

- A new roundabout at the intersection of Chatham Road and New Betts Street with two northbound lanes
- Two northbound lanes at the Chatham Road and Dickson Avenue roundabout

West Parade and Miriam Road intersection is controlled by a roundabout and was observed to be free flowing traffic in all directions during the site inspection. If it is assume that approximately 40% of the forecast site vehicles access the site to/ from the north, it is unlikely to have any significant impact with the additional 18 vehicles in the peak hours, hence the intersection is not analysed.

Ryedale Road and Marlow Road intersection is located north of the site just east of the railway over bridge. This intersection is currently controlled by a traffic signal. This intersection was also observed to be free flowing in all directions in the peak periods. This intersection was analysed in the traffic impact assessment of CRI development. Since due to the proposed development additional 10-15 vehicles in the peak hours is unlikely to have any significant impact, this intersection has not been analysed in Sidra intersection modelling.

The following extract from the West Ryde Village Traffic Study showed the following intersection operations. The other seven intersections surrounding the development site and the new site access intersection were analysed using the SIDRA intersection analysis program. A summary of this analysis is shown in Table 8. It should be noted that a growth factor of 1% per annum has been applied on all roads in the study area for a 10 year period. The intersections have been analysed for year 2016 assuming 10 years growth from existing flows to provide a 2016 base conditions assessment.

Table 8 Summary of Future Intersection Analysis

Intersection	Scenario	Peak Hour	Level of Service	Degree of Saturation	Average Delay	95% Back Of Queue (m)
Victoria Road / West Parade	Saturday	midday	A	0.85	11.6	198
	Thursday	AM	C	1.36	28.7	219
		PM	C	1.15	35.6	535
Victoria Road / Chatham Road	Saturday	midday	F	1.16	71.4	759
	Thursday	AM	F	1.25	117.0	1677
		PM	E	1.15	61.2	903
Chatham Road / Dickson Avenue	Saturday	midday	A	0.72	13.6	64
	Thursday	AM	A	0.43	9.3	20
		PM	B	0.77	15.4	76
Chatham Road / New Betts Street	Saturday	midday	A	0.49	8.3	29
	Thursday	AM	A	0.60	8.6	42
		PM	A	0.63	8.5	46
Anthony Road / West Parade	Saturday	midday	C	0.92	41.1	81
	Thursday	AM	C	0.83	35.6	62
		PM	C	0.81	38.2	112
Anthony Road / New Betts Street	Saturday	midday	C	0.33	14.3	49
	Thursday	AM	B	0.30	8.9	2

		PM	C	0.38	10.1	13
Anthony Road / Reserve Street	Saturday	midday	B	0.22	2.4	7
	Thursday	AM	B	0.17	2.9	5
		PM	C	0.58	5.1	24
New Betts Street/ Residential Access Intersection	Saturday	midday	B	0.32	2.9	30
	Thursday	AM	B	0.30	2.3	21
		PM	C	0.36	3.9	46

It is apparent that Chatham Street/Victoria Road will remain congested, but more generally this can be managed.

5 Authorities Issues

5.1 From Notes by Housing NSW from West Ryde Town Centre Masterplan Workshop , October 2008

5.1.1 Ryde Council

Remo redevelopment of Council car park in Anthony Road, next to Woolworths:

The main traffic issue for Council was access to/ from Victoria Road. Also, Victoria Road commercial strip generally have access to the rear of the shops. Several shops are now trying to reverse their frontage so that they back on to Victoria Road and face the Woolworths "Village Square". They are more likely to attract business from the Village Square rather than Victoria Road which is seen as a commercial dead spot.

Provision of commuter parking in West Ryde was an issue. There is the potential for Council to look at sites on the east side of the railway line for development as parking facilities.

5.1.2 RTA

No new development with regard to private vehicle uses is planned for Victoria Road. RTA is looking at the feasibility of introducing bus lanes on Victoria Road (which will affect parking facilities). Most traffic signals in the West Ryde town centre have been recently modelled and identified.

The issue of turning right off Victoria Road into Chatham Road is problematic, especially when the Anthony Road development comes on stream – Council is looking at further improving the right turn lane into Chatham Road by amending the linemarking on Victoria Road. Turning right off Victoria Road into West Parade is also problematic as a Telstra mainframe would have to be relocated at a cost of \$ 1.5M approx.

RTA focus is to try and maximise pedestrian safety on Victoria Road by creating traffic islands etc. Currently it is difficult to cross Victoria Road and businesses on the south side suffer accordingly. This area could be good for alternative use redevelopment e.g. commercial etc.

5.1.3 State Transit Authority

Pedestrian movements within the Interchange are an issue. Bus usage has increased in taking commuters to and from railway stations. Of the 150 new articulated buses ordered by State Transit, 30 are for Ryde.

5.1.4 RailCorp

The area is experiencing rapid growth in train usage "from Rhodes down". A new timetable is being introduced from 2009 replacing 6 car passenger trains with 8 cars.

The new Epping to Chatswood line opened in February 2009. RailCorp has confirmed that an extra freight track on the west side of the RailCorp precinct is planned (for the northern good line).

6 Department of Planning Director-General's Requirements to Transport and Accessibility Impacts (construction and operational)

Director-General's Environmental Assessment (EA) requirements have been received from Department of Planning (DoP) for the subject development dated 4 May 2009. The conditions are valid for two years. Section 5 of the document addressed the "Transport & Accessibility Impacts (Construction and Operational)" requirements. The conditions are described and discussed as follows:

- 6.1 Provide a Transport & Accessibility Impact Study prepared in accordance with the RTA's Guide to Traffic Generating Developments, considering traffic generation (including daily and peak traffic movements), any required road / intersection upgrades, access, loading dock(s), car parking arrangements, measures to promote public transport usage and pedestrian and bicycle linkages

The peak hourly traffic for the subject development has been calculated based on the RTA rate (refer to section 4.1.1). The nearby road and intersection update due the other large developments at the vicinity has been described in section 4.2. Loading dock service arrangements is outlined in section 3.1.7. Due to the close proximity of public transport availability parking provision is minimised as much as possible so that it would have minimal traffic and parking impact at the locality.

Bicycle parking will be provided with the proposed development in accordance with Council requirements. The development, located within the 400m radius of the railway station and well connected streets and walking and cycling catchments, will achieve the 60% connectivity efficiency according to NSW DoP 'Planning Guidelines for Walking and Cycling'.

- 6.2 Provide an assessment of the implications of the proposed development for non-car travel modes (including public transport, walking and cycling), including an assessment of existing and proposed pedestrian and cycle movements within the vicinity of the subject site, and possible linkage to the "Rail Trail Shared Use Path Cycle/Pedestrian Route" which runs along the rail corridor

There are existing paved footpaths at the vicinity of the site joining all the public transport accessibility and retail precincts (refer to Figure 13). The footpaths on both sides of West Parade are in good conditions and will be retained. In addition, a significant reduction of driveways due to the proposed development should improve the pedestrian safety on eastern side of West Parade.

As discussed in section 3.4, there is an existing on road cycle route on Ryedale Road to the east of the railway line. For the west of the railway line, the future regional bicycle route is proposed via Marlow Avenue, West Parade and Bank Street. Details of the "Rail Trail Shared Cycle/ Pedestrian Route" are not known at this stage. However, if a Rail Trail shared path along the railway corridor is proposed in future, there may be an opportunity to connect the shared path from the site.

6.3 Demonstrate that a minimalist approach to carparking provision is taken based on the accessibility of the site to public transport

The proposed development will provide minimal parking provisions due to the close proximity of public transport. Due to the availability of public transport facilities and minimal provision of parking, the majority of the staff of the commercial and retail component of the development would need to catch public transport to access the site.

In addition, due to the close proximity of the major retail precincts, trip generation by the residential components of the development would be low.

6.4 Demonstrate how users of the development will be able to make travel choices that support the achievement of relevant State Plan targets

The NSW Government and Ryde City Council seek to reduce the demand for travel by private car and commercial vehicle to developments located in close proximity of public transport services. The relatively low parking provision for the development is in keeping with this philosophy. The site is well-served by public transport and therefore suitable alternatives to private car travel are readily available.

6.5 Demonstrate consistency with the accessibility and traffic/transport principles which are currently being developed as part of the West Ryde Masterplan Principles report (by Council)

West Ryde Masterplan has been prepared for Council in February 2009. In the Masterplan the 'City of Ryde Integrated Transport and Land use Strategy, 2007' states that:

- Victoria Corridor is identified to be a greater bus artery which will provide increase public transport options for local residents
- To reduce car dependency, the growth in vehicles kilometres (VKT) travelled and greenhouse gas emissions
- To increase the share of trips made by public transport, walking and cycling and reduce the number of trips made by private vehicles

The proposed development will fulfil the above objectives of the Masterplan.

6.6 Details of service vehicle movements

Details of service arrangements are outlined in 3.1.7. If an internal service dock is required, it will be designed in accordance with 2890.2 Off-street commercial vehicle facilities.

6.7 Consideration into a one way internal road system

The development of the site in stages may mitigate against using two driveways in a one way circulation. For this small peak, there may be more hazards for vehicles and pedestrians and signage clutters in enforcing a one-way circulation.

Potential for one-way traffic will be analysed in the detailed design stage. The internal road system will be designed in accordance with Council code and 2890.1 Off-street car parking. All safety and design issues will be in accordance with DoP 'Development near Rail Corridors and Busy Roads – Interim Guidelines'.

- 6.8 The EA should consider and investigate the opportunities for providing a pedestrian bridge across the rail corridor to link to the West Ryde Centre and improve pedestrian flows
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There are excellent pedestrian linkages between the site and all the pedestrian generators at the vicinity. There is an existing pedestrian crossing facility at Anthony Road and West Parade intersection. All the pedestrian desire lines are well served by the existing footpaths.

As discussed in section 2.3, West Ryde station provides an accessible pedestrian link bridge up and over the railway to the other side of the railway to Ryedale Road with its shopping centre and services club.

The pedestrian volume generated by the development will have no significant impact on pedestrian traffic in surrounding streets. Therefore, a pedestrian overbridge due to this development is considered unwarranted. However, as described in section 2.9, there is a lack of pedestrian crossing facility on West Parade between Anthony Road and Miriam Road and a median pedestrian refuge islands may be warranted in that section.

The provision of an isolated pedestrian bridge over the railway past of the subject development would not attract heavy pedestrian flows, be underutilized, and therefore likely become a personal security risk. Most pedestrians, including disabled, would prefer the more secure active "Easy Access" bridge crossing at the railway station, or the footpath of the Marlow Avenue bridge activated by passing drivers.

In addition to the six transport issues above, Council's response to DoP outlines the following transport issues:

- 6.9 As West Parade carries a significant proportion of through traffic, it is preferred that the proposed development considers one way movement of motor vehicles within the site i.e. one way entry and one way exit points
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The development proposes two combined entry/ exit points. Traffic estimate in section 4.1.1 shows that there will be 45 vehicles in the peak periods which will share the two driveways. 45 vehicles in the peak hour or 1 vehicle in every 1.3 minutes is unlikely to have any significant impact to the through traffic movement on West Parade.

- 6.10 The impact on the local and state road networks that takes into consideration the recently approved large scale development of West Ryde Urban Village and CRI development at Ryedale Road in its overall assessment
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This transport impact assessment considered and compared other large scaled development at the vicinity as described in section 4.2.