

GOULBURN PROJECTS

26 LITHGOW STREET, GOULBURN

TRAFFIC ENGINEERING REPORT

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1. EXECUTIVE SUMMARY

- > The subject site is located at 26 Lithgow Street, Goulburn, NSW in a MU1 Mixed Use Zone and is currently vacant with 5 residential units proposed, each unit with vehicular access Taylor Street.
- > The subject site will have direct vehicular access via Taylor Street. To the north, Taylor Street links to Lithgow Street, while to the south, it merges into North Street, which further connects to Bourke Street.
- > There are no existing publicly available Traffic Count data for the roads abutting the subject site. Based on desktop research it is not expected that Taylor Street carries more than 100 vehicular trips per day, as it provides rear access to 10 residential and 1 commercial lot.
- > The subject site is expected to generate up to 25 vehicular trips per day and 3 vehicular trips in the peak hours. Developments generating less than 10 VPH in the peak hours can be deemed to have a low impact on the network.
- > Surrounding streets likely to carry low volumes of vehicular traffic. Therefore, with the added traffic from the subject site the impact can be considered negligible.
- > The one registered crash in the vicinity of the subject site in the last 5 years is located at the intersection with Lithgow Street and Bourke Street. The anticipated traffic flow and driving patterns associated with the new residential development are not likely to pose a heightened risk compared to the existing conditions.
- The site will provide five residential parking bays (each unit with its own garage space) and two visitor bays within Lot 1. Parking areas are designed to accommodate User Class 1A (residential, domestic, and employee parking) as well as User Class 2 (long-term city and town centre parking, including facilities like sports venues, entertainment centres, hotels, motels, and airport visitors, typically for medium-term parking).
- > While sight distances may be limited, in areas with minimal traffic flow such as this one, the reduced likelihood of encountering sudden or high-speed vehicles significantly diminishes potential safety risks.
- > The waste vehicle is expected to travel from Lithgow Street via Taylor Street to North Street, exiting onto Bourke Street, with the path being suitable for the proposed vehicle. A standard B99 passenger vehicle (5.2m) can safely enter and exit all proposed parking bays, with all parking spaces being accessed in reverse and exited forward. Due to the lack of survey data for the eastern end of Taylor Street, scaled aerial imagery was used to assess manoeuvring space.
- > In summary the proposed development should not have a negative impact on the surrounding road network.

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2. INTRODUCTION

2.1 Background

Premise Australia Pty Ltd (Premise) has been engaged by Goulburn Projects to prepare a Traffic Engineering Report (TER) for the proposed multi-residential development at 26 Lithgow Street, Goulburn, NSW.

The subject site is located in a MU1 - Mixed Use zone and is currently vacant.

Figure 1 shows the assessment area where a development is proposed consisting of 5 residential units, each unit with vehicular access Taylor Street.





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3. **EXISTING CONDITIONS**

3.1 Local Road Network

The subject site will have direct vehicular access via Taylor Street. To the north, Taylor Street links to Lithgow Street, while to the south, it merges into North Street, which further connects to Bourke Street.

The surrounding streets are classified as Local Streets with a 50km/h speed limit.

Taylor Street is a two-way laneway with pavement width of approximately 3m, with no pedestrian paths. The road reserve is 5.5m in the northern section of the road and widens to 16.5m in the southern section to accommodate on street parking at an angle on both sides of the road reserve.

Lithgow Street has a road reserve of approximately 30m, accommodating a 10m two-way sealed carriageway and pedestrian paths on each side of the road reserve.

3.2 Traffic Volumes

There are no existing publicly available Traffic Count data for the roads abutting the subject site. Based on desktop research it is not expected that Taylor Street carries more than 100 vehicular trips per day, as it provides rear access to 10 residential and 1 commercial lot.

Similarly, North Street offers rear access to 8 residential lots and the same commercial lot.

The assumptions are based on the fact that the neighbouring lots have frontage road access and 80% of traffic is expected to be from the main access point, apart from the commercial lot (Goulburn Engineering) which is expected to have most of the traffic to/from North Street.

Traffic volumes on Lithgow Street is not as straightforward to assess as it serves as connecting road to Auburn Street and Bourke Street. However, based on desktop survey it is likely that the traffic on Lithgow Street does not exceed the street capacity.

3.3 Crash Data

The one registered crash in the vicinity of the subject site in the last 5 years is located at the intersection with Lithgow Street and Bourke Street as shown by **Figure 2**.

The anticipated traffic flow and driving patterns associated with the new residential development are not likely to pose a heightened risk compared to existing conditions.

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Figure 2 – Crash map



Reporting year	Crash Id	Degree of crash	KUM - code	RUM - description	Type of location	Natural lighting	Longitude	Latitude	Number killed	Number injured
2020	1249262	Non-casualty (towaway)	30	Rear end	T-junction	Daylight	149.722015	-34.746637		

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4. **PROPOSED DEVELOPMENT**

4.1 Overview Of Compliance with AS2890 Parking Facilities

The proposed development should adhere to the Australian/New Zealand Standard for parking facilities (AS 2890.01), which prescribes geometric requirements for off-street car parking facilities.

The site will provide five residential parking bays (each unit with its own garage space) and two visitor bays within Lot 1. Parking areas are designed to accommodate User Class 1A (residential, domestic, and employee parking) as well as User Class 2 (long-term city and town centre parking, including facilities like sports venues, entertainment centres, hotels, motels, and airport visitors, typically for medium-term parking).

The access driveway is classified as Category 1, allowing direct access to the parking bays from the Taylor Street.

4.1.1 COMPARISON OF PROPOSED LAYOUT TO AS2890.01 REQUIREMENTS

REQUIREMENT	COMPLIANCE
"1.4 CLASSIFICATION OF OFF-STREET CAR PARKING FACILITIES User class 1A - Three-point turn entry and exit into 90° parking spaces only, otherwise as for User Class 1 User class 2 - Minimum for single manoeuvre entry and exit"	 The parking spaces for User Class 1A and User class 2 are all at a 90° angle with three-point turn entry and exit within a single space enclosed garage. User Class 1A will be accessed reverse in with a three-point turn entry and a single manoeuvre exit with a B99 Passenger vehicle The parking spaces for User Class 2 is all at a 90° angle accessible front in. B99 vehicles would access with a three-point turn while B85 can access the bays the in a single manoeuvre.
"APPENDIX B B2.2 The B99 vehicle Design dimensions based on the B99 vehicle are required at all locations where failure of a vehicle to fit into the facility would cause intolerable congestion and possible hazard. Such locations include all access driveways, ramps, and circulation roadways, unless special circumstances of severe space limitation and relatively low traffic volumes apply. In those cases, B85 vehicle dimensions may be used. B2.3 The B85 vehicle Except as permitted in Clause 2.5.2(c) and Paragraph B2.2, design dimensions based on the B85 vehicle apply only to parking spaces and parking aisles.	 Given the spatial constraints and low traffic volumes in this laneway, the adoption of B85 vehicle dimensions is well-suited for single manoeuvre access to visitor parking spaces. While B99 vehicles can still access these visitor spaces, they would require a three-point turn to do so front-in, owing to the restricted manoeuvring space.
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Note: This is based on the assumption that the statistical likelihood of two or more longer vehicles occupying adjacent parking spaces at the same time is relatively low. In cases where this occurs, a driver can divert to an alternative space with minimal disruption to other users."

"2.6 DESIGN OF DOMESTIC DRIVEWAYS

2.6.1 Width

The minimum width of domestic driveways shall be 3.0 m. On curved driveways other than at turns into garages or parking spaces the width shall be increased as given for domestic property in Table 2.2.

For apron widths at turns into enclosed garages, see Clause 5.4.

Minimum aisle or apron widths for turns into open sided parking shall be as for user Class 1 or 1A requirements in Figure 2.2."

"3.2 ACCESS DRIVEWAYS — WIDTH AND LOCATION

TABLE 3.1 SELECTION OF ACCESS FACILITY CATEGORY

Class of narking	Frontage road type	Access facility category Number of parking spaces (Note 1)						
facility								
(see Table 1.1)		<25	25 to 100	101 to 300	301 to 600	>600		
1,1A	Arterial	1	2	3	4	5		
	Local	1	1	2	3	4		
2	Arterial	2	2	3	4	5		
	Local	1	2	3	4	4		

(a) Driveway Categories 1 and 2

At unsignalized intersections of sub-arterial, collector or local streets with each other or with an arterial road, access driveways in Categories 1 and 2 (see Table 3.1) shall not be located in the sections of kerb shown by heavy lines in Figure 3.1. This requirement shall not apply to accesses to domestic driveways in the kerb section opposite the entering road at any intersection including signalized intersections. Furthermore, it shall not apply to any access driveway serving a property which would otherwise be denied access due to the physical impossibility of meeting the requirement."

"3.2.4 Sight distance at access driveway exits

(a) Entering sight distance Unsignalized access driveways shall be located so that the intersection sight distance along the frontage road available to drivers leaving the car park or domestic driveway is at least that shown in Figure 3.2."

- Lot 1 driveway width 9.7m
- Lot 2 5 driveway width 3m
- Lot 1 contains and open sided parking bay for visitors with 4.7m apron width. This is lower than the required 5.8m, however the swept paths show there are no issues manoeuvring in and out of the spaces.
- Each driveway falls into the Category 1 driveway serving less than 25 parking bays from a local road.
- Lot 1 access driveway is located 19m from the intersection of Taylor Street and Lithgow Street complying with the minimum of 6m distance from intersection tangent points as required.

- Sight distance of 40m was not achieved.
- While 50 km/h is the legal limit, the realistic operating speeds are expected to be lower due to the physical characteristics of the laneway including carriageway width, narrow road reserve and increased side friction.
- Operating speed is realistically limited at 20 km/h.

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- "3.2.4 Sight distance at access driveway exits
- (b) Sight distance to pedestrians
 - Clear sight lines as shown in Figure 3.3 shall be provided at the property line to ensure adequate visibility between vehicles leaving the car park or domestic driveway and pedestrians on the frontage road footpath."



"5.4 DESIGN OF ENCLOSED GARAGES

(a) Single vehicle garage

The overall internal width shall be 3.0 m minimum, and the internal space shall conform to the design envelope shown in Figure 5.2 except that the entry splays shown on Figure 5.2 may be omitted. A doorway of 2.4 m minimum width shall be provided. For right angle access to a garage, the required width of apron for manoeuvring purposes is shown in Figure 5.4. Single manoeuvre front-in entry may not be possible for some vehicles larger than the B85 vehicle at the apron widths shown in Figure 5.4. GOULBURN PROJECTS 26 LITHGOW STREET, GOULBURN TRAFFIC ENGINEERING REPORT

- The sight distance requirements are generally designed for roads with higher speeds and more significant traffic volumes. Although the speed limit is set at 50 km/h, the actual traffic conditions, characterized by low volumes and a relatively constrained road environment, reduce the likelihood of vehicles reaching or maintaining sign-posted speed. This, in turn, diminishes the potential safety risks associated with limited sightlines.
- The combination of a reduced likelihood of high-speed travel and the low traffic volume inherently mitigates the danger that might otherwise be associated with limited visibility in this setting.
- Clear pedestrian sightlines can be achieved on both sides of the proposed driveways.
- Any proposed fencing and vegetation height fronting the proposed units should be lower than the driver's eye height of 1.15m.
- It should be noted that the requirement above refers to pedestrian sight distance on the frontage road footpath. Rear access roads, such as this one, rarely feature footpaths or pedestrian crossings. Given the nature of the environment, pedestrian activity is expected to be extremely low.
- Internal width 2890mm i.e. 110mm less than required. It is not expected any issues would arise due to this minimal deviation from the standard.
- Doorway not defined, to be designed to a 2.4m minimum

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NOTE: For user classes other than Class 1A, it is recommended that the apron widths shown in Figure 5.4 be increased by at least 0.6 m.



4.1.2 VEHICLE SWEPT PATHS

The proposed parking area has been checked with a Passenger Vehicle (5.2m) and a Waste Collection Vehicle (10.0m).

The path of the waste vehicle was assumed to be from the north via Lithgow Street turning into Taylor Street and continuing on to North Street, with a right-hand turn exit onto Bourke Street. This path is navigable by the proposed vehicle.

Standard B99 Passenger Vehicle (5.2m) can safely enter and exit all of the proposed parking bays within the development. Given the overall setting and width of the access laneway, all parking spaces will be accessed in reverse and exit in forward motion.

The visitors' parking spaces on Lot 1 can be accessed forward in and reverse out.

It should be noted that the available survey does not cover the eastern end of Taylor Street; therefore, scaled aerial imagery has been used to assess the available manoeuvring space.

Please refer to the swept path analysis plans provided in Appendix A.

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4.2 Development Generated / Attracted Trips

The proposed development, consisting of 5 residential units, does not have specific hours of operation. However, the likely peak hours of traffic generation are anticipated to be from 08:00 to 09:00 in the morning and from 17:00 to 18:00 in the evening.

Although traffic volume data for the immediate surrounding road network is not available publicly, it is reasonable to assume that the peak times for the development will coincide with those of the nearby residential area.

This traffic impact assessment is based on the guidelines provided in the NSW RTA Guide to Traffic Generating Developments. According to Section 3.3.2, which pertains to medium-density residential flat buildings, smaller units and flats (up to two bedrooms) typically generate 4-5 daily vehicle trips per dwelling and 0.4-0.5 vehicle trips per dwelling during peak weekday hours.

Land Use Type	Rate	Yield	Daily Traffic Generation	Peak Hour Traffic Generation
Multi- residential	5 VPD / dwelling 0.5 VPH / dwelling	5 units	25 VPD	3 VPH

Table 1 - Calculation of Development Generated / Attracted Trips

Developments that generate fewer than 10 vehicular trips per hour during peak hours are generally considered to have a low impact on the surrounding road network. Given that the subject site would generate up to 25 vehicular trips per day and 3 vehicular trips in the peak hour, it is anticipated that the surrounding road network can easily cater to the additional traffic generated by this development without significant adverse effects.

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APPENDICES

APPENDIX A Vehicle swept path analysis

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