TRANSPORT IMPACT STATEMENT

Lot 243 & 244 (No 44 & 46) Grand Ocean Entrance,

Burns Beach

October 2023

Rev D

kctt

HISTORY AND STATUS OF THE DOCUMENT

Revision	Date issued	Reviewed by	Approved by	Date approved	Revision type
Rev A	28.01.2021	M Kleyweg	M Kleyweg	19.01.2021	Issued for Review
Rev B	23.02.2021	M Kleyweg	M Kleyweg	23.02.2021	Waste vehicle information updated
Rev C	27.05.2021	M Kleyweg	M Kleyweg	27.05.2021	Proposed Layout Amended
Rev D	10.10.2023	M Kleyweg	M Kleyweg	11.10.2023	Proposed Layout Amended

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1. Executive Summary

Site Context

- The project location is Lot 243 & 244 (No. 44 & 46) Grand Ocean Entrance, Burns Beach.
- The proposed development is a childcare centre with a capacity for 57 children and 11 staff members.
- A secondary land use is proposed – a Coffee Shop for pedestrians. This land use will not generate any additional motor vehicle traffic and will not require separate parking provision, as it is intended for patrons arriving on foot.
- Currently, both subject lots are vacant.
- The proposed development will have an access / egress point to Broulee Lane.

Technical Findings

- The proposed development is expected to generate up to 250 vehicular trips per day; 46 vehicular trips per hour in the AM peak hour and 40 vehicular trips per day in the PM peak hour.
- According to the WAPC guidelines, this is a moderate impact to the surrounding network.
- Four major routes for accessing the development:
    - To the east via Broulee Lane > Whitehaven Avenue > Grand Ocean Entrance
    - To the west via Broulee Lane > Whitehaven Avenue > Grand Ocean Entrance
    - To the west via Broulee Lane
    - To the south via Broulee Lane > Whitehaven Avenue

Relationship with Policies

- According to the Child Care Premises Local Planning Policy, the proposed development requires 19 parking bays (11 bays for staff members and 8 bays for parents).
- The plans for the proposed development show a total of 17 car parking bays. As analysed further in the Section 2.7 of this Report, KCTT believe the car parking provision for the subject development can be considered adequate.
- Building Code of Australia ACROD Provision – the requirement for 1 ACROD bay will be met by the proposed development.
- The proposed development will provide 2 bicycle racks – meeting the requirements.

Conclusion

- A childcare centre for 57 children and 11 staff members is proposed.
- As stated above the additional traffic attracted to the subject site will be up to 250 vehicular trips per day and 46 vehicular trips in the peak hour.
- All three roads surrounding the subject site are classified as Access Roads as per MRWA classification with the maximum desirable volume of 3,000 vehicles per day. Both Whitehaven Avenue and Grand Ocean Entrance are below 3,000 VPD (2,244 VPD and 1,573 VPD respectively). Therefore, with the additional traffic from the subject site, these roads will remain under maximum desirable capacity.
- Other surrounding roads would absorb significantly less traffic than Grand Ocean Entrance, Whitehaven Avenue and Broulee Lane, moreover, the traffic would be dispersed so that the impact can be considered negligible.
- In summary KCTT believe that the proposed childcare centre will not have a negative impact on the surrounding road network.

2. Transport Impact Statement

2.1 Proposal

Germano Designs engaged KCTT to prepare a TIS for the proposed Childcare Centre at Lots 243 & 244 Grand Ocean Entrance.

The proposed development will have a capacity for 57 children and 11 staff members.

This report will primarily address the level impact of the proposed development and the requirements for integration of the proposed development with the surroundings, namely the existing and planned immediate road network.

2.2 Location

Lot Number	243 & 244
Street Number	44 & 46
Road Name	Grand Ocean Entrance
Suburb	Burns Beach
Description of Site	The subject site is currently vacant land within Burns Beach Structure Plan. The proposed land use is a childcare centre with a capacity for 57 children. There will be a secondary land use on the subject lot – a coffee shop for pedestrians. KCTT believe that this land use will not generate any motor vehicle traffic. Vehicular access to the development will be provided from Broulee Lane.

2.3 Technical Literature Used

Local Government Authority	City of Joondalup
Type of Development	Childcare Centre
Are the R-Codes referenced?	NO
Is the NSW RTA Guide to Traffic Generating Developments Version 2.2 October 2002 (referenced to determine trip generation / attraction rates for various land uses) referenced?	YES
Which WAPC Transport Impact Assessment Guideline should be referenced?	Volume 4 - Individual Developments Volume 5 - Technical Guidance
Are there applicable LGA schemes for this type of development?	YES
If YES, Nominate:	
Name and Number of Scheme	Local Planning Scheme No. 3
Are Austroads documents referenced?	YES
Is the Perth Transport Plan for 3.5 million and Beyond referenced?	NO

2.4 Land Uses

Are there any existing Land Uses	NO

Proposed Land Uses	
How many types of land uses are proposed?	Two
Nominate land use type and yield	Main Land Use: Childcare Centre - 57 children and 11 staff members (9 required educators for the specified age groups + 1 cook and 1 admin) Secondary Land Use: Coffee Shop for pedestrians

Are the proposed land uses complimentary with the surrounding land-uses?	YES

2.5 Local Road Network Information

How many roads front the subject site?	3

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

Road 1	
Road Name	Grand Ocean Entrance
Number of Lanes	two way, one lane (no linemarking), undivided
Road Reservation Width	17m
Road Pavement Width	7m
Classification	Access Road
Speed Limit	50kph
Bus Route	YES
If YES Nominate Bus Routes	471
On-street parking	YES

Road 2	
Road Name	Whitehaven Avenue
Number of Lanes	two way, one lane (no linemarking), undivided
Road Reservation Width	16m
Road Pavement Width	7m
Classification	Access Road
Speed Limit	50kph
Bus Route	YES
If YES Nominate Bus Routes	471
On-street parking	NO

Road 3

Road Name	Broulee Lane
Number of Lanes	two way, one lane (no linemarking), undivided
Road Reservation Width	7m
Road Pavement Width	5.5m
Classification	Access Road
Speed Limit	50kph
Bus Route	NO
On-street parking	NO

2.6 Traffic Volumes

Road Name	Location of Traffic Count	Vehicles Per Day (VPD)	Vehicles per Peak Hour (VPH)		Heavy Vehicle %	Date of Traffic Count	*If older than 3 years multiply with a growth rate*
			AM Peak Time - AM Peak VPH	PM Peak Time - PM Peak VPH	*If HV count is Not Available, are HV likely to be in higher volumes than generally expected?*		
Burns Beach Road	West of Marmion Avenue	10,373	07:45 – 843	17:00 – 1,080	5.6%	2017/ 2018	12,385 (3% annual growth rate to 2023)
Marmion Avenue	North of Burns Beach Road	25,554	07:45 – 2,245	15:15 – 2,207	7.0%	2021/ 2022	–
Whitehaven Avenue	South of Grand Ocean Entrance*	2,244	08:00 – 241	15:00 – 203	8.7%	Sep 2020	2,452 (3% annual growth rate to 2023)
Grand Ocean Entrance	East of Umina Way*	1,573	08:00 – 175	15:00 – 131	6.6%	May 2017	1,878 (3% annual growth rate to 2023)

Note - These traffic counts have been received from the City of Joondalup*

2.7 Vehicular Crash Information

Is Crash Data Available on Main Roads WA website?	YES

KCTT have checked the below locations for crash data in the below 5-year period. There were no crashes reported for locations 2 and 3.

Location 1	Intersection of Grand Ocean Entrance and Whitehaven Avenue
Location 2	Intersection of Whitehaven Avenue and Broulee Lane
Location 3	Broulee Lane
Period of crash data collection	01/01/2018 - 31/12/2022

Road / Intersection Name	SLK	Road Hierarchy	Speed Limit	Crash Statistics			
				No of KSI Crashes	No of Medical Attention Crashes	No of PDO Major Crashes	No of PDO Minor Crashes
Grand Ocean Entrance / Whitehaven Avenue	N/A	Access Road / Access Road	50kph / 50kph	0	1	1	0
No of MVKT Travelled at Location			approximately 2,500 VPD * 365 * 5 years * 0.3 km = 1.37 MVKT				
KSI Crash Rate			0 KSI crashes / 1.37 MVKT = 0 KSI crashes/MVKT				
All Crash Rate			2 crashes / 1.37 MVKT = 1.45 crashes/MVKT				
Comparison with Crash Density and Crash Rate Statistics			1.45 crashes/MVKT is lower than the network average of 1.98 crashes / MVKT.				

The following tables shows crash rates and crash densities in Perth Metropolitan area on local roads and state roads for the period from 2017 to 2022, as obtained from Main Roads WA on the 31st May 2022 by email request:

Crash Density and Crash Rate on Metropolitan Local Roads Network only

	All Crashes		Serious Injury Crashes (Fatal+Hospital)	
	Average Annual Crash Density (All Crashes/KM)	Average Annual Crash Rate (All Crashes/MVKT)	Average Annual Crash Density (Ser. Inj. Crashes/KM)	Average Annual Crash Rate (Ser. Inj. Crashes/MVKT)
Metro Local Roads - Midblock	2.51	0.95	0.12	0.05
Metro Local Roads - All	5.23	1.98	0.24	0.09

Note: Based on 5-years data for the period 2017 to 2021.

2.8 Vehicular Parking

Local Government	City of Joondalup
Local Government Document Utilised	Child Care Premises Local Planning Policy

Description of Parking Requirements in accordance with Scheme:

1 per employee plus 8 per 57-64 children

*Coffee Shop is intended for pedestrians only. Potentially, patrons could use the existing on-street parking to park and purchase coffee on-foot. Parking at the subject site will not be possible for coffee shop visitors.

Calculation of Parking

Land Use	Requirements	Yield	Total Parking
Childcare Centre	1 per employee	11 staff members	11
	8 per 57-64 children	57 children	8
		Total Car Parking Requirement	**19**

Total Volume of Parking Provided by Proponent	**17**

Justification

According to the Child Care Premises Local Planning Policy, the proposed development requires 19 parking bays (11 bays for staff members and 8 bays for parents).

The plans show 17 parking bays proposed, resulting in a shortfall of 2 parking bays. KCTT believe that the following points are adequate for justifying the 2 bays shortfall:

- Grand Ocean Entrance provides on-street parking directly adjacent to the subject site. These bays are likely to be used by parents. This section of parking, directly along the property line of the subject site is suitable for 3 passenger vehicles (18m long parking strip).
- Bus route 471 has a bus stop 70m from the proposed development.
- There are 2 bicycle racks provided for staff members.
- Childcare centres rarely operate at maximum number of children.
- The subject Childcare centre is located in a large residential area; parents working from home might walk with their children to and from the centre.

Estimation of peak parking demand for visitors

KCTT have derived the children arrival assumptions through many years of practice and research in this field that our office completed. We have worked with several established childcare providers who have provided sign-in data for a full week. The percentages outlined below have emerged as the current average arrival/departure pattern. As per our transport impact assessment, the estimated average dwell time is 10 minutes, which is significantly higher than the dwell time suggested by NSW RTA Guide to Traffic Generating Developments. While this pattern shows that up to 95% of children attend for the day (as practically recorded), the distribution still does not allow for siblings attending the centre. Furthermore, the distribution assumes that all children in attendance are driven to the childcare in a separate personal vehicle (not walked or brought on bicycles); therefore, the distribution below has a degree of conservativism. In our previous experience, we have come across data indicating that siblings usually make up 15-25% of attendees. More than one child will be brought in a single vehicle in these cases, reducing the parking requirement.

The table below was developed on the following assumptions:

- The arrival percentage is derived from data provided to KCTT and described above.
- It was assumed there were no siblings in the centre.

- It was assumed that all children in attendance would be driven to the centre.

Sign-in Time	Extracted Arrival Percentages (of the maximum number of children)	Expected Number of Children Signing In	Parking demand (assumed dwell time 10 minutes per vehicle)	Remaining parking bays (17 bays total)
07:00 - 07:30	13.97%	8	2	15
07:30 - 08:30	**40.55%**	**23**	**4**	**13**
08:30 - 09:30	30.68%	17	3	14
09:30 - 10:30	7.67%	4	1	16
After 10:30	1.37%	1	1	16
Total:	94.25%	54 children (57 children = 100% capacity)		

The table above shows that the parking demand is the strongest in the period 07.30 - 08:30.

When applied to the subject development with the assumed dwell time of 10 minutes per vehicle, the subject childcare centre would require a maximum of 4 car bays to cater for the expected parking demand of the pick-up / drop off function. Therefore, there will be 2 additional bays (a total of 6 bays) for parents in rare situations where more than the calculated maximum would be required.

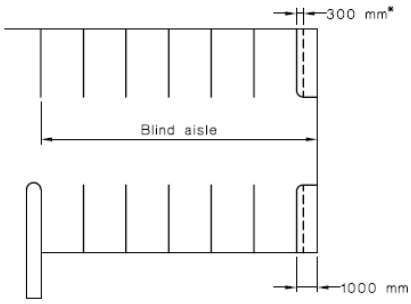
The remaining 11 parking bays can cater for staff parking demand. Therefore, the total car parking provision can be considered sufficient to adequately cater for parking requirements of the proposed development.

2.9 Compliance with AS2890.1:2004 and AS2890.6

Number of Parking Bays on-site	17
Are Austroads documents referenced?	YES
If YES, Nominate:	• Australian/New Zealand Standard, Parking facilities, Part 1: Off-street car parking - Originated as AS 2890.1—1986. • Australian/New Zealand Standard, Parking facilities, Part 6: Off-street parking for people with disabilities - Originated as AS2890.6
Proposed development User Class	User Class 1A (Residential, domestic and employee parking)
	User Class 4

AS2890.1:2004 Off-street car parking AS2890.6 Off-street parking for people with disabilities						
Parking Bay Type	Parking Bay Length		Parking Bay Width		Aisle Width	
	Required	Proposed	Required	Proposed	Required	Proposed
All bays at 90°	5.4m	5.4m	2.4m	2.5m	5.8m	6m
ACROD Parking	5.4m	5.4m	2.4m–ACROD 2.4m–shared space	2.5m–ACROD 2.5m–shared space	5.8m	6m

Name the other requirements in the AS2890.1:2004 document.	*At blind aisles, the aisle shall be extended a minimum of 1 m beyond the last parking space, as shown in Figure 2.3, and the last parking space widened by at least 300 mm if it is bounded by a wall or fence.*



*Additional widening required if there is a wall or fence at the side of the last space, see Clause 2.4.1(b)(ii).

DIMENSIONS IN MILLIMETRES

FIGURE 2.3 BLIND AISLE EXTENSION

	Blind aisle	extended by a minimum of 1 m	√
	Reversing bay	provided	√
Does the parking area meet the requirements set in AS2890.1:2004?	KCTT reviewed the layout for the proposed development and conclude that car parking bays dimensions and aisle width comply with the Australian Standard AS/NZS 2890.1/2004.		
Does the parking area meet the requirements set in AS2890.6?	YES		

Have Vehicle Swept Paths been checked for Parking?	YES
If YES, provide description of performance:	
The parking area was checked with a B99 passenger vehicle (5.2m). No navigability issues have been found.	

2.10 Bicycle Parking

Local Government: City of Joondalup

Reference Document Utilised: Child Care Premises Local Planning Policy

Description of Parking Requirements in accordance with Scheme:

1 per 8 employees

Parking Requirement in accordance with regulatory documents

Land Use	Requirements	Yield	Total Parking
Childcare Centre	1 per 8 employees	11	2
	Total Volume of Bicycle Parking Required		2
	Total Volume of Bicycle Parking Provided by Proponent		2

Justification

The proposed development will provide 2 bicycle racks – meeting the requirement for 2 bicycle bays.

2.11 ACROD Parking

Class of Building	Class 9b - an assembly building, including a trade workshop, laboratory or the like in a primary or secondary school, but excluding any other parts of the building that are of another Class
Does this building class require specific provision of ACROD Parking?	YES
Reference Document Utilised	Building Code of Australia
Description of Parking Requirements:	
Class 9b — (b) Other assembly building — (i) up to 1000 carparking spaces; - 1 space for every 50 carparking spaces or part thereof	

Parking Requirement in accordance with regulatory documents

Land Use	Requirements	Yield	Total Parking
Childcare Centre	*1 space for every 50 carparking spaces or part thereof*	17	1
	Total Volume of ACROD Parking Provided by Proponent		1

Justification

One accessible parking bay provided as required.

2.12 Delivery and Service Vehicles

Guideline Document used as reference	NSW RTA Guide to Traffic Generating Developments

Requirements

Other uses - 1 space per 2,000m2

Parking Requirement in accordance with regulatory documents

Land Use	Minimum Requirements	Yield	Total Parking
Childcare Centre	*1 space per 2,000m2*	803.74 m^2	1
	Total Volume of Service and Delivery Parking Provided by Proponent		N/A

Justification

Waste collection is expected to be conducted from the Broulee Lane verge. Waste collection should be organised outside of development peak operating hours to ensure safety of the patrons and other road users.

2.13 Calculation of Development Generated / Attracted Trips

What are the likely hours of operation?	Childcare Centre – 06:30-18:30
What are the likely peak hours of operation?	07:00 - 08:00 and 16:00 - 17:00
Do the development generated peaks coincide with existing road network peaks?	NO
Guideline Document Used	**NSW RTA Guide to Traffic Generating Developments**
Rates from above document:	***Child Day Care*:** • *AM Peak - 0.8 VPH per child* • *PM Peak - 0.7 VPH per child* It should be noted that these rates are given for a 2-hour peak period. For the purposes of this report KCTT assumes that the two-hour traffic volume will be attracted to the development in a one-hour period which will represent the peak for the subject site.

Given that the WAPC Transport Assessment Guidelines and NSW RTA Guide to Traffic Generating Developments do not offer daily vehicular trip generation rate for the proposed land use KCTT have assumed the following to apply:

Childcare centre

Vehicular daily trips can be assumed to be 4 VPD per child and 2 VPD per employee. Each parent will make 2 vehicular trips when dropping off the child to the day care centre and 2 vehicular trips when picking the child up. Employees will make 1 vehicular trip arriving to work, and another vehicular trip when leaving work.
In the calculations below, a conservative approach has been applied showing the theoretical maximum number of children, under assumption that all children are driven to school and there are no siblings in the centre.

*Note: The proposed Coffee Shop is a secondary land use which will be predominantly visited by patrons on foot. Potentially, patrons will park their vehicles at the existing on-street parking and purchase their coffee on-foot. However, this traffic is already present in the network, as coffee shop will attract only passing traffic. Therefore, no additional motor vehicle traffic will be generated by this secondary land use.

Land Use Type	Rate above	Yield	Daily Traffic Generation	Peak Hour Traffic Generation	
				AM	PM
Childcare Centre	*Daily - 4 VPD / child & 2 VPD / staff member* *AM Peak - 0.8 VPH per child* *PM Peak - 0.7 VPH per child*	57 children	228	46	40
		11 staff members	22	-	-
		Total:	**250**	**46**	**40**

Does the site have existing trip generation / attraction? NO

What is the total impact of the new proposed development?	With the additional 250 daily vehicular trips, 46 vehicle trips in the AM peak and 40 vehicle trips in the PM peak the proposed development would have a moderate impact on the surrounding road network, as per WAPC Guidelines. KCTT believe surrounding road network can successfully accommodate additional traffic from the proposed development.

2.14 Traffic Flow Distribution

How many routes are available for access / egress to the site?	Four (4)
Route 1	
Provide details for Route No 1	To the east via Broulee Lane > Whitehaven Avenue > Grand Ocean Entrance
Percentage of Vehicular Movements via Route No 1	35% [88 VPD; AM 16 VPH; PM 14 VPH]
Route 2	
Provide details for Route No 2	To the west via Broulee Lane > Whitehaven Avenue > Grand Ocean Entrance
Percentage of Vehicular Movements via Route No 2	20% [50 VPD; AM 10 VPH; PM 8 VPH]
Route 3	
Provide details for Route No 3	To the west via Broulee Lane
Percentage of Vehicular Movements via Route No 3	5% [12 VPD; AM 2 VPH; PM 2 VPH]
Route 4	
Provide details for Route No 4	To the south via Broulee Lane > Whitehaven Avenue
Percentage of Vehicular Movements via Route No 4	40% [100 VPD; AM 18 VPH; PM 16 VPH]

Note - For a more detailed plans of the estimated vehicular traffic volumes and distribution please refer to the plans provided in Appendix 2.

2.15 Vehicle Crossover Requirements

Are vehicle crossovers required onto existing road networks?	YES
How many existing crossovers?	None
How many proposed crossovers?	One full movement to/from Broulee Lane
If there are greater numbers of new crossovers, than existing, provide justification:	
There are no existing developments on subject lots.	
How close are proposed crossovers to existing intersections?	15m
Does this meet existing standards?	YES

2.16 Public Transport Accessibility

How many bus routes are within 400 metres of the subject site?			One (1)
How many rail routes are within 800 metres of the subject site?			None
Bus Route	Description	Peak Frequency	Off-Peak Frequency
471	Joondalup - Burns Beach via Currambine	20 minutes	60 minutes
Walk Score Rating for Accessibility to Public Transport			
27	Some Transit. A few nearby public transportation options.		
Is the development in a Greenfields area?			NO

2.17 Pedestrian Infrastructure

Describe existing local pedestrian infrastructure within a 400m radius of the site:

Classification	**Road Name**
" Other Shared Path (Shared by Pedestrians and Cyclists)"	Grand Ocean Entrance; Whitehaven Avenue (short section south of Broulee Lane); Within the park surrounded by Windmill Circuit
Does the site have existing pedestrian facilities	YES
Does the site propose to improve pedestrian facilities?	NO
What is the Walk Score Rating?	
11	Car-Dependent. Almost all errands require a car.

2.18 Cyclist Infrastructure

Are there any PBN Routes within an 800m radius of the subject site?	YES
If YES, describe:	
Classification	**Road Name**
" High Quality Shared Path"	Along the shoreline and Beachside Park;
" Other Shared Path (Shared by Pedestrians and Cyclists)"	Grand Ocean Entrance; Whitehaven Avenue (short section south of Broulee Lane); Within the park surrounded by Windmill Circuit; Burns Beach Road; Ocean Entrance; Kallatina Drive; Bramston Vista; Watcombe Avenue; Burleigh Drive; Cheviot Way; McIntyre Avenue.
" Good Road Riding Environment"	Watcombe Avenue
" Bicycle Lanes or Sealed Shoulder Either Side"	Grand Ocean Entrance
Are there any PBN Routes within a 400m radius of the subject site?	YES
If YES, describe:	
Classification	**Road Name**
" Other Shared Path (Shared by Pedestrians and Cyclists)"	Grand Ocean Entrance; Whitehaven Avenue (short section south of Broulee Lane); In the park surrounded by Windmill Circuit
" Bicycle Lanes or Sealed Shoulder Either Side"	Grand Ocean Entrance
Does the site have existing cyclist facilities?	YES
Does the site propose to improve cyclist facilities?	YES
If YES, describe the measures proposed.	
Addition of 2 bicycle racks.	

2.19 Site-Specific Issues and Proposed Remedial Measures

How many site-specific issues need to be discussed?	One (1)
Site-Specific Issue No 1	Parking Provision
Remedial Measure / Response	According to the Child Care Premises Local Planning Policy, the proposed development requires 19 parking bays (11 bays for staff members and 8 bays for parents). The plans show 17 parking bays proposed, resulting in a shortfall of 2 parking bays. KCTT believe that the following points are adequate for justifying the 2 bays shortfall: • Grand Ocean Entrance provides on-street parking directly adjacent to the subject site. These bays are likely to be used by parents. This section of parking, directly along the property line of the subject site is suitable for 3 passenger vehicles (18m long parking strip). • Bus route 471 has a bus stop 70m from the proposed development. • There are 2 bicycle racks provided for staff members. • Childcare centres rarely operate at maximum number of children. • The subject Childcare centre is located in a large residential area; parents working from home might walk with their children to and from the centre. • For further justification KCTT have assumed a conservative 10 minutes of dwell time (According to RTA NSWA Guide to Traffic Generating Developments, average dwell time for vehicles during drop off is 6.8 minutes), all 57 children are present and driven to the childcare and there are no siblings. When applied to the subject development with the assumed dwell time of 10 minutes per vehicle, the subject childcare centre would require a maximum of 4 car bays to cater for the expected parking demand of the pick-up / drop off function. 2 additional on-site bays will be available for parents. The remaining 11 parking bays can cater for staff parking demand. Therefore, the total car parking provision can be considered sufficient to adequately cater for parking requirements of the proposed development (assuming that the full requirement of 11 bays is allocated to staff members).

Appendix 2

Transport Planning and Traffic Plans

CITY OF JOONDALUP

KINROSS

FALKLANDS PARK

800m

Marmion Avenue

Burleigh Drive

Waterhouse Meander

400m

MCINTYRE PARK

McIntyre Avenue

SOUTHPORT PARK

Grand Ocean Entrance

Mattingleys Approach

GRAND OCEAN PARK

BURNS BEACH

BENGELLO PARK

Broulee Lane

Watcombe Avenue

Lillico Avenue

Bramston Vista

BEACHSIDE PARK

BRAMSTON PARK

FUTURE BURNS BEACH PRIMARY SCHOOL (2022)

Beachside Drive

Whitehaven Avenue

Burns Beach Road

Delgado Parade

JACK KIKERO'S COMMUNITY HALL

ATMA PARK

Ocean Entrance

Kallatina Drive

BURNS BEACH SUNSET VILLAGE HOLIDAY & LEISURE PARK

Kurrawa Way

ILUKA PLAZA

Burns Beach Road

PARKS AND RECREATION	ROAD
WATERWAYS	Hay Street — STREET NAME
PUBLIC PURPOSE	LOCATION BOUNDARY
SHOPPING AREA	DISTANCE FROM LOCATION
CITY OF JOONDALUP	LOCAL GOVERNMENT NAME
BURNS BEACH	SUBURB NAME

LEGEND

No	DATE	AMENDMENT
A	23-12-2020	ISSUED FOR REVIEW

PROJECT: LOT 243 & 244 (NO 44 & 46) GRAND OCEAN ENTRANCE, BURNS BEACH

TITLE: LOCALITY PLAN - 800M RADIUS

DRAWING NUMBER: KC01230.000_ S01

DRAWN BY: A.M.

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CITY OF JOONDALUP

KINROSS

FALKLANDS PARK

800m

400m

Marmion Avenue

Burleigh Drive

Waterhouse Meander

MCINTYRE PARK

McIntyre Avenue

SOUTHPORT PARK

GRAND OCEAN PARK

Grand Ocean Entrance

Matinglevs Approach

BURNS BEACH

BENGELLO PARK

Broulee Lane

Watcombe Avenue

Lillico Avenue

Bramston Vista

BEACHSIDE PARK

BRAMSTON PARK

FUTURE BURNS BEACH PRIMARY SCHOOL (2022)

Beachside Drive

Whitehaven Avenue

Burns Beach Road

Delgado Parade

JACK RIKERO'S COMMUNITY HALL

ATMA PARK

Ocean Entrance

Kallatina Drive

BURNS BEACH SUNSET VILLAGE HOLIDAY & LEISURE PARK

Kurrawa Way

ILUKA PLAZA

Burns Beach Road

PARKS AND RECREATION	ROAD
WATERWAYS	Hay Street — STREET NAME
PUBLIC PURPOSE	LOCATION BOUNDARY
SHOPPING AREA	DISTANCE FROM LOCATION
CITY OF JOONDALUP	LOCAL GOVERNMENT NAME
BURNS BEACH	SUBURB NAME
HIGH QUALITY SHARED PATH	
OTHER SHARED PATH (SHARED BY PEDESTRIANS & CYCLISTS)	
GOOD ROAD RIDING ENVIRONMENT	
BICYCLE LANES OR SEALED SHOULDER EITHER SIDE	
GRADIENT ARROW	
WALKING TRAIL	

LEGEND

No	DATE	AMENDMENT
A	23-12-2020	ISSUED FOR REVIEW

PROJECT: LOT 243 & 244 (NO 44 & 46) GRAND OCEAN ENTRANCE, BURNS BEACH

TITLE: BICYCLE NETWORK PLAN - 800M RADIUS

DRAWING NUMBER: KC01230.000_ S02

DRAWN BY: A.M.

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CITY OF JOONDALUP

KINROSS

FALKLANDS PARK

800m

Marmion Avenue

Burleigh Drive

Waterhouse Meander

400m

MCINTYRE PARK

McIntyre Avenue

SOUTHPORT PARK

Burleigh Drive

471

Grand Ocean Entrance

Mattingleys Approach

GRAND OCEAN PARK

BURNS BEACH

Grand Ocean Entrance

471

BENGELLO PARK

Watcombe Avenue

Grand Ocean Entrance

Brownlee Lane

Lillico Avenue

Bramston Vista

BEACHSIDE PARK

BRAMSTON PARK

FUTURE BURNS BEACH PRIMARY SCHOOL (2022)

Beachside Drive

Whitehaven Avenue

Burns Beach Road

470

Delgado Parade

JACK KIKERO'S COMMUNITY HALL

ATMA PARK

Kallatina Drive

Ocean Entrance

T

470 471

BURNS BEACH SUNSET VILLAGE HOLIDAY & LEISURE PARK

Kurrawa Way

470

Burns Beach Road

ILUKA PLAZA

PARKS AND RECREATION

WATERWAYS

PUBLIC PURPOSE

SHOPPING AREA

ROAD

Hay Street — STREET NAME

LOCATION BOUNDARY

DISTANCE FROM LOCATION

CITY OF JOONDALUP — LOCAL GOVERNMENT NAME

BURNS BEACH — SUBURB NAME

BUS ROUTES

BUS STOPS

103 — BUS ROUTE NUMBER

NOTE : FOR MORE INFORMATION REGARDING THE DESCRIPTION OF BUS ROUTES AND THEIR INDICATIVE PEAK AND OFF-PEAK FREQUENCIES REFER TO THE REPORT.

MANAGEMENT SYSTEMS REGISTERED TO ISO 9001

LEGEND

No	DATE	AMENDMENT
A	23-12-2020	ISSUED FOR REVIEW

PROJECT: LOT 243 & 244 (NO 44 & 46) GRAND OCEAN ENTRANCE, BURNS BEACH

TITLE: PUBLIC TRANSPORT PLAN - 800M RADIUS

DRAWING NUMBER: KC01230.000_ S03

DRAWN BY: A.M.

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CITY OF JOONDALUP

KINROSS

FALKLANDS PARK

800m

Marmion Avenue

Burleigh Drive

Waterhouse Meander

400m

MCINTYRE PARK

McIntyre Avenue

SOUTHPORT PARK

Grand Ocean Entrance

Matinglevs Approach

GRAND OCEAN PARK

BURNS BEACH

BENGELLO PARK

Broulee Lane

Watcombe Avenue

Lillico Avenue

Bramston Vista

BEACHSIDE PARK

BRAMSTON PARK

FUTURE BURNS BEACH PRIMARY SCHOOL (2022)

Beachside Drive

Whitehaven Avenue

Burns Beach Road

Delgado Parade

JACK RIKERO'S COMMUNITY HALL

ATMA PARK

Ocean Entrance

Kallatina Drive

BURNS BEACH SUNSET VILLAGE HOLIDAY & LEISURE PARK

Kurrawa Way

Burns Beach Road

ILUKA PLAZA

PARKS AND RECREATION

WATERWAYS

PUBLIC PURPOSE

SHOPPING AREA

ROAD

Hay Street — STREET NAME

LOCATION BOUNDARY

DISTANCE FROM LOCATION

CITY OF JOONDALUP — LOCAL GOVERNMENT NAME

BURNS BEACH — SUBURB NAME

HIGH QUALITY SHARED PATH

OTHER SHARED PATH (SHARED BY PEDESTRIANS & CYCLISTS)

PEDESTRIAN PATH

WALKING TRAIL

LEGEND

No	DATE	AMENDMENT
A	23-12-2020	ISSUED FOR REVIEW

PROJECT: LOT 243 & 244 (NO 44 & 46) GRAND OCEAN ENTRANCE, BURNS BEACH

TITLE: PEDESTRIAN PATHS PLAN - 800M RADIUS

DRAWING NUMBER: KC01230.000_ S04

DRAWN BY: A.M.

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CITY OF JOONDALUP

KINROSS

FALKLANDS PARK

800m

400m

Marmion Avenue

Burleigh Drive

Waterhouse Meander

McIntyre Avenue

MCINTYRE PARK

SOUTHPORT PARK

25,554 AM 07:45 - 2,245 PM 15:15 - 2,207 21/22
NORTH OF BURNS BEACH ROAD

1,573 AM 08:00 –175 PM 15:00 –131 2017
EAST OF UMINA WAY

Grand Ocean Entrance

Mattingleys Approach

GRAND OCEAN PARK

BURNS BEACH

BENGELLO PARK

Broulee Lane

Lillico Avenue

Watcombe Avenue

Bramston Vista

2,244 AM 08:00 –241 PM 15:00 –203 2020
SOUTH OF GRAND OCEAN ENTRANCE

BEACHSIDE PARK

Beachside Drive

Whitehaven Avenue

FUTURE BURNS BEACH PRIMARY SCHOOL (2022)

BRAMSTON PARK

Burns Beach Road

10,373 AM 07:45 - 843 PM 17:00 - 1,080 17/18
WEST OF MARMION AVENUE

Delgado Parade

JACK KIKERO'S COMMUNITY HALL

ATMA PARK

Ocean Entrance

Kallatina Drive

BURNS BEACH SUNSET VILLAGE HOLIDAY & LEISURE PARK

Kurrawa Way

ILUKA PLAZA

Burns Beach Road

LEGEND

PARKS AND RECREATION	ROAD
WATERWAYS	Hay Street — STREET NAME
PUBLIC PURPOSE	LOCATION BOUNDARY
SHOPPING AREA	DISTANCE FROM LOCATION
CITY OF JOONDALUP	LOCAL GOVERNMENT NAME
BURNS BEACH	SUBURB NAME
5,512	NUMBER OF VEHICLES PER DAY
AM 1145 – 381 PM 1630 – 480	NUMBER OF VEHICLES PER AM PEAK HOUR NUMBER OF VEHICLES PER PM PEAK HOUR
2014	YEAR
EAST OF HARLOW ROAD	LOCATION

No	DATE	AMENDMENT
B	04-10-2023	INFORMATION UPDATED
A	19-01-2021	ISSUED FOR REVIEW

PROJECT: LOT 243 & 244 (NO 44 & 46) GRAND OCEAN ENTRANCE, BURNS BEACH

TITLE: EXISTING TRAFFIC COUNTS - 800M RADIUS

DRAWING NUMBER: KC01230.000_ S05

DRAWN BY: N.M.

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CITY OF JOONDALUP

Rundle Link

Grand Ocean Entrance

50

88

138

Whitehaven Avenue

250

Figtree Lane

250

238

12

Broulee Lane

100

LOCATION BOUNDARY

ROAD (VARIED WITH ROAD WIDTH)

Lewis Road ROAD NAME

1,389 Total Expected Traffic Generation from the proposed development

503 Total Expected Traffic Generation from Subject Site on the specific section of road - **IN and OUT direction**

Traffic Flow IN Direction

Traffic Flow OUT Direction

NOTE: THE PLAN IS COURTEOUSY OF GERMANO DESIGNS

LEGEND

No	DATE	AMENDMENT
C	04-10-2022	PROPOSED LAYOUT AMENDED
B	27-05-2021	PROPOSED LAYOUT AMENDED
A	28-01-2021	ISSUED FOR REVIEW

PROJECT: LOT 243 & 244 (NO 44 & 46) GRAND OCEAN ENTRANCE, BURNS BEACH

TITLE: TRAFFIC FLOW DIAGRAM

DRAWING NUMBER: KC01230.000_ S06

DRAWN BY: N.M.

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CITY OF JOONDALUP

Rundle Link

Grand Ocean Entrance

Whitehaven Avenue

Figtree Lane

Broulee Lane

46

23

22

1

22

13

22

9

13

1

22

9

LOCATION BOUNDARY

ROAD (VARIED WITH ROAD WIDTH)

Lewis Road ROAD NAME

000 Traffic Flow IN Direction

000 Traffic Flow OUT Direction

1,389 Total Expected Traffic Generation from the proposed development - AM peak

NOTE: THE PLAN IS COURTEOUSY OF GERMANO DESIGNS

LEGEND

No	DATE	AMENDMENT
C	04-10-2022	PROPOSED LAYOUT AMENDED
B	27-05-2021	PROPOSED LAYOUT AMENDED
A	28-01-2021	ISSUED FOR REVIEW

PROJECT: LOT 243 & 244 (NO 44 & 46) GRAND OCEAN ENTRANCE, BURNS BEACH

TITLE: TRAFFIC FLOW DIAGRAM - AM PEAK

DRAWING NUMBER: KC01230.000_ S07

DRAWN BY: N.M.

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CITY OF JOONDALUP

Rundle Link

Grand Ocean Entrance

Whitehaven Avenue

Figtree Lane

Broulee Lane

40

20

19

1

11

19

8

11

8

1

19

LOCATION BOUNDARY

ROAD (VARIED WITH ROAD WIDTH)

Lewis Road ROAD NAME

000 / 000 / 000 / 000 Traffic Flow IN Direction

000 / 000 / 000 / 000 Traffic Flow OUT Direction

1,389 Total Expected Traffic Generation from the proposed development - PM peak

NOTE: THE PLAN IS COURTEOUSY OF GERMANO DESIGNS

LEGEND

No	DATE	AMENDMENT
C	04-10-2022	PROPOSED LAYOUT AMENDED
B	27-05-2021	PROPOSED LAYOUT AMENDED
A	28-01-2021	ISSUED FOR REVIEW

PROJECT: LOT 243 & 244 (NO 44 & 46) GRAND OCEAN ENTRANCE, BURNS BEACH

TITLE: TRAFFIC FLOW DIAGRAM - PM PEAK

DRAWING NUMBER: KC01230.000_ S08

DRAWN BY: N.M.

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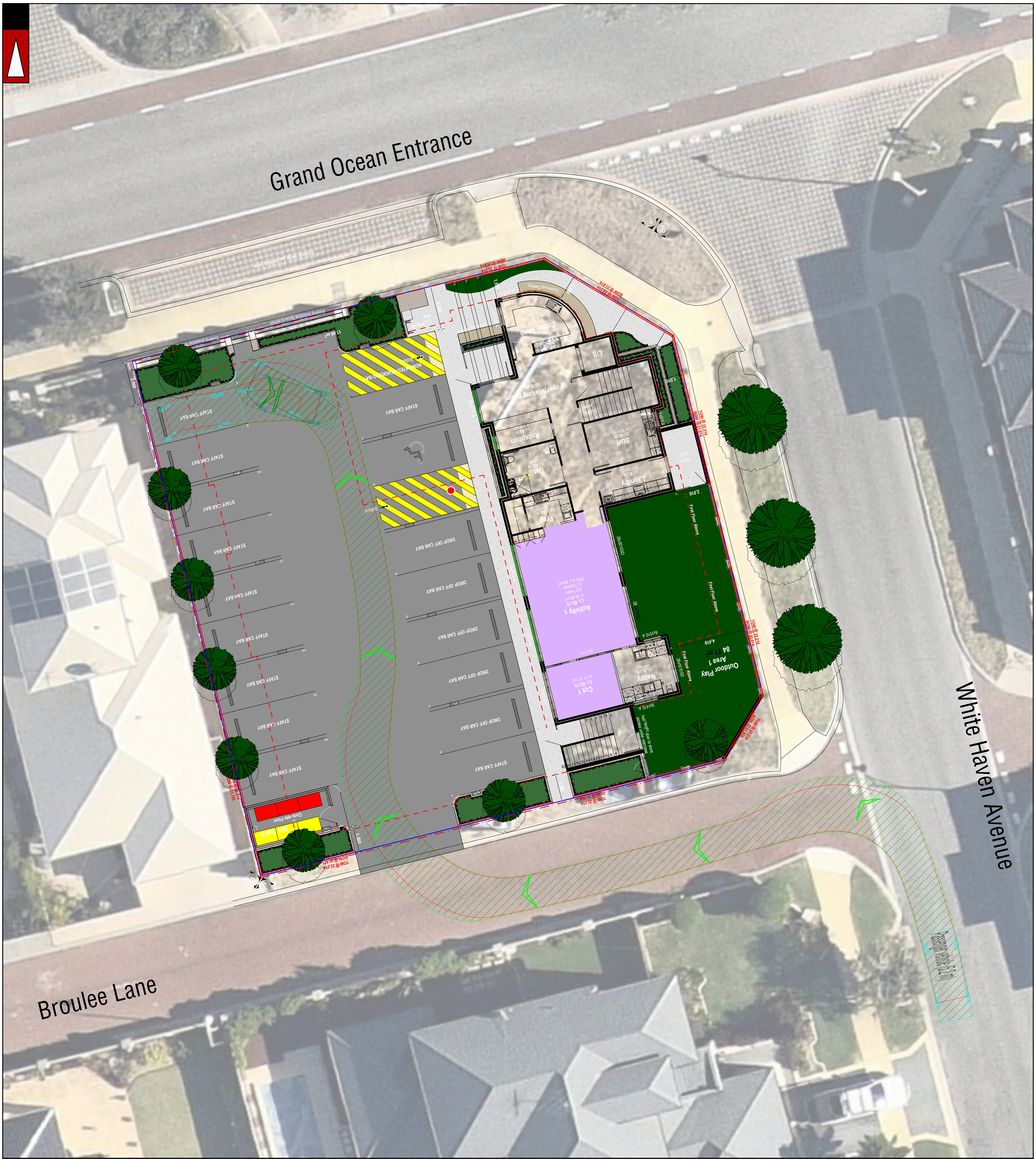
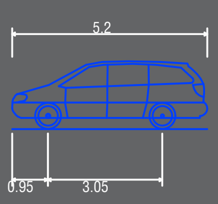
Appendix 3

Vehicle Turning Circle Plan



Passenger vehicle (5.2 m)	
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.804m
Min Body Ground Clearance	0.295m
Track Width	1.840m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	6.300m



- Lot boundary
- Wheel Path (Forward Vehicle Motion)
- Vehicle Chasis Envelope (Forward Vehicle Motion)
- Wheel Path (Reverse Vehicle Motion)
- Vehicle Chasis Envelope (Reverse Vehicle Motion)

LEGEND

NO	DATE	AMENDMENT
C	04-10-2023	PROPOSED LAYOUT AMENDED
B	27-05-2021	PROPOSED LAYOUT AMENDED
A	28-01-2021	ISSUED FOR REVIEW

PROJECT: No. 44 & 46 Grand Ocean Entrance, Burns Beach

TITLE: Vehicle Turning Circle Plan - B99 Passenger Vehicle (5.2m)

DRAWING NUMBER: KC01230.000_S20

DRAWN BY: N.M.

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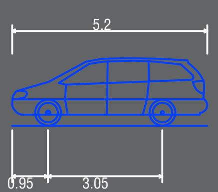
LEGEND



Passenger vehicle (5.2 m)	
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.804m
Min Body Ground Clearance	0.295m
Track Width	1.840m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	6.300m

- Lot boundary
- Wheel Path (Forward Vehicle Motion)
- Vehicle Chasis Envelope (Forward Vehicle Motion)
- Wheel Path (Reverse Vehicle Motion)
- Vehicle Chasis Envelope (Reverse Vehicle Motion)

NO	DATE	AMENDMENT
C	04-10-2023	PROPOSED LAYOUT AMENDED
B	27-05-2021	PROPOSED LAYOUT AMENDED
A	28-01-2021	ISSUED FOR REVIEW

PROJECT: No. 44 & 46 Grand Ocean Entrance, Burns Beach

TITLE: Vehicle Turning Circle Plan - B99 Passenger Vehicle (5.2m)

DRAWING NUMBER: KC01230.000_S21

DRAWN BY: N.M.

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kctt

Grand Ocean Entrance

Broulee Lane

White Haven Avenue

Passenger vehicle (5.2 m)	
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.804m
Min Body Ground Clearance	0.295m
Track Width	1.840m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	6.300m

- Lot boundary
- Wheel Path (Forward Vehicle Motion)
- Vehicle Chasis Envelope (Forward Vehicle Motion)
- Wheel Path (Reverse Vehicle Motion)
- Vehicle Chasis Envelope (Reverse Vehicle Motion)

LEGEND

NO	DATE	AMENDMENT
C	04-10-2023	PROPOSED LAYOUT AMENDED
B	27-05-2021	PROPOSED LAYOUT AMENDED
A	28-01-2021	ISSUED FOR REVIEW

PROJECT:
No. 44 & 46 Grand Ocean Entrance, Burns Beach

TITLE:
Vehicle Turning Circle Plan - B99 Passenger Vehicle (5.2m)

DRAWING NUMBER:
KC01230.000_S22

DRAWN BY:
N.M.

Civil & Traffic Engineering Consultants
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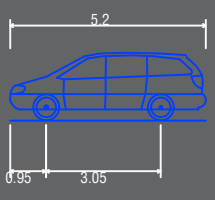
WEB: www.kctt.com.au

Grand Ocean Entrance

White Haven Avenue

Broulee Lane



Passenger vehicle (5.2 m)	
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.804m
Min Body Ground Clearance	0.295m
Track Width	1.840m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	6.300m

- Lot boundary
- Wheel Path (Forward Vehicle Motion)
- Vehicle Chasis Envelope (Forward Vehicle Motion)
- Wheel Path (Reverse Vehicle Motion)
- Vehicle Chasis Envelope (Reverse Vehicle Motion)

LEGEND

NO	DATE	AMENDMENT
C	04-10-2023	PROPOSED LAYOUT AMENDED
B	27-05-2021	PROPOSED LAYOUT AMENDED
A	28-01-2021	ISSUED FOR REVIEW

PROJECT:
No. 44 & 46 Grand Ocean Entrance, Burns Beach

TITLE:
Vehicle Turning Circle Plan - B99 Passenger Vehicle (5.2m)

DRAWING NUMBER:
KC01230.000_S23

DRAWN BY:
N.M.

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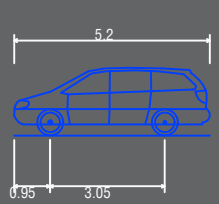
WEB: www.kctt.com.au
kctt

Grand Ocean Entrance

Broulee Lane

White Haven Avenue



Passenger vehicle (5.2 m)	
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.804m
Min Body Ground Clearance	0.295m
Track Width	1.840m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	6.300m

- Lot boundary
- Wheel Path (Forward Vehicle Motion)
- Vehicle Chasis Envelope (Forward Vehicle Motion)
- Wheel Path (Reverse Vehicle Motion)
- Vehicle Chasis Envelope (Reverse Vehicle Motion)

LEGEND

NO	DATE	AMENDMENT
C	04-10-2023	PROPOSED LAYOUT AMENDED
B	27-05-2021	PROPOSED LAYOUT AMENDED
A	28-01-2021	ISSUED FOR REVIEW

PROJECT:
No. 44 & 46 Grand Ocean Entrance, Burns Beach

TITLE:
Vehicle Turning Circle Plan - B99 Passenger Vehicle (5.2m)

DRAWING NUMBER:
KC01230.000_S24

DRAWN BY:
N.M.

Civil & Traffic Engineering Consultants
PO Box 1456 Scarborough WA 6922
PH: 08 9441 2700
WEB: www.kctt.com.au