Porter
Consulting Engineers

PROPOSED RECEPTION CENTRE
1 HALUCK CIRCUIT, NORTH DANDALUP

TRAFFIC IMPACT STATEMENT

Porter

REPORT PREPARED FOR

Planning Horizons

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CONTENTS

1.0 INTRODUCTION

1.1 Background

Porter Consulting Engineers has been commissioned to prepare a Traffic Impact Statement (TIS) to inform the development application for a reception centre to be located on 1 Hasluck Circuit, North Dardanup within the Shire of Murray.

The Site is located 18km to the north of Pinjarra and 22km to the east of Mandurah. Key distributor roads in close proximity include Hopeland Road, Lakes Road and South Western Highway. The site location is shown in a regional context in **Figure 1.1** and in the local context in **Figure 1.2**.

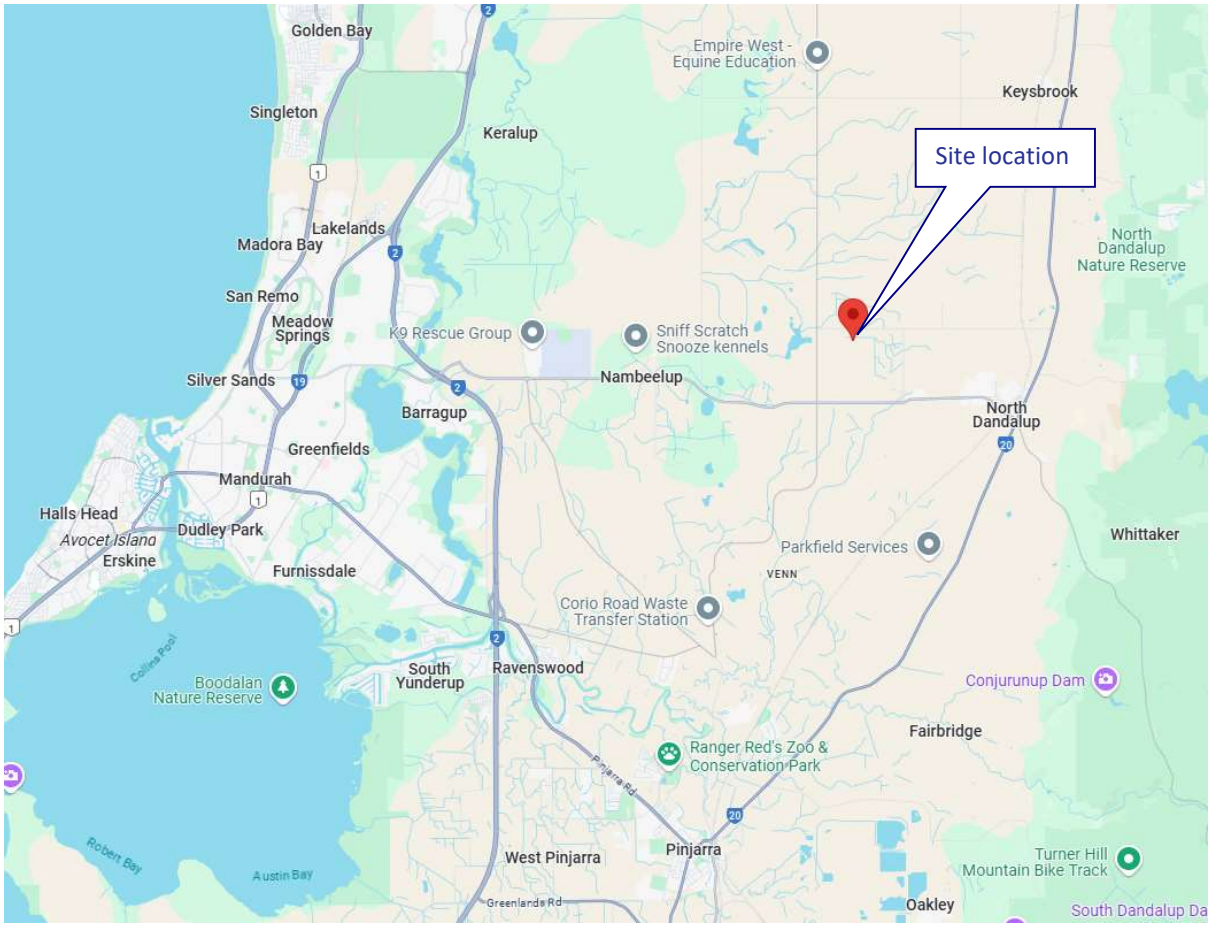

Figure 1.1: Site Location – Regional Context *(Google Maps)*

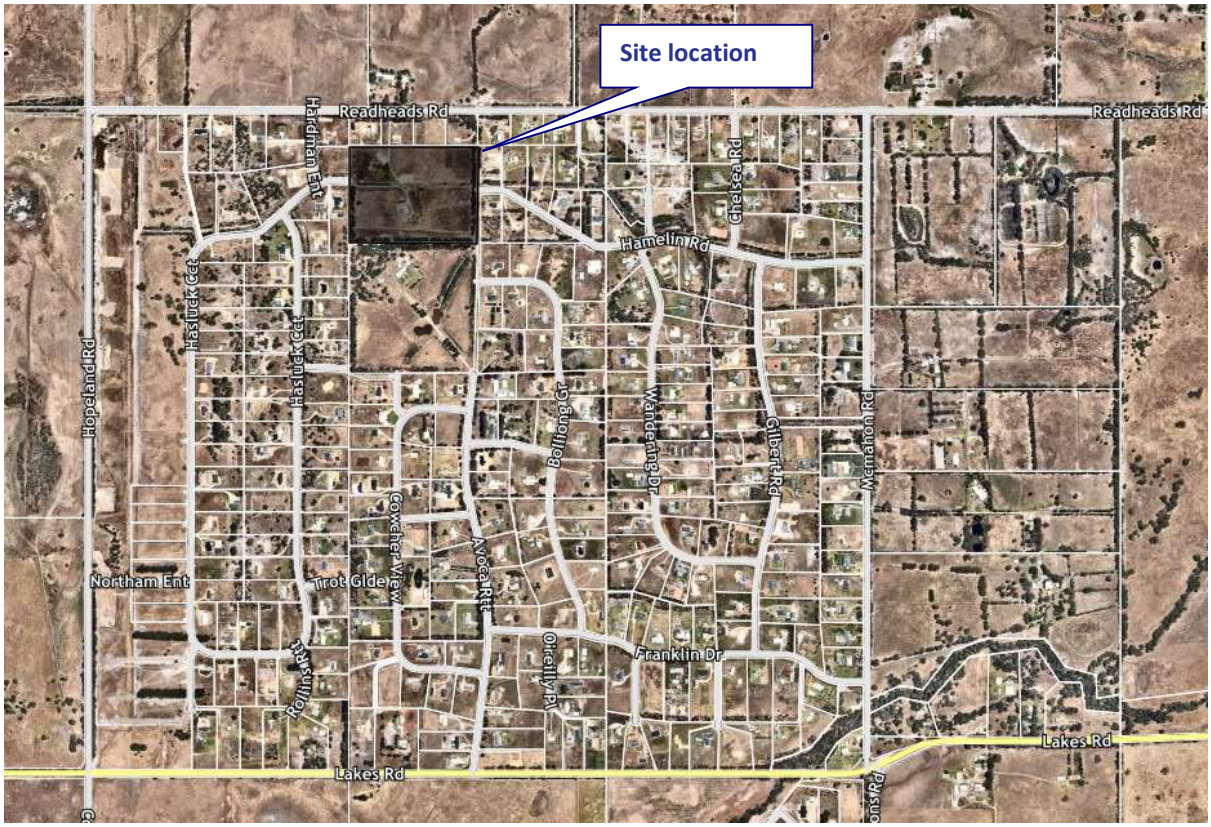

Figure 1.2: Site Location – Local Context *(Nearmap Sept 2024)*

1.2 Scope of Assessment

The intent of this report is to provide the approving authority with sufficient transport information to confirm that the proponent has adequately considered the transport aspects of the development application.

2.0 DEVELOPMENT PROPOSAL

2.1 Proposed Land Use

The proposed development is for a reception centre to be located within the rural residential setting on 1 Hasluck Circuit, North Dardanup. Key features of the proposal are as follows:

- Primarily for weddings or similar events with up to 100 guests
- Events to take place on Fridays and Saturdays
- Typical hours to be 3pm to 12pm
- Anticipated that up to 10 staff would be required for catering purposes
- Events will have transport serviced by private vehicles, Ubers/taxis and buses
- Service vehicles will also require access to the Site for catering purposes, audio and lighting equipment and waste removal

Figure 2.1 shows the aerial imagery of the Site with the various internal roads and buildings.

The site layout is shown in **Appendix A.**

Figure 2.1: Aerial Image of the Site *(Nearmap Dec 2024)*

2.2 Context to the Surrounds

The Site is currently zoned "rural" and "special rural" by the regional scheme and Shire of Murray Local Planning Scheme respectively as shown in **Figures 2.2 and 2.3.** as are the other lots bounded by Readheads Road, Hopeland Road, Lakes Road and McMahon Road.

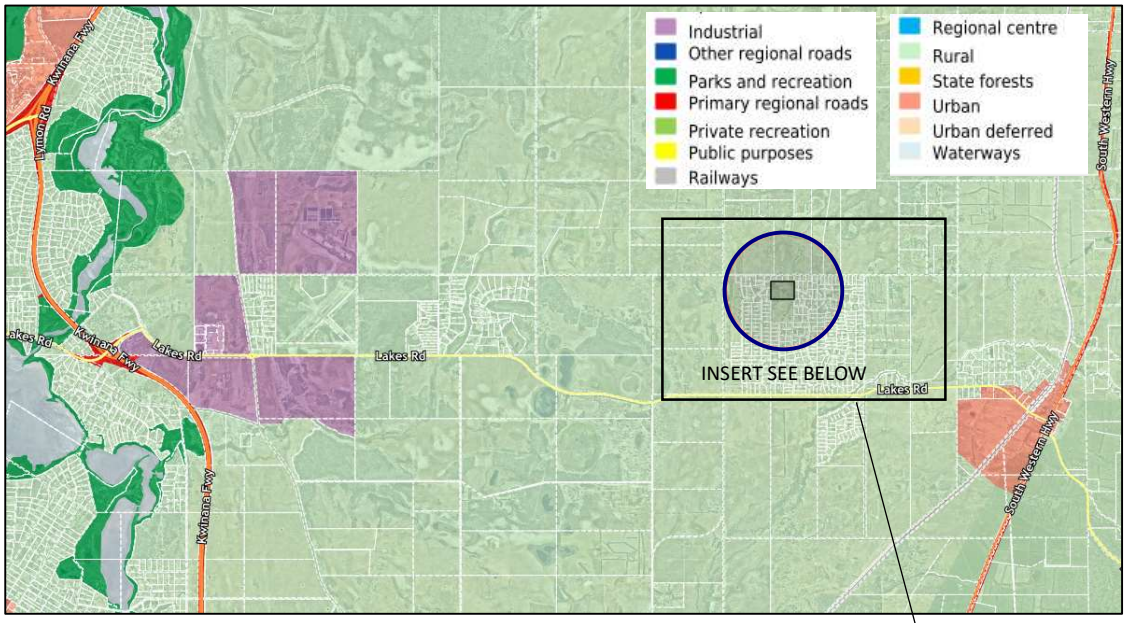

Figure 2.2: Surrounding Land Use Zones (DPLH Region Scheme)

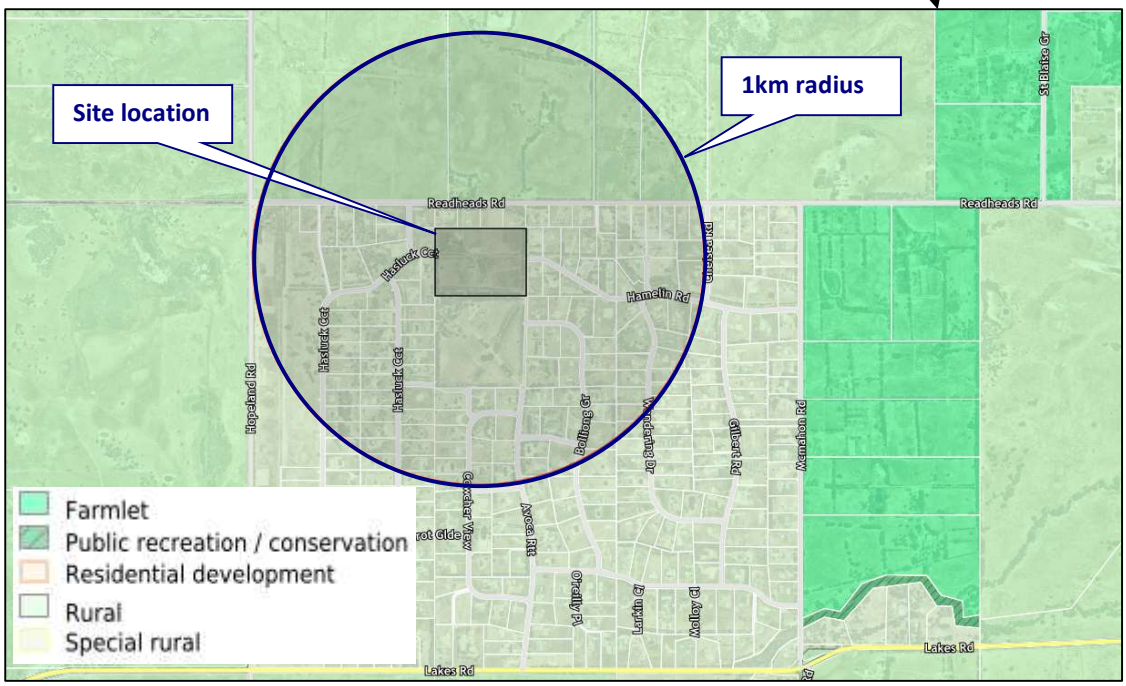

Figure 2.3: Surrounding Land Uses (Shire of Murray LPS)

3.0 EXISTING SITUATION

3.1 Road Hierarchy and Road Infrastructure

The Main Roads Western Australia road hierarchy classification for the surrounding road network is shown in **Figure 3.1** outlining those roads within a 2 kilometre radius. The key regional road distributors that service the North Dardanup estate are Lakes Road and Hopeland Road. The primary distributor roads include Kwinana Freeway, approximately 11 kilometres to the west and South West Highway approximately 6 kilometres to the east.

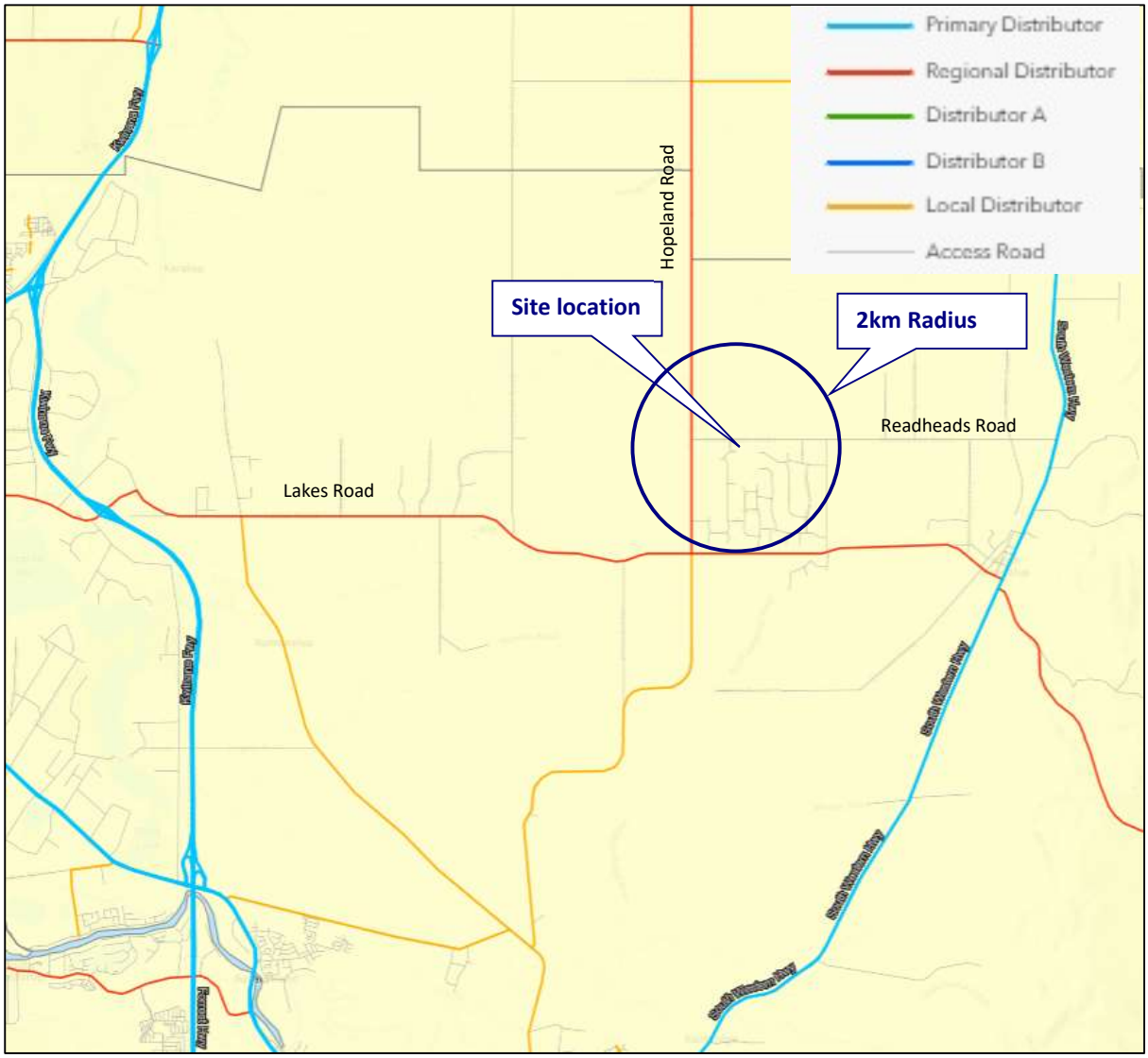

Figure 3.1. Functional Road Hierarchy *(MRWA website)*

There are two local access road connections to Hasluck Circuit: Hardman Entrance and Northam Entrance. Hardman Entrance connects to Readheads Road which connects to South Western Highway. While Northam Entrance connects to Hopeland Road which connects to Lakes Road that connects to both South Western Highway and Kwinana Freeway. **Figure 3.2** shows the rural road standard of the adjoining road network in close proximity to the Site.

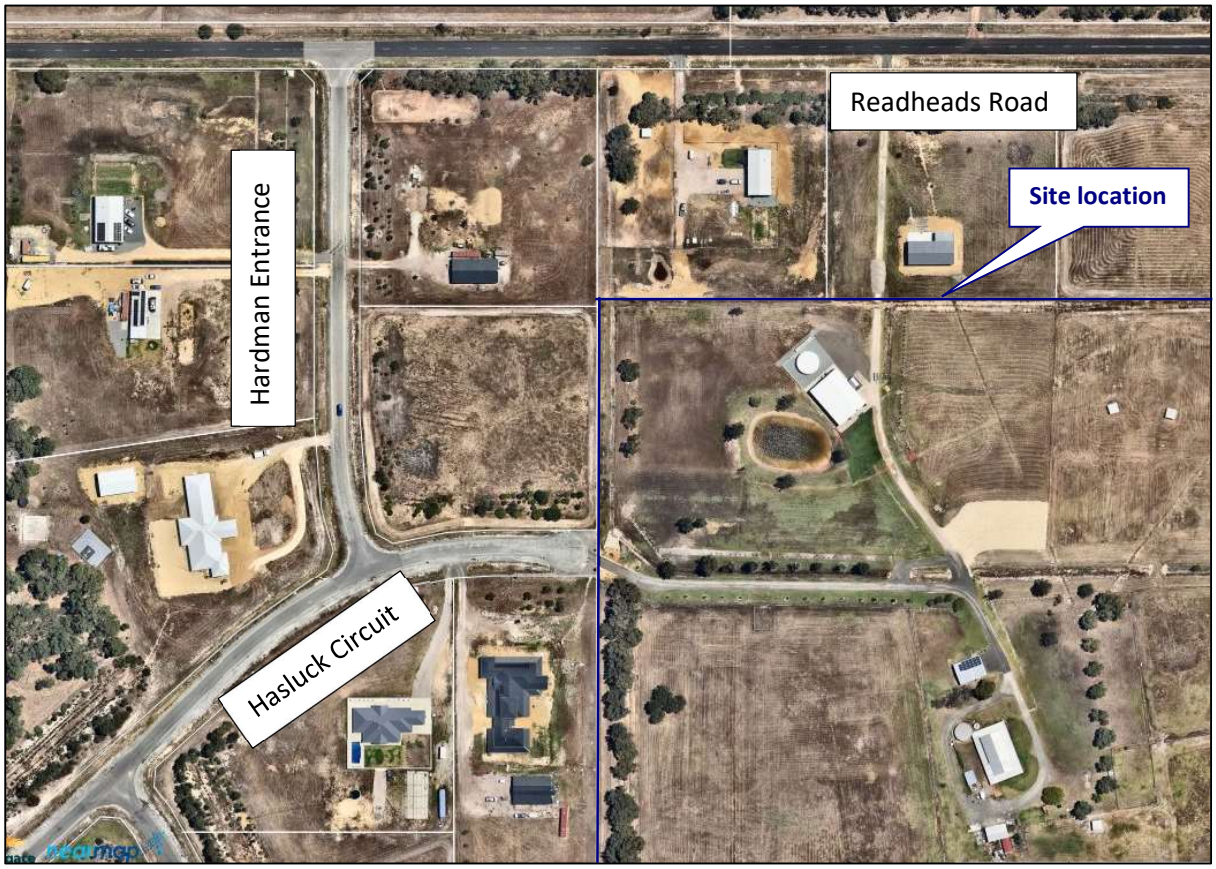

Figure 3.2: Local Road Standard *(Nearmap Dec 24)*

Hasluck Circuit

Hasluck Circuit is classified a Local Access road under Main Roads WA's Functional Road Hierarchy. By definition this road is *"to provide access to abutting properties with amenity, safety and aesthetic aspects having a priority over the vehicle movement function".*

Hasluck Circuit is constructed to two lane, unkerbed single carriageway standard having 6m wide pavement with no centreline road markings. The rural road standard is such that drainage is via channel v-drains on each side of the carriageway. There are no pedestrian or cycle paths on either side of the road. Hasluck Circuit east of Hardman Entrance is a 90m length of road that services only two rural residential properties. It has a cul-de-sac turning circle end to facilitate vehicles turning around.

Table 3.1. Hasluck Circuit Key Features

Feature	Description
Road Hierarchy	Local Access Road – cul- de sac at eastern end
Carriageway	6m wide single carriageway with v-drains allowing two-way traffic
Orientation	East-west
Speed Limit	50km/h default speed limit within built up area
Traffic Volume	No data available
Pedestrian Facilities	No dedicated facilities
Bicycle Facilities	No dedicated facilities

Figure 3.3: Hasluck Circuit, rural road standard (looking east towards cul-de-sac end) *(Streetview Aug 2024)*

Readheads Road

Readheads Road is also classified a Local Access road under Main Roads WA's Functional Road Hierarchy. Readheads Road is orientated in a west-east direction and connects to the regional distributor Hopeland Road at its western end and to the primary distributor South Western Highway at its eastern end. Based on its connections it is anticipated that is takes on the role of a Local Distributor.

Readheads Road is constructed to two lane, unkerbed single carriageway standard with 6.7m pavement with a painted road centreline. The rural road standard is such that drainage is via channel v-drains on each side of the carriageway. There are no pedestrian or cycle paths on either side of the road.

Table 3.2. Readheads Road Key Features

Feature	Description
Road Hierarchy	Local Access Road
Carriageway	6.7m wide single carriageway with v-drains allowing two-way traffic
Orientation	East-west
Speed Limit	110km/h default speed limit within non built-up area 85% percentile speed 100.3km/h (SLK 4.5)
Traffic Volume	261 vehicles per day (Feb 2024)
Pedestrian Facilities	No dedicated facilities
Bicycle Facilities	No dedicated facilities

Figure 3.4: Readheads Road, rural road standard (looking west towards Hartman Entrance intersection) *(Streetview August 2024)*

Hopeland Road

Hopeland Road is classified a Regional Distributor road under Main Roads WA's Functional Road Hierarchy. Hopeland Road is orientated in a north-south direction and connects to the regional distributor Lakes Road at its southern end in close proximity to the Site.

Hopeland Road is constructed to two lane, unkerbed single carriageway standard with 6m-7m pavement with a painted road centreline. The rural road standard is such that drainage is via channel v-drains on each side of the carriageway. There are no pedestrian or cycle paths on either side of the road.

Table 3.3. Hopeland Road Key Features

Feature	Description
Road Hierarchy	Regional Distributor Road
Carriageway	6m-7m wide single carriageway with v-drains allowing two-way traffic
Orientation	North-south
Speed Limit	110km/h default speed limit within non built-up area 85% percentile speed 106km/h (SLK 5.08)
Traffic Volume	890 vehicles per day (July 2024)
Pedestrian Facilities	No dedicated facilities
Bicycle Facilities	No dedicated facilities

Figure 3.5: Hopeland Road, rural road standard (looking south towards Northam Entrance intersection) *(Streetview Aug 2024)*

3.2 Existing Traffic Counts

The most recent available road traffic flow counts were sourced from the Shire of Murray and are presented in **Figure 3.6**.

The typical daily traffic along the regional distributor Lakes Road is 1,633 vehicles per day with an 85th percentile speed of 102.6km/h in proximity to the Site. The regional distributor road Hopeland Road carries less volume with 890 vehicles per day. Readheads Road carries in the order of 261 vehicles per day whilst Northam Entrance carries in the order of 157 vehicles per day.

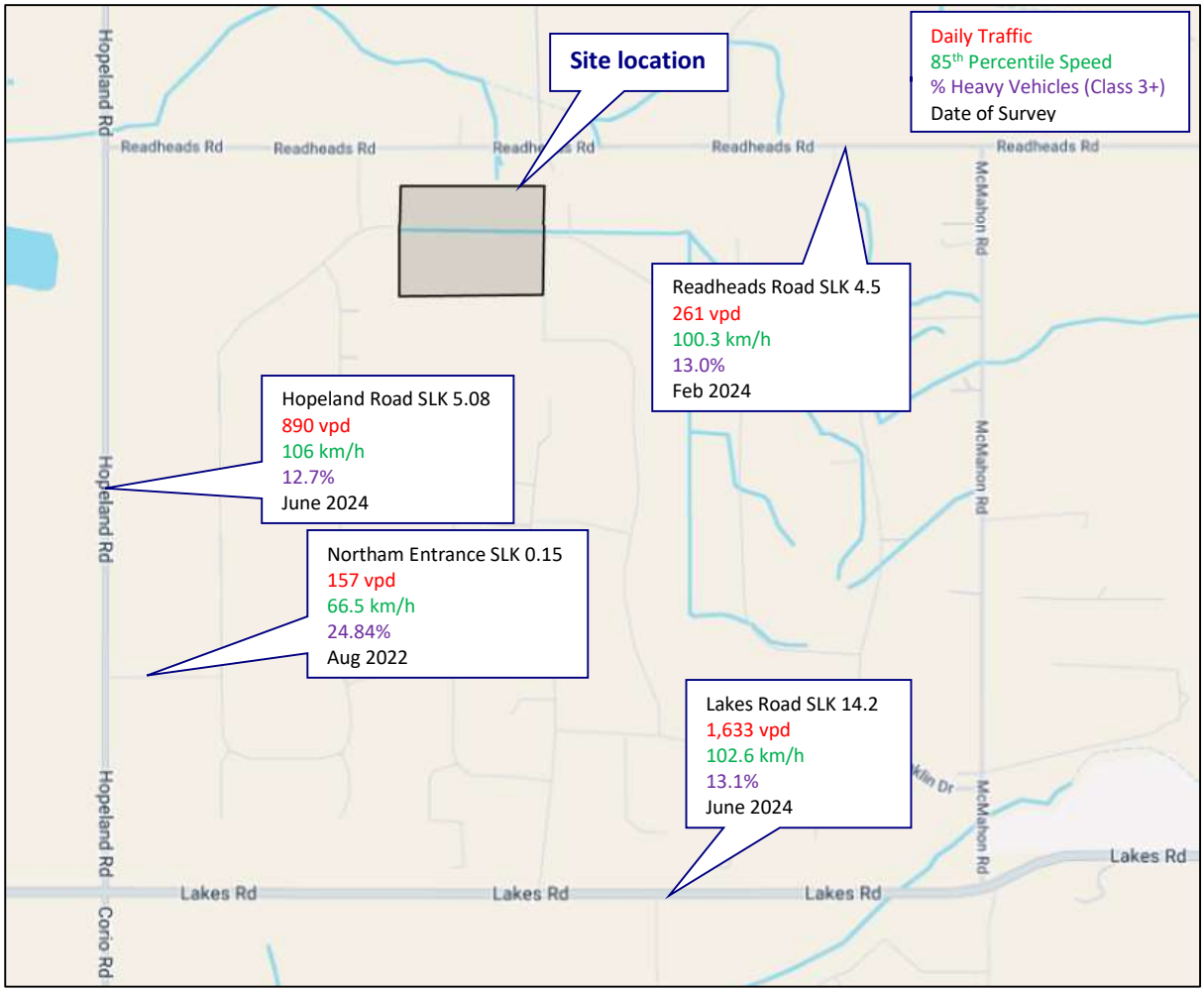

Figure 3.6: Existing Traffic Volumes Surrounding the Site (*Shire of Murray)*

3.3 Crash History

A review of the recent crash history in close proximity to the Site has been conducted for the five year period to the end of December 2023 from the Main Roads Western Australia Integrated Road Information System (IRIS) crash database as shown in **Figure 3.7**. Four (4) crashes resulting in major property damage only have been recorded as follows:

- A vehicle collided with a fallen tree on Hopeland Road which occurred in wet conditions
- A vehicle collided with a kangaroo on Hopeland Road
- A side swipe collision between a vehicle travelling on Lakes Road and a right turning vehicle.
- A rear end collision between a vehicle travelling on Lakes Road and a vehicle stopped to turn right

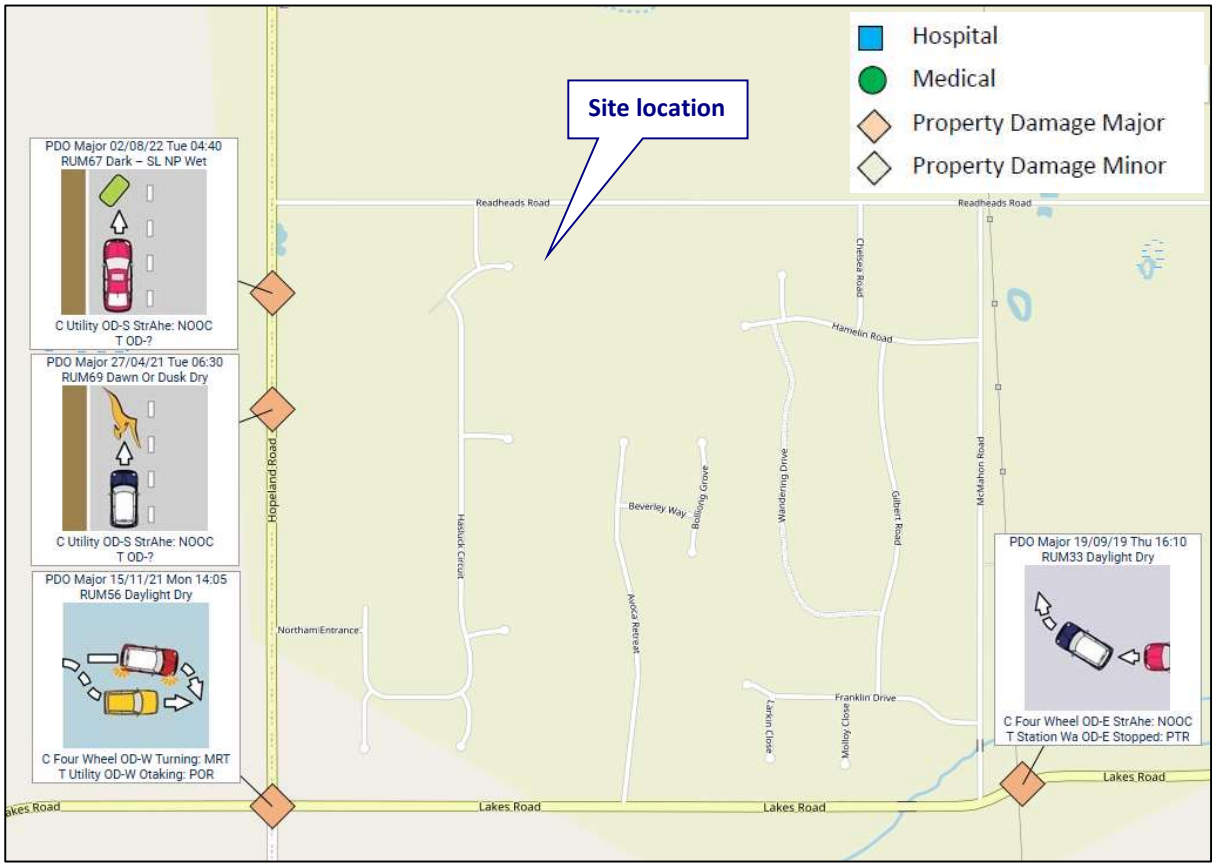

Figure 3.7: Location and Severity of Crashes surrounding the Site

4.0 VEHICLE ACCESS AND PARKING

4.1 Vehicle Access

The property is serviced by a single driveway accessed from the cul-de-sac at the eastern end of Hasluck Circuit.

The current driveway is mostly 4m wide and hence allows for only one direction of traffic flow at a time. Due to the nature of the proposed events the majority of traffic is likely to be one-way traffic flow at given times i.e. guests arrival at the start of the wedding followed by guests' departure at the completion of the wedding. There is the potential for some two-way traffic, for example uber or taxi drop-off and/or pick-up as well as bus movements.

AS2890.1 Off Street Parking states that as a guide where 30 or more movements occur in a peak hour (in and out) this would usually require provision for two vehicles to pass on the driveway i.e. a minimum width of 5.5m however narrower widths can be considered on a case by case basis noting that on long driveways passing opportunities should be provided say every 30m.

The internal driveway is approximately 160m. The peak hour traffic movements may be in the order of 54-59 vehicles however the potential for two-way flow will be low with arrival and departure patterns associated with wedding events. Based on trip generation in section 5.1 the directional split is an average 82%/18% during the peak arrival hour and 18%/82% during the peak departure hour. Ideally, the provision of a 5.5m wide driveway would readily allow for 2 way traffic without the need for separate traffic management.

The Client advises that whilst the pavement width of the internal driveway measures as approximately 4m there is a grassed verge either side of the driveway that could be traversed by cars to allow opposing vehicles to pass each other slowly from time to time when two-way traffic occurs involving standard vehicles. If the driveway is not to widened, then signage alerting drivers to the "*narrow driveway*" and to travel at a "*slow speed*" should be installed.

Two-way traffic involving buses should not occur on the driveway. The Client has advised that traffic will be appropriately managed when buses are expected. For example, this may mean stopping traffic entering the Site immediately prior to a bus departing and visa versa. It may also involve managing the departure time of the bus during the arrival peak and vice versa (i.e. buses are not to depart within the arrival peak and similarly buses must arrive prior to the departure peak)

It is noted that on the northern side of the internal driveway is an open drain. The extent of the grass verge adjacent to the open drain should be suitably delineated (i.e. guideposts with reflector at regular intervals) to make drivers aware of the width of the grassed verge (clear of the open drain) they can safely use especially when the open drain may not be clearly visible.

Given the rural setting of the location the option of private bus transportation to and from the Site will be offered to guests. The size of buses may vary. Smaller coaster type buses would be able to drop guests within the short pull over area at the eastern end of the main internal driveway and remain until such time as the arrival peak has passed. Similarly, the bus would arrive prior to the departure peak and wait within this area to pick up guests. Larger buses are not envisaged to use this area due to their size but rather would need to drop guests to the south and then use other internal roads to circular to exit the Site.

The swept paths for a bus within the site in shown in **Appendix B.**

The Client has confirmed that small 6m delivery vehicles are typically used. These vehicles will access the rear of the venue and load/unload.

4.2 Parking

Parking requirements applied by Local Governments are generally defined through local planning schemes and local planning policies. The Shire of Murray Local Planning Scheme No.4 outlines parking requirements for various land uses in their Table 11 – Non-Residential Development Standards. There is no specific parking requirement for a reception centre or similar.

Austroads Guide to Traffic Management Part 11: Parking Management Techniques provides example parking ratios for the land uses sourced from the Town of Cambridge which outlines 1 space per 5m^2 of public area for a reception centre.

WA Planning Manual, Non- Residential Car Parking Rates in Perth and Peel, November 2024 provides consistent car parking rates for non-residential land uses. A minimum and maximum rate are provided as follows for a reception centre

- Minimum 1 space for every 20 persons accommodated
- Maximum 1 space for every 5 persons accommodated.

This document states that it is not the intention to apply these rates to regional areas on the basis that often regional areas do not have acceptable levels of public transport which increases

the reliance on cars. Adopting the maximum rate would equate to a parking requirement of 20 bays.

Due to the nature of the event where alcohol will most likely be served and the rural setting it is proposed that private bus services be provided thereby reducing the reliance on cars and the subsequent demand for parking.

Whilst the Site is located within a rural setting there are relatively nearby higher density urban residential suburbs such as Lakelands, Meadow Springs and Mandurah within 15-20 minutes' drive therefore the use of Ubers and/or taxis is also likely to be a convenient mode of transport to events further reducing parking demand.
The parking demand estimate for a 100 person event is outlined as follows:

- 30-50% of guests use private bus facility i.e. 30-50 persons
- 10-20% of guests use Uber/taxi i.e. 10-20persons
- Remaining (60-30%) of guests use private vehicles i.e. 60-30 persons
- 2 guests per vehicle i.e. 30-15 vehicles or 30-15 bays required
- 2 event staff (celebrant/event planner) all arriving via private vehicle or 2 bays required
- 10 catering staff using vehicles. Assumes 8 bays required on the basis that some catering staff arrive together in the delivery vehicle.
- **PARKING DEMAND = 25-40 bays required**

The current limestone hardstand area may cater for up to 30 vehicles based on the parking layout sketch. There is also space for approximately 9 staff to park behind the venue (including delivery vehicles. This will accommodate the estimated typical parking demand where a bus is used. From time to time, it is possible that buses may not be used or the assumed modes of transport to the venue may vary such that additional parking may be required. In such instances the Client has advised that the grassed area immediately adjacent to the hardstand would be made available and is suited to this purpose.

5.0 TRAFFIC ASSESSMENT

In order to assess the potential traffic impacts associated with the proposed development a traffic generation exercise was undertaken. This establishes the levels of traffic that could potentially be generated from the proposed development and enables the assessment of anticipated effects that the additional traffic could have on the adjacent road network.

5.1 Trip Generation

The traffic generated by the proposed Development Application is forecast using a first principal approach outlined in section 4.3. The subsequent arrival and departure trip patterns are outlined in **Table 6.1.**

Table 6.1: Trip Generation for Typical Event

	Arrival Peak Hour For 3pm start		Departure Peak 12pm finish		Total
	In	**Out**	**In**	**Out**	
Guests arriving by Bus [1)]	1	1	1	1	4
Uber/Taxi	5-10[2)]	5-10[2)]	5-10[2)]	5-10[2)]	20-40
Private Vehicles	30-15[3)4)]			30-15[3)4)]	60-30
Staff (Event) [5)]	2			1	4
Delivery Vehicles Staff (Catering)	6 [6)]			6 [6)]	16
TOTAL	**46-35**	**6-11**	**6-11**	**45-35**	**104-94**

1) Buses drop guests, leave site and return later for pick up
2) Assumes 10-20% of guests use Uber/Taxi with 2 persons per vehicle
3) Assumes 30-60% of guests use private vehicle with 2 persons per vehicle
4) Assumes that wedding party are within the 100 guests permitted at the venue and use private vehicles
5) Some event staff i.e. Celebrant leaves outside of the arrival and departure peaks
6) Some staff and service delivery vehicles arrive outside of the peak hour

Therefore, it is estimated that the during an event approximately 94-104 daily trips would be generated with approximately 35-46 trips within the peak arrival and departure hour depending on the event start and finish times.

5.2 Trip Distribution and Assignment

The nature of weddings is such that guests will likely come from various locations and will inevitably alter with each event. The approach/departure patterns will be dependent on the wedding couple place of residence as well as that of their family and friends which will vary.

Upon review of the surrounding residential catchments areas the anticipated trip distribution patterns may be:

- 5% approach/depart along Hardman Entrance/ Readheads Road and South Western Highway
- 30% approach/depart along Hardman Entrance/ Readheads Road and Hopeland Road
- 65% approach/depart along Northam Entrance/ Hopeland Roads and Lakes Road.

5.3 Impact on Adjacent Road Network

Based on the aforementioned trip distribution patterns the likely additional trips on the road network are as follows:

Total	**Existing Daily Traffic**	**Additional Trips Daily**	**% Increase**	**Proposed Daily Traffic (on event days)**
Hasluck Circuit (east of Hardman Ent)	16 [1)]	104	650%	120
Hardman Entrance	N/A	36	-	-
Northam Entrance	157	68	43%	225
Readheads Road (east of Hardman Ent)	261	5	2%	266
Readheads Road (west of Hardman Ent)	261[2)]	31	12%	292
Hopeland Road (south of Northam Ent)	890[3)]	68	8%	958
Lakes Road (west of Hopeland Rd)	1,633[4)]	68	4%	1,701

NA – Not available

1) Estimate only based on 8 trips per dwelling with two dwellings located east of Hardman
2) Traffic count assumed to be similar to Readheads Road, SLK 4.5
3) Traffic count assumed to be similar to Hopeland Road, SLK 5.08
4) Traffic count assumed to be similar to Lakes Road, SLK 14.2

The low number of trips generated by the Site can be readily accommodated on both the local and regional road network. *Local Access roads* within a built-up area are typically expected to cater for up to a maximum of 3,000 vehicles per day or 75 vehicles per day in a non built up area. In this rural residential environment traffic volumes would typically be lower than 3,000 vehicles per day but also be higher the 75 vehicles per day. This is evidenced by the existing traffic volumes measured on the Northam Entrance that are in the order of 157 vehicles per day. On event days the volume of traffic anticipated on the local access roads being Hardman Entrance, Northam Entrance and Readheads Road could be readily accommodated within the space capacity of the roads.

6.0 SUMMARY AND CONCLUSION

Porter Consulting Engineers has been commissioned to prepare a Traffic Impact Statement (TIS) to inform the development application for a reception centre to be located on 1 Hasluck Circuit, North Dardanup within the Shire of Murray.

Based on the staffing and proposed use of private bus/es to transport guests to the venue the parking demand is estimated to typically range between 25-40 bays. An existing limestone hardstand area will accommodate approximately 30 vehicles. Whilst staff parking (approximately 9 bays) is available at the rear of the venue. On this basis the estimated typical parking demand can be met. From time to time, it is possible that buses may not be used or the assumed modes of transport to the venue may vary such that additional parking may be required. In such instances the Client has advised that the grassed area immediately adjacent to the main parking hardstand would be made available and is suited to this purpose.

The traffic generated by the development is estimated to be in the order of 105 vehicles on an event day with peak hour volumes of approximately 46-52 vehicles during the arrival and departure peaks. The volume of traffic will vary with each event and will be dependent on the use of private vehicles by guests. These volumes are based on only 30% of guests or 30 guests out of a total of 100 attendees by private bus.

Ideally, the provision of a 5.5m wide driveway would readily allow for 2-way traffic without the need for additional active traffic management. The Client advises that whilst the pavement width of the internal driveway measures as approximately 4m there is a grassed verge either side of the driveway that could be traversed by cars to allow opposing vehicles to pass each other slowly from time to time when two-way traffic occurs involving standard vehicles. The extent of the grass verge adjacent to the open drain should be suitably delineated to make drivers aware of the width of the grassed verge they can safely use. Two-way traffic involving buses should not occur on the driveway. The Client has advised that traffic will be appropriately managed when buses are expected such that two-way traffic will not occur.

APPENDIX A

Development Concept Plan

APPENDIX B

Swept Paths

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