Baw Baw Shire Council

Warragul Parking Study

August 2015

Executive Summary

Council initiated the Warragul Parking Study (WPS) due to the need to review current adequacy and effectiveness of the parking within the Warragul town centre area.

The objectives of the parking study are to:

- Provide an effective parking regime with appropriate time limitations;
- Adapt current parking arrangements to suit current business needs; and
- Review the capabilities of current and future parking supply to cater for future population growth.

The Warragul Research Area consists of 2847 defined parking spaces excluding additional informal private parking such as gravel parking spaces and some parking spaces perceived to be for exclusive use of a private business. The survey consisted of four days over which information was collected every two hours over the broader study area and 30 minute intervals used in a smaller centralised area denoted the Principal CBD area. The results of each survey day follows.

- Monday 6th Oct 2014 65% Occupancy
- Wednesday 8th Oct 2014 66% Occupancy
- Friday 10th Oct 2014 67% Occupancy
- Saturday 11th Oct 2014 36% Occupancy

On any given day, the peak occupancy rate was recorded at approximately 12:30pm. This peak causes the Principal CBD Area to become effectively full (over 85% occupancy rate) whilst parking across the outer CBD Area reaches peak rates of 70% occupancy.

By 2016 it is expected that the research area as a whole may start to experience inefficiencies during peak times caused by overall occupancy rates being greater than the effective parking supply (85% of total parking volume).

Unless corrective action is undertaken, by 2027 all parking within the study area on average will likely be inefficient (average value greater than 85% and peaks of 100% occupancy).

It is expected therefore that in order to ensure a balanced parking supply, methods be put in place as soon as practical to either increase supply or promote alternative modes of transport such as walking, cycling and public transport.

Detailed results of the individual survey days and overall duration of stay values are illustrated in Appendix A and Appendix B.

Based on the study findings and feedback received from the wider community the following recommendations are proposed:

Immediate Actions (2015)

Recommendation 1: Alter on street existing parking to increase supply

Council to provide additional parking spaces in the following area;

- Napier Street (between Queen Street and Connor Street)

A concept drawing of the proposed changes are shown in Appendix C

Council to also ensure that through private development, the following location is altered to provide additional parking spaces.

- Palmerston Street (between Smith Street and Mason Street)

Recommendation 2: Manage existing parking restrictions to better reflect user needs

A review of the parking survey information in conjunction with the initial community consultation has determined that the following areas would likely benefit from an alteration to existing time restrictions.

- Introduce a mix of unrestricted and 2P Parking on Albert Street between Victoria Street and Smith Street.
- Introduce a mix of 2P and 1P parking on Palmerston Street between Mason Street and Smith Street.
- Replace existing unrestricted parking with 2P parking on Queen Street between Gladstone Street and Peace Avenue,
- Replace existing 2P parking with 1P parking on Smith Street between Palmerston Street and Albert Street.

Recommendation 3: Complete an audit on the suitability and access provisions of disabled parking spaces

Council to ensure that the concerns identified by the community in regards to the suitability and access of disabled parking spaces throughout the CBD is addressed by the completion of an audit.

Recommendation 4: Seek to expand Council's enforceable parking areas

Council to contact new developments with the intention to implement an enforcement agreement allowing Council Officers to patrol new parking areas to increase the effectiveness of parking by reducing vehicle overstay.

Recommendation 5: Rationalise Council's parking directional signage

Council to improve parking directional signage throughout Warragul and rationalise or provide additional signage where needed to increase effectiveness. A plan of the proposed changes are shown in Appendix D.

Short Term (1-3 Years)

Recommendation 6: Complete investigation into the suitability of multi storey parking development within the Warragul CBD

Given the limited ability for developers to provide additional parking within infill development sites, Council to complete cost benefit analysis and determine opportunity for net parking increases on Council owned land at

- Williams Street,
- Barkly Street.

Council also to investigate the potential for multi storey development on privately owned land such as at Safeway. The results of this analysis should then form the basis of determining and implementing a uniform 'cash in lieu' rate per parking space across Warragul.

Recommendation 7: Implement 'Cash in Lieu' Scheme

Council to undertake investigation and implementation of a 'cash in lieu' contribution scheme to maintain and provide future parking provisions. Preference should be for a uniform fee (adjusted annually to reflect construction prices) 'cash in lieu' scheme. This shall include a schedule added to the existing parking overlay Clause 45.09, which requires a contribution for each parking space not supplied as part of the parking requirements as set out in Column B of Table 1 within Clause 52.06 of the Baw Baw Shire Planning Scheme .

Ongoing

Recommendation 8: Monitor development provisions of parking

Council to monitor the amount and rate at which future developments provide parking provisions. The purpose of this monitoring is to compare forecast supply (2.94 spaces/100m^2) to actual supply and plan further corrective actions as determined.

Recommendation 9: Advocate for increased Public Transport and means of reducing parking demand

Council to continue to invest in infrastructure, which promotes active and public transport as an alternative to single occupant vehicle use. Specific areas of need include improving infrastructure focussed on pedestrian improvement within the Principal CBD and Queen Street areas.

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1.0 Introduction

1.1 Background

The Baw Baw Shire Council has commissioned the task of performing a car parking survey and associated strategy for the Warragul CBD and surrounding area.

1.2 The need for the Warragul Parking Study

Community concern and also the results gained from a high level review; the Baw Baw Shire Council Warragul Town Centre Master plan 2011 has prompted the need for an in depth study into the level of service of parking provided in and around the CBD of Warragul.

Work completed as part of the Warragul Precinct Structure Plan 2014, estimates that the population of Warragul will grow from 14,000 to 40,000 residents through the construction of 12,500 new homes over the next 30-50 years. This growth in population and its associated land usage will have implications on the parking availability around Warragul, especially the CBD area. As a result, Council commissioned the Warragul parking study to investigate current and future parking requirements.

1.3 Study Objectives

Council has undertaken the Warragul Parking Study with a view to formulating a range of actions that address the current and future parking needs of residents, businesses and visitors to Warragul. The key objectives of this Parking Study are to:

- Provide an effective parking regime with appropriate time limitations;
- Adapt current parking arrangements to suit current business needs; and
- Review the capabilities of current and future parking supply to cater for the large expected population growth.

1.4 Warragul Parking Study research area

The area of focus for the Warragul Parking Study includes the major retail and office areas of Warragul and its closely surrounding areas of similar usage. The study area, chosen as the Principal CBD area and the area outside, termed the Outer CBD area makes up the region from which data was collected and subsequent research completed. The chosen research area is a best representation of the high traffic areas in Warragul, with high traffic generally arising from the office and retail floor space in the vicinity, which attracts both employees and customers who require parking spaces.

All parking spaces within the Principal CBD area are on street parking spaces. These are the most accessible and user-friendly parking, giving the greatest ease of access to the nearby businesses. Parking spaces within the Outer CBD Area consist of a mix of on street and off street areas. Off street parking for residential dwellings located on the fringe of the research area and some parking spaces not perceived by the public as available for public use have been omitted.

The boundaries of both the Principal CBD Area and Outer CBD Area are shown in Figure 1.

Figure 1 Warragul Parking Study Research Area

2.0 Background

2.1 Baw Baw Shire and Warragul profile

Baw Baw Shire is located approximately 100km east of Melbourne and is regarded as a peri urban council. As such, Baw Baw shire is neither completely urban nor rural, but forms a mix of residential and agricultural land uses.

Baw Baw Shire attracts 14,222 workers to the area with 83.2% living and working in the area the remaining 16.8% travel to Baw Baw Shire from outside the municipal area.

Warragul located along the former Princes Highway is the main commercial and service centre for the Baw Baw Shire with approximately 40% of all businesses in Baw Baw Shire located within Warragul. Warragul's main employment industries include construction, health and community services, education and training as well as retail trade. These businesses service Warragul's population of 14,074 (2011, Census).

Baw Baw Shire's peri urban nature combined with Warragul's limited public transport options results in vehicular transport being the main mode of transport throughout Baw Baw and Warragul. This is confirmed by 2011 Census data which determined 74.2% of workers travel by car as either a passenger or driver to work, above the state average of 66.2%.

2.2 Policy documents and previous studies

In completing this report, a number of key documents have been reviewed in order to ensure any recommendations and directions align with the objectives of both Council's Plan and its policies. These key documents include but are not limited to the;

- Warragul Shopping Centre Parking Survey Update (2003)
- Warragul Town Centre Master plan (2011)
- Warragul Town Centre Master plan Traffic and Transport Assessment (2011)
- Warragul & Drouin Retain Impact Study (2013)
- Warragul Precinct Structure Plan (2014)
- Baw Baw 2050
- Council Plan 2013-17

2.3 Sustainable transport options in Warragul CBD

2.3.1 Walking and Cycling

Warragul has an extensive footpath network within the CBD. Footpaths are provided on both sides of the road within the large majority of the CBD area. Dedicated Pedestrian crossings are located along Victoria Street and Smith Street, varying from pedestrian operated signals to temporary zebra crossings.

Most local roads within the CBD area have pram crossings and pedestrian refuges where applicable.

Along the fringe of the research area, the roads of Albert Street and Queen Street limit the ability for north south pedestrian movements with no controlled pedestrian's crossings in this area. Further south the railway track inhibits movement into the CBD area from the south, with the only railway track crossing into Warragul near the CBD area being a footpath located adjacent to kerb along the Alfred Street Bridge.

The existing transport system to the north, west and east of Warragul is focused on motor vehicle transport, these sections lack suitable existing infrastructure such as dedicated bicycle lanes or shared paths for safe and accessible multi-modal transport.

2.3.2 Public Transport

Public transport connects the major towns of Baw Baw Shire including Warragul along the Princes Freeway Corridor. At present Baw Baw shire is serviced by V/Line Corporation, which provides public train services connecting Gippsland to Melbourne while linking in with metropolitan trains. Services are available from approximately 5am to 9pm with trains arriving at hourly intervals with service intervals times decreasing to cater for the morning peak.

Within the shire, many areas are service by Warragul and Latrobe Valley Bus Lines connecting towns to outer residential areas. Although public transport links exist within Baw Baw Shire, there remains a large reliance on cars for transport between towns from the areas not serviced by Public Transport or that are too inconvenient to use.

3.0 Parking Surveys

1.1 Introduction

The current demand for parking within the study area originates from a range of land use types. Within the Principal CBD area, the parking user types include employees and visitors to retail, services stores and office workers who require parking close to work. The Outer CBD area land use consists of larger facilities such as supermarkets and warehouse stores and smaller boutique businesses.

In the research area chosen for the Warragul Parking Study 2847 spaces were included for review. These include 1010 on street spaces and 1837 off street spaces consisting of a mix of publically owned parking and private parking such as but not limited to the Coles, Safeway and Aldi parking.

1.2 Car parking surveys

In order to understand the parking requirements and existing trends throughout the research area, comprehensive in depth surveys were undertaken. The parking surveys were completed over the course of 4 days, during the week starting the 6th October 2014, from 9:00AM– 5:00PM. The surveying exercise included:

- Two-Hourly data collection intervals for Outer CBD spaces
- Half-Hourly data collection intervals for the Principal CBD spaces
- Surveying took place on four separate days (Monday 6th, Wednesday 8th, Friday 10th and Saturday 11th October).

3.1 Daily profile of parking

Through collating the information obtained by the parking survey, daily occupancy profiles were established to understand the trends and characteristics that occur during any given day.

3.1.1 Principal CBD Area

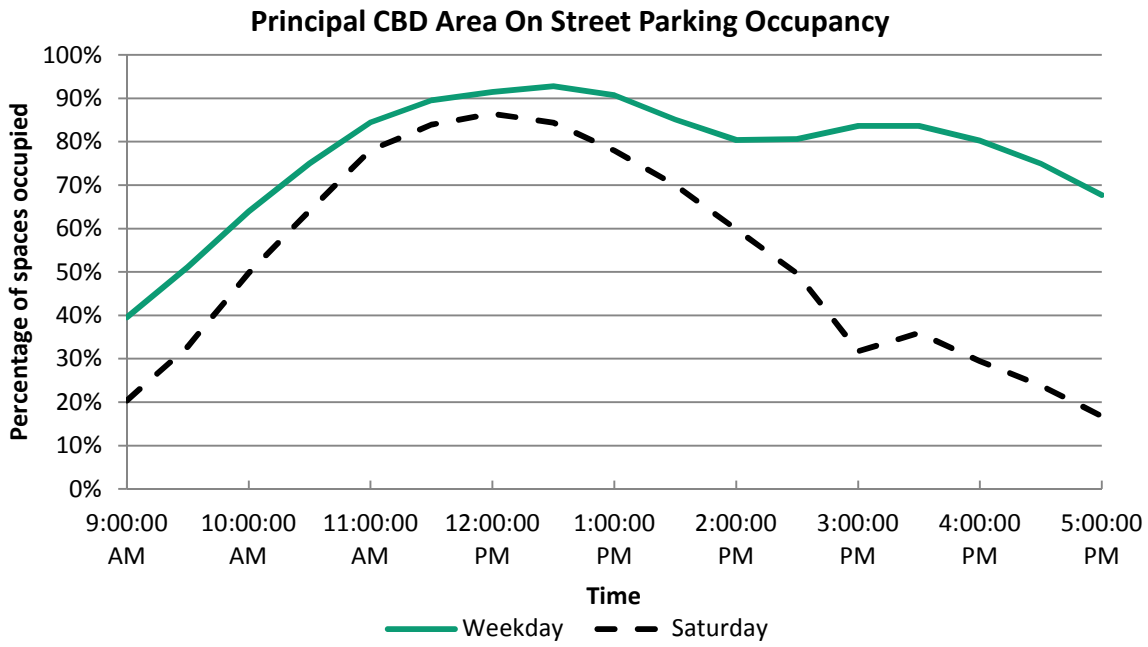


Figure 2 Daily profile of parking demand for on street parking in the CBD area

From Figure 2, it is observed that:

- Occupancy rate reaches a peak of over 90% for the entire on street Principal CBD parking area.
- The initial peak period of parking occupancy occurs at 12:30PM on a weekday with a subsequent secondary peak occurring at approximately 3pm corresponding with the end of school period.
- Inefficiencies are observed within the majority of the parking area for 2-3 hours per day caused by occupancy rates greater than 85% resulting in motorists circling while looking for a space.
- Although Saturday receive peaks at similar times, the magnitude is generally lesser with no significant secondary peak occurring. However at these peak times inefficiencies are still observed

3.1.2 Outer CBD Area

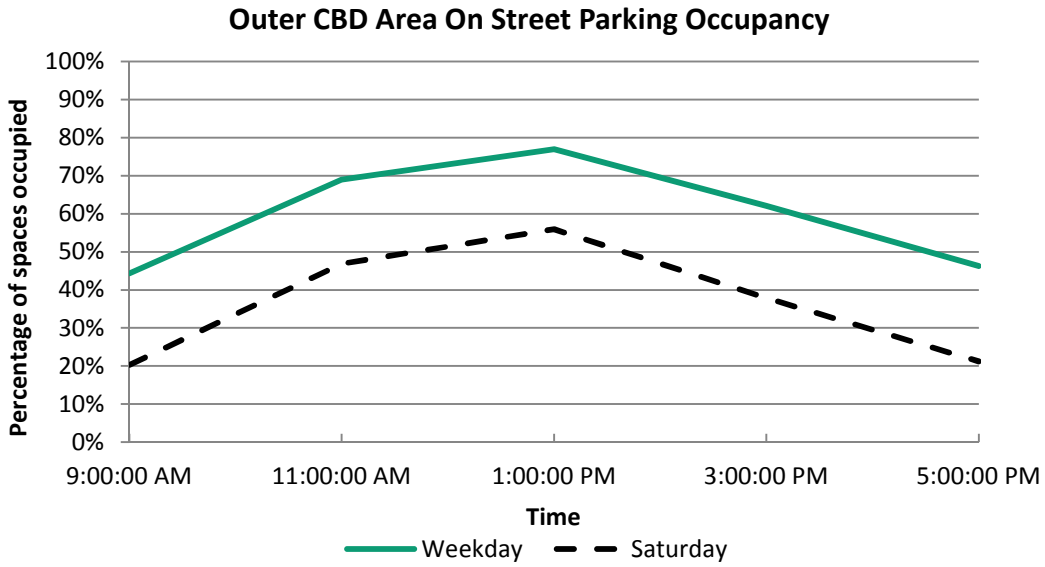


Figure 3 Daily profile of parking demand for on street parking within the Outer CBD Area

From Figure 3, it is observed that:

- Occupancy rates peak at above 75% for the on street parking outside of the CBD area.
- Generally as a whole this area does not experience inefficiencies caused by occupancy rates over 85%.
- The peak period occurs at 1:00PM on a weekday likely in line with the peak times observed within the Principal CBD Area.
- After the peak period at 1:00PM, the demand for parking spaces greatly decreases.
- Weekend occupancy rates are generally 20% less than weekdays at any given time.

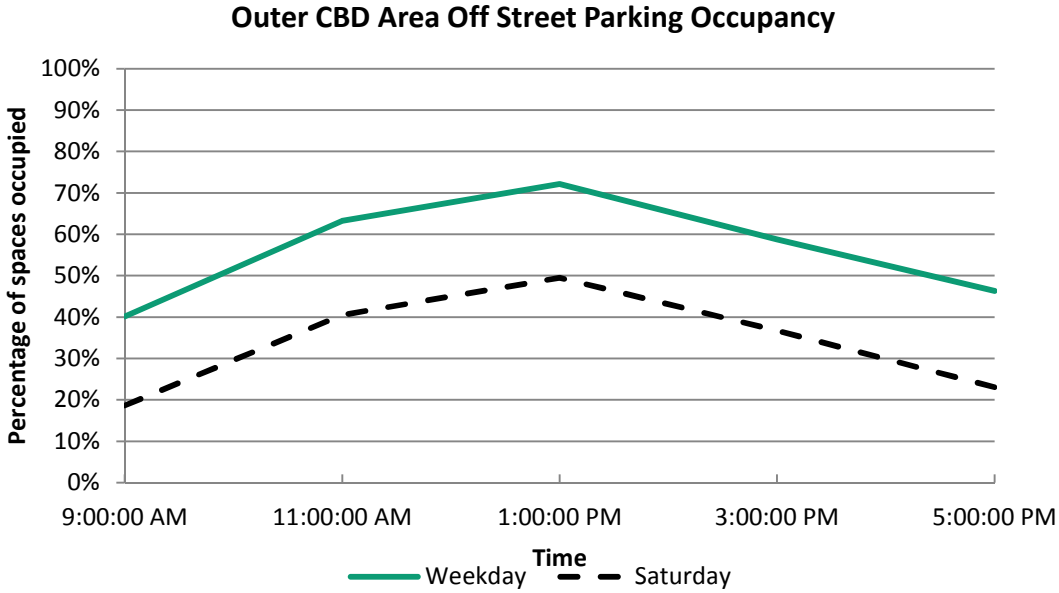


Figure 4 Daily profile of parking demand for off street parking within the Outer CBD Area

From Figure 4, it is observed that:

- Occupancy rates peak slightly above 70% at 1:00PM on a weekday.
- The demand for off street parking is less than that for on street parking.
- Weekend occupancy rates are generally 20% less than weekday values.
- Generally this area does not experience inefficiencies caused by occupancy rates over 85%.

3.1.3 Total Research Area Occupancy Rates

Within the entire research area the total occupancy rates were determined. These are as shown in Table 1 below.

Table 1 Recorded Occupancy Rates of Entire Research Area

Recorded Occupancy Rates (Entire Research Area)						
Day	9AM	11AM	1PM	3PM	5PM	Average
Monday 6th Oct	54%	74%	80%	66%	54%	65%
Wednesday 8th Oct	51%	74%	82%	70%	56%	66%
Friday 10th Oct	52%	74%	83%	72%	58%	67%
Saturday 11th Oct	22%	46%	53%	37%	21%	36%

3.2 Parking supply and demand

Table 2 below highlights the peak demand and associated occupancy rate by parking restriction for both the Principal CBD area and the Outer CBD Area. The values shown in the table represent the highest average occupancy rate determined at any given time for each unique parking restriction.

Table 2 Peak parking demand and supply in Warragul

Parking Restriction	OUTER CBD AREA			PRINCIPAL CBD AREA		
	Supply	Peak Demand	Occupancy	Supply	Peak Demand	Occupancy
10P	0	0	0%	6	6	100%
1/4P	13	9	69%	11	10	94%
1/2P	7	6	91%	0	0	N/A
1P	27	20	75%	158	153	97%
2P	948	806	85%	85	82	96%
3P	142	131	92%	0	0	N/A
4P	13	7	50%	0	0	N/A
DISABLED	48	29	61%	4	0	0%
LOADING	4	2	46%	6	4	60%
RESTRICTED	211	148	70%	0	0	N/A
TAXI	1	0	0%	5	3	67%
UNLIMITED	1155	912	79%	0	0	N/A
TOTAL	**2572**	**2070**		**275**	**258**	

From Table 2 above, it can be noted that:

- There is a larger spread of long and medium-term parking outside of the Principal CBD area
- At peak times, parking is very competitive in the Principal CBD area with 235 spaces occupied out of 243 1P and 2P spaces.
- At peak times in the Outer CBD area, there are 243 unlimited parking spaces unoccupied.

Spatial representations of average occupancy rates for each study date are as shown in Appendix A

1.3 Observed parking habits

3.2.1 Duration of stay

Determining the duration of stay is critical to assessing the effectiveness of a parking regime as it determines how appropriate current parking restrictions are to business needs. Table 3 below illustrates the observed duration of stays, which occurred, throughout the study area as well as the related under stay or overstay in reference to the signed time restriction.

Table 3 Observed Duration of Stay (min)

General Restriction	PRINCIPAL CBD AREA		OUTER CBD AREA	
	Average DoS*	Under stay/Overstay	Average DoS*	Under stay/Overstay
10P	39	+29	NA	NA
1/4P	21	+6	93	+78
1/2P	45	+15	NA	NA
1P	64	+4	83	+23
2P	98	-22	135	+15
3P	NA	NA	145	-35
4P	NA	NA	115	-126
BUS	NA	NA	NA	NA
DISABLED	2	NA	80	NA
LOADING	19	NA	182	NA
RESTRICTED	NA	NA	167	NA
TAXI	NA	NA	NA	NA
UNLIMITED	NA	NA	182	NA

*DoS refers to Duration of Stay

3.2.2 Compliance with parking restrictions

Based on Table 3 in section 3.2.1 above, it is observed that:

- The longer-term parking outside of the Principal CBD area is not being effectively used, with people staying in the 4P parking areas for an average time of 126 minutes, less than half of the allowed time.
- The results show the 3P parking outside the Principal CBD area seems to be an appropriate restriction with on average stay durations of 145 minutes, 35 minutes less than the allocated time.
- The 1/4P parking in and outside of the Principal CBD area both had an average stay time greater than the allocated restriction, although for the Principal CBD area, this was only marginal. The Outer CBD area had an observed overstay of approximately 5 times the length of the restriction (93 minutes).
- Results show that the parking spaces with shorter restrictions witnessed the most overstay, and in contrast, the spaces with the longest restrictions witnessed the most under stay.

A spatial representation of under stay/overstay and average duration of stay for the research area are shown in Appendix B

4.1 Introduction

Public consultation is key in determining both users expectations and developing measures to create an effective parking regime.

Prior to the commencement of the parking survey data collection on the 6th October 2014, Council undertook initial public surveys in May of 2014 through Council's 'Have Your Say' channel.

This survey served as an open forum for residents to express their concerns in regards to parking within Warragul.

4.2 Have Your Say survey results

In total, twenty-eight people responded to this survey outlining forty-two concerns within the Warragul area. A third of all concerns raised by participants were regarding the amount of parking available within the CBD while 21% of concerns also requested changes to parking infrastructure including the width of parking bays, requests for specific restricted parking such as long vehicle parking.

A breakdown of all comments received is as shown in Figure 5 below.

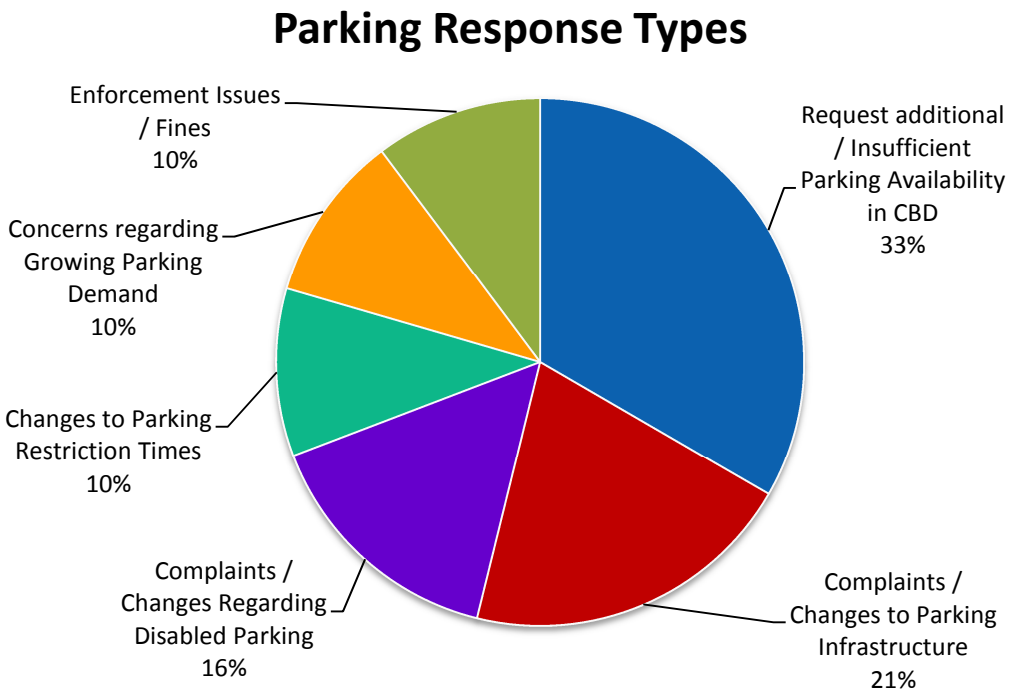


Figure 5 Compilation of public survey comments

5.0 Parking Strategy

5.1 Introduction

The subsequent sections provide background on the current requirements of any development as well as discuss specific areas for Council to investigate further in relation to current parking demands and future parking requirements within the research area.

5.2 Car parking provisions

In April 2013, the State Government amended the Victoria Planning provisions relating to car parking. Clause 52.06 in the Baw Baw Planning Scheme defines the car parking requirement of developments.

The purpose of Clause 52.06 is to:

- Ensure that car parking is provided in accordance with the State Planning Policy Framework and Local Planning Policy Framework.
- Ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- Support sustainable transport alternatives to the motor car.
- Promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- Ensure that car parking does not adversely affect the amenity of the locality.
- Ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

The Baw Baw Planning Scheme has a schedule to the Parking Overlay that applies a different rate to calculate the number of car parking spaces required in Warragul and Drouin Town Centres.

The parking overlay as shown in Figure 6 overleaf covers the large majority of the study area and is intended to define the areas at which a reduced parking provision requirement be placed on a developer as per the schedule listed in Table 1 of Clause 52.06.

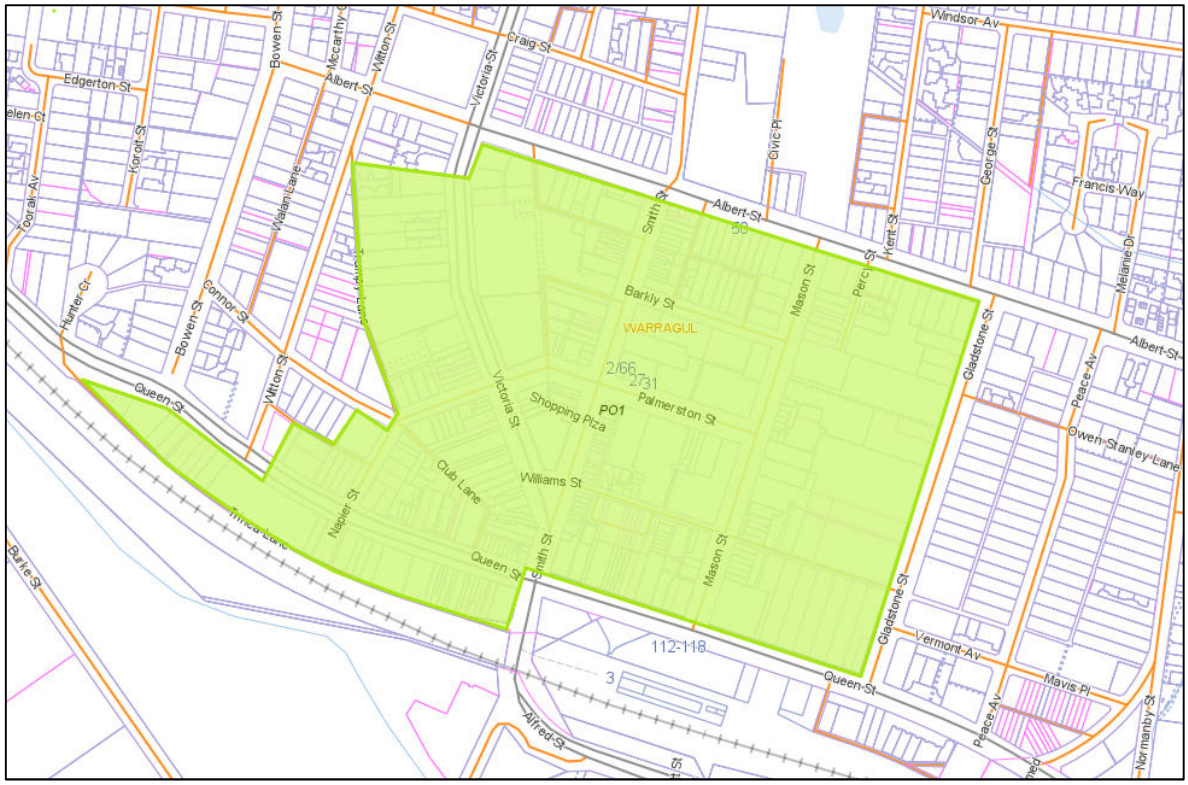


Figure 6 Warragul Parking Overlay

5.3 Future parking requirements

The Baw Baw Settlement Management Plan sets out the future population growth across the shire and the Warragul Precinct Structure Plan provides further detail for the township of Warragul. By 2036, it is expected that the population will have increased at an annual rate of 2.6% to 3.5% resulting in an increase of 15,071 people from 2011 figures bringing Warragul's total population to 28,152.

5.3.1 Forecast growth of floor space for office and retail

Using information adapted from the Warragul and Drouin Retail Impact Study 2013 it is estimated that:

- There was 40,758m^2 of floor space for office and retail use in 2013,
- There will be 89,551m^2 of floor space available for office and retail use in 2036,
- A total growth of 48,793m^2 will have occurred by the year 2036, meaning
- A total growth rate of both office and retail spaces totalling approximately 2100m^2 per year.

It is noted that the total growth in the period from 2013 to 2036 is expected to include a mix of small and large scale developments planned for the Warragul CBD area and on this basis and by looking at past figures, these values have been considered appropriate for the use of determining future parking supply values.

5.3.2 Estimated future growth of parking demand

Based on the these growth estimates to future retail and office land use, assuming future parking provisions are provided by development at the current supply rate, future parking supply and demand rates can be predicted.

The results of such predictions based on the current developer supply rate of 2.94 spaces/100m^2 of land use are as shown in Figure 7. By comparing the forecast supply in respect to the effective capacity of a parking area, an indicative level of service can be determined. This level of service outlines the qualitative effectiveness of parking at any given occupancy rate.

It should be noted that the forecast supply represented in Figure 7 signifies average values and not peak values. Peak values vary significantly across any given parking area as represented in Section 3.1.

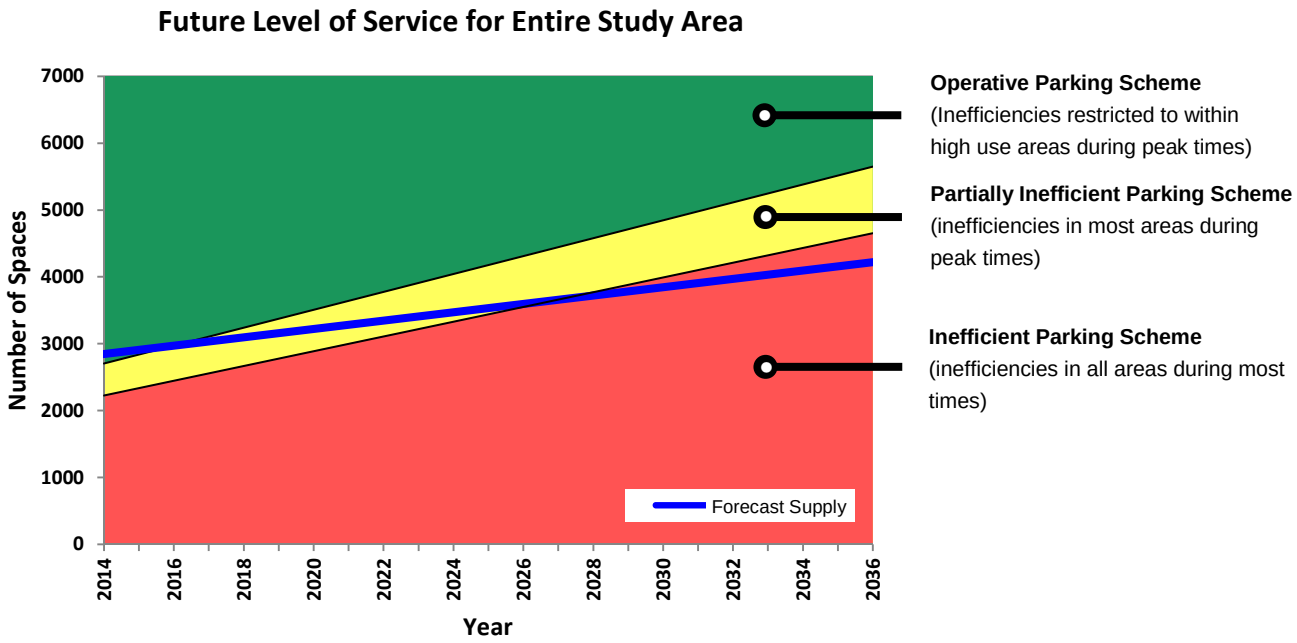


Figure 7 Future Parking Supply vs Level of Service

When comparing Figure 7 with the average demand of 1894 and average occupancy rate of 66% the expected level of service experienced within the study area at present is indicative of an operative parking regime with peak levels below 85%.

Quantitatively, by mid-2016 it is expected that the study area in general will start to experience inefficiencies caused by maximum occupancy rates being greater than 85% (average value greater than 70% with peaks greater than 85%). By 2027, all parking within the study area will be inefficient (average value greater than 85%, which is effectively full, and peaks of 100% occupancy).

To put this in perspective qualitatively, the current level of service across the entire study period is similar to that experienced within Smith Street mid-morning on a weekday. That is a user would have the same chance of finding a car park in Smith Street at this time as they would in the entire study period. By 2027, the average level of service would be similar to that of Smith Street at peak times.

It should be noted however that these predictions are somewhat simplified as the estimation of parking provision and subsequent increase in supply rates is difficult to predict for a number of reasons:

- Development footprint size and location of development site may not allow provision of parking spaces
- Developer may look to utilise existing parking provisions offsite in lieu of providing additional parking
- The developer may support the use of ridesharing as a means of transport
- The developer may look to utilise existing public transport as means of transport in lieu of parking
- Due to the specific development type, parking demands may not be in conflict with existing land uses therefore allowing shared parking.
- Council has recently opened up large volumes of land for development which is contrary to Council's previous methods of steadily opening up smaller parcels of land for development. This may or may not affect the expected parking supply rate.

5.3.3 Potential Impact and Implications of future growth on parking

When assessing the potential implications of growth on parking as shown in Table 4. The following scenarios were considered:

Scenario 1: Accept an operative parking scheme while also maintaining the existing level of service (average occupancy of 66% peaking at 82% occupancy)

Scenario 2: Accept a partially inefficient parking scheme (average occupancy of 70% peaking at 85% occupancy).

Scenario 3: Accept an inefficient parking scheme allowing for an average occupancy of 85% peaking at 100% occupancy

Table 4 Future Parking Requirement Scenarios

	Level of Service Criterion			Resultant Parking Requirements	
	*Peak Occupancy Rate**	*Average Occupancy Rate*	*Predicted Supply*	*Total Spaces required to meet LOS*	*Additional Spaces required*
Scenario 1	81%	66%	4218	5993	1775
Scenario 2	85%	70%	4218	5651	1432
Scenario 3	100%	85%	4218	4654	435

*Peak Occupancy Rate determined as maximum recorded occupancy rate of entire research area at any given time.

The scenarios shown in Table 4 focus around the effectiveness of parking within the research area, parking practitioners generally accept that an occupancy rate of 85% represents the effective capacity of parking supply. Once parking supply reaches levels above this rate vehicles tend to circulate around the parking area resulting in increased congestion and difficulty in motorists finding a parking space.

Scenario 1 maintains the status quo, this scenario allows no change to the existing average occupancy rates and level of service with any future demand to be entirely catered for by future parking provisions. This therefore results in requiring 1775 additional parking spaces to maintain the existing level of service.

Scenario 2, allows peak occupancy rates to increase from approximately 81% to 85%. This results in a minor increase to average occupancy rates from 66% to 70%. Such allowances result in a minor decrease to existing levels of service resulting in additional parking required for this scenario to be 1432 spaces.

Scenario 3, allows the average occupancy rate to increase significantly from 66% to the effective limit of parking occupancy rate of 85%. Allowing the average occupancy rate to increase, decreases the level of service provided significantly. This however results in a lower shortfall in parking supply thus the likely additional parking required for this scenario is 435 spaces.

None the less all scenarios depict that intervention from Council is required in order to cater for increased parking demand should the current rate of development supplied parking continue.

Given the restrictions and inabilities for future developments (especially brownfield sites restricted by existing development) to provide parking provisions and the tendency for waivers on parking provision requirements given due to these conditions. It is expected that by as early as 2016 parking within Warragul as a whole will become inefficient with effective occupancy rates reaching in excess of 85% at times.

5.4 Management of existing parking

5.4.1 Overview

While both public and active transport modes should be encouraged to not only promote a healthy lifestyle but also reduce the demand on parking, it is noted that the major mode of travel to and from Warragul will remain as private motor vehicles.

This is likely to continue throughout all towns of Baw Baw Shire including Warragul with the peri urban landscape by nature having limited public transport options. As such, there is a requirement for a substantial mix of parking supply to be provided and managed to best suit current and future business and community needs.

5.4.2 Review of parking restrictions

Table 5 shows the parking supply by restriction type in both the Principal CBD and Outer CBD area whilst Table 6 and Table 7 shows the observed duration of stay within the study area.

Table 5 Supply of parking by restriction type

Parking Restriction	OUTER CBD AREA		PRINCIPAL CBD AREA	
	Supply	% of Total Supply*	Supply	% of Total Supply*
10P	0	0.0%	6	2.2%
1/4P	13	0.5%	11	4.0%
1/2P	7	0.3%	0	0.0%
1P	27	1.0%	158	57.5%
2P	948	36.9%	85	30.9%
3P	142	5.5%	0	0.0%
4P	13	0.5%	0	0.0%
UNLIMITED	1155	44.9%	0	0.0%

*Percentage of Total Supply includes restricted parking not shown in table

Table 6 Breakdown of trip stay duration Non CBD Area

OUTER CBD AREA		
Duration	Number of Stays	% of Total Stays
<2hrs	12735	66.7%
2hrs - 4hrs	3814	20.0%
4hrs - 6hrs	1390	7.3%
6hrs - 8hrs	616	3.2%
8hrs - 10hrs	527	2.8%

Table 7 Breakdown of trip stay duration CBD Area

PRINCIPAL CBD AREA		
Duration	Number of Stays	% of Total Stays
<30min	4647	62.7%
30min - 60min	1549	20.9%
1hr - 2hrs	910	12.3%
2hrs - 3hrs	203	2.7%
3hrs - 4hrs	78	1.1%
4hrs - 5hrs	22	0.3%
>5hrs	7	0.1%

Through comparison of Table 5, Table 6 and Table 7 the following can be determined:

Within the Outer CBD Area;

- The large majority of users stay for less than 2 hours with proportionately less 2P parking available. While this may be of concern within the Principal CBD areas, the amount of 2P parking is acceptable given the need to provide mixed parking types and ability for users to park within areas with higher time restrictions

Within the Principal CBD Area;

- Over 62% of users stay for less than 30 minutes whilst only 6% of parking spaces are allocated for this stay duration with no spaces apportioned within the CBD for 30 minute parking.
- 2P Parking contributes to 30% of total available parking, however only 12% of users were noted to stay between 1hr – 2hrs. Opportunity exists, therefore to reduce the number of 2P parking in favour of 1P and 1/2P parking.
- More than 300 vehicles were noted to stay for periods greater than 2P (the highest applicable parking restriction within the CBD area). While it is noted that this represents inefficiency in the parking regime it is possible that some of these vehicles are doing so legally having exemptions such as double time disabled parking permits.

5.4.3 On street parking

On street parking within any CBD area is essential in ensuring the competitiveness and survival of small-scale retail and businesses. This is due to the high convenience on street parking provides due to its close proximity to these attractions.

Generally, providing restrictions greater that 2P in these areas is discouraged as it may influence the effectiveness of car park by promoting longer durations of stay. Furthermore, while it is difficult to determine the exact mix levels of short term parking within CBD on street areas it is commonly accepted that these areas should contain a mix of 15min (1/4P), 30 minute (1/2P) and 1 hour (1P) parking. This is undertaken to achieve a high turnover of car parking while also maintaining high occupancy rates in these areas.

When comparing Table 5 and Table 7 it is observed that while 1P parking within the Principal CBD area comprises 57.5% of the total available parking only 20.9% of vehicles are noted to stay for this duration. It is therefore likely that in this particular instance, a proportion of parking restrictions should be reduced to better reflect the likely stay duration of a vehicle.

5.4.4 Off street parking

By nature, off street parking areas not associated to an attraction (such as the Barkly Street off street parking area) are generally less attractive to short term users given the increased walking distance from destinations. It is for this reason that off street parking not associated with a development generally is provided for medium to long-term use.

Inherently, this results in parking areas, which are somewhat disconnected and unless properly designed can be underutilised. It is therefore important that where possible off street parking areas be made attractive to use and easy to access. Consequently, off street parking areas should include:

- Safe and accessible access and egress
- Informative and rational directional signage
- Proper pedestrian access and connections
- A high level of amenity including infrastructure to improve safety and security such as lighting and natural surveillance.

Furthermore, off street parking areas should include the ability to expand, should expansion be warranted.

Table 8 indicates the parking supply by restriction type for all off street parking areas.

Table 8 Off Street parking restriction type distribution

Parking Restriction	Number of Spaces
1/4P	2
1P	18
2P	645
3P	142
UNLIMITED	818
Total	1625

It is observed that at present Warragul has a good mix of longer term parking opportunities within off street areas.

In regards to accessibility and amenity, Council owned off street parking areas generally have acceptable access given the topography in areas. Furthermore, while somewhat limited in natural surveillance most Council owned parking areas are supplemented with lighting.

However it is noted that a number of privately owned smaller off street parking areas such as parking at the rear of the Club Hotel and parking at the rear of the McDonalds have limited to no natural surveillance and lighting with many parking areas not viewable from nearby streets and line of sight impeded by adjacent buildings.

5.5 Management of priority parking spaces

5.5.1 Overview

Investigation has highlighted that the most highly sort parking spaces in the research area of Warragul are the on street parking spaces in the Principal CBD area. This investigation has highlighted that the on street Principal CBD area parking spaces are the most occupied spaces in the research area. Efficiency of these CBD spaces is vital to the effective functioning of Warragul's parking. A good mixture of short, medium and long-term parking and the presence of suitable loading zones and disabled parking zones are critical in order to cater for the needs of the entire public.

5.5.2 Disabled and mobility impaired parking

Warragul and its surrounding townships are ageing with 23.4% of the community over the age of 60 years old, a value, which is higher than both the Victorian and Australian averages. The relatively high number of aged residents' signifies an increased need to ensure ample parking for the disabled and mobility-impaired citizens.

There are currently 59 disabled spaces included in the Warragul Parking Study research area with these spaces located in 39 different locations around Warragul.

In reviewing these spaces, Council has taken into account the results of public surveys. Feedback from these surveys has highlighted that the issues surrounding disabled and mobility impaired parking around Warragul are:

- A lack of available and accessible parking for disabled or mobility impaired residents,
- A perceived lack of monitoring of these spaces to ensure that occupying vehicles hold valid permits, and
- A perceived need for tighter parking restrictions in high use areas, such as the post office, local banks, chemists and medical centres.

In Australia, there are no standards in place regarding the number of parking spaces for disabled and mobility impaired people, instead parking spaces are provided on a case by case basis in each shire and councils endeavour to accommodate the needs of the community as effectively and reasonably as possible.

Data gained from the parking surveys, revealed that although the public felt that there was inadequate disability and mobility impaired parking around, average occupancy rates for disabled spaces were noted to be only 27%. This result shows that there are two possible scenarios occurring. Either, the disability parking spaces are under-utilised around Warragul over the course of a day, or there is ample parking in areas that are not as frequently used, but a lack of parking in the high use areas at peak times.

5.5.3 Loading zones

It is important for local business owners, consumers and suppliers to have access to suitable loading facilities. Having a space set aside for the drop off or pick up of deliveries ensures that businesses can run effectively with limited inconvenience to delivery companies

Around Warragul, there are 10 different loading zones generally located at the beginning or end of a street. Investigation highlighted that the supplied loading zones are being underutilised, with the average occupancy rate being only 18%. It is likely that rather than using the spaces allocated as loading zones, a delivery company would rather try to find a space that is closer to the receiving business. Although this results in an underutilisation of existing loading zones, there were no comments or concerns in the public consultation sessions.

5.5.4 Scooter and motorcycle parking

There are currently no designated scooter or motorcycle parking spaces within the research area. Upon a review of the consultation, comments and recommendations council noted that there was no active interest in the provision of these parking spaces at the time of study so council will take no further action.

5.5.5 Long vehicle parking

There are no designated long vehicle parking spaces within the research area. Upon a review of the consultation, comments and recommendations council noted that there is some active interest in the provision of long vehicle parking.

Providing long vehicle parking within Warragul's on street network is difficult given the large proportion of angled on street parking. Options exist along Napier Street, Barkly Street, Victoria Street and Queen Street. However, it is likely that providing dedicated long vehicle parking in these locations would result in a scenario similar to that of loading zones within Warragul. That is, while a provision is made for this vehicle type, these spaces are underutilised, thus reducing the effective parking supply for other user types.

5.6 Enforcement

Given the expected increase in population, it is likely that demand for parking spaces will increase, therefore the pressure on parking to work effectively will also likely increase.

Ensuring vehicles utilising parking within Warragul stay within the defined parking time restrictions is key to maintaining an effective parking regime. Enforcement within the Warragul area therefore will be paramount to the success of any parking arrangement.

Historically, enforcement in Warragul has played a strong part in maintaining the effectiveness of parking. Table 9 illustrates the infringements issued within Warragul to overstaying vehicles.

Table 9 Overstay Infringements Issues

OVERSTAY INFRINGEMENT BY FINANCIAL YEAR			
12/13	13/14	14/15*	Total
1324	1116	624	3064

* As of February 2015

It can be seen that the magnitude of infringements issued has remained constant over the 12/13, 13/14 financial years. Similarly, the 14/15 financial year is on track to reach a similar number of infringements.

Consultation with Council Officers has determined that areas prone to overstaying vehicles include:

- Queen Street
- Coles Car Park
- Palmerston Street (between Mason Street and Smith Street)
- Smith Street (between Palmerston Street & Victoria Street)

This information correlates well with Figure 8 overleaf which outlines the observed areas of overstay during the study period.

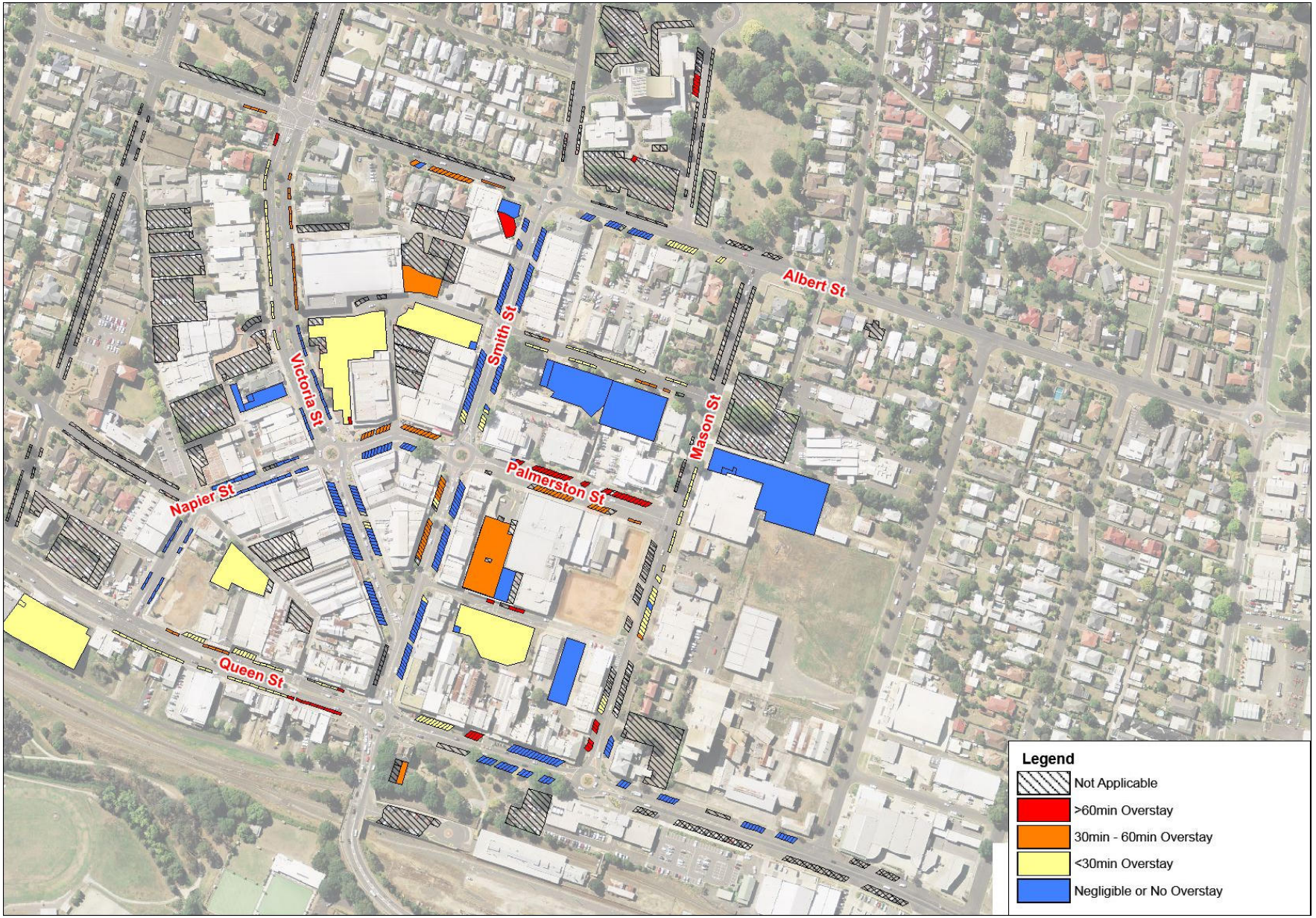


Figure 8 Areas of Overstay

5.7 Directional Signage

Investigations have shown that throughout the Warragul research area, a major cause for congestion during peak times is motorists searching for parking spaces. Due to the lack of available on street parking in the Principal and Outer CBD areas, drivers use slower speeds to navigate the town, essentially driving around the CBD waiting for other drivers to vacate a parking space. The consequence of this behaviour is reduced efficiency in the flow of through traffic, resulting in increased levels of congestion and bottlenecks around popular office and retail locations.

Council has a role to play in ensuring these tendencies are minimised wherever possible by ensuring that adequate directional signage is installed and is easily locatable by both locals and those whom are visiting Warragul.

Throughout the research area, there are currently 15 blue directional parking signs installed. The primary function of these signs is to direct motorists toward the locations where major off street parking areas are located. Most major roads have viewable signs indicating off street parking locations however, there is a need to provide additional or rationalise signs in some locations.

Locations of current parking directional signage are as shown in Figure 9 below.

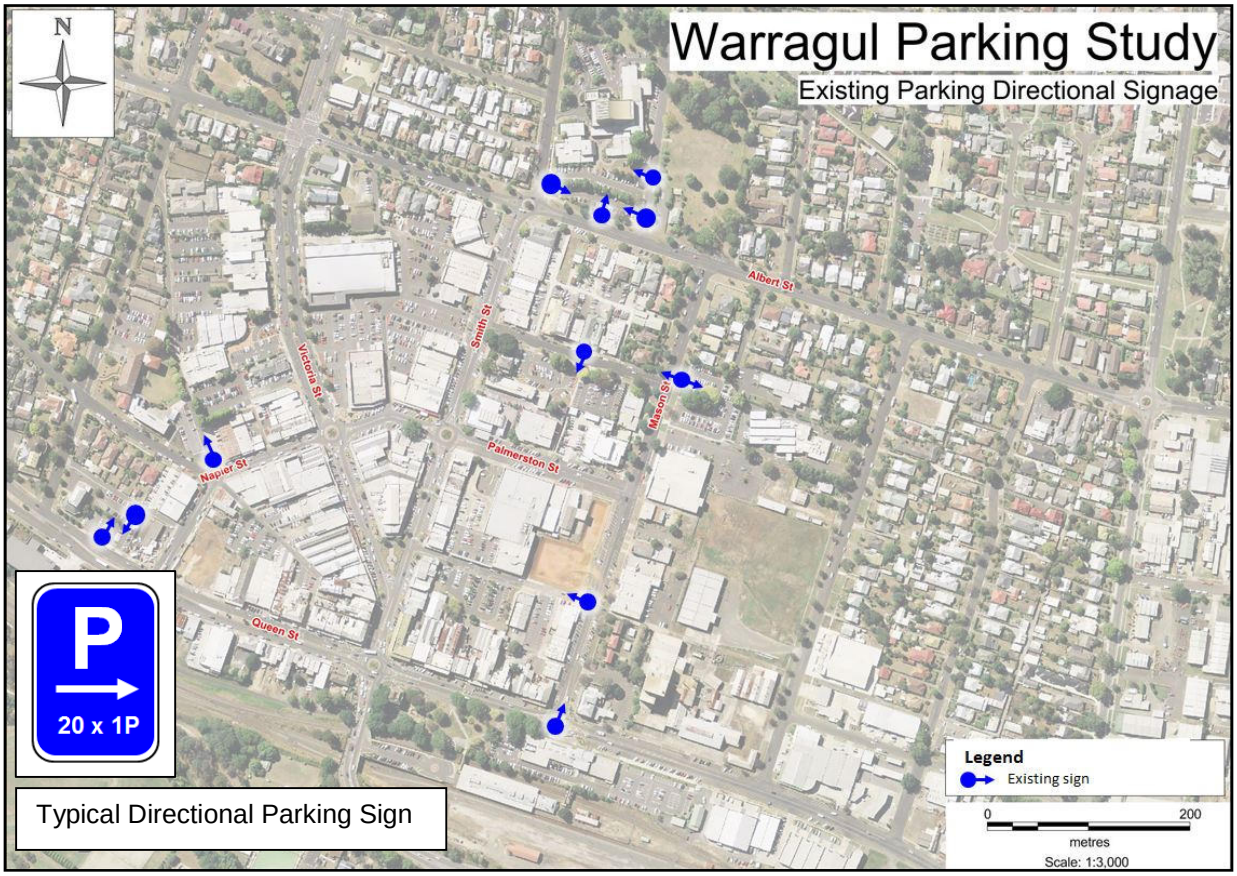


Figure 9 Current parking directional signage in Warragul Research Area

5.8 Future Parking

Given the significant shortfall predicted in parking supply in the future, there is a need to fund parking initiatives to either reduce the demand on parking or increase supply. As part of the investigation into existing parking conditions, Council has also investigated potential avenues to ease the burden on parking created by the expected population growth.

5.8.1 Increasing Supply

5.8.1.1 On Street Parking

A review of the existing design and layout of on street parking within the Warragul CBD area has determined that there is little ability to increase the number of on street parking spaces without major reconstruction and alignment of the roads within the CBD area.

Areas of improvement are limited to,

- Napier Street (between Queen Street and Connor Street) and
- Palmerston Street (between Smith Street and Mason)

Modification to these parking areas through the introduction of new parallel parking in Napier Street and angled parking in Palmerston Street will likely yield only 8-10 additional parking spaces.

5.8.1.2 Off Street Parking

When determining a suitable site for off street parking development a range of considerations as well as those listed in Section 5.4.4 need to be reviewed when assessing a potential site. These include

- Accessibility and proximity to existing attractions and destinations,
- Cost of purchasing land, design, removing existing buildings, excavation and construction, as well as
- Suitability of land and potential parking supply.

Analysis completed using these considerations have determined the most suitable Council owned sites are the Williams Square site located immediately south of Coles and the Barkly Street Site. These sites as well as other Council owned sites considered in the analysis are as shown in Figure 10 overleaf.

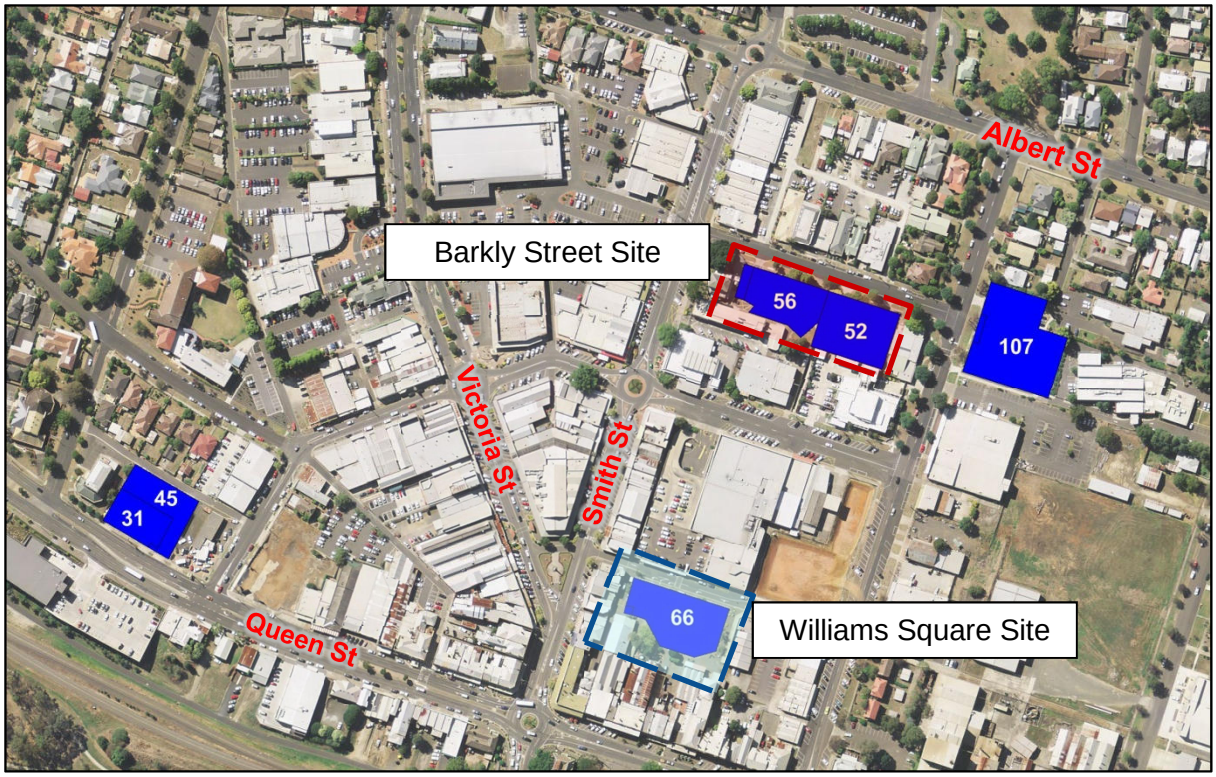


Figure 10 Council owned potential parking development sites

Any analysis completed into the suitability of these sites should also investigate large privately owned sites such as the parking immediately south of Safeway. While the Safeway parking area is privately owned, it is located centrally within the Warragul CBD area thus likely to have a higher utilisation rate and yield the greatest net increase in parking spaces when compared to other sites.

5.8.2 Reducing the demand for car travel

Independently, parking spaces do not create travel demand, but sufficient parking supply can induce travel by encouraging those already driving to drive more or convert people whom would rather walk, cycle or take public transport. Likewise free on street/kerbside parking reduces the costs of vehicle travel and can make this mode of travel more attractive. While it is not suggested that future parking should not be provided, it can be seen that policies and practices should be introduced in order to either reduce the attractiveness of parking or increase the attractiveness of alternatives.

Through providing infrastructure, that fosters walking and cycling as well as public transport, the demand for parking provisions can be reduced. This is of particular value to Warragul given:

- The barriers created along major traffic through fares such as Princes Way & Albert Street with no dedicated pedestrian crossings to encourage pedestrian access.
- There is a large residential catchment surrounding the CBD within suitable working distances.

- Future residential development is proposed along fringe areas of Warragul currently not readily connected via walking and cycling infrastructure.

Furthermore, in order to overcome the hurdles created by future development Council has implemented documents such as the Precinct Structure Plans for Warragul, which outlines both future development sites as well as the means for successfully integrating these developments with Council's current objectives and infrastructure.

5.9 Funding Parking Initiatives

Generally, there are three main methods for generating income from parking. These include:

1. User Pay Systems, such as paid parking areas,
2. Ratepayer Funded Systems, and
3. Developer or Benefitted Business Funded Systems.

Given the significant amount of parking required to meet future parking demand, it is likely that a combination of these methods may be required.

Previously user pay systems and metered parking has been provided in Warragul with revenue received contributing to the construction of new parking, however strong resident concern resulted in the removal of these meters across the town a number of years ago.

Schemes to provide public parking in lieu of private parking have been adopted by numerous councils across the country. In lieu fee schemes give developers the option to pay a fee in lieu of providing the required parking spaces stipulated under clause 52.06 of the local Planning Scheme.

Specifically the benefits of in lieu fee schemes to Warragul include:

- Consolidating scattered parking spaces and assisting infill development by encouraging conversion of existing parking spaces to better land uses.
- Centralising parking areas to allow users to park once and walk to multiple attractions while also allowing shared use of parking between businesses, which may require parking at different periods, i.e. a post office and a restaurant.
- Minimise the chances of issuing concessions on difficult sites or allowing for a reduction in parking requirements, which undermine the objective of Clause 52.06 of the Planning Scheme.
- Maximises development potential by giving developers the option to utilise the entire development site without the need for parking which otherwise would be required through the triggering of Clause 52.06 of the Baw Baw Shire Planning Scheme.

Generally, in lieu fee schemes are implemented through an amendment to the local planning scheme, which specifies the required fee payable per space. This can either be determined case by case or through the setting of a uniform fee.

It is suggested that in this instance Council should favour a uniform fee approach as this minimises complications in determining the value of a parking space on each development while having reduced administration and time costs when compared to the case-by-case scenario.

The fee set for each parking space should be determined as the cost per additional parking space to develop centralised parking as specified in Section 5.8.1.2. This value, dependent on the structure and land cost can vary considerably depending on the structure design and number of additional spaces provided.

Depending on the result of this investigation, Council may then look to provide further contribution to the development through ratepayer contributions dependent on the number of spaces, which a developer is required to provide. This sliding rule approach is aimed at supporting economic affordability of developments, which may otherwise not be able to proceed due to the high costs of in lieu contributions. However, it should be noted that such an approach could undermine the objective of providing more parking by reducing the ability of Council to gain funds from the scheme while also conceding that parking particularly free parking invariably does cause a significant financial burden on the community.

Likewise, any funds gained through the introduction of an in lieu fee scheme can also be applied to reducing the parking demand within the CBD area by increasing the attractiveness and reducing the cost of alternative transport modes.

6.0 Recommendations & Implementation Plan

6.1 Recommendations

The recommendations of the investigation into existing parking conditions within the research area are as follows:

Immediate Actions (2015)

Recommendation 1: Alter on street existing parking to increase supply

Council to provide additional parking spaces in the following area;

- Napier Street (between Queen Street and Connor Street)

A concept drawing of the proposed changes are shown in Appendix C

Council to also ensure that through private development, the following location is altered to provide additional parking spaces.

- Palmerston Street (between Smith Street and Mason Street)

Recommendation 2: Manage existing parking restrictions to better reflect user needs

A review of the parking survey information in conjunction with the initial community consultation has determined that the following areas would likely benefit from an alteration to existing time restrictions.

- Introduce a mix of unrestricted and 2P Parking on Albert Street between Victoria Street and Smith Street.
- Introduce a mix of 2P and 1P parking on Palmerston Street between Mason Street and Smith Street.
- Replace existing unrestricted parking with 2P parking on Queen Street between Gladstone Street and Peace Avenue,
- Replace existing 2P parking with 1P parking on Smith Street between Palmerston Street and Albert Street.

Recommendation 3: Complete an audit on the suitability and access provisions of disabled parking spaces

Council to ensure that the concerns identified by the community in regards to the suitability and access of disabled parking spaces throughout the CBD is addressed by the completion of an audit.

Recommendation 4: Seek to expand Council's enforceable parking areas

Council to contact new developments with the intention to implement an enforcement agreement allowing Council Officers to patrol new parking areas to increase the effectiveness of parking by reducing vehicle overstay.

Recommendation 5: Rationalise Council's parking directional signage

Council to improve parking directional signage throughout Warragul and rationalise or provide additional signage where needed to increase effectiveness. A plan of the proposed changes are shown in Appendix D.

Short Term (1-3 Years)

Recommendation 6: Complete investigation into the suitability of multi storey parking development within the Warragul CBD

Given the limited ability for developers to provide additional parking within infill development sites, Council to complete cost benefit analysis and determine opportunity for net parking increases on Council owned land at

- Williams Street,
- Barkly Street.

Council also to investigate the potential for multi storey development on privately owned land such as at Safeway. The results of this analysis should then form the basis of determining and implementing a uniform 'cash in lieu' rate per parking space across Warragul.

Recommendation 7: Implement 'Cash in Lieu' Scheme

Council to undertake investigation and implementation of a 'cash in lieu' contribution scheme to maintain and provide future parking provisions. Preference should be for a uniform fee (adjusted annually to reflect construction prices) 'cash in lieu' scheme. This shall include a schedule added to the existing parking overlay Clause 45.09, which requires a contribution for each parking space not supplied as part of the parking requirements as set out in Column B of Table 1 within Clause 52.06 of the Baw Baw Shire Planning Scheme .

Ongoing

Recommendation 8: Monitor development provisions of parking

Council to monitor the amount and rate at which future developments provide parking provisions. The purpose of this monitoring is to compare forecast supply (2.94 spaces/100m^2) to actual supply and plan further corrective actions as determined.

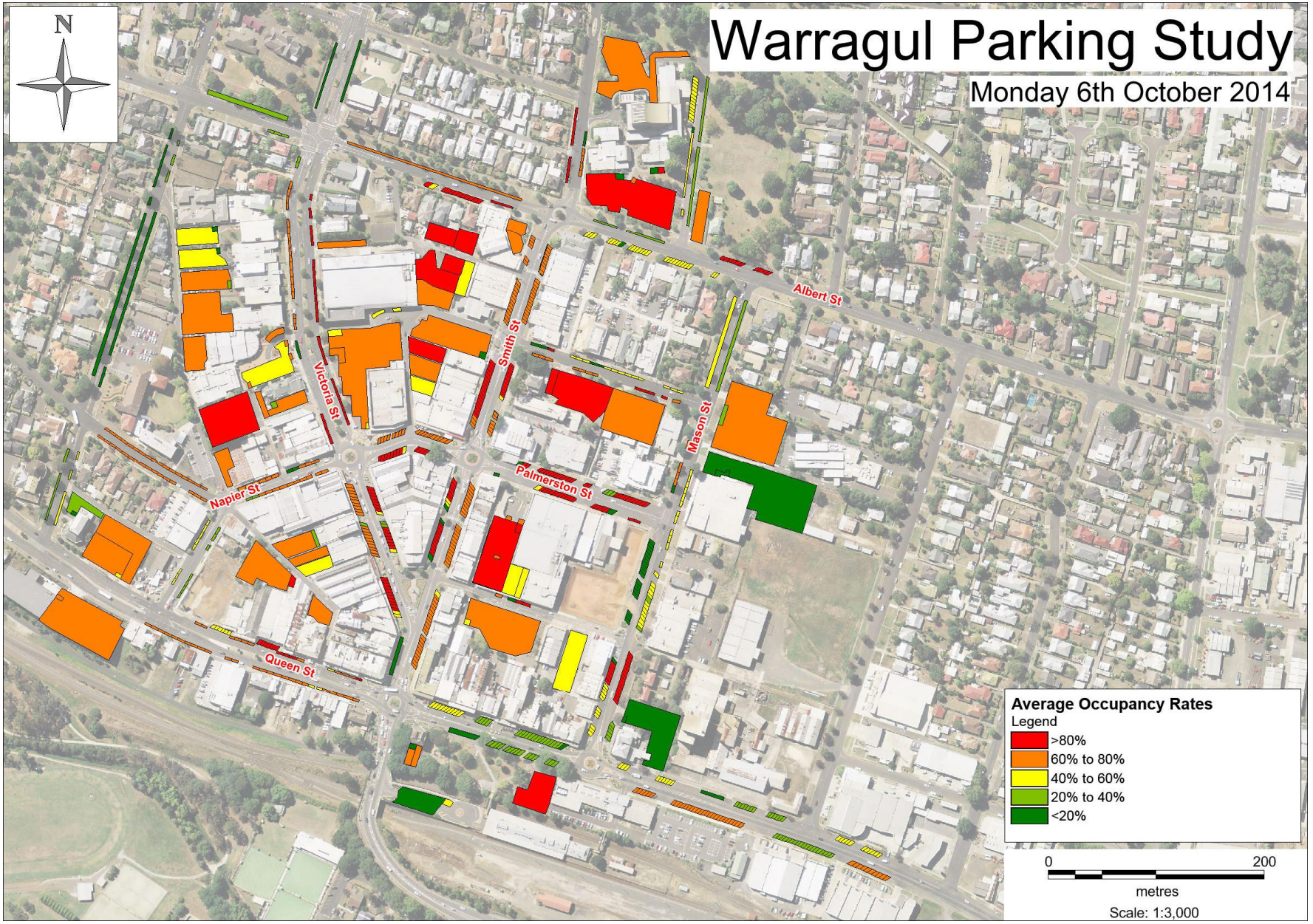
Recommendation 9: Advocate for increased Public Transport and means of reducing parking demand

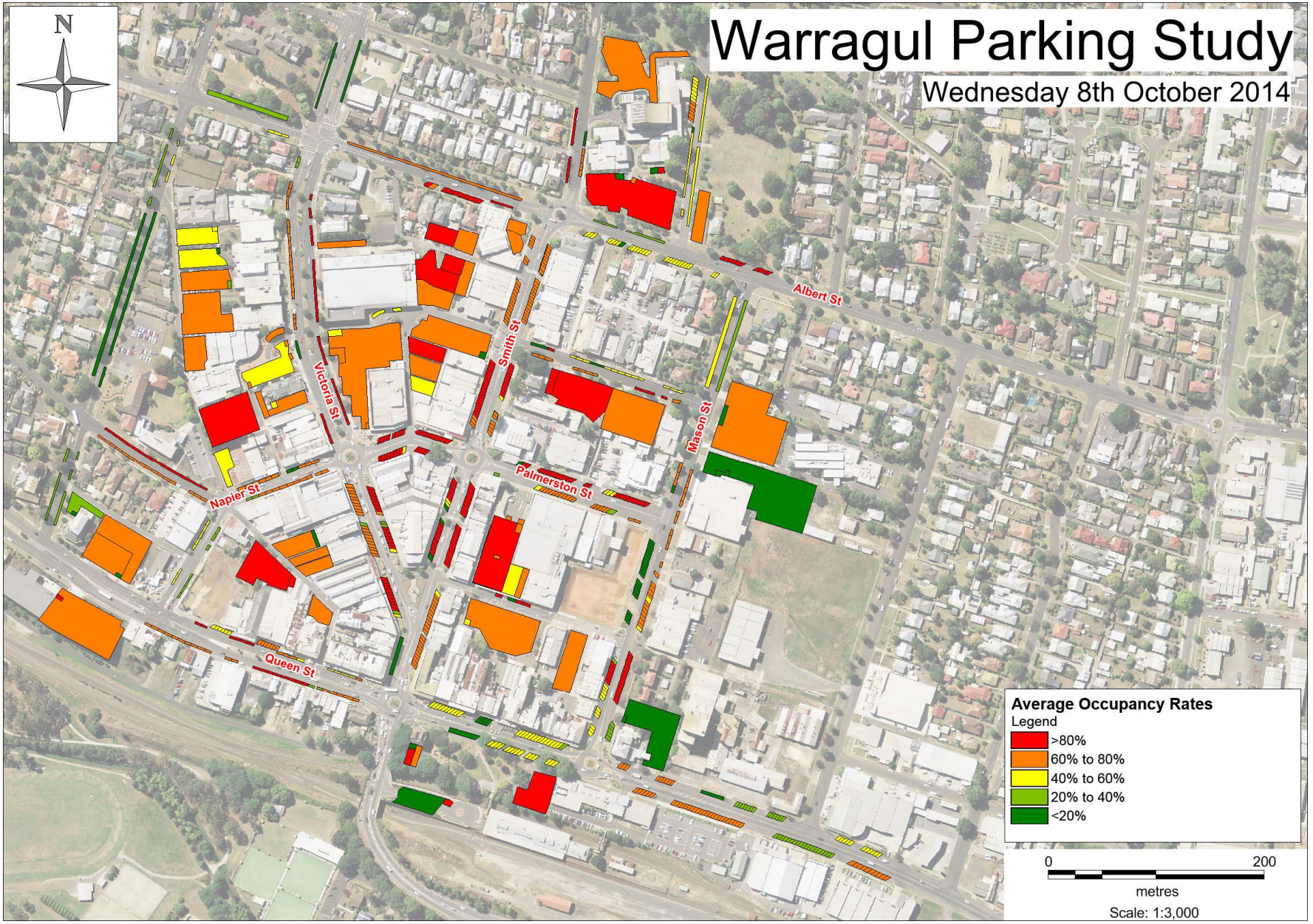
Council to continue to invest in infrastructure, which promotes active and public transport as an alternative to single occupant vehicle use. Specific areas of need include improving infrastructure focussed on pedestrian improvement within the Principal CBD and Queen Street areas.

6.2 Implementation plan and costing

RECOMMENDATION		RESPONSIBLE PARTY	TIMING	COST ESTIMATE
1	Alter on street existing parking to increase supply	Community Assets	Immediate (2015)	$500
2	Manage existing parking restrictions to better reflect user needs	Community Assets	Immediate (2015)	$1,000
3	Complete an audit on the suitability and access provisions of disabled parking spaces	Community Assets	Immediate (2015)	N/A*
4	Seek to expand Council's enforceable parking areas	Local Laws	Immediate (2015)	N/A*
5	Rationalise Council's parking directional signage	Community Assets	Immediate (2015)	$2,000
6	Complete investigation into the suitability of multi storey parking development within the Warragul CBD	Community Assets, Planning Department	Short Term (1-3 Years)	$50,000
7	Implement Cash in Lieu Scheme	Planning Department	Short Term (1-3 Years)	$25,000
8	Monitor development provisions of parking	Planning Department	Ongoing	N/A*
9	Advocate for increased Public Transport and means of reducing parking demand	Council	Ongoing	N/A*

*Recommendation to be completed internally at no cost


Warragul Parking Study
Monday 6th October 2014
N
Albert St
Smith St
Victoria St
Mason St
Palmerston St
Napier St
Queen St
Average Occupancy Rates
Legend
>80%
60% to 80%
40% to 60%
20% to 40%
<20%
0
200
metres
Scale: 1:3,000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Victoria St
Mason St
Napier St
Palmerston St
Queen St
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20% to 40%
<20%
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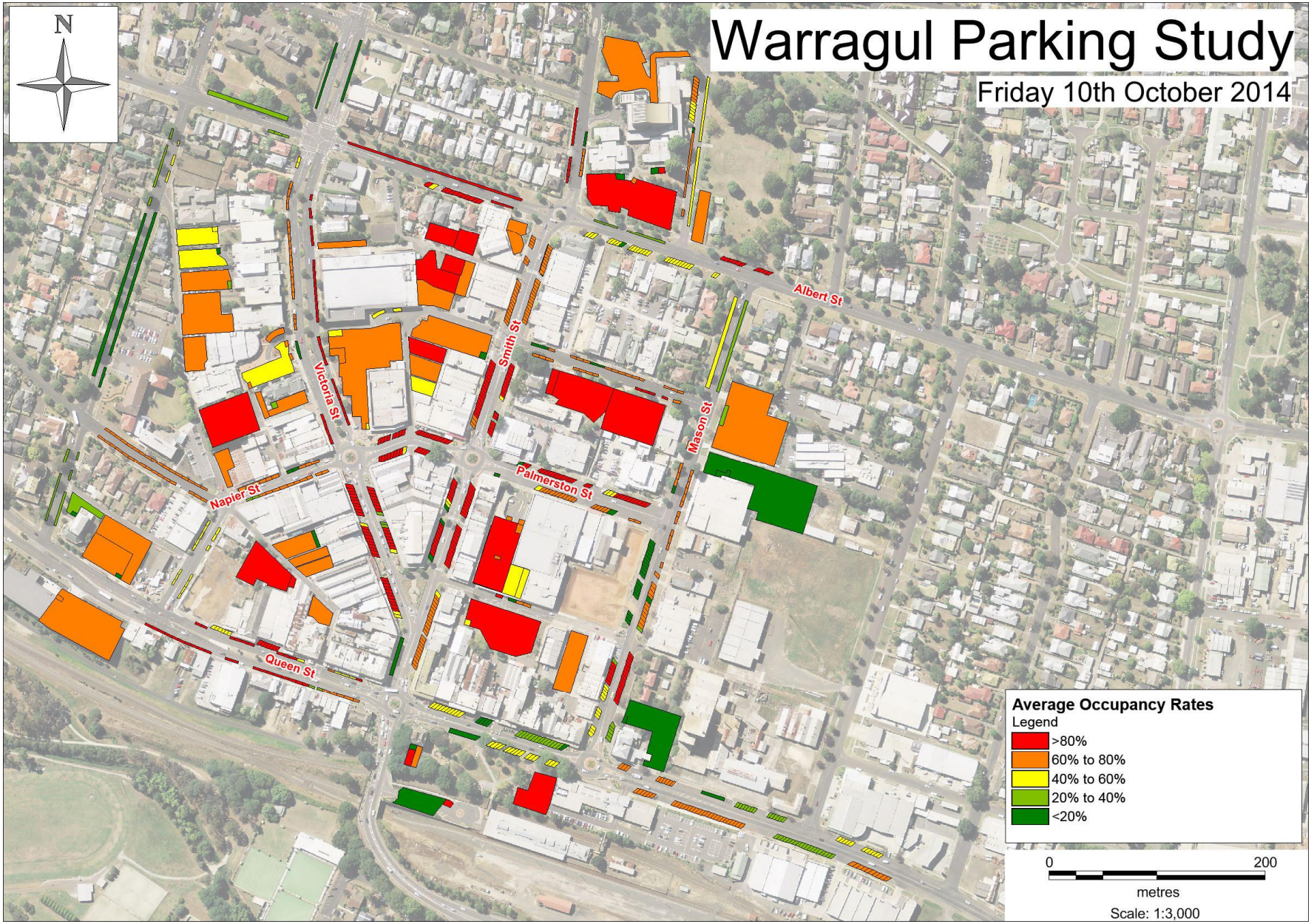
metres
Scale: 1:3,000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Queen St
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20% to 40%
<20%
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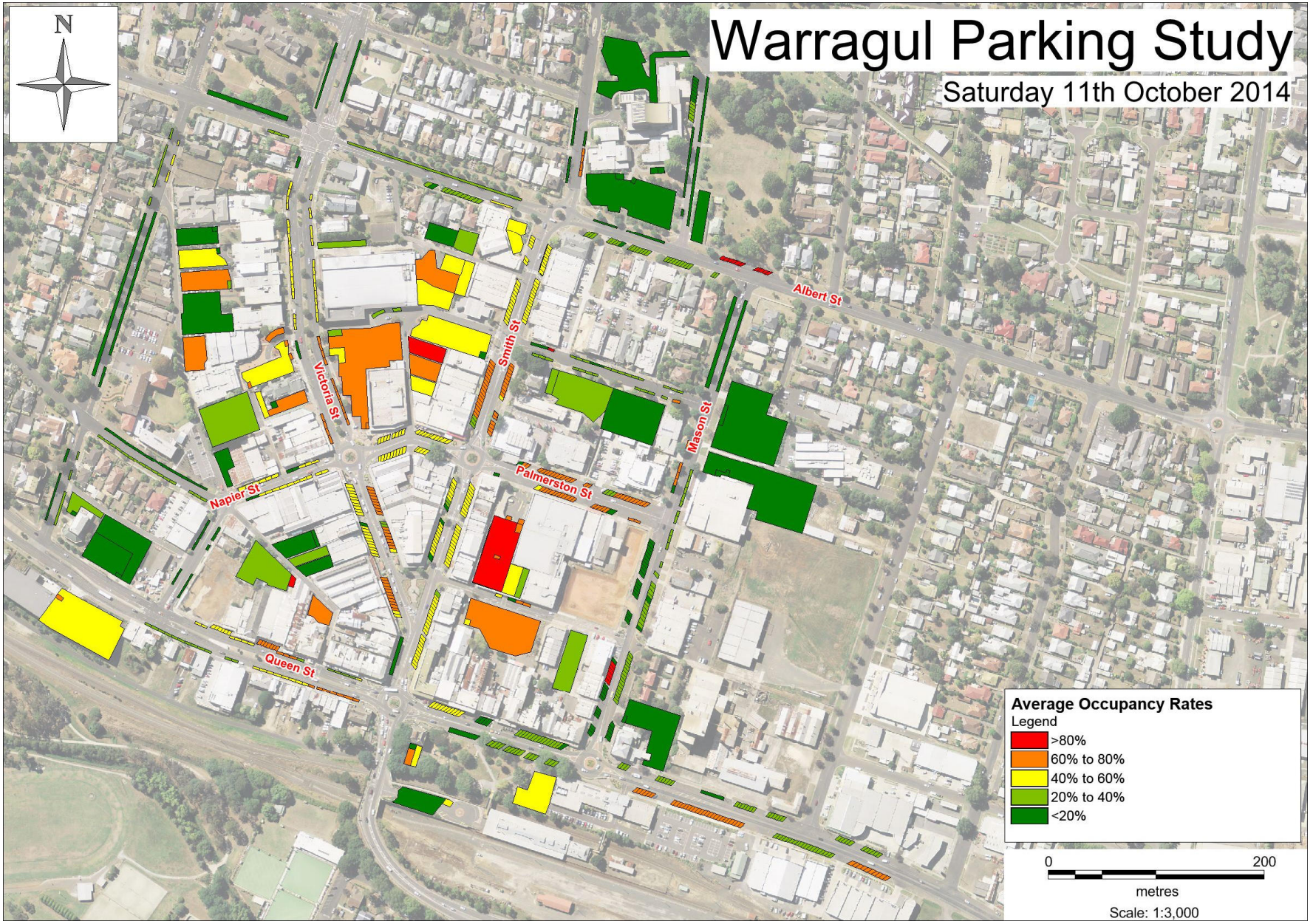
200
metres
Scale: 1:3,000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Mason St
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Queen St
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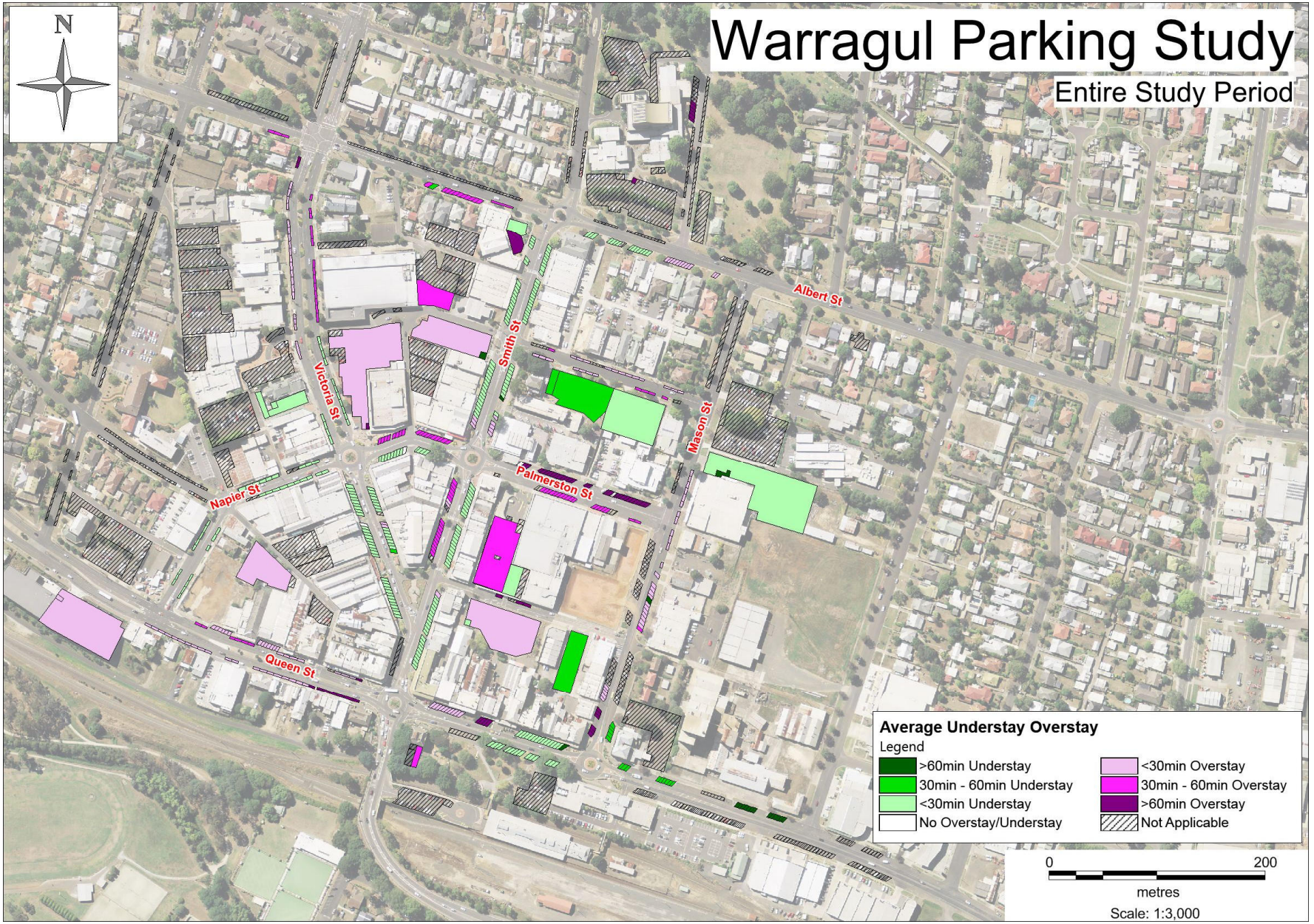
metres
Scale: 1:3,000


Warragul Parking Study
Entire Study Period
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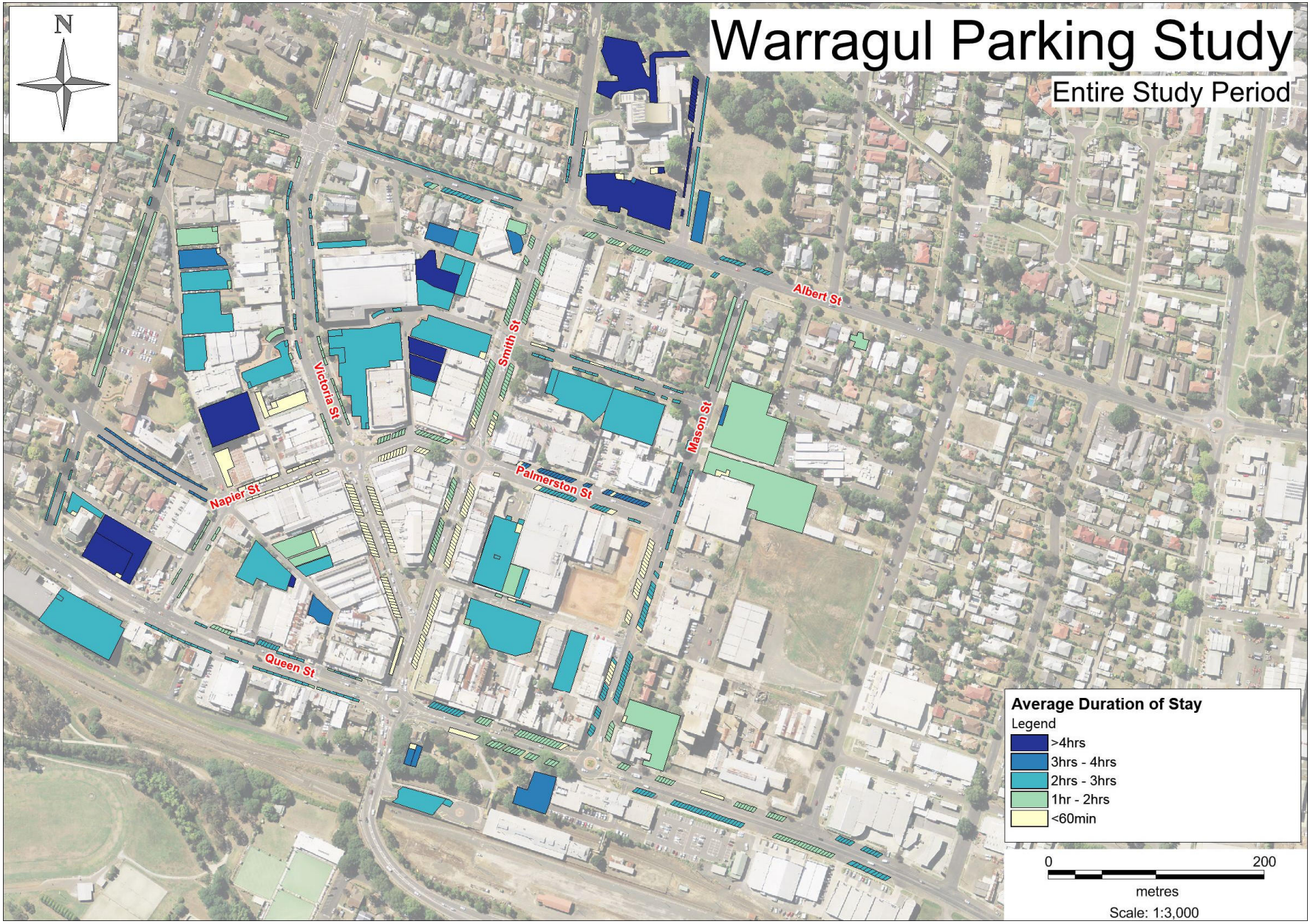
Smith St
Victoria St
Mason St
Palmerston St
Napier St
Queen St
Average Understay Overstay
Legend
>60min Understay
30min - 60min Understay
<30min Understay
No Overstay/Understay
<30min Overstay
30min - 60min Overstay
>60min Overstay
Not Applicable
0
200
metres
Scale: 1:3,000


Warragul Parking Study
Entire Study Period
N
Albert St
Smith St
Victoria St
Mason St
Palmerston St
Napier St
Queen St
Average Duration of Stay
Legend
>4hrs
3hrs - 4hrs
2hrs - 3hrs
1hr - 2hrs
<60min
0
200
metres
Scale: 1:3,000


Napier Street Proposed Parking Changes
Napier Street
2P
8:30 AM - 5:30 PM
MON - FRI
8:30 AM - 12 PM
SAT
2P
8:30 AM - 5:30 PM
MON - FRI
8:30 AM - 12 PM
SAT
Napier St
Existing signs to be replaced with 2P bidirectional parking signs as shown
0 2 4 6 8 m
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Nicholas Green
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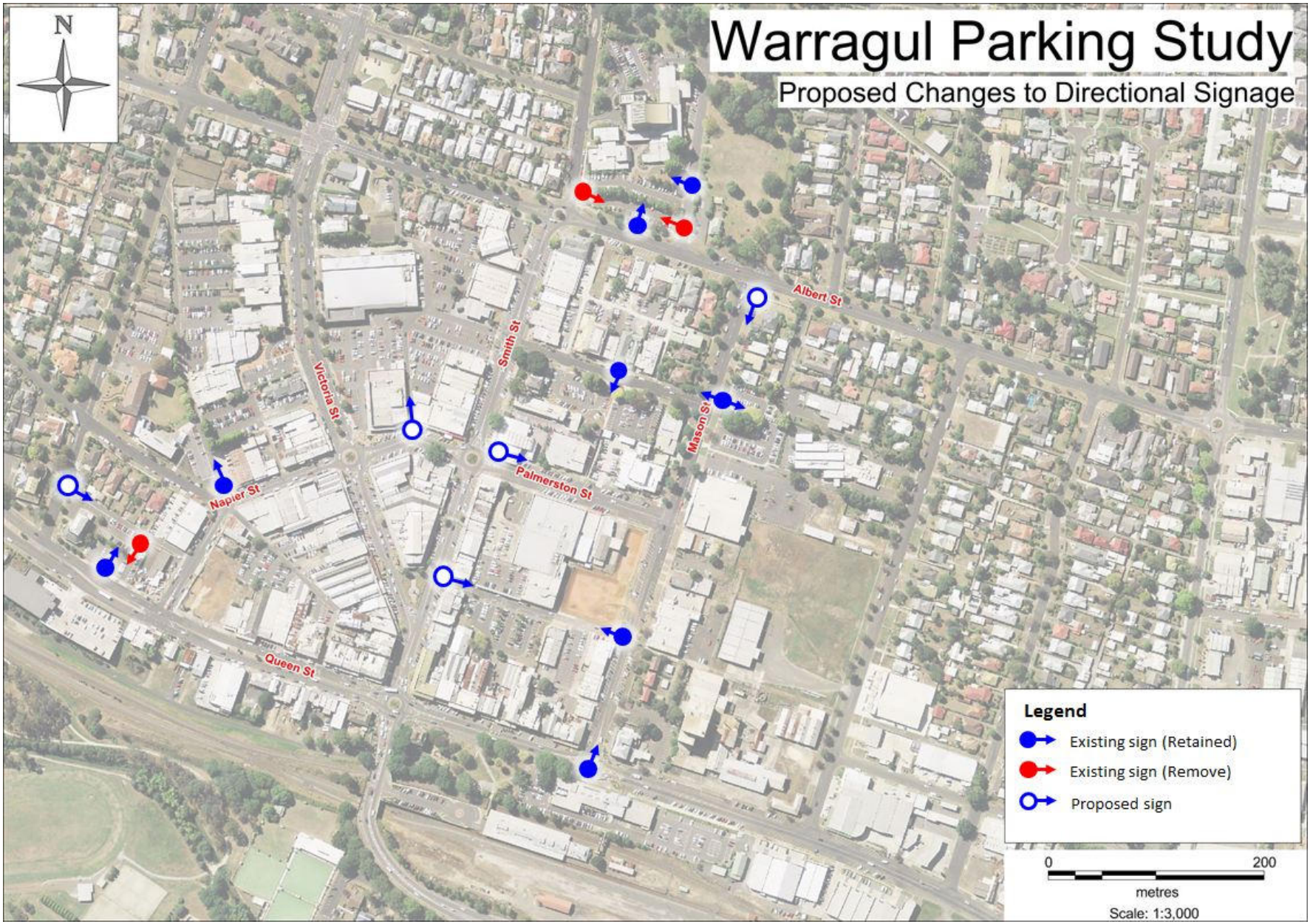
Warragul Parking Study
Proposed Changes to Directional Signage
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Smith St
Victoria St
Mason St
Palmerston St
Napier St
Queen St
Legend
Existing sign (Retained)
Existing sign (Remove)
Proposed sign
0
200
metres
Scale: 1:3,000