



TRAFFIC IMPACT ASSESSMENT

PROPOSED RESIDENTIAL SUBDIVISION

88A & 90 WEDGE STREET, KYNETON

19 DECEMBER 2022

88A & 90 WEDGE STREET, KYNETON
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CONTENTS

1	INTRODUCTION	1
2	EXISTING CONDITIONS	1
3	THE PROPOSAL	5
4	KYNETON STRUCTURE PLAN	6
5	ASSESSMENT OF THE PROPOSED ROAD NETWORK	7
6	TRAFFIC GENERATION, DISTRIBUTION & IMPACT	8
7	CONCLUSION	10
	APPENDIX A	12

1 INTRODUCTION

O'Brien Traffic has been engaged by Armstrong Design and Technical Services Pty Ltd to undertake a traffic impact assessment of a proposed residential subdivision at 88A & 90 Wedge Street, Kyneton.

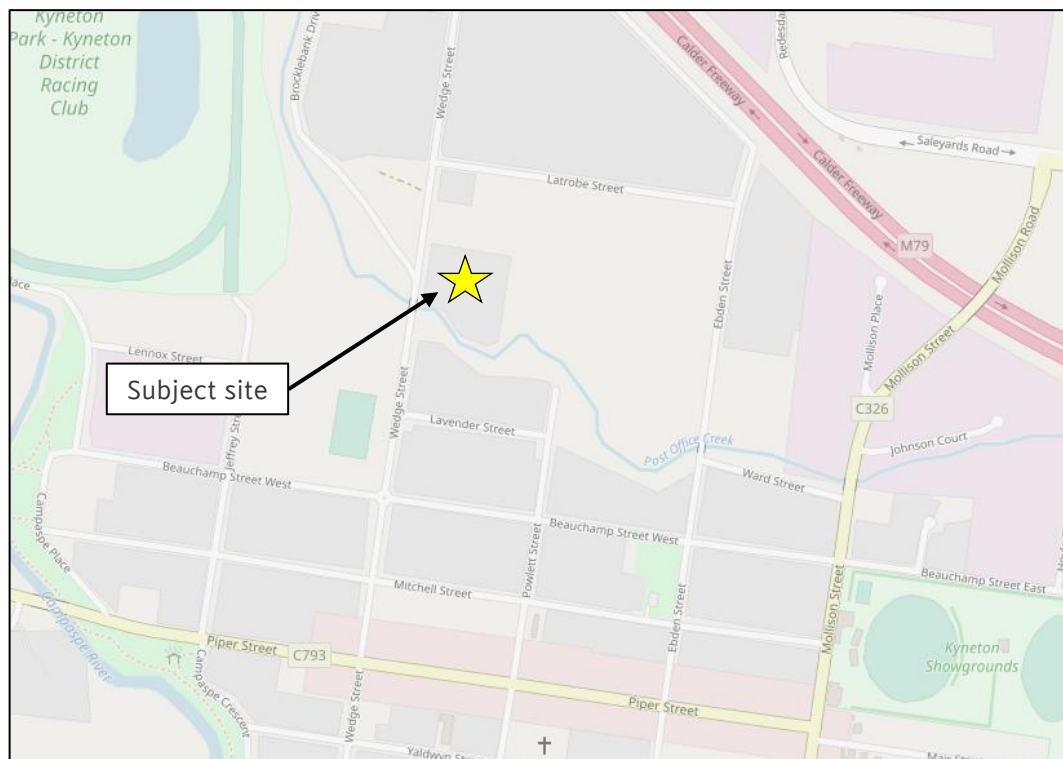
In the course of preparing this report:

- Concept layout plan prepared by Tomkinson Group (Drawing number: 890296CP03 sheet 2, dated 11 September 2018) and other relevant documentation have been examined;
- The subject site and surrounding area have been inspected via aerial photos; and
- The traffic implications of the proposal have been assessed.

2 EXISTING CONDITIONS

2.1 LOCATION AND LAND USE

The subject site is located on the eastern side of Wedge Street, approximately 550 m north of Piper Street. The northern and eastern boundaries of the site are bound by an unnamed road reserve and the Powlett Street road reserve, respectively. Post Office Creek runs along the southern boundary of part of the site. The location of the subject site and surrounding area is shown in **Figure 1**. A recent aerial photograph is shown in **Figure 2**.



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FIGURE 1: LOCATION OF SUBJECT SITE



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FIGURE 2: AERIAL PHOTO OF SUBJECT SITE

The site is zoned *Neighbourhood Residential (NRZ)* in the Macedon Ranges Planning Scheme and subject to a Development Plan Overlay (Schedule 17).

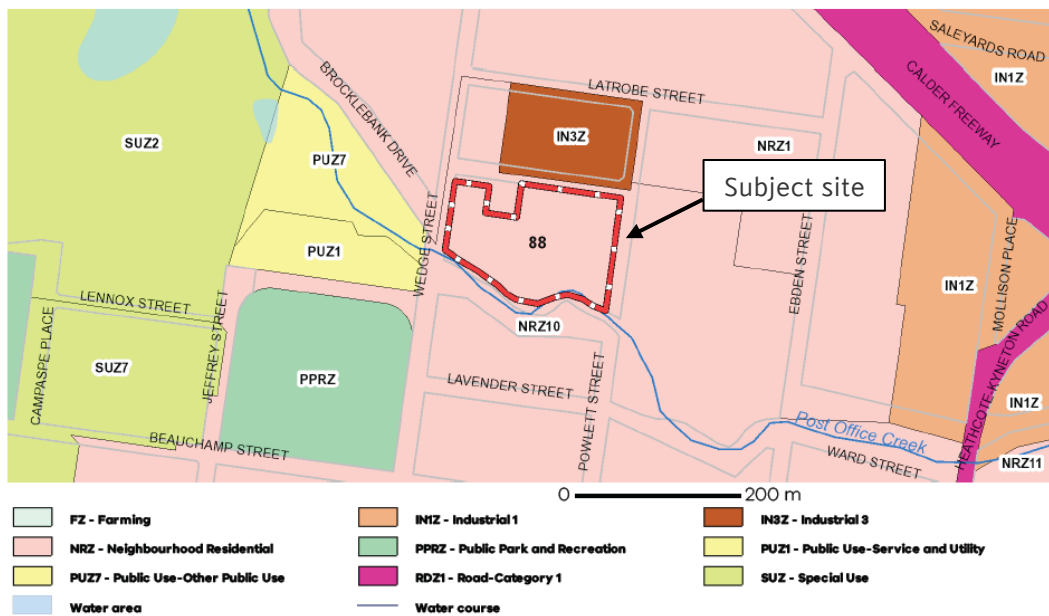
The overall site area is approximately 2 hectares. Two buildings (dwelling and a shed) are located in the north western portion of the site, with vehicle access currently provided via a driveway from Wedge Street.

2.2 SURROUNDING LAND USE

The subject site is surrounded by a mixture of residences, businesses and vacant land, including small factories and workshops in the light industrial area along Latrobe Street. A paddock occupies much of the space to the eastern side of the Powlett Street road reserve. To the south of the site is Post Office Creek.

A zoning map of the area is provided in **Figure 3**.

NEIGHBOURHOOD RESIDENTIAL ZONE (NRZ)
 NEIGHBOURHOOD RESIDENTIAL ZONE - SCHEDULE 10 (NRZ10)



SOURCE: PLANNING.VIC.GOV.AU

FIGURE 3: ZONING MAP

2.3 ROAD NETWORK

Wedge Street is a local street under the management of Council. It runs in a north-south orientation from Donnithorne Street at its southern end to George Street at its northern end, where it terminates at edge of the Calder Freeway reserve. Adjacent to the subject site, Wedge Street has a pavement width of approximately 5m. South of Post Office Creek, the pavement width increases to approximately 6m. A view of Wedge Street adjacent to the subject site is provided in **Figure 4**.



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FIGURE 4: VIEW OF WEDGE STREET ADJACENT TO SUBJECT SITE, FACING SOUTH

Powlett Street is a local street under the management of Council. It runs parallel to Wedge Street although terminates south of Post Office Creek. North of Post Office Creek, the Powlett Street road reserve continues to Latrobe Street.

Ebden Street is a local street under the management of Council. It also runs in a north-south orientation from south of Piper Street to George Street near the Calder Freeway reserve. In the vicinity of the subject site, Ebden Street has a pavement width of approximately 6.4-6.6m.

All of the streets surrounding the subject site are subject to the default 50 km/h urban speed limit.

2.4 EXISTING TRAFFIC VOLUMES

Existing traffic volumes on Wedge Street past the subject site are not known. However, it is anticipated that the road would carry a two-way volume of less than 500 vehicles per day north of Post Office Creek.

2.5 CASUALTY CRASH HISTORY

There have been no casualty crashes recorded along any of the streets surrounding the subject site during the last five years of available data (2015-2019).

2.6 PUBLIC TRANSPORT

Kyneton's Route 1 bus operates along Beauchamp Street West, passing within approximately 370 m of the subject site. This route circles the northern portion of Kyneton and then travels south to Kyneton railway station. The route would be accessible to residents of the proposed subdivision by walking along Wedge Street to Beauchamp Street West.

Bus services for Kyneton are shown in **Figure 5**.

Kyneton railway station is located 2.8 km to the south of the subject site, on Mollison Street. V/Line trains run north to Bendigo and south to Melbourne.



SOURCE: PUBLIC TRANSPORT VICTORIA (PTV) WEBSITE

FIGURE 5: PUBLIC TRANSPORT SERVICES

3 THE PROPOSAL

It is proposed to demolish all existing buildings on the subject site and subdivide the land into 18 residential lots with an average lot size of 700 m² plus approximately 4,800 m² of reserve in the southern portion of the subdivision, adjacent to Post Office Creek.

Access to the proposed subdivision would be provided from Wedge Street via:

- a new street (unnamed) along the northern boundary of the site in an existing road reserve, providing access to Lots 3-6, 12 and 13;
- construction of Powlett Street along the eastern boundary of the site, providing access to Lots 14-18; and
- an internal court accessed from the unnamed east-west street, providing access to Lots 7-11 of the residential lots and the reserve.

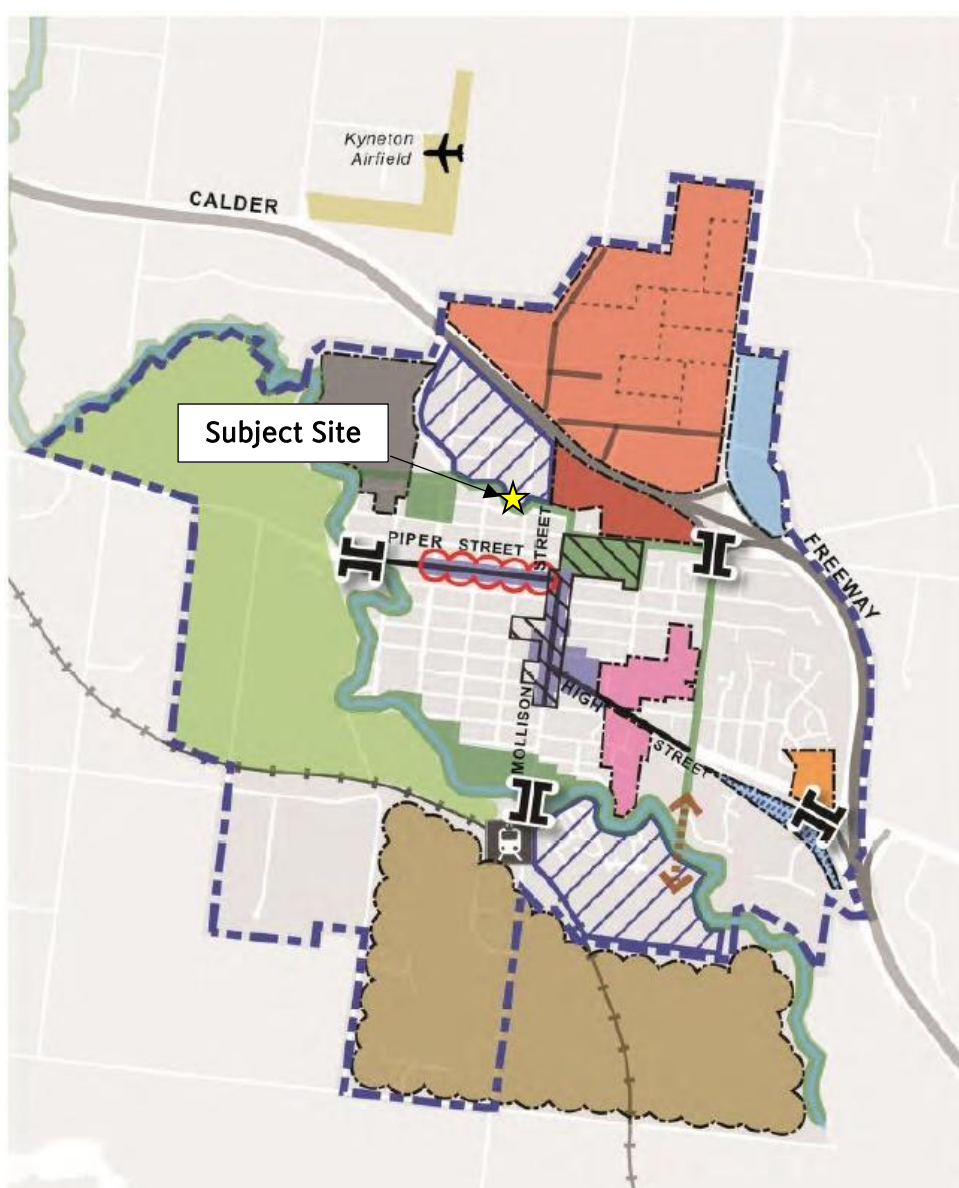
The proposed subdivision concept plan is provided in **Appendix A**.

4 KYNETON STRUCTURE PLAN

The Kyneton Structure Plan, dated June 2013, sets out the long-term plan to achieve Council’s vision for the township of Kyneton.

The Structure Plan for the precinct is provided in **Figure 6**. The subject site, which is highlighted on the plan, sits within an area earmarked for residential development, which extends north to the boundary of the Calder Freeway reserve.

The Structure Plan shows a pedestrian and bicycle link along Post Office Creek connecting to a trail along the Campaspe River to the west, and to Mollison Street and the Showgrounds to the east. While the Structure Plan does not nominate which side of Post Office Creek the trail would be provided, it would be appropriate to construct the path on the southern side given there is an existing road reserve on that side.



SOURCE: KYNETON STRUCTURE PLAN (JUNE 2013)

FIGURE 6: OVERALL KYNETON STRUCTURE PLAN

5 ASSESSMENT OF THE PROPOSED ROAD NETWORK

5.1 STREET DESIGN

Council's infrastructure construction policy, titled *Engineering Requirements for Infrastructure Construction* (June 2010) lists requirements for street design including carriageway widths and footpath provision. This includes:

- An Access Place (for up to 5 lots) – requires a road reserve width of 16 m and a shared carriageway of 5.5 m.
- An Access Place (6-20 lots) – requires a road reserve width of 18 m, a carriageway width of 6.6 m, and a footpath on one side of the street.
- An Access Street Level 1 (21-50 lots) – requires a road reserve of 20 m, a carriageway width of 6.6 m and footpath on both sides of the street.

The Infrastructure Design Manual (IDM), of which Macedon Ranges is a participating Council, has the following requirements for street design:

- Access Place (0-300 vpd) – road reserve width of 14 m, carriageway width of 6.0 m, footpath both sides.
- Access Street (0-2,500 vpd) – road reserve width of 16.0m, carriageway width of 7.3m, footpath both sides.

Desirably, street design would be consistent with the rural profile characteristics of other streets in the area, noting that the planning zoning encourages preservation of existing streetscape.

Internal Court

The concept subdivision plan indicates that the internal court within the subdivision would have a road reserve width of 16 m, with provision for a court bowl at the southern end. This exceeds the minimum reserve width for an Access Place in the IDM. The court bowl should have a turning radius of 8 m to facilitate vehicles, including emergency and service vehicles, turning around.

Unnamed access street

The existing road reserve along the subdivision's northern boundary appears to have a road reservation width of approximately 20 m. It is understood a carriageway width of 7.3m is proposed (in accordance with the IDM for an Access Street), with flush kerbs in keeping with other rural profiles in the area. A footpath is proposed on one side of the street (i.e. adjacent to the subdivision) which is considered appropriate, particularly given there is no pedestrian access to the light industrial uses on the northern side of the street.

Powlett Street

The existing Powlett Street road reserve also appears to have a road reservation width of approximately 20 m. It is understood a carriageway width of 7.3m is proposed (in accordance with the IDM for an Access Street), with flush kerbs in keeping with other rural profiles in the area. A footpath is proposed on one side of the street (i.e. adjacent to the subdivision) which is considered appropriate, particularly given the land to the

east is currently undeveloped.

At the southern end of Powlett Street, a court bowl with a turning radius of 8 m should be provided to facilitate vehicles, including emergency and service vehicles, turning around.

5.2 PEDESTRIAN & CYCLIST PROVISION

The recommended footpaths above would cater for pedestrian movements. No separate cyclist provision is required for an Access Place as per the IDM or Council's *Engineering Requirements for Infrastructure Construction*.

5.3 LOCAL AREA TRAFFIC MANAGEMENT

All intersections constructed as part of the subdivision would be T-intersections. This is appropriate from a road safety perspective.

Street lengths are less than 240 m, which is in accordance with Clause 56.06-7 to control traffic speeds.

5.4 EMERGENCY AND SERVICE VEHICLE ACCESS

Country Fire Authority (CFA) requirements for fire truck access are specified in the document *Requirements for Water Supplies and Access for Subdivisions in Residential 1 and 2 and Township Zones*. The requirements outlined in this guide would be met with the road cross-sections recommended above. This also ensures appropriate access for other emergency and service vehicles.

6 TRAFFIC GENERATION, DISTRIBUTION & IMPACT

6.1 TRAFFIC GENERATION

The proposed subdivision includes 18 residential lots. Each lot is anticipated to generate an average of 10 daily trips per lot. This equates to a total of 180 vehicle trips per day, of which 10% are anticipated to occur in each of the AM and PM peak hours (18 trips in each peak hour).

6.2 TRAFFIC DISTRIBUTION

To determine the peak hour residential traffic distribution, the typical residential splits between entry and exit movements have been adopted, which are:

- AM peak hour: 20% IN and 80% OUT; and
- PM peak hour: 60% IN and 40% OUT.

This equates to a total of 4 residential trips to the subdivision and 14 residential trips from the subdivision in the AM peak, and 11 trips to the subdivision and 7 trips from the subdivision in the PM peak.

As discussed in Section 3, access to the subdivision would be via Wedge Street. Having regard to the road network, it is anticipated that:

- 80% of trips would be to/from Wedge Street south (eg. to/from Kyneton town centre and Calder Freeway via Beauchamp Street);
- 20% would be to/from Wedge Street north (eg. to/from Calder Freeway or Mollison Street north of freeway via Latrobe Street, Ebden Street and Ward Street).

Based on the above, the AM and PM peak hour traffic distribution to/from the proposed subdivision is shown in **Figure 7**.



FIGURE 7: PEAK HOUR TRAFFIC DISTRIBUTION

6.3 TRAFFIC IMPACT

As noted above, all traffic to/from the proposed subdivision would be via Wedge Street. On the basis of the above traffic distribution, an additional 150 vehicles per day (15 vph in the AM and PM peak hours) are anticipated on Wedge Street south of the new unnamed access street, and 40 vehicles per day on Wedge Street north of the unnamed access street (4 vph in the AM and PM peak hours).

6.3.1 Wedge Street

As noted in Section 2.3, Wedge Street has a pavement width of approximately 5 m north of Post Office Creek, widening to approximately 6 m south of Post Office Creek. It is recommended that Wedge Street between Post Office Creek and the new unnamed access street be widened to 6 m to accommodate the additional traffic and be consistent with the carriageway width further south.

Where Wedge Street crosses Post Office Creek, the road width is constrained by the bridge barriers. Currently the seal width between barriers is approximately 6m, although the 'effective' width is less (allowing for clearances to the barriers). Nevertheless, there is sufficient width for two vehicles to pass. Given that the constrained situation occurs over a short distance only (approximately 35m), it will have no significantly impact on the operation of the road and is considered acceptable.

Widening of Wedge Street north of the unnamed access road is not considered necessary as additional traffic would be negligible.

6.3.2 Future development east of Powlett Street

It is understood that the land to the east of the subject site, between the Powlett Street road reserve and Ebden Street, is likely to be subdivided in the future. Based on the area of vacant land, it is likely that a future subdivision would provide approximately 36 residential lots. **It is understood that a future subdivision would provide east-west connectivity between Powlett Street and Ebden Street.**

Based on a 36 lot subdivision, up to 360 vehicle trips per day could be expected to be generated. Vehicle trips would likely be split between Ebden Street and Wedge Street (via Powlett Street). Assuming 80% of vehicles use Ebden Street and 20% use Wedge Street to access the subdivision, there would be an additional 288 vpd on Ebden Street (29 vph in each of the AM and PM peak hours) and 72 vpd on Wedge Street (7 vph in the AM and PM peak hours).

It is noted that Council's Road Register categorises Ebden Street as Category 1 – a Sealed Link road, suitable for carrying high traffic volumes (>2000 vpd). Wedge Street is a Category 3 – Sealed Access road with a typical ADT of 500-1000 vpd. With the additional traffic generated by the two subdivisions, traffic volumes on Wedge Street and Ebden Street would fall comfortably within these traffic volume ranges.

Therefore, there would be no need for an additional road connection over Post Office Creek at Powlett Street. That is, there would be no need to connect the new section of Powlett Street (constructed as part of the proposed subdivision at 88 Wedge Street) to Powlett Street south of the creek.

It is noted that Map 1 of Schedule 17 to the Development Plan Overlay shows a road connection of Powlett Street north to Latrobe Street. Such a road connection would serve little or no benefit to the proposed development or future development east of Powlett Street. With east-west connectivity between Wedge Street and Ebden Street, traffic from these developments is anticipated to distribute directly to Wedge Street or Powlett Street. Negligible traffic associated with the developments would use a connection of Powlett Street to Latrobe Street.

6.3.3 Summary

The proposed street network would accommodate the additional traffic volumes generated by the proposed subdivision at 88A & 90 Wedge Street, and potential future subdivision east of Powlett Street, subject to widening of Wedge Street between the new unnamed access street and Post Office Creek.

7 CONCLUSION

Based on the investigations made during the preparation of this report, we are of the opinion that:

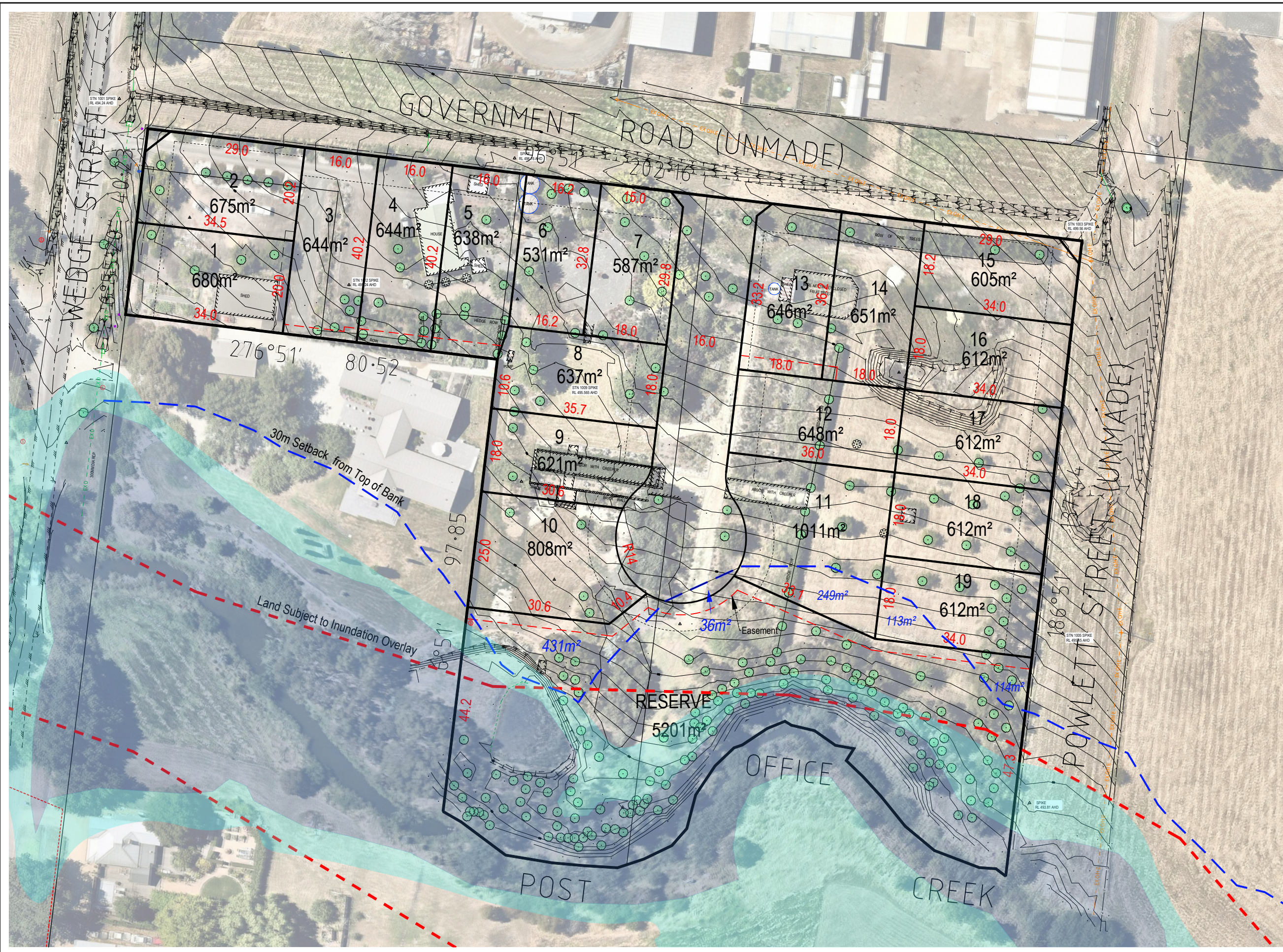
- The proposed residential subdivision is in accordance with the Kyneton Structure Plan;

- The existing/proposed street network would accommodate the additional traffic generated by the proposed subdivision at 88 Wedge Street, and potential future subdivision east of Powlett Street, subject to widening of Wedge Street between the new unnamed access street and Post Office Creek.
- The proposed new streets can be designed appropriately in accordance with the IDM and/or Councils *Engineering Requirements for Infrastructure Construction*.

Therefore, we see no traffic related grounds to prevent the proposed development from proceeding.

APPENDIX A

SUBDIVISION CONCEPT PLAN



NOTES:

AREAS SHOWN IN BLUE TEXT 113m² SHOW AREA OF ENCROACHMENT OR INCREASE OF 30m SETBACK FROM CREEK. AN AVERAGE OF GREATER THAN 30m IS ACHIEVED FOR THE SUBDIVISION PROPOSAL

BLUE SHADING SHOWS THE FLOOD MAPPING FROM NCCMA's 'FLOOD EYE'

= 0.3m DEPTH
 = >.0.3m DEPTH

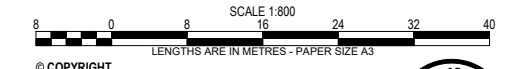
— = 30m SETBACK FROM CREEK
- - - = LSIO (LAND SUBJECT TO INUNDATION OVERLAY)

D	ALTER LOTS	P.J.L	ME	21/10/21	
C	ALTER LOTS	M.E.	P.J.L	ME 15/10/21	
B	AS SUBMITTED TO CLIENT	P.J.L	ME	11/10/21	
A	DRAFT	P.J.L	ME	01/10/21	
REV	REVISION	DES	DWG	CHK	DATE



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**80 Wedge Street
 Kyneton**
 Proposed Subdivision Plan

AUTHORITY: Macedon Ranges Shire
 CLIENT: ADTS P/L
 DWG STATUS:
CONCEPT

PROJECT & DWG No: 1326301 PROSUB D

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