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Lot 1 Corio Rd, Nambeelup

Proposed Sand Excavation Site

TRANSPORT IMPACT STATEMENT



Prepared for:
P & F Gangemi

December 2024

Lot 1 Corio Rd, Nambeelup

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1 Introduction

This Transport Impact Statement has been prepared by **Urbii** on behalf of **P & F Gangemi** with regards to the Proposed Sand Excavation Site, located at Lot 1 Corio Rd, Nambeelup.

The subject site is situated on the western side of Corio Road, as shown in Figure 1. The site is presently cleared and fenced. A vehicle access gate is presently provided for vehicle access to and from the site (Figure 2).

It is proposed to develop the site into a sand excavation pit. Sand excavation is proposed to be undertaken in three stages, which is conceptually indicated in Figure 1.

The key issues that will be addressed in this report include the traffic generation and distribution of the proposed development, access and egress movement patterns, truck circulation, parking and access to the site for alternative modes of transport.

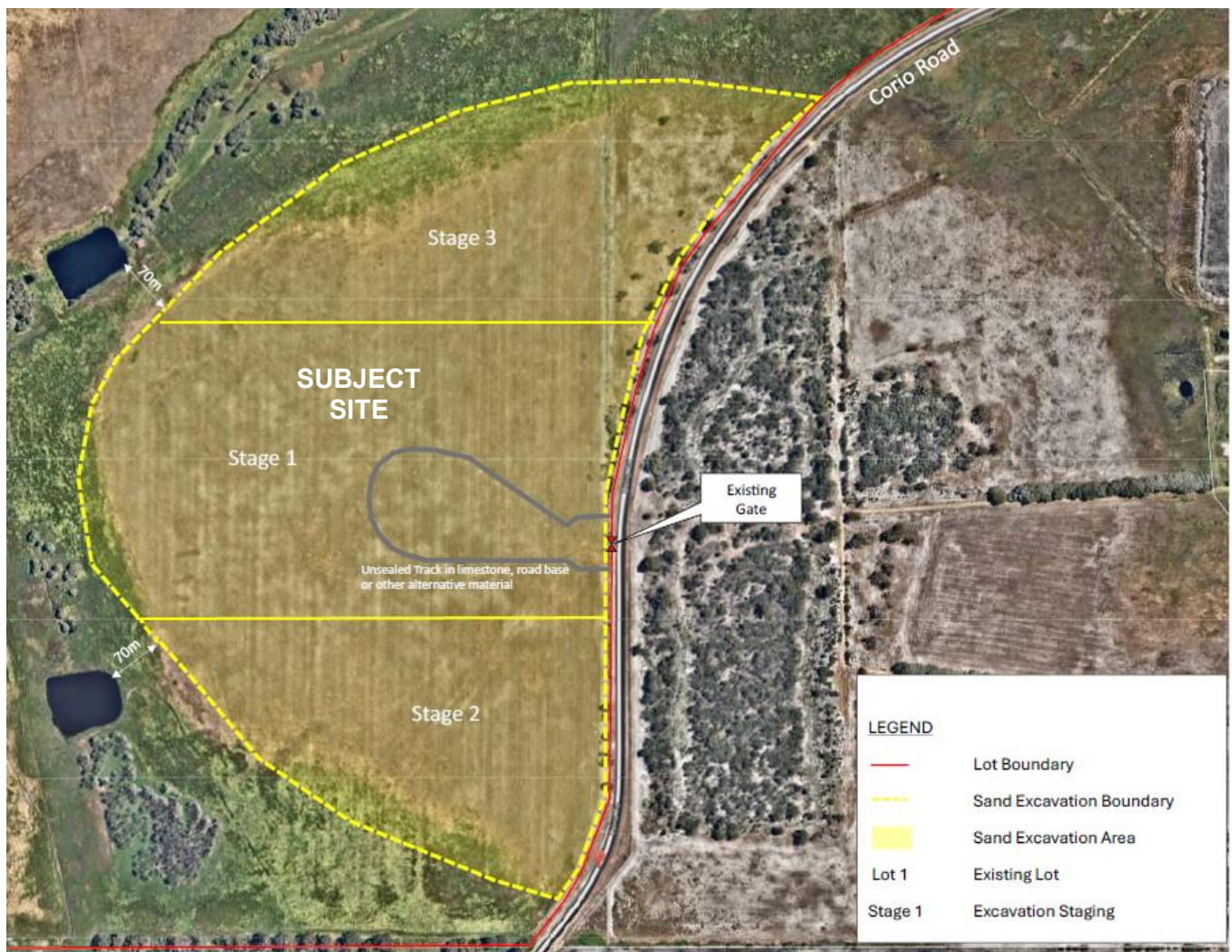


Figure 1: Subject site



Figure 2: Existing site use

Source: Google Streetview September 2024

2 Scope of work

The WAPC *Transport Assessment Guidelines 2016* identifies the proposed development as being “Low Impact” (Figure 3). A Transport Impact Statement (TIS) has been prepared to support a robust Development Application and to assist the City with demonstration of traffic impact.

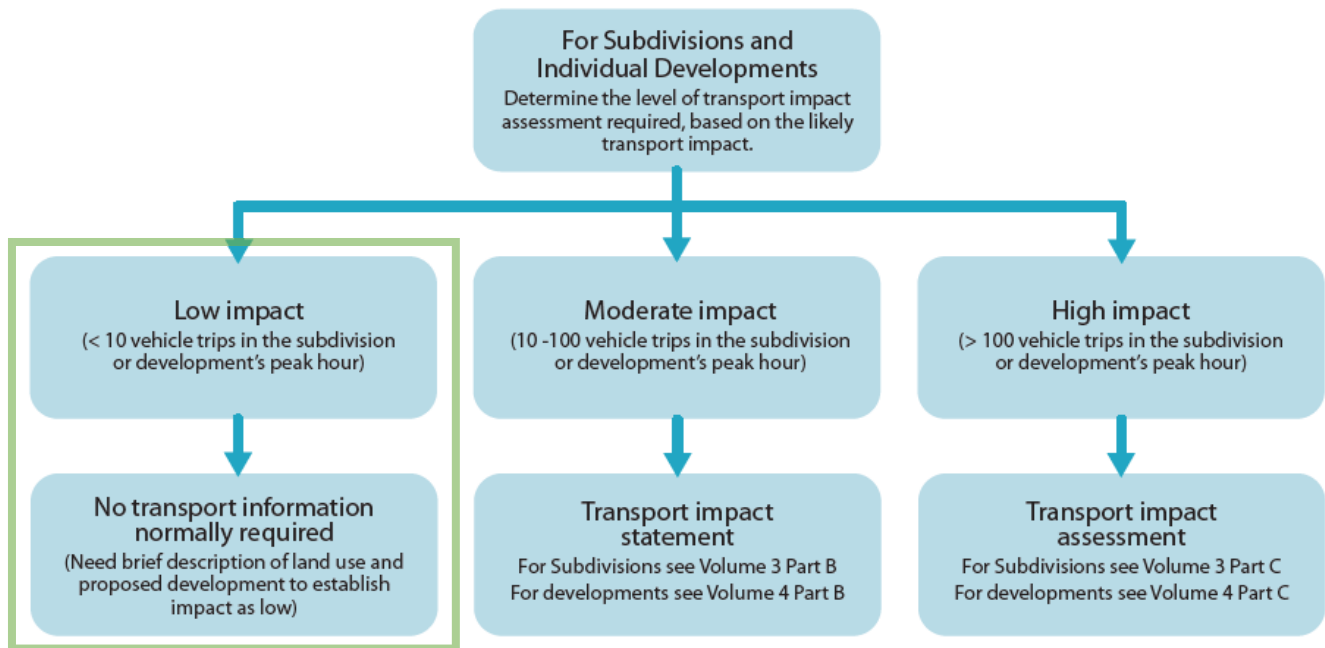


Figure 3: WAPC Transport Assessment Guidelines – reporting requirements

3 Proposed development

The proposal for the subject site is for sand excavation operations.

No permanent structures are proposed for the site. Vehicle access will be accommodated via the existing access gate fronting Corio Road. An unsealed road track will be provided in limestone, road base or other suitable material, to allow trucks and other vehicles to circulate within the site as required.

One or two staff will be operating on site, with no visitors permitted. The largest size truck to access the site is anticipated to be a Prime Mover, Semi-Trailer & Dog-Trailer combination.

The site plan is included for reference in Appendix A.

4 Vehicle access and parking

4.1 Vehicle access

Vehicular access to the site is currently available from one access gate fronting Corio Road, as detailed in Figure 4. There is a break in the centre line marking on Corio Road in front of the vehicle access gate (Figure 5). The existing vehicle access gate will be used for the proposed sand excavation operations.



Figure 4: Existing vehicle access



Figure 5: Existing site crossover



4.2 Parking supply

Staff private vehicles, loaders and other equipment will be parked within the site in dedicated locations. There is sufficient internal site area to accommodate all vehicles with no external parking required.

5 Provision for service vehicles

5.1 RAV network status

Corio Road adjacent to the subject site is designated as Tandem Drive Network 4 in the Main Roads WA Restricted Access Vehicles (RAVs) network (Figure 6). As detailed in Table 1, the maximum heavy vehicle size currently permitted on this section of Corio Road is 27.5m A-Doubles.

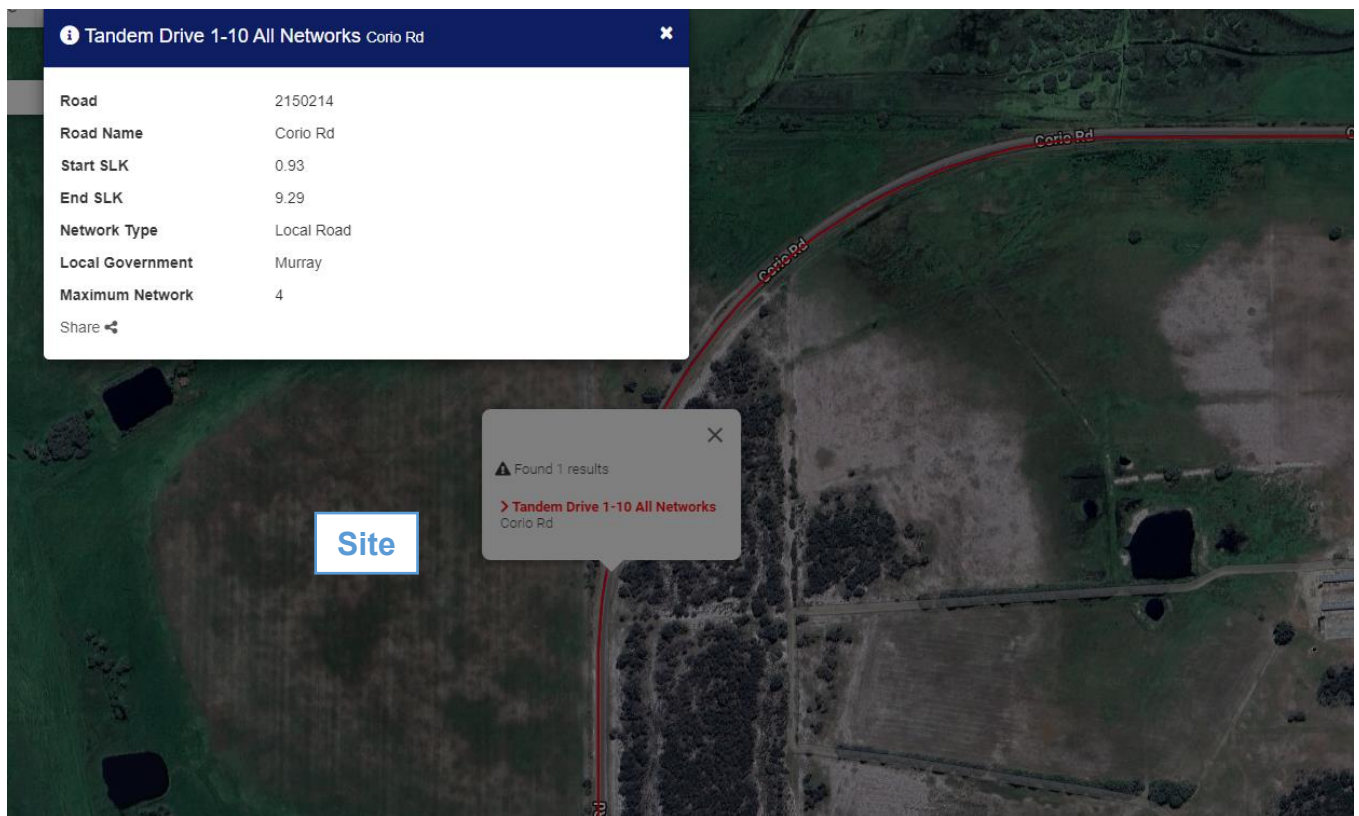
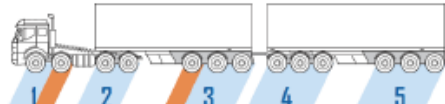


Figure 6: MRWA RAV Network status for Corio Road

Table 1: Main Roads WA category 4 RAVs

Category 4 RAVs				
Category	Vehicle Description	Length	Max. Mass	Approved Network
4A	A-Double (Prime Mover, Semi Trailer & Dog Trailer) 	≤27.5 m	88.5 t	Tandem Drive Network 4

5.2 Sand haulage route planning

The recommended sand haulage routes are marked in Figure 7. The sand haulage routes include Corio Road from the site and north to Lakes Road. The route can then either extend west along Lakes Road to the Kwinana Freeway interchange or extend east towards South Western Highway. Haulage trucks can then travel north or south along Kwinana Freeway or South Western Highway as required.

The route has been approved to accommodate RAV 4 vehicles on Corio Road and Lakes Road, and RAV 7 vehicles on Kwinana Freeway. Road and intersection geometry should be available to the standard required for RAV access.

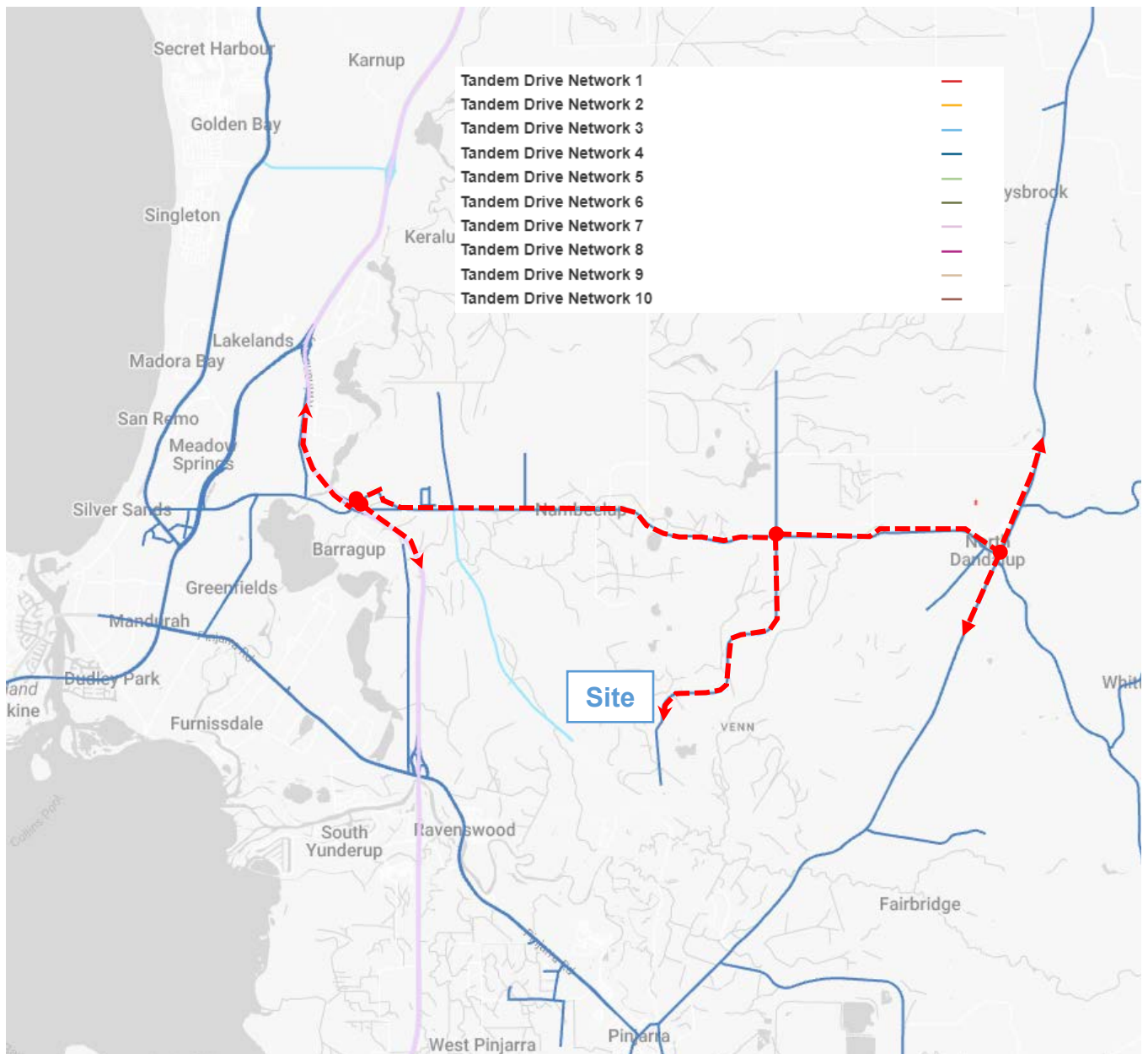


Figure 7: Recommended sand haulage routes

6 Hours of operation

The proposed hours of operation are Monday to Saturday, 6:00am to 5:00pm, excluding public holidays for processing and excavation.



7 Daily traffic volumes and vehicle types

7.1 Traffic generation

Traffic generation was estimated using first principles assumptions as following:

- Assume 2 x staff cars.
- Assume each staff car enters and exits the site 1 x per day:
 - 2 staff cars in and 2 staff cars out.
- Total 25 Heavy Vehicles per day (vpd) – 25 in and 25 out.
- Less than 60 vehicles per day and less than 10 vehicles per hour (two-way).

7.2 Impact on surrounding roads

The WAPC Transport Impact Assessment Guidelines for Developments (2016) provides the following guidance on the assessment of traffic impacts:

“As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 percent may. All sections of road with an increase greater than 10 percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore, any section of road where development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis.”

The proposed development will not increase traffic flows on any roads adjacent to the site by the quoted WAPC threshold of +100vph to warrant further analysis. Therefore, the impact on the surrounding road network is minor.

8 Traffic management on the frontage roads

8.1.1 Corio Road

Corio Road near the subject site is an approximately 7.5m wide, two-lane undivided road. The road features unsealed gravel shoulders.

Corio Road is classified as a *Local Distributor Road* in the Main Roads WA road hierarchy (Figure 8) and operates under a speed limit of 110km/h (Figure 9). Local Distributor Roads are the responsibility of Local Government and typically are for the movement of traffic within local areas and connect access roads to higher order Distributors (Figure 10).

Traffic data obtained from the Shire of Murray indicates that this section of Corio Road carries around 1,000 vehicles per day (vpd) with 28% heavy vehicles. The 85th percentile speed is 96.4 km/h.

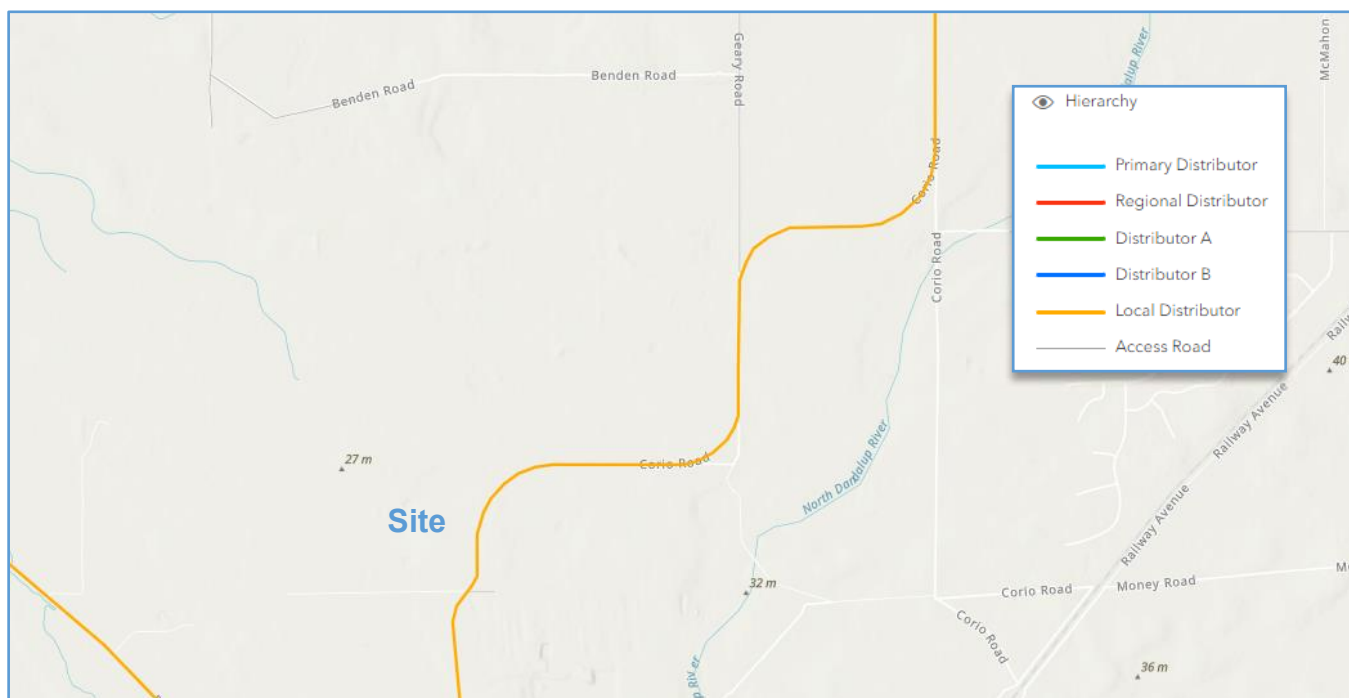


Figure 8: Main Roads WA road hierarchy plan

Source: Main Roads WA Road Information Mapping System (RIM)

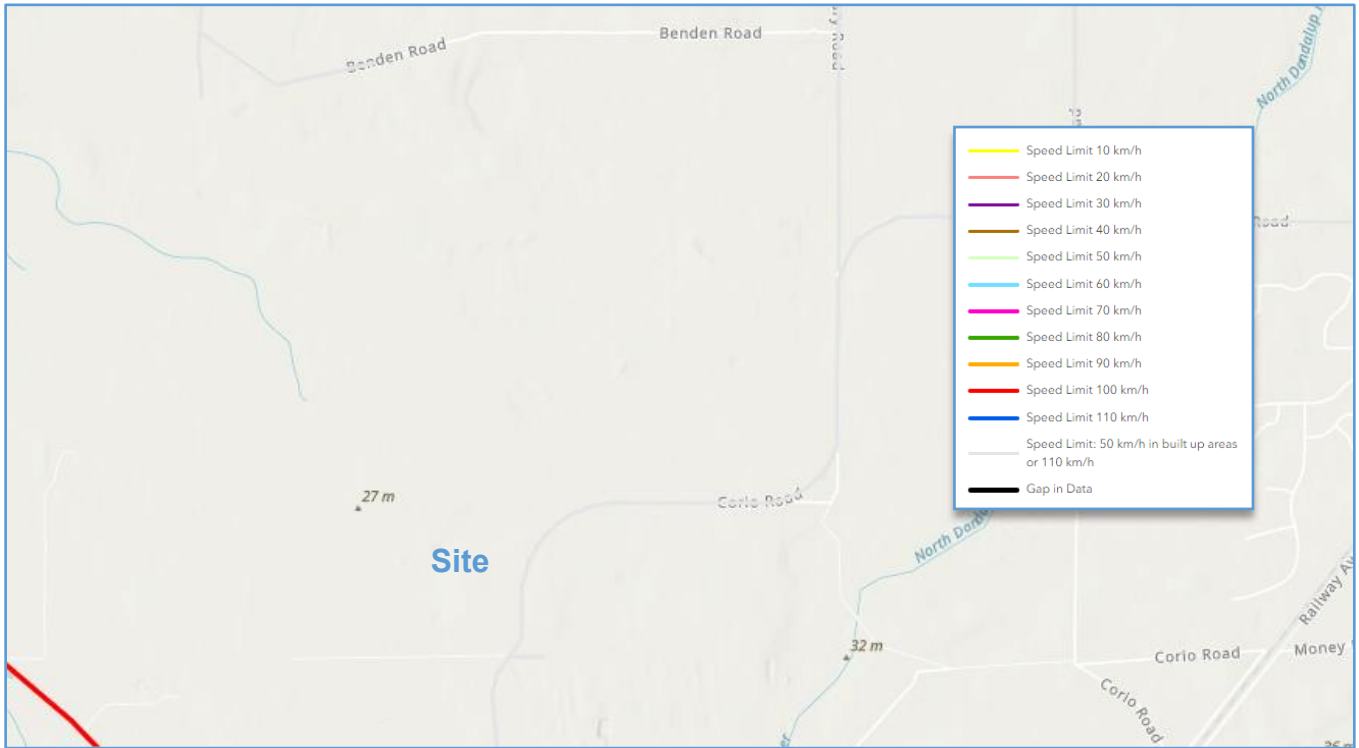


Figure 9: Main Roads WA road speed zoning plan

Source: Main Roads WA Road Information Mapping System (RIM)

**ROAD HIERARCHY FOR WESTERN AUSTRALIA
ROAD TYPES AND CRITERIA (see Note 1)**

CRITERIA	PRIMARY DISTRIBUTOR (PD) (see Note 2)	DISTRICT DISTRIBUTOR A (DA)	DISTRICT DISTRIBUTOR B (DB)	REGIONAL DISTRIBUTOR (RD)	LOCAL DISTRIBUTOR (LD)	ACCESS ROAD (A)
<i>Primary Criteria</i>						
1. Location (see Note 3)	All of WA incl. BUA	Only Built Up Area.	Only Built Up Area.	Only Non Built Up Area. (see Note 4)	All of WA incl. BUA	All of WA incl. BUA
2. Responsibility	Main Roads Western Australia.	Local Government.	Local Government.	Local Government.	Local Government.	Local Government.
3. Degree of Connectivity	High. Connects to other Primary and Distributor roads.	High. Connects to Primary and/or other Distributor roads.	High. Connects to Primary and/or other Distributor roads.	High. Connects to Primary and/or other Distributor roads.	Medium. Minor Network Role Connects to Distributors and Access Roads.	Low. Provides mainly for property access.
4. Predominant Purpose	Movement of inter regional and/or cross town/city traffic, e.g. freeways, highways and main roads.	High capacity traffic movements between industrial, commercial and residential areas.	Reduced capacity but high traffic volumes travelling between industrial, commercial and residential areas.	Roads linking significant destinations and designed for efficient movement of people and goods between and within regions.	Movement of traffic within local areas and connect access roads to higher order Distributors.	Provision of vehicle access to abutting properties
<i>Secondary Criteria</i>						
5. Indicative Traffic Volume (AADT)	In accordance with Classification Assessment Guidelines.	Above 8 000 vpd	Above 6 000 vpd.	Greater than 100 vpd	Built Up Area - Maximum desirable volume 6 000 vpd. Non Built Up Area - up to 100 vpd.	Built Up Area - Maximum desirable volume 3 000 vpd. Non Built Up Area - up to 75 vpd.
6. Recommended Operating Speed	60 – 110 km/h (depending on design characteristics).	60 – 80 km/h.	60 – 70 km/h.	50 – 110 km/h (depending on design characteristics).	Built Up Area 50 - 60 km/h (desired speed) Non Built Up Area 60 – 110 km/h (depending on design characteristics).	Built Up Area 50 km/h (desired speed). Non Built Up Area 50 – 110 km/h (depending on design characteristics).
7. Heavy Vehicles permitted	Yes.	Yes.	Yes.	Yes.	Yes, but preferably only to service properties.	Only to service properties.
8. Intersection treatments	Controlled with appropriate measures e.g. high speed traffic management, signing, line marking, grade separation.	Controlled with appropriate measures e.g. traffic signals.	Controlled with appropriate Local Area Traffic Management.	Controlled with measures such as signing and line marking of intersections.	Controlled with minor Local Area Traffic Management or measures such as signing.	Self controlling with minor measures.
9. Frontage Access	None on Controlled Access Roads. On other routes, preferably none, but limited access is acceptable to service individual properties.	Prefer not to have residential access. Limited commercial access, generally via service roads.	Residential and commercial access due to its historic status. Prefer to limit when and where possible.	Prefer not to have property access. Limited commercial access, generally via lesser roads.	Yes, for property and commercial access due to its historic status. Prefer to limit whenever possible. Side entry is preferred.	Yes.
10. Pedestrians	Preferably none. Crossing should be controlled where possible.	With positive measures for control and safety e.g. pedestrian signals.	With appropriate measures for control and safety e.g. median/islands refuges.	Measures for control and safety such as careful siting of school bus stops and rest areas.	Yes, with minor safety measures where necessary.	Yes.
11. Buses	Yes.	Yes.	Yes.	Yes.	Yes	If necessary (see Note 5)
12. On-Road Parking	No (emergency parking on shoulders only).	Generally no. Clearways where necessary.	Not preferred. Clearways where necessary.	No – emergency parking on shoulders – encourage parking in off road rest areas where possible.	Built Up Area – yes, where sufficient width and sight distance allow safe passing. Non Built Up Area – no. Emergency parking on shoulders.	Yes, where sufficient width and sight distance allow safe passing.
13. Signs & Linemarking	Centrelines, speed signs, guide and service signs to highway standard.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs and guide signs.	Speed and guide signs.	Urban areas – generally not applicable. Rural areas - Guide signs.
14. Rest Areas/Parking Bays	In accordance with Main Roads' Roadside Stopping Places Policy.	Not Applicable.	Not Applicable.	Parking Bays/Rest Areas. Desired at 60km spacing.	Not Applicable.	Not Applicable.

Figure 10: Road types and criteria for Western Australia

Source: Main Roads Western Australia D10#10992

9 Public transport access

The nature of the site use and relatively remote location means that public transport is not a desirable transport mode choice. Staff are expected to all drive to the site.



10 Pedestrian access

Information from online mapping services, Main Roads WA, Local Government, and site visits was collected to assess the pedestrian access for the proposed development.

No footpaths are provided near the development. The nature of the proposed development and isolated location means that people will not travel to the site by walking.

11 Bicycle access

Information from online mapping services, Department of Transport, Local Government, and/or site visits was collected to assess bicycle access for the proposed development.

No cycling infrastructure is provided near the development. The nature of the proposed development means that people will not travel to the site by cycling.



12 Site specific issues

No additional site-specific issues were identified within the scope of this assessment.

13 Safety issues

The five-year crash history in the vicinity of the site was obtained from Main Roads WA. As detailed in Figure 11, 3 crashes were recorded in the locality in the last five years. One crash was fatal severity and another crash was hospital severity. All crashes were 'run off road' and appeared to be influenced by the horizontal geometry of Corio Road at this location.

The detailed crash history is presented in Table 2.

The low traffic generation of the proposed development is unlikely to impact traffic safety in the area. Truck drivers driving to and from the site should be appropriately trained to consider road safety as part of Occupational Health and Safety. Drivers should drive to the road conditions and within the capabilities of their vehicles.



Figure 11: 5-year crash map in the locality (2019-2023)

Source: MRWA crash mapping tool

Table 2: 5-year crash history in the locality (2019-2023)

Severity	No.	%
Fatal	1	33.33
Hospital	1	33.33
Medical	0	0
PDO Major	1	33.33
PDO Minor	0	0

Year	No.	%
2019	1	33.33
2020	1	33.33
2023	1	33.33

Nature	No.	%
Head On	0	0
Hit Animal	0	0
Hit Object	1	33.33
Hit Pedestrian	0	0
Non Collision	2	66.67
Not Known	0	0
Rear End	0	0
Right Angle	0	0
Right Turn Thru	0	0
Sideswipe Opposite Dirn	0	0
Sideswipe Same Dirn	0	0

Light	No.	%
Dark - Street Lights Not Provided	0	0
Dark - Street Lights Off	0	0
Dark - Street Lights On	0	0
Dawn Or Dusk	0	0
Daylight	3	100.00
Not Known	0	0

Conditions	No.	%
Dry	3	100.00
Not Known	0	0
Wet	0	0

Alignment	No.	%
Curve	2	66.67
Not Known	0	0
Other / Unknown	1	33.33
Straight	0	0

Total	No.	%
Total	3	

14 Conclusion

This Transport Impact Statement has been prepared by Urbii on behalf of P & F Gangemi with regards to the Proposed Sand Excavation Site, located at Lot 1 Corio Rd, Nambeelup.

The subject site is situated on the western side of Corio Road. The site is presently cleared and fenced. A vehicle access gate is presently provided for vehicle access to and from the site.

It is proposed to develop the site into a sand excavation pit. Sand excavation is proposed to be undertaken in three stages.

The site features good connectivity with the existing road network. Corio Road forms part of the RAV network, which accommodates larger sized trucks. Due to the nature of the proposed uses, public transport, cycling and walking are less-desirable options for travelling to the site.

The traffic analysis undertaken in this report shows that the traffic generation of the proposed development can be accommodated on the surrounding road network.

It is concluded that the findings of this Transport Impact Statement are supportive of the retrospective planning application.



Appendices

Appendix A: Proposed development site plan

Site Plan

