Traffic Engineering Evidence

Verbena Street, Baranduda
Amendment C132 to the Wodonga Planning Scheme

Prepared for
Next 1 Pty Ltd

Instructed by
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STATEMENT TO PLANNING PANELS VICTORIA BY HENRY TURNBULL, TRAFFIC ENGINEER
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1. Executive Summary

1.1. Introduction

I have been retained by Harwood Andrews on behalf of Next 1 Pty Ltd in April 2020 to undertake traffic engineering assessments and prepare traffic evidence in relation to Amendment C132 to the Wodonga Planning Scheme, to rezone land on the northwest corner of the Verbena Street/Arnica Circuit intersection in Baranduda for the purpose of the use and development of a supermarket.

I have also been engaged to assess and respond to the submissions in relation to this matter.

In preparing this report, I have relied upon the facts, matters and assumptions detailed in Appendix A.

1.2. Qualifications and Experience

Appendix A contains a statement setting out my qualifications and experience, and the other matters raised by “Planning Panels Victoria – Planning Panels – Expert Evidence”.

Appendix B contains my CV.

1.3. Summary of Opinions

Having undertaken traffic engineering assessments of the proposed Amendment C132 to the Wodonga Planning Scheme, I am of the opinion that:

a) the proposed car parking provision exceeds the statutory requirement and will easily accommodate the peak demands generated by the supermarket as well as allowing for overspill school drop-off/pick-up parking to occur,

b) adequate provision can be made for bicycle parking on the site in accordance with Clause 52.34, and this is appropriately addressed by permit condition 4h,

c) traffic generated by the proposed supermarket can readily be accommodated on the surrounding road network and intersections without any adverse impacts,

d) the level of traffic on Verbena Street between Arnica Circuit and Juniper Way will remain within the environmental capacity of a local access street,

e) the Verbena Street carriageway exceeds the minimum dimensions specified in the IDM for the level of traffic it will ultimately carry,

f) the site’s loading provisions are adequate and there will not be any adverse on-site or off-site amenity, traffic flow or road safety impacts,

g) subject to installation of the footpaths as proposed, there will not be any adverse pedestrian safety issues as a result of the proposed supermarket, and

h) there are no traffic engineering reasons why the subject site should not be rezoned and a permit granted for the development of a 1,300m² supermarket at Lot 128 on PS 733790, Verbena Street, Baranduda.
2. Amendment C132

Amendment C132 to the Wodonga Planning Scheme applies to land in Baranduda on the northwest corner of the Verbena Street/Arnica Circuit intersection.

The Amendment is a combined planning permit application and planning scheme amendment under Section 96A of the Act, and seeks to facilitate the development of a Neighbourhood Convenience Centre supermarket at Baranduda, in accordance with the Wodonga Growth Strategy (WGS), the Wodonga Municipal Strategic Statement and the Wodonga Activity Centre Hierarchy Strategy (July 2019).

Specifically, the Amendment:

• Rezones land (Lot 128 on PS 733790) from General Residential Zone (GRZ) to Mixed Use zone (MUZ).

• Amends Wodonga Planning Scheme Map 16.

The Wodonga Planning Scheme Amendment C132 Explanatory Report states the following in relation to why the Amendment is required:

• The Amendment is required to facilitate the development of a Neighbourhood Convenience Centre, at Baranduda. The development is in accordance with municipal strategic policy namely, Clause 21.03-1 Activity Centre of the Wodonga Planning Scheme, the Wodonga Activity Centre Hierarchy Strategy and the Wodonga Growth Strategy (WGS). These strategic documents and the policy statements within the Municipal Strategic Statement, seek to ensure that the tiered hierarchy of activity and retail centres across the municipality is achieved and that development is commensurate with residential and population growth whilst maintaining the primacy of larger population catchments and centres. The proposed amendment will ensure that development of the site is in accordance with long established strategic objectives and strategies.

• The zone applied to the development site along with a pre assessed Planning Permit and s173 agreement (P & E Act 1987) setting out a floor space cap, ensures that the supermarket, otherwise prohibited under the General Residential 1 Zone, will be developed in-line with preferred strategic direction.

• The Amendment will facilitate locals and the immediate adjoining community to “shop locally” and may assist in reducing private vehicle use, offer choice for convenience shopping needs, and reducing unnecessary multiple car trips while contributing to household budgets.

The land proposed to be rezoned to Mixed Use is shown in Figure 1 below.
3. Proposal

The planning application which accompanied the rezoning request included a 1,300m² supermarket and a total of 72 car parking spaces, including two disabled spaces.

Vehicular access to the site is provided via two two-way crossovers to Verbena Street.

The development application includes three bicycle parking spaces, and a pedestrian walkway along the southern wall of the supermarket, providing connectivity between the site, Verbena Street and the adjacent community centre on Sage Court.

A recessed loading dock is located on the northern side of the supermarket, and is accessed via the western crossover to Verbena Street.
As a result of my review of the proposed site layout, I have recommended several changes to the application plan which although minor in nature, give a better design outcome. A copy of the updated plan is attached at Appendix C.

The changes are:-

- a widening of the western crossover to allow better access for heavy vehicles,
- the introduction of a row of parking on the southern side of the carpark,
- a slight rearranging of the aisle widths within the carpark to conform with the Australian Standard,
- an increase in the number of parking spaces from 72 to 73, and
- a minor widening of the loading dock and loading access to ensure easy egress for large vehicles.

4. **Section 173 Agreement**

A Section 173 Agreement has been drafted to accompany the Planning Scheme Amendment to ensure that the supermarket will be developed in-line with Council’s preferred strategic direction.

The section 173 Agreement provides for the following:

- The leasable floor area of the Neighbourhood Convenience Centre must not exceed 1,500 square metres; and
- If any part of the Subject Land is used for the purpose of an Office, the combined leasable floor area on the Subject Land that is used for an Office must not exceed 100 square metres.

5. **Proposed Permit Conditions**

Council’s meeting agenda dated 16th March, 2020, sets out draft conditions for Permit No. 103/2018, and includes the following traffic engineering related conditions:

4. Before development starts, detailed engineering construction plans … to the satisfaction of the responsible authority … must incorporate the following requirements:

   c) Parking shall be provided in accordance with the planning permit conditions, each parking bay is to be clearly delineated (line marked and/or signed) as required. The removal of any existing parking bays must be offset by new bays.

   d) Measures taken to prevent damage to fences or landscaped areas of adjoining properties and to prevent direct vehicle access to an adjoining road(s) other than by a vehicle crossing.

   e) Vehicular crossing and driveway crossovers shall be constructed to the Council’s standard. A maximum crossing width must be the minimum required to accommodate the design turning template of the anticipated service vehicles. A Road Reserve Works Permit is to be obtained from the relevant authority.

   f) Incorporate safe pedestrian walks and (line marked) crossings within the proposed carpark.
g) New footpath construction and associated crossing(s) must be provided along the full frontage of the development along Verbena Street and Arnica Circuit. New connections and strategic links must be provided to the existing reserve path (north of the proposed development) and to the existing paths in Sage Court.

h) Provision of bicycle facilities in accordance with Wodonga Planning Scheme Clause 52.34.

6. Construction Management Plan ... must address:
   c) Construction vehicle access point to the site during construction;
   d) Parking facilities for construction workers;

14. Waste Management Plan ... must provide for:
   a) The method of collection of garbage and recyclables.
   b) Designation of methods of collection.
   c) Appropriate areas of bin storage on site and areas for bin storage on collection days.

17. The hours of operations for uses are 6:00am to 11:00pm on all days including public holidays.

18. Regulation of Delivery times – Deliveries to and from the site (including waste collection, but with the exception of bakery and dairy deliveries) must only take place between 7:00am and 7:00pm Monday to Friday and 8:30am and 4:00pm Saturday, Sunday and public holidays.

19. Vehicle Access Lanes and Car Park Construction – Before the use starts, the areas set aside for the parking of vehicles and access lanes as shown on the endorsed plans must be:
   d) Line marked to indicate each car space and all access lanes clearly marked to show the direction of traffic along access lanes and driveways to the satisfaction of the responsible authority.

20. A minimum of 2 car spaces must be provided for the exclusive use of disabled persons. The car spaces must be provided as close as practicable to suitable entrances of the building and must be clearly marked with a sign to indicate that the spaces must only be utilised by disabled persons.

21. Signs to the satisfaction of the responsible authority must be provided directing drivers to the areas set aside for car parking and must be located and maintained to the satisfaction of the responsible authority.

I understand that hours of operation (condition 17) will be revised to 10pm close.
6. Existing Conditions

6.1. Subject Site

The subject site is located on the northwest corner of the Verbena Street/Arnica Circuit intersection in Baranduda, as shown in the locality plan presented at Figure 2.

The subject site is known as Lot 128 on PS 733790 and is irregular in shape with a total area of 5,207m$^2$, and frontages to Verbena Street and Arnica Circuit.

The site is currently vacant undeveloped land with provision for access at the Verbena Street corner.

An aerial view of the site is shown in Figure 3 and a site frontage photograph is shown in Figure 4 below.
Figure 3: Aerial View of Site (www.nearmap.com)

Figure 4: Site Viewed from Verbena Street
6.2. Land Use

The land is currently zoned General Residential Zone – Schedule 1 (GRZ1) as shown in Figure 5 below, and is affected by the Bushfire Management Overlay (BMO).

Surrounding land uses included residential development to the east, Baranduda Primary School and community church to the southeast, Baranduda General Store to the south, Baranduda Community Centre, skate park and swimming pool to the west, and Baranduda Recreation Reserve to the north.
6.3. Road Network

Verbena Street

Verbena Street is a local street which extends approximately 500m between Baranduda Boulevard in the west and Lorage Street in the east. The alignment changes direction a number of times, and forms the eastern, northern and western boundaries of Baranduda Primary School.

In the vicinity of the site, Verbena Street is generally configured with an 8.6m wide carriageway within an 18m reservation. Footpaths are generally constructed on both sides, except for along the site frontage.

A school crossing is located approximately 50m south of the site on Verbena Street, and "No Stopping" restrictions apply on both sides on the approach and departure sides of the crossing. A 40km/h speed limit applies.

Figure 6: Verbena Street Looking North
Arnica Circuit

Arnica Circuit is a local access street which extends approximately 300m in a loop, connecting to Verbena Street at both ends.

In the vicinity of the site, Arnica Circuit is configured with a 7.3m wide carriageway within a 16m road reservation. A footpath is provided on the east side opposite the site.

The default urban 50km/h speed limit applies.

Baranduda Boulevard

Baranduda Boulevard is a local (rural) main road which is zoned Road Zone – Category 2 (RDZ2) and extends approximately 6.5km in a northwest-southeast direction between Beechworth-Wodonga Road and Yakandandah-Wodonga Road.

In the vicinity of its intersection with Verbena Street, Baranduda Boulevard is configured with a 7m (approx.) carriageway between edge-lines, providing a 3.5m wide marked traffic lane in each direction, with sealed shoulders on both sides.

A posted speed limit of 60km/h applies.
6.4. Existing Traffic Conditions

There is no recent traffic count data available for Verbena Street or Baranduda Boulevard, and it is not possible to undertake counts that are reflective of “typical” conditions due to the current restrictions to movement resulting from the current COVID-19 pandemic.

However, a Traffic Impact Assessment (TIA) report was prepared by Peter Meredith Consulting (dated 6th November 2018) which accompanied the town planning and rezoning application. The report made an estimate of the traffic volumes based on standard traffic generation rates, sourced from the RMS Guide to Traffic Generating Developments.

The RMS Guide is an update to the former RTA Guide to Traffic Generating Developments, which is referred to in Austroads which is used by Department of Transport (DOT) and Regional Roads Victoria (RRV) and is generally regarded as a standard for development characteristics.

For the primary school use, a traffic generation rate of 1.4 trips per student per day and 0.52 trips per student per hour in the school pick-up and drop-off peaks was adopted, with this rate quoted from the South Australian Department of Planning, Transport and Infrastructure’s Trip Generation Rates for Assessment of Development Proposals. Notably, there is no Victorian equivalent, and the RMS Guide (NSW-based) does not include rates for schools.

A trip generation rate of 1.4 trips per student per day corresponds to an average of two students per car, with 70% of students being dropped off/picked-up and the remaining 30% arriving via sustainable modes (walking/cycling/bus). The adopted rates are consistent with my experience.

The Peter Meredith Consulting TIA calculated a two-way daily traffic volume of 399 vpd on Verbena Street between Juniper Way and Arnica Circuit, and 1,614 vpd on Verbena Street between Baranduda Boulevard and Sage Court.
6.5. Car Parking Conditions

Kerbside parallel on-street car parking is permitted on both sides of Arnica Circuit and Verbena Street. “No Stopping 8am-9:30am and 2:30pm-4pm Mon-Fri School Days” restrictions apply on Verbena Street within the school crossing, including on the approach and departure.

A 60m indented parking area is located on the south side of Verbena Street to the east of Arnica Circuit. “P-2 minute 8am-9:30am and 2:30-4pm Mon-Fri School Days” restrictions apply within the indented parking bay.

At the time of my site inspection on Wednesday 29th April 2020, only a small number of students were in attendance at the school with the majority remote learning due to the COVID-19 pandemic, and accordingly it wasn’t possible to see the full extent of on-street parking demands generated by the school.

A review of aerial photography (www.nearmap.com) showed the following:

- At 12noon on Wednesday 11th March 2020, 22 cars were parked in the school’s on-site staff carpark and a single vehicle was parked on-street in Verbena Street opposite the staff carpark, to the south of the school crossing. No cars were parked on the subject site’s frontages or opposite the site.
- At 3:30pm on Sunday 24th November 2019, no cars were parked within the school grounds, two cars were parked on the west side of Verbena Street south of the school crossing, no cars were parked on the site’s frontages, and two cars were parked on the east side of Arnica Circuit opposite the site.
- At 10:30am on Tuesday 10th September 2019, 23 cars were parked in the school’s on-site staff carpark and a single vehicle was parked on-street in Verbena Street on the school frontage, to the south of the school crossing. No cars were parked on the subject site’s frontages or opposite the site.
- At 11:30am on Wednesday 5th June 2019, 23 cars were parked in the school’s on-site staff carpark and a single vehicle was parked on-street in Verbena Street on the school frontage, to the north of the school crossing. No cars were parked on the subject site’s frontages or opposite the site.
- At 10:50am on Tuesday 1st May 2018, the on-site staff carpark was configured differently, with a second access driveway and fewer on-site car spaces available, and the school crossing was located further south. A total of 16 cars were parked within the school’s on-site staff carpark, and a further eight cars were parked on Verbena Street. When cars were parked on both sides of Verbena Street, there was a minimum of 4.6m clear road space for through traffic between parked cars.

There were no aerial photography images taken at school pick-up or drop-off times.

The Peter Meredith Consulting TIA which accompanied the town planning application stated the following:

- *It was noted during site inspections that a number of vehicles park along Verbena Street south of the site, and also in Sage Court, to collect children from school. The drop-off/pick-up zones are well-utilised, and there were no vehicles observed parking on the proposed development site or its immediate frontage on either Verbena Street or Arnica Circuit.*
• During the remainder of the day, demand for on-street parking is relatively low near the site, as school staff and residential properties have access to off-street car parking.

• Parking in Sage Court varies throughout the day, with demand from the Swim Centre and General Store all occurring at varying times.

6.6. Public Transport

Bus Route B operates between Wodonga City Centre and Baranduda, with a stop at Baranduda Primary School, as shown in Figure 8 below.

![Figure 8: Public Transport – Wodonga Bus Route B](image)

Services operate Monday to Friday, stopping on Verbena Street at 7:45am, 9:00am, 11:00am, 1:30pm, 3:35pm and 6:00pm.

6.7. Crash Statistics

The Department of Transport Open Data Portal provides information on crashes in Victoria which occurred in the last five years.

There have been no recorded crashes on Verbena Street over this timeframe. A single crash was recorded on Sunday 20th March 2016 at 9:54am involving a single vehicle (motorcycle) overturning on the Baranduda Boulevard carriageway in the vicinity of Verbena Street. The crash was listed as “other” injury (no hospital treatment needed).

There is no crash pattern suggesting any safety issues in the vicinity of the site.
7. Traffic Engineering Assessment

7.1. Statutory Car Parking Requirement

Clause 52.06 of the planning scheme sets out the statutory requirements for car parking. The purpose of Clause 52.06 is:

- To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.
- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not adversely affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

Notably, Clause 52.06-6 states that Column B car parking rates apply if:

- Any part of the land is identified as being within the Principal Public Transport Network Area as shown on the Principal Public Transport Network Area Maps (Stage Government of Victoria, August 2018); or
- A schedule to the Parking Overlay or another provision of the planning scheme specifies that Column B applies.

The site is not located within the PPTN and is not affected by a Parking Overlay and accordingly Column A car parking rates apply.

The statutory Clause 52.06 Column A car parking rate for a supermarket is 5 car spaces per 100m$^2$.

Accordingly, the 1,300m$^2$ supermarket generates a statutory requirement for a total of 65 car spaces.

A total of 73 car spaces are proposed to be provided on-site, including two disabled car spaces.

The proposed car parking provision exceeds the statutory car parking requirement by eight spaces and accordingly a dispensation is not being sought as part of this application.
7.2. Variation in Demand Over Time

As noted above, the on-site car parking provision exceeds the statutory requirement and accordingly an application to vary the requirement is not sought.

I understand that there has been some discussion between the permit applicant and Council as to the potential for some of the on-site supermarket car parking to be utilised during school pick-up and drop-off times, potentially in-lieu of some of the existing on-street parking demand on Verbena Street between Juniper Way and Arnica Circuit.

The on-site parking provision exceeds the statutory car parking requirement by eight (8) spaces.

Additionally, the statutory car parking requirement of 5 spaces per 100m$^2$ for supermarkets is highly conservative when applied to regional areas in my experience.

I expect that the peak car parking demand is unlikely to exceed 4 spaces per 100m$^2$.
Additionally, this peak typically occurs on weekends, when the school is closed.

During the AM school drop-off peak, supermarket car parking demands will be low, and generally limited to staff demands and parents of school children, making use of the trip to school to also pick up items at the supermarket.

Similarly, during the PM school pick-up peak, it is unlikely that a significant number of supermarket customers would choose to drive to the proposed supermarket between 3:00pm and 4:00pm on weekdays having regard to its proximity to the school, unless they were already coming to pick up children.

Accordingly, I expect that there will be a substantial number of car spaces (at least 20) available on-site during both pick-up and drop-off times.
7.3. Car Parking Layout

The proposed car parking layout and access arrangements have been assessed under the relevant sections of the Planning Scheme and the relevant Australian Standards.

Key elements of the design include:

**Design Standard 1 – Accessways**
- All accessways are at least 6.1m wide and allow for two-way traffic flow.
- No dead-end access aisles are proposed.
- There are no overhead obstructions.
- All vehicles can enter the carpark in a forward direction.
- The corner splay requirements are met at both exit lanes and there is a clear view of pedestrians on the footpath in accordance with the requirements of Design Standard 1 of Clause 52.06-9.

**Design Standard 2 – Car Parking Spaces**
- All of the proposed 90-degree car spaces within the retail carpark are compliant with AS/NZS2890.1-2004, being at least 2.6m x 5.4m with a 6.0m access aisle.
- Where trolley bays are located adjacent to spaces, these are offset at least 300mm from the edge of the adjacent space. No other obstructions will be located within or adjacent to the car spaces.
- The proposed disabled spaces are in accordance with AS2890.6-2009, being at least 2.4m x 5.4m with an adjacent shared space of the same dimensions.

**Design Standard 3 – Gradients**
- The site is relatively flat, and no ramps are proposed.

I am satisfied that the proposed car parking layout and access arrangements are satisfactory and will work well.
7.4. **Bicycle Parking**

Statutory bicycle parking requirements are set out at Clause 52.34 of the Wodonga Planning Scheme. “Supermarket” falls under the sub-category of “Shop” under the land use definitions at Clause 73.03 of the Planning Scheme, and the following bicycle parking rates apply:

- One space to each 600m\(^2\) of leasable floor area for staff, if the leasable floor area exceeds 1,000m\(^2\), and
- One space to each 500m\(^2\) of leasable floor area for customers, if the leasable floor area exceeds 1,000m\(^2\).

The leasable floor area is 1,300m\(^2\) and accordingly the proposed supermarket generates a statutory requirement for five bicycle spaces, including two spaces for staff and three spaces for customers.

Plans show three spaces (at rails), suitable for customer use, in front of the proposed supermarket. There is adequate space within the back-of-house areas to accommodate two staff bicycles.

Permit condition 4h) requires that the construction management plan must include provision of bicycle facilities in accordance with Clause 52.34 of the Planning Scheme.

I am satisfied that this condition is appropriate, and that bicycle facilities in accordance with Clause 52.34 can be accommodated on the site as part of the development.

7.5. **Traffic Generation**

The RTA Guide to Traffic Generating Developments (2002) (RTA Guide) sets out traffic generation rates for a range of developments, based on survey data collected in New South Wales, and is generally regarded as a standard for metropolitan development characteristics.

The RTA Guide sets out the following traffic generation rates for shopping centres with a floor area of less than 10,000m\(^2\):

- **Weekday peak hour:** 12.5 vehicles per 100m\(^2\) gross leasable floor area
- **Daily traffic generation:** 121 vehicles per 100m\(^2\) gross leasable floor area

Based on these rates, the proposed 1,300m\(^2\) supermarket could generate in the order of 163 vehicle movements during the weekday PM peak hour and 1,573 vehicle movements per day.

I am of the opinion that these rates are highly conservative, particularly for a small supermarket in a regional area, located off a main road. I expect a significant proportion of customers will be from the direct local area, and may walk, cycle or combine the shopping trip with an existing trip to the nearby community centre, school, pool, etc.

I note that the RMS update to the RTA Guide (TDT 2013/04a) provided details of survey data for individual shopping centre sites surveyed to establish the rates. While the RMS update did not revise the RTA Guide figures for shopping centres under 10,000m\(^2\), of the three regional area shopping centres surveyed, the daily vehicles trips ranged from 38.92 to 60.67 vehicles per 100m\(^2\) GLFA, and the PM peak vehicle trips ranged from 3.31 to 5.77 vehicles per 100m\(^2\) GLFA.
These rates are significantly lower than the RTA Guide rates. The smallest regional shopping centre site surveyed for the RMS study had a floor area of 15,552m$^2$.

Traffix Group has previously surveyed a stand-alone Woolworths supermarket in the regional town of Wonthaggi and identified a PM peak traffic generation rate of 7.5 vehicles per 100m$^2$ GLFA.

Based on a more realistic traffic generation rate of 7.5 vehicles per 100m$^2$ in the PM peak and 60 vehicles per 100m$^2$ per day, the proposed supermarket is expected to generate in the order of 98 vehicle movements in the peak hour and 780 vehicle movements per day.

### 7.6. Traffic Distribution

The Peter Meredith Consulting TIA which accompanied the town planning application assumed 90% of traffic accessing the proposed supermarket would come from outside of the Baranduda Grove precinct and would be new traffic to the network (not a linked trip in conjunction with accessing the school or other community facilities).

The proposed development is a small local supermarket which is expected to serve the local Baranduda community, with a secondary catchment coming from rural living areas to the south.

Based on the road network layout, existing catchment location and acknowledging that planning for the future development area between Baranduda and Wodonga includes separate retail facilities to serve that development, I anticipate that in the order of at least 25% of retail trips to the proposed supermarket will come from the established Baranduda community located to the east of Baranduda Boulevard. Not only will these trips not access Baranduda Boulevard, but they will result in a similar number of reduced trips which currently exit to Baranduda Boulevard to shop at Wodonga no longer needing to do so.

Of the remaining up to 75% of trips that access the proposed supermarket via the Baranduda Boulevard/Verbena Street intersection, a roughly 50/50 north/south split is expected, and at least 10% are likely to be associated with an existing trip, i.e. already accessing the school, community centre or pool, and linking it with a trip to the supermarket.

Therefore, on the basis of the supermarket generating 98 peak hour vehicle movements, 25 will be internal trips, with these trips being removed from Baranduda Boulevard (previously accessing shops that are further away), seven will be "linked" trips which are already utilising the Baranduda Boulevard/Verbena Street intersection to access other facilities, and 66 will be new trips entering the Baranduda Grove precinct.

Figure 9 below shows the expected net change to turning movements at the Baranduda Boulevard/Verbena Street intersection during the PM road network peak hour based on these assumptions.
Figure 9: PM Peak Hour Net Change to Traffic Movements
7.7. Traffic Impact

Figure 9 shows that the proposed development will have minimal impact on traffic volumes along Baranduda Boulevard, with the provision of a local supermarket reducing some of the existing trips to Wodonga.

The most notable traffic increase will occur on Verbena Street between Juniper Way and the site access points. Figure 9 indicates that during the road network peak hour, an increase in the order of 80 vehicle movements is expected along this section of Verbena Street.

The increase along Verbena Street to the west of Juniper Street will be less, because some local traffic which currently exits Juniper Street and turns left into Verbena Street to head to shopping centres in Wodonga will instead turn right and head north along Verbena Street to the new supermarket.

While there is no available traffic count data for Verbena Street and it is not possible to conduct meaningful counts in the current climate, the TIA report was prepared by Peter Meredith Consulting (dated 6th November 2018) which accompanied the town planning and rezoning application made estimates of the existing traffic volumes in Verbena Street based on first principles.

The Peter Meredith Consulting TIA calculated an existing (2018) two-way daily traffic volume of 399 vpd on Verbena Street between Juniper Way and Arnica Circuit. Typically, a peak-to-daily ratio of 10% is adopted, and accordingly the estimated peak hour traffic volume is 40 vpd.

At the time that the TIA was prepared, there were a number of undeveloped residential lots off Bilberry Way, some of which are still unoccupied. In order to provide a conservative assessment, full build-out of all lots off Bilberry Way (38 lots) with a traffic generation rate of 0.78 trips per lot in the PM peak hour (in accordance with the RMS guide for dwellings in regional areas and consistent with the Peter Meredith Consulting TIA) corresponds to an additional 30 peak hour vehicle trips, of which most are likely to utilise Verbena Street.

Therefore in the full build-out future “no supermarket” scenario, the two-way PM peak hour traffic volume on Verbena Street between Arnica Circuit and Juniper Way would be 70 vph, while under the full build-out future scenario with the supermarket traffic added, the two-way PM peak hour traffic volume on Verbena Street between Arnica Circuit and Juniper Way would be 160 vph.

Based on a peak-to-daily ratio of 10%, this corresponds to an ultimate two-way daily traffic volume in the order of 1,600 vph on Verbena Street between Arnica Circuit and Juniper Way.
Wodonga Rural City Council adopted the Infrastructure Design Manual (IDM\(^1\)) in 2013. The IDM indicates that a two-way access street has an indicative traffic capacity of 2,500vpd, and a collector street has a capacity of up to 6,000vpd.

The anticipated ultimate traffic volume of 1,600vpd on Verbena Street between Arnica Circuit and Juniper Way (inclusive of full build-out of residential zoned land as well as the proposed supermarket) is well within the range of a local access street.

The IDM indicates that a local access street is required to be constructed with a 7.3m wide carriageway within a 16m road reservation. The existing configuration of Verbena Street between Arnica Circuit and Juniper Way exceeds this standard, with a width of 8.6m wide carriageway within an 18m reservation.

Importantly, following development of the subject site, all of the streets will remain within the environmental capacity of the road, and there is adequate capacity within the surrounding road network and intersections to accommodate the proposed development without any adverse impacts.

7.8. **Loading**

Clause 65 of the Planning Scheme states:-

“Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate:

- The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.”

The following truck traffic is expected to access the site weekly:

- Articulated vehicles (up to 19-metre semi-trailer): 6 per week (grocery deliveries)
- Smaller rigid trucks or vans: 31 per week (fresh meat, veg, bakery, milk)
- Garbage collection: 3 per week (cardboard, general waste, green waste)

This corresponds to an average of six trucks (12 movements, 6 entering and 6 exiting) per day, of which most will be smaller rigid trucks and vans.

A dedicated recessed loading dock is proposed on the northern side of the building, and has been designed to accommodate the largest vehicle type which will access the site.

Swept path diagrams attached at Appendix D demonstrate that 19-metre semis can appropriately enter, manoeuvre into the loading dock and then exit the site in a forwards direction.

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\(^1\) The IDM (Version 5.30 – release date 24\(^{th}\) March 2020) is produced and maintained by the Local Government Infrastructure Design Association (LGIDA), and has been adopted by most regional and rural municipalities across Victoria. It sets out design standards and requirements for infrastructure provision, including design and classification of roads. These requirements at times vary from the statutory state-wide provisions set out in the Planning Scheme.
Where trucks will traverse the car parking aisle, they will only be travelling in a forwards direction, and will have good sight distance. Where trucks will reverse into the recessed loading dock, there are no car spaces proposed on either side of the aisle and accordingly, any potential conflict between pedestrians and loading manoeuvres is appropriately minimised.

I am satisfied that the site's loading provisions are adequate and there will not be any adverse on-site or off-site amenity, traffic flow or road safety impacts.

8. Panel Directions

The Planning Panels Victoria directions dated 28th April 2020 require that the traffic expert evidence address the following matters:

(i) Identify any pedestrian safety issues associated with locating the proposed retail centre next to an existing primary school and, where relevant, any mitigation measures.

(ii) Assess the suitability of the local road network to facilitate delivery vehicle access, and where relevant, any remedial works.

These matters are addressed below.

Pedestrian Safety

It is not unusual for local neighbourhood retail to be situated in close proximity to a primary school. The level of traffic along the school frontages is well within acceptable limits for local access streets and will remain so following development of the proposed supermarket as well as full build-out of the existing vacant residential lots within the catchment area, as discussed in Section 7.6 of my evidence.

The supermarket development will include new footpaths along its Arnica Circuit and Verbena Street frontages which will connect to the existing footpath network.

I understand that the existing pedestrian crossing is not supervised.

Vicroads’ Supplement to AS 1742.10:2009 – Manual of uniform traffic control devices, Part 10: Pedestrian control and protection (2015) states that the warrants for government subsidy for children’s crossings for primary school children are where the number of children (minimum 20) multiplied by the number of vehicles in the hour (minimum 100) exceeds 5,000.

It is possible that once the supermarket is operational and the surrounding residential area is fully developed, the existing crossing may meet the warrants.

Subject to installation of the footpaths as proposed, I am satisfied that there will not be any adverse pedestrian safety issues as a result of the proposed supermarket.

Delivery Vehicle Access

The Verbena Street carriageway is 8.6m wide.

A swept path turning movement diagram has been prepared, attached at Appendix D, which demonstrates access from Baranduda Boulevard to the site for a 19-metre semi.

The semi-trailer has no difficulty in access both to and from the site.
9. Response to Submissions

The Amendment was placed on exhibition from 21st November 2019 to 10th January 2020 and a drop-in session was undertaken on 11th December 2019. The amendment received 34 submissions to the rezoning proposal and seven submissions to the planning permit.

A majority of the submissions raised traffic engineering related grounds, under the following general themes:

- congestion,
- safety,
- drop-off and pick-up times too busy,
- delivery trucks,
- road widths/street standard,
- school crossing,
- traffic speed,
- pedestrians, and
- congestion due to parking.

I have addressed all traffic engineering related issues raised in the submissions, in Table 3 below.

Table 1: Response to Submissions to Rezoning and Permit (unless otherwise stated)

<table>
<thead>
<tr>
<th>Submitter</th>
<th>Issues</th>
<th>Response</th>
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<tbody>
<tr>
<td>Submitter</td>
<td>Issues</td>
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<td></td>
<td>Safety of children: more traffic, the school traffic is bad enough, the continuous car parking on both sides of the road and continuous U-turns being made at the T-junction of Arnica Circuit and Verbena are dangerous and Council wants to bring traffic.</td>
<td>I understand that the main area for school pick-up is in Lorage Street, and am satisfied that the access to the site will not create any unsafe situations. The supermarket will provide parking in excess of its requirements and will allow school parents to park on-site. This will improve traffic flow and safety for school children. There is no reason for U-turns to be occurring, as vehicles can loop around the school to head back out to Baranduda Boulevard.</td>
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<tr>
<td></td>
<td>Traffic impacts during construction.</td>
<td>Permit conditions will limit traffic impacts (including hours) during construction.</td>
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<tr>
<td>15</td>
<td>Support</td>
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<tr>
<td>16</td>
<td>Increase of traffic along Verbena Street and surrounding areas poses a major safety concern for the school children attending the Baranduda Primary School. A large portion of the school playground is located along Verbena Street and the current boundary fence does not seem adequate for a road with high levels of traffic.</td>
<td>The future level of traffic along Verbena Street (including the supermarket development and the full build-out of vacant residential lots in the area) will remain well within the environmental capacity of a local road, and the classification of Verbena Street adjacent to the school will not change as a result of the proposed supermarket development.</td>
</tr>
<tr>
<td></td>
<td>School drop-off and pick-up times along Verbena Street are already very busy and hard for drivers to negotiate, due to the width of the carriageway. The recent development of the residential dwellings opposite the school has caused parking/traffic issues and adding additional traffic to this already congested street will exacerbate the issue.</td>
<td>The width of the carriageway exceeds the minimum requirements having regard to the existing classification and traffic volumes. When cars are parked on both sides, simultaneous two-way traffic flow is not always maintained, however this is not inappropriate for a local access street. The future traffic volumes (including supermarket traffic) will remain within the local road classification. The school has road frontages on all four sides and ample space for pick-up, and additional parking will also be provided on the supermarket site, in excess of the statutory requirement.</td>
</tr>
<tr>
<td></td>
<td>Understand the 72 car spaces will be made available to parents dropping off children at the primary school. As Baranduda continues to grow and</td>
<td>Customers accessing the supermarket near school pick-up/drop-off time are likely to be school parents, making use of the convenience of combining the trip. Supermarket customers</td>
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<td>Submitter</td>
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<td>more students attend the school, the use of this car park at peak times will only increase. Concerned that this would have a negative impact on customers not being able to access the retail space and ultimately leading to its demise, thus an empty retail space within the community.</td>
<td>who are not picking up or dropping off school children are likely to undertake their shopping trip outside of this peak school pick-up/drop-off time.</td>
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</tr>
<tr>
<td>The proposed location is hidden from the main roads of Baranduda. Concerned that a retail store within this space would be hidden away from passing traffic and only be utilised by local residents (viability of site).</td>
<td>The proposal is a small supermarket, intended to serve the Baranduda community, which will be aware of its location. It is also located adjacent to the community centre and opposite the school.</td>
<td></td>
</tr>
<tr>
<td>Overflow of the car park floodlighting into the surrounding residences. Believe this will be an issue for those in Arnica Circuit, given the hours of operation are proposed to be until 11pm daily (including weekends and public holidays).</td>
<td>I understand that that hours of operation have been revised to 7am-10pm daily. A permit condition requires a 1.2m wall along the Arnica Circuit boundary to prevent headlight glare. Additionally, permit condition 16 requires that all lighting used to externally illuminate buildings, works and uses shall be fitted with cut-off luminaries (baffles), so as to prevent the emission of direct and indirect light onto adjoining roadways, land and premises. I believe that the proposed permit conditions adequately address light overspill issues in relation to Arnica Circuit residents.</td>
<td></td>
</tr>
<tr>
<td>Increased traffic on Verbena and Arnica Circuit, increased traffic will compete with the school traffic that is already very busy during the drop off and pick up times.</td>
<td>There will not be any increased traffic in Arnica Circuit. There are no access points proposed to the site from Arnica Circuit, and it is a loop road so it will not be used by supermarket customers. It is unlikely that supermarket traffic will &quot;compete&quot; with school traffic. It is likely that people utilising the supermarket specifically at school pick-up and drop-off times will predominantly be school parents, and that other customers will generally seek to avoid that time.</td>
<td></td>
</tr>
<tr>
<td>You will not get a semi-trailer down Verbena Street with all the school traffic parked during those times</td>
<td>The future two-way daily traffic in Verbena Street, inclusive of supermarket traffic, will</td>
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**Traffic Engineering Evidence**

**Amendment C132 to the Wodonga Planning Scheme**

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<tr>
<th>Submitter</th>
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<td></td>
<td>making it very dangerous to other drivers, parked vehicles and most of all school children. The road is way too small. Verbena Street is not suitable for large trucks or large amounts of two-way traffic.</td>
<td>remain within the environmental capacity of a local street. It is unlikely that large delivery vehicles/operators would choose to access the site at school pick-up times but in any event, I am satisfied that there are more than sufficient passing opportunities within the local street network.</td>
</tr>
<tr>
<td></td>
<td>Noise from all the delivery trucks that come to deliver stock at all times of the day and evening.</td>
<td>Deliveries will be restricted to appropriate hours by way of permit condition, and will not occur after 7pm on weeknights or after 4pm on weekends.</td>
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<td></td>
<td>People will speed past the school, regardless of the speed limit and speed humps.</td>
<td>There is already a speed control device in Verbena Street north of the school. The speed limit is 40km/h and supermarket traffic will be stopping at the carpark. I see no reason to think that the development will lead to illegal driver behaviour.</td>
</tr>
<tr>
<td>18</td>
<td>Support (convenient for older local residents, reduces need for travel).</td>
<td>Verbena Street is 8.6m wide, which is substantially wider that it is required to be under the provisions of Clause 52.06 of the Planning Scheme and the IDM having regard to the volume of traffic it carries (7.3m). Following completion of the supermarket, the traffic volume will remain within the same local access street category.</td>
</tr>
<tr>
<td>19</td>
<td>The main access road for customers is currently proposed to be via Verbena Street. This street is exceptionally narrow and already has terrible congestion in the school zone. This often results in only having room for one direction of traffic being able to flow at a time. The additional traffic that would be created on this street with a retail development would see the problem increase immensely and therefore also increases the risk to children commuting to school and attempting to cross Verbena Street.</td>
<td>The traffic volume will remain within the environmental capacity for a local access street, and traffic speeds are low (posted 40km/h speed limit), and there is no need for an overpass for foot traffic. Parking is proposed to be provided in excess of the statutory requirement.</td>
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### Traffic Engineering Evidence

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<td>parking at the school on Verbena Street. Alternatively, perhaps access to and from the proposed IGA carpark could be via Sage Court, between the new development and the Baranduda General Store. This solution would also divert traffic away from Verbena Street however consideration would need to be given to the pedestrian impact this may have.</td>
<td>See above.</td>
</tr>
<tr>
<td></td>
<td>Should the amendment be accepted and approved by Council, at minimum the planning permit, under point 18 – regulation of delivery times, should be extended to restrict deliveries to times that will not see trucks trying to deliver via Verbena Street during school zone traffic periods. This additional restriction should also be extended to the construction permitted under point 19 – vehicle access lanes and car park construction, so that delivery of construction materials and trucks are not accessing Verbena Street during school traffic periods.</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Concerned with safety of road users and pedestrians. As well as the limited access for vehicles into and within the lot, also causing congestion and more safety issues.</td>
<td>See above.</td>
</tr>
<tr>
<td></td>
<td>Increased traffic volumes passing submitter’s property. Traffic congestion would be significant. Verbena Street corner is already difficult to navigate as a pedestrian, cyclist and driver, feels like a blind corner even at times away from school pick-up and drop-off. Many children riding, scooting, etc along the footpaths not tall enough to be seen over fences and over the height of cars, need safe passage across</td>
<td>Traffic will remain within the environmental capacity of the road and there will not be any unreasonable congestion as a result. I believe that parking could be subject to “No Stopping” around the bend at all times, which would improve sight distance at the bend however, this is a matter for Council. There will not be any restrictions to sight distance to pedestrians on the proposed footpath along the site frontage at the site access points, so supermarket customers will be able to clearly see pedestrians as they enter</td>
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### Traffic Engineering Evidence

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<tr>
<td>21</td>
<td>streets at all times of the day, not just during school crossing times.</td>
<td>and exit the supermarket site in a forward direction. The ultimate (post-development) traffic volumes on Verbena Street do not warrant a formal crossing outside of school pick-up and drop-off times.</td>
</tr>
<tr>
<td>22</td>
<td>Pro-forma (same as #5).</td>
<td>See above.</td>
</tr>
<tr>
<td>23</td>
<td>Don’t believe the layout of the surrounding streets lends itself to the increase traffic that this change will bring. Already around the school and pre-school there are issues, this will only exacerbate the problem. Secondary to this the traffic congestion will be a significant issue.</td>
<td>See above.</td>
</tr>
<tr>
<td></td>
<td>Believe that the estate was not developed to accommodate increased traffic from locals utilising an IGA or any business. The estate already has difficulty in regards to traffic particularly during school drop-off and pick-up times.</td>
<td>See above.</td>
</tr>
<tr>
<td></td>
<td>Understand that plans for the IGA include a parking lot, however this will not prevent cars being backed up along Verbena Street, as occurs now. Often Verbena Street is reduced to a single lane road during busy times with low visibility of oncoming traffic. This will be exacerbated by an IGA.</td>
<td>See above.</td>
</tr>
<tr>
<td></td>
<td>Estate was not developed to accommodate delivery trucks. The amount of space trucks would regularly require to deliver goods is simply not available within our estate and on the residential roads.</td>
<td>The estate was designed to accommodate garbage trucks and fire trucks. The trucks accessing the supermarket will not be any wider. An on-site loading bay is proposed, and trucks can enter and exit the supermarket site in a forwards direction. No on-street loading will occur.</td>
</tr>
<tr>
<td></td>
<td>The risk of children being struck by a vehicle will be increased by extra vehicles being present along the usually quiet Arnica Circuit.</td>
<td>No additional traffic is likely in Arnica Circuit as a result of the development.</td>
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### Submitter

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<th>Number</th>
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<tbody>
<tr>
<td>24</td>
<td>Objecting submission, oppose the location due to concerns around traffic management, noise pollution, litter and waste odours.</td>
<td>See above.</td>
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<tr>
<td>25</td>
<td>Letter of support.</td>
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<tr>
<td>26</td>
<td>Impacts to local amenity, traffic flow and safety for pedestrians and cyclists accessing the school.</td>
<td>See above.</td>
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<tr>
<td></td>
<td>The school crossing is not serviced by Council and there already are issues and incidents with cars travelling at high speeds on Verbena Street or car not stopping for people wishing to cross at the crossing. The proposed location of the Neighbourhood Convenience Centre will further increase traffic flow on Verbena Street and create even further increased risks for our students and their families.</td>
<td>The increased traffic volumes generated by the supermarket will remain within the environmental capacity of a local access street under the provisions of the IDM. The number of trucks accessing the supermarket daily is not significant. The road is wide enough for the passage of trucks, and has been designed for garbage truck and fire truck access.</td>
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<tr>
<td>27</td>
<td>Supporting submission, including noting that the location is appropriate taking into account proximity to the general store and community centre, feels central and is walking distance for many, and will reduce unnecessary car trips into Wodonga.</td>
<td>Given the size of the supermarket, it is likely that the car parking and traffic generation estimates are conservative, and many customers will walk given its central location.</td>
</tr>
<tr>
<td>28</td>
<td>There was no TIAR accompanying exhibited documentation to demonstrate that the movements of articulated vehicles between</td>
<td>Semi-trailer access between Baranduda Boulevard and Verbena Street is addressed at Section 7.7.</td>
</tr>
<tr>
<td>Submitter</td>
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<td></td>
<td>Baranduda Boulevard and the subject site, along with movements within the site are safe and functional. It is unclear in the submission how 19m long articulated vehicles will transition from Baranduda Boulevard into Verbena Street, and then into the site access point. Such access is not possible without crossing the opposing lanes of Verbena Street. Such a manoeuvre is unsafe, particularly where the road serves as a direct link between Baranduda Boulevard and approximately 70 homes, along with school traffic and road curvature.</td>
<td>The amended plan has improved accessibility for trucks to enter the site and there is no crossing of the centre-line at the corner. The layout is appropriate. Heavy vehicles only travel in a forwards direction past the main entrance, and all vehicles (including heavy vehicles) enter and exit the site in a forwards direction. Adequate provision is made for pedestrian safety, including footpaths and marked zebra crossings within the carpark. There is good sight distance of the zebra crossings for truck drivers. The amended plans improve turning areas for delivery trucks.</td>
</tr>
<tr>
<td></td>
<td>The layout of the site provides poor circulation of delivery vehicles. Articulated vehicles move past the main entrance where parents and children are transitioning between the carpark and front entrance to the site. Not convinced the turning arc shown on plans is achievable and again results in a conflict between customer vehicles and delivery vehicles egressing the site.</td>
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<tr>
<td></td>
<td>Suggestion that deliveries be restricted to certain hours and days remain difficult to enforce. Deliveries are reliant upon dispatch times from supplier’s warehouse and not by hours specified on a planning permit.</td>
<td>The applicant has advised that the proposed delivery restrictions are workable. Restriction to hours by way of permit condition is an appropriate mechanism. Enforcement action can be taken if there are repeated breaches.</td>
</tr>
<tr>
<td></td>
<td>Condition 4 – query how the condition can be fulfilled ... “incorporate safe pedestrian walks” in a carpark where young children and parents are interacting with articulated vehicle movements.</td>
<td>Truck drivers have good visibility of pedestrian walkways, will only cross them in a forwards direction, and pedestrians have right of way. I am satisfied that the proposed design appropriately achieves this condition.</td>
</tr>
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<td></td>
<td>Condition 18 – delivery hours – require further regulation taking account of the conflict with customer movements through the site.</td>
<td>The number of delivery trucks in real terms (an average of six trucks per day, with an average of a single semi and the other five being smaller rigid trucks and vans) is low, and</td>
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<tr>
<td>29</td>
<td>Supporting submission.</td>
<td>drivers will be aware of the potential for customer movements and will drive accordingly.</td>
</tr>
<tr>
<td>6</td>
<td>Traffic congestion is already an issue. Putting a supermarket there will be a disaster and could result in an accident. Won't be able to let kids ride by themselves due to traffic.</td>
<td>See above.</td>
</tr>
<tr>
<td>31</td>
<td>Alternative sites would allow for easier traffic access from Baranduda as well as other nearby towns.</td>
<td>Adequate traffic access is available at the proposed site.</td>
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<td></td>
<td>Current proposed site would appear to have the potential to create much more traffic in a tight predominantly residential area.</td>
<td>See above.</td>
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<td>1</td>
<td>Supporting submission.</td>
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**North East Catchment Management Authority**

<table>
<thead>
<tr>
<th>Issues</th>
<th>Response</th>
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<tbody>
<tr>
<td>No objection.</td>
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**2**  

<table>
<thead>
<tr>
<th>Issues</th>
<th>Response</th>
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<tbody>
<tr>
<td>Would prefer to have the land used as additional parking for the existing primary school.</td>
<td>This development provides surplus parking which can be used by parents.</td>
</tr>
<tr>
<td>Difficult to see oncoming traffic during pick-up and drop-off times as parents park on either side of submitter’s driveway.</td>
<td>Submitter lives in Foxlove Terrace, and will not be affected by the development.</td>
</tr>
<tr>
<td>Inadequate car parking for proposed use.</td>
<td>The proposed car parking significantly exceeds the statutory requirement and will be more than adequate for the proposed use, with spare capacity able to be used by the school.</td>
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**North East Water**

<table>
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<th>Issues</th>
<th>Response</th>
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<tbody>
<tr>
<td>No objection subject to conditions (no traffic related conditions).</td>
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**3**  

<table>
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<tr>
<th>Issues</th>
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<tr>
<td>Supporting submission.</td>
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### Traffic Engineering Evidence

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<th>Submitter</th>
<th>Issues</th>
<th>Response</th>
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<tbody>
<tr>
<td>Goulburn Murray Water</td>
<td>No objection.</td>
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<td>DELWP</td>
<td>No objection.</td>
<td>See above.</td>
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<tr>
<td>4</td>
<td>Location is too close to the school. At school times now it is a nightmare trying to get by and with the added traffic and on what is a very bad corner, not a good idea to build there. Primary objection is the close proximity to the school and the added traffic that will be incurred in a mainly residential area.</td>
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<tr>
<td>Transport for Victoria</td>
<td>The development proposes pedestrian and cycling links throughout the area as well as end of trip facilities, which TfV supports. It is suggested that a degree of separation and/or wayfinding for cyclists on pedestrian paths could be introduced to reduce conflicts between the two users.</td>
<td>Primary school aged children are able to cycle on footpaths, while older cyclists would be on-road on Verbena Street. It is noted that TfV have not requested any additional permit conditions.</td>
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<td></td>
<td>No objection. The planning permit conditions proposed are reasonable and TfV have no further conditions to request be included in any permit granted.</td>
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<tr>
<td>5</td>
<td>The figure provided about the expected increase to traffic in the area, considering the large amount of housing development occurring in Baranduda and also the establishment of Baranduda Fields seems underrepresented. The figure provided was based on estimating each school vehicle to undertake 1.4 trips per day, so that alone is questionable. Also feel that additional traffic from residents living along the Kiewa Valley potentially utilising this supermarket has not been adequately measured.</td>
<td>I disagree. In my opinion, the Peter Meredith Consulting TIA over-estimated the likely increase to traffic in the area, and under-estimated the proportion of traffic which will be from the immediate local area, as well as the amount which will no longer travel along Baranduda Boulevard to Wodonga for shopping trips. The school traffic figure adopted in the TIA is a standard figure and is reasonable having regard to the likelihood of multiple school children in a single vehicle, and some children walking/cycling to school. At any rate, the enrolments at the school have remained consistent and are unlikely to change substantially.</td>
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<td>Delivery vehicles will be disruptive to locals. Permitted times difficult to enforce.</td>
<td>See above.</td>
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<td></td>
<td>Supermarket traffic has limited point of entry/exit from Baranduda Boulevard, which currently does not have a turning lane into Verbena Street. There is new housing development behind the proposed IGA that also requires this intersection for access. It does not seem practical or safe to draw additional traffic into a residential zone with limited traffic egress options. There is another option to enter/exit from the roundabout at Patterson Avenue, however this would require traffic to navigate additional residential streets to reach the supermarket and would not be as convenient. Concern for school children that will need to negotiate additional traffic on foot/bike/scooter. Unfortunately, a crossing supervisor is not the answer because the number of school children at the primary school does not meet the criteria for a supervisor to be made available. The developer has proposed a change to the road and parking to help this issue, however creating more traffic in a school zone regardless should not be an option.</td>
<td>From a capacity perspective, there isn’t a requirement for a turning lane on Baranduda Boulevard at Verbena Street, and there are no existing safety issues at this location, being a low speed (60km/h) environment with adequate sight distance. The additional turning traffic generated by the supermarket at the Baranduda Boulevard/Verbena Street intersection will be low, noting that existing residents of the surrounding estate will reduce the number of trips exiting Verbena Street to shop at Wodonga, as they will be able to shop locally instead. See above.</td>
</tr>
<tr>
<td>6</td>
<td>See submission 30</td>
<td>Verbena Street is adequate in width to accommodate the truck movements.</td>
</tr>
<tr>
<td>7</td>
<td>Question suitability of the road size, considering that large and smaller trucks will be utilising the roadway to deliver stock. Road is one way into and the same way out of the residential area. Trucks will need to drive past the primary school. There is a potential for a child to be injured as a result.</td>
<td>Verbena Street is adequate in width to accommodate the truck movements.</td>
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<td></td>
<td>If the permit is approved, submitter requests school crossing supervisor either side of the right-angle road bend near the proposed supermarket entry and exit.</td>
<td>Children should not be encouraged to cross Verbena Street close to the right-angle bend. The existing crossing location is appropriate. I agree that following opening of the supermarket, traffic and pedestrian counts should be undertaken between 3pm and 4pm on a school day to assess whether the warrants for a school crossing supervisor are met.</td>
</tr>
<tr>
<td></td>
<td>If the permit is approved, submitter requests that all heavy vehicle deliveries happen outside of school times to avoid congestion and safety risks.</td>
<td>The developer has advised that deliveries will be discouraged from occurring during school pick-up and drop-off times, however from time to time this may be unavoidable, due to the nature of how deliveries are made, with drivers often visiting a number of supermarkets in a row with a single load.</td>
</tr>
<tr>
<td></td>
<td>The school should be fenced and only organised entry and exit points directly towards the school crossings should be available, controlling the flow of student and with adult supervision.</td>
<td>This is a matter for the school.</td>
</tr>
<tr>
<td></td>
<td>This small area is only part of Baranduda and many residents will need to use their cars to access the service offered at this store, thus increasing the road traffic on this not very adequate road leading to the proposed centre.</td>
<td>While some traffic will access the supermarket from outside of this part of Baranduda, other existing trips will be removed from the network due to residents of this area needing to undertake fewer shopping trips to Wodonga. Verbena Street is adequate to accommodate the level of traffic anticipated.</td>
</tr>
<tr>
<td>8</td>
<td>Supporting submission. Submitter noted that at the community meeting, parking issues were addressed and the developer has offered use of some of the supermarket parking for school pick-up and drop-off, people attending events at the community oval, etc, and noted that it would be an asset which may alleviate existing congestion and improve safety for school children. Also noted the reduced car-based trips with locals currently driving to Wodonga for basic groceries, and</td>
<td></td>
</tr>
<tr>
<td>Submitter</td>
<td>Issues</td>
<td>Response</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td>particular benefits to older residents who are unable to drive, having this facility within walking distance.</td>
<td>See above.</td>
</tr>
<tr>
<td></td>
<td>The current and proposed road conditions are not suitable for an increase in traffic volume or size. Verbena turns into a one car at a time road now going past the school. The road is too narrow, not suitable for delivery trucks. The increase in traffic poses a safety risk for the residents, pedestrians and school children.</td>
<td></td>
</tr>
</tbody>
</table>

| 10        | The current pedestrian crossing and approach on Verbena Street (outside the front gate of Baranduda Primary) is unsuitable for any increase in traffic due to the following:  
- It is a crossing that is only active when flags are put out by school staff. This has not been improved since Verbena Street was a No Through Road.  
- Currently there is inadequate signage indicating to drivers that they are approaching a school zone.  
- Currently there are no flashing lights to indicate a school zone.  
- Currently there are no road markings to warn drivers that they are approaching a pedestrian crossing.  
- Approaching from the west, the bend in the road can obscure the pedestrian crossing behind trees and cars parked on Verbena Street. | I find the existing signage to be adequate and in-line with current requirements, having regard to the existing traffic volumes and classification of Verbena Street.  
There is no requirement for flashing lights for a school zone where it is on a local access street.  
The full build-out of vacant residential land and construction of the small supermarket will not “tip” Verbena Street into a higher category, and accordingly the existing signage arrangements with regard to the school zone and pedestrian crossing remain adequate. I recommend that the warrants for a school crossing supervisor be re-tested by Council once the supermarket is operational. |
<p>|           | Baranduda Primary School currently caters for students with hearing impairments. These students can often have reduced situational and road awareness. This increases the need for a safer pedestrian crossing outside of the school. | This is potentially an issue for the school, and does not preclude the introduction of a supermarket on the subject site. |</p>
<table>
<thead>
<tr>
<th>Submitter</th>
<th>Issues</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Submitter has witnessed near misses at the crossing caused by drivers failing to stop at the crossing, presumably due to not noticing the school crossing flags or the children waiting to cross. Can foresee that due to lack of parking around the school, the new carpark will become a favoured location for parents to drop-off and pick-up children (as is the case in the current community centre carpark). This will increase traffic in Verbena Street, and these children will need an improved crossing on Verbena Street from the new shop to the school. Submitter requests the developer to upgrade the crossing to a raised concrete island with permanent painted zebra crossing, and installation of flashing school zone lights and signage warning drivers of school zone and pedestrian crossing.</td>
<td>I recommend that the warrants for a school crossing supervisor be re-tested by Council once the supermarket is operational. I do not believe that warrants would be met for these upgrades, however these are matters for Council.</td>
</tr>
<tr>
<td>12</td>
<td>Supporting submission.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>The roads are too narrow, the proposed entry is on an already dangerous corner. Safety concern for school children crossing roads which will carry extra traffic due to the supermarket. Will no longer feel safe having children riding bikes out the front of their home due to extra traffic on the roads (Arnica Circuit resident).</td>
<td>See above</td>
</tr>
<tr>
<td>14</td>
<td>Excessive traffic, entry on a corner.</td>
<td>See above.</td>
</tr>
</tbody>
</table>
10. Conclusions

Having undertaken traffic engineering assessments of the proposed Amendment C132 to the Wodonga Planning Scheme, I am of the opinion that:

a) the proposed car parking provision exceeds the statutory requirement and will easily accommodate the peak demands generated by the supermarket as well as allowing for overspill school drop-off/pick-up parking to occur,

b) adequate provision can be made for bicycle parking on the site in accordance with Clause 52.34, and this is appropriately addressed by permit condition 4h,

c) traffic generated by the proposed supermarket can readily be accommodated on the surrounding road network and intersections without any adverse impacts,

d) the level of traffic on Verbena Street between Arnica Circuit and Juniper Way will remain within the environmental capacity of a local access street,

e) the Verbena Street carriageway exceeds the minimum dimensions specified in the IDM for the level of traffic it will ultimately carry,

f) the site’s loading provisions are adequate and there will not be any adverse on-site or off-site amenity, traffic flow or road safety impacts,

g) subject to installation of the footpaths as proposed, there will not be any adverse pedestrian safety issues as a result of the proposed supermarket, and

h) there are no traffic engineering reasons why the subject site should not be rezoned and a permit granted for the development of a 1,300m$^2$ supermarket at Lot 128 on PS 733790, Verbena Street, Baranduda.

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.

HENRY H TURNBULL, RFD
B.E.(Civil), M.I.E.Aust., M.I.T.E., F.V.P.E.L.A.

13th May 2020
Appendix A

Practice Note – Expert Evidence
Statement of Witness

Name
Henry Hume Turnbull

Position
Principal Consultant, Traffix Group

Address
Level 28, 459 Collins Street
MELBOURNE
VICTORIA 3000

Qualifications
My qualifications and membership of professional associations are as follows:-
• Bachelor of Civil Engineering, University of Melbourne
• Life Member, Institute of Transportation Engineers
• Member, Institution of Engineers, Australia
• Life Fellow, Victorian Planning & Environmental Law Association

Experience
I have approximately 44 years’ experience in Engineering including:
• ten years Country Roads Board of Victoria,
• two years with TTM Consulting, and
• thirty-two years with Turnbull Fenner Pty Ltd/Traffix Group Pty Ltd.
Additional activities and appointments include:-
• Sessional member, Planning Panels Victoria (1982-2017)
• Member, Priority Development Panel (2004 - 2010)
• Councillor, Shire of Euroa (1980-1983)
  Shire President (1982-1983)
• President, Victorian Planning and Environmental Law Association (1999-2002)
• Bail Justice (Victoria)
Area of Expertise

I have substantial experience and expertise in major road design and construction, contract administration, road construction material and construction methods, development impact assessment, including traffic generation and parking generation characteristics, traffic management and general traffic engineering, road safety and transportation planning.

I was a member of the former Ministers for Planning Advisory Committees making a review of Clause 52.06 (Car Parking) that led to changes being incorporated into the scheme on 5th June, 2012.

Disclosure of Interests

Neither Traffix Group nor I have any private relationship with any parties involved in this Amendment. Both have worked with the various consultants and in Wodonga on a number of projects in the past.

These involvements have not impacted on my ability to provide impartial Expert Evidence to the Panel.

Engagement and Scope of Report

I was retained by Harwood Andrews on behalf of Next 1 Pty Ltd to undertake traffic engineering assessments and to prepare an evidence statement for the proposed planning scheme amendment to rezone the site on the corner of Verbena Street/Arnica Circuit to facilitate the construction of a supermarket.

Facts and Assumptions

As detailed in evidence.

Reference Documents

I have reviewed the following documents as part of my assessment:

- Exhibited documentation including notice material, planning scheme maps, explanatory report, Section 173 Agreement, plans, etc.,
- Submissions,
- Council reports including Council meeting agenda and minutes,
- Application material including planning report and Traffic Impact Assessment (TIA) prepared by Peter Meredith Consulting,
- Amended plans,
- Relevant sections of the Wodonga Planning Scheme, and
- Relevant experience.

Summary of Opinions

See Conclusions section of the evidence statement.
Provisional Opinions
Not applicable.

Identity of Persons Undertaking Work
Henry H Turnbull as per the evidence statement.
Jodie Place (Associate, Traffix Group) and Daniel Milder (Senior Traffic Engineer, Traffix Group) assisted with preparation of the evidence report.

Report Completeness
Final report.
Appendix B

CV
Henry Turnbull
Principal Consultant

Henry Turnbull is the founding principal of Traffix Group. Henry is highly regarded in the transport planning and traffic management industry for his specialist expertise and substantial experience. This includes metropolitan and regional traffic engineering, as well as transport planning at the strategic and development levels.

His experience and expertise in planning projects puts him in demand as an expert witness at the Victorian Civil Appeals Tribunal and Planning Panels.

Professional History

<table>
<thead>
<tr>
<th>Company/Position</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffix Group</td>
<td>Since 1988</td>
</tr>
<tr>
<td>TTM Consulting Pty Ltd</td>
<td>1986 to 1988</td>
</tr>
<tr>
<td>Miller Huthwaite Ltd/Peat Marwick Hungerfords</td>
<td>1982 to 1986</td>
</tr>
<tr>
<td>Country Roads Board</td>
<td>1972 to 1982</td>
</tr>
</tbody>
</table>

Qualifications

Bachelor of Civil Engineering, Melbourne University

Affiliations

Life Member, Institute of Transportation Engineers Australia
Member, Institution of Engineers Australia
Life Fellow, Victorian Planning and Environmental Law Association (VPELA)

Significant Appointments

Sessional Member Planning Panels Victoria (1982 – 2017)
Member Priority Development Panel (2004 – 2010)
Member Growth Areas Authority Expert Panels for Urban Planning and Urban Design (Appointed 2010)

Areas of Expertise

Transport Planning (Traffic Impact Assessments):
- Preparation of Traffic Impact Assessment Reports (TIAR) and Evidence for presentation at VCAT and Planning Panels for a range of land-use developments.
- Other significant commissions include co-ordination of a development contribution plan for the City of Maribyrnong including extensive traffic investigations and assessments, preparation of Parking Precinct Plans, and TAC funding strategies and priority assessment for VicRoads – Northern Region.
- Preparation of transport planning studies and Integrated Travel Plans including consideration of sustainable transport modes and green travel plans, pedestrian access; bicycle paths, parking and access to public transport.
- Provision of advice on traffic engineering and transport planning issues for major infrastructure projects for government and private clients.
- Extensive stakeholder interaction and consultation with community bodies on technical transport issues and project planning issues.
- Management of numerous other projects including local and district management studies, heavy vehicle route assessments, pedestrians safety research, public transport passenger surveys and route studies, property rezoning and health care projects.

Strategic Planning & Statutory Planning

- Regularly appointed as a Planning Panel member by the Minister for Planning with over thirty years’ experience as a sessional Planning Panel member. Relevant major Panels and Advisory Committees include Armstrong Creek Urban Framework Plan, Armstrong Creek North East Industrial Precinct Structure Plan, Traralgon Bypass, Webb Dock EES and Melbourne Airport Rail Link.
- Served successive Governments on Advisory Committees to assist with policy development, including the Priority Development Panel Steering Committee on the development of Practice Notes for Parking Precinct Plans, and the Advisory Committee reviewing Clause 52.06 Carparking in the VPPs.
- Significant experience and expertise in the provision of traffic engineering and transport planning advice to support the development of structure plans, site/precinct plans and development contributions plans.
Appendix C

Amended Plans
EXISTING PEDESTRIAN CROSS OVER.

PROPOSED PLANTING
PLANT STRIP TO BE
PROTECTION ZONE WITHIN ADJOINING RESERVE
PLANTING TO BE DESIGNED TO
2000mm WIDE. NATIVE GRASSES TO
FUTURE LANDSCAPE DETAIL
PLANTING STRIP FRONTING EASTERN BOUNDARY AS SCREENING (MATURE HEIGHT OF 1.2M) TO
FUTURE LANDSCAPE

TOWN PLANNING

AREA SCHEDULE
BUILDING TOTAL: 1300m²
PROPOSED 1500mm WIDE PEDESTRIAN
FOOTPATH TO COUNCIL
SUPERMARKET: 1300m²
REQUIREMENT

NO. CAR SPACES: 73
CAR PARK RATIO: 5.6/100 m²

P11 TOWN PLANNING CD 11/05/20
P10 TOWN PLANNING CD 08/05/20
P9 TOWN PLANNING - INCLUSION OF TREE
PROTECTION
P8 TOWN PLANNING APPROVAL ND 12/09/18
P7 TOWN PLANNING - GENERAL UPDATE ND 31/10/18
P6 TOWN PLANNING APPROVAL ND 12/09/18
P5 PRELIMINARY CD 17/04/18
P4 PRELIMINARY CD 29/03/18
P3 PRELIMINARY CD 26/03/18
P1 PRELIMINARY ND 09/03/18
P PRELIMINARY ND 27/02/18

REV AMENDMENTS DETAILS BY DATE
SUBDIVISION
RESIDENTIAL
22.68m
+RL: 194.10

CAR PARK
TOTAL SITE AREA
BIKE
13900
TITLE BOUNDARY 174°44'20" 84.11m
CK
73 BAYS
DO
3000
BICYCLE PARKING RAILS x 2
TITLE BOUND

ARNICA CIRCUIT
SED L
EXISTING NATURE
CE
89°
26
52
RE
52.42m
8900
1 IN 100
W
90
IDE SEW
OM

NEW FOOTPATH / PEDESTRIAN CROSSING
25m
EXISTING STREET LIGHT
RELOCATED, TO LOCAL
AUTHORITY REQUIREMENTS

PROPOSED HD CONCRETE CROSS OVER TO STANDARD COUNCIL DETAIL.
EXISTING STREET LIGHTPOLE
PROPOSED RETAIL
PROJECT ADDRESS
LOT 128 VERBENA STREET

PROPOSED CROSSOVER
PROPOSED PEDESTRIAN LINK / PATH

TRG CONCEPT DECOUPLING CONTRACTORS
NORTH CARPARK
W
LEVEL 3, SUITE 37, 799 SPRINGVALE ROAD
MULGRAVE
VICTORIA
AUSTRALIA
LEVEL 3, SUITE 37, 799 SPRINGVALE ROAD
MULGRAVE
VICTORIA
AUSTRALIA

39.40.
25m
ENTRY
3170
2020
20800
18200
4.20m
80m²
PLANT ROOM ABOVE
8800
1500
6000
10800
6000
5400
8400
5400
6000
1200
6200
5400
180°17'20", 29.03m 3.0m WIDE SEWER

DASH LINE DENOTES CANOPY ABOVE
DASH LINE DENOTES CONDENSER DECK ON

ENTRY
PACKING
ROOM
BUILDER / CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE PRIOR
TO PRODUCING SHOP DRAWINGS, ORDERING MATERIALS OR
DRAWINGS SHALL BE READ IN CONJUNCTION WITH RELEVANT
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OFFICE, WRITTEN AUTHORITY IS REQUIRED FOR ANY REPRODUCTION.

CONCEPT + INTERIORS + PROJECT MANAGEMENT

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Appendix D

Swept Path Diagrams