for areas that are well-connected to the bicycle travel network.

2.2 Change is needed to current travel behaviour

At 90%, the share of people travelling by car to work in Geelong is one of the highest in Australia and is comparable to the most car-dependent cities in the United States, which results in severance, poor community connection, sedentary lifestyles and societal exclusion.

90%	5%	5%
Car / Passenger	Public Transport	Active Travel / Other

Source: ABS Census 2016 Journey to Work for the City of Greater Geelong

Growth on the scale envisaged while meeting a 50% sustainable travel mode share target means changes are needed to the transport network:

- **Walkable neighbourhoods** and activity centres
- **High-quality bike network** that is convenient for most people
- **Better public transport** (more routes, higher frequencies, reliable journeys)
- **Improved roads** (but proportionally less on a per person basis)

These aspects are planned to be delivered by the Creamery Road PSP movement network and the Geelong Growth Area Transport Infrastructure Strategy (GGATIS).

Scenario planning – using the Victorian Government's Transport Model - was undertaken as a part of the GGATIS evidencing the following conclusion:

- *'Good progress is made towards 50 per cent of journeys to work being made by public transport, walking or cycling – but the Do Different scenario only delivers a part of this objective and therefore more work is needed. Mode shift in Geelong provides a cost-effective solution that has real benefits to all people in Geelong – including car drivers.'*

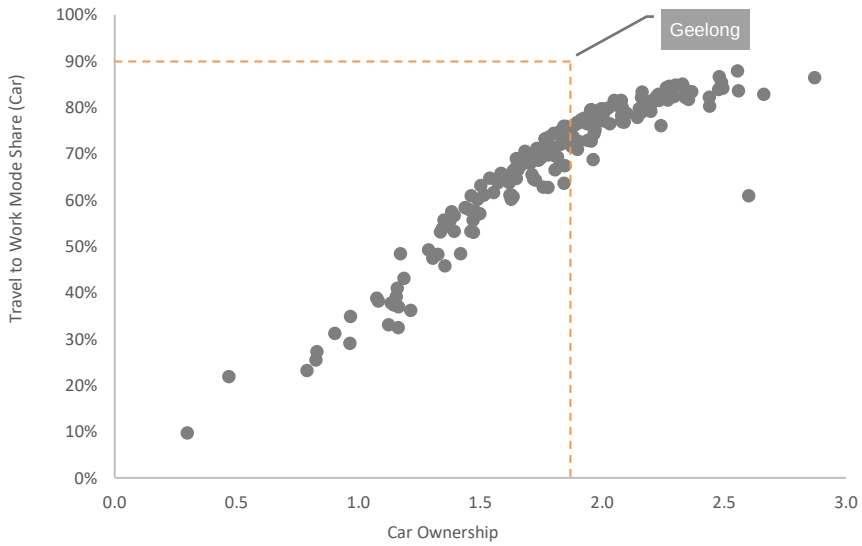
2.3 What Degree of Change is Needed?

Reducing car ownership is crucial but will be difficult

While a 50% mode share target is aspirational for Greater Geelong, it reflects the current travel to work mode share of many inner Melbourne suburbs, which is a useful comparison of what is needed. It is an outcome that correlates to density of jobs and access to public transport.

In this regard, there is a relationship between car ownership and car use. **Figure 2.1** shows the relative car ownership levels and journey to work car mode shares for Greater Melbourne suburbs, showing that Greater Geelong sits well above the trend, indicating that reduced car reliance will require a change from the way urban planning currently takes place.

Figure 2.1 – Car ownership and car use are linked (Greater Melbourne Suburbs, with Greater Geelong indicated)



Source: ABS Census 2016

A 50% mode share target broadly equates to an average of 1.4 cars per household, according to the Australian Bureau of Statistics (ABS) Census 2016. Recently released ABS Census data indicates that Geelong has a car ownership of 1.9 vehicles per household. Notionally, a target of 50% car use requires a 20% reduction in car use across Geelong, on average.

If nothing changed for existing dwellings, the 150,000 new dwellings would be limited to 1 car per household, see Appendix B.

Clearly, it would not be possible to place the full weight of meeting the 50% target on all new housing as there is much that can be done to encourage existing residents to travel more sustainably; however, existing car parking provision is difficult to erase. In existing areas, incentives to use non-car modes are the only real options to delivering more sustainable travel mode share.

Achieving reductions in demand requires reductions in car parking supply to 'lock in' the benefits of improved sustainable transport uptake. Abundant availability of car parking will undermine the effectiveness of the sustainable transport measures delivered through GGATIS and induce car-based travel. In planning for NWGGA the City has a number of actions to provide and encourage sustainable transport options, and parking provision is one tool that can be used to encourage lower car ownership and use.

Current policy (Clause 52.06 of the Planning Scheme) does not enable low parking provision by default. A change is needed to enable planning and delivery of development that comes with reduced amounts of parking (as it will be much easier to provide new housing with reduced parking than getting existing residents to give up cars). The conditions that enable this need to be established (or better leveraged where they already exist).

Steps that councils can take to achieve this outcome and strike a balance between existing and new developments parking needs include:

- Mixing land uses and creating density in the most accessible areas – addressed by the NWGGA Framework Plan
- Creating walkable environments (which enables public transport and bicycle access) – again, addressed by the NWGGA Framework Plan
- Remove parking minimum requirements to let the market decide an appropriate level of parking for each development. This avoids the need for municipalities to continually keep-up with changing market conditions.
- Use time restrictions, permit systems and (where necessary) paid parking, to enforce appropriate parking use and protect existing parking for existing users.

These suggestions are not particularly new or radical. They can be found in widely-accepted industry texts such as Donald Shoup's *The High Cost of Free Parking*[2] and Jeff Speck's *Walkable City Rules: 101 Steps to Making Better Places*[3]. These are features of growing areas across Victoria and Australia more broadly; they are essential to achieving the goals set by the City.

This parking strategy deals with the appropriateness of continuing to specify parking rates, even if these rates are reduced from those set out in Clause 52.06. The strategy is supported by car parking design requirements, management measures and contemporary levels of bicycle parking to provide a realistic alternative to car use.

2.4 There is community support for change

Based on engagement for the Climate Change Response Plan[4], the community generally supports the policy direction that underpins a focus on sustainable travel and a shift away from car use.

- Respondents identified a need for regular, public and transparent reporting, monitoring, target setting and evaluation. The need for actions to be supported by clear timelines and measurables was also highlighted.
- Respondents were strongly in favour of setting a strong target and adopting a science-based data approach. Interim targets for 2025 and 2030 were also suggested.
- Respondents called for a variety of sustainable transport options, including: better active transport and public transport routes and infrastructure within the Geelong region; car share schemes; shuttle buses with free parking/collection points; and best practice planning to ensure that the transport needs of new residential developments are addressed.
- Some respondents called for detailed data-driven assessments of trip types, distances, and frequencies to better understand what would improve public and active transport use.
- While greater uptake of electric vehicles and charging infrastructure was well supported, the cost and sustainability of batteries was of concern to some respondents, with hydrogen-powered vehicles suggested as an alternative.

It is acknowledged that while there is broad support for more transport options and greater sustainability, parking is a contentious and emotive topic, and this represents a challenge for the City in terms of engaging with the community and achieving buy-in. The fact that the Creamery Road PSP is a greenfield area means there is effectively no car parking demand, at least in an urban context. This is an opportunity to put in place the correct car and bicycle parking policies from the outset of development.

[3] Speck, J. (2018) *Walkable City Rules: 101 Steps to making better places*. Washington, DC: Island Press.

[4] City of greater Geelong Climate Change Response Plan 2021-30

2.5 How can parking help address these issues?

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

As the Creamery Road PSP area is developed, it will be critical to have suitable mechanisms in place to safeguard it from adverse impacts (such as reduced amenity, delays to public transport, decreased road transport reliability, poor urban design outcomes and poor use of valuable urban space) and better align development with community aspirations and City planning policy.

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

This car parking plan aims to better align the Greater Geelong Planning Scheme with a flexible approach to providing for the demands for car parking provision to ensure that the area has the best chance of delivering on policy objectives through its evolution and growth.

This parking plan will achieve these objectives by removing barriers to new development enabling car ownership, including:

- developers' acquiescence to current parking policies
- the City continuing to implement policies that have an adversarial approach to new development providing relatively low levels of parking.

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

The parking plan will be supported by contemporary levels of bicycle parking provision and end-of-trip facilities to support lower car use.

3. Transport Demand Trends

A parking plan that will be implemented from the outset of the PSP area needs to be strong enough to realise the desired outcomes, but flexible enough to respond to future changes in travel behaviour, along with providing certainty for the community living and working there, as well as developers of land.

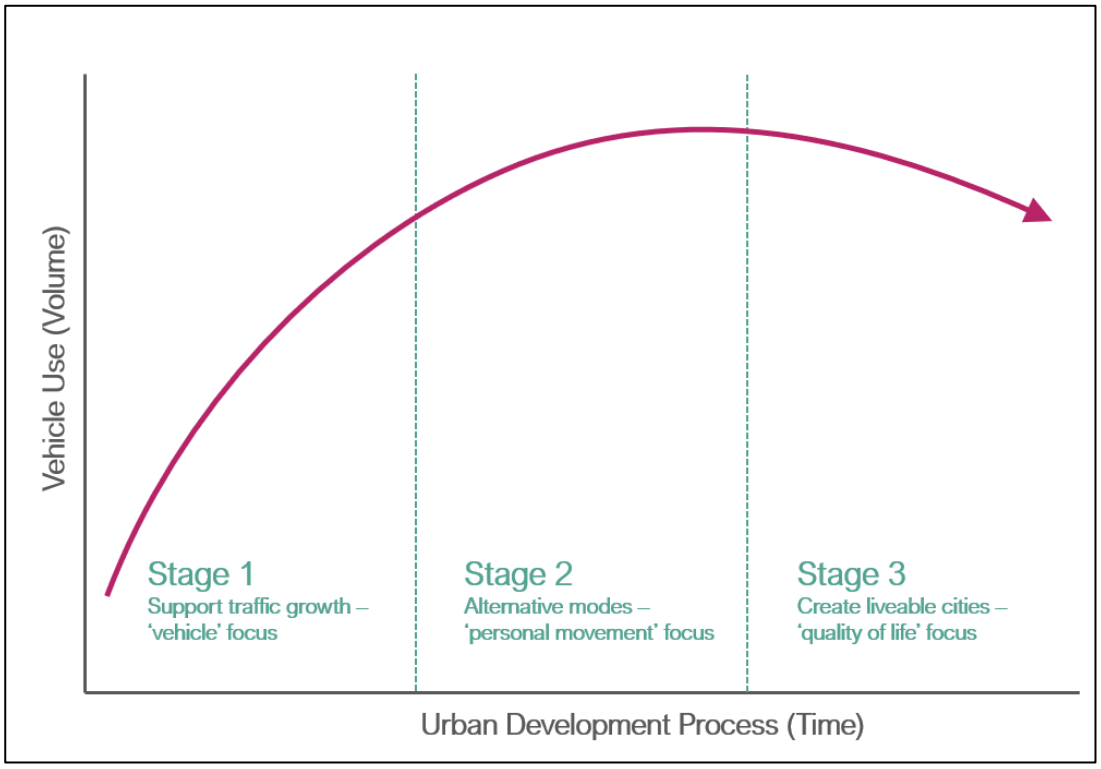
3.1 Urban Development Stages

When planning for a future transport network, it should be recognised how centres evolve and that travel behaviour changes is not linear. Urban development and the development of centres can be described as three primary Urban Development Stages as identified below and shown in Figure 3.1:

- **Stage 1**: Initial urban form and transport network developed, which has low density and low congestion. This typically results in high proportional car use, as it is the most convenient and cost-effective transport mode. Active and public transport modes are only typically used by those that can access a vehicle or choose them for other factors, i.e. no license, don't own a car, health, etc.
- **Stage 2**: As density and congestion rise, the proportional use of cars decreases. Ultimately, car use numbers 'top out' when the available road capacity is fully utilised. Choice of other modes become more convenient and cost-effective as the road network congestion increases, i.e. travel times are competitive, the introduction of paid car parking, etc.
- **Stage 3**: Higher densities and increasing access demands need to be provided and prioritised through more space-efficient travel modes. As single-occupant car use has the lowest modal space efficiency, the reallocation of road space to support other and more space-efficient transit modes occurs, resulting in an overall reduction of car use numbers on the network.

The vision for the Creamery Road PSP is for a liveable community that embraces the principles of a 20-minute neighbourhood and 30-minute city. This vision aligns with Stage 3 of the cycle, while current travel behaviour is aligned with Stage 2, or even Stage 1 in some localities.

Figure 3.1: Urban Transport Development Cycle



Source: Peter Jones' three development stages: http://www.create-mobility.eu/create/Publications/Project-deliverables

3.2 Transport Demand Trends

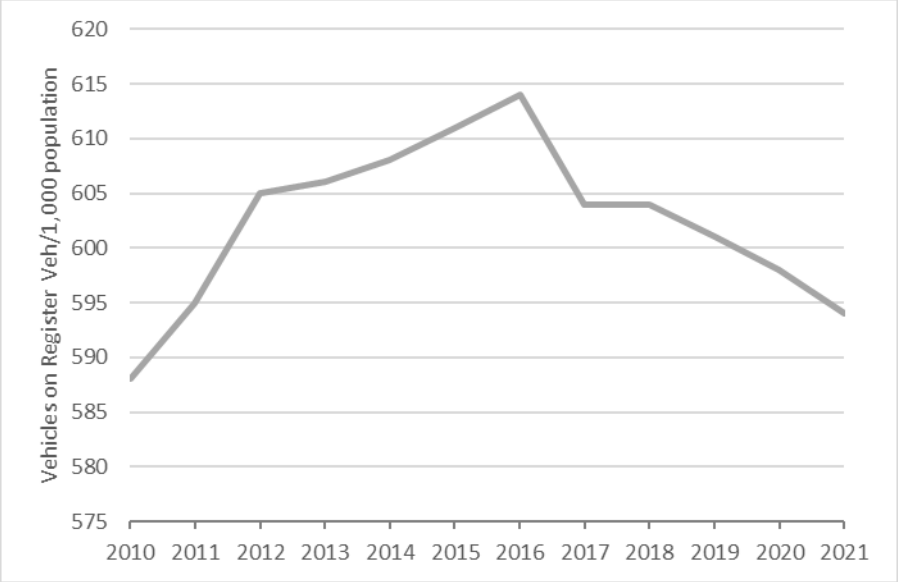
Car ownership trends and post-Covid work practices add-up to a reduced need to travel and a reduced likelihood of owning, or needing to own a car, compared to current characteristics.

3.2.1 While Car Ownership Across Victoria is Trending Downward, it is Increasing in Geelong

Based on trends reported more broadly through numerous open-source data and research locations, car ownership trends reveal a diminishing or reduced level of ownership over recent decades (i.e. peak car has been achieved in 2016, with a downward trend in licensing in Victoria recorded to 2021). This trend is shown in Figure 3.2 and is expected to continue over the long term.

ABS Census 2021 car ownership is reporting a flattening of a previously declining car ownership trend, even an increase in car ownership in some instances, compared to 2016 records. Geelong's car ownership per household has increased from 1.8 cars per dwelling in 2016 to 1.9 cars in 2021.

Figure 3.2 – Passenger Car Registrations in Victoria 2010 to 2021



Source: ABS Motor Vehicle Census, to 31 January 2021

3.2.2 The COVID-19 Pandemic is Likely to Change Movement

One of the positive outcomes of the COVID-19 pandemic is that it is likely to change the way people work and, consequently, how much time they devote to travel to and from their place of work. The pandemic has effectively forced businesses to break down barriers to enable people to do their job from home. Coupled with this, many businesses have implemented a curtailed working week – or people voluntarily working fewer days – which has given people greater work/life balance that will be difficult to relinquish.

3.3 Living and working locally

A key part of reducing car use is to make decisions that support people to live locally. This is supported at the metropolitan-wide policy level through the idea of a 20-minute neighbourhood, as set out in Plan Melbourne.

3.3.1 20-Minute Neighbourhoods

The realisation of 20-minute neighbourhoods, places where people can live and work and meet most of their daily needs, is a key component of Plan Melbourne.

The shorter the trip the more likely that it will be walked or cycled. Given that the mode share targets for the PSP area aim to achieve a high number of trips by walking and cycling, 'self-contained' trips within the precinct should form an important aspect of both land use and transport planning.

Self-containment is the idea that an area can provide for a persons' daily needs, reducing the need to travel long distances. It is achieved through the concentration of housing, services and employment options for residents within their local municipality. The degree of self-containment of a region impacts transport demand to and from the region, as employment outcomes and service distribution influence travel distance and mode shares.

3.3.2 Transport and land use policy

Creating a successful self-contained suburb requires a number of policies to work together, including:

- Land use planning needs to create a mix of uses to satisfy residential and commercial demand.
- Land uses need to focus on local catchments and not those that draw people by car from across Greater Geelong Greater Melbourne and other regional areas.
- Economic investment / incentives need to create local employment opportunities that cater for the populations that live in the area.
- Transport planning should prioritise local transport links and potentially constrain connection to the strategic network.

3.4 Implications for this Study

While the trip-making behaviour for the Creamery Road PSP has not yet been established, Greater Geelong has a higher-than-average level of car dependence relative to its level of car ownership. A greenfield site with aspirations for significant sustainable urban development is an opportunity to start with a "clean slate" as regards to car ownership and use to deliver the PSP objectives.

It is important to instil the right policies from the outset, to ensure these objectives are achieved together with the City's wider goal of 50% of travel being made by sustainable modes.

4. Principles for Parking

In response to the strategic policy context and characteristics of the municipality, a set of parking principles have been developed to form the foundation of car parking strategies to be adopted. These principles are common to many parking plans in established communities and will provide a strong footing for a parking strategy in a growth area.

Manage parking as a finite resource

The supply of car parking is limited by the availability of public space (including adjacent land), and the need to provide for different uses within the road reserve. As such, the management of car parking will be approached as a shared and limited resource.

Protect the environment and amenity

Parking policy will support a shift to sustainable travel modes and minimize the environmental impact of cars and car park facilities.

Safely ensure social equity

The safety of all people in public spaces should be the highest priority. The way parking is managed should be inclusive of people travelling by all modes, and in all places, particularly people with special access requirements.

Balance modal priorities

Roads have a primary movement function, and on street car parking competes with this. People move in different ways and by a variety of modes including walking, cycling, public transport and car. There is a need to dedicate space to important activities such as loading, bus stops or disabled parking. Additionally, by removing the amount of vehicle crossovers at business, houses, this creates less-interrupted, safe setting for pedestrian and bike movements, to encourage active travel, reduce the need for private vehicle trips and reduce vehicle ownership rates per dwelling.

Support the local economy

Car parking can play a supporting role in the success and vibrancy of the local economy, in particular within activity centres. On its own, parking management is not the answer, and should be considered as part of the broader economic, transport, and liveability objectives for the City.

5. Car Parking

5.1 Car Parking Strategy

A parking policy is sought that is resilient, enables opportunities and can stand the test of time.

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

A key consideration for this parking strategy is how to manage car parking in the context of a growth area transitioning over time from greenfield to a mature urban environment. A fast pace of change is expected, and policies are not supportive of change if they are continually playing catch-up.

Summary of Key Car Parking Recommendations

- Recommendation #1 – Remove the Requirement to Provide Parking
- Recommendation #2 – Undertake future investigations to control car use using maximum parking rates
- Recommendation #3 – Council will manage the use of on-street parking.

Essentially this is a strategy to let the market decide how much parking should be provided, with regulatory controls put in place to manage inappropriate or potentially adverse outcomes.

As well as enabling less parking to be provided, this type of strategy has the benefit of removing responsibility for setting parking requirements from Council and places it in the hands of development applicants. This strategy also removes the adversarial approach to deciding how much parking to provide by removing the need for Council officers to continually defend statutory parking requirements that cannot account for current and changing circumstances. This will result in Council spending less time and cost opposing low car parking provision in VCAT, or similar planning appeals processes.

5.2 How much parking should be provided?

5.2.1 Case for change

Policy tells us the future must be different

Reducing vehicle use will be challenging, all barriers getting in the way of meeting a 50% sustainable travel mode share should be removed.

By and large, car parking studies are based on surveys of existing use that are then taken as a proxy for future use. It is worth noting that this type of approach 'looks back' rather than 'looking forward'' in that the use of current or past parking demands in an attempt to predict future car parking demands will not:

- recognise the emerging trend of declining car use, or
- meet policy objectives seeking to influence travel behaviour and bring about desired change to the way people travel.

The latter principle is well-encapsulated in the VCAT Red Dot decision (reference No. P458/2016) Ronge v Moreland CC, where Members Bennett and Keddie stated the following:

"[Although a car parking demand assessment was undertaken], *as called for by Clause 52.06-6 when there is an intention to provide less car parking than that required by Clause 52.06-5, we found the whole discussion around car parking of marginal value given the strong policy imperatives about relying less on motor vehicles and more on public transport, walking and cycling. Census data from 2011 or 2016 is simply a snapshot in time, a base point, but we are not persuaded that such data should be given much weight in determining what number of car spaces should be provided in future, for dwellings with different bedroom numbers.* ***Policy tells us the future must be different****. We consider that oversupplying parking, whether or not to comply with Clause 52.06, has the real potential to undermine the encouragement being given to reduce car-based travel in favour of public transport, walking and cycling."*

Separate from policy, as a result of technology, the way that people travel is getting more complex – by mode, purpose and time of day. While many see aspects of this occurring, there is limited holistic research that connects land use

planning to new mobilities. The ability to share resources has continued to evolve beyond car share and ride share, with the shared e-scooter trials occurring in locations across the country. New fuels are also maturing, and different types of bicycles (including e-bikes) are gaining popularity rapidly.[5]

An alternative approach to the business-as-usual/predict-and-provide approach, is to take action to reduce the parking demand rate compared to current policy requirements. Doing so will enable a reduction in the amount of additional supply that needs to be added.

5.2.2 Criteria for this parking strategy

The following criteria have been applied to determine an appropriate way to provide car parking in the Creamery Road PSP area:

- **Flexible** – Enables development to take place in the short term
- **Responsive** – Enables developers to respond to market demands for parking (including providing no parking)
- **Sustainable** – Enables mode shift.

5.2.3 How can car parking supply be controlled?

There are four approaches that can determine how much off-street car parking is provided through planning controls, as outlined in Table 5.1.

Table 5.2 then shows how these four approaches align with the criteria set out above. These principles are illustrated in Figure 5.1, noting that a maximum rate with zero minimum parking is essentially a special case of the combined maximum and minimum parking rate option.

Table 5.1 – Options for reducing growth in off-street car parking through the Planning Scheme (orange reflects key factor influencing car parking provision)

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

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

Approach	Implication on lower bound for car parking	Implication for upper bound for car parking	Example application
4) Remove the requirement to provide parking altogether Enable the market to decide how much parking to provide.	There is no lower limit to the amount of car parking that can be provided.	In theory, no upper limit provided an applicant can demonstrate that the amount of parking aligns with wider municipal goals, is the minimum viable amount or can be later converted into more productive land uses.	There are many examples in the US, including areas that are developing and where regeneration was held back by parking requirements. Also, anywhere in Australia where maximum parking rates apply, do not have a parking "requirement".

Source: Stantec

Figure 5.1 – Options for controlling parking

Source: Stantec

Table 5.2 – How options to control parking align with the criteria sought for this parking strategy

Approach	Flexible	Responsive	Sustainable
1) Reducing the minimum rate	✗	✗	✗
2) Applying a maximum rate in addition to the minimum rate	✗	✗	✓
3) Replacing the minimum rate with maximum rate	✗	✗	✓
4) Remove the requirement to provide parking altogether	✓	✓	✓

Source: Stantec

5.2.4 The problem with trying to set car parking rates

We should be mindful that there is a lot of information we do not know when setting car parking requirements:

- How much each parking space costs
- How much drivers are willing to pay to par
- How parking increases the price of everything else, except parking
- How parking demands will change over time, particularly in a growth area
- How parking affects architecture and urban design
- How parking influences travel choices
- How parking affects the environment in terms of CO_2 emissions, air and water pollution.

Recommendation #1 – Remove the Requirement to Provide Parking

Setting parking requirements in a centralised manner within a planning policy cannot possibly cover all the future nuances and opportunities that may arise.

The key recommendation of this study is that car parking requirements are removed and are not replaced with a set of parking rates.

Implementation

This recommendation can be included in a schedule to the Parking Overlay. A development application that includes on-site car parking can be administered via decision guidelines, either within the Parking Overlay itself (such as the requirement for a Parking Plan that controls the parking layout), or elsewhere in the Planning Scheme, such as Clause 65.

Recommendation #2 – Undertake future investigations to control car use using maximum parking rates

City of Greater Geelong should monitor travel behaviour and the use of car parking in the Creamery Road PSP, see Recommendation #11.

The purpose is to establish whether too much value is being placed on car parking and whether maximum parking rates should be introduced to supress car mode share, should it be identified that mode share targets set by the City risk not being met.

The intention is to allow travel behaviour to establish and develop in the interim, from its current greenfield status, and provide the evidence base to potentially introduce maximum parking rates.

It is important to note that maximum parking rates are part of a wider transport solution, i.e. it is not enough to simply supress car parking to achieve a mode share target, there must be realistic alternatives to car use. These aspects should form part of an evidence base to support the introduction of maximum car parking rates, when necessary.

Implementation

At an appropriate time in the future, this recommendation can be included in a Schedule to the Parking Overlay and administered via decision guidelines, primarily within the Parking Overlay itself.

5.2.5 Certainty, equity, and transparency

There are two key questions that arise from a proposal to remove parking requirements, each from different perspectives:

Entity	Question	Answer
Responsible Authority	How can it be certain that developments won't provide enough parking, too much of it, or not enough of the right type of parking (such as DDA parking)?	An applicant needs to demonstrate that a development is compatible with the objectives of the parking overlay. These questions can be addressed through decision guidelines as noted above, or by reference to this parking strategy.
Development Industry	What does an acceptable outcome look like if the responsible authority doesn't tell us how much parking is needed?	

5.2.6 What will be the wider impacts of these changes?

Protecting on-street car parking from overspill

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

Removing car parking requirements means that developers are able to provide zero on-site car parking as-of-right. If this occurs and surrounding on-street parking is uncontrolled, this encourages residents and workers to own a vehicle and simply park on-street, undermining the effectiveness of the parking controls, resulting in substantial on-street car parking concerns.

Recommendation #3 – Council will manage the use of on-street parking.

To prevent these outcomes, on-street car parking in Creamery Road PSP is recommended to be managed in accordance with parking management principles, as set out in Section 6.6 of this report. This may include fees, time limits and/or resident parking permits.

City of Greater Geelong will take on the responsibility of managing car parking in the Creamery Road PSP area.

Will no parking be provided?

Developers of land will (by and large) only market products that they can sell. Parking will be a key consideration of homebuyers, retail and office tenants, and the like.

Removing minimum parking rates does not mean 'no car parking', there are many examples across the country where there is no requirement to provide parking, yet parking is still constructed. The best examples that demonstrate the principle are central business districts and inner urban areas. These are the most accessible areas in a region, with high levels of public transport, walkability and connectivity to the bicycle network. Yet, it is evident that parking still has a value by virtue of the fact that many private and public car parks are in use.

In Victoria, such locations include Melbourne CBD, Southbank, Docklands, Carlton, East Melbourne, West Melbourne where maximum limits on car parking apply and car parking still exists and is still constructed. The Creamery Road PSP will not have the same degree of alternative transport provision as these areas, which notionally means more parking will be provided in the PSP area, on a comparative basis. However, these examples underline the point that car parking will be provided where there is a market for it, i.e. where a value is still placed on car travel.

This means that, rather than 'no parking', more appropriate amounts of car parking will be provided, and the risk of oversupply will be reduced.

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

Will too much parking be provided?

Current parking policy under Clause 52.06 permits unlimited parking – in theory. The number that has actually been provided has been shaped by market forces. These market forces are not likely to markedly change in terms of the demand for parking increasing beyond current norms. Again, developers will only market products they can sell.

In this manner, and using housing again as an example, average car ownership rates will always be a relevant indicator of how much resident parking could ever be required. This average is currently 1.9 cars per household in Greater Geelong. Enabling an outcome that has lower car ownership than the current average, means the PSP will need to have much better than average access to alternative travel modes.

In retail and office settings, providing car parking comes at a cost, in terms of land at surface-level car parks, or in terms of relatively high capital costs in above or below-ground parking structures. These costs limit the amount of parking that would be provided. Again, low parking in these circumstances can only be enabled if alternatives to car use are realistic.

In view of the above considerations, it is unlikely that developers would respond by providing higher than necessary levels of car parking.

Case Study

The New Zealand Government has requested that all council areas remove minimum car parking requirements from their planning codes. This case study focuses on the evidence coming out of Lower Hutt, near Wellington[6]

The Lower Hutt Region is similar to Geelong in many ways; it is located in a coastal bay area, connected to the regional capital, Wellington, by public transport and road, and has a linear urban layout that is served by a train line. The population of Lower Hutt, approx. 110,000 people, is in the same order of population as Geelong (approx. 260,000 people).

Hutt City Council removed minimum parking requirements in 2019/20 and it had an immediate effect on the amount of car parking being provided for new residential developments.

Figure 5.2 shows the locations of new multi-unit residential development relative to train station catchments. The change in parking provision is illustrated in Figure 5.3, which shows the years of anticipated development construction start on-site. There was an uptick in provision into 2023 which was due to developers gaining an appreciation of how much people were actually prepared to pay for parking when buying a home – the reported average cost of a parking space was $45,000 (AUD). It is important to note that the average car parking rate remained low at just under **0.6 car spaces per dwelling**.

Figure 5.4 then shows the effects of proximity to transit services. While the comparative effectiveness of proximity to either train or bus services (such as for the Clever and Creative Corridor) can be debated, Figure 5.4 demonstrates that development sites not within the transit catchment still come with car parking that is well below 1 car space per dwelling (approx. 0.73 spaces per dwelling in the case of Lower Hutt).

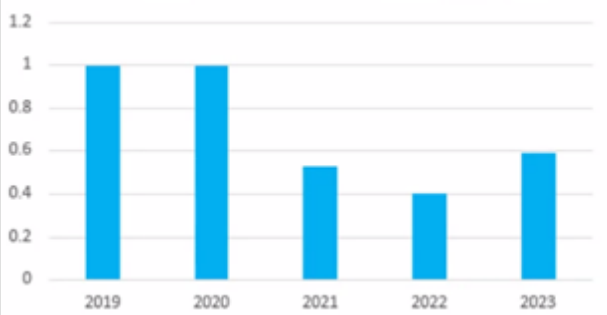
This case study shows that removing parking minimums can have a marked effect on the amount of parking that is provided, while also showing that parking will continue to be provided even where there is not a planning requirement to do so.

[6] *Less Parking for Better Cities* - Lessons from NZ, a seminar provided by PMP Urbanists, 18 October 2022.

Figure 5.2 – Lower Hutt, showing new multi-unit residential developments and 800m train station catchments

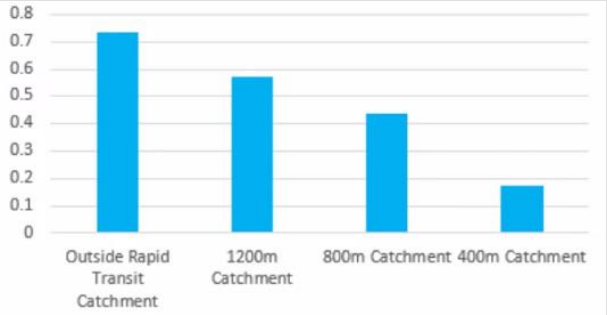
Source: PMP Urbanists, Oct 2022, edited by Stantec

Figure 5.3 – Average car park rate for residential developments by year (anticipated start on site)



Source: PMP Urbanists, Oct 2022, edited by Stantec

Figure 5.4 – Average car park rate for residential development by proximity to transit



Source: PMP Urbanists, Oct 2022, edited by Stantec

Need for transport alternatives to support reduced car use

If car parking is reduced, incentives in the form of improved sustainable transport modes are required to ensure a good level of accessibility and liveability is maintained. The Creamery Road PSP is planned to have good public transport, walking and cycling networks, which can be leveraged to reduce car reliance. The PSP will be connected to the wider transport network via new infrastructure and improvements to existing infrastructure, as set out in GGATIS.

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

5.3 Equitable parking for people with disabilities

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

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

A common issue people with disabilities have is that there is not enough parking that meets their needs. To have equitable access, people with disabilities rely more on car travel than the general populace. If this parking strategy is successful, car parking will be provided at lower levels than historic norms. So if the amount of parking is decreasing, and the number of people with disabilities that need car access stays the same, the amount of DDA compliant parking needs to go up in percentage terms.

A review of other parking plans that have dealt with this issue does not yield an exact method to determine parking for people with disabilities in areas that will have lower parking provision.

Recommendation #4 – Provide 5% of car parking spaces for people with disabilities

This applies to land uses covered by the relevant part of the National Construction Code / Building Code of Australia.

A rate of 5% combines the above two matters i.e. that there is not currently enough DDA parking, and that parking for people with disabilities should increase in percentage terms to continue to provide equity of access in an absolute sense.

This would elevate the Creamery Road PSP to the top of precincts that more equitably provide for these users. It would make the provision similar to parking overlays adopted for precincts in Melbourne.

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

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

Similar to the National Construction Code / Building Code of Australia, the calculated number of spaces must be rounded up to a whole number.

Implementation

Consideration of parking for people with disabilities can be implemented in the *Parking Plan* (parking layout) clause of the Parking Overlay and its associated decision guidelines.

5.4 Electric Vehicle Spaces and Charging

Though a low proportion of market share currently, ownership of electric vehicles is slowly growing in Australia, representing approximately 1.5% of new vehicle sales (see Figure 5.5).

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

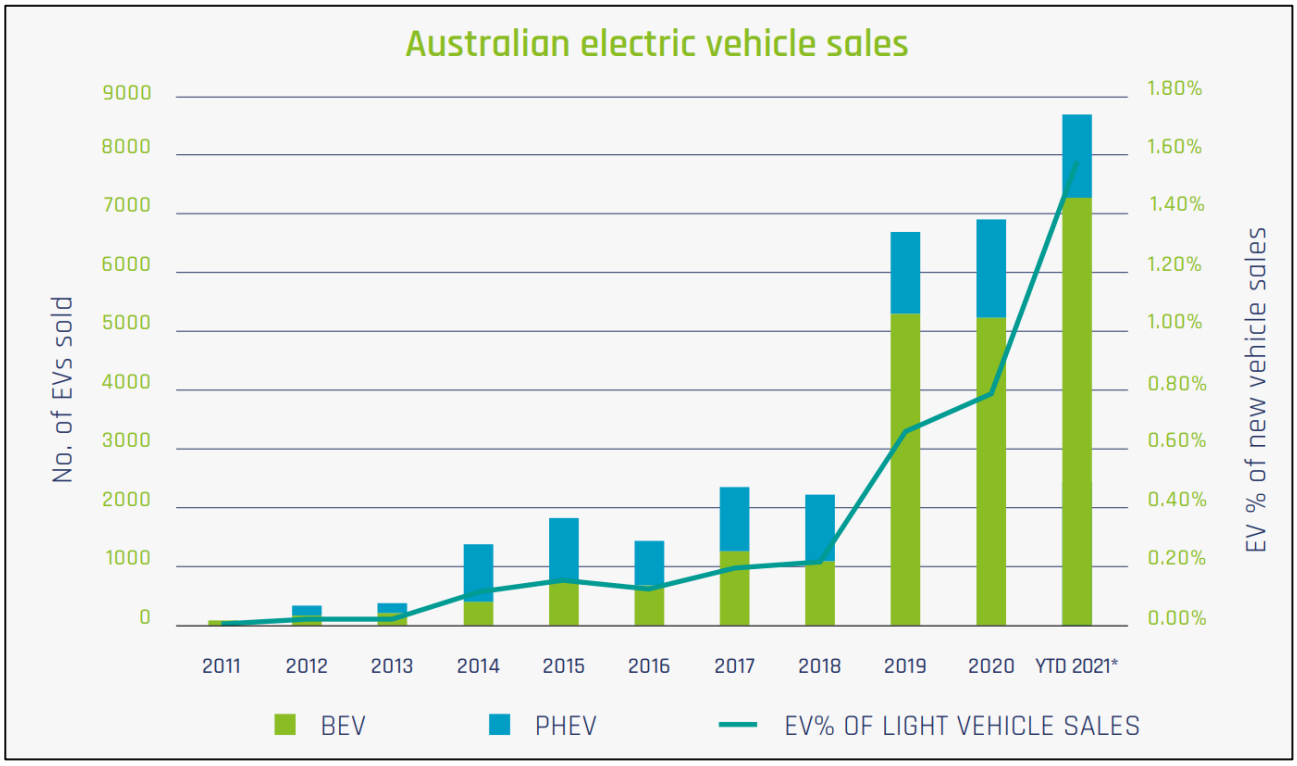
- Electric vehicles expected to be economically competitive with internal combustion vehicles this decade[7]
- International policy trends banning sales of internal combustion engines by 2035.[8] Recent advice from Infrastructure Victoria has also recommended that Victoria should cease registrations of petrol and diesel vehicles by 2035 “at the latest”.[9]

[7] *Charging up the Australian EV Market*, KangaNews Sustainable Finance and Clean Energy Finance Corporation, October/November 2021
[8] *Survey of Global Activity to Phase Out Internal Combustion Engine Vehicles*, The Climate Center, March 2020
[9] *Driving down emissions: accelerating Victoria's zero emission vehicle uptake*, Infrastructure Victoria, August 2021

- Increasing petrol prices and more holistic shifts in the energy market towards renewable electric energy.
- Continued investment in EV infrastructure, such as charging networks.
- Consumer awareness and policy sentiments around environmental impacts and air quality. This includes developers pursuing Green Star accreditation.

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

Figure 5.5 – Electric vehicle sales have grown as a proportion of new vehicles in Australia, albeit still representing a small share of the market[10]



Recommendation #5 – All off-street car parking to be capable of EV charging

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

All off-street car parking spaces in the Creamery Road PSP area should be **capable** of providing EV charging in the future, with installation of EV charging facilities to be based on demand.

Implementation

Consideration of EV parking and charging can be implemented in the *Parking Plan* (parking layout) clause of the Parking Overlay and its associated decision guidelines.

[10] *State of Electric Vehicles,* Electric Vehicle Council, August 2021

5.5 Car Share

Car share schemes allow limited space to be shared by multiple users and provide alternative access to car ownership where alternative transport options are unavailable.

5.5.1 Commercial Car Share Operators

Car share is well-established in Australia and in other countries, with companies promoting its benefits in terms of reducing the demand for parking spaces and travel demand. Publicised research supports the assertion that car share offsets the demand for car parking. Shaheen and Cohen (2013)[11] undertook a review of studies that analysed these benefits, and documented the following results based on case studies from different parts of the world:

- *"Each car share vehicle has been documented to reduce the number of private vehicles owned across car share members by 7 to 10 vehicles in Australia, 4 to 10 vehicles in Europe, and 9 to 13 vehicles in North America, with the related need for parking spaces reduced.*
- *A variety of European studies demonstrated a reduction in VKT per car share member of 28% to 45%, and in North America some studies demonstrated a vehicle kilometres travelled reduction of up to 80%.*
- *Car share also reduces the need to own a vehicle, reducing the overall number of cars in a city and reducing car ownership costs for an individual. European studies indicate that between 15.6% and 34% of participants sold a vehicle after joining a car sharing program, while between 11% and 29% of members did the same in the North American studies. Including the decision to forego the purchase of a car, this number rises to around 50% of members in the North American context."*

The studies reviewed by Shaheen and Cohen (2013) are consistent with the local Australian study undertaken by Phillip Boyle & Associates[12] , which showed for every car share vehicle, ten fewer private vehicles are owned as a result, based on studies of municipalities in Melbourne and Sydney.

These findings align with other known documents, such as the Yarra City Council sustainable transport factsheet[13] that identifies that a car share space removes 7 to 10 cars off the road.

It is noted that City of Greater Geelong does not currently have a car share policy.

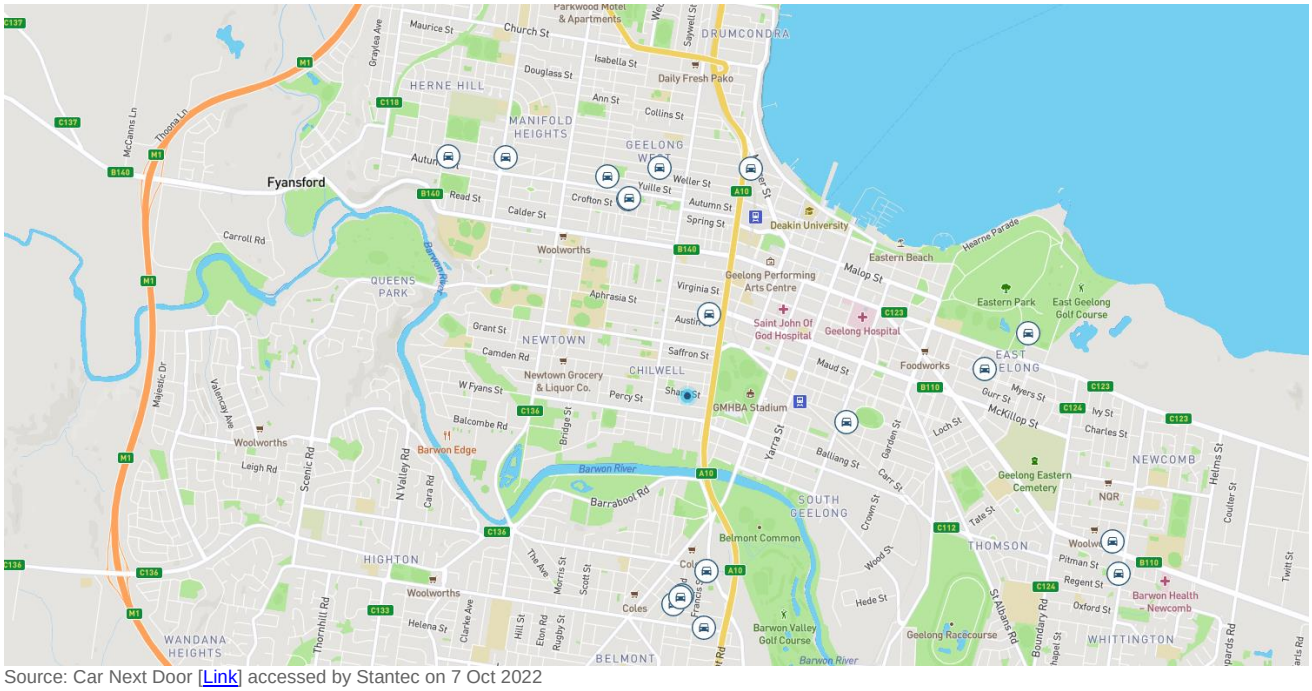
5.5.2 Social Car Share

The future uptake of not only car share, but of social car-sharing apps such as "**Car Next Door**" can enable access to a vehicle from time-to-time from within the local area. Cars can be used on an hourly or daily basis, with a brief review of information available online indicating rates from $6/hr and $28/day can be found in Geelong currently. It is expected that as social acceptance of these services goes beyond the "early adopter" phase, it will become more prevalent as a means of vehicle use.

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

[11] Shaheen, S.A. & Cohen, A.P. (2013): Carsharing and Personal Vehicle Services: Worldwide Market Developments and Emerging Trends, International Journal of Sustainable Transportation, 7:1, 5-34.
[12] Phillip Boyle & Associates (2016) The Impact of Car Share Services in Australia
[13] Yarra City Council – Sustainable Design Assessment in the Planning Process, Transport: Building Design for a Sustainable Future.

Figure 5.6 – Car Next Door vehicles are becoming available in Geelong



Source: Car Next Door [Link] accessed by Stantec on 7 Oct 2022

Recommendation #6 – Car Share Spaces to be Provided based on Market Demand

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

Setting a specific rate at which to provide commercial car share spaces would go against the principle of letting the market decide what is best. Car share companies are commercial operations. If the terms of the sale/lease of the parking space are attractive to both the car share company and the property owner, this creates a market for this type of parking. It would be wasteful to force developers to provide parking for a market that does not exist.

Social car sharing may see more widespread adoption. This type of car share does not need any more parking than what is already provided for residential use. This creates a level of uncertainty as to the future prevalence of commercial car share.

Implementation

Consideration of car share can be implemented in the *Parking Plan* (parking layout) clause of the Parking Overlay and its associated decision guidelines.

Implementation of car share within the Creamery Road PSP would be assisted by Council developing a car share policy for the municipality.

5.6 Adaptable Car Park Design

Beyond the number of parking spaces, there are other means by which parking car be provided and managed in an effort to reduce car use and reduce the land area and capital costs dedicated to providing car parking.

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

5.6.1 Unbundled Parking

Unbundled car parking is parking that is "decoupled" from the land use.

Unbundling parking compels developers to sell or lease parking independently of residences or commercial leases. People may re-evaluate their need to own a car as unbundling exposes the cost of car parking by separating it from the cost of owning or renting the property.

Unbundling can be done in several ways:

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

5.6.2 Consolidated Parking

Different land uses have different parking demands at different times of the day. Residential parking demands, peak in the early morning and the late evening, while employment parking reaches a peak in the hours prior to midday.

The differences in parking demand can be leveraged to serve more cars from fewer parking spaces.

Car parks typically provide parking for only the land uses they directly support. Historically, planning conditions have been imposed that require parking to be available in perpetuity for that land use. This creates an inefficiency by "partitioning" the parking supply, making parking spaces available only for a subset of people seeking a space.

This inefficiency can be addressed by unbundling car parking from the land use as described above, and making parking spaces available to the market, irrespective of the destination of the end user.

Fully decoupling the user from the "ownership" or "allocation" of individual spaces, further extends this efficiency by initiating a "right to park" only.

This enables less parking to be provided, as shared efficiencies remove some of the effects of partitioning parking supply and tying it to specifies land uses and property titles. The efficiencies include:

- time-of-day differences in parking demand (e.g. office vs residential)
- vacancy rates in residences and commercial tenancies that otherwise see parking going unused.

5.6.3 Adaptable Car Park Design

There is increasing focus on the importance of designing car parking facilities so they are resilient and adaptable as transport demands shift. Per the Office of the Victorian Government Architect, "*areas occupied by car parks today are likely to become valuable community assets in the future*".[14] If demand for car parking reduces, there is potential to convert part of the structure to other uses, such as hotels, offices or entertainment spaces.

Designing sustainably requires the adaptability and reuse of buildings. This includes the design of the structure to ensure columns, roof heights etc. are flexible to re-use before it is constructed.

It is noted that there are some inherent issues with this, including less efficient delivery of car parking (due to taller roof heights), longer ramps (due to taller roof heights) and difficulty retrofitting ramps.

[14] *Design principles: multi-deck commuter car parks*, Office of the Victorian Government Architect

5.6.4 Implementation

Recommendation #7 – Use Decision Guidelines in the Parking Overlay to Control Adaptable Car Park Design

The above opportunities can be captured in the application requirements, design standards and associated decision guidelines for permit applications, within a new Schedule to the Parking Overlay in the Greater Geelong Planning Scheme:

This approach had been adopted in other recently published Parking Overlay schedules, including Fishermans Bend, West Melbourne, Arden and Macaulay.

The decision guidelines should be aimed at achieving the objectives of the Parking Overlay and this parking strategy, and could include:

- Consideration of the allocation of spaces and ownership structure
- Requiring a documented management plan framework for how parking can be shared
- Consideration of the impact of vehicle access on transport network (number of vehicle crossovers and the like)
- The adaptability of structure
- Consideration of provisions for car share, DDA spaces, bike parking
- Requirement for all car parking spaces to be EV capable.

6. Bicycle Parking

Bicycle travel can be used to replace many short distance car trips that are beyond a casual walking distance, i.e. beyond 1km. Bicycle storage is normally separately planned where space is at a premium and access can be problematic (apartment buildings); however, consideration should be given to how a people can own different types of bicycle to suit different everyday needs.

6.1 Current Bicycle Parking Requirements

Current statutory rates for bicycle parking are set out in Clause 52.34 of the Greater Geelong Planning Scheme. These rates apply to all municipalities across Victoria.

Example rates that could apply to the proposed land uses are:

- 1 space to each 5 dwellings for residents in developments of four or more storeys
- 1 space to each 10 dwellings for visitors to developments of four or more storeys
- 1 space per 300sqm for office employees
- 1 space per 1,000sqm for office visitors
- 1 space per 600sqm for shop employees
- 1 space per 500sqm to shop customers

The rates in Clause 52.34 of the Planning Scheme are considered low by contemporary standards, as will be set out in the following review.

6.2 Benchmarking Bicycle Use and Needs

The Austroads National Cycling Participation Survey (2019) identified that that approximately 60% of Victorian households own a bicycle.

Of these, in Victoria:

- 23.5% of households own 3+ bicycles
- 17.5% of households own 2 bicycles
- 20% of households own 1 bicycle
- These rates imply a state-wide average of 1.26 bicycles per household. It is noted that this average rate includes:
  - areas of ranging from poor to excellent cycling connectivity
  - all dwelling types
  - all household occupancy levels

In a multi-unit residential setting, the dwelling sizes and occupancies are less than the Victorian average, meaning there are fewer people with a need to own a bike. However, higher density dwellings are typically found in the most accessible areas, which implies a greater ability to use a bike for everyday needs.

To assist with determining a suitable set of bicycle parking rates, other types of bicycle parking policy requirements that have been recently published are set out in Table 6.1 below.

Table 6.1 – Recently Published Bicycle Park Rates in Other Jurisdictions

Ordinance	Resident	Residential Visitors	Retail and Office Employees	Retail and Office Visitors/Customers
Melbourne - draft amendment C376[15]	1 per dwelling	2 per dwelling	1 per 100sqm	4 minimum + 1 per each additional 100sqm
Melbourne – Arden Precinct Structure Plan	1 per bedroom	2 per dwelling	1 per 100sqm	4 minimum + 1 per each additional 100sqm
ACT End-of-Trip Facilities General Code	1 space per one- or two-bedroom dwelling; 2 spaces per three or more-bedroom dwelling with a car parking space; AND 1 space per bedroom for dwellings not allocated a car parking space	0.1 per dwelling	1 per 200sqm for office 1 per 250sqm for Shop	1 per 400sqm for office 1 per 100sqm for Shop

Source: As noted

While the **Melbourne draft amendment C376 and the Arden Precinct** bicycle parking rates are the same for residential visitors and commercial, the higher resident rate for Arden is due to the very low level of car parking being planned for (zero by default, together with preferred maximum car parking rates that average at 0.3 car spaces per dwelling).

The C376 and Arden retail and office rates do not have regard for the fact that employee and visitor/customer proportions greatly differ depending on whether the development is employment-led or retail-led. This is important to determining how many of each type to provide.

The **ACT End-of-Trip Facilities General Code** applies to all multi-unit dwellings across the ACT, meaning it applies to sites of all circumstances, making it applicable to similar types of development elsewhere. It provides a balance between the parking rates in Melbourne amendment C376 and those adopted for Arden, together with a clearly identifiable reasoning for doing so (dwelling size and access to car parking). Adopting these types of bicycle parking rates would result in a rate of parking provision that is at least 5 times high as that required by Planning Scheme Clause 52.34. This meets the principle that sustainable travel should be prioritised by removing barriers to its use.

Further, the ACT code provides a wide range of bicycle parking rates for various other uses, as does Clause 52.34 of the Planning Scheme. While progressive for some land uses, it is not possible that a prescriptive level of bicycle parking can get it right for so many types of development in different circumstances.

There are elements of prescriptive approach in the draft Creamery Road PSP, by way of both land use-specific rates and locational characteristics. If this type of approach were to be adopted for the Creamery Road PSP, it would be inconsistent with the market-led approach to car parking described in Section 5.

6.3 Determining a suitable set of bicycle parking rates

6.3.1 Residential bicycle parking

Residents

On average, demand for bicycle parking is 1.26 bicycles per dwelling, for all dwelling types across the state. The adoption of a range of parking rates, per the **ACT End-of-Trip Facilities General Code**, would result in an average level of provision being above 1 per dwelling in the Creamery Road PSP.

As noted, this will result in a level of provision that is at least 5 times greater than Clause 52.34 rates - it is also equivalent to current minimum car parking rates set out in Clause 52.06. For a parking plan seeking to prioritise sustainable travel choices over car use, there is a logical symmetry in replacing bicycle parking rates that are low by contemporary requirements, with the same rates used to provide historically too much car parking.

[15] Melbourne Planning Scheme Amendment C376: Sustainable Building Design, 15 September 2020 [Link]

Some households will not own bicycles. In a shared facility, this allows those who own bicycles to own different types of bicycle for different needs (cargo, racing, commuting, electric, pedal power, childrens bicycles, etc).

Residential Visitors

As a measure of demand, we can continue to draw an equivalence between historic car parking provision and potential bicycle parking as a proxy for the average number of dwellings receiving visitors (1 in 5 dwellings in Clause 52.06).

A "car occupancy" factor would need to be considered to convert a single car into an equivalent number of bicycles. Car occupancies for personal business and leisure typically range from 1.5 to 2.0 per vehicle. This suggests the 2 bicycles are equivalent to 1 car, indicating a visitor bicycle parking rate of 2 spaces per 5 dwellings.

6.3.2 Non-residential bicycle parking

Contemporary planning for bicycle parking provision for non-residential developments is increasingly being based on determining building occupancies and applying target mode shares. This approach is exemplified by the Green Star Buildings *Movement and Place* credit methodology (Green Building Council of Australia, December 2021) and the Austroads guidance document *Bicycle Parking Facilities*[16].

The methodology set out in the Austroads guide is particularly applicable in this case as the employment land use population is based on City of Melbourne Census of Land Use and Employment (CLUE) data and the other parking rates, such as retail, are based on Victoria Planning Provision (Clause 52.34). The bicycle parking rates specified in the Austroads guide are based on a target mode share of 10%, which can be factored based on the adopted mode share target. Parking rates are provided for both long stay and short stay parking. Example population densities and bicycle rates are set out in Table 6.2 below.

Table 6.2 – Example Employment and Retail Population Densities and Bicycle Parking Rates

Land Use	Population Density	Employee Bicycle Parking	Customer/Visitor Bicycle Parking
Office	20sqm GFA per person	0.45 spaces per 100sqm GFA	0.05 spaces per 100sqm GFA
Retail	20sqm NLA per person	0.1 spaces per 100sqm NFA	0.4 spaces per 100sqm NFA

Source: Austroads,2016

Notes: Rates are based on mode share of 10% travel by bicycle.

The City of Greater Geelong has advised that a mode share target of 25% for bicycle should be adopted. Applying this target to the rates specified for a 10% bicycle mode share in Table 6.2 results in the rates set out in Table 6.3.

Table 6.3 – Adopted Bicycle Parking Rates for Commercial Premises

Description	Long-Stay Bicycle Parking	Short-Stay Bicycle Parking
Office [1]	9 spaces per 800sqm	1 space per 800sqm
Retail Premises [1]	1 space per 400sqm	1 space per 100sqm

[1] Rate based on mode share of 25% travel by bicycle as advised by the City of Greater Geelong and applied to rates set out in Austroads, 2016[16].

6.4 End-of-Trip Facilities

6.4.1 Current Statutory Requirements

Current statutory rates for the provision of end-of-trip facilities are set out in Clause 52.34 of the Planning Scheme:

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

[16] Austroads Report AP-R528-16 *Bicycle Parking Facilities: Updating the Austroads Guide to Traffic Management* (Austroads, 2016) https://austroads.com.au/publications/active-travel/ap-r528-16

There is currently no requirement to provide an area within the end-of-trip facility to clean or repair bikes.

6.4.2 Quantifying End-of-Trip Facilities

Clause 52.34 is not clear on what the statutory requirement for showers should be based on:

- The number of statutorily required bicycle spaces; or
- The number of bicycle parking spaces proposed to be provided.

The implementation mechanism for any new bicycle facilities should be unambiguous that the quantification of associated facilities should be based on the number of bicycle parking spaces being provided.

Recommendation #8 – Better bicycle facilities for multi-unit residential buildings and commercial premises

Bicycle Parking

The following rates of provision are adopted based on the background, evidence and rationale set out above. These recommendations will align bicycle parking with the projected growth and the sustainable transport aims of the Creamery Road PSP.

Bicycle parking for land uses not listed must be calculated using Planning Scheme Clause 52.34 (as a minimum), or other sustainable design guidelines or accreditation specifications.

Description	Long-Stay Bicycle Parking	Short-Stay Bicycle Parking
Dwelling [1]	1 space per 1 or 2-bedroom dwelling 2 spaces per 3-bedroom dwelling 1 space per bedroom for dwellings with no car parking	2 spaces per 5 dwellings
Office [2]	9 spaces per 800sqm	1 space per 800sqm
Retail Premises [2]	1 space per 400sqm	1 space per 100sqm

[1] This policy applies to multi-unit residential buildings (of 3+ dwellings), irrespective of the number of storeys.
[2] Rate based on mode share of 25% travel by bicycle as advised by the City of Greater Geelong and applied to rates set out in Austroads, 2016[16].

End-of-Trip Facilities

End of trip facilities are to be provided in accordance with Planning Scheme Clause 52.34, or as otherwise recommended by an ESD consultant. Such facilities should be provided at locations that are convenient and designed using CPTED principles. It is not necessary to set out additional rates of provision in this strategy.

The quantification of end-of-trip facilities should be based on the number of bicycle parking spaces being delivered and not a lesser amount, such as a statutory minimum requirement.

End-of-trip facilities are to be provided with a dedicated area to clean and repair bicycles, where practical to do so. This will encourage continued use and maintenance of bicycles in a convenient location.

Implementation

This recommendation can be implemented using the following means:

- Planning condition that makes reference to the PSP and/or this parking strategy
- A Schedule to the Parking Overlay (via decision guidelines referring to the parking strategy, rather than explicit requirements in the overlay itself, making this a secondary means of implementation).

6.5 Right-sizing Bicycle Requirements

There will be cases, particularly for large developments, when the statutory bicycle requirements for individual land uses would collectively result in in too many bicycle parking spaces or end of trip facilities than would ever be needed.

A mechanism exists under Clause 52.34-4 to reduce bicycle requirements in specific circumstances. These provisions are considered adequate and will continue to apply to the Creamery Road PSP.

6.6 Micro-mobility

The term “micro-mobility” covers a variety of compact forms of travel, including bikes, skateboards and scooters. They can be people powered or electrically powered.

In this discussion, we focus on E-bikes, as they can readily replace journeys of 1km to 5km that would otherwise have been made by car. E-bikes can also serve travel distances of 5km or more.

Uptake and how much parking to provide are each key questions. E-bikes can also replace trips that are within “walking range” so it is appropriate to look at future potential walking trips as well as bicycle trips.

Recommendation #9 – Consider E-bikes within Bicycle Parking Design

Allowance should be made for E-bikes within the overall bicycle parking provision. Given the weight of an E-bike, they can really only be accommodated in a horizontal parking configuration. All visitor parking should be provided as horizontal parking, as this is the most convenient. For employee bicycle parking the Australian Standard for bicycle parking (AS 2890.3) requires 20% of all bicycle spaces should be horizontal – this is to allow for people who are not physically able to lift a bike. This should provide sufficient parking for E-bikes, assuming the other dimensions for bicycle parking accessways and spaces sizes can be met as set out in AS 2890.3.

Battery charging equipment should be provided for all horizontal bicycle parking spaces that are provided for use by employees. At minimum, the ability to convert all horizontal employee bicycle parking to enable charging should be demonstrated, except where it is shown to be impractical or unnecessary to do so.

Consideration should be given to E-Scooter parking in the future should they become legal under Victorian Law.

Implementation

Provision for E-bikes can be implemented via the Creamery Road PSP.

7. Implementing the Strategy

7.1 Implementation Options

Implementation of a parking strategy may be achieved by:

- **Statutory implementation**: Inclusion of the Precinct in a Parking Overlay (at Clause 45.09 of the Planning Scheme).This is consistent with Planning Practice Note 57 – The Parking Overlay (PN57).
- **Other implementation mechanisms**: In addition, there are other mechanisms to manage car parking that can be implemented on-the-ground to support the policy objectives of the municipality, including parking permits, signage/wayfinding, paid parking and enforcement. These measures are implemented outside of the Planning Scheme decision making process.

7.2 Parking Overlay (a schedule to Clause 45.09)

PN57 requires consideration of a precinct-based context in the preparation of a Precinct Parking Plan, including:

- Is a Parking Overlay an appropriate tool to introduce specific parking rates for the area?
- What area should the Parking Overlay be applied to?
- What are the proposed car parking characteristics of the site, and how do these support wider municipal objectives?
- What is the scale of development and how could this impact car parking in the surrounds should the Overlay be introduced?
- Does the Overlay represent an appropriate strategy for meeting the parking objectives and managing car parking?

These questions are further considered in the following subsections.

7.2.1 Appropriateness of Parking Overlay as a Planning Tool

The Parking Overlay (PO) provides a tool to specify, amongst other things, specific car parking quantum requirements that should apply to a defined precinct.

In this respect, PN57 identifies:

"Local variations to Clause 52.06 can only be introduced using the Parking Overlay and accompanying schedule. A local policy cannot be used to apply variations."

While local car parking rates in the past have been applied through a number of planning mechanisms PN57 is clear that a PO represents the only appropriate tool by which to introduce local parking rates.

The PO provides opportunity to realign the expectations of Council, developers and the community in respect of car parking requirements.

The PO is the appropriate planning tool to introduce local parking rates to support lower car use, provide appropriate certainty to the future development of the PSP area and the manner in which car parking will be considered and assessed when permits are sought for individual site components.

7.2.2 Area to which the Parking Overlay Applies

PN57 states:

"The Parking Overlay's primary function is to manage car parking in a precinct, rather than on a site-by-site basis. The parking overlay would cover the entire Creamery Road PSP area.

The Parking Overlay can be used for any precinct where local parking issues can be identified, and a common strategy can be adopted to respond to them. This might include a new car parking rate or design requirement that applies to the entire municipality, but is more likely to apply to a smaller area, such as an activity or employment area within the municipality."

The parking overlay would cover the entire Creamery Road PSP area.

7.2.3 Scale and Nature of the Development

The area that a PO would covers is a large-scale growth area precinct, providing a variety of activity centres, neighbourhood and local centres, as well as residential development in high, medium and low-density settings. The build-out is expected to take place over time horizons of 20 to 30 years, making flexibility an important aspect of a suitable parking policy.

This parking strategy deals with these varying circumstances by removing the requirement to provide car parking. The amount of parking will be determined in response to market conditions. This sets a level playing field for different types of development in different locations and levels of accessibility across the PSP area.

7.2.4 Parking objectives

The targets of 50% car and 50% sustainable transport, are realistic but policy needs to be aligned to ensure that sustainable transport investments, which runs to many millions of dollars, are not undermined by a business-as-usual approach to parking.

The objective of this parking strategy is to enable development applicants to provide the most appropriate parking outcome, including providing no car parking. This strategy will be supported by Council management of publicly owned parking and regulatory controls to ensure that parking that is provided will assist with delivering on the objectives of the overlay by enabling reduced parking over the long term, either by unbundling parking, sharing parking or converting car parking structures to other land uses.

7.2.5 Financial Contributions

Financial contributions to provide car parking cannot be applied in a PO area where there is no requirement to provide car parking.

7.2.6 Requirements for a Parking Plan (Car Park Layout)

While this document sets out overall parking strategy and controls for the PSP area as a whole, it will not have regard for all the possible circumstances that may be faced when trying to implement the strategy at individual car parks.

Development applications that include on-site car parking will be determined with weight given to whether parking is likely to result in the objectives of the parking plan being met over time. This will include demonstrating whether the car park is adaptable, in the sense that it can be used to provide shared parking for precinct use or can be removed and replaced by another land use.

This creates a requirement for a car parking plan to be prepared for individual sites that have shared or unbundled parking, to demonstrate how this will be secured and implemented as intended.

This requirement would be in addition to all the typical requirements for a car parking plan that are set out in Planning Scheme Clause 52.06-8.

7.2.7 Design Standards for Car Parking

Additional design standards for how a car park should be set out geometrically can be specified in this part of the Parking Overlay, including:

- Parking for people with disabilities, loading vehicles and car share to be located in the most convenient places
- Parking rates for people with disabilities, car share, electric vehicles and bicycle parking are to be provided as set out in Section 5 of this report
- Car parking and building security arrangements are to enable 24hr access for current or future shared parking purposes
- Ensuring access to car parks is taken from suitable roads within the PSP road hierarchy.

Further design standards are set out in other Planning Scheme controls and are separate to the parking overlay. The intent of these standards is to provide a guide as to how external design should apply to car parking to minimise its impact on the public realm, such as sleeving parking structures and limitations on ground floor car parking.

7.2.8 Decision Guidelines (for a Parking Plan)

When a development application is made that includes on-site parking, this triggers a review of the Parking Plan under Clause 52.06-8 and the associated decision guidelines. Further decision guidelines can be provided within the Parking Overlay to ensure the objectives of the overlay are being met (or can be met in future).

Possible decision guidelines are generally related to the Design Standards specified in the Parking Overlay and could include:

- Is the proposed parking to be made available for public or shared use, now or in future; how will this be delivered?
- Can the parking be adapted to allow for other land uses?
- Will the car parking have an adverse impact on the urban realm?
- The extent to which the proposed development meets the parking strategy for the PSP with regard to providing for EV's, car share, parking for people with disabilities and bicycle parking.

7.3 Parking Management

The City of Greater Geelong will commit to taking responsibility for the management of publicly owned parking in the Creamery Road PSP area. This will ensure the parking strategy is implemented in accordance with this document, such that the intended outcomes are realised.

7.3.1 Parking Management Objectives

Car parking is a key demand management tool and has the potential to greatly influence urban form, transport patterns and investment.

The management of car parking can occur at many levels in order to ensure car parking is allocated to its intended users. It should take into account and balance a variety of factors which influence the demand for parking including:

- Key user groups
- Road safety
- Amenity and public realm
- Property access and servicing, including delivery and waste collection vehicles
- Desired modes of transport including car, walk, cycle and public transport.

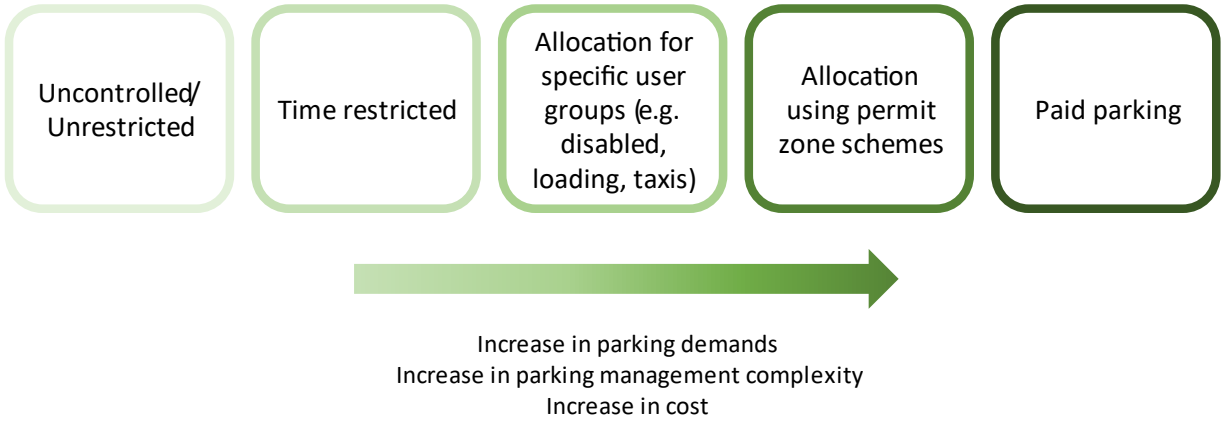
It is important that parking is managed to:

- Recognise that a parking space doesn't attract people; it's the destination that attracts people, parking facilitates it.
- Enhance and not detract from an area as an attractive destination.
- Encourage economic activity while advancing liveability and sustainability.
- Ensure that an area is not placed at a competitive disadvantage relative to others due to its car parking provisions.

7.3.2 Parking Management Measures

Parking management techniques can be used to control the use of publicly owned parking, beyond determining the number of parking spaces to provide. These techniques lie on a continuum and depend on the level of parking demand and the level of intervention required by the City of Greater Geelong.

Figure 7.1: Parking Management Measures



Source: Stantec

Unrestricted Parking

The use of unrestricted parking is only relevant where demand does not exceed supply and where it relates to a single user group and prioritisation and turnover of spaces are not required. This is likely to be found only in residential streets within the PSP area over the long term, as it is expected that the density and growth around activity centres and transit corridors will lead to some form of parking restrictions in surrounding streets.

Time Restricted

This is the first step in managing parking and places time limits on parking spaces to induce turnover and increasing availability and total visitation through the parking system. Time limits provide the first level of prioritisation of parking to specific typical user groups according to the length of stay they typically require.

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

Allocated

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

Permit Schemes

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

Paid Parking

Paid parking provides another level of parking management introducing a cost to parking beyond the desired length of stay to prioritise parking allocations and act as a demand management tool. Charging for parking can be a highly effective tool in managing both on and off-street parking, particularly where demand outstrips supply.

Wayfinding Signage

Providing legible and informative signage can work alongside the paid parking system (or timed restrictions) to enable more efficient use of the parking supply – doing more with less - which speaks to the **Clever and Creative** vision.

Reduced parking search time reduces on-street congestion and improves use of off-street car parking.

Overall, this leads to improved pedestrian amenity in streets and reduced driver frustration.

Smart Parking and Technologies

Smart parking technologies and systems improve efficiency and functionality of transport. These systems have the ability to improve amenity, liveability and safety of road users and the community in a number of different ways.

Some examples of these technologies include:

- Underground parking sensors, or Parking Overstay Detection Systems (PODS)
- Pole mounted parking monitoring cameras
- Electronic permits and ticketless parking
- Pay-by-phone and phone-based parking guidance systems
- Dynamic wayfinding signage systems

Enforcement

Enforcement is important to ensure a parking system operates as designed. In general terms, without effective enforcement, drivers will become aware of the low probability of consequences and not seek to adhere to the system.

Enforcement takes four forms:

- drivers who have overstayed the posted time period
- overspill into surrounding neighbourhoods
- regulatory infringements, such as parking on the wrong side of the road
- drivers who have not paid for parking.

Enforcement has negative connotations with the public; however, the outcomes are positive if the system is viewed as fair overall.

While parking enforcement can be a frustration to drivers who try to park for free, it reduces the frustrations of those who adhere to the system.

Achieving an effective enforcement system is contingent on the clarity of the message and commitment to the enforcement task. To achieve this, clarity of the system (signage, advertising and education), desired outcomes (compliance and turnover of parking) and non-compliance outcomes (fine value) must be clearly communicated to all involved.

In-ground PODS create greater certainty and efficiency of enforcement. Technologies such as this and other further technology enhancements in coming years will continue to enable an effective enforcement which is less resource intensive.

Overall, enforcement can ultimately increase compliance, ensuring the parking system works as intended with fewer fines being issued – resulting, on the whole, in a parking system with less frustrations and a greater desire to spend time in the precinct.

7.3.3 Implementation in Areas of Higher Activity and Fringe Areas

Recommendation #10 – Prepare Parking Precinct Plans for areas of higher activity

In time, specific Parking Precinct Plans should be prepared to manage car parking areas of higher demand.

When to prepare these plans will depend on:

- Whether parking demands within the centre are nearing capacity
- The level of planned land use growth
- Planned infrastructure changes that could give rise to changing modes of travel
- Seasonal fluctuation that requires specific consideration.

These PPPs should consider whether it is appropriate to extend the area it covers into nearby fringe streets, if parking overspill into these streets is expected.

7.3.4 Implementation in Residential Areas

Predominately these areas don't require parking management, but specific controls may be required around areas of high activity, such as schools) or in streets around well-used transit stops (to prevent pseudo park and ride type impacts). Such measures may include:

- Time controls in discrete areas at limited times of the day
- Resident permit systems (to prevent long-term use by non-residents, as opposed to controlling resident parking).

These issues can be dealt with via Councils municipal car parking management remit on a case-by-case basis.

8. Monitoring and Review

A Precinct Parking Plan is a living document that should be monitored and reviewed to ensure its aims and objectives continue to be met.

PN57 notes the following, in this regard:

"The characteristics of a precinct often change over time, affecting local parking conditions. It is important that the Parking Overlay is regularly monitored and reviewed to ensure it continues to reflect the precinct's actual parking requirements, and is consistent with future plans for the precinct.

It is recommended that any Schedules to the Parking Overlay are reviewed concurrently with the council's Municipal Strategic Statement to ensure the specified car parking rates still reflect the car parking demand for each land use"

Recommendation #11 – Review this parking plan and the Parking Overlay every 5 years

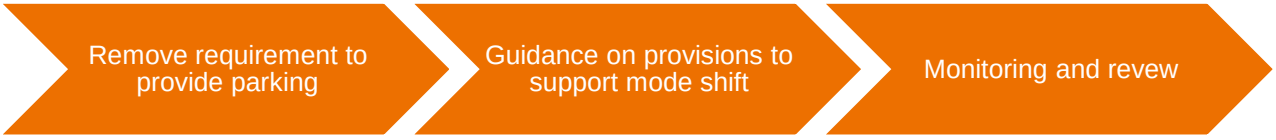
This Parking Strategy and an associated Schedule to the Parking Overlay should be reviewed and (if necessary) updated as required every 5 years over the lifetime of the Creamery Road PSP.

As the PSP area develops it will be important to ensure that the parking strategy is having the desired effect. This could be a relatively straightforward process potentially involving review of planning data. In time, this will include recording the parking demands for land uses and determining if the strategy remains appropriate.

A key aspect that may change will be the question of if/when maximum parking rates need to be implemented to control car use, as set out in Recommendation #2 of this report.

9. Summary & Next Steps

9.1 Parking Strategy Summary



- Enables the market to determine how much parking to provide.
- Removes the need to set parking rates, which are inaccurate and inflexible.

- Infrastructure to cater for sustainable travel demand
- Bicycle parking and end-of-trip facilities to be provided based on best practice, at minimum.

- Design of provisions to be responsive and enable statutory authority to respond to community and development sector

9.2 Key Recommendations

This report contains 11 key recommendations to enable reduced car use and to support travel by alternative modes:

- **Recommendation #1** – Remove the requirement to provide parking
- **Recommendation #2** – Undertake future investigations to control car use using maximum parking rates
- **Recommendation #3** – Council will manage the use of on-street parking
- **Recommendation #4** – Provide 5% of all car parking spaces for people with disabilities
- **Recommendation #5** – All off-street car parking to be capable of EV charging
- **Recommendation #6** – Car share spaces to be provided based on market demand
- **Recommendation #7** – Use Decision Guidelines in the Parking Overlay to control adaptable car park design
- **Recommendation #8** – Better bicycle facilities for multi-unit residential buildings and commercial premises
- **Recommendation #9** – Consider E-bikes within bicycle parking design
- **Recommendation #10** – Prepare Parking Precinct Plans for areas of higher activity
- **Recommendation #11** – Review this parking plan and the Parking Overlay every 5 years

9.3 Next Steps

This car parking plan will be used to inform planning controls, including a Schedule to the Parking Overlay. Other controls may also contain parking-related content.

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

Appendix A. Policy Review

A.1 Local Policies and Strategies

A.1.1 Clever and Creative Future

***Clever and Creative Vision : By 2047, Greater Geelong will be internationally recognised as a clever and* creative city-region that is forward looking, enterprising and adaptive and cares for its people and *environment*.**

At the heart of the Clever and Creative Future is a series of aspirations developed by the community that are focused on the region's economy and employment, the environment, arts and culture, transport connections, tourism, efficient and equitable digital access, and good governance.

For a city-region to be successful, it must be connected, prosperous, creative, sustainable and resilient, and designed for people. The community's aspirations support these elements helping us become a clever and creative city-region.

Being clever and creative is about developing a consistent approach to get things done:

- by making travel between suburbs easier through a network of pedestrian and cycle paths
- by designing to create an active street network
- by fostering a strong sense of community and uplifting vulnerable community members
- by designing for people and making the best use of technology and sustainable living
- by researching and encouraging economically viable, environmentally sound and socially responsible solutions to the community's challenges.

The above approaches are consistent with an innovative change to the way parking is managed to enable more sustainable and healthy living choices.

Measures of success for a clever and creative future include:

- 100% of all public places being accessible for people with disabilities
- 50% of journeys to work being made by sustainable travel
- Being able to access all parts of Greater Geelong within 30-minutes through a variety of travel options
- Reducing the need to travel, and encouraging walking, cycling and low carbon transport.

A.1.2 Northern and Western Geelong Growth Areas Framework

Creamery Road Precinct is the first precinct proposed for development in NWGGA. It is located in the north eastern corner of the Western Growth Area at the intersection of Geelong Ballarat Railway line and the Geelong Ring Road.

The Framework Plan sets out the following vision for the NWGGA:

"The Northern and Western Geelong Growth Areas will exemplify Geelong's transformation as a clever and creative city by building diverse, localised and sustainable neighbourhoods that prioritise self-sufficiency whilst maximising connections to the Geelong community, economy and identity."

The **Framework Plan demands innovation** in the design and development of NWGGA precinct structure plans, for the growth areas to:

- develop comfortable climate resilient communities
- develop zero carbon and zero waste communities
- build integrated water management systems around major catchments
- support a Clever and Creative Corridor (CCC) and prioritise active transport and transit to develop 20-minute neighbourhoods
- enable and support the delivery of smart city infrastructure

- enable environmentally sustainable development (ESD), in-line with the Framework Sustainability Action Plan.

The Creamery Road PSP seeks to address the aspirations, objectives and actions of the Framework Plan and determine the final land uses and the urban structure of the Creamery Road Precinct.

A.1.3 Geelong Growth Areas Transport Infrastructure Strategy

The Geelong Growth Areas Transport Infrastructure Strategy (GGATIS) is currently being prepared by the City of Geelong. GGATIS combines strategic transport modelling conducted on behalf of the City, with a transport infrastructure delivery strategy for Geelong and its growth areas.

The strategic modelling computes travel demand responses to land use, population and transport infrastructure changes using the Victorian Integrated Transport Model (VITM). Transport modelling reduces uncertainty as to where shortfalls and gaps in the transport network are likely to occur. The outputs of the model have been used to determine where and what type of transport infrastructure is required to support the sustainable development of the NWGGA.

GGATIS indicates that overall car mode share (car and passenger) for Greater Geelong is likely to be 66% at 2051. This is 16% higher than the City's target of 50% car travel. It is therefore clear that this type of "bottom-up" approach indicates that targets will be missed. Other areas of transport related policy need to be reviewed in a "top-down" manner to enable car use to be supressed over time and also provide the policy backdrop that results in more walkable streetscapes that lead to higher uptake of walking, cycling and public transport.

A.1.4 Climate Change Response Plan

The City's Climate Change Response Plan 2021-30 establishes a target of net zero community emissions by 2035. Similarly, the Framework Plan requires PSPs to deliver zero carbon and environmentally sustainable development (ESD) through 'ESD action plans'.

At over 90% of travel to work journeys, car use in Geelong is on par with some of the most car dependent cities in the United States.

Transport currently contributes approx. 20% to community emissions. About 1/3rd of household emissions comes from private car use.

To reduce our current transport emissions footprint, the City recognises that we must change the way we move around our communities. However, it will take significant commitment and investment from a range of different stakeholders to not only create viable alternatives, but to plan neighbourhoods that support this outcome. The City will take a leading role in taking climate change action.

The Climate Change Response Plan sets out 7 Principles for tackling the threat to our climate:

1. Support an empowered and active community
2. Increase energy efficiency and renewable energy production
3. Switch to sustainable transport and cleaner fuels
4. Reduce non-energy emissions and increase carbon storage
5. Increase awareness and understanding of climate change impacts
6. Build climate action into decision-making
7. Increase collaborative climate change responses

Of these principles, it is perhaps Principal 6 *Embed Climate Action into Decision-making* that is the most relevant to this parking strategy as it clearly sets out that policies and decision-making must address how they contribute to reaching or maintain targeted climate action

Embed climate thinking in our decisions : "*Ensure local planning schemes, standards, codes and policies support the use of best available climate change data and adaptative planning principles as part of decision making, particularly as it relates to infrastructure, development and land use changes."*

A.2 State Government Policies & Strategies

A.2.1 Transport Integration Act 2010

The Transport Integration Act is Victoria's principal transport Act, bringing together the whole transport portfolio under one statute for the first time.

The Transport Integration Act combines Victoria's transport portfolio under one single legislative act. It serves as a strategic framework for sustainable transport systems. The legislation guides the main decision-making process for other strategic transport planning documents within Victoria.

The Act also includes six legislated objectives - social and economic inclusion; economic prosperity; environmental sustainability; integration of transport and land use; efficiency, coordination and reliability; safety, health and wellbeing. These are also underpinned by eight principles that further guide this decision making.

A.2.2 Plan Melbourne 2017-2050

Plan Melbourne is the Victorian Government's metropolitan planning strategy that defines the future shape of the city and state until 2050.

The plan sets a strategy for investment in regional Victoria to support local jobs and economic growth and deliver productive, sustainable and healthy communities.

Geelong is recognised as Victoria's second city and Plan Melbourne prioritises land use strategies that position our region as a centre of employment and accelerated growth.

As the largest of Victoria's ten regional cities, Greater Geelong's vibrant community and diverse economy will attract the primary population growth outside Melbourne and strengthen the city's importance to our surrounding communities.

Plan Melbourne highlights the importance of locally-led growth that is delivered in keeping with Geelong's character and balanced with the protection of the productive land, economic resources and biodiversity assets that are critical to the state's economic and environmental sustainability.

A.2.3 Movement and Place in Victoria

This document provides an overview of movement and place thinking and steps through the four modules in the Movement and Place Framework.

The Movement and Place Framework takes a future-focused, multi-modal approach to network planning. It takes into consideration the diverse role places play in planning the types of transport modes appropriate to a local road or street. In this new language, roads and streets are defined by the context of a local place and assigned various 'movement' and 'place' classifications.

The Framework offers a common language for coordinated transport planning between transport and planning agencies and local governments. It also provides a consistent approach to assessing the performance of the road and transport network, identifying project requirements and assessing project solutions.

Appendix B. Supporting Technical Evidence

B.1 Reduced Car Ownership Context

To meet a car use mode share of 50%, the City of Greater Geelong would have to reduce car ownership from 1.9 cars per household to 1.4 cars per household – a reduction of 25%. The table below shows the projected growth in housing across the municipality and what a reduction of 25% car ownership means. With 145,000 new houses to be delivered between 2021 and 2051, our analysis indicates:

- A reduction of 25% car ownership means cars owned is set to increase by approx. 140,500 cars over this period.
- This means that unless people in existing houses give-up their cars, new dwellings would need to be provided with car parking at a rate of approx. 1.0 car per dwelling.

Projected Increase in Dwelling Numbers and Car Ownership across the City of Greater Geelong

Metric	2021	2051
Dwellings [1]	125,000	270,000
Car Ownership/dwelling	1.9 [2]	1.4 [3]
Cars owned total	237,500	378,000
Difference in cars	-	140,500
Difference in dwellings	-	145,000
Cars per new dwelling	-	1.0

Source: ABS Census, ID data, Stantec analysis

[1] Modelling completed for the Geelong Growth Areas Transport Infrastructure Strategy, by Stantec
[2] ABS Census 2021 car ownership rate
[3] The car ownership rate that approximates 50% car mode share, according to analysis of ABS Census 2021 data undertaken by Stantec

Clearly, it is not reasonable to provide such a relatively low rate of parking for all new dwellings; however, any new parking that is provided places additional pressure to reduce car ownership among the existing housing stock, or provide ever-lower parking for the developments that follow. It therefore must be assumed that a reasonable reduction in car ownership must come from existing dwellings.

Using the same data, if all new homes are provided with an average of 1.2 car spaces, this means that 15% of existing cars (1 in 7) must be given up.

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