Technical Memo

Technical Memo No	TM0003	Date of Issue	14 September 2020
Subject/Title	Future Parking Demands		
Project Name	Projected Future Car Parking Needs	Project Number	3006375
Discipline	Transport Planning		
Document Number	3006375_TM_0003_Future Parking Demand		
Revision Details	FINAL		
Author	Louise ROUND		
Reviewed by	Kathy Ward		
Approved by	James Parrott		
Prepared for	City of Busselton	Attention to	Louise Koroveshi
Attachments	Dunsborough Town Centre Parking Utilisation and Turnover Survey (July 2019) Dunsborough Town Centre Parking Utilisation and Turnover Survey (Feb 2020) Busselton City Centre Parking Utilisation and Turnover Survey (Mar 2020) Base Parking Demand for Future Years (July 2020) Current Proposed Parking Changes		

1 Purpose

The purpose of this Technical Memo is to provide the City of Busselton (the City) with an estimate of future parking demand in the Dunsborough Town Centre and the Busselton City Centre. The estimates will be used as part of the Activity Centre planning being undertaken by the City.

This is intended as an internal document for the City.

2 Introduction

2.1 Background

Parking surveys for peak and non-peak days have been conducted and base levels of parking demand were agreed with the City at a meeting on 23 July. This Technical Memo should be read in conjunction with the previous Technical Memos prepared by SMEC:

- Dunsborough Town Centre Parking Utilisation and Turnover Survey (July 2019)
- Dunsborough Town Centre Parking Utilisation and Turnover Survey (Feb 2020)
- Busselton City Centre Parking Utilisation and Turnover Survey (Mar 2020)
- Base Parking Demand for Future Years (July 2020)

The previous Technical Memos are attached in Appendix A to Appendix D.

2.1.1 Dunsborough Town Centre

A base parking demand of 670 spaces has been agreed for Dunsborough Town Centre.

This demand was exceeded for four hours (12:15 to 16:15) in the peak season survey, and not at all in the non-peak survey.

2.1.2 Busselton City Centre

A base parking demand of 1,880 spaces has been agreed for Busselton City Centre.

This demand was exceeded for four hours (10:45 to 14:45) in the peak season survey, and for three hours (11:30 to 14:30) in the non-peak survey.

2.2 Objectives

The objective of this Technical Memo is to present the methodology that SMEC has used to derive the future parking demands and to compare future parking demand with likely future parking supply.

2.3 Scope

The scope of this memo is as follows:

- Model and analyse the projected future car parking needs for a 20-year timeframe, from 2020 to 2040, for the Busselton City Centre and Dunsborough Town Centre based on
  - Predicted commercial/retail floorspace growth and development within the Busselton City Centre and Dunsborough Town Centre
  - Projected population growth
  - Seasonal holiday-maker visitation periods/trends.
- provide recommended improvements and/or changes required in the provision and management of car parking zones/cells for both the short and longer terms

3 Factors Creating Future Parking

3.1 Population Growth

An increase in the resident population will lead to an increase in demand for parking. This is irrespective of the age groups that are increasing. A positive correlation between population and parking demand exists in the absence of any travel behaviour constraints.

3.2 Driver's Licence Holders

The number of people holding a licence and level of car ownership, and hence car parking demand, are linked. Western Australia (WA) has high levels of licencing and car ownership, or access to a vehicle. Analysis of car ownership in 2016 indicates 96.2% of households in the South West Region had access to a motor vehicle.[1]

[1] https://profile.id.com.au/wapl/car-ownership?WebID=740

There is an increasing number of driver's licence holders in Australia[2]. Whilst younger drivers are delaying obtaining a licence, the number of people over 60 years old with a driver's licence continues to rise. Looking at the next 20 years, there will continue to be an increase in driving licence holders as nearly everyone in the current age group 40 – 60 years old has a driver's licence.

In addition, the generation 40 – 60 years old has grown up with the car dependency culture. This generation will continue to drive as long as infrastructure, such as parking, is provided. This predict and provide approach gives rise to "the continual expansion of transport infrastructure to meet inferred latent demand"[3]. Therefore, this approach perpetuates the car dependency culture.

3.3 Tourism

Both Dunsborough and Busselton attract large numbers of tourists, particularly in the school summer holidays. Busselton is located just over 200km or two and a half hours south of Perth, and Dunsborough is a further half hour west. Most of the tourism is domestic and is set to increase in the next 10 years.

As both Dunsborough and Busselton are a relatively easy drive from Perth, the majority of tourists have a car. The attractions are widespread and there is no public transport, further making a private vehicle advantageous. Therefore, an increase in tourists will inevitably result in an increase in parking demand.

3.4 Technology

Much is made of changes in technology that will bring about autonomous vehicles, which have different parking demands. However, given the large number of barriers still to be overcome with the technology it is unlikely to have an impact on parking demand in the next 20 years.

The deployment of technology for car parking management has become common place, both for enforcement and for wayfinding to available spaces.

3.5 Changes to Land Use

For both Dunsborough and Busselton, peak demand is concentrated to a few locations with particular land uses. The Busselton Foreshore Redevelopment is a good example of this, incorporating future hotel developments and commercial venues.

Changes of land use to complementary activities will assist in smoothing out the demand, through reciprocity and increasing demand in the evening.

3.6 Public Transport

The provision of public transport is a key measure for limiting parking demand in areas of intense activity or where land for car parking is constrained. However, it is not expected that activity will increase in the next 20 years to levels that would require a comprehensive public transport system.

3.7 Dominant Factors

The two dominant factors in predicting future demand will be the future population of people with a driver's licence and future tourism.

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[2] https://chartingtransport.com/2015/03/09/trends-in-drivers-license-ownership-in-australia/

[3] Murray Goulden, Tim Ryley, Robert Dingwall Beyond 'predict and provide': UK transport, the growth paradigm and climate change - https://doi.org/10.1016/j.tranpol.2014.01.006

4 Dunsborough Town Centre

4.1 Population

Figures supplied by the City indicate that the resident population of Dunsborough, including the adjoining localities, is estimated to be 9,820 in 2020 and this will increase to 16,390 by 2040. This is a 67% increase.

Taking the base parking demand of 670 spaces and applying a 67% increase, to reflect population growth, gives a parking demand of 1,118 spaces. It is unknown how much of the parking is tourism related, using population gives a slight overestimate of future demand.

4.2 Tourism

Tourism visitor nights in Dunsborough are increasing at a slower rate than population, approximately 49% from 2020 to 2040 (refer to Dunsborough City Centre Commercial Growth Analysis Pracsys 2018).

Taking the base parking demand of 670 spaces and applying a 49% increase, to reflect tourism growth, gives a parking demand of 996 spaces. It is unknown how much of the parking is by tourists, using tourism gives a slight underestimate of future demand.

4.3 Land Use

The report Dunsborough City Centre Commercial Growth Analysis (Pracsys 2018) indicates an increasing demand for retail/shop, entertainment/recreation/cultural, health/welfare/community services, and office/business. All these land uses will generate demand for private and public parking.

Pracsys 2018 suggests that the growth in demand for the floor spaces noted above increases faster than population increase. However, future demand for other floor space is increasingly likely to be accommodated outside the town centre, examples of such land use are storage/ distribution and utilities / communication, thereby reducing the amount of this floor space in the Town Centre.

Assuming complementary land uses, the increase in floor space will be offset by reciprocity of parking demand and will increase the length of time that people stay in the town centre.

4.4 Future Demand and Supply

A future demand of 1,118 spaces is estimated for the Dunsborough Town Centre. The main increase in demand will come from an increasing population.

For efficient car parking, demand should be 85% of supply. Therefore, 1,316 bays should be provided in the Dunsborough Town Centre by 2040. The existing parking supply across public and private parking is 1,160 formal bays.

It should be noted that public parking in the Dunsborough Town Centre is quite limited, with the private parking in the Dunsborough Centrepoint Shopping Centre being used by 41% of cars parking in the Town Centre.

4.4.1 Proposed Parking Changes

Currently, there are an estimated 160 informal bays in a vacant lot at the corner of Cyrillean Way and Dunn Bay Road. It is assumed that these bays will be unavailable in the future.

Proposed changes to Dunsborough parking are that Naturaliste Terrace (Cyrillean Way to Dunn Bay Road) will have streetscaping, which may reduce parking supply, in conjunction with an increase in supply in the car park off Chieftain Crescent, refer Appendix E.

The City is also looking at the potential for additional parking on the southern side of Caves Road, around the Dunsborough playing fields, which may yield around 60 additional bays. There are ongoing discussions with Main Roads regarding pedestrian movement across Caves Road for access to the Town Centre from the Dunsborough Playing Fields.

The City is in negotiation to acquire an area of land in a vacant block to the north of the Cape Naturaliste Road / Caves Road roundabout for 300 bays of additional parking. Negotiations on this acquisition have stalled so it cannot be assumed that the City will be successful in purchasing this land.

These changes will yield approximately 360 additional bays.

4.4.2 Summary

The current oversupply of parking in the Dunsborough Town Centre may continue into 2040 if the predicted increase in of 360 bays eventuates, refer Table 1.

Table 1 - Dunsborough Town Centre Parking Provision

	2020	Additional Parking Spaces (potential)	Medium Term 2030	Long Term 2040
Demand	670		894	1,118
Required Supply (85% occupancy)	788		1,052	1,316
Supply	1,160	360	1,520	1,520
+Over / -under Supply	+372		+468	+204

4.5 Parking Management

The Dunsborough Town Centre's parking supply is sufficient for the next 20 years, allowing that at peak times the most popular parking areas will be congested and that the Town relies on the continued provision of private parking. To echo the comments in the Dunsborough City Centre Commercial Growth Analysis, the location of the parking is just as important as the quantity.

The 2019 parking survey by SMEC showed that the majority of vehicles are parking within the given time parking restrictions. The exceptions, in public parking areas, were the on-street parking in Naturliste Terrace and Dunsborough Place. Naturaliste Terrace has occupancy greater than 80% in the peak season for most of the day.

The City has noted that Dunsborough has only recently had enforced parking management. However, this was interrupted by the impact of Covid 19, with fewer tourists and more people working from home. Now that intrastate travel is possible there will be a return to enforcement.

5 Busselton City Centre

5.1 Population

Figures supplied by the City indicate that the resident population of Busselton, including the adjoining localities, is estimated to be 29,460 in 2020 and this will increase to 49,169 by 2040. This is a 67% increase.

Taking the base parking demand of 1,880 spaces and applying a 67% increase gives a parking demand of 3,691 spaces.

5.2 Tourism

The Busselton City Centre Retail & Commercial Analysis (Urbis 2020) anticipates a small growth in tourism between 2019 and 2029, and notes that "Busselton City Centre has a significant level of spending generated by tourists."

5.3 Land Use

The Urbis Report 2020 recommends that the retail strategy in the Activity Centre Plan, over the next 15 years, should be focused "on consolidation and enhancement of the mix and overall revitalisation of the precinct, rather than an increase in floorspace." Therefore, it is anticipated that there will not be an increase in demand for parking spaces related to retail but consideration of demand for parking spaces for other land uses is required.

The report further identifies an "undersupply of several non-retail uses in the City Centre, particularly commercial and entertainment/leisure focussed developments." A recommendation of the Urbis Report is to provide more entertainment in and around the City Centre to attract more activity in the evenings and to increase visitors' length of stay, both during the day and into the evening.

5.4 Future Demand and Supply

It is anticipated that from 2020 to 2030 there will be a consolidation of the City Centre in terms of land use, with the provision of complementary land uses. This should see visitors staying longer and higher demand in the evenings, without an increase in the peak demand. This will allow better usage of the existing public car parks.

Existing supply in Busselton is 3,374 formal spaces, which is well in excess of the 2,212 spaces that would cater for the existing demand of 1,880 spaces.

5.4.1 Proposed Parking Changes

At the time of the parking surveys there were an estimated 200 informal spaces in Signal Park and a further estimated 200 informal spaces on vacant land at the south west corner of Brown Street and Harris Road.

Proposed changes to parking in Busselton include the addition of a 600 seat Performing Arts Centre, located at the top end of Queen Street. The Centre will rely on existing public parking as most of the demand for parking will be in the evenings. Similarly, a microbrewery is under construction on the foreshore with an expected opening in spring 2020. The microbrewery has a capacity for 700 patrons and relies on public parking.

There are three hotels proposed for Foreshore Precinct. Other than Site 2 (development of which is imminent), it is not known what car parking supply and demand for those sites will be, but for the purposes of this work, it is reasonable to assume they will require some dedicated car parking (30 bays,

30 bays and 60 bays) and that will result in the loss of some public parking. The City proposes 176 additional public parking close to the tennis courts at the Foreshore. Over time, this additional parking will compensate for the loss of public parking from the hotel developments. Therefore, there is no net gain of parking bays.

5.4.2 Summary

Assuming a 1% per annum increase in parking demand, there will still be an oversupply of parking spaces, refer Table 2.

Should parking supply be increased in line with population growth there may be an undersupply of parking spaces in the City Centre by 2040, refer Table 2. However, this is unlikely due to the changing nature of the land uses within the City Centre.

Table 2 - Busselton City Centre Parking Provision

	2020	Additional Parking Spaces (potential)	Medium Term 2030 (1.0% growth in demand)	Long Term 2040 (1.0% growth in demand)	Long Term 2040 (In line with population)
Demand	1,880		2,077	2,294	3,138
Required Supply (85% occupancy)	2,212		2,443	2,699	3,691
Supply	3,374	120	3,494	3,494	3,494
+Over / -under Supply	+1,162		+1,051	+795	-197

5.5 Parking Management

There is an oversupply of parking in the Busselton City Centre for both the Medium and Long Term.

There is strong parking management for the Busselton City Centre.

6 Recommendations

6.1 Peak Season Parking

The use of additional parking in the peak season should be continued. This allows the City to limit the oversupply of parking outside the summer months.

6.2 Parking Policy

The City does not have direct control over private parking but can set policies that ensure that there is not an oversupply.

It is inevitable that high private vehicle usage will continue across the City of Busselton, particularly for tourists, and therefore policies around travel demand management and public transport will not be appropriate in the next ten years. These types of policies should be revisited in 2030.

6.3 Dunsborough Town Centre Parking Supply

6.3.1 Medium Term 2030

A parking supply of 1,052 spaces, across public and major private car parks, is recommended for Dunsborough Town Centre by 2030.

Currently, public parking in the Dunsborough Town Centre is limited and the City should consider increasing the ratio of public to private parking.

6.3.2 Long Term 2040

A parking supply of 1,316 spaces, across public and major private car parks, is recommended for Dunsborough Town Centre by 2040.

6.4 Busselton City Centre Parking Supply

6.4.1 Medium Term 2030

A parking supply of 2,443 spaces across public and major private car parks, is recommended for Busselton City Centre by 2030.

6.4.2 Long Term 2040

A parking supply of 2,699 spaces, across public and major private car parks, is recommended for Busselton City Centre by 2040. This assumes that the land use recommendations of the Busselton City Centre Retail & Commercial Analysis (Urbis 2020) are implemented, resulting in visitors staying longer in the City and additional visitors in the evenings.

Appendix C Busselton City Centre Parking Utilisation and Turnover Survey (Mar 2020)

Technical Memo

Technical Memo No	0001	**Date of Issue**	26 March 2020
Subject/Title	Busselton City Centre Parking Utilisation and Turnover Survey		
Project Name	Technical Memo	**Project Number**	3006375
Discipline	Transport Planning, Logistics and Analysis		
Document Number	3006375		
Revision Details	04		
Author	Cameron Steel & Clara Hechei		
Reviewed by	Clara Hechei		
Approved by	Louise Round		
Prepared for	City of Busselton	**Attention**	Paul Needham, Matthew Riordan & Louise Koroveshi

1 Introduction

The City of Busselton (the City) commissioned SMEC Australia Pty Ltd (SMEC) to undertake peak and non-peak Parking and Utilisation surveys for the Busselton City Centre. The extent of the surveyed area and individual parking zones surveyed are attached in Appendix A.

SMEC's scope of work consists of the following;

- Conducting a typical day (non-peak) and a holiday season day (peak) Parking Occupancy and Duration Survey for parking within the Busselton City Centre;
- Analysis of the survey results to inform the performance of the existing parking management, identify areas of short and over parking supply; and
- Undertake up to 20 years of parking demands projection for the Busselton City Centre.

1.1 Data Collection

Parking Surveys were conducted on the following days between hours of 6:00 am to 10:00 pm.

- Wednesday, 4 December 2019 (non-peak) and
- Tuesday, 7 January 2020 (peak).

On both days, License Plate Recognition (LPR) technology was used to capture parking data. The peak survey was undertaken during the school summer holidays. Key dates were:

- School summer holidays: 18 December – 31 January,
- Christmas and Boxing days – 25 December – 26 December, and
- New years day: 1 January

During the non-peak survey, a traffic management detour and closure were in place for the western part of parking zone 30 (Kent Street).

2 Parking Survey Analysis

On both survey occasions, a total of 3,774 parking bays were available.

On the non-peak day survey, traffic management detour and closure were in place for the western part of parking zone 30 (Kent Street). The assessment of parking data has assumed that other parking zones were unlikely to have been affected by the closure.

2.1 Overall Parking Observation

On the peak day, 12,092 vehicles were observed using the Busselton City Centre car parks. This equates to 31% more parking demand for the peak day, in comparison to the non-peak day where 8,317 vehicles were counted.

Maximum occupancy percentage for peak day was noted to be 56% across all parking zones (2127 vehicles across 3774 parking supply) in comparison to 52% (1960 vehicles across 3774 parking supply) in a non-peak day. A detailed hourly parking occupancy rates comparison between a typical day and peak day is provided in Section 2.2.

The data has also highlighted; average parking turn over per bay for peak day is higher by 1.7 cars per bay in comparison to non-peak day. Average parking utilisation also goes up by 3% on a peak day. A comprehensive overview of non-peak and peak survey outputs for all parking zones within the study area is provided in Table 1 below.

Table 1: Observed Peak vs Non-Peak Data for all parking zones

	Non-Peak Day	Peak Day	Difference (Peak – Non-Peak)
Average Parking Turn Over (cars/space)	3.8	5.5	1.7
Average Duration of stay (hrs/car)	1.5	1.2	-0.3
Maximum Duration of stay (hrs/car)	2.0	1.8	-0.2
Average Parking Utilisation	29%	32%	3 percentage points

In terms of average parking duration, the survey data suggests on a peak day; vehicles park 18 minutes less than on a non-peak day. Survey data has also pointed out that 93% of all the observed vehicles on the peak day stayed for 4 hours or less in comparison to 88% on the non-peak day. Out of this 46 % stayed for less than 1 hour in the peak compared to 33% on non-peak. The table below details observations of the duration of stay in terms of percentage of counted vehicles.

Table 2: Peak and Non-Peak Comparison of Average Parking Duration Demand

Observed duration of stay	Non-Peak Day		Peak Day	
	Vehicles Counted	Percentage	Vehicles Counted	Percentage
<= 1 hour	2746	33.1%	5624	46.4%
1 hour – 2 hours	3303	39.8%	4205	34.7%
3 hour – 4 hours	1235	14.9%	1497	12.4%
5 hour – 6 hours	622	7.5%	646	5.3%
7 hour – 9 hours	324	3.9%	137	1.1%
> 10 hours	70	0.8%	7	0.1%
TOTAL	8300	100.0%	12116	100.0%

2.2 Hourly Parking Occupancy Rate

Figure 1 provides an overview comparison of the observed hourly occupancy rate between peak and non-peak days. The survey data suggest occupancy rates above 50% occurs for peak day between 10.45 am and 2.30 pm while for non-peak happens between 11.30 am and 2.15 pm. The highest observed occupancy rate for the non-peak day was 52% occurred at 12.15 pm, and the highest occupancy rate for the peak day was 56% occurred at 1.30 pm.

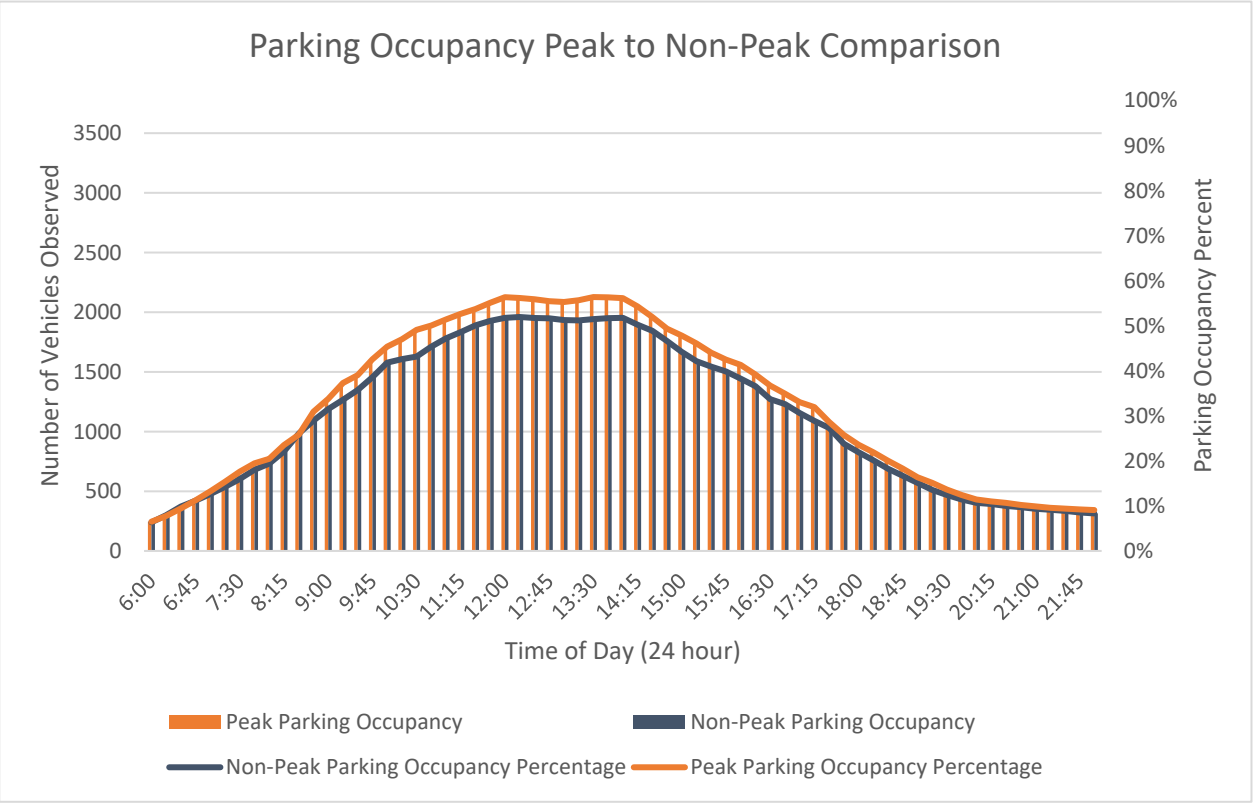

Figure 1: Observed 6 am to 10 pm hourly parking occupancy rate.

2.3 Parking Zones Utilisation

There are four zones with a significant difference in utilisation between non-peak and peak. These Zones are highlighted in the table below.

Table 3: Zones with significant Peak to Non-Peak Parking Utilisation difference

Zone Name	Non-Peak	Peak	Parking Utilisation Percentage Point (pp) Difference (Peak - Non- Peak)	Surrounding Landuse
2	23%	34%	+11pp	Busselton Jetty
4	34%	43%	+10pp	Busselton Jetty
34	30%	40%	+10pp	Busselton Central Shopping Centre
40	36%	52%	+16pp	Busselton Central Shopping Centre

A comparison of parking utilisation variation in individual zones between peak and non-peak period is provided in Figure 3.

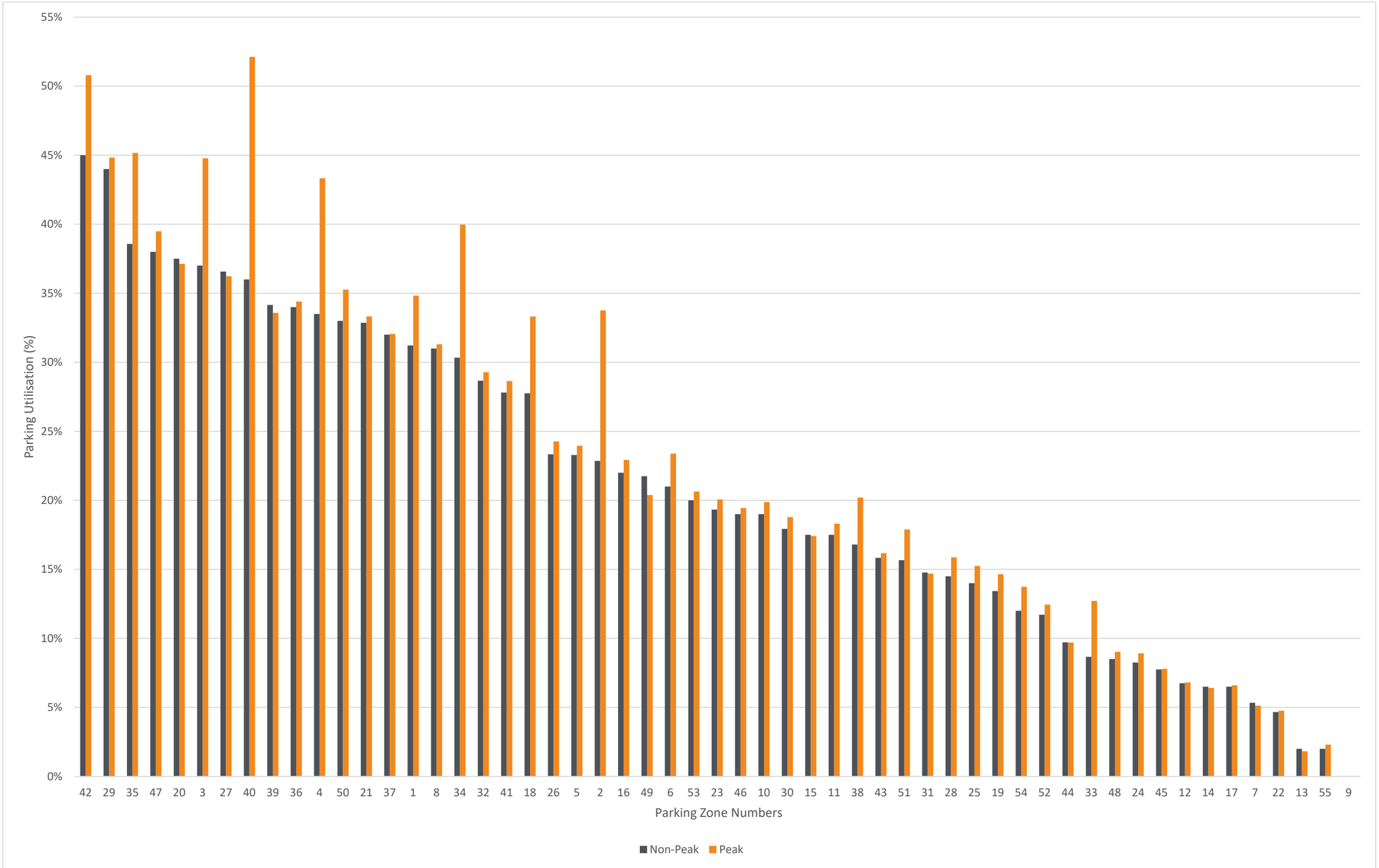

Figure 2: Average Parking Utilisation per Zone for each day.

Each parking zone is further divided into sub-sections. Table 4 reports parking sub-sections with the highest percentage of utilisation.

On both surveyed days, survey data has indicated zone 1 – Busselton Jetty Car Park 1 East had parking utilisation above 80%. Utilisation above or equal to 80% was also observed in various sections of parking zone 2 and 50 on the peak day. A list of zones with utilisation above 70% is provided in Table 4 below.

Table 4: High Utilisation Parking Sections.

Zone	Section	Side	Restriction	Supply	Parking Utilisation		Land-Use
					Peak	Non-Peak	
1	Busselton Jetty Car Park - Car Park 1 East	E	Unrestricted	67	87%	80%	Jetty Parking
	Busselton Jetty Car Park - Car Park 1 East	E	Caravan Parking	7	82%	81%	
2	Queen St - From Foreshore Pde To Marine Terrace	E	Unrestricted	9	80%	74%	Jetty Parking
	Queen St - From Foreshore Pde To Marine Terrace	W	Unrestricted	11	81%	74%	
4	Busselton Jetty Car Park - Car Park 4 North Of Foreshore Pde	N	Unrestricted	72	77%	72%	Jetty Parking
	Car Park 4 Foreshore Pde - From Geographe Bay Rd To Car Park S Acess	S	Unrestricted	3	77%	78%	
35	Queen St - From Kent St To Prince St	E	1/2P 9Am-5Pm Mon-Fri, 9Am-12Noon Sat	6	72%	69%	Near Mitchell Park, Fire Station, Food, Banks & both Shopping Centres
41	Prince St - From West St To Queen St	N	1P 9Am-5Pm Mon-Fri, 9Am-12Noon Sat	8	74%	71%	Next to Busselton Central Shopping Cente and Mitchell Park
50	Pries Ave - From Albert St To Peel Terrace	E	Unrestricted	31	80%	73%	In between Bed & Breakfast/Motel and Victoria Square Park

On the peak day survey, usage of marked accessible parking spaces was observed to increase significantly in zones 3, 4, 34, 35 and 40. Figure 5 provides the total parking utilisation percentage for each zone supplying accessible parking for both peak and non-peak days with the difference noted between the two labelled.

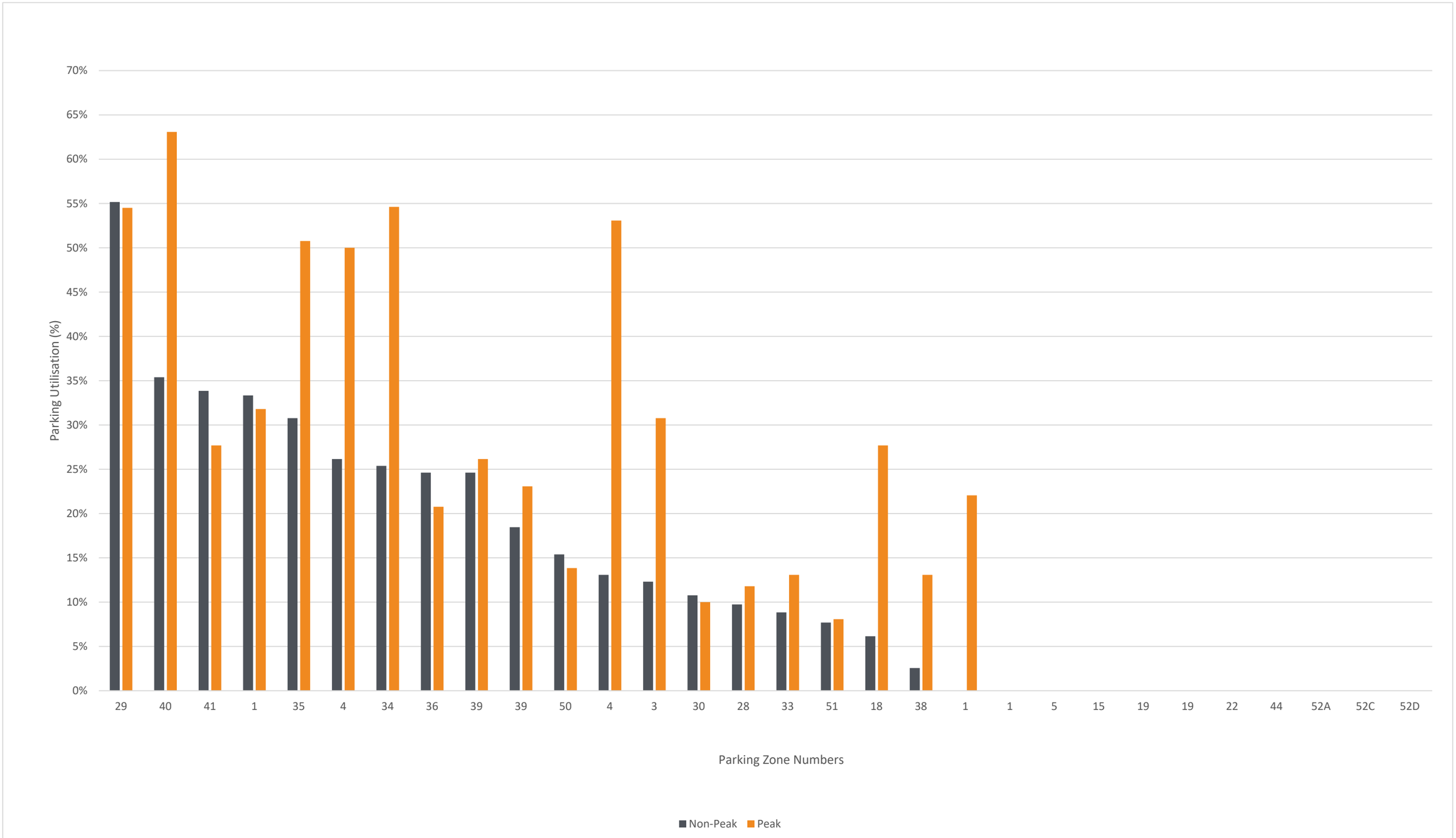

Figure 3: Parking utilisation per accessible zone.

2.4 Vehicles Duration of Stay in Parking Zones

The average duration of stay for individual parking zones for both peak and non-peak days were observed to be under 4 hours.

Parking zone 1, which is located at the Busselton Jetty, has a high average and maximum duration of stay in non-peak day. The maximum duration of stay recorded on the non-peak day was 7.3 hours and 6.1 hours for the peak. This zone is located within 10 minutes of walking distance to Busselton Central Shopping Centre.

Figure 4 provides the average duration of stay for each zone in the peak and non-peak day with the difference between the two.

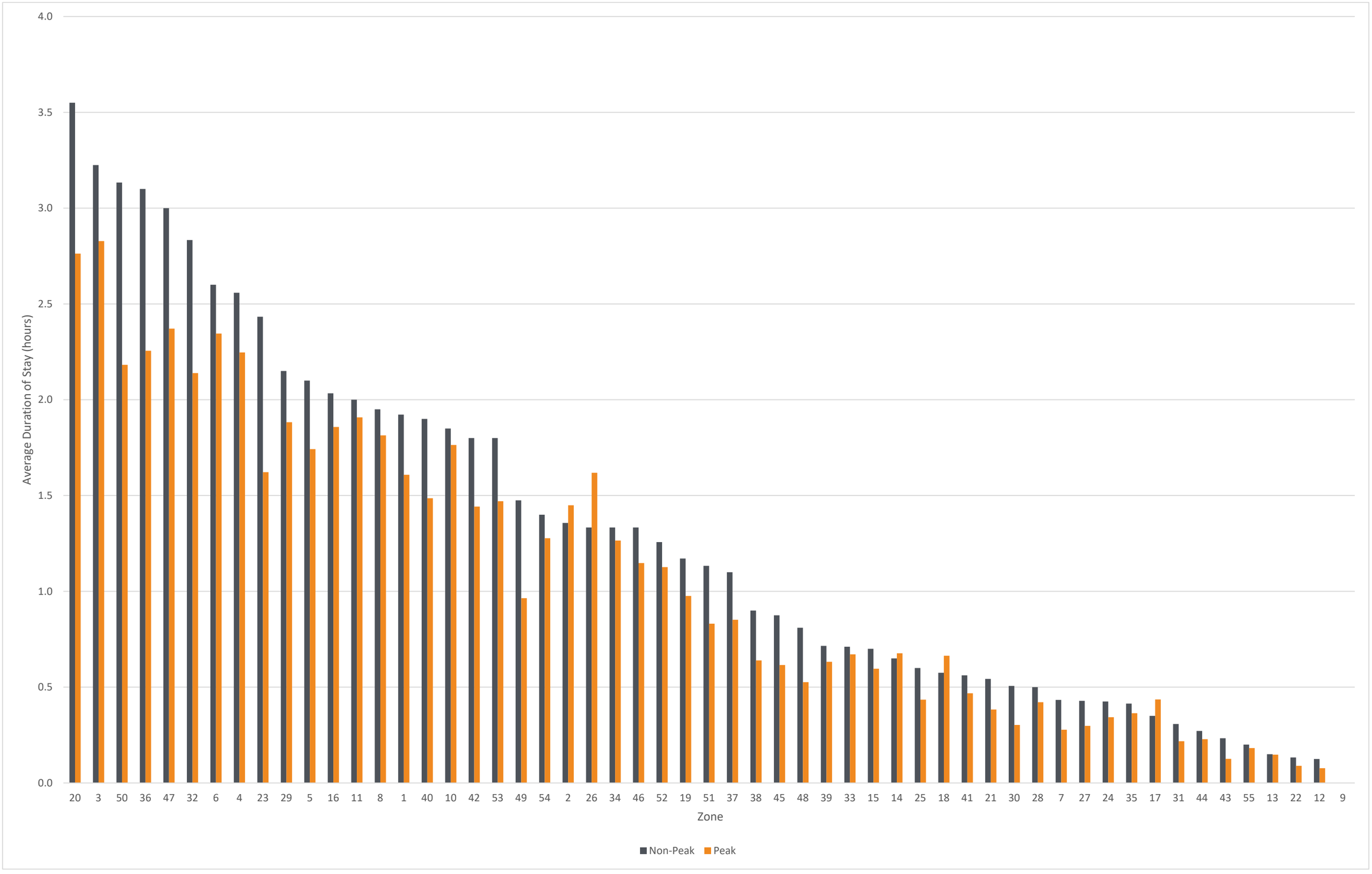

Figure 4: Observed Average Parking Duration of Stays

2.5 Parking Turn Over

On the peak day, three-quarters of parking zones were observed to have a turnover of above 1 car per parking bay. On the non-peak day, less than two-thirds of parking zones had a turnover above 1 car per parking bay.

The average parking turnover for each parking zone is provided in Figure 6. Parking zone 35 has the highest vehicle turn-over on both the peak (18.7 cars per bay) and non-peak day (11.9 cars per bay).

Parking zone 35 is equidistant from the two shopping centres. Zone 35 offers a total of 18, 30-minute parking bays along with one accessible and three taxi parking bays. Therefore, it can be expected to have high demand and justifies the high turn-over recorded.

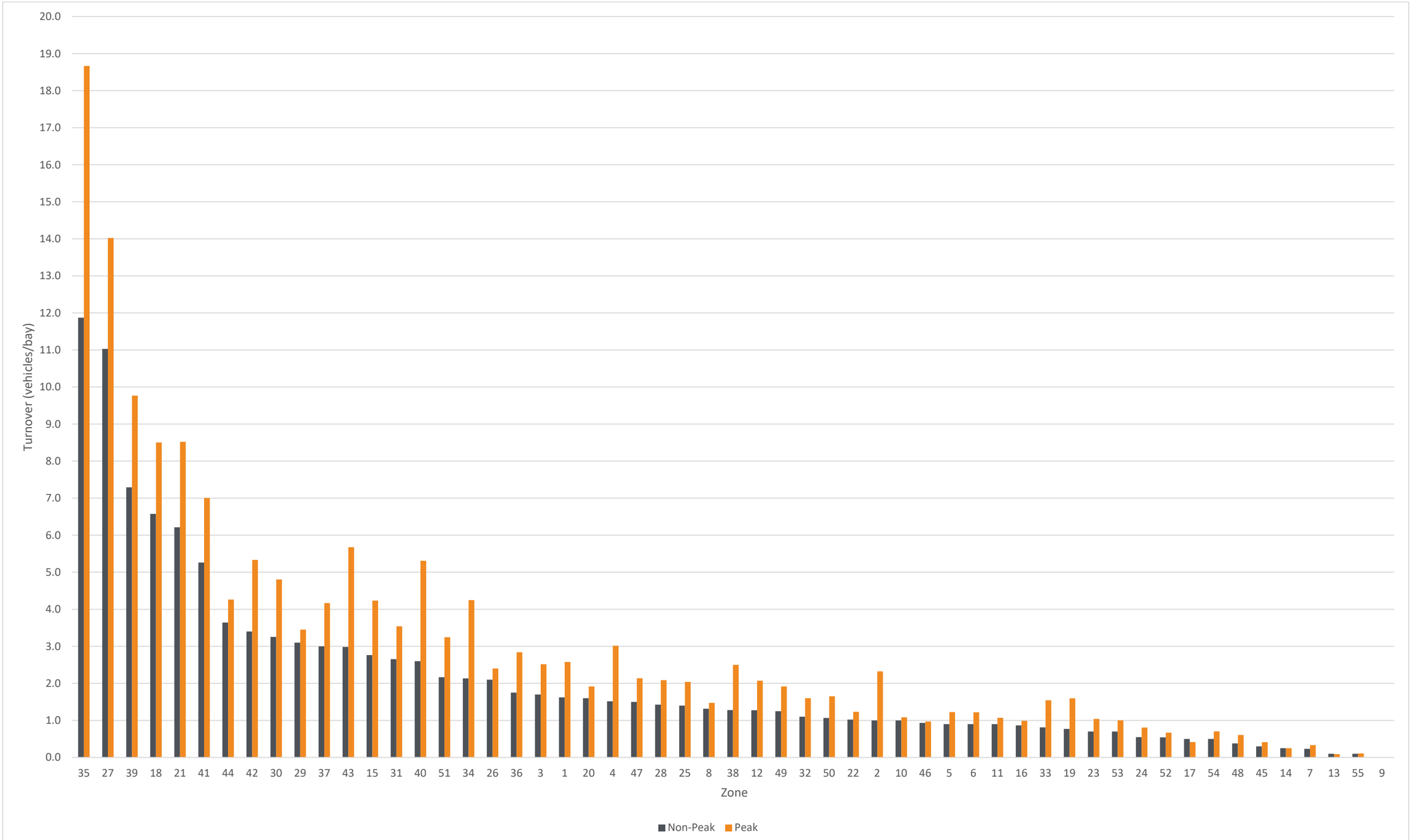

Figure 5: Parking zone turn-over comparison for peak and non-peak days

3 Conclusions

Survey data has indicated the Busselton City Centre has no shortage of parking supply. A maximum parking occupancy percentage of 52% (1960 vehicles across 3774 parking supply) was observed in a non-peak in comparison to 56% (2127 vehicles across 3774 parking supply).

The data also suggests the majority of vehicles in Busselton City Centre park for 4 hours or less. However, major car parking areas of zones 1,2,4, 35,41 and 50 have parking utilisation percentage of above 70%.

On both surveyed days, zone 54 (Signal Park) was observed to be used as an informal parking area. Peak parking demands for zone 54 occurred between hours of 1:15 pm to 4:00 pm. This time period falls within the time when parking zone 1, 2 and 4 have more than 70% occupancy percentage.

SMEC recommends the City to consider parking restriction reviews, monitoring and management program for parking zones with utilisation percentage of above 70%. This will include parking zone 1, 2 and 4 which are located close to Signal Park and have direct access to Marine Terrace corridor. This will safeguard the operation of Marine Terrace as surplus parking demands for zone 1, 2 and 4 are likely to impact the operation of Marine Terrace corridor.

The traffic management detour and closure of the western part of parking zone 30 (Kent Street) did not impact the overall results, due to the availability of alternative parking area within the study area.

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Appendix A: Parking Zone Cells

Appendix D Base Parking Demand for Future Years (July 2020)

Technical Memo

Technical Memo No	TM0002	Date of Issue	27 July 2020
Subject/Title	Base Parking Demand for Future Years		
Project Name	Projected Future Car Parking Needs	Project Number	3006375
Discipline	Transport Planning		
Document Number	3006375_TM_0002		
Revision Details	FINAL		
Author	Louise ROUND		
Reviewed by	Clara Hechei		
Approved by	James Parrott		
Prepared for	City of Busselton	Attention to	Louise Koroveshi
Attachments			

1 Purpose

The purpose of this Technical Memo is to work with the City to develop specific base year parking demand conditions for the Busselton City Centre and Dunsborough Town Centre. The base conditions are highly dependent on the variation between the 'peak' and 'non-peak' parking demands, which have been determined by survey data.

2 Introduction

2.1 Background

An important part of parking supply is the difference between the 'peak' and 'non-peak'. Providing for the 'peak' can leave large areas of land unused during the majority of the year. This is balanced by the local businesses' assertion that they lose business in the 'peak' due to a lack of parking. Striking the right balance is a key part of the Activity Centre planning process.

This Technical Memo should be read in conjunction with the previous Technical Memos: Dunsborough Town Centre Parking Utilisation and Turnover Survey (Feb 2020) and Busselton City Centre Parking Utilisation and Turnover Survey (Mar 2020).

2.2 Objectives

The objective of this Technical Memo is to present the methodology that SMEC has used to derive the base demands and consequently obtain agreement from the City for the proposed demands.

The base demands are important as they will form a basis for future demands used in other projects encompassing these areas. As such, SMEC has allowed two weeks in the project timeline as hold point to allow the City to review and agree the base demands.

2.3 Scope

The scope of this memo is as follows:

- Summarise existing parking
- Discussion on industry standards for parking capacity
- Proposed Base Demand

3 Dunsborough Existing Parking

Demand and supply for parking in Dunsborough Town Centre is given in Table 1, showing maximum hourly demand. The peak season survey was conducted on 7 January 2020, and the non-peak survey was conducted on 1 May 2019.

Table 1 - Dunsborough Parking Occupancy

	Peak Season	Non-peak Season
Maximum hourly demand	786	565
Supply	1315	1320
Occupancy	60%	43%

During the hour of maximum demand (14:00) in the peak season there is an ample supply of parking.

3.1 High Demand Areas

During the peak season, in Dunsborough there are three parking areas that have a maximum hourly demand in excess of 85% of supply, refer Table 2.

Table 2 - Dunsborough High Demand Areas

Peak Season	Area 3 – Coles Car Park – Adjacent to Cyrillean Way	Area 4 – Naturaliste Terrace - Adjacent to Cyrillean Way	Area 6 – Dunn Bay Road – Dunsborough Place to Seymour Boulevard
Maximum hourly demand (13:30 – 14:30)	206	54	40
Supply	242	56	41
Occupancy	86%	96%	98%

All these zones are located near the land-use that would likely to attract social and commercial activities during holiday peaks, refer Figure 1. Closer analysis shows that only Area 4 – Naturaliste Terrace and Area 6 – Dunn Bay Road have prolonged demand above 85% occupancy.

Figure 1 - Dunsborough Central Parking Areas

Area 4 has high demand between 09:15 and 14:45. Area 6 has high demand between 12:45 and 15:15.

3.2 Comparison of Peak and Non-peak Demand

In the Dunsborough Town Centre the parking demand is over 500 spaces across the morning and into the afternoon in both the peak and non-peak (09:45 to 15:00). During the peak day, demand is over 600 spaces for most of the working day (10:00 to 16:30). However, demand in the non-peak does not reach 600 spaces, refer Figure 2.

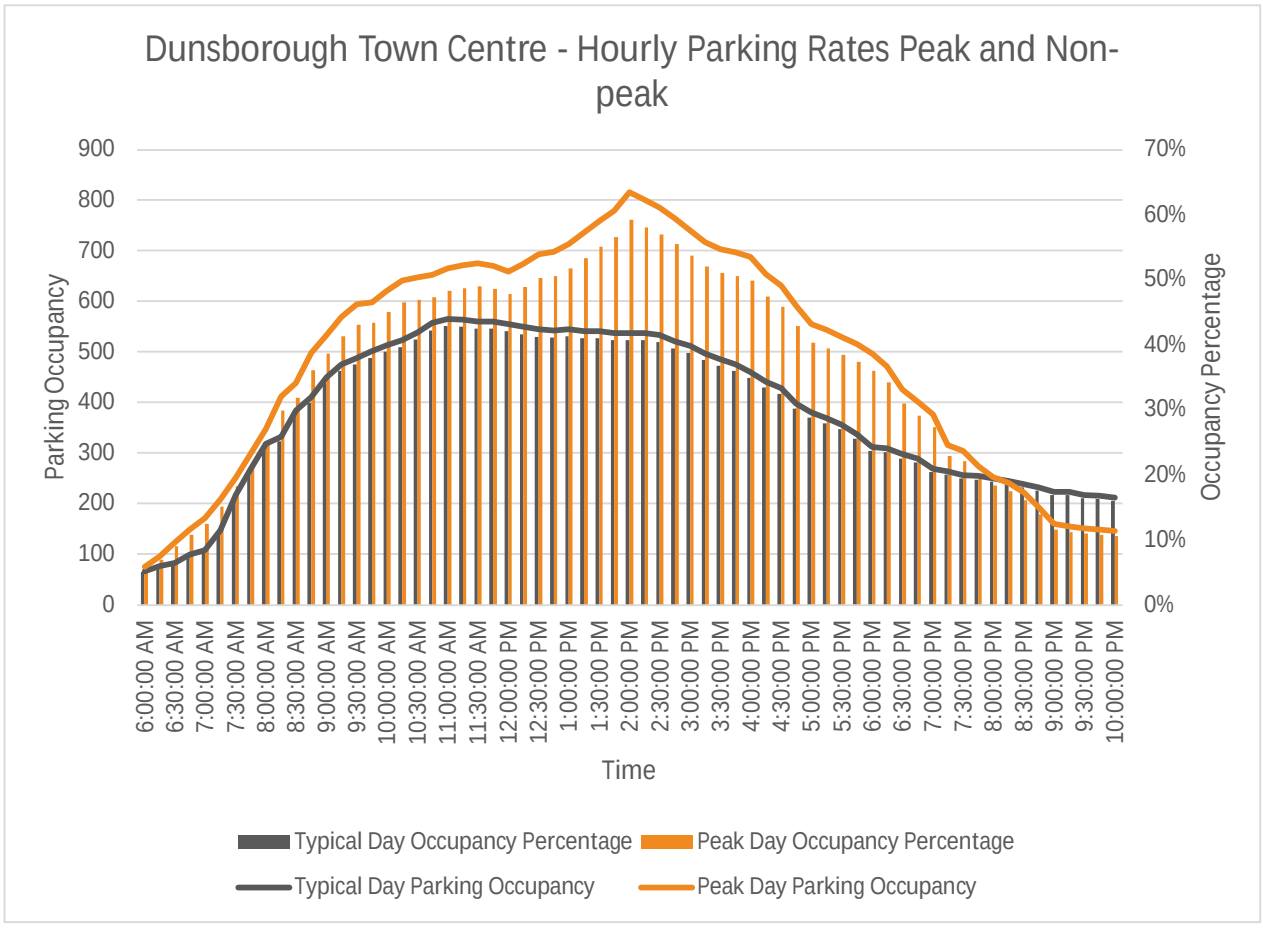

Figure 2 - Dunsborough Comparison of Demands

In the peak, parking demand is over 700 spaces in the early afternoon (13:00 and 15:30). Figure 2 shows this as a clear peak in demand, in comparison to non-peak which has a steady demand.

4 Busselton Existing Parking

Demand and supply for parking in Busselton is given in Table 3, showing maximum hourly demand. The peak season survey was conducted on 7 January 2020, and the non-peak survey was conducted on 4 December 2019.

Table 3 - Busselton Parking Occupancy

	Peak Season	Non-peak Season
Maximum hourly demand	2126	1960
Supply	3774	3774
Occupancy	56%	52%

During the hour of maximum demand (12:00) in the peak season there is ample supply of parking.

4.1 High Demand Areas – Peak Season

Within Busselton there are several areas that are fully occupied for much of the day in the peak season, refer to Table 4. This high demand is centred on the Busselton Jetty and Queens Street. During the non-peak these areas also have high demand, with many of these areas being over 85% occupied.

Table 4 – Busselton High Demand Areas

Peak Season	Area 1 – Busselton Jetty Car Park	Area 2 – Foreshore Parade (west) and Queens Street (north)	Area 3 – Busselton Tennis Courts	Area 4 – Car Park between Marine Tce – Foreshore Parade	Area 36 – Coles Car Park
Maximum hourly demand (14:00-15:00)	216	24	95	310	112 (12:00-13:00)
Supply	249	24	104	324	117
Occupancy	87%	100%	91%	96%	96%

The high demand is centred around Busselton Jetty, as would be expected in the peak season, refer to Figure 3 for parking locations. Coles car park, in the town centre, is the other high demand area.

Figure 3 - Busselton Jetty High Demand Areas

The only car park that has extended high demand is Area 2. From 10:15 to 18:15 the car park has over 85% occupancy.

4.2 High Demand Areas – Non-peak Season

In Busselton in the Non-peak Season, only the Coles car park reaches over 85% occupancy for more than an hour. This is from 11:30 to 12:45.

4.3 Comparison of Peak and Non-Peak Demand

Parking demand in the Busselton City Centre is reasonably consistent across the working day. There is demand for over 1,900 spaces in the middle of the day in both the peak and non-peak (11:45 to 14:00). During the peak day, demand is over 2,000 spaces during this time for the peak.

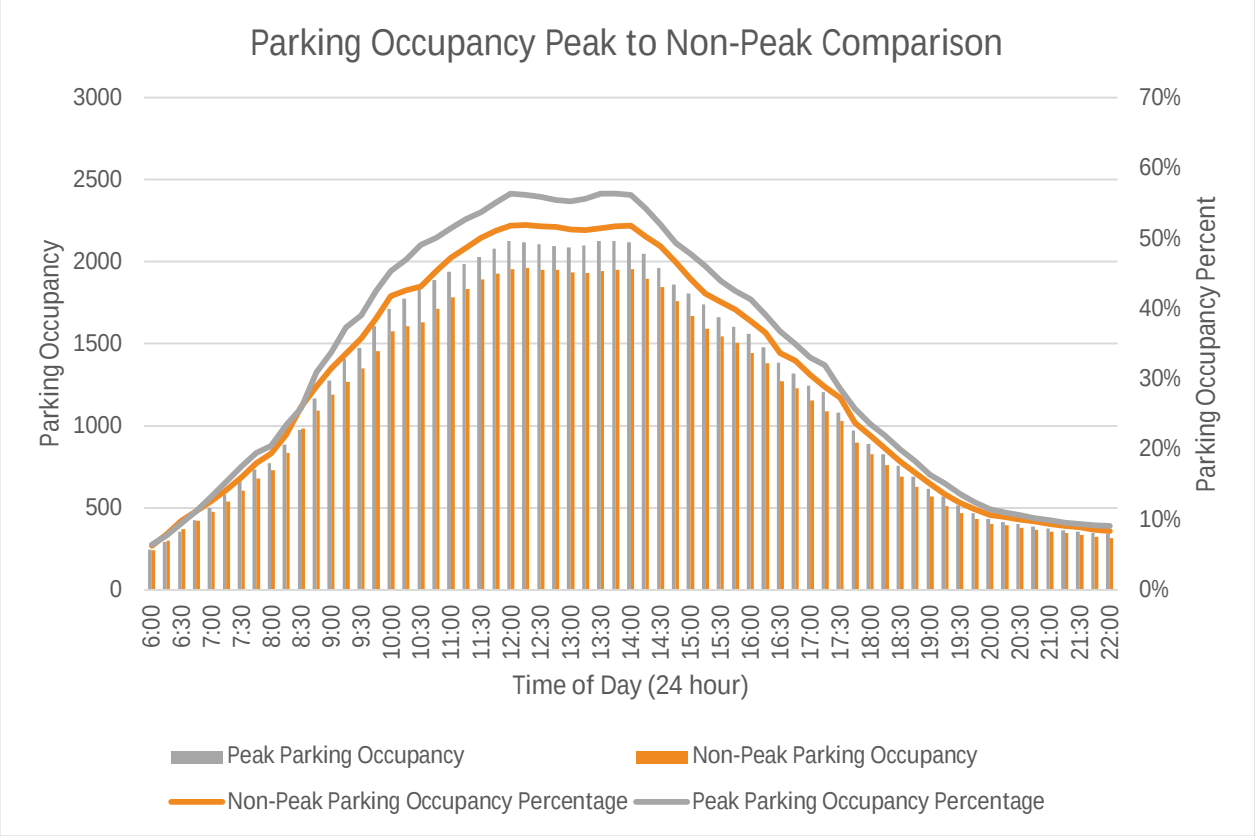

Figure 4 - Busselton Comparison of Demands

5 Industry Standards

An occupancy rate of 85% is taken as the industry standard for an efficient use of a car park. At higher occupancy rates people perceive it as difficult to find a space, leading to frustration. When the occupancy rate is above 85% for an extended period, generally four hours or more, the perception is that there is a lack of parking.

High occupancy rates imply that there is unmet demand and supply should be increased. High occupancy rates also lead to traffic circulating to find a space, which can cause congestion.

5.1 Application of Industry Standards in Dunsborough

Dunsborough has a notable difference in parking demand between Peak Season and Non-peak Season.

As the overall parking demand does not reach over 60% there is no unmet demand.

5.2 Application of Industry Standards in Busselton

Busselton has no notable difference in parking demand between Peak Season and Non-peak Season.

There is unmet parking demand in the vicinity of Busselton Jetty, however, the informal parking that the City provides in Signal Park provides an adequate overflow.

6 Proposed Base Demand

6.1 Demand Levels

The demand levels set will be scaled into future demand. For this reason, a base demand should be set rather than taking the highest demand. Once the demand has been set and scaled then SMEC will look at recommendations for the future supply.

6.2 Dunsborough Town Centre

A parking demand of 670 spaces is recommended for Dunsborough Town Centre.

This demand is exceeded for four hours (12:15 to 16:15) in the peak season, and not at all in the non-peak.

6.3 Busselton City Centre

A parking demand of 1880 spaces is recommended for Busselton City Centre.

This demand is exceeded for four hours (10:45 to 14:45) in the peak season, and for three hours in the non-peak (11:30 to 14:30).

Appendix E Current Proposed Parking Changes

Dunsborough

Busselton

DIAL BEFORE YOU DIG
www.1100.com.au

PRELIMINARY

REV.	DATE	AMENDMENT	DRN	CHKD	APPD
A	01/11/19	ISSUED FOR COMMENT	CB	DWM	JS

NORTH POINT

DRAWN: CB
APPROVED: JS
DESIGNED: CB
CHECKED: DWM

City of Busselton
Geographe Bay

HOTEL SITE 1 - FORESHORE
PARKING AND LANDSCAPE DEVELOPMENT
SITE PLAN - CONCEPT
SHEET 1 OF 1

SCALE.	C/CODE	PLAN	REV.
1 : XXX	XXX	HOTEL 1 OPT3	A

ORIGINAL SHEET SIZE
A1

1:200

SITE PLAN
SCALE 1:200

DIAL BEFORE YOU DIG
www.1100.com.au

PRELIMINARY

REV.	DATE	AMENDMENT	DRN	CHKD	APPD
D	11/09/19	AMENDMENTS TO PUBLIC AND HOTEL PARKING AREAS	CB	DWM	JS
C	28/03/19	ISSUED FOR COMMENT	DF	DWM	JS
B	17/12/18	ISSUED FOR COMMENT	CB	DWM	JS

NORTH POINT

DRAWN	APPROVED
CB	JS
DESIGNED	CHECKED
CB	DWM

City of Busselton

HOTEL SITE 2 PARKING
PROPOSED PARKING CONCEPT - HOTEL AND PRIVATE AREAS
SITE PLAN - ATTACHMENT A
SHEET 1 OF 1

SCALE:	C/CODE	PLAN	REV.	ORIGINAL SHEET SIZE
1 : 200	XX	HOTEL SITE 2	D	A1