



Teys Abattoir Dampier Street, Bomen Transport Impact Assessment

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Teys Abattoir

Dampier Street, Bomen

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A	27/03/15	Draft	Dipen Nathwani	Rhys Hazell	Brett Maynard	

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1. Introduction

1.1 Background

It is understood that an application is to be lodged with NSW Department of Planning and Environment to modify an existing State Significant Development Approval (DA220-07-2002-i) for alterations and additions to the existing Abattoir located on Dampier Street, Bomen (5km north of Wagga Wagga) in the central south-west NSW. The proposed modifications represent Stage 1 of three stages planned for the overall upgrade of the existing facility.

This modification seeks approval for upgrades to the existing site facilities in order for it to be able to operate and achieve its maximum permitted throughput, which is 1 600 head of cattle per day. The upgrades are proposed in 3 separate stages. This Stage 1 modification application includes the following key works:

- o Construction of a new loading dock and marshalling area to be serviced by a reinstated site access along Dampier Street
- o Construction of a 24-hour gate house
- o Construction of a chilled storage and retrieval system facility
- o Refurbishment of existing chillers and frozen palletizing area.

Teys Australia engaged GTA Consultants in February 2015 to complete a transport impact assessment for the proposal.

1.2 Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposal, including consideration of the following:

- i existing traffic and parking conditions surrounding the site
- ii suitability of the proposed truck and service vehicle parking in terms of supply (quantum) and layout
- iii service vehicle requirements
- iv the traffic generating characteristics of the proposal
- v suitability of the proposed access arrangements for the site
- vi the transport impact of the development proposal on the surrounding road network.

1.3 References

In preparing this report, reference has been made to the following:

- o Wagga Wagga City Council Development Control Plan (DCP) 2010
- o Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS 2890.2:2002
- o Truck movement summary data for the site provided by Teys Australia as referenced in the context of this report
- o Layout plan for the proposed development prepared by Wiley, Drawing Number 00P121, Revision 4, dated August 2014
- o Revised layout plan for the proposed development prepared by Wiley, Drawing Number 00P150, Revision 1, dated February 2015
- o other documents and data as referenced in this report.

2. Existing Conditions

The subject site is located on Dampier Street, Bomen. The irregular shaped site has frontages of approximately 300m to the southern end of Dampier Street and 100m to the eastern end of Bomen Road. The main site entry is via Dampier Street along the eastern boundary, with an access road along the site's western boundary currently being used by trucks to deliver livestock and to distribute final products.

The surrounding properties predominantly include industrial uses, with the Main Southern Railway Line travelling along the site's eastern boundary.

The location of the subject site and its surrounding environs is shown in Figure 2.1.

Figure 2.1: Subject Site and Its Environs



Basemap Source: Google Maps

2.1 Road Network

2.1.1 Adjoining Roads

Dampier Street

Dampier Street is a local road and in the vicinity of the site is aligned in a north-south direction. It is a two-way road configured with one traffic lane in each direction, spanning a 10m wide carriageway. Dampier Street connects the site to the local road network, forming separate priority controlled intersections with Bomen Road and Byrnes Road to the north.

Informal kerbside parking is generally permitted along its length.

Dampier Street is shown in Figure 2.2.

Figure 2.2: Dampier Street (looking north)



Image Source: Teys Australia

Bomen Road

Bomen Road functions as a collector road and in the vicinity of the site is aligned in an east-west direction north of the site. It is a two-way road configured with one wide traffic lane in each direction. The wide traffic lanes have been designed to generally accommodate a variety of heavy vehicles, with a total carriageway width of 16m.

Bomen Road connects with the Olympic Highway (A41) further to the west and is the key approach and departure route between the site and major destinations, including Wagga Wagga in the immediate vicinity.

An access road adjoining the western boundary of the site forms a priority controlled intersection with Bomen Road and predominantly caters for heavy vehicle access, including those to/ from the site.

Bomen Road is shown in Figure 2.3.

Figure 2.3: Bomen Road (looking east)



Image Source: Google

Byrnes Road

Byrnes Road is an arterial road located east of the site on the eastern side of the Main Southern Railway Line. It generally runs in a north-south direction and provides an alternative link between Wagga Wagga to the south, and Junee to the north.

2.1.2 Surrounding Intersections

The following priority controlled intersections currently exist in the vicinity of the site:

- o Dampier Street/ Bomen Road
- o Dampier Street/ Byrnes Road
- o Bomen Road/ Access Road.

It is understood that all intersections provide adequate sight lines and low-moderate traffic volumes, contributing to a safe road environment.

2.2 Existing Site Traffic Characteristics

Teys Australia provided 24-hour truck movement data for the site for the full week commencing Monday 16 February 2015. The data was collected from the site's gatehouse with direct access via the access road along the western boundary.

The data indicates that a total of 190 vehicle movements (two-way) were registered during the surveyed week, with Monday being the busiest day. It is noted that the data does not account for seasonal variations that may arise over any given year in terms of changes in export and domestic demand, leading to variations in the number and type of trucks accessing the site.

With 58 vehicle movements occurring in the 24-hour period on Monday 16 February 2015, this is representative of approximately 30% of total weekly vehicle movements. Of this, a total of 9 (or 15%) occurred during the typical road network AM peak period (7:00am-9:00am) and 6 (or 10%) during the PM peak period (4:00pm-6:00pm). This also equates to up to 5-6 vehicle movements in any peak hour.

Overall, the arrival and departure profiles demonstrate that approximately 25% of all heavy vehicle movements coincide with the typical weekday road network peak periods.

Site generated vehicles, excluding VISY and BOC trucks, have an average duration of stay of less than 45 minutes, with 'container' vehicles (comprising 65% of all vehicles) staying an average of 24 minutes. Of the 4 VISY and BOC trucks, the average duration of stay was much longer (2 hours), with these vehicles accessing specific and separated areas on-site and removed from general on-site vehicle circulation and loading areas.

In total, all heavy vehicles (excluding VISY and BOC trucks) stay on-site an average of less than 45 minutes. This also equates to up to 2 heavy vehicles on-site at any one time.

3. Development Proposal

3.1 Land Uses

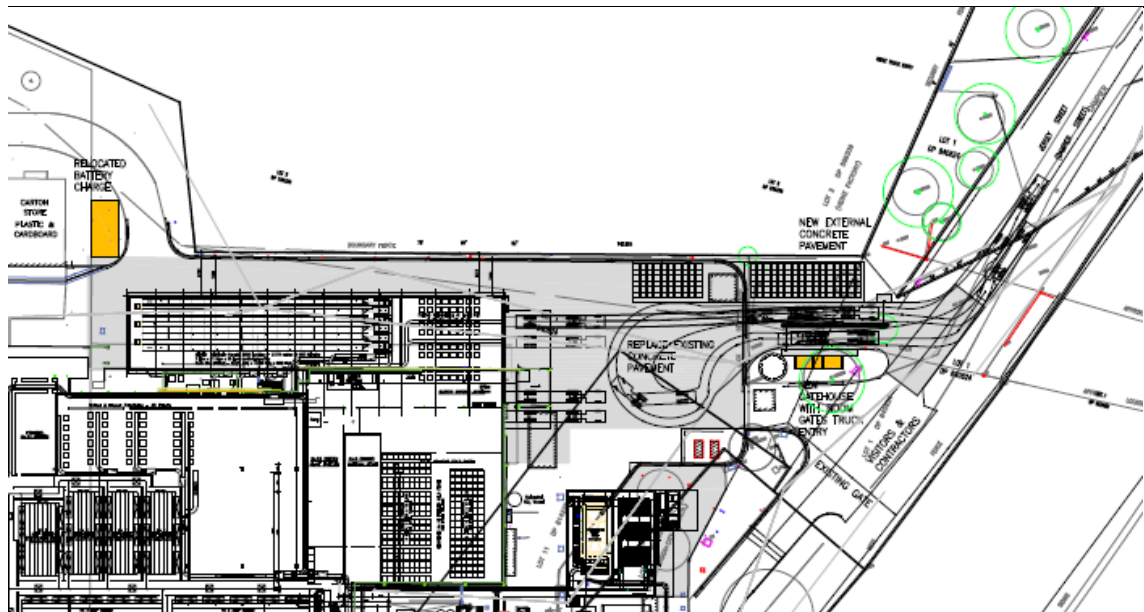
The modifications proposed (Stage 1 modification) include alterations and additions to the existing abattoir located on Dampier Street, Bomen. The proposed Stage 1 modifications to the approved DA include the following key components:

- Construction of a new loading dock and marshalling area to be serviced by a reinstated site access along Dampier Street
- Construction of a 24-hour gate house
- Construction of a chilled storage and retrieval system facility
- Refurbishment of existing chillers and frozen palletizing area.

It is understood that the existing facility is inefficient and is currently operating well below its approved capacity of 1,600 head of cattle per day. The Stage 1 modifications are part of a series of proposed improvements to the existing site facilities, which are designed to upgrade the operational efficiency and achieve the maximum approved output.

Figure 3.1 is an extract of the proposed site layout plan.

Figure 3.1: Proposed Site Layout Plan



Source: Wiley

3.2 Site Access and Parking

Access to the site is currently via two distinct locations. Staff and visitors generally access the on-site car park via Dampier Street, while all heavy vehicles/ light trucks/ delivery vehicles access the site via the access road along the western boundary.

An existing concrete driveway historically also provided access to the site via Dampier Street though is currently disused. The proposal includes the re-establishment of this existing driveway to allow for heavy vehicle access to a reconfigured and expanded loading dock and hard stand area, with a new gatehouse to control access.

It is understood that the existing staff and visitor site access arrangements and on-site car park at the southern end of Dampier Street will remain unchanged.

3.3 Proposed Loading Arrangements

A new formalised loading dock and hardstand area is proposed to be located in the eastern section of the site, adjacent to the structure housing the new chilled storage and retrieval system facility and refurbished palletising area.

Access to the proposed four loading docks will be via the re-established driveway access along Dampier Street, secured by a new 24-hour gatehouse and boom gates.

The proposed loading dock has been designed to cater for vehicles up to 19m articulated trucks with adequate manoeuvring space to ensure all vehicles can enter the site, reverse into each dock independently and exit the site in a forward direction.

The adjacent hardstand area has been designed to ensure adequate capacity for one articulated vehicle to wait (in a designated and line marked area). There is also adequate hardstand area to provide marked parking bays for light vehicles including small rigid trucks, delivery vans, couriers etc. with minimal impact to the loading dock operations.

It is assumed that a suitable on-site management plan will be implemented to ensure all users are informed of site conditions, operations and associated safety requirements.

Overall, the proposal includes use of two distinct loading areas within the site. This includes the use of the new loading dock arrangements as discussed above, while maintaining access to the existing loading area, with access maintained via the western access road. In total, the site will provide 5 loading docks.

This will allow the new loading dock to accommodate the dispatch of final products, with livestock deliveries continuing via the western access road. This clearly separates the two distinct site operations and contributes to strengthening safety for all users, site security and levels of hygiene.

4. Traffic Impact Assessment

4.1 Traffic Generation

The Stage 1 modifications and any of the future and subsequent stages, do not involve an intensification of the operations (i.e. there is no proposed increase in throughput and subsequently no increase in the anticipated traffic movements to and from the site from that previously approved). It is noted that the original approval for the facility was to allow up to 2000 head of cattle per day, which was only reduced to 1600 on the basis of the wastewater treatment capacity on the site. On this basis, the traffic movements endorsed were previously well in excess of that which is now anticipated.

There will be a small redistribution of vehicle activity away from the western access road to make use of Dampier Street and the new gatehouse to access the site. This will also ensure a more even distribution of heavy vehicle activity across the site.

Having regard for the existing traffic conditions surrounding the site, this minor change could not be expected to compromise the safety or function of the surrounding road network.

4.1.1 Future Stages

Table 4.1 has been prepared to summarise the light and heavy vehicle activity once all stages (Stages 1, 2 & 3) associated with the proposed improvements are completed and the facility is operating at its maximum throughput capacity of 1,600 head of cattle a day. The table illustrates how traffic movement will be now distributed between the back (western) and new front gate entry.

Table 4.1: Traffic Generation Estimates associated with approved throughput capacity

Vehicle Type	Weekly Vehicle Movements (two-way)	
	Back Gate [1]	Front Gate [2]
Cattle Trucks	350	-
Fridge Vans	-	160
Containers	-	200
Light Vehicles (contractors & deliveries to the store)	-	360
Waste Trucks	-	70
Hide Shed	20	-
Render	72	-
Total	442	790

[1] Back Gate – existing access via the western access road

[2] Front Gate – new access via the new Dampier Street access driveway

Table 4.1 indicates that, when operating at its maximum throughput capacity, up to 1,232 vehicle movements in a typical week would occur, with the majority (790, or 65%) entering and exiting via the new front gate. As previously noted, these traffic movements have already been anticipated, considered and approved within the current consent and subsequent modifications. The only change created by this Stage 1 modification is that truck movements will now be distributed more widely between the back and the new front gate entry.

Assuming that the peak 24-hour period may be required to accommodate up to 30% of all weekly vehicle movements, the peak day could theoretically result in the site generating up to 370 vehicle movements once operating at its approved capacity.

Given the site currently generates up to 60 vehicle movements through the back gate on the peak day, this represents an increase of 310 vehicle movements per day, or 155 vehicle arrivals when operating at its approved capacity (which will not occur until future stages 2 and 3 are also complete).

4.1.2 Back Gate

The existing gatehouse data confirms that the site currently generates approximately 190 vehicle movements in an average 6-day week.

Based on Table 4.1 and assuming that up to 30% of vehicle movements will continue to occur on the peak day, the back gate would need to accommodate up to 130-135 daily vehicle movements; or slightly more than double current volumes. These levels, however, have already been anticipated and approved as part of the previous development consent and subsequent modification approvals for the site.

Assuming a similar distribution across a peak day, the peak two-hour period would see 13-20 vehicle movements, or 10-15% of total daily vehicle movements. The existing gatehouse would be able to accommodate such an increase as part of the future stages, with little modification required to existing arrangements.

4.1.3 Front Gate

The new Dampier Street front gate may need to ultimately accommodate up to 790 vehicle movements in an average 6-day week. This equates to 230-240 vehicle movements on the peak day and 23-35 during a peak two-hour period once the facility is operating at its approved capacity.

Once the facility is operating at its approved capacity in the future, it is recommended that site operations be appropriately managed to ensure that the theoretical peak day represents no more than 20% of the total weekly vehicle movements. This would result in less than 25 vehicle movements in any weekday peak two-hour period (with the AM peak the busiest), or less than 15 in any weekday peak hour.

In the future and once operating at approved capacity, it is conservatively estimated that 50% of these vehicles will require direct access to the 5 on-site loading docks, with the remainder being smaller trucks/ vans that would park in the marked on-site loading spaces, with convenient access to the storage facilities. As such, the loading docks may need to accommodate a theoretical peak demand of 4-5 vehicles in any peak hour.

Based on an average duration of stay of less than 45 minutes, the 5 loading docks and the additional waiting area would be able to accommodate the peak site demands. No heavy vehicles would ultimately be required to queue along Dampier Street external to the site. Furthermore, it should be noted that Teys' transport provider TOLL has been advised of the requirement to manage its fleet on its own site to ensure that none of their vehicles wait in the streets surrounding the subject site. Each TOLL truck will be allocated an arrival time slot to the facility. If that time is not met, the TOLL trucks will be required return to their own base to receive a reallocated time slot.

It is noted that such a scenario is heavily dependent on implementation of a comprehensive dock management plan, supported by rigorous monitoring, to ensure site operations and efficiencies are maintained at all times.

The future increase in traffic volumes travelling on the surrounding road network, including Dampier Street and the access road will be minor and in-line with both the approved use of the site and the intended function of the surrounding road hierarchy.

As discussed, the Stage 1 modifications will result in a minor redistribution of heavy vehicle activity across the site, with no actual increase in traffic volumes anticipated. The above assessment also concludes that when the facility is operating at its maximum permitted throughput following implementation of the future stages, the associated increase in vehicle activity could not be expected to compromise the safety or function of the surrounding road network.

4.2 Mitigating Measures

As discussed, the Stage 1 modifications represent no change to site-generated vehicle movements. The substantial increases, in-line with the maximum permitted throughput, are only anticipated as part of the proposed future stages. These increases have in any event already been considered, assessed and endorsed within the site's current approval and subsequent modifications.

Notwithstanding the above, it is recommended that site operations, particularly those associated with dispatch of final products that will make use of the re-established Dampier Street access, be ultimately modified to ensure that a typical peak day does not represent more than 20% of total weekly activity.

The separation of on-site uses, including small trucks and vans etc. using designated loading spaces (rather than occupying a loading dock) will also be required to ensure efficient future site operations.

The duration that each vehicle spends on-site will also be key, noting that the existing average 45 minute duration of stay would need to represent a maximum average stay. This requirement will be managed via Teys' transport provider TOLL, ensuring allocated time slots for loading and dispatch are adhered to.

5. Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

- i The proposed Stage 1 modifications seek to upgrade the site facilities as part of a series of proposed improvements to ultimately enable the Teys abattoir in Bomen to achieve its maximum approved throughput of 1,600 cattle head per day.
- ii The existing facility is served by two site accesses. The Dampier Street site access is for use by staff/ visitors while the access road along site's western boundary accommodates heavy vehicles.
- iii The proposal includes the following key components:
 - o Construction of a new loading dock and marshalling area to be serviced by a reinstated site access along Dampier Street
 - o Construction of a 24-hour gatehouse
 - o Construction of a chilled storage and retrieval system facility
 - o Refurbishment of existing chillers and frozen palletizing area.
- iv The Dampier Street access and new loading area will be used for dispatch of final products. Livestock and other deliveries would continue to use make use of the western access road. This ensures separation of uses for improved operations and maintaining hygiene standards.
- v A total of 190 vehicle movements (95 arrivals) were registered at the existing western access road gatehouse during the week commencing Monday, 16 February 2015.
- vi The Stage 1 modifications will not result in a change to the approved production throughput and subsequently, no increase in vehicle movements is anticipated.
- vii There will be a small redistribution of vehicle activity away from the western access road to make use of Dampier Street and the new gatehouse to access the site. This will also ensure a more even distribution of heavy vehicle activity across the site.
- viii Having regard for the existing traffic conditions surrounding the site, the minor changes associated with Stage 1 could not be expected to compromise the safety or function of the surrounding road network.
- ix An assessment of future site operations has been completed to ensure that the Stage 1 works provide the facilities to enable the site to theoretically generate up to 1,232 vehicle movements in any 6-day week in the future.
- x Under this scenario, should the peak day represent 30% of weekly activity, the site is anticipated to generate up to 370 daily vehicle movements. This equates to 130-135 via the back gate and 230-240 via the new front gate. It should, however, be noted that these traffic movements have already been considered, assessed and approved as part of the current consent and subsequent modifications approved.
- xi The existing back gate would be able to accommodate these volumes however it is recommended that site operations be appropriately managed to ensure the peak day represent no more than 20% of all weekly vehicle movements (up to 250 movements).
- xii Based on this, and adopting the peak period activity, the site would theoretically be able to accommodate the following vehicle movements in any peak two-hour period (excluding staff/ visitors):
 - o 13-20 via the western access road
 - o 25 via the Dampier Street gatehouse.

- xiii With the breakdown of vehicle type, such arrangements would ensure that heavy vehicles would not be required to park/ wait external to the site prior to being able to enter.
- xiv This scenario is heavily dependent on the future implementation of a comprehensive dock management plan, supported by rigorous monitoring, to ensure site operations and efficiencies are maintained at all times.
- xv The proposed Stage 1 loading area layout is consistent with the dimensional requirements as set out in the Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS 2890.2:2002.
- xvi The separation of on-site uses, including formal use of the new loading docks only as required with additional and separate parking capacity for small trucks/ vans will be required to ensure efficient site operations.
- xvii The current average 45 minute duration of stay should represent a future maximum. This requirement will be managed via Teys' transport provider TOLL, ensuring allocated time slots for loading and dispatch are adhered to.

Melbourne
A Level 25, 55 Collins Street
PO Box 24055
MELBOURNE VIC 3000
P +613 9851 9600
E melbourne@gta.com.au

Sydney
A Level 6, 15 Help Street
CHATSWOOD NSW 2067
PO Box 5254
WEST CHATSWOOD NSW 1515
P +612 8448 1800
E sydney@gta.com.au

Brisbane
A Level 4, 283 Elizabeth Street
BRISBANE QLD 4000
GPO Box 115
BRISBANE QLD 4001
P +617 3113 5000
E brisbane@gta.com.au

Canberra
A Unit 4, Level 1, Sparta Building,
55 Woolley Street
PO Box 62
DICKSON ACT 2602
P +612 6243 4826
E canberra@gta.com.au

Adelaide
A Suite 4, Level 1, 136 The Parade
PO Box 3421
NORWOOD SA 5067
P +618 8334 3600
E adelaide@gta.com.au

Gold Coast
A Level 9, Corporate Centre 2
Box 37, 1 Corporate Court
BUNDALL QLD 4217
P +617 5510 4800
F +617 5510 4814
E goldcoast@gta.com.au

Townsville
A Level 1, 25 Sturt Street
PO Box 1064
TOWNSVILLE QLD 4810
P +617 4722 2765
E townsville@gta.com.au

Perth
A Level 27, 44 St Georges Terrace
PERTH WA 6000
P +618 6361 4634
E perth@gta.com.au