KC00909.000 Mindarie Marina - boat parking

27-08-2018

FJM Property 338 Barker Road Subiaco WA 6008

Attn: Kevin Chu

Re: Parking Survey

Kevin,

This letter has been prepared to examine the practical capacity of a portion of the Mindarie Marina parking area and the potential impact of converting this open parking area into secured dry boat parking facility. The subject lot provides parking for the Mindarie Marina with both standard bays and boat parking bays to meet the niche demand of the site. The focus of the survey is on the utilisation of the boat parking bays which are angled bays and fill out the central portions of the subject lot that is situated in the rear section of the parking facility.

The survey was conducted on the assumed occupancy peak of weekends from 11:00 – 14:00 with 30-minute intervals on Saturday the 25th of August, Saturday the 1st of September and Sunday the 9th of September 2018. The weather was sunny and quite appropriate for boating activities. A desktop study was also conducted to examine the historical occupancy at assumed peak seasonal dates using historical satellite imagery from Nearmap. Due to the nature of the subject lot as overflow parking, observations were extended to the adjacent dry boat parking bays to provide context to the usage of the subject lot bays.

Subject parking facilities were found greatly underutilised given over 95% of bays remained unoccupied throughout the survey period. The observational data showed that in the adjacent lot the bays had generally low occupancy rates. These findings were confirmed in the desktop study where the overflow parking remained predominately unoccupied and the adjacent lots reaching practical capacity in only one of the sample images. The surveyor witnessed the subject area being used as a training grounds for L drivers while tyre marks observed on site and on aerial imagery indicate there might be an issue with antisocial behaviour.

Given the subject area is greatly underutilised, we do not foresee any adverse impact on traffic and parking in the area should the subject area be converted into a secure dry boat parking facility. Furthermore, we believe this would be a favourable outcome where the users of the marina can store their vessels safely reducing the requirement to take them to their respective dwellings and back. This would effectively reduce the volume of Class 2 vehicles on the surrounding roads. Utilising this section as a dedicated boat parking facility would enable use of adjoining parking areas as dedicated passenger parking.

While this parking area might be utilised to a degree during specific events, we do not believe this is warrant for rejection of the proposal. The effective design caters for 85% of demand – catering for 100% demand is not a good engineering practice as it is deemed as a waste of resource. As stipulated above, should the subject area be converted



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into a secure dry boat parking, additional spare capacity will be unlocked in the adjacent parking area where some of the boat parking bays can be converted to cater for passenger parking bays.

As far as events are concerned, each event that has the potential to affect standard parking and traffic functioning has to have a traffic management plan approved by the City and MRWA (as stated on the City of Wanneroo's website). It is generally considered that occasional events do not warrant retention of parking areas that are effectively unoccupied for 90% of the time.

In summary, we believe the conversion of the subject area into secure, dedicated dry boat parking will see this severely underutilised resource put to a good use. This adjustment is likely to free additional capacity in the adjoining parking areas as some of the boat parking can be converted into passenger vehicle parking.

On subsequent pages are details of our findings. If you have any queries, please do not hesitate to contact us.

Regards,

Marina Kleyweg

Director | Principal of Traffic and Transport

Justin Storer

Graduate Transport Planner

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1.1 Location

Lot Number 496 Street Number 3

Road Name Ocean Falls Boulevard

Suburb Mindarie

Description of Site

The subject lot provides parking for the Mindarie Marina with both typical bays and parking bays with dimensions to fit a car with a boat trailer, known as dry boat storage facilities but referenced as boat parking bays in this report. The focus of the survey is on the utilisation of the boat parking bays which are angled bays and fill out the central portions of the subject lot which is situated in the rear section of the parking facilities.

Existing dry boat storage facility is defined as a 'Marina*' land use under the City's District Planning Scheme No. 2 (DPS 2) and classified as 2A Harbour side Commercial Precinct which means the uses permitted are the same as those which apply to the Commercial zone in the Scheme.

Note * - The DPS 2 defines marina land use to mean premises at which berths or pens, and fuelling, servicing, repairing, storage (including storage on land) and other facilities for boats are provided, with or without the sale of boating gear and equipment, and includes all jetties, piers, embankments, quays and moorings appurtenant thereto and all offices and storerooms used in connection therewith'.

1.2 Local Road Network Information

How many roads front the subject site?

Name of Roads Fronting Subject Site / Road Classification and Description:

Road 1

Road Name Ocean Falls Boulevard

Number of Lanes two way, one lane each direction,

divided with a raised central median

Road Reservation Width 32m

Road Pavement Width Varying, up to 12.5m

Classification Significant Urban Local Road / Local Distributor

Two

Speed Limit 50kph
Bus Route YES
If YES Nominate Bus Routes Bus No.481
On-street parking YES

Road 2

Road Name Boston Quays

Number of Lanes two way, one lane each direction, undivided

Road Reservation Width 14.5m Road Pavement Width 6.5m

Classification Urban Local Road / Access Road

Speed Limit 50kph
Bus Route NO
If YES Nominate Bus Routes On-street parking YES

Name of Other Roads within 400m radius of the site, or roads likely to take increased traffic due to the development.

Road 1

Road Name Swansea Promenade

Number of Lanes two way, one lane each direction,

divided with a raised central median

Road Reservation Width Approx. 32m
Road Pavement Width Approx. 6+6m

Classification Significant Urban Local Road / Local Distributor

Speed Limit50kphBus RouteNOIf YES Nominate Bus Routes-On-street parkingYES

Road 2

Road Name Anchorage Drive

Number of Lanes two way, two lanes each direction,

divided with a raised central median

Road Reservation Width 32.5m Road Pavement Width 6+8m

Classification Significant Urban Local Road / Local Distributor

Speed Limit 60kph
Bus Route YES
If YES Nominate Bus Routes Bus No.481

On-street parking

YES

1.3 **Traffic Volumes**

			Vehicles per Peak Hour (VPH)		Heavy Vehicle %	Year	
Road Name	Location of Traffic Count	Vehicles Per Day (VPD)	AM AM Peak - Peak Time VPH	PM PM Peak - Peak Time VPH	If HV count is Not Available, are HV likely to be in higher volumes than generally expected?	Date of Traffic Count	If older than 3 years multiply with a growth rate
Ocean Falls Boulevard	West of Anchorage Drive	778	12:00 - 50	15:00 - 91	N/A - HV not likely to be in higher volumes than generally expected	June 2013	902 (with 3% annual growth rate)
Anchorage Drive	South of Alexandria View	2,312	12:00 - 123	18:00 - 264	N/A - HV not likely to be in higher volumes than generally expected	May 2013	2,680 (with 3% annual growth rate)
Anchorage Drive	n/a	3,009	08:00 – 384 (Monday)	15:00 – 385 (Monday)	3%	May 2016	-

Note - All traffic counts data have been received from the City of Wanneroo.

1.4 **Vehicular Crash Information**

Is Crash Data Available on Main Roads WA website?

If YES, nominate important survey locations:

Location 1

Location 2

Location 3

Location 4

YES

Ocean Falls Boulevard (0.00 to 0.28)

Ocean Falls Boulevard & Anchorage Drive - Intersection Ocean Falls Boulevard & Boston Quays - Intersection

Boston Quays (0.00 to 0.16)

Period of crash data collection 01/			01/01/20	/01/2013 - 31/12/2017				
					Crash Statistics			
Road Name	SLK	Functional Classification	Road Hierarchy	Speed Limit	No of KSI Crashes	No of Medical Attention Crashes	No of PDO Major Crashes	No of PDO Minor Crashes
Ocean Falls Boulevard	0.00 to 0.28	Significant Urban Local Road	Local Distributor	50kph	0	0	1	0
Ocean Falls Boulevard & Anchorage Drive	0.00	Significant Urban Local Road / Significant Urban Local Road	Local Distributor / Local Distributor	50kph/6 0kph	0	0	1	0
No of MVKT Travelled at Location KSI Crash Rate All Crash Rate Comparison with Crash Density and Crash Rate Statistics			MVKT No KSI cra 1 crashes All crash i	,500 VPD*365 ashes / 1.92 MVKT = rate is significa ork average of	= 0.52 crashe antly lower th	s/MVKT		
Ocean Falls Boulevard & Boston Quays	0.28	Significant Urban Local Road / Urban Local Road	Local Distributor / Access Road	50kph/5 0kph	_	have accessed on 18.07.2018 reported for to	, and no cras	h data was

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Boston	0.00 to	Urban Local	Access Road	50kph
Quays	0.16	Road	Access Road	ЭОКРП

The following table shows the Crash Density and Crash Rates on Metropolitan Local Roads as obtained from Main Roads WA on the 14th May 2018 by email request: -

Crash Density and Crash Rate on Metropolitan Local Roads Network only

	All Cra	shes	Serious Injury Crashes (Fatal+Hospital)	
	Average Annual Crash Density (All Crashes/KM)	Crash Rate	Crash Density	•
Metro Local Road - Midblock	2.99	0.81	0.13	0.03
Metro Local Road - All	6.41	1.73	0.26	0.07

Note: Based on 5-years data for the period 2013 to 2017.

1.5 Parking Requirements

Local Government City of Wanneroo

Local Government Document Utilised City of Wanneroo District Planning Scheme No.2

Description of Parking Requirements in accordance with Scheme:

Calculation of Parking

Land Use Yield Total Parking

Total Parking Requirement

Total Volume of Parking Provided by Proponent

Justification

Have Vehicle Swept Paths been checked for Parking?

NO

If YES, provide description of performance:

-

1.6 **Parking Surveys**

Was a parking survey required?

YES

If YES, provide details:

KCTT has been commissioned to determine the percentage of occupancy for the rear section of the Marina parking facility focusing on the boat parking bays. The subject parking area contains 51 parking bay - combined dry boat parking and passenger vehicle parking. The purpose of this portion of the facility is to provide overflow parking and as such the subject parking area is mostly characterised as a dry boat storage facility with additional standard car parking provided. The focus of the survey, therefore, was on occupancy of the boat parking bays during the assumed peak activity perior the practical spare capacity of the surveyed parking area. Given the nature of the subject lot as overflow parking, the observational notes have included the adjacent lots to provide context to the occupancy and utilisation of the subject lot.

The overall parking survey has been conducted in two parts with a desktop study and on-site survey. The purpose of the desktop study is to examine the historical occupancy rates. The desktop study utilised satellite imagery from Nearmap to examine all weekends available during 2018 until the latest available image of Sunday 17th of June 2018. Images prior to 2018 were selected based on being taken during the assumed peak season between October to Janurary on weekends going back from 2017 until 2012.

Times and dates of parking surve

11:00 – 14:00 on Saturday 25.08.2018.

11:00 - 14:00 on Saturday 01.09.2018.

11:00 – 14:00 on Sunday 09.09.2018

The subject area was surveyed at increments of 30 minutes. The entire surveyed area has a total of 51 boat trailer parking bays at the time of the survey.

Summary of desktop study utilising Nearmap Satellite Imagery (See Appendix 2 for full details)

Image Date	Cars Counted in Dry Boat Bays	Observational Notes
Sun 17 Jun 2018	0	-
Sun 15 th April 2018	1	1 in dry boat bay with trailer, 2 vehicles parked in standard bays
Sun 11 th Feb 2018	0	-
Sun 3 rd Dec 2017	2	2 in dry boat bay with trailers, adjacent bays mostly unoccupied but notable utilisation closer to the marina entrance
Sun 15 th Oct 2017	13	4 no trailers, 9 with trailers, 10 in standard bays
Sun 24 th Jan 2016	2	1 with trailer, 1 boat
Sun 15 th Nov 2015	0	1 vehicle in standard bay
Sat 13th Dec 2014	0	-
Sat 15 th Dec 2012	3	3 with trailer, adjacent boat bays at practical capacity at the time of photo

The results of the desktop study suggest that at the assumed peak times and season (1); subject lot dry boat bays are generally unoccupied. Furthermore, the adjacent bays were only noted to be at capacity once in 2012.

Provide detailed results of the survey:

The tables below represent a statistical overview of the survey. Parking bays have been surveyed in 15-minu(e) increments to determine the percentage of occupancy of the parking in the vicinity of the subject site.

The results were classified into five categories: -



- 1. 0% unoccupied deemed greatly under-utilised
- 2. <17% occupied- deemed greatly under-utilised

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- 3. 18% 32% occupied deemed under-utilised
- 4. 33% 49% occupied deemed utilised
- 5. 50% 66% occupied deemed utilised
- 6. 67% 82% occupied deemed full utilisation
- 7. 83% 99% occupied deemed full utilisation
- 8. 100% fully occupied deemed full utilisation

The percentages refer to the amount of time parking bays were occupied within the surveyed hour. For graphic presentation of the results, please refer to Appendix 1 of this letter.

Results of survey conducted on Saturday 25th of August from 11:00 to 14:00

Usage	Total	Percentage
0%	47	92%
<17%	3	6%
18% - 32%	1	2%
33% - 49%	-	-
50% - 66%	-	-
67% - 82%	-	-
83% - 99%	-	-
100%	-	-
Total	51	100%

The survey results show that 92% of the parking bays for boating were unoccupied throughout the survey period. 100% of the bays utilised are deemed underutilised.

Additional Notes

- Weather conditions were sunny
- It was observed (see Image 1 below) that the adjacent boat parking which forms part of the overall provision but outside the survey area could also be underutilised
- Out of the vehicles utilising the bays one vehicle parked with a trailer
- Three learner driving lessons were observed to have taken place in the parking area (see Image 2 below)



Image 1 taken at 11:05 on 18/08/18 from Location 1: Parking closer to the marina facilities may also be underutilised



Image 2 taken at 12:31 on 18/08/18 from Location 2a: Example of bay utilisation for driving lesson purposes

Results of survey conducted on Saturday 1st of September from 11:00 to 14:00

Usage	Total	Percentage
0%	49	96%
<17%	1	2%
18% - 32%	-	-
33% - 49%	-	-
50% - 66%	-	-
67% - 82%	-	-
83% - 99%	-	-
100%	1	2%
Total	51	100%

The survey results show that for most of the survey period the carpark was 98% unoccupied with an observed peak occupancy of 4% for one survey interval.

Additional Note

- Weather conditions were sunny
- Tyre marks on site suggest anti-social behaviour may have occured
- The observed usage of bays was that car parked in the boat parking bay for the entire duration of the survey did have a trailer attached while the car which was parked for approximately 30 minutes did not
- It was observed at 30-minute intervals (see Image 3 below) that the boat parking which forms part of the provision but outside the survey area was not fully utilised throughout the survey period
- Learner driving lessons were also observed to have taken place during the survey period (see Image 4)



Image 3 taken at 13:03 on 01/09/18 from Location 3: Potential underutilisation in the other parts of the parking facility



Image 4 taken at 13:25 on 01/09/18 from Location 2a: Example of bay utilisation for driving lesson purposes

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Results of survey conducted on Sunday 9th of September from 11:00 to 14:00

Usage	Total	Percentage
0%	49	96%
<17%	2	4%
18% - 32%	-	-
33% - 49%	-	-
50% - 66%	-	-
67% - 82%	-	-
83% - 99%	-	-
100%	-	-
Total	51	100%

The results show that 2 of the subject lots were occupied for 30 minutes of the survey period while the rest remained unoccupied for the entire survey period. 100% of the lots are deemed under-utilise

Additional Note

- Weather conditions were sunny
- Of the two lots utilised during the survey period, one vehicle had a trailer attached while the other vehicle had no trailer attached (see image 5)
- It was observed that 100% of the lots were unoccupied until the 13:30 interval (see image 5)



Image 5 taken at 13:31 on 09/09/2018 from location 2a: Peak bay utilisation for Sunday survey

• Further observation of the parking adjacent to the subject lot and within the overall facilities showed that the dry boat parking bays are used for regular parking even if there are other bays available (see image 6)

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Image 6 taken at 13:29 on 09/09/2018 from Location 1c in the adjacent part of the facility: Evidence of vehicles without trailers using the dry boat bays when alternatives are available

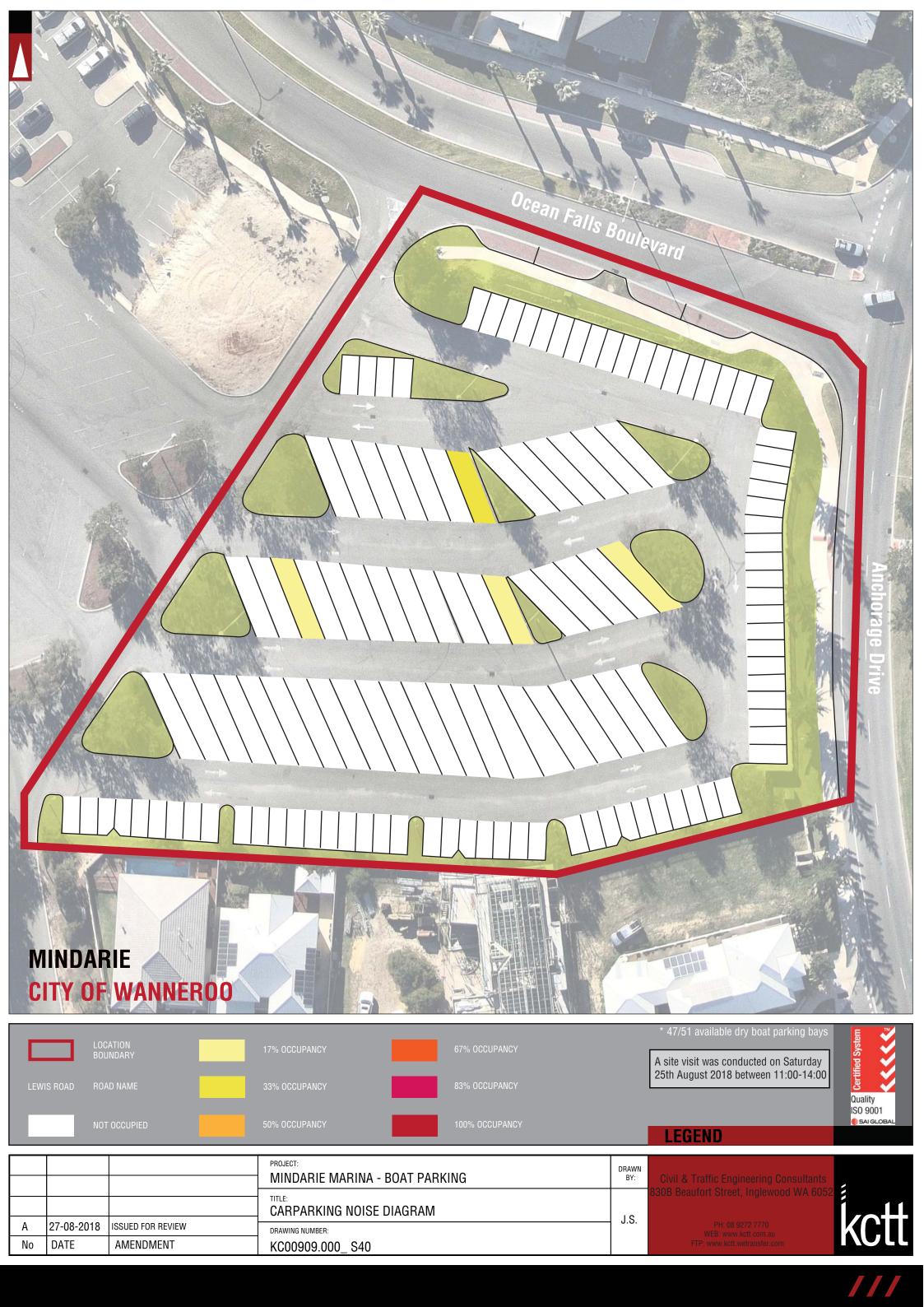
Conclusions

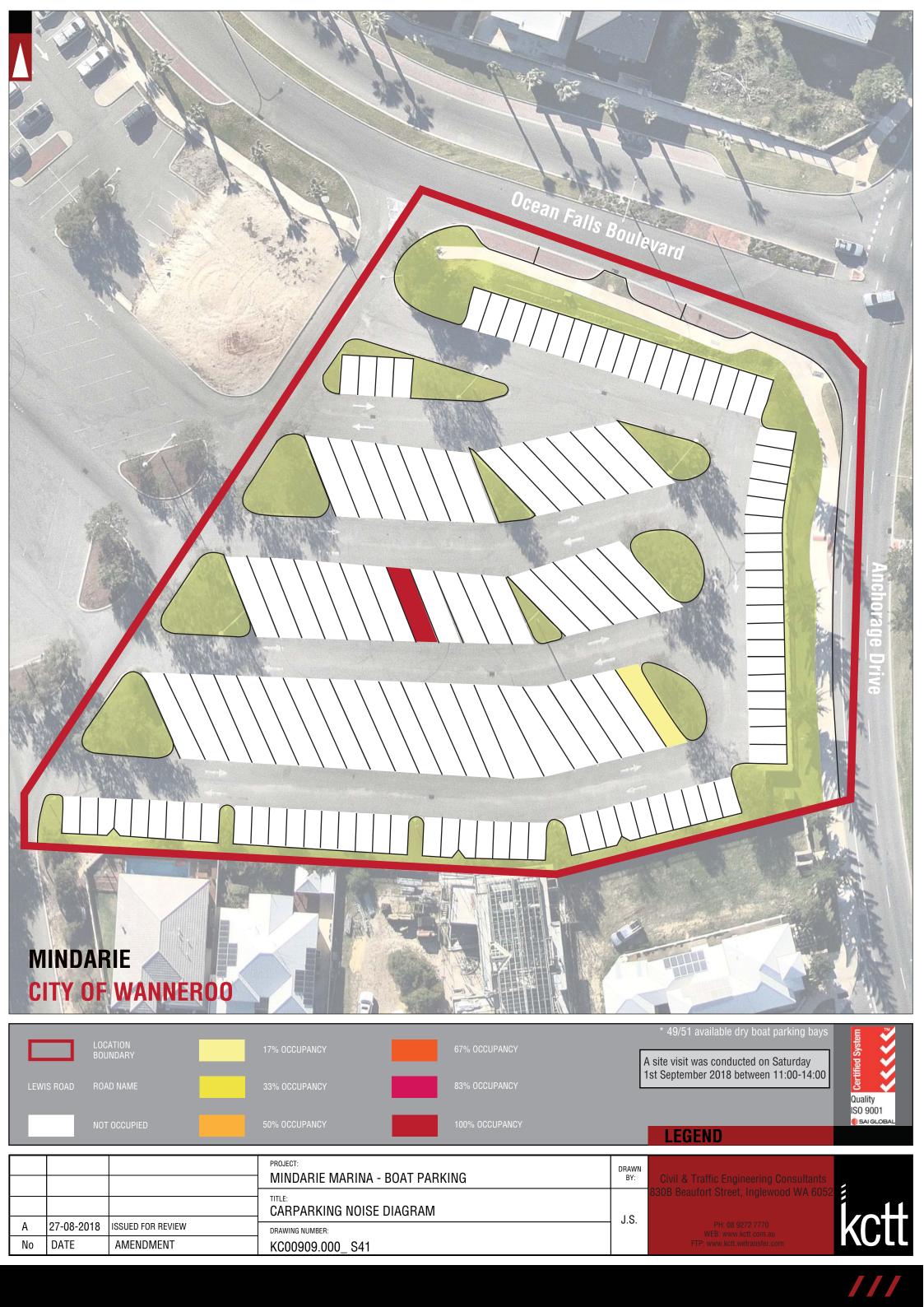
- The subject carpark was at least 90% unoccupied over the entire survey period
- Except for one parking bay on Saturday the 1st of September, 100% of the lots were observed to be greatly underutilise
- The adjacent ions were also observed to have generally low occupancy rates
- From the above points it can be concluded that the subject lot could be considered as effectively unoccupied

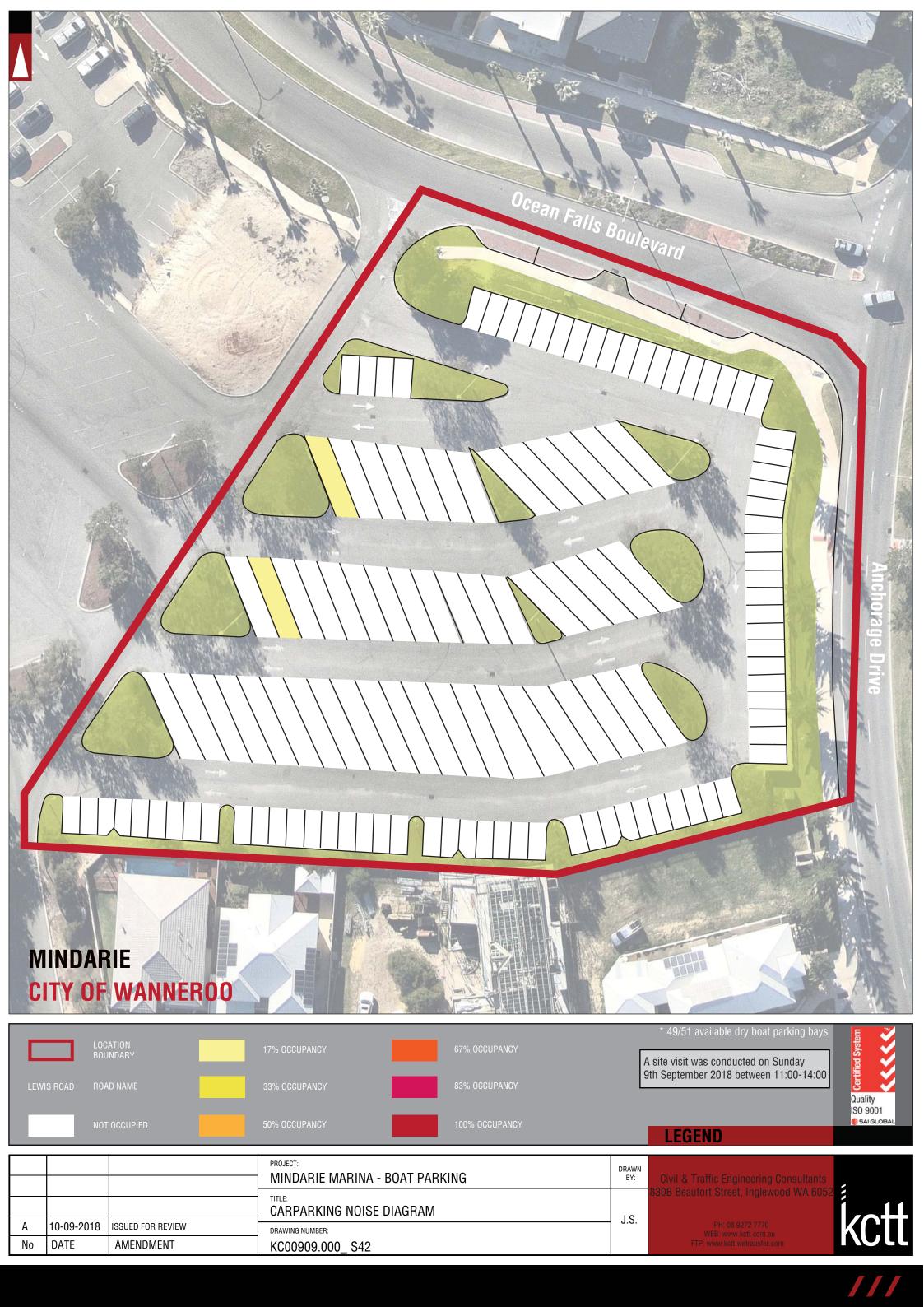


Appendix 1

Carparking Noise Diagrams







Appendix 2

Desktop Study







Notes:

Adjacent Lot

Subject Lot

- No vehicles observable in image for either lots.



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L

Adjacent Lot

Subject Lot

Notes:

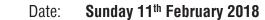
- Subject lot 1 vehicle with trailer in the dry boat bay and 2 vehicles in the standard lots
- Adjacent lot some utilisation for dry boat parking but also for standard (without trailer) parking



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Notes:

-

Subject Lot

Adjacent Lot

- No vehicles observable in either lots.



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Date:

Sunday 03rd December 2017





Adjacent Lot

Subject Lot

Notes:

- Subject lot 2 vehicles with trailers in the dry boat bays
- Adjacent lot mostly unoccupied, 6 vehicles with trailers.
- Closer to the marina notable utilisation of dry boat bays.



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Notes:

Adjacent Lot

- Subject lot - 9 vehicles with trailers, 4 with no trailers in the dry boat bays. 10 vehicles in the standard bays.

Subject Lot

- Adjacent lots - Some utilisation by vehicles with and without trailers.



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Date:

Sunday 16th October 2016





Adjacent Lot

Subject Lot

Notes:

- Subject lot 1 vehicle with trailer and one boat.
- Adjacent lot 2 vehicles with trailers.



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Date:

Sunday 15th November 2015





Notes:

Adjacent Lot - S

- Subject lot - 1 vehicle in the standard bay, no observable vehicles in dry boat bays.

Subject Lot

- Adjacent lot - 1 vehicle with trailer.



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Adjacent Lot

Subject Lot

Notes:

- No observable vehicles in either lot.



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Date:

Saturday 15th December 2012





Adjacent Lot

Subject Lot

Notes:

- Subject lot 3 vehicles with trailers in dry boat bays
- Adjacent lot 1 bay unoccupied, suggesting practical capacity at time of photo



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