



# Traffic and Parking Impact Assessment

2/106 Robinson Avenue, Belmont WA 6104

January 2020



**Type of Assessment:** Traffic and Parking Impact Assessment

**Site Location:** 2/106 Robinson Avenue, Belmont WA 6104

**Prepared for:** Hope Perth Christian Church

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## 1. INTRODUCTION

APEX Engineers were engaged by the Hope Perth Christian Church to provide a Traffic and Parking Impact Assessment as a part of the development application for the proposed place of worship development at Unit 2/106 Robinson Avenue in Belmont WA 6104.

This report has been structured into the following sections:

- **Section 2** Describes the existing transport conditions in the locality and provides an overview of the proposed development;
- **Section 3** Assesses the parking provision requirements applicable for the subject development;
- **Section 4** Assess the nearby on-street public parking availability, based on parking surveys conducted at the anticipated peak demand periods of the proposal;
- **Section 5** Discusses the traffic impacts from the proposed development likely to be realised on the local road network; and
- **Section 6** Provides the summary and conclusions of the study.

## 2. BACKGROUND AND EXISTING CONDITIONS

### 2.1 Site Description and Local Road Network

The subject site is located within a commercial complex, at Unit 2/106 Robinson Avenue in Belmont and is zoned as Industrial 1 with the immediate site vicinity characterised by a mix of commercial, light industrial and residential uses. A total of 8 car spaces are allocated within the on-site car park of the complex, for exclusive use by the subject unit. Vehicle access to the site is provided off Robinson Avenue, which at the site frontage is a local road with an undivided carriageway with kerbside parking on either side.

Figure 1 below highlights the site location from an aerial perspective while Figure 2 illustrates the Robinson Avenue as seen at the site frontage.



Figure 1: Location of the subject site



Figure 2: Robinson Avenue as seen at the site frontage



## 2.2 Details of the Proposed Development

The subject proposal involves change of use of the existing commercial unit (Unit 2) to a place of worship at 106 Robinson Avenue in Belmont. The subject unit includes 8 exclusively allocated on-site parking spaces within the overall complex. It is noted that the purpose of the proposed development is to conduct religious meetings and classes. Table 1 below provides a summary of the proposed operations at the subject site.

Table 1: Weekly activity schedule for the proposed development

Room	Number of people					
	Monday (630am – 1030pm)	Tuesday (630am – 1030pm)	Wednesday (630am – 1030pm)	Friday (630am – 1030pm)	Saturday (8am – 1030pm)	Sunday (8am – 1030pm)
Type of Activities	Planning/ Meeting	Prayer/ Meeting	Student Life Groups	Life Groups or Special Event	Training Session or Special Event	Sunday Service or Special Event
Estimate numbers of people at any one time	32ppl	32ppl and 60ppl (5pm – 1030pm) 32+28ppl (8cpb + 7 street parking)	32ppl and 60ppl (5pm – 1030pm) 32+28ppl (8cpb + 7 street parking)	32ppl or 172ppl (5pm - 1030pm)	172ppl	172ppl



## 2.3 Public Transport Service Accessibility

The local area of the subject site was assessed for available public transport services that were both easily accessible and provide viable alternative options to private vehicle trips. This assessment identified that the site lies within comfortable walking distance to a number of bus routes, as listed below in Table 2.

Table 2: Local public transport services

Service	Coverage	Location	Frequency-Weekday			Frequency Weekend
			AM Peak (7-9am)	PM Peak (4-6pm)	Other	
Route 286	Elizabeth Quay Bus Station to Forrestfield.	Along Belmont Avenue – 400m (5 min walk)	–	–	Operate between 6.30 am-7.40am and 4.30pm-5.45pm. No operation on Fridays.	No operation.
Route 287	Elizabeth Quay Bus Station to Forrestfield.	Along Belmont Avenue – 400m (5 min walk)	–	–	Operate between 5.40 am-8am and 4pm-5.30pm. No operation on Fridays.	No operation.
Route 380	Elizabeth Quay Bus Station to Perth Airport.	Along Belmont Avenue – 400m (5 min walk)	Every 30 minutes.	Every 30 minutes.	Every 30 minutes. (Operates until midnight)	Every 30 minutes. (Operates until midnight)
Route 39	Perth - Redcliffe via Star Street & Belmont Forum Shop Ctr.	Along Abernethy Road – 600m (8 min walk)	Every 30 minutes.	Every 30 minutes.	Every 30 minutes. (Operates until midnight)	<u>Saturday</u> : Every 30 minutes. (Operates until midnight) <u>Sunday</u> : Every 60 minutes.
Route 284	Belmont Forum Shop Ctr to Curtin Central Bus Stn via Albany Highway.	Along Abernethy Road – 600m (8 min walk)	Only 3 services operate.	–	Every 60 minutes.	No operation.



<b>Route 293</b>	Elizabeth Quay Bus Stn to Forrestfield.	Along Abernethy Road – 600m (8 min walk)	–	–	Operate during 7am-8pm and at 4.15pm. No operation on Fridays.	No operation.
<b>Route 935</b>	Perth Airport Terminals 3 & 4 to Kings Park via Belmont Forum & Perth.	Along Abernethy Road – 600m (8 min walk)	Every 5-10 minutes.	Every 10 minutes.	Operate during 5.30am-6pm. Monday to Thursday. Operate between 7am-6.30pm on Fridays.	Operate between 7am-6.30pm.

Figure 3 below illustrates the public transport map for the subject site area, outlining the coverage of the above listed bus services.

From the above information, it was established that the subject site has a good level of connections to the local areas during both weekdays and weekends, through a number of bus services. These routes operate with generally encouraging frequencies with some services operating until late night. Therefore, it was concluded that public transport is anticipated be a popular mode of travel to and from the subject site, by both patrons and staff members.



It was identified that the local road network supports pedestrian footpaths for convenient pedestrian travel. In particular, Belmont Avenue includes paved pedestrian footpaths on both sides while Robinson Avenue includes a paved pedestrian footpath on the side of the subject site.

The intersection of Alexander Road and Abernethy Road includes signalised pedestrian crossings, so that bus stops along either side of these roads can be conveniently accessed by pedestrians.

Furthermore, a number of cycling routes were noted around the locality, providing access to much of the surrounding area. Figure 4 illustrates the cycling network surrounding the subject site – it is evident that the site locality includes bicycle lanes and shared paths.

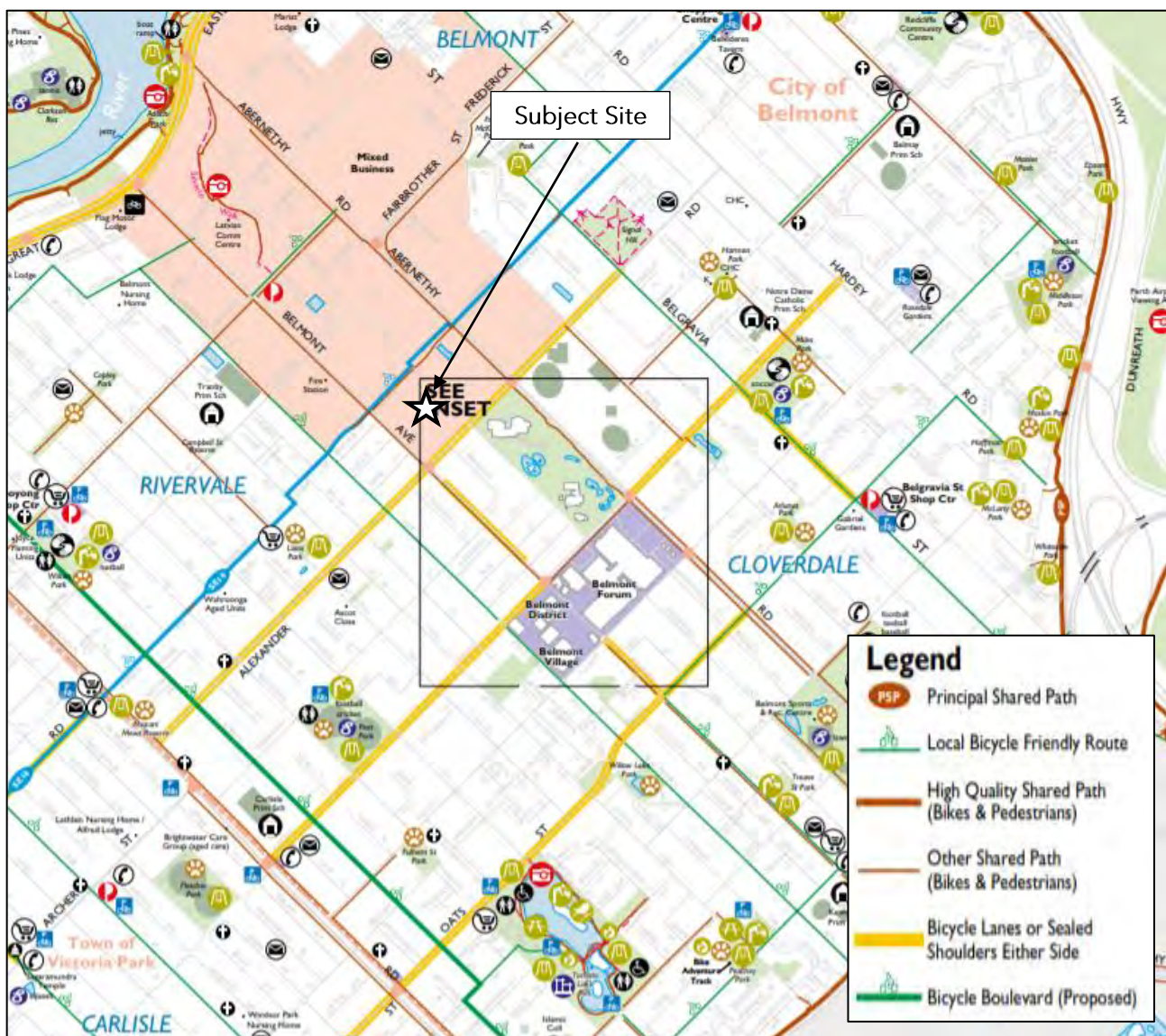


Figure 4: Cycling network within the site locality

The above aspects will encourage some level of active transport (walking and cycling, including walking to and from the bus stops within the site vicinity) by patrons and staff members.



### 3. PARKING PROVISION ASSESSMENT

The car parking provision requirements for the proposed development were determined in accordance with Table 2 of the City of Belmont Local Planning Scheme No. 15. In relation to land uses dedicated for 'Public Worship', this policy document stipulates the following car parking rate;

- *Provide 1 space for every 4 persons whom the building is designed to accommodate*

Applying the above parking rate to the proposed place of worship, which includes a maximum patron capacity of 172, a maximum statutory car parking provision requirement of 43 car spaces is obtained. The subject site includes provision for 8 on-site car parking spaces. Accordingly, there exists a maximum shortfall of 35 spaces for which dispensation is sought.



#### 4. CAR PARKING SURVEY RESULTS

A car parking survey was carried out considering the on-street car parking (inventory and occupancy levels, recorded at hourly intervals) within the site vicinity, on;

- 1) A typical Friday, between 6.30-10.30pm
- 2) A typical Saturday, between 9am to 1pm and 7pm to 9pm
- 3) A typical Sunday, between 8am to 4pm.

The above survey times were chosen to determine the vacancy levels of the nearby on-street public car parking inventory during the peak operational periods of the proposed site (see **Table 1**).

The following figure illustrates the on-street sections considered in the survey. It is noted that all the on-street parking spaces considered in the survey are located within a 400m radius of the site (i.e. maximum 5-minute walk) and therefore reflect the areas likely to be considered by the patrons when parking their vehicles. Also, it is noted that Belmont Avenue and Alexander Road, within the site vicinity, do not include any on-street parking opportunities.



Figure 5: On-street sections considered in the parking survey

The following tables outline the results obtained from the parking surveys carried out across three days (Friday, Saturday and Sunday).



Table 4: Parking survey results for Friday

Street Name	Between	Side of Street	Restriction	Supply	6-7pm	7-8pm	8-9pm	9-10pm	10-11pm
Robinson Ave	Campbell St & Esther St	North	No Restriction	19	0	1	1	1	1
	Esther St & Alexander Rd		No Restriction	34	2	1	0	0	0
	Campbell St & Esther St	South	No Restriction	9	0	0	0	0	0
	Esther St & Alexander Rd		No Restriction	14	0	0	0	0	0
Total				76	2	2	1	1	1
% Capacity					3%	3%	1%	1%	1%
Esther St	Robinson Ave & Belmont Ave	West	No Restriction	0	0	0	0	0	0
	Robinson Ave & Belmont Ave	East	No Restriction	11	0	0	0	1	2
Total				11	0	0	0	1	2
% Capacity					0%	0%	0%	9%	18%
Total Parking Spaces				87	2	2	1	2	3
% Capacity					2%	2%	1%	2%	3%

Table 5: Parking survey results for Saturday

Street Name	Between	Side of Street	Restriction	Supply	9-10am	10-11am	11am-Noon	Noon-1pm		7-8pm	8-9pm
Robinson Ave	Campbell St & Esther St	North	No Restriction	19	1	1	1	3		0	0
	Esther St & Alexander Rd		No Restriction	34	0	3	3	1		0	0
	Campbell St & Esther St	South	No Restriction	9	0	0	0	2		0	0
	Esther St & Alexander Rd		No Restriction	14	0	0	0	0		0	0
Total				76	1	4	4	6		0	0
% Capacity					1%	5%	5%	8%		0%	0%
Esther St	Robinson Ave & Belmont Ave	West	No Restriction	0	0	0	0	0		0	0
	Robinson Ave & Belmont Ave	East	No Restriction	11	0	0	0	0		0	0
Total				11	0	0	0	0		0	0
% Capacity					0%	0%	0%	0%		0%	0%
Total Parking Spaces				87	1	4	4	6		0	0
% Capacity					1%	5%	5%	7%		0%	0%

Table 6: Parking survey results for Sunday

Street Name	Between	Side of Street	Restriction	Supply	8-9am	9-10am	10-11am	11am-Noon	Noon-1pm	1-2pm	2-3pm	3-4pm
Robinson Ave	Campbell St & Esther St	North	No Restriction	19	0	0	1	1	0	1	0	0
	Esther St & Alexander Rd		No Restriction	34	0	0	0	1	1	0	1	1
	Campbell St & Esther St	South	No Restriction	9	0	0	0	0	0	0	0	0
	Esther St & Alexander Rd		No Restriction	14	0	0	1	1	0	0	0	1
Total				76	0	0	2	3	1	1	2	
% Capacity					0%	0%	3%	4%	1%	1%	1%	3%
Esther St	Robinson Ave & Belmont Ave	West	No Restriction	0	0	0	0	0	0	0	0	0
	Robinson Ave & Belmont Ave	East	No Restriction	11	0	0	0	0	0	0	0	0
Total				11	0	0	0	0	0	0	0	
% Capacity					0%	0%	0%	0%	0%	0%	0%	0%
Total Parking Spaces				87	0	0	2	3	1	1	1	2
% Capacity					0%	0%	2%	3%	1%	1%	1%	2%



As per the tables above, there are a total of 87 time unrestricted, on-street parking spaces within the site vicinity (76 on Robinson Avenue and 11 on Esther Street). Across all time periods surveyed, all these parking spaces included very low occupancy levels – with the peak occupancy level of 6 car spaces recorded between Noon-1pm on the Saturday.

It is noted that the maximum on-site car parking shortfall of 35 car spaces is anticipated on weekends. As per the survey results, the above identified maximum car parking shortfall can be sufficiently accommodated within the surrounding on-street parking inventory, without exhausting the overall parking availability.



## 5. TRAFFIC IMPACT ASSESSMENT

The likely net traffic volume increases resulting from the subject proposal has been determined and discussed qualitatively, based on site specific operational information at hand (since the RMS Guide does not stipulate specific trip rates for place of worship developments).

In general, given the shortfall of car parking on-site, traffic associated with the patrons entering and leaving the activities at the subject site will likely be dispersed across the surrounding streets (as parking will be sought from surrounding on-street public parking inventory). This nature of traffic activity will likely impose minor impacts on multiple locations as opposed to a large impact at a single location. In particular, vehicles entering and exiting the block within which the subject site is located, can utilise;

- The Robinson Avenue/Esther Street intersection to the north.
- The Alexander Road/Robinson Avenue intersection to the east.
- The Belmont Avenue/Esther Street intersection to the west.
- The Alexander Road/Belmont Avenue intersection to the south.

As a result of these multiple route options, traffic will likely be distributed over more than a single intersection. This will reduce the additional pressure imposed on a single intersection, by the traffic generated from the propose development.

The peak traffic generation level for the site will occur on weekends, when 172 patrons are entering and leaving the site. Since the surrounding businesses are not operational on weekends, no impacts on the existing traffic from the businesses in the vicinity are expected from this additional traffic. Additionally, it is noted that this peak period (along with the peak operations on other days, as outlined in **Table 1**) are expected to occur outside the general network peak traffic periods.

Furthermore, the multiple public transport options afforded to the site is likely to reduce the peak hour vehicle trips entering and exiting the subject site. As such, no ramifications to the existing traffic and pedestrian conditions are anticipated to result from the additional traffic generated by the proposed development.



## 6. CONCLUSIONS

APEX Engineers were engaged by Hope Perth Christian Church to provide a Traffic and Parking Impact Assessment as a part of the development application for the proposed place of worship at Unit 2/106 Robinson Avenue, Belmont WA 6104.

A review of the existing conditions of the site vicinity revealed that the area is served by a number of bus services, which can be accessed from bus stops located within a 10-minute walking radius of the subject site. As such, it was concluded that both prospective patrons and staff can carry out most trips via public transport services, thus reducing the need for driving trips. In addition, due to the nature of the site area (surrounded by number of residential precincts) and available active travel infrastructure (such as footpaths and cyclist friendly roads) within the vicinity, large amounts of active travel can be expected.

A parking provision assessment was undertaken in accordance with the City of Belmont Local Planning Scheme No. 15, leading to a maximum parking requirement of 43 on-site car parking spaces. The subject site includes provision for 8 on-site car parking spaces. Therefore, dispensation is sought for 35 car parking spaces. It is noted that the above determined statutory car parking requirement is the maximum for the subject site, based on the largest event – i.e. weekends, which will include 172 patrons. However, during other times of operations, the on-site car parking demand is much less than the above, as outlined in Table 1.

The parking surveys carried out reveal that there are 87 time unrestricted, on-street parking spaces within the site vicinity (76 on Robinson Avenue and 11 on Esther Street). Across all time periods surveyed, all these parking spaces included very low occupancy levels – with the peak occupancy level of 6 car spaces recorded between Noon-1pm on the Saturday. It is noted that the maximum on-site car parking shortfall of 35 car spaces is anticipated on weekends. As per the survey results, the above identified maximum car parking shortfall can be sufficiently accommodated within the surrounding on-street parking inventory, without exhausting the overall parking availability.



It is noted that certain measures could be enacted to alleviate unfavourable parking demands being realised due to the proposal. These measures include the following:

- Provision of information in relation to parking availability in the area and other transport modes available to access the site, within the site's website;
- Having taxi's readily available at the conclusion of larger functions;
- Provide information in the form of posters/leaflets of nearby public transport options; and
- Promote active/public travel to staff through reward programs.

Engaging in such efforts will help reduce overall parking impacts.

The anticipated peak period of operations for the subject proposal will occur on weekends when 172 patrons are attending the service. Since the surrounding businesses are not operational on weekends, no impacts on the existing traffic from the businesses in the vicinity are expected from this additional traffic. Additionally, it is noted that this peak period (along with the peak operations on other days, as outlined in **Table 1**) are expected to occur outside the general network peak traffic periods. Furthermore, the multiple public transport options afforded to the site is likely to reduce the peak hour vehicle trips entering and exiting the subject site.

Given the shortfall of car parking on-site, traffic associated with the patrons entering and leaving the activities at the subject site will likely be dispersed across the surrounding streets (as parking will be sought from surrounding on-street public parking inventory). This nature of traffic activity will likely impose minor impacts on multiple locations as opposed to a large impact at a single location. As such, no ramifications to the existing traffic and pedestrian conditions are anticipated from the additional traffic generated by the proposed development.



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# **VISUAL REPORT**

## **2/106 Robinson Ave Belmont WA**

**SITE PHOTOS INDICATED NON – ACTIVITIES ON SUNDAY  
ALONG ROBINSON AVE  
(RECORDED ON 21 JULY 2019 @ 11:20AM)**

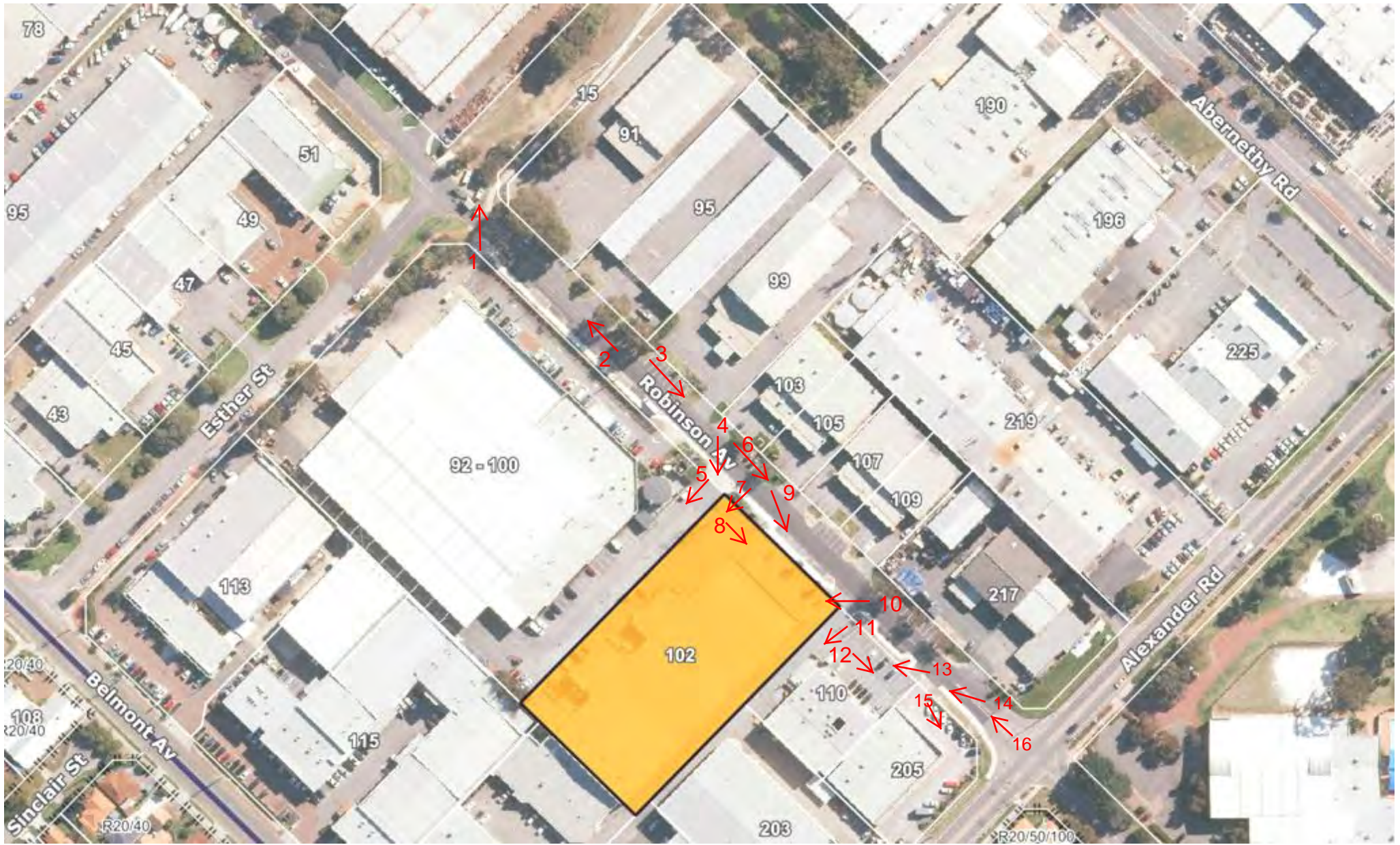
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**SITE PHOTOS INDICATED NON - ACTIVITIES ON SUNDAY ALONG ROBINSON  
AVE (RECORDED ON 21 JULY 2019 @ 11:20AM)**



**SITE PHOTOS INDICATED NON – ACTIVITIES ON SUNDAY ALONG ROBINSON AVE  
(RECORDED ON 21 JULY 2019 @ 11:20AM)**



VIEW 1 – 20 car parking bays empty during Sunday



VIEW 3 – Empty street parking, 150m from proposed site



VIEW 2 – Empty street on Sunday



VIEW 4 – Empty car parking within 106 Robinson Ave

**SITE PHOTOS INDICATED NON – ACTIVITIES ON SUNDAY ALONG ROBINSON AVE  
(RECORDED ON 21 JULY 2019 @ 11:20AM)**



VIEW 5 – Empty car parking within 106 Robinson Ave



VIEW 7 – Empty street on Sunday



VIEW 6 – Empty car parking within 106 Robinson Ave



VIEW 8 – Empty street on Sunday

**SITE PHOTOS INDICATED NON – ACTIVITIES ON SUNDAY ALONG ROBINSON AVE  
(RECORDED ON 21 JULY 2019 @ 11:20AM)**



VIEW 9 – Empty car parking on 110 Robinson Ave



VIEW 11 – Empty car parking on 110 Robinson Ave



VIEW 10 – Empty car parking within 106 Robinson Ave



VIEW 12 – Empty car parking on 110 Robinson Ave

**SITE PHOTOS INDICATED NON – ACTIVITIES ON SUNDAY ALONG ROBINSON AVE  
(RECORDED ON 21 JULY 2019 @ 11:20AM)**



VIEW 13 – Empty car parking on 110 Robinson Ave



VIEW 15 – Empty car parking on 205 Robinson Ave



VIEW 14 – Empty street on Sunday



VIEW 16 – Empty street on Sunday