TRAFFIC AND PARKING IMPACT ASSESSMENT

Proposed Poultry Farm Expansion

3329 Oxley Highway, Somerton

Prepared for: Wintergreen Farm Pty Ltd

N255067A (Version 1a)

May 2025

Motion Traffic Engineers Pty Ltd
Telephone:
940 33 588
sydney@motiontraffic.com.au

ACN 600201583

Table of Contents

1. INTRODUCTION

Motion Traffic Engineers was commissioned by Wintergreen Farm Pty Ltd to undertake a traffic and parking impact assessment of a proposed expansion of a poultry farm at 3329 Oxley Highway, Somerton.

Currently, the site operates as a commercial poultry farm accommodating approximately 240,000 birds. The proposed development seeks to significantly expand operations to accommodate up to 810,510 birds within 14 tunnel-ventilated sheds.

This traffic report presents an assessment of the anticipated transport implications of the proposed expansion, with the following considerations:

- Background and existing traffic and parking conditions of the proposed poultry farm expansion
- Assessment of the public transport network within the vicinity of the proposed poultry fame expansion
- Adequacy of car, bicycle and motorcycle parking provision
- The projected traffic generation of the proposed poultry fame expansion and;
- The transport impact of the proposed poultry fame expansion on the surrounding road network.

In the course of preparing this assessment, the proposed poultry farm and its environs have been inspected, plans of the development are examined, all relevant traffic and parking data have been collected and analysed.

2. BACKGROUND AND EXISTING CONDITIONS

2.1. Location and Land Use

The proposed poultry expansion is located at 3329 Oxley Highway in Somerton. The vehicle driveway is via Babbinboon Road.

The site is situated within a rural and agricultural zone in the Tamworth Regional Council area, surrounded primarily by farmland and low-density rural residential lots. The land is zoned RU1 – Primary Production under the Tamworth Regional Local Environmental Plan 2010 and is currently used as a commercial poultry farm.

Vehicular access and egress to the existing farm is provided via a sealed driveway connecting directly to Babbinboon Roa at the north-western boundary of the site. The surrounding area comprises predominantly cleared land, with Peel River located nearby.

Figure 1 shows the location of the proposed poultry farm expansion from a regional perspective, while Figure 2 provides an aerial view of the site. Figure 3a illustrates the site access driveway and Figure 3b shows a ground-level photograph of the existing poultry sheds and farm layout.

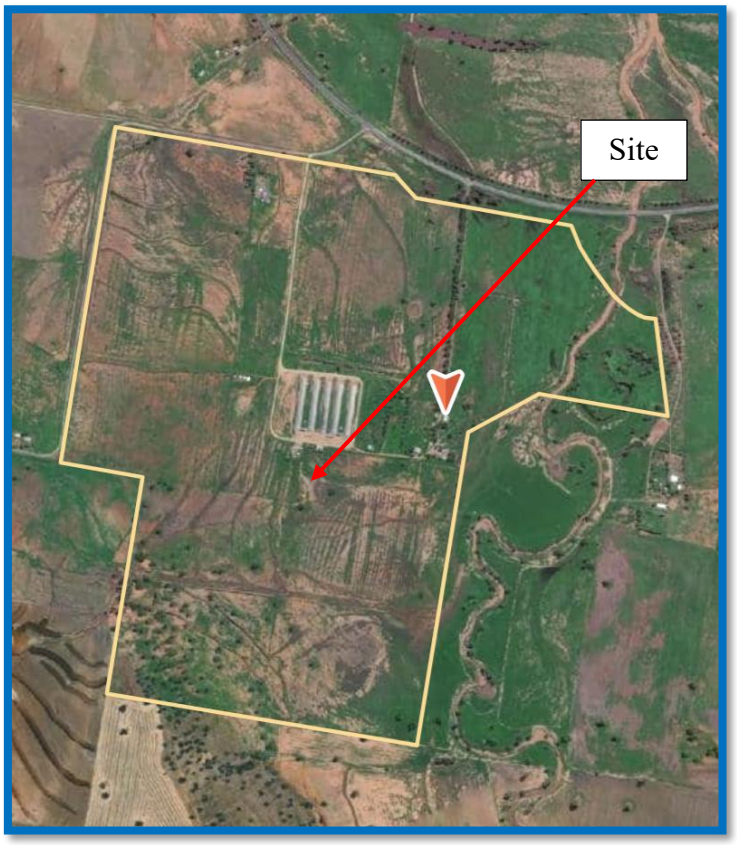

Figure 1: Location of the Poultry Farm on Aerial

Figure 2: Location of the Poultry Farm on Street Map and Surveyed Intersections

Figure 3a: Photograph of the Poultry Farm Driveway

2.2. Poultry Farm Operations

Currently the poultry farm employs six staff, with three workers living on-site and three commuting during weekdays or weekends. The poultry farm is a seven-day twenty-four operation.

Trucks movements occur in conjunction with the growth of the chickens and are based on a nine-week cycle

- Seven large rigid trucks for chick delivery
- Forty large rigid trucks for poultry feed
- Sixty-seventy chicken pick ups during the night only in a heavy rigid truck or B Double

A peak truck occurrence would be ten per day.

2.3.Road Network

This section discusses the road network adjacent and near to the proposed poultry fame expansion.

Oxley Highway is an arterial road with one lane of traffic in each direction. The sign posted speed limit along this section is 100 km/h. The road is sealed and provides direct access to the subject site via a dedicated driveway. Double Barrier lines separate the two opposing traffic flows. A road shoulder is provided for emergency parking such as a car breakdown. Edge lines are provided .Figure 4a presents a photograph of the Oxley Highway near the site access.

Babbinboon Road is a rural road intersecting the southern boundary of the broader area. It generally accommodates one lane of traffic each way and has an unsealed shoulder. The sign posted speed limit is 80 km/h. A road shoulder is provided for emergency parking in some sections. Figure 4b presents a photograph of Babbinboon Road.

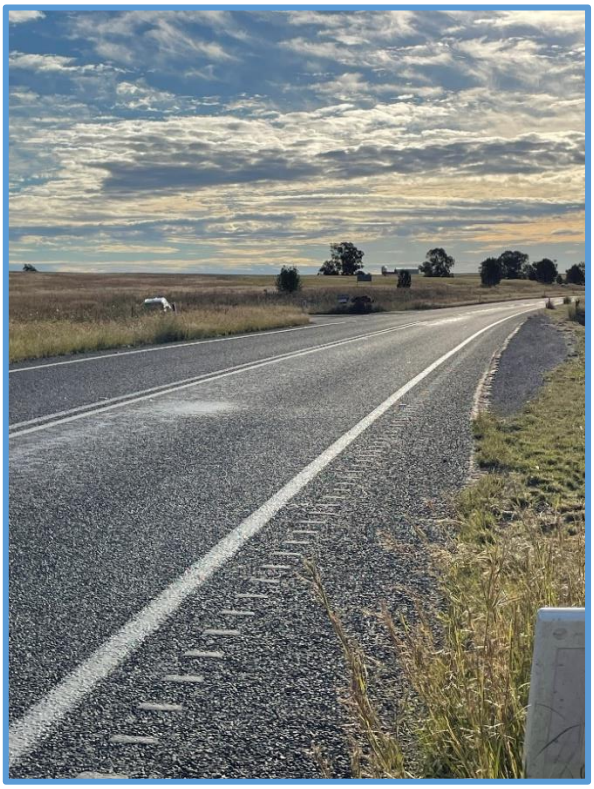

Figure 4a: Oxley Highway: Looking East from the intersection with Babbinboon Street

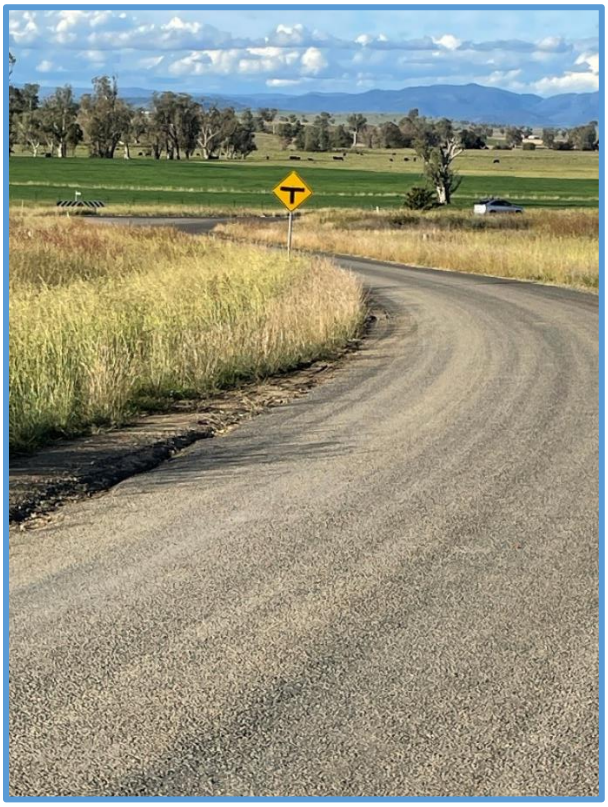

Figure 4b: Babbinboon Road: Looking North to the intersection with Oxley Highway

2.4. Intersection Description

As part of the traffic impact assessment, the performance of the nearby intersection was surveyed and assessed:

- Priority intersection of Oxley Highway with Babbinboon Road

External traffic travelling to and from the development is likely to travel through the intersection mentioned above.

The priority intersection of Oxley Highway with Babbinboon Road is a three-leg intersection with all movements permitted. Drivers on the Babbinboon Road need to give way to the vehicles on the Oxley Highway. Figure 6a presents the layout of this intersection using SIDRA 9.1 and Figure 6dbrepresents the aerial view of the intersection.

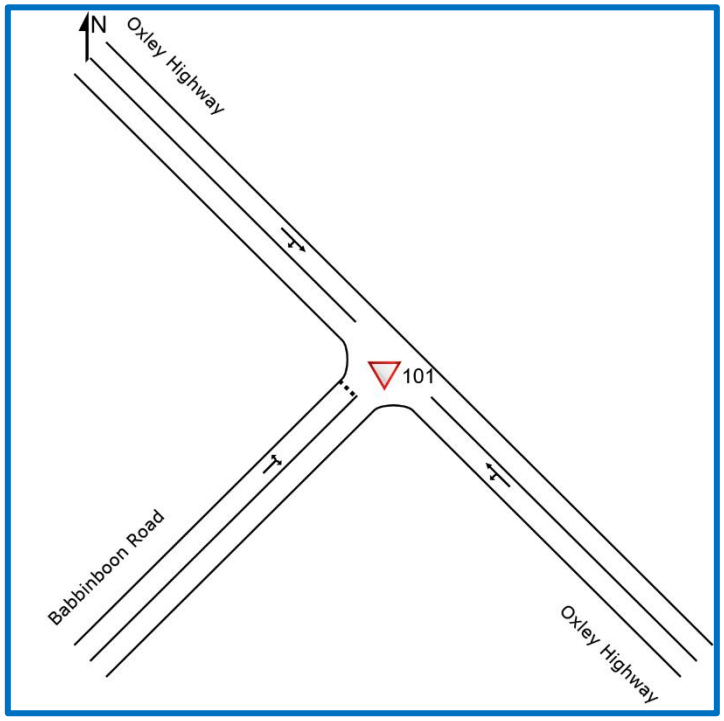

Figure 6a: Priority intersection of Oxley Highway with Babbinboon Road (SIDRA)

Figure 6b: Priority intersection of Oxley Highway with Babbinboon Road (Aerial)

2.5. Existing Traffic Volume

As part of the traffic assessment, traffic counts have been undertaken at the above-mentioned intersections and the AM and PM peak hours are identified accordingly. The AM peak hour is 8am to 9am and the PM peak hour is 4pm to 5pm.

The following Figures present the traffic volumes in vehicles for the weekday peak hours. The bracketed numbers are trucks/buses and the un-bracketed are cars.

Traffic volumes on Babbinboon Road is low. Trucks represent a reasonable proportion of traffic on Oxley Highway.

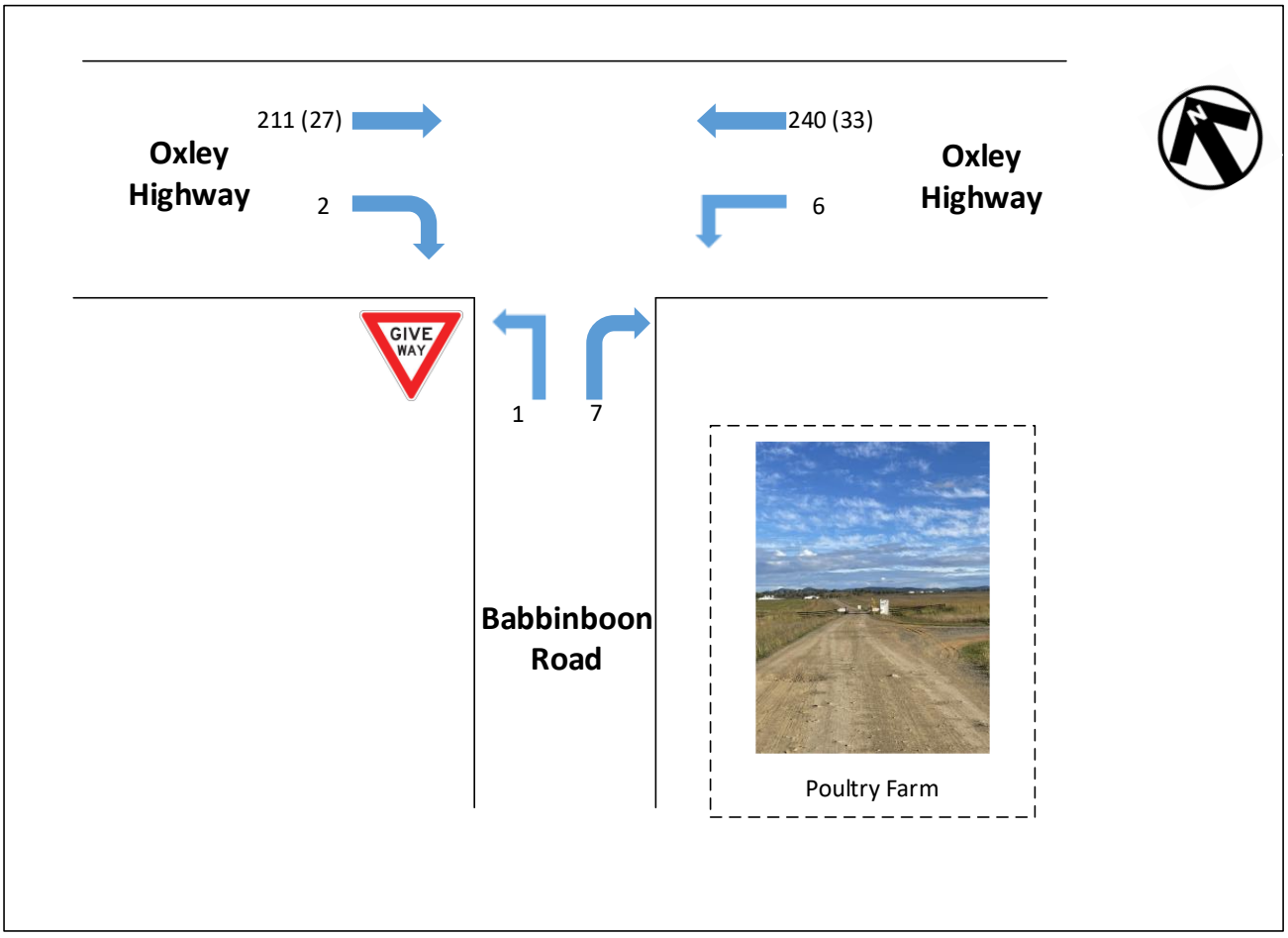

Figure 7A: Existing Weekday Traffic Volumes AM Peak Hour

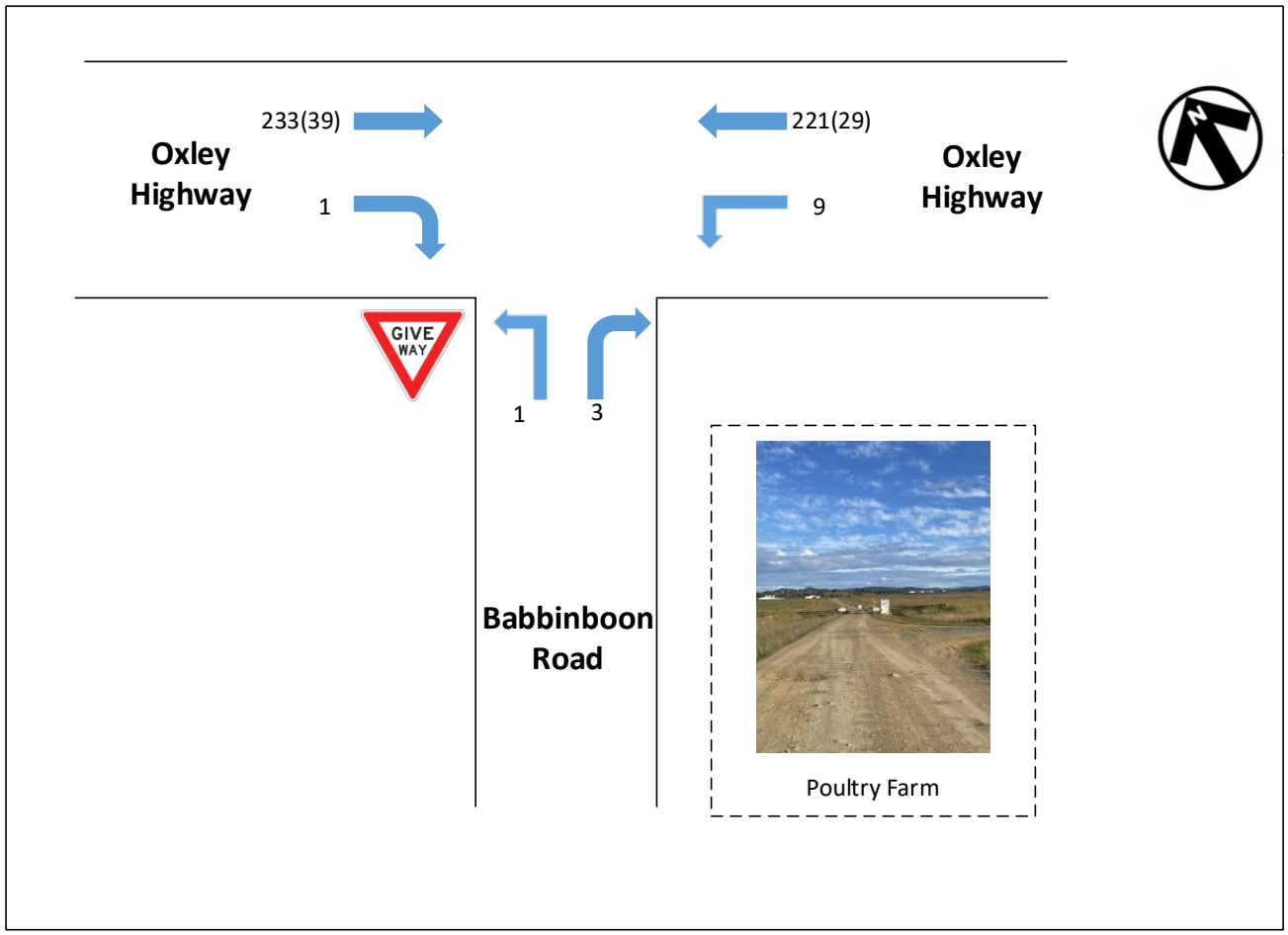

Figure 7B: Existing Weekday Traffic Volumes PM Peak Hour

2.6. Intersection Assessment with Existing Traffic

An intersection assessment has been undertaken for the:

- Priority intersection of Oxley Highway with Babbinboon Road

The existing intersection operating performance was assessed using the SIDRA software package (version 9.1) to determine the Degree of Saturation (DS), Average Delay (AVD in seconds) and Level of Service (LoS) at each intersection. The SIDRA program provides Level of Service Criteria Tables for various intersection types. The key indicator of intersection performance is Level of Service, where results are placed on a continuum from 'A' to 'F', as shown in Table 1.

LoS	Traffic Signal / Roundabout	Give Way / Stop Sign / T-Junction control
A	Good operation	Good operation
B	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	Satisfactory	Satisfactory, but accident study required
D	Operating near capacity	Near capacity & accident study required
E	At capacity, at signals incidents will cause excessive delays.	At capacity, requires other control mode
F	Unsatisfactory and requires additional capacity, Roundabouts require other control mode	At capacity, requires other control mode

Table 1: Intersection Level of Service

The Average Vehicle Delay (AVD) provides a measure of the operational performance of an intersection as indicated below, which relates AVD to LOS. The AVD's should be taken as a guide only as longer delays could be tolerated in some locations (i.e. inner-city conditions) and on some roads (i.e. minor side street intersecting with a major arterial route). For traffic signals, the average delay over all movements should be taken. For roundabouts and priority control intersections (sign control) the critical movement for level of service assessment should be that movement with the highest average delay.

LoS	Average Delay per Vehicles (seconds/vehicle)
A	Less than 14
B	15 to 28
C	29 to 42
D	43 to 56
E	57 to 70
F	>70

Table 2: Intersection Average Delay (AVD)

The degree of saturation (DS) is another measure of the operational performance of individual intersections. For intersections controlled by traffic signals both queue length and delay increase rapidly as DS approaches 1. It is usual to attempt to keep DS to less than 0.9. Degrees of Saturation in the order of 0.7 generally represent sat intersection operation. When DS exceed 0.9 queues can be anticipated.

The results of the intersection analysis are as follows:

Intersection/ Performance criteria	AM Peak Hour Existing	PM Peak Hour Existing
Oxley Highway with Babbinboon Road *LoS* *AVD* *DS*	Not Applicable, Worst Case: LoS A 0.3 0.162	Not Applicable, Worst Case: LoS A 0.2 0.161

Table 3: Existing Intersection Performances

As presented in Table 3, the assessed intersections are currently operating at excellent conditions with spare capacity to accommodate additional traffic both AM and PM peak hours. The full intersection results are presented in Appendix A.

2.7.Conclusions on Existing Conditions

Vehicle access and egress for the poultry farm via Babbinboon Road.

There is no formal provision for public transport, pedestrian infrastructure, or public parking in the immediate vicinity. The site is not located within proximity of schools, hospitals, or major sensitive land uses, and is surrounded primarily by rural and agricultural land.

Overall, the existing road infrastructure is appropriate for rural industry operations and can accommodate the current scale of traffic generated by the poultry farm. Further assessment is provided in the following sections in relation of the proposed expansion impacts and access capacity.

3. PROPOSED POULTRY FARM EXPANSION

The proposed poultry farm consists of:

- An expansion of the existing poultry farm to accommodate 810,510 birds across a total of fourteen tunnel-ventilated sheds.
- Each new shed will have an internal floor area of approximately 2,970 m².
- Existing sheds (5 total) will remain, each with a floor area of 2,323 m².
- The total combined capacity of the development equates to approximately 14 sheds in operation, maintaining a stocking density of approximately 21.5 birds/m².

Staff Numbers

Currently the poultry farm employs six staff, with three workers living on-site and three commuting during weekdays or weekends. The poultry expansion will increase staff by six people.

Truck numbers are dependent upon the nine-week chicken growth cycle with the existing details in Section 2.2.

- Twenty one large rigid trucks for chick delivery
- One hundred and twenty large rigid trucks for poultry feed
- Approximately chicken pickups during the night only in a heavy rigid truck or B Double

A peak truck occurrence would be thirty a day per day.

Parking

The proposed development includes on-site parking and manoeuvring areas to accommodate all required vehicle movements associated with farm operations. This includes feed delivery trucks, bird transport vehicles, staff vehicles, and contractors. Internal roads are designed to enable safe and efficient access for large trucks.

- Access to the site is via a sealed driveway on Babbinboon Road
- Designated service areas and turning bays are included to manage operational traffic.
- All vehicle parking will be accommodated within the site boundary because of the large farm area

A total of 41,790 m² of new shed GFA is proposed, in addition to the existing shed areas.

A full scaled plan of the proposed poultry farm is provided as part of the Development submission.

4.PARKING REQUIREMENTS

4.1.Car and Truck Parking

The Tamworth Regional Development Control Plan 2010 does not specify a car parking rate for poultry farms or intensive livestock agriculture. As such, the parking requirement for this development has been assessed based on operational staffing and site conditions as discussed previously.

The proposed poultry farm expansion requires two truck loading areas and twelve car spaces (one for each staff).

While the submitted plans do not show any formally delineated parking spaces, there is sufficiently open area near the office and amenities block to accommodate the required staff parking. This area is flat, accessible, and suitable for vehicle use without impacting on operational efficiency.

Given the low parking demand and ample available space, the proposed development provides sufficient on-site parking to meet staff needs. There is no reliance on public or on-street parking, and all vehicle parking will be wholly contained within the site boundary.

5.TRAFFIC GENERATION AND IMPACT

5.1.Proposed Traffic Generation

The *Guide to Transport Impact Assessment 2024* does not specify trip generation rates for rural industries such as poultry farms.

The increase in truck and staff car numbers is discussed in Section 3.

The expansion will lead to no more than two truck movements in the weekday peak hour.

Staff arrivals and departures are outside of the weekday peak hours.

The expected traffic volumes are low and consistent with a rural agricultural land use. The proposed poultry farm expansion is considered a low traffic generator on an hourly or daily basis and its impact on the surrounding road network will be minimal.

5.2.Existing with Poultry Expansion traffic

The additional poultry farm trips are assigned onto the local traffic network. The following figures present the future traffic volume with the additional poultry farm trips (in red for origin trips and blue for destination trips) for the weekday AM and PM peak hours

The additional poultry farm expansion trips represent a small proportion of the existing traffic volumes.

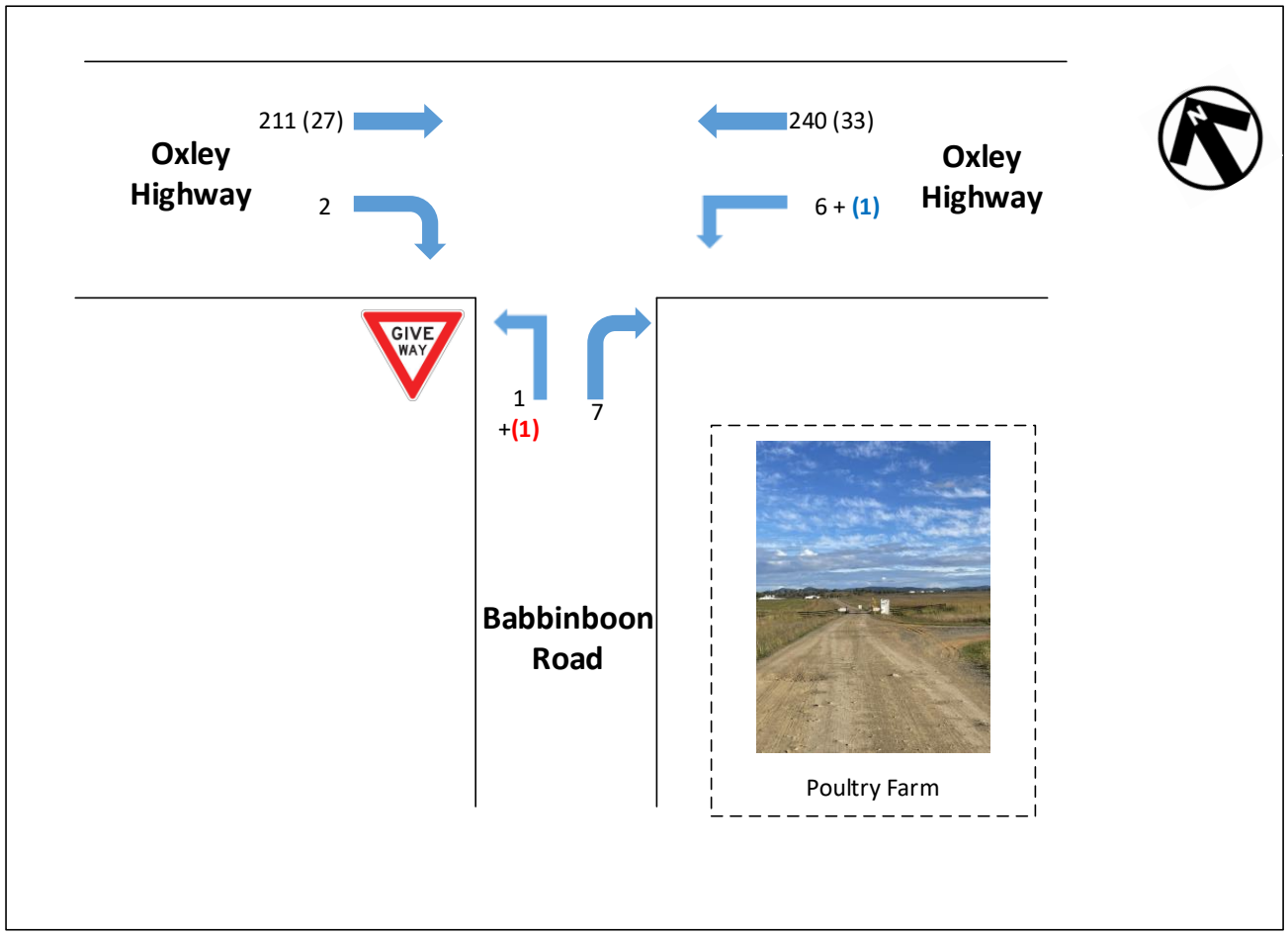

Figure 8a: Existing Weekday Traffic Volumes with Additional Expansion of Poultry Farm Traffic AM Peak Hour

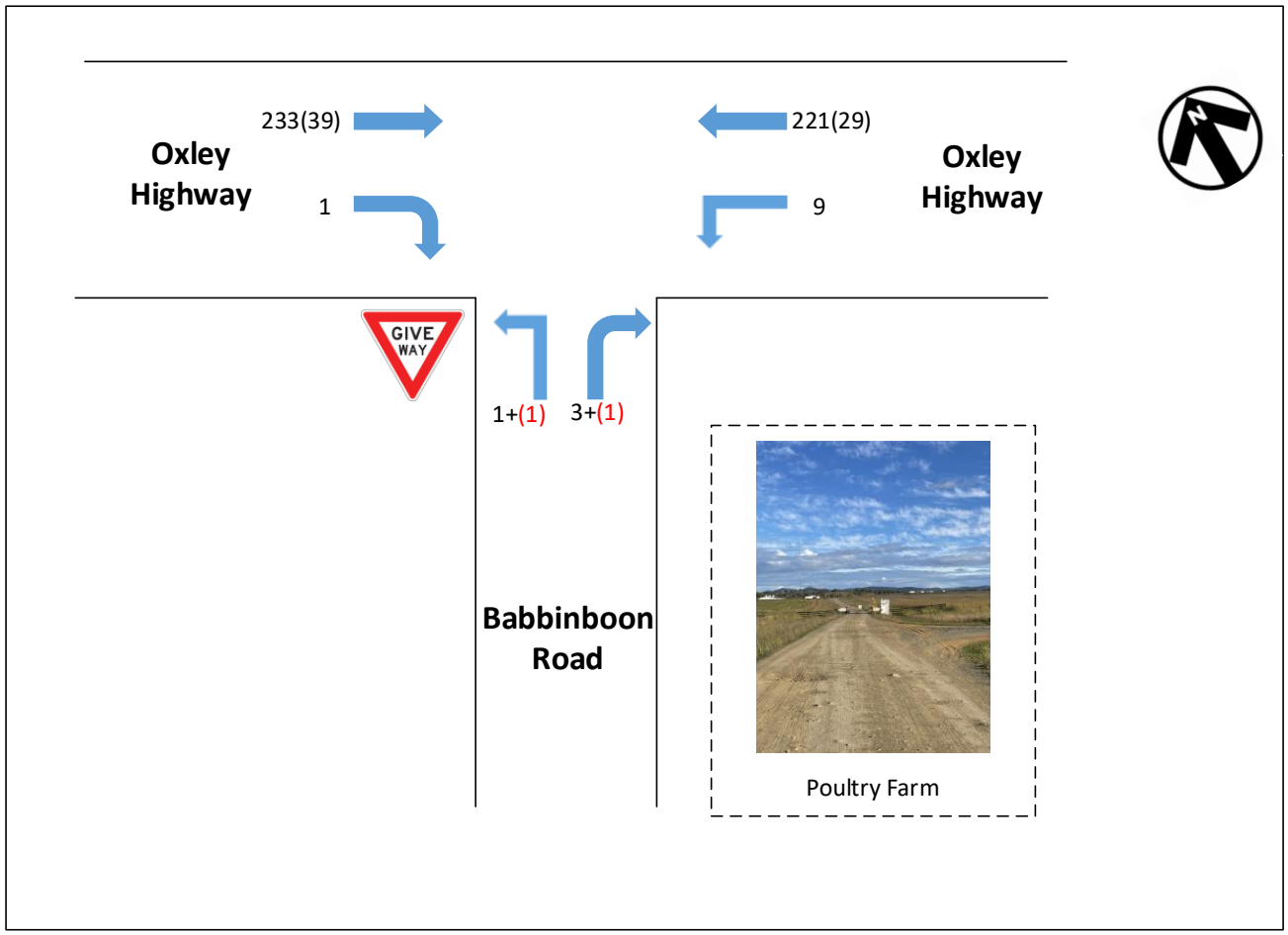

Figure 8b: Existing Weekday Traffic Volumes with Additional Expansion of Poultry Farm Traffic PM Peak Hour

5.3. Traffic Impact

This section assesses the following intersections for the existing traffic with the poultry expansion traffic. The results of the intersection assessment are as follows noting that both the intersection for the existing with poultry expansion traffic.

Intersection/ Performance criteria	Performance with Existing Traffic		Projected Performance with Existing and Poultry expansion traffic	
	AM Peak Hour Existing	PM Peak Hour Existing	AM Peak Hour Projected	PM Peak Hour Projected
Oxley Highway with Babbinboon Road *LoS* *AVD* *DS*	Not Applicable, Worst Case: LoS A 0.3 0.162	Not Applicable, Worst Case: LoS A 0.2 0.161	Not Applicable, Worst Case: LoS A 0.3 0.163	Not Applicable, Worst Case: LoS A 0.3 0.161

Table 8: Projected intersection performance with traffic

As presented in Table 8 above, the additional trips generated by the proposed poultry fame expansion have minimum impact on the intersection performances in both AM and PM peak hours. The LoS, AVD and DS of each intersection are not significantly affected by the addition of poultry expansion traffic.

The traffic impacts of the proposed poultry fame expansion are therefore considered acceptable.

The full SIDRA results are presented in Appendix B for the proposed conditions with the poultry expansion traffic.

6. CONCLUSIONS

This traffic impact assessment report relates to the proposed expansion of a poultry farm at 3329 Oxley Highway, Somerton. Based on the analysis and operational information presented in this report, the following conclusions are made:

- The poultry farm is located in a rural area with direct access to the Oxley Highway, a classified B-double route suitable for freight and agricultural vehicle access.
- The existing access driveway provides safe and efficient entry and exit for staff and service vehicles.
- The poultry is expected a low number of additional trips in any given hour of the day.
- Wekday peak traffic generation is limited to a maximum of two trucks.
- All car parking for staff and trucks will be accommodated on-site.
- There are no sensitive traffic environments or capacity constraints in the surrounding network that would be adversely affected by the proposed development.

There are no traffic engineering reasons why development consent for the proposed poultry farm expansion at 3329 Oxley Highway, Somerton should be refused.

APPENDIX A

Traffic and Parking Impact Assessment for Proposed Poultry Farm Expansion

3329 Oxley Highway, Somerton [N255067AReport 1a]