Traffic Impact Assessment

Proposed Subdivision
Townson Road, Colebee

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1. Introduction

TRAFFIX has been commissioned by Luxeland Development Pty Ltd to undertake a Traffic Impact Assessment for a subdivision at Townson Road in Colebee. An accompanying development application seeks approval for the creation of 216 residual and individual lots.

The subject site is referred to as a ‘Stage 2’ subdivision and follows an approval for a ‘Stage 1’ subdivision immediately south. It is located within the City of Blacktown local government area and has been assessed under the Blacktown City Council Growth Centre Precincts Development Control Plan 2010.

This report documents the findings of our investigations and should be read in the context of the Statement of Environmental Effects prepared separately. The proposal seeks approval for more than 200 allotments and therefore requires referral to the Roads and Maritime Services (RMS) under the provisions of State Environmental Planning Policy (Infrastructure) 2007.

The report is structured as follows:

- Section 2: Describes the site and its location
- Section 3: Documents existing traffic conditions
- Section 4: Describes the proposed development
- Section 5: Assesses the parking requirements
- Section 6: Assesses traffic impacts
- Section 7: Discusses access and internal design aspects
- Section 8: Presents the overall study conclusions.
2. Location and Site

The site is located at Townson Road in Colebee, on the southwest corner of the intersection with Victory Road. In a regional context, it lies approximately 7.7 kilometres northwest of Blacktown.

The site specifically comprises of an area known as ‘Stage 2’, and roughly has a rectangular shaped configuration with a site area of approximately 15 hectares. It is bound to the north by Townson Road for approximately 365 metres and Victory Road to the east for approximately 343 metres. The remainder of the site is bound by a public reserve to the west and an approved subdivision to the south known as ‘Stage 1’. This subdivision includes two north-south roads which form a connection to the Stage 2 site, as well as an east-west road running on the shared boundary.

The majority of the site is greenfield land with the exception of a single dwelling house at the northeast corner of the site. It presently has two access points:

- An unused western leg at the roundabout intersection of Victory Road (a road stub),
- A vehicular crossing for the dwelling house on Townson Road.

The site falls within the North West Priority Growth Area and is subject to the Blacktown City Council Growth Centre Precincts Development Control Plan (DCP) 2010. More specifically, it is identified within the West Schofields (Townson Road) Precinct, for which specific controls are stipulated in Schedule 7 of the DCP.

A Location Plan is presented in Figure 1, with a Site Plan presented in Figure 2. Reference should also be made to the Photographic Record presented in Appendix A, which provides an appreciation of the general character of roads and other key attributes in proximity to the site.
Figure 1: Location Plan
Figure 2: Site Plan
3. Existing Traffic Conditions

3.1 Road Network

The existing road hierarchy in the locality of the site is discussed below and shown illustrated in Figure 3.

- Richmond Road:

An RMS Main Road (MR 537), that runs in a north south direction between Blacktown Road (to the north) and Kildare Road (to the south) and is an unclassified Regional Road (RR 7154), between Kildare Road and its intersection with Balmoral Street and Third Avenue. The environment along Richmond Road varies considerably on either side of the Westlink M7, and therefore the following traffic conditions are only valid for the section of Richmond Road that lies to the north of the M7 Motorway. Richmond Road generally carries in the order of 25,000 vehicles per day (vpd), and is subject to an 80km/h speed zoning in the vicinity of the site.

- Townson Road:

Townson Road is a local that generally runs east-west, between Richmond Road in the west and Victory Road Road in the east. It is subject to a 60km/h speed zoning, and carries a single lane of traffic in either direction along an undivided carriageway. It should be noted that Townson Road currently has no road markings, it is however set to be upgraded to a 'Transit Boulevard' as set out in the North West Growth Centre Road Framework (2011) discussed below.

- Alderton Drive:

Alderton Drive is a local collector road that runs in an east-west direction between Richmond Road in the west and Victory Road in the east. Colebee Road carries a single lane of traffic in either direction along a divided carriageway.

- Victory Road:

Victory is a local collector road that generally runs in a north-south direction from Townson Road in the north to Alderton Drive in the south. It carries a single lane of traffic in either direction along a divided carriageway.
Figure 3: Road Hierarchy
3.2 Future Road Hierarchy

The Roads and Maritime Services (RMS) developed the *North West Growth Centre Road Framework (2011)* which provided the outline to assist in the development of an integrated and strategic road network required to support the development of the NWGC.

The *NWGC Road Framework* built on the previous assessments undertaken by the RMS and other Government Bodies including the *Growth Centre Structure Plan (2006)* and identified that following roads to be constructed or upgraded by the RMS:

- Richmond Road as a Principle Arterial
- Garfield Road, Schofields Road and Townson Road / Burdekin Road / Stanhope Parkway as Transit Boulevards.

Subsequently, the RMS prepared a concept plan design for the upgrade of Richmond Road from the M7 Motorway / Rooty Hill Road North intersection to Vine Street / Richmond Road intersection in the north. The upgrade included the construction of a five lane divided carriageway with an 80km/hr speed limit plus the construction of two new signalised intersections with Townson Road and Colebee Road, providing access to the Colebee and Marsden Park precincts.

The *NWGC Road Framework* developed a future road hierarchy which identifies the future alignment of the Principle Arterial roads, Transit Boulevards, Sub Arterial and Collector roads, based on the existing and future road network. This future network is provided in Figure 4.
Source: Transport for NSW: Northwest Growth Centres Road Framework Report – May 2011

Figure 4: Existing & Proposed Road Hierarchy
The NWGC Road Framework identifies a future road network hierarchy with 3 major road functions. These functions include:

- **Principle Arterial**: major roads that connect with motorways, linking centres and communities, with posted speeds of 80km/h and 70km/h. Although largely dedicated to a transport function, they typically include pedestrian and cycle access and provide for a higher volume of traffic at higher speed.

- **Transit Boulevards**: link with Principal Arterials incorporating a mix of public transport facilities and land service functions, with typical posted speeds of 60km/h. Settlements and development including residential, educational, retail and business districts, are associated with Transit Boulevards and Sub-Arterials, supporting a public transport function. They also have a higher pedestrian and cycle access function. Principal Arterials have a higher order transport function than Transit Boulevards and generally have a lower response to adjacent land uses due to higher speeds, access controls, safety and amenity, and

- **Sub-Arterials**: connect with Transit Boulevards with typical posted speeds of 50km/h, serving more of a community role, providing access to adjacent properties with a significant transport function. Sub-Arterials are typically owned and maintained by local Councils, and link to local roads.

These road classifications and general layout form the basis of the future road network for the site.

### 3.3 Public Transport

The public transport network presently available is shown illustrated in Figure 5. Most lots would be within 800 metres walking distance of bus stops on Richmond Road which connect to key destinations in the surrounding region, including two services to Blacktown.

It is envisaged that new bus routes would be introduced in the future as patronage demands increase with continued growth in the Townson Road Precinct.
Figure 5: Public Transport
4. Description of Proposal

A detailed description of the proposed development is provided in the Statement of Environmental Effects prepared separately. In summary, approval is sought for a subdivision of the subject ‘Stage 2’ site, which will comprise of:

- Creation of 216 allotments, which has potential to accommodate 230 dwellings, and consists of:
  - 3 x residual lots understood to have potential for 17 dwellings
  - 213 x individual lots potentially accommodating 213 dwellings

- Construction of a new internal road network in accordance with the DCP. These roads primarily have been designed in accordance with a ‘local street’ with respect to carriageway widths.

- External road connections to:
  - Victory Road via an existing western leg for a roundabout intersection with Sunningdale Drive,
  - Victory Road an existing left-in / left-out intersection, and
  - Townson Road, via a new T-Junction intersection.

- Appropriate provisions for future pedestrian and cyclist networks in accordance with the DCP.

The traffic impacts arising from the proposal is discussed in Section 5, while design aspects are discussed in Section 6. Reference should be made to the Masterplan drafted for the site, which is presented in Appendix B.
5. Traffic Impacts

5.1 Trip Generation

The RMS Technical Direction (TDT 2013/04a), which supplements the Guide to Traffic Generating Developments, provides updated trip generation rates for low density residential dwellings based in Sydney. It recommends an average hourly trip rate of 0.99 vehicle trips per dwelling during the AM peak period and 0.95 vehicle trips per dwelling during the PM peak period. The proposed subdivision, with potential for 230 dwellings, is therefore anticipated to generate the following traffic:

- 228 vehicle trips per hour during the AM peak period, and
- 219 vehicle trips per hour during the PM peak period.

5.2 Traffic Impacts

The proposed subdivision is assumed to comply with all planning controls including minimum lot sizes and densities. In this regard, the development potential for the site would be consistent with that envisaged within the North West Growth Corridor, with all arterial intersections expected to accommodate future traffic arising from new development.

In a local context, the site is considered to have suitable connections to the external road network as illustrated in Figure 5. It is evident that Bells Boulevard forms a roundabout with Victory Road and will form the principle access to the subdivision. This intersection is operational and considered to be capable in handling high traffic volumes while minimising queue lengths in comparison to a T junction. It also complies with the DCP requirement to have a four way intersection upgraded to traffic lights or roundabouts (if not controlled by median strips of signage).

There are several additional supplementary accesses which will further aid in dispersing development volumes across the road network. This includes a T junction at Townson Road, close to the western boundary of the site, which is anticipated to be of primary benefit to those motorists originating from or
departing to the north. Coraki Road and Irvington Road traverse both Stage 1 and Stage 2 subdivisions, thereby allowing alternate access to Alderton Drive for those motorists originating from or departing to the south.
6. Access & Internal Design Aspects

Under Schedule 7 - West Schofields (Townson Road) Precinct of the DCP, all roads within the Townson Road Precinct are classified as local level roads. A typical carriageway for a local street, as illustrated in the DCP, is shown in Figure 6.

![Figure 6: Typical Local Street](image)

It can be seen that this layout will accommodate parking on both kerbsides whilst permitting two-way flow. With the exception of Irvington Road, all public roads within the proposed subdivision will have a minimum road reserve width of 16.0 metres and minimum carriageway of 9.0 metres, thereby complying with the DCP. Irvington Road also has a carriageway width of 9.0m and will thus effectively operate identically in a traffic context.
Excluding the intersection of Bells Boulevarde and Coraki Road, the internal road network has a perpendicular grid and having compliant road widths, is expected to accommodate all design vehicles and allow for sufficient sight distances.

Bells Boulevarde has an angled alignment, approaching Coraki Road at approximately 70 degrees. Having regard for a large splay on the south-western corner of this intersection, the north-west, south-west and south-east corners are considered to maintain the same or infact achieve greater levels of sight visibility compared to a perpendicular intersection. The following sight distance checks are noteworthy with respect to the interface between the north approach of Coraki Road and the east approach of Bells Boulevarde:

- **Approach Sight Distance** is unaffected as Coraki Road, assumed to be the minor road, has a straight alignment.

- **Safe Intersection Sight Distance** can be achieved all the way to Victory Road and is therefore unaffected, as illustrated in Figure 7.

- **The Minimum Gap Sight Distance** would be consistent with a perpendicular intersection as there is enough carriageway width on Coraki Road for a driver to position themselves 90 degrees to Bells Boulevarde.
The geometry of the intersection of Bells Boulevarde and Coraki Road will also result in different turning movements for larger vehicles. It is envisaged that the largest vehicle to enter the subdivision would be Council’s waste collection vehicle. This vehicle would exceed the size of regular emergency vehicles that would service the development such as a General Fire Truck (as defined by the NSW Fire Brigades in the Guideline for Emergency Vehicle Access) and ambulance vehicles.

A swept path analysis has been undertaken for a 12.5m Heavy Rigid Vehicle (conservative) for acute turning movements at this intersection. The results are presented in Attachment C and demonstrate that some kerb sections will need to be signposted for No Stopping for approximately 20 metres from the intersection. This is considered to be acceptable on the basis given:
this is a minor increase over the statutory 10 metres of No Stopping from intersections as per the
NSW Road Rules 2014;

the affected kerb space are on corner lots, where on-street parking will be available along the
alternate frontage; and

these parking spaces would be assumed for visitor use as it is presumed that garage parking will be
provided for future dwellings for residents.

The development is otherwise noted to have two private laneways that will provide access to several
lots. These laneways have a carriageway width of 5.5 metres, which will allow for two-way traffic flow
under the off-street parking standard AS2890.1 (2004). This is also the minimum apron width to allow
access to any garages. It is noteworthy that all lots with laneway access will also have a frontage to a
local street or external road, whereby it is envisaged that waste collection will occur from public roads.
7. Conclusions

In summary:

- An accompanying development application seeks approval for a subdivision at Townson Road in Colebee. This comprises of the creation of 216 lots with potential for 230 future dwellings, and would be supplemented by an internal road network.

- The subdivision has been assessed to have potential to generate up to 228 vehicle trips per hour during the AM peak period and 219 vehicle trips per hour during the PM peak period. These volumes will be dispersed by integrated connections to the external road network, with upgrades to arterial intersections designed to accommodate future growth in the region.

- The design of the internal road network complies with the requirements stipulated for the Townson Road Precinct. The geometric design has been tested and can accommodate all intended design vehicles with no adverse sight distances.

It is therefore concluded that the proposed development is supportable on traffic planning grounds and will operate satisfactorily.
Appendix A

Photographic Record
View looking north on Victory Road at intersection with Creek Street.

View looking south on Victory Road at intersection with Creek Street.
View looking south on Victory Road at intersection with Sunningdale Drive and Bells Boulevard.

View looking north on Victory Road at Bells Boulevard.
View looking west on Townson Road at approximate location of proposed intersection.

View looking east on Townson Road at approximate location of proposed intersection.
Appendix B

Masterplan
Appendix C

Swept Path Analysis