TRAFFICWORKS™

## Traffic Impact Assessment Report

# 157 Kiewa Valley Highway, Baranduda

**Project Number** 220957
**Final 2 Report** 21/05/2024

**Client** Birdwood Energy

TRAFFICWORKS™

# Document control record



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# Executive summary

Chris Smith and Associates, on behalf of Birdwood Energy engaged Trafficworks to undertake a traffic impact assessment (TIA) for the proposed development of a battery energy storage system (BESS) facility at **157 Kiewa Valley Highway, Baranduda**.

The planning application has been updated to include the works to be undertaken by Ausnet Services, an energy delivery services business (EDSB), that will provide the connection to the electricity distribution network for the proposed BESS.

The table below summarises the subject site the proposed development, and our conclusions and recommendations.

| | |
|---|---|
| **Address** | 157 Kiewa Valley Highway, Baranduda |
| **Zoning** | Industrial 1 Zone |
| **Proposed development** | Battery energy storage system facility |
| **Road network** | Kiewa Valley Highway (C513)<br>Baranduda Drive |
| **Traffic generation** | Daily and peak hour traffic volumes of:<br>— 120 vehicles per day (vpd)<br>— 41 vehicles per hour (vph) |
| **Car parking** | Car parking demand of:<br>— 40 car parking spaces during the construction phase<br>— 10 car parking spaces, post-opening of the subject site |
| **Conclusion** | We conclude that subject to the implementation of our recommendations, there are no traffic engineering reasons that would prevent the development from proceeding.<br>— the subject site will generate a peak car parking demand of 40 spaces during the construction period and a car parking demand of 10 spaces post-opening<br>— the number of car parking spaces provided in the development plan satisfies the expected demand of 10 spaces post-opening<br>— the proposed development plan indicates no formal on-site car parking provision for the construction period<br>— the Ausnet Services substation works will generate a peak car parking demand of 12 spaces during the construction period<br>— the number of car parking spaces provided at the Ausnet Services substation satisfies the expected demand of 12 spaces during the construction works |

| | |
|---|---|
| | — the SISD requirement for a 50 km/h design speed for light and heavy vehicles of 97 m and 103 m, respectively, is satisfied along Baranduda Drive<br>— the setback of the main facility gate is approximately 150 m from the edge of Baranduda Drive and will accommodate the storage of approximately four 19 m semi-trailers clear of the traffic lane<br>— to accommodate development traffic, no additional work is required at the development's proposed site access along Baranduda Drive. |
| **Recommendations** | It is recommended that:<br>— **Recommendation 1:** Council to update signage on Baranduda Drive to indicate a speed limit of 50 km/h<br>— **Recommendation 2:** the development plan to include a designated car parking area for light vehicles during the construction phase with a minimum of 40 car parking spaces<br>— **Recommendation 3:** ensure the subject site access is designed to council satisfaction and allows for the simultaneous entry and exit of a 19-m semi-trailer. |

**Referenced documents**

References used in the preparation of this report include the following:

- Austroads Guide to Road Design
    - Part 4A – Unsignalised and Signalised Intersections, for sight distance criteria and provision for turning vehicles at intersections (AGRD4)
- Clause 52.06 of the Wodonga Council Planning Scheme
- Department of Transport and Planning (DTP) Open Data website (Crashes Last 5 years) for the crash history of the road network in the vicinity of the development

# Table of Contents

# 1 Introduction

Chris Smith and Associates, on behalf of Birdwood Energy engaged Trafficworks to undertake a traffic impact assessment (TIA) for the proposed development of a battery energy storage system facility at **157 Kiewa Valley Highway, Baranduda**.

The planning application has been updated to include the works to be undertaken by Ausnet Services, an energy delivery services business (EDSB), that will provide the connection to the electricity distribution network for the proposed BESS.

For the detail about:

- existing site conditions – see section 2
- description of the proposed development – see section 3.1
- traffic impact of the proposed development – see section 3
- car parking assessment of the proposed development – see section 4
- assessment of the access to the proposed development – see section 5
- our conclusions and recommendations – see section 6.

# 2 Existing conditions

## 2.1 Subject site

The subject site is:

- located at 157 Kiewa Valley Highway (C531) and is contained within lot 11 of PS340793, approximately 5 km southeast of the Wodonga central business district
- vacant.

Vehicular access to the subject site is currently available from Kiewa Valley Highway.

The street frontage lengths are as follows:

- Baranduda Drive: 550 m
- Kiewa Valley Highway: 390 m.



Figure 1 shows the location of the subject site, which is surrounded by residential / industrial / properties, the Ausnet Services substation and farmland.


Figure 1: Location plan (reproduced with permission from Nearmap)

The subject site is within an Industrial 1 Zone (IN1Z) under the Wodonga City Council's (council) Planning Scheme.

Figure 2 shows the zoning for the subject site and surrounding area.

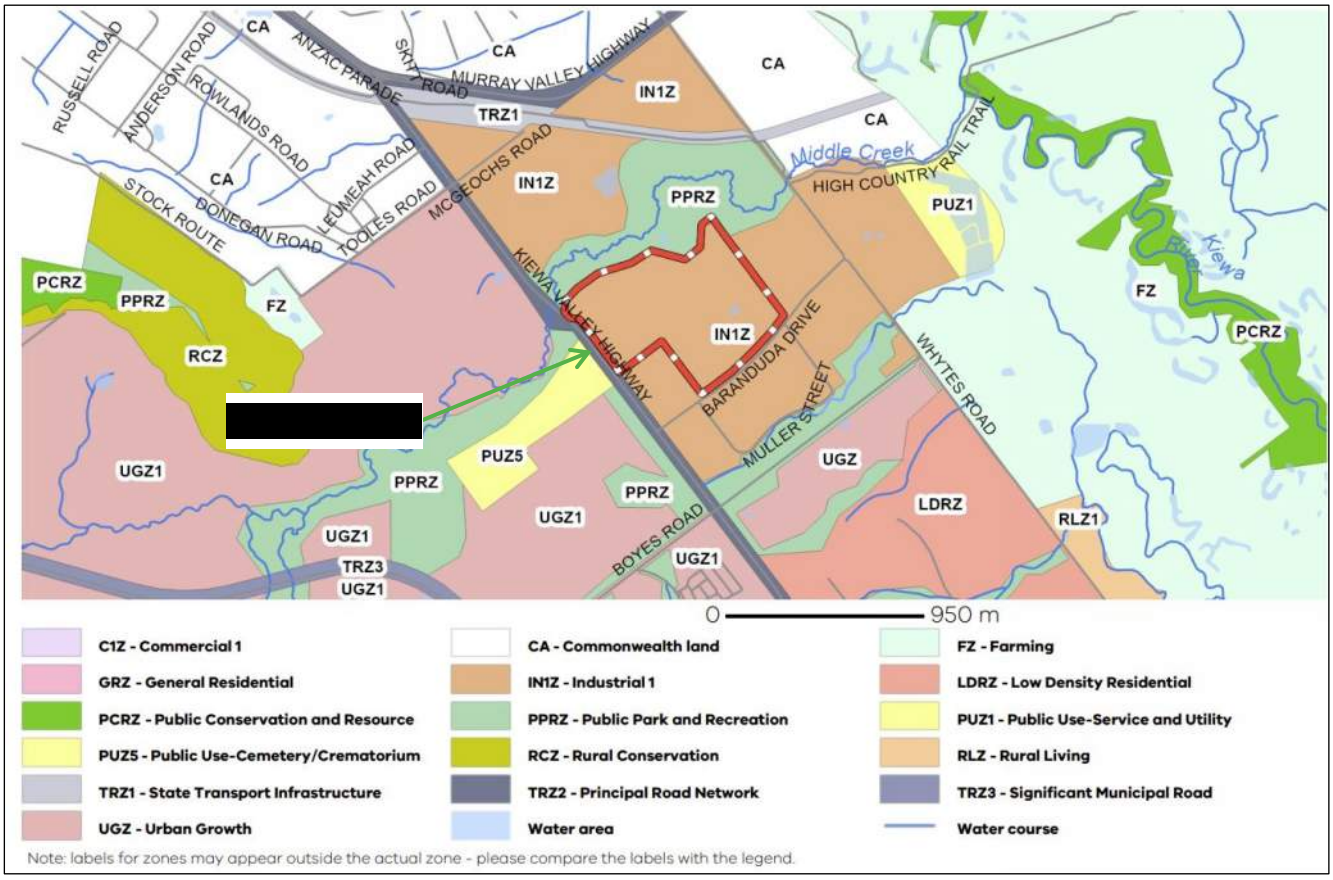



Figure 2: Zoning plan (reproduced from the VicPlan website)

## 2.2 Road network

The road network includes:

- Kiewa Valley Highway (C531)
- Baranduda Drive



### 2.2.1 Kiewa Valley Highway (C531)

Table 1 describes the features of this road.

Table 1: Kiewa Valley Highway features

| Feature | Description |
|---|---|
| Road type | Classified state road managed by the Department of Transport and Planning (DTP) |
| Access | Provides access between the Murray Valley Highway (B400) in Wodonga to the north and Falls Creek to the south |
| Carriageway | Two-way, two-lane road consisting of:<br>— 3.2 m traffic lanes in each direction bound by 1.5 m sealed shoulders |
| Road reservation | 60 m wide |
| Intersection | Forms a T intersection with Baranduda Drive providing the following turn treatments into Baranduda Drive:<br>— a short auxiliary left turn lane<br>— an auxiliary right turn lane |
| Speed limit | A posted speed limit of 80 km/h |

Figure 3 and Figure 4 provide further information about the road.

Figure 3: Kiewa Valley Highway facing northwest



Figure 4: Kiewa Valley Highway facing southeast

### 2.2.2 Baranduda Drive

Table 2 describes the features of this road.

Table 2: Baranduda Drive features

| Feature | Description |
|---|---|
| Road type | Collector Road, as per the council's road register |
| Access | Provides access between Kiewa Valley Highway to the southwest and Whytes Road to the northeast |
| Carriageway | Two-lane two-way road<br>7.5 m seal |
| Road reservation | 54 m wide |
| Speed limit | 50 km/h urban default speed limit transitioning to 70 km/h, 110 m west of Whytes Road.<br>Currently, there is no signage specifying the speed limit requirement along Baranduda Drive past the 'end 70 km/h' sign near the road's northeast end; refer to Figure 5.<br>  <br><br>Figure 5: End 70 km/h sign on Baranduda Drive 110 m west of Whyte Road<br>This can cause ambiguity when determining the speed limit past this point, as the road can be perceived to be rural due to its lack of street lighting.<br>It is recommended that signage be updated to indicate that Baranduda Drive is subject to the urban default speed limit of 50 km/h 110 m west of Whytes Road.<br>**Recommendation 1:** Council to update signage on Baranduda Drive to indicate a speed limit of 50 km/h. |

Figure 6 and Figure 7 provide further information about the road.

Figure 6: Baranduda Drive facing northeast



Figure 7: Baranduda Drive facing southwest before the intersection with Muller Street

### 2.2.3 Whytes Road

Table 3 describes the features of this road.

Table 3: Whytes Road features

| Feature | Description |
|---|---|
| Road type | Access Road as per the council's road register |
| Access | Provides access between Kenneth Watson Drive to the northeast and is truncated to the south |
| Carriageway | 6.8 m and 11.5 m seal north and south of Baranduda Drive, respectively, with unsealed shoulders |
| Road reservation | 45 m wide |
| Speed limit | A posted speed limit of 70 km/h |

Figure 8 and Figure 9 provide further information about the road.

Figure 8: Whytes Road facing northeast



Figure 9: Whytes Road facing southwest

## 2.3 Traffic volumes

### 2.3.1 Kiewa Valley Highway (C531)

The existing traffic volumes on Kiewa Valley Highway between Anzac Parade and Boyes Road were sourced from the Department of Transport and Planning (DTP) Open Data Portal for 2020. The traffic volumes are summarised in Table 4.

Table 4: 2020 traffic volumes on Kiewa Valley Highway sourced via DTP's open data portal

| Road Name | Daily two-way volume (vpd) | Daily NWB volume (vpd) | Daily SEB volume (vpd) | Heavy Vehicle (%) | Estimated Growth Rate |
|---|---|---|---|---|---|
| Kiewa Valley Highway between Anzac Parade and Boyes Road | 9,900 | 5,000 | 4,900 | 7% NWB<br>8% SEB | 2.0 % NWB<br>1.9% SEB |

### 2.3.2 Baranduda Drive and Whytes Road

Traffic count data was provided by the Council near the subject site for June 2020, with the survey results shown in Table 5.

Table 5: Traffic survey results summary

| Street | Location | Year | Daily Weekday Traffic (2-way) |
|---|---|---|---|
| Baranduda Drive | 80 m east of Kiewa Valley Highway | 2021 | 1,450 vpd |
| Whytes Road | 40 m south of Baranduda Drive | 2020 | 563 vpd |

It has been assumed that the traffic volumes are split evenly in each direction, and the peak hour volumes account for 10% of the daily volumes.



## 2.4 Crash history

The Department of Transport and Planning (DTP) data portal, which details all injury crashes on roads throughout Victoria, reports that no casualty crashes have occurred on the roads in the vicinity of the subject site in the last five-year period.

Based on this, we conclude that no trend requires immediate investigation.

## 2.5 Public transport

No public transport services operate within the vicinity of the subject site, so this matter is not considered further in this report.

## 2.6 Pedestrians and cyclists

There are no footpaths along Kiewa Valley Highway, Baranduda Drive, and Whytes Road within the vicinity of the subject site. Approximately 1.2 km north of the subject site, however, is the Cudgewa Wodonga Rail Trail, which takes approximately 15 minutes and 4 minutes to walk and cycle, respectively.

Figure 10 is a map of the rail trail within the vicinity of the subject site.

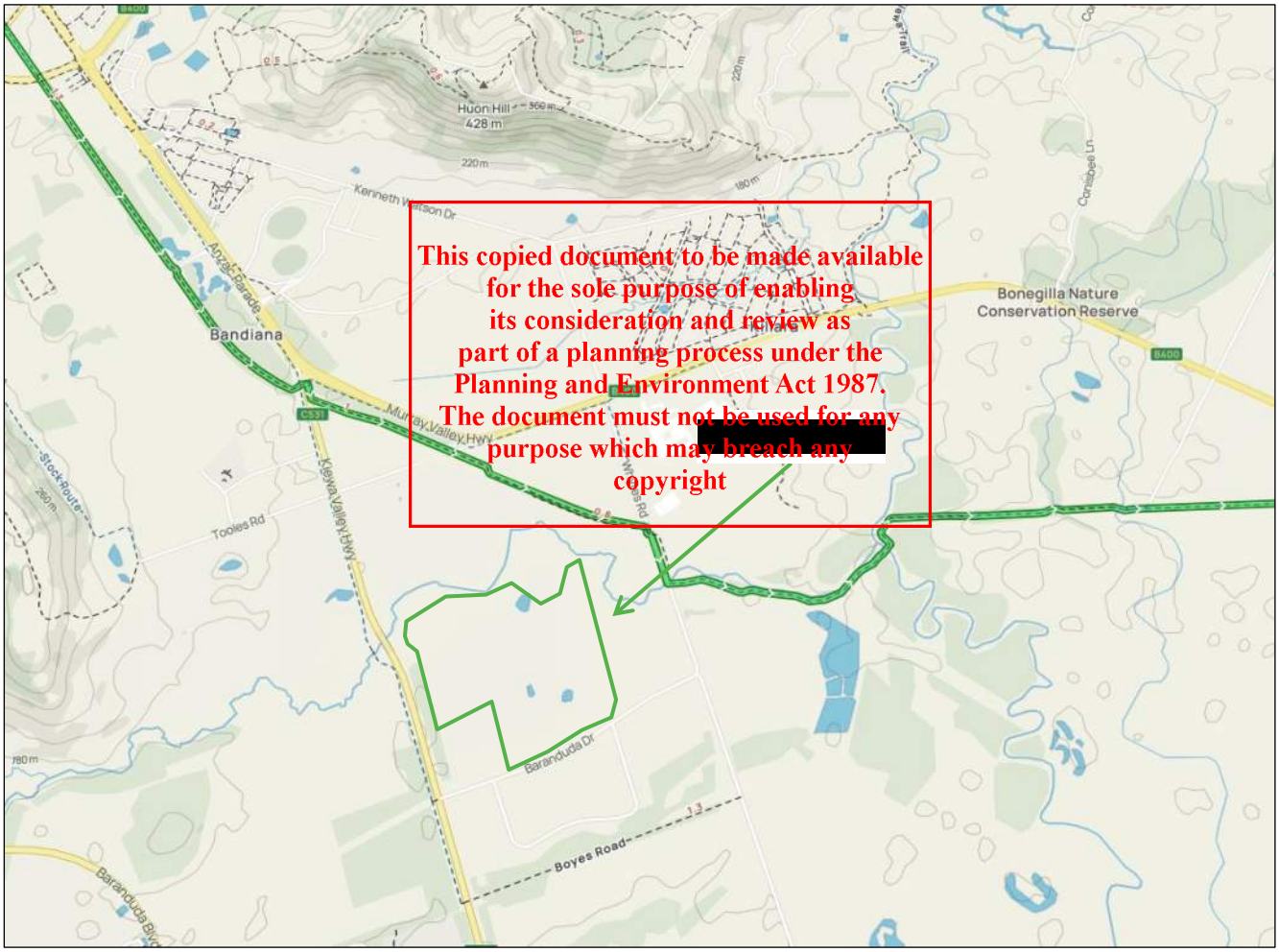





Figure 10: Map of the Cudgewa Wodonga Rail Trail within the vicinity of the subject site

# 3 Traffic assessment of the proposed development

## 3.1 The proposal

### 3.1.1 BESS development

The proposed battery storage facility will cover an approximate area of 17 ha, including surrounding setbacks, and consists of:

- four battery energy storage system (BESS) areas (49,000 $m^2$)
- harmonic filters (1,800 $m^2$)
- a substation (6,000 $m^2$)
- construction site/office/warehouse/laydown area (6,000 $m^2$)
- temporary construction storage/laydown (5,700 $m^2$)
- a control/switch room
- fire water tank.



The internal road network will generally consist of a 6 m wide access road, with the only exception being the 4 m light vehicle access road fronting the subject site's northern boundary.

Vehicular access to the proposed development will be via Baranduda Drive. Refer to Appendix 1 for the proposed development plan.

### 3.1.2 Ausnet Services works

As noted, the planning application for the proposed development has been updated to include the works proposed by Ausnet Services at their substation adjacent to the subject site on land known as Lot 2 of PS406394.

The original traffic impact assessment already considered all of the Ausnet Services construction traffic that will access the subject site for the BESS. Ausnet Services' additional works at their substation will take place during the subject site's development period. However, these works will be independent of this, and the traffic will only access the substation directly from Baranduda Drive.

## 3.2 Traffic generation

### 3.2.1 BESS construction

On-site construction for the proposed BESS facility is largely limited to the assembly and connection of components with the typical BESS system delivered to the site in shipping containers.

Equipment will mostly be transported to the subject site via rigid trucks, with the medium voltage power station (MVPS), BESS containers, and transformers required to be delivered to the subject site by 19 m semi-trailers (B-doubles will not be used for transportation).

Detailed vehicle movement estimates have been provided by the client and are summarised in Table 6.

Table 6: Daily and peak traffic flow for the proposed development during construction

| Period (months) | Activity | Typical Vehicles | | |
|---|---|---|---|---|
| | | Light vehicles | Heavy vehicles | Total |
| 1 - 6 | Premobilisation | 1-2 | 10 | 11-12 |
| 6 – 10 | Earthworks | 15-20 | 4-6 | 19-26 |
| 10 - 14 | Civil works i.e., footings, trenching | 15-20 | 6-10 | 21-30 |
| 14 - 24 | Electrical Balance of Plant (EBoP) | 20-40 | 14-21 | 34-61 |
| 24 - 30 | Commissioning & demobilisation | 15-20 | 10 | 25-30 |

These show that the peak activity at the subject site occurs during weeks 14 to 24, with up to 61 vehicles entering the subject site each day, comprising a maximum of 40 light vehicles arriving during the AM pre-work peak and 21 heavy vehicle arrivals spread throughout the day.

Based on these estimates, the proposed development is anticipated to generate approximately:

- 122 vehicle trips per day (vpd), 61 entering and 61 departing the subject site
- morning and afternoon peaks of 41 vehicles per hour (vph), comprising 40 light vehicles and 1 heavy vehicle (conservatively assuming a heavy vehicle will arrive during the development peak).

### 3.2.2 Ausnet Services substation

Detailed vehicle movement estimates associated with the Ausnet Services subdivision have been provided by the client and are summarised in Table 7.

Table 7: Daily and peak traffic flow for the Ausnet Services substation works during construction

| Period (months) | Activity | Typical Vehicles | | |
|---|---|---|---|---|
| | | Light vehicles | Heavy vehicles | Total |
| 1 - 6 | Premobilisation | 1-2 | 1-2 | 2-4 |
| 6 – 10 | Earthworks | 4-6 | 1-2 | 5-8 |
| 10 - 14 | Civil works i.e., footings, trenching | 4-6 | 3-6 | 7-12 |
| 14 - 24 | Electrical Balance of Plant (EBoP) | 4-6 | 3-6 | 7-12 |
| 24 - 30 | Commissioning & demobilisation | 1-2 | 0 | 1-2 |



This shows that the peak activity at the Ausnet Services substation will occur during weeks 10 to 24, with up to 12 vehicles entering the substation site each day. This comprises a maximum of 6 light vehicles arriving during the AM peak and 7 heavy vehicle arrivals spread throughout the day.

Based on these estimates, the proposed Ausnet Services substation works are anticipated to generate approximately:

- 24 vehicle trips per day (vpd), 12 entering and 12 departing the subject site
- morning and afternoon peaks of 7 vehicles per hour (vph), comprising 6 light vehicles and 1 heavy vehicle (conservatively assuming a heavy vehicle will arrive during the peak hours).

Due to the independent nature of the works at the Ausnet Services substation, the negligible traffic volumes generated have been excluded from the traffic assessment of the subject site, as they have minimal impact.

### 3.2.3 BESS operational

During the operational phase, an average of 5-10 light vehicles are expected to arrive on site per day. Occasionally, a heavy vehicle will arrive for testing or maintenance operations, accounting for 10-20 heavy vehicles annually. Occasional cranes would be 12t Franna or rubber tyre truck cranes up to 200t.

### 3.2.4 Heavy vehicle access to the subject site

Heavy vehicles are expected to arrive from Melbourne and Sydney via the Hume Freeway (M31), with the proposed route to the subject site consisting of the following movements:

- Hume Freeway (M31) to Bandiana Link Road (B400) and continue onto Kiewa Valley Highway (C531)
- turn left onto Baranduda Drive
- turn left into the subject site.

Figure 11 indicates the recommended route for all heavy vehicles to the subject site.

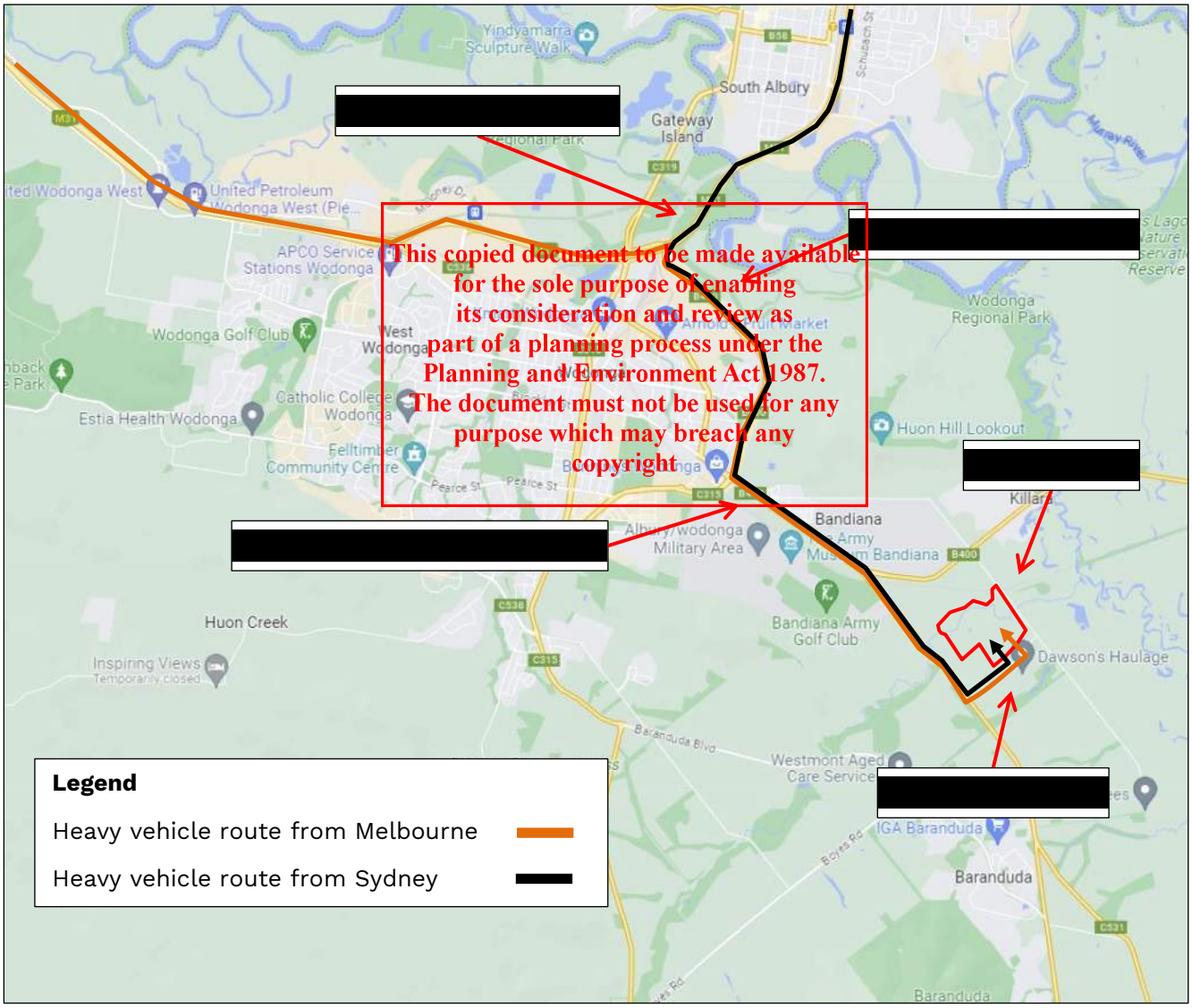





Figure 11: Recommended heavy vehicle route to/from the subject site

## 3.3 Traffic distribution assumptions

Our traffic distribution assumptions are that:

- 10% of light vehicles will travel to/from the south via Kiewa Valley Highway from neighbouring townships such as Baranduda
- 90% of light vehicles will travel to/from the north from neighbouring townships such as Albury, Wodonga and Bandiana with an 80/10 split via Kiewa Valley Highway and Whytes Road, respectively
- all heavy vehicles will travel to/from the north via Kiewa Valley Highway.

## 3.4 Anticipated traffic volumes

Based on the information provided by the client (refer to Table 6) the development's construction phase will take approximately 30 months (2.5 years). Assuming construction begins in mid/late 2024, it would be completed in late 2026/early 2027. As a result, the traffic volumes were projected along Baranduda Drive to 2026, with an annual compound growth rate of 1%, typical for collector roads.

Figure 12 shows the anticipated peak hour traffic volumes at the proposed development.

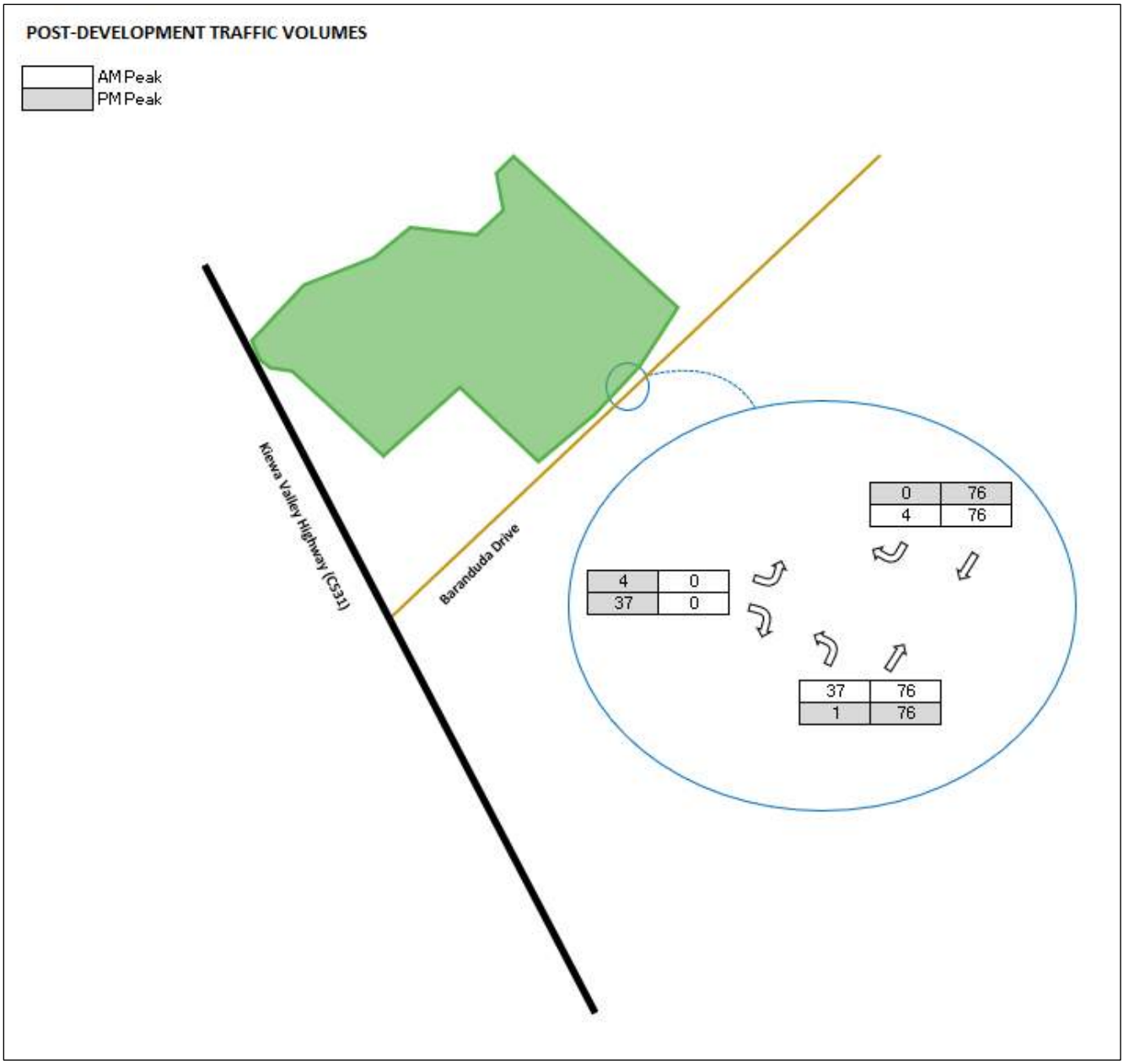



Figure 12: Anticipated peak-hour traffic volumes

# 4 Car parking assessment of the proposed development

### 4.1.1 BESS development

The RTA Guide provides car parking rates for new developments. However, the parking requirement for battery energy storage system facilities is currently unavailable. Therefore, an empirical assessment was undertaken to estimate the car parking demand for the proposed development.

Section 3.2.1 outlined that:

- up to 40 light vehicles are anticipated to access the subject site per day during the construction phase of the development
- up to 10 light vehicles are anticipated to access the subject site daily post-opening the facility for periodic maintenance.

**Conclusion 1:** the subject site will generate a peak car parking demand of 40 spaces during the construction period and a car parking demand of 10 spaces post-opening.

The proposed development site plan indicates 10 parking spaces fronting the proposed control/switch room. These spaces are designated for use during the operational phase of the development and satisfy the peak car parking demand of 10 spaces.



**Conclusion 2:** the number of car parking spaces provided in the development plan satisfies the expected demand of 10 spaces post-opening.

In regard to the construction period, no formal on-site car parking area has been designated. It is recommended that the development plan includes a designated car parking area for light vehicles during the construction phase with a minimum of 40 car parking spaces.

**Conclusion 3:** the proposed development plan indicates no formal on-site car parking provision for the construction period.

**Recommendation 2:** the development plan to include a designated car parking area for light vehicles during the construction phase with a minimum of 40 car parking spaces.

## 4.2 Ausnet Services substation

The RTA Guide does not include a parking requirement for substations. Therefore, an empirical assessment was undertaken to estimate the car parking demand for the proposed development.

Section 3.2.2 outlined that up to 12 light vehicles are anticipated to access the Ausnet Services substation per day during the construction phase of the works.

**Conclusion 4:** the Ausnet Services substation works will generate a peak car parking demand of 12 spaces during the construction period.

The Ausnet Services substation includes a designated car park within the existing facility that would satisfy the peak car parking demand of 12 spaces.

**Conclusion 5:** the number of car parking spaces provided at the Ausnet Services substation satisfies the expected demand of 12 spaces during the construction works.

# 5 Access to the site

## 5.1 Site access – Intersection SISD requirement

The visibility criterion normally applied to intersections is Safe Intersection Sight Distance (SISD). Figure 13 shows the SISD, which:

- is nominated in the Austroads Guide to Road Design, Part 4A (AGRD4) as the minimum distance that should be provided on a major road at any intersection (refer to Section 3.2.2 in AGRD4A)
- provides sufficient distance for the driver of a vehicle on the major road:
    - to observe a vehicle from the minor access approach moving into a collision situation, e.g., in the worst case, stalling across the traffic lanes
    - to decelerate to a stop before reaching the collision point.

The minimum SISD criterion for light vehicles, based on a general reaction time (RT) of 2 seconds and a design speed of 50 km/h, requires clear visibility for a desirable minimum distance of 97 m, based on Table 3.2 of AGRD4A.

SISD for trucks should also be considered and is established from the SSD (stopping sight distance) for trucks, given in Table 5.6 in the *Austroads Guide to Road Design Part 3: Geometric Design*, plus 3 seconds of observation time. The 85th percentile operating speed for trucks is typically the posted speed limit. This equates to a SISD of 103 m for a 50 km/h approach speed.

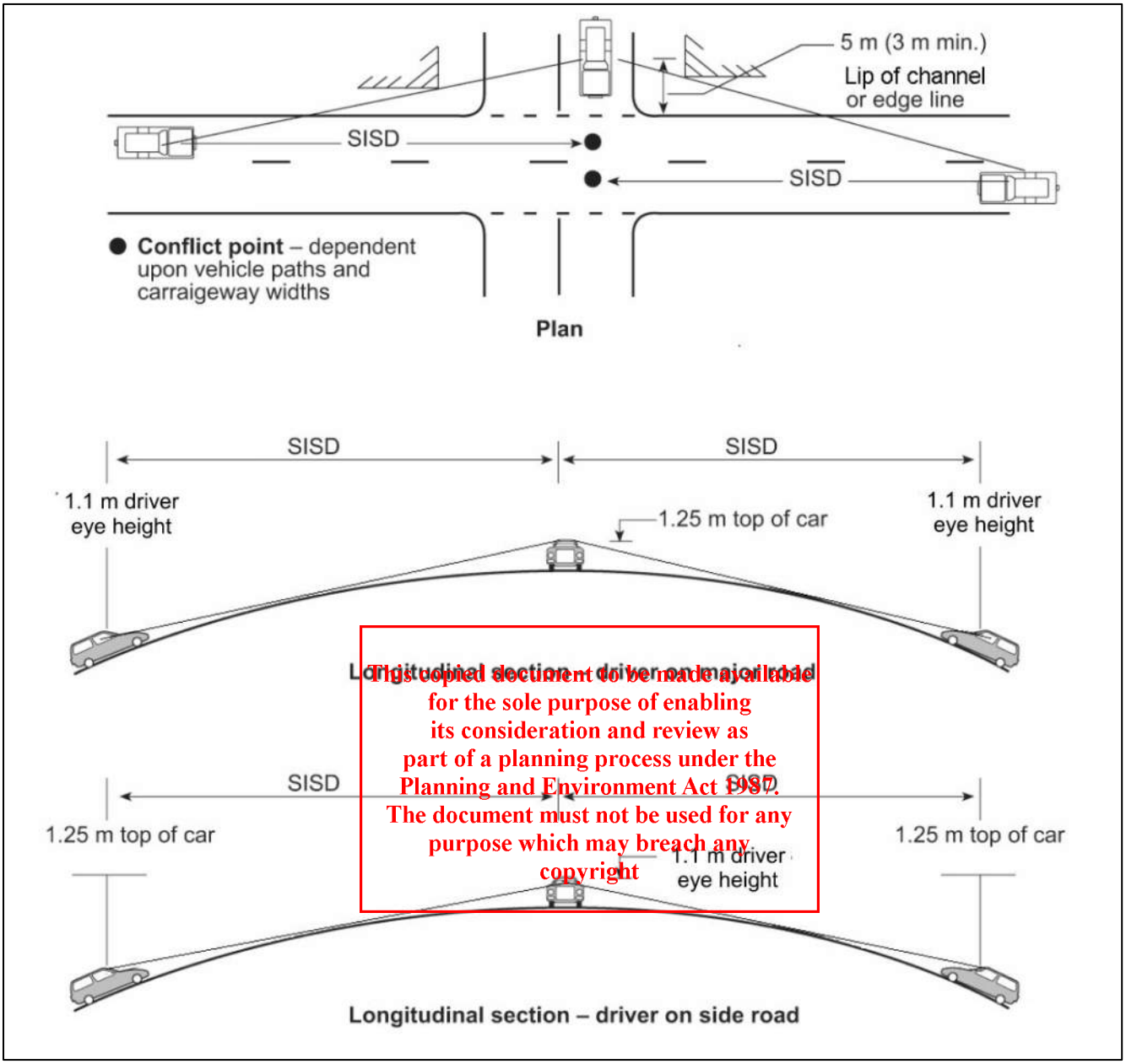





Figure 13: Safe Intersection Sight Distance (SISD) (Source: Figure 3.2 from AGRD4)

**Impacts for this proposed development**

The proposed site access to the development along Baranduda Drive is subject to a 50 km/h design speed, corresponding to a minimum SISD of 97 m and 103 m for light and heavy vehicles, respectively. This is achieved to the northeast and southwest of the proposed access location, as demonstrated by Figure 14 and Figure 15.

Figure 14: Sight distance at the proposed site access along Baranduda Drive facing northeast



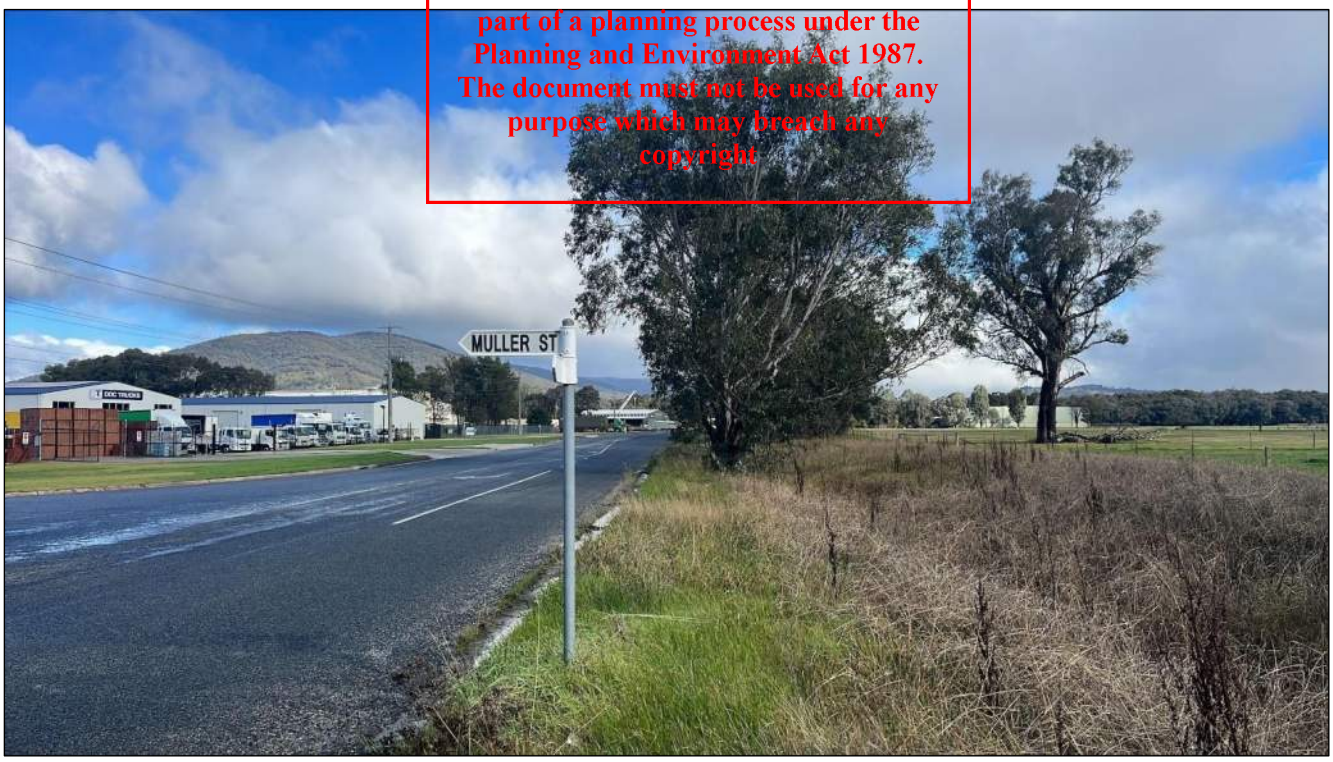



Figure 15: Sight distance at the proposed site access along Baranduda Drive facing southwest

**Conclusion 6**: the SISD requirement for a 50 km/h design speed for light and heavy vehicles of 97 m and 103 m, respectively, is satisfied along Baranduda Drive.

## 5.2 Access location and operation

It is recommended that the subject site access is constructed to council satisfaction, catering for the simultaneous entry and exit of a 19 m semi-trailer.

**Recommendation 3:** ensure the subject site access is designed to council satisfaction and allows for the simultaneous entry and exit of a 19-m semi-trailer.

## 5.3 Site security

The proposed development will have a main facility gate with stock fencing extending approximately 150 m to the subject site access along Baranduda Drive.

The main facility gate should be installed to accommodate all queuing vehicles. With an approximate setback of 150 m from the main facility gate to the edge of Baranduda Drive, there is enough distance to store approximately four 19-meter semi-trailers clear of the traffic lane.

**Conclusion 7**: the setback of the main facility gate is approximately 150 m from the edge of Baranduda Drive and will accommodate the storage of approximately four 19 m semi-trailers clear of the traffic lane.

## 5.4 Turn provisions impact

The traffic turning from major roads into minor roads should not delay through traffic.

Generally, turn treatments from major roads into minor roads at sign-controlled intersections are provided to ensure the intersection's safe and efficient operation.

The additional traffic generated by the development will only occur during the construction phase and will mostly be left-turning movements. Furthermore, Baranduda Drive along the frontage of the subject site is subject to low volumes and a speed limit of 50 km/h. As a result, providing turn treatments would be unnecessary.

**Conclusion 8:** to accommodate development traffic, no additional work is required at the development's proposed site access along Baranduda Drive.

# 6 Conclusions and recommendations

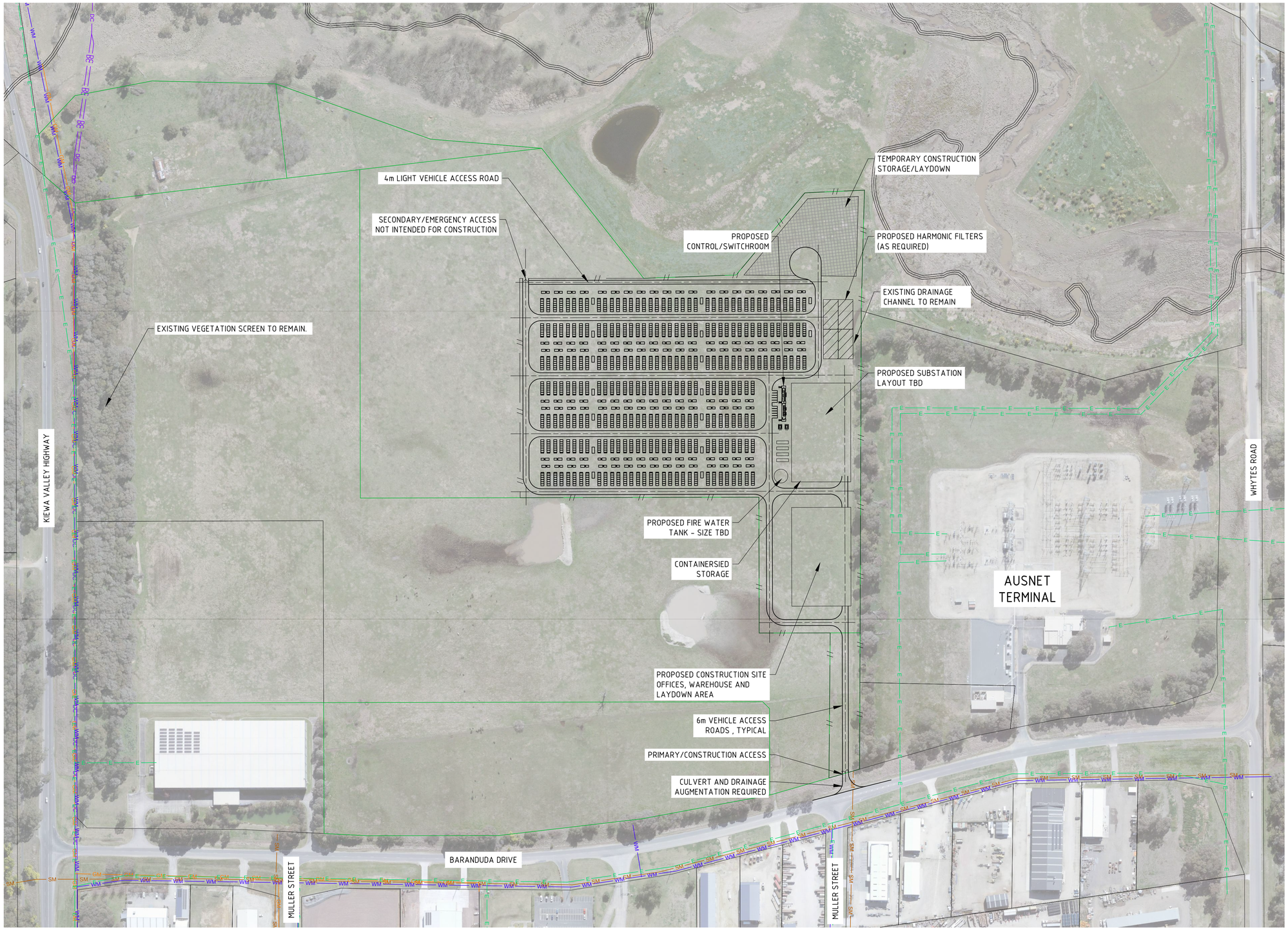
We conclude there are no traffic engineering reasons that would prevent the development from proceeding, as outlined below:

- the subject site will generate a peak car parking demand of 40 spaces during the construction period and a car parking demand of 10 spaces post-opening
- the number of car parking spaces provided in the development plan satisfies the expected demand of 10 spaces post-opening
- the proposed development plan indicates no formal on-site car parking provision for the construction period
- the Ausnet Services substation works will generate a peak car parking demand of 12 spaces during the construction period.
- the number of car parking spaces provided at the Ausnet Services substation satisfies the expected demand of 12 spaces during the construction works
- the SISD requirement for a 50 km/h design speed for light and heavy vehicles of 97 m and 103 m, respectively, is satisfied along Baranduda Drive
- the setback of the main facility gate is approximately 150 m from the edge of Baranduda Drive and will accommodate the storage of approximately four 19 m semi-trailers clear of the traffic lane
- to accommodate development traffic, no additional work is required at the development's proposed site access along Baranduda Drive.

However, this TIA has identified a number of recommendations that need to be addressed:

- **Recommendation 1:** Council to update signage on Baranduda Drive to indicate a speed limit of 50 km/h
- **Recommendation 2:** the development plan to include a designated car parking area for light vehicles during the construction phase with a minimum of 40 car parking spaces
- **Recommendation 3:** ensure the subject site access is designed to council satisfaction and allows for the simultaneous entry and exit of a 19-m semi-trailer.

# Appendix 1 – Development plan




## LEGEND:

- EXISTING PARCEL BOUNDARY
- SUBJECT PARCEL BOUNDARY
- CHAIN MESH FENCE
- PROPOSED GATE
- EXISTING FIBRE OPTIC CABLE
- EXISTING WATER MAIN
- EXISTING SEWER MAIN
- EXISTING GAS MAIN
- EXISTING ELECTRICAL (VARIOUS VOLTAGES)
- ACCESS ROAD
- INDICATIVE LAYDOWN AREA



## GENERAL NOTES:

1. DRAWINGS COLOUR CODED. MUST PRINT COPIES IN COLOUR.
2. ALL DIMENSIONS ARE IN METRES (m) UNLESS NOTED OTHERWISE.
3. SURVEY DATUM: GDA 2020/ MGA ZONE 55.
4. ALL DIMENSIONS, QUANTITIES AND LEVELS SHALL BE VERIFIED ON SITE PRIOR TO FURTHER WORKS.
5. LAYOUT SHOWN IS FOR INFORMATION PURPOSES ONLY, NOT FOR CONSTRUCTION.
6. BATTERY TECHNOLOGY/MANUFACTURER SUBJECT TO CHANGE.

## SITE PLAN

SCALE 1:2000

ADVERTISED PLAN

40 20 0 40 80
1:2000 (m)

NOT FOR CONSTRUCTION
3/10/2023 3:01 PM

| REV | DATE | REVISION DESCRIPTION | DES | RVD | APP | AUTH |
|---|---|---|---|---|---|---|
| | | | | | | |
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| | | | | | | |
| 0.1 | 10.03.2023 | FOR INFORMATION ONLY | C.A. | | | |

CLIENT

ENERVEN PROJECT No: 724

ENERVEN™

| | NAME | DATE |
|---|---|---|
| DESIGNED | C.ADAMS | 07.03.2023 |
| REVIEWED | | |
| APPROVED | | |
| AUTHORISED | | |

BARANDUDA BESS
SITE PLAN

CONCEPT DESIGN A

| SIZE | DRAWING NUMBER | REVISION |
|---|---|---|
| A1 | 724.EEI.GN.DWG.1A01 | 0.1 |

0 10 20 30 40 50 60 70 80 90 100
100mm ON ORIGINAL

# Appendix 2 – Acronyms and terms

| Acronyms / terms | Definition |
|---|---|
| AGRD4 | Austroads Guide to Road Design Part 4 – Intersections and crossings |
| AGRD4A | Austroads Guide to Road Design Part 4A – Unsignalised and signalised intersections |
| AGTM6 | Austroads Guide to Traffic Management Part 6 – Intersections, interchanges and crossings management |
| AGTM8 | Austroads Guide to Traffic Management Part 8 – Local street management |
| AS/NZS2890.1 | Australian Standard / New Zealand Standard 2890.1 Parking facilities Part 1: Off-street car parking |
| DTP | Department of Transport and Planning (formerly VicRoads) |
| ESD | Entering site distance |
| PSP | Precinct structure plan |
| SIDRA | SIDRA intersection – micro analytical traffic engineering software to model the performance of intersections |
| SISD | safe intersection sight distance |
| TIA | traffic impact assessment |
| vpd | vehicles per day |
| vph | vehicles per hour |
| VPA | Victorian Planning Authority |