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Wagga Wagga City Council

Report for Wagga Planning Studies

Traffic Management - Bomen

September 2008



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1. Bomen

1.1 Introduction

Bomen is primarily a rural area with some existing industrial developments in the southern portion. Most activity in the area depends on road-based motor vehicle transport. A full range of commercial transport is available including taxis, freight delivery and couriers that serve the area from Wagga Wagga CBD.

1.2 Existing Conditions

The site is accessible from Olympic Way at Bomen Road and Horseshoe Road and from Oura Road via Byrnes Road. The Horseshoe Road route follows a circuitous alignment and is considered to be unsuitable in the medium to long term. There is also access from Olympic Highway via Hampden Avenue/Travers Street. These roads generally provide access to existing industrial and commercial developments in the southern portion of Bomen.

Bavin Road and East Bomen Road/Dunns Road are east-west running unsealed roads that also provide access from the southern portion of the site to Patterson Road, a sealed road to the east of the site that connects to Oura Road.

Trahairs Road and Mary Gilmore Road are unsealed roads that provide access from Olympic Way to the less developed northern portion of the site. Council has received an application to close the level crossing on Trahairs Road. If approved, traffic on Byrnes Road would not have access to Olympic Way via Trahairs Road.

The existing conditions and road hierarchies are shown in Appendix A..

1.2.1 Road and Intersection Layouts

Olympic Way

Olympic Way is a two-lane two-way single carriageway road and is a B-double classified route. Olympic Way forms the western boundary of the Bomen site. It has a posted speed limit of 100 km/hr.

Trahairs Road

Trahairs Road is a lightly trafficked unsealed road connecting Olympic Way to Byrnes Road on the eastern side of the Main South Line.

Byrnes Road

Byrnes Road is a two lane sealed road approved for use by B-doubles that runs along the eastern side of the railway. WWCC expects the traffic growth on this link to be 8% per annum with an initial demand of about 600 vpd. It has a posted speed limit of 80 km/hr south of Dampier Street and 100 km/hr to the north. It intersects Oura Road at a give-way T-junction.

Dampier Street

Dampier Street runs parallel to and on the western side of the railway from Bomen Road for a distance of about one kilometre.



Bomen Road

Bomen Road is a two lane sealed road approved for use by B-doubles that intersects Olympic Way at a channelised T-junction and is the primary access to Bomen. It carries a relatively high volume of traffic (approximately 1300 vpd) including stock sale traffic. It has a posted speed limit of 80 km/hr, which drops to 50 km/h as the road approaches Bomen

Hampden Avenue

Hampden Avenue/Fitzmaurice Street/Baylis Street provides sealed road access across the river and is an important connection between the city centre and Bomen, carrying 6500 vpd. Hampden Avenue also connects Bomen to Olympic Way via Travers Street. It has a posted speed limit of 60 km/hr

Olympic Way/Bomen Road

Olympic Way/Bomen Road is constructed as a CHR rural T-junction with lanes suitable for accommodating heavy vehicle turning movements. The right turn out of Bomen Road requires large vehicles to find suitable gaps in both streams of traffic on the highway.

Olympic Way/ Horseshoe Road

Olympic Way/Coolamon Road/Horseshoe Road intersection is a two-lane roundabout. All roads at this intersection are approved for use by B-doubles.

1.2.2 Traffic Flow

The following existing two way traffic volumes were provided by WWCC:

- » Olympic Way carries about 3,700 vpd with an estimated 25% comprising heavy or commercial vehicles.
- » Hampden Avenue carries about 6,500 vpd at the river crossing.
- » Bomen Road carries about 1,500 vpd west of Old Bomen Road and about 2600 vpd at the rail crossing
- » Horseshoe Road carries about 1,200 vpd
- » Trahairs Road carries about 150 vpd
- » Byrnes Road carries about 3100 vpd south of Bavins Road and about 2750 vpd between Bavins Road and Dampier Street.

1.2.3 Public Transport

There are no regular bus services running through Bomen.

The Sydney to Melbourne rail line dissects Bomen and there are level crossings at Trahairs Road and Bomen Road. Bomen rail station is not in regular use. There are 4 XPT passenger services and about 30 to 40 freight trains per day that use the Main South Line.

1.2.4 Cycling/Footpath Systems

There are no footpaths or cycle ways in the area.



1.3 Proposed Development

The roads likely to be affected by short-term growth in Bomen include Hampden Avenue, Travers Street, Bomen Road and Byrnes Road

Hampden Avenue and Travers Street provide access to Olympic Highway for the existing developed area in the south of Bomen.

Bomen Road provides a direct link to Olympic Way for development in the northern developed areas of Bomen and is the route most likely to attract traffic as development of Bomen spreads further northwards.

Byrnes Road currently serves as a supplementary north-south route to Olympic Highway on the eastern side of the railway for traffic travelling between Wagga and Junee. There is the potential to realign Byrnes Road further to the east in a more central north-south alignment through Bomen that could connect to Eunony Bridge Road to access Sturt Highway and the industrial areas to the south.

An additional east-west link north of Bomen Road will be needed as development progresses northward. With the proposed closure of the level crossing at Trahairs Road, East Bomen Road could be extended via a bridge over the railway to connect to Olympic Highway.

With the eventual closure of Dampier Street level crossing due to safety issues, Dampier Street could be extended to pass under the proposed East Bomen Road extension to provide connectivity between existing and new industrial lands.

1.3.1 Future Traffic Flows

Refer to Appendix B for post development access arrangements at the Bomen site.

Traffic Generation

Long-term demand for industrial land in Wagga Wagga is around 4 to 5 hectares per annum [Industrial Lands Study]. Based on the Industrial Lands Study's forecast, there will be an additional 50 ha of industrial land developed by 2016.

An estimate of the distribution of industrial land take-up throughout Wagga was made generally in proportion to the area of each site. The distribution of industrial development assumed for Bomen and other study sites is shown in Table 1.

Table 1: Projected Industrial Development by Site

Site	Land Available for Industrial Development (ha)	Assumed Industrial Development by 2016 (ha)
Bomen	1877	24
Hammond	9	4
Copland	25	8
Edison	23	2
Other	600	12
Total	2534	50



Based on the assumption that of the land to be developed by 2016, half of it will be occupied by floor space and the vehicle generation rate 5 vpd per 100m² GFA, or one veh/hr during peak periods [RTA], the total vehicle movements generated by Bomen is estimated to be about 1200 vpd.

Traffic Distribution

There are three main routes to access Bomen [estimated distribution]:

1. Southwest and Northeast along Olympic Highway, via Bomen Road and Bomen Road East (extended) [50%]
2. East, via Byrnes Road, Oura Road, Eunony Bridge Road and Sturt Highway [30%]
3. Towards the city centre, via Hampden Avenue and Travers Street [20%]

1.3.2 Projected Flows

According to the Industrial Lands Study, the projected take up of available industrial land in Wagga Wagga is sufficiently slow that none of the roads or intersections serving Bomen will suffer from capacity constraints by 2016.

Bomen Road will remain as the primary access route between the city centre and Bomen. The right turn out of Bomen Road at the intersection with Olympic Way will require upgrading to a seagull tee junction to allow heavy vehicles to cross halfway and also gain speed to assist merging with the northbound lane.

1.3.3 Traffic Analysis

The AM peak traffic flows for intersecting roads along Olympic Way, and Bomen Road were analysed using aaSIDRA (Vers 3.1) to determine intersection levels of service for projected traffic flows in 2016. The type of intersection control proposed and the intersection level of service are given in Table 2.

Table 2: Intersection Analysis Results

Intersection	Intersection Type	Level of Service
Olympic Way/ Bomen Road	Seagull Tee Junction	A

A description of the level of service thresholds for various intersection control measures is provided by in the RTA Guidelines to Traffic Generating Developments and is reproduced in Table 3.

Table 3: Performance Criteria for Intersections

Level of Service	Average Delay Per Vehicle (secs/vehicle)	Traffic Signals, Roundabout	Give-Way and Stop Signs
A	Less than 14	Good Operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required



Level of Service	Average Delay Per Vehicle (secs/vehicle)	Traffic Signals, Roundabout	Give-Way and Stop Signs
D	43 to 56	Operating near capacity	Near capacity and other accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays	At capacity and requires other control mode
F	Greater than 70	Roundabouts require other control mode	

The analysis results indicate that the projected traffic volumes at the remaining intersections along Olympic Way and Bomen Road perform satisfactorily with 2016 volumes.

1.4 Construction Cost Estimate

The proposed improvement works and associated indicative cost estimates are summarised in Table 4.

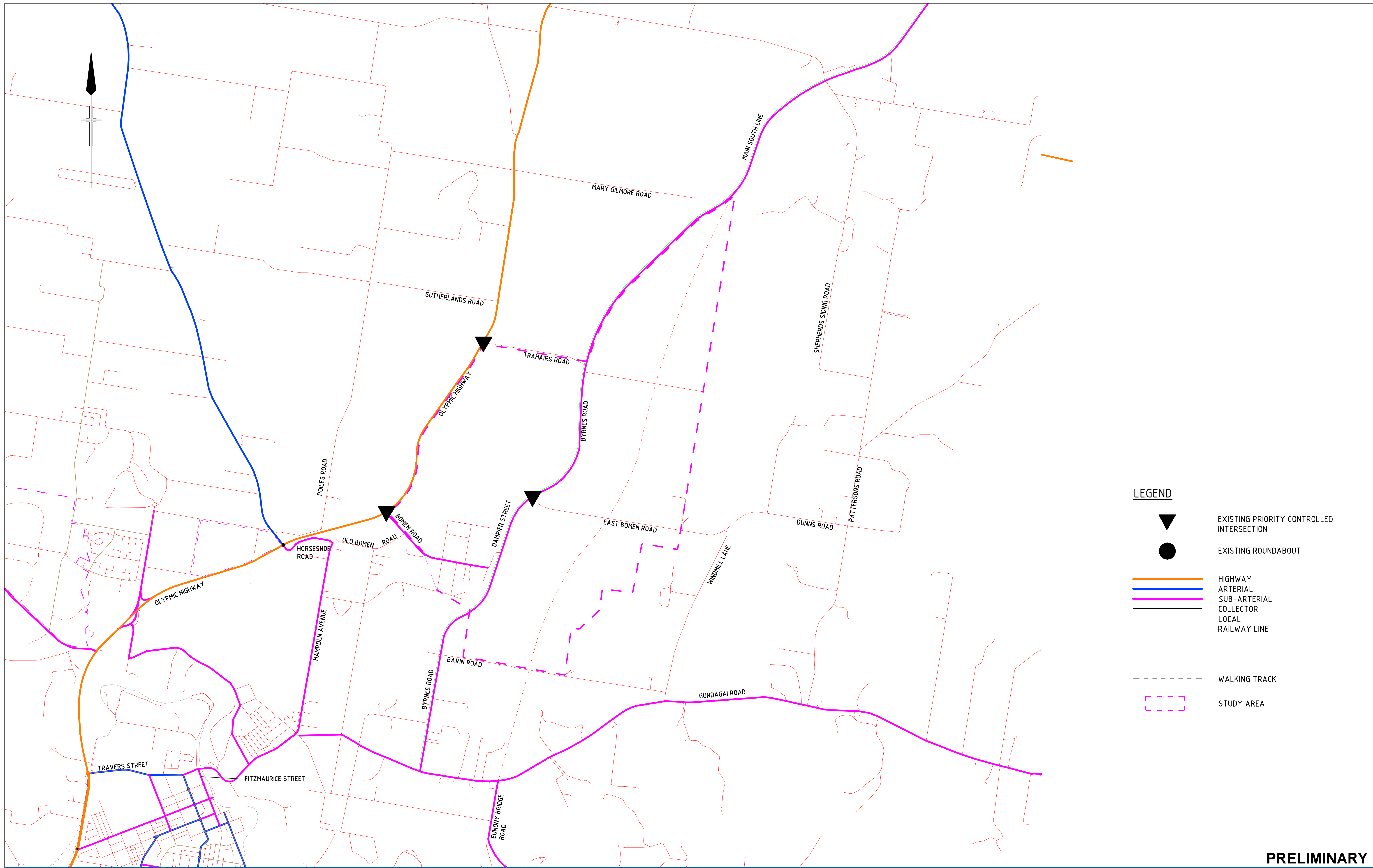
Table 4: Proposed Improvement Works

Location	Proposed Upgrade Works	Estimated Cost
Olympic Way/ Bomen Road	Upgrade to 'seagull' T-Junction	\$300,000











The indicative cost estimates are based on typical rates for projects undertaken by WWCC in 2005 and are accurate to +/- 50%. As the estimates are based on indicative information only, they may change when preliminary and detailed design investigations are undertaken. The estimates exclude the costs of escalation to time of construction, design and construction contingency allowances, the costs of detailed investigations, survey, authority approvals, design, documentation, procurement, and project management of the works.



Appendix A
Existing Conditions - Bomen

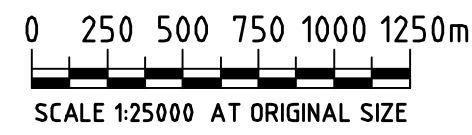


LEGEND

-  EXISTING PRIORITY CONTROLLED INTERSECTION
-  EXISTING ROUNDABOUT
-  HIGHWAY
-  ARTERIAL
-  SUB-ARTERIAL
-  COLLECTOR
-  LOCAL
-  RAILWAY LINE
-  WALKING TRACK
-  STUDY AREA

PRELIMINARY

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Checked	Approved	Date
B	MINOR LINWORK CHANGES		TM	GG*	TC*	19.3.08
A	PRELIMINARY		TM			



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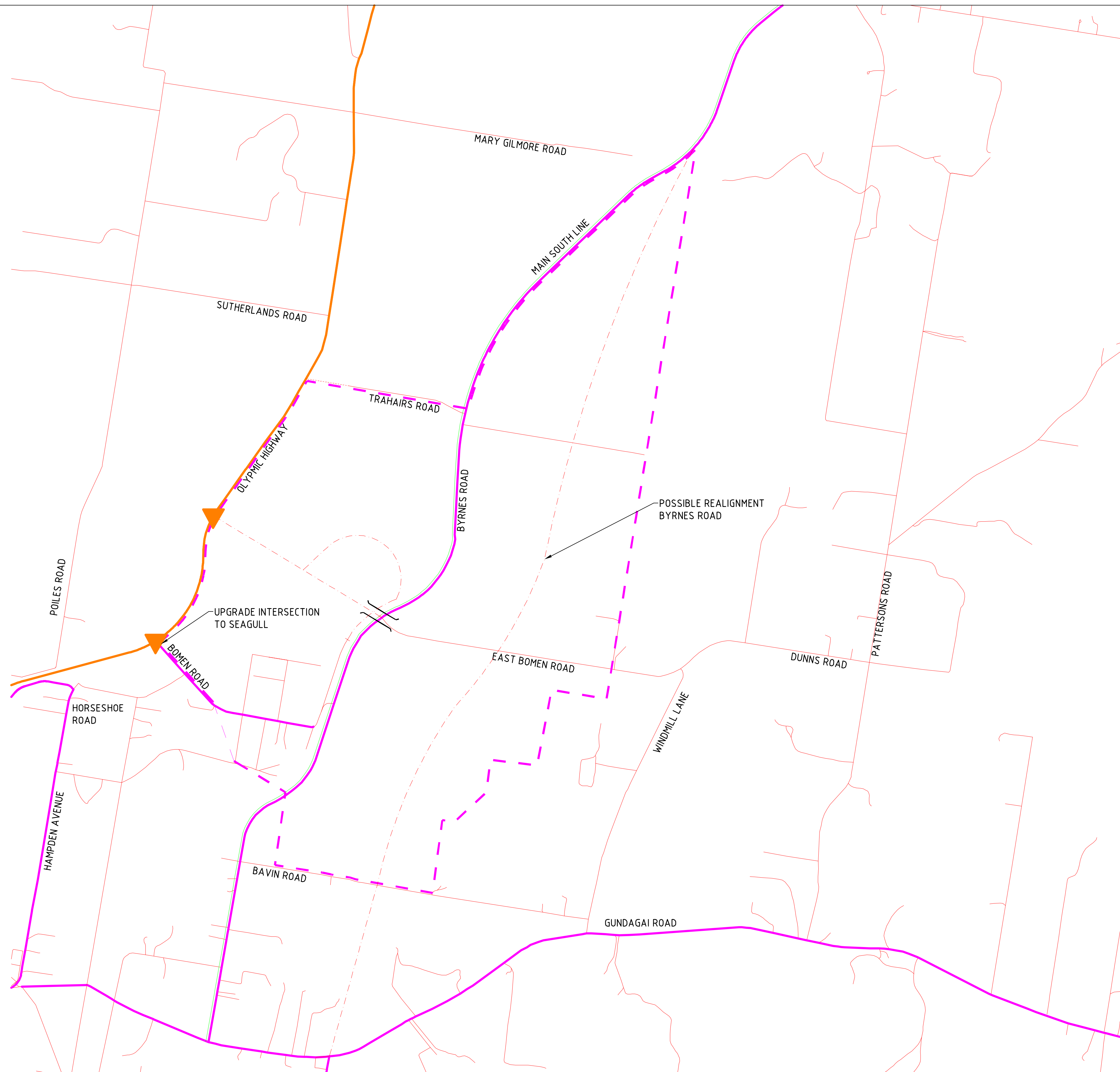
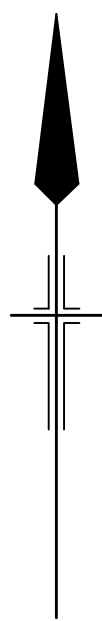
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Client **WAGGA CITY COUNCIL**
Project **WAGGA WAGGA DRAFT LEP STUDY 2007**
Title **BOMEN EXISTING CONDITIONS**

Original Size **A1** Drawing No: **23-12229-SK107** Rev: **B**



Appendix B
Post Development Arrangement - Bomen

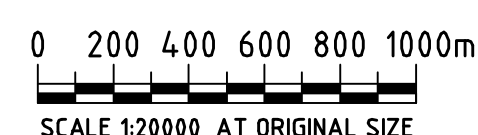


LEGEND

- NEW/UPGRADED ROADS
- NEW/UPGRADED INTERSECTION
- NEW/UPGRADED ROUNDABOUT
- NEW TRAFFIC SIGNALS
- HIGHWAY
- ARTERIAL
- SUB-ARTERIAL
- COLLECTOR
- LOCAL
- RAILWAY LINE
- NEW ROAD
- WALKING TRACK
- STUDY AREA

PRELIMINARY

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Checked	Approved	Date
B	MINOR LANE WORK CHANGES		TM	GG*	TC*	19.3.08
A	PRELIMINARY		TM			



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Client	WAGGA CITY COUNCIL
Project	WAGGA WAGGA DRAFT LEP STUDY 2007
Title	BOMEN POST DEVELOPMENT
Original Size	A1
Drawing No:	23-12229-SK115
Rev:	B



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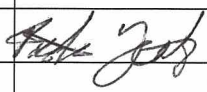

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