Attachment E - ESR Transport Planning, Traffic Impact Assessment Report

PROPOSED ACCOMMODATION DEVELOPMENT 21 CHURCH STREET, MINYIP

Transport Impact Assessment Report



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PREPARED FOR

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1 Introduction

1.1 Overview

A planning permit is being sought for an accommodation development at 21 Church Street, Minyip. To assist in the consideration of the development proposal, ESR Transport Planning has been engaged to assess relevant transport implications.

1.2 Scope of This Report

This report documents a transport impact assessment which investigates the following:

- Existing transport conditions in the vicinity of the site.
- Statutory transport planning requirements.
- Parking demands generated by the proposed land use.
- Traffic movements generated by the proposed land use.
- Anticipated impacts on the surrounding road network.
- Design merit of proposed transport facilities.

1.3 Referenced Information

Documents

- Australian Standards, AS2890, Australian Standard for Parking Facilities.
- Austroads Traffic Management and Road Design Guides (various as noted in this report).
- Institute of Transportation Engineers (ITE), 2021, 11th Edition, *Trip Generation Manual*.
- Roads and Traffic Authority (RTA), 2002, Guide to Traffic Generating Developments.
- Transport NSW, 2013, Guide to Traffic Generating Developments Updated Traffic Surveys.
- Yarriambiack Planning Scheme.
- Yarriambiack Shire Council, Road Register, Version 9, 22/01/20.
- Yarriambiack Shire Council, Road Hierarchy, Version 8, 10/12/14.

Drawings / Data / Information

- Advice from BM Projects Collective regarding operation of the proposed development.
- An inspection of the site and surrounds August 2023.
- Drawings of the proposed development, by BM Projects Collective, dated 01/08/23.
- Online maps from Google, VicPlan, VicEmergency, Public Transport Victoria, and Yarriambiack Shire Council.
- Traffic volume and accident data from the Department of Transport and Planning (www.data.vic.gov.au).

1.4 Terms

- AS Australian Standard
- ITE Inst. of Transportation Engineers
- RTA Roads and Traffic Authority
- rs vph vehicle movements per hour

vpd

vehicle movements per day



2 Existing Conditions

2.1 Site

The subject site is located on the northeast side of Church Street, approximately 700m from the Main Street town centre. The site contains a shed building and is otherwise mostly vacant and used as a grazing paddock. It is understood that a hospital was formally located on the site. A gated vehicular access is provided to Church Street opposite Phillips Street.

Nearby land use is a mix, including a medical centre neighbouring to the northwest, farming paddocks to the east, a place of worship and residential properties.

The site and neighbouring medical centre are within a Public Use Zone (PUZ3). Other surrounding land is within a Township Zone (TZ).

Figure 2.1 Aerial Photo of Site Locality





2.2 Road Network

Church Street is classified as an Arterial Road (Transport Zone Category 2 (TRZ2), managed by Department of Transport and Planning). It is part of the Stawell-Warracknabeal Road arterial route beyond the township. A 60kph speed zone applies for much of its length between the site and the town centre. A 80kph speed zone applies southeast of the site. The transition between speed zones is near the southeast corner of the site, and is defined by a community gateway treatment (green signage and lane narrowing).

Phillips Street is classified as an Access Street and forms a T-intersection with Church Street near the southwest corner of the site. The Phillips Street intersection is give-way sign controlled, as is the case predominately for other nearby intersections.



Figure 2.2 Church Street (facing northwest, site on right)

2.3 Traffic Volumes

Minyip's road network is characterised by very low traffic volumes. Church Street accommodates a daily traffic volume in the order of 560 vpd. It's extension southeast, Stawell-Warracknabeal Road, accommodates approximately 440 vpd. Main Street accommodates approximately 400 vpd¹.

2.4 Public Transport, Walking & Cycling

Vline bus service Ouyen - Melbourne via Warracknabeal & Ballarat operates through Minyip, with a stop located in Church Street a short distance from Main Street.

A footpath is not provided alongside the site. A footpath does extend along the northeast side of Church Street from the town centre to an end approximately 30m from the site's southwest corner.

Cycling lanes or paths are not provided within the site's immediate vicinity.

¹ Source: Department of Transport and Planning databases (www.data.vic.gov.au).



2.5 Accident History

A review of road accidents in the site's vicinity has been undertaken using the Department of Transport and Planning's Road Crashes for Five Years database which includes accidents reported to police which resulted in personal injury within the last 5 years. The review found no accidents records within the Minyip township area.

3 Proposed Development

The proposed development will establish the site as a worker accommodation premises.

The proposed development consists of accommodation units, communal facilities buildings and an administration building. A total of 62 accommodation units, all 1-bedroom will be provided.

The development is to provide accommodation for staff working in the local district at mineral extraction worksites.

The site is designed with a vehicular accessway and car parking along the site's boundaries that surround the buildings. A total car parking provision of 47 spaces is proposed, including 1 disabled space.

The majority² of workers housed on-site will travel to worksites in a minibus operated by their employer. A bus parking bay is proposed near the communal and administration buildings.

A loading bay is also proposed near communal dining facilities.

4 Parking Assessment

4.1 Car Parking

Planning Scheme Standard Provision Requirements

Clause 52.06 (Car Parking) of the Yarriambiack Planning Scheme sets out planning controls with respect to car parking, and Table 1 to Clause 52.06-5 specifies parking provision rates for various land uses.

The proposed land use is expected to be classified as 'group accommodation'.

No standard provision rate is specified for group accommodation.

If a car parking requirement is not specified in the Table or elsewhere in the Planning Scheme, Clause 52.06 states that car parking spaces must be provided to the satisfaction of the responsible authority.

² All except management who may be permitted car access to worksites.



A Car Parking Demand assessment is presented below to inform decisions around the adequacy of the proposed parking provision.

Car Parking Demand Assessment

The proposed worker accommodation will house a transient workforce (e.g. 2 week on, 2 weeks off). We are advised that due to staff shift times and room cleaning arrangements, it will be typical that a majority, but not all, accommodation units are occupied at any one time. Occupancy rates in the order of 80% during worksite construction, and 60% ongoing worksite operation are anticipated.

We conservatively estimate that workers will travel to the accommodation predominately by car (98% mode share), and predominately as a single occupant (average 1.05 persons car occupancy). On this basis, a room occupancy rate between 70-85% would equate to parking demands between 41-49 vehicles.

The proposed car parking supply is 47 spaces. This appears to match a reasonable assessment of peak car parking demand. Should there be infrequent occasions of slightly greater demands than supply, numerous landscaped areas of the site would provide overflow parking opportunities.

Given all of the above, it is considered that the proposed development includes reasonable measures to provide car parking, and its use will not result in a significant impact to parking amenity within the surrounding area.

4.2 Bicycle Parking

Clause 52.34 (Bicycle Facilities) of the Yarriambiack Planning Scheme sets out planning controls with respect to the provision of bicycle facilities such as parking and change room facilities. Table 1 to Clause 52.34-3 specifies provision rates for various land uses.

A group accommodation development has no standard provision requirements.

5 Traffic Assessment

5.1 Traffic Generation

Guidance on the traffic generating characteristics of accommodation, lodging and residential land uses is provided by empirical data within Transport NSW 2013, RTA 2002, and ITE 2021. Sites with high density (e.g. all 1-bed) and/or low car ownership / usage typically generate vehicle movements in the order of 2-3 vpd per dwelling / room, with peak to daily traffic volume ratios of approximately 10%.

The majority of workers housed on-site will travel to their worksite in a minibus. Therefore, only non-work related trips will be generated by the majority of residents. Also, room occupancy rates well below 100% are anticipated. Accordingly, the empirical rate range of 2-3 vpd per room above is considered reasonably conservative to assess traffic activity of the proposed development. At the upper end, this estimates a daily trip generation to/from the site of 186 vpd (93 in / 93 out), and 19 vph during AM and PM peak hours.



5.2 Traffic Distribution

The direction in which vehicles travel to and from a site is influenced by a variety of factors including the site's location, configuration of access intersections, characteristics of the surrounding road network and trip purpose.

Given worksite locations, work relates trips are likely to travel to/from the southeast direction. Non work related trips are likely to be predominately to/from the northwest (township) direction.

5.3 Ability of Nearby Road Network to Absorb Development Traffic

Guidelines for roadway capacity specify that a 2-lane urban roadway can accommodate daily traffic volumes in the order of 15,000 - 20,000 vpd without experiencing high delays during commuter peak periods³. However, without flaring at intersections to provide additional lanes, it is typically intersections which form a lower capacity constraint in urban road networks.

In residential areas, it is desirable for roadways to accommodate traffic activity below an indicative maximum volume that is specified by type of roadway. Indicative maximum volumes are well below theoretical capacity, and take into account the implications of traffic activity on residential amenity and efficient intersection operation. The Planning Scheme defines indicative maximum volumes of up to 3,000 vpd for Access Streets and 7,000 vpd for Collector Streets.

Noting that existing traffic volumes along Church Street in the order of 560 vpd. And the proposed development is conservatively estimated to generate additional traffic in the order of 100 vpd along any one section of Church Street. Clearly, there is ample spare capacity within the surrounding road network such that development generated traffic, or much greater volumes, can be absorbed without significant impact to efficient operating conditions.

6 Design Review

General

An assessment of the design merit of proposed transport infrastructure has been undertaken with reference to the Yarriambiack Planning Scheme, the Australian Standard for Parking Facilities (AS2890) and the results of vehicle swept path simulations.

It is noted that ESR Transport Planning has reviewed and provided design input for previous versions of development drawings.

The following are key outcomes of our assessment.

- The carpark design is a common layout which can be conveniently accessed.
- Proposed space, aisle and accessway dimensions are consistent with Clause 52.06 of the Planning Scheme, and the Australian Standard for Parking Facilities (AS2890.6) for disabled spaces (with some very minor exceptions as set out in Figure's 6.1 and 6.2).

³ Interrupted flow capacity = 900 vpd per lane (Austroads Guide to Traffic Management Part 3), with 10% peak to daily ratio = 18,000.



- Swept path analysis has been undertaken to confirm a medium rigid truck (representative of waste / fire trucks and larger than most mini buses) can negotiate critical curves of the accessways satisfactorily, refer Figure 6.3.
- Footpaths within the site do not provide a connection towards the town centre. It would be ideal if a footpath connection to the southwest corner of the site could be provided, refer Figure 6.4).



Figure 6.1 Recommended Modifications to Parking and Aisle Dimensions

Figure 6.2 Recommended Modifications to Parking and Aisle Dimensions







Figure 6.3 Swept Path Analysis – Medium Rigid Vehicle at Critical Curves





Figure 6.4 Recommended Footpath Additions

Church Street Vehicle Crossings

The proposed development includes modification to vehicle access to a road in a transport zone. Should a planning permit be issued, it is likely to include typical conditions relating to vehicle crossing design and construction occurring to road agency satisfaction.

Figure 6.5 provides a conceptual layout showing location of the proposed vehicle crossings.

It is noted that the community gateway speed zone transition treatment alongside the site includes lane narrowing with a painted centre median bound by a single continuous line. And that under the road rules, vehicles can enter and exit a road across these lines.

Along all areas of the site frontage, excellent sight lines are available to approaching traffic, refer Figure 6.6.





Figure 6.5 Church Street Vehicle Crossings Locations

Figure 6.6 Sight Line Views Along Church Street from Site Frontage



Summary

Given all of the above, and subject to some minor modification of development drawings, proposed transport infrastructure is expected to facilitate safe and efficient operational outcomes.



7 Conclusions

The following conclusions have been made within this report:

- 1. The proposed development includes reasonable measures to provide car parking, and will not result in a significant impact to parking amenity within the surrounding area.
- 2. There is ample spare capacity within the surrounding road network to absorb site generated traffic without significant congestion impacts.
- 3. Proposed transport infrastructure is expected to facilitate safe and efficient operational outcomes.