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Terminals Australia

Parkes Intermodal Terminal

Preferred Project Report

February 2007

INFRASTRUCTURE | MINING & INDUSTRY | DEFENCE | PROPERTY & BUILDINGS | ENVIRONMENT

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Appendices

1. Introduction

1.1 Background

GHD Pty Ltd (GHD) was commissioned by Terminals Australia Pty Ltd (Terminals Australia) in March 2005 to prepare an Environmental Assessment for the proposal to develop an Intermodal Terminal in Parkes, NSW.

The Environmental Assessment was prepared to support Terminals Australia's application for concept approval for the proposal under Part 3A of the *Environmental Planning and Assessment Act 1979*. The Minister for Planning is the approval authority for the proposal.

The Environmental Assessment was placed on public exhibition by the Department of Planning between 16 June and 19 July 2006. Following exhibition, on 24 July 2006 the Department of Planning (DoP) provided Terminals Australia with a copy of submissions received.

On 18 August 2006, a copy of an independent traffic assessment of the proposal was received by the DoP along with an accompanying letter dated 15 August 2006.

This report provides Terminals Australia's responses to the issues raised.

As the draft statement of commitments has been modified in response to the issues raised, the report takes the form of a Preferred Project Report.

1.2 The proponent

Terminals Australia Pty Ltd was established in 2003 to take over from the Mountain Industries Pty Ltd proposed Parkes Intermodal Terminal project. Mountain Industries Pty Ltd is a privately owned transport company based in Newcastle, which operates out of three terminals in NSW (Kooragang Island, St. Marys and Forbes).

1.3 Project description

As described in the Environmental Assessment, the proposal is to construct an Intermodal Terminal for the warehousing and storage of freight. The proposed Intermodal Terminal site virtually abuts Brolgan Road at the junction of the national road and rail corridors of the Newell Highway, the Main Western and proposed inland rail routes, and the transcontinental railway.

The aim of the project is to provide an efficient multimodal freight logistics solution for the storage, handling and distribution of freight to key destinations throughout Australia.

Further information on the proposal is contained in the Environmental Assessment.

1.3.1 Staging

It is envisaged that, assuming concept approval is granted, the project will be developed in two major stages over a period of ten to fifteen years. The two stages

are defined in the Environmental Assessment as the “Initial” and “Ultimate” stages. The Initial Stage is envisaged to be subdivided so that the first development application to be brought forward is for the core terminal infrastructure. Subsequent elements of the Initial Stage will be brought forward as their requirements are generated by market forces over the next several years.

Initial Stage

This stage as described in the EA can be chronologically subdivided into three main elements:

Initial Stage 1a: This comprises rail terminal works, with associated road access and office and equipment depot facilities, sufficient to service the existing rail market. It will be brought forward by way of an asset specific DA after concept approval and when Terminals Australia finalises its joint venture or other arrangements.

Initial Stage 1b: This will comprise partial expansion of the intermodal terminal to the capacity identified in the EA for the Initial Stage. The expansion project will be brought forward as an asset-specific DA as market forces develop.

Initial Stage 1c: This may or may not be concurrent with Stage 1b. It is likely to comprise a number of unrelated third-party asset-specific DAs for warehousing and distribution facilities within the area defined in the EA and contiguous to the intermodal terminal. These DAs could be brought forward either by Terminals Australia or by the parties themselves, depending on the nature and timing of the particular asset.

Ultimate Stage

The progression of the project from the Initial to the Ultimate Stage is likely to be gradual and spread over a number of years, generating a number of further asset-specific DAs which could include:

- Full-scale expansion of the intermodal terminal to the ultimate capacity identified in the EA. Such expansion is probably dependent upon the construction and commissioning of a Melbourne-Brisbane direct rail route (”The Inland Rail Project”).
- Development of further warehousing, distribution and engineering facilities, as identified in the EA, by third parties. Again, each of these would be brought forward by asset-specific DAs.

This is discussed further in Section 5.2.

1.4 Structure of the report

This report is structured as follows:

Section 1 – Introduction

- Provides background information and introduces the project and the proponent;

Section 2 – Consultation activities

- Outlines consultation activities undertaken throughout the EA process and during exhibition and provides a summary of submissions received;

Section 3 – Responses to issues raised in submissions

- This section provides a summary of submissions and presents Terminals Australia's responses to these submissions;

Section 4 – Additional investigations

- Details additional investigations that were undertaken to address some of the key issues raised in the submissions;

Section 5 – Modifications to the proposal

- Addresses any modifications to the proposal and provides further information on the project staging (Section 5.2);

Section 6 – Statement of commitments

This section presents the mitigation, management and monitoring measures that Terminals Australia agree to undertake (the statement of commitments) should the proposal be granted approval. This section also details new commitments that were developed since the exhibition of the EA (Section 6.2).

2. Consultation activities

2.1 Consultation during the Environmental Assessment process

Consultation activities are described in Chapter 4 of the Environmental Assessment.

Since the commencement of the Environmental Assessment, a number of consultation activities have been undertaken, as outlined in Table 1 below. The objective of these activities has been to raise awareness of the project and provide an opportunity for statutory authority and community input.

Table 1 Consultation activities undertaken as part of the Environmental Assessment

Activity	Date
Background meeting with the following stakeholders: ◗ Parkes Shire Council; ◗ The Roads and Traffic Authority (RTA); ◗ Australian Rail Track Corporation (ARTC); and ◗ Country RIC.	29 April 2005
GHD facilitated workshop with Parkes Shire Council and RTA.	29 April 2005
GHD facilitated workshop with ARTC and Country RIC.	2 May 2005
Consultation with landowners	25 August 2005 - 2 September 2005
Public Exhibition of Environmental Assessment	16 June 2006 – 19 July 2006

2.2 Consultation during exhibition

2.2.1 Advertisement

The exhibition of the Environmental Assessment, including receipt of submissions, was coordinated and managed by the Department of Planning.

The DoP placed an advertisement in the Parkes Champion Post on 16 and 30 June 2006. The advertisement announced the public exhibition and provided details on how to view a copy of the Environmental Assessment and make a submission. It also provided contact details for members of the community who required more information on the project or the exhibition and approvals process. The following people/organisation were notified by mail of the exhibition of the project:

- Owners and occupiers surrounding the site;
- Relevant government agencies and Council;
- Mrs Dawn Fardell, Member for Dubbo; and

- The Nature Conservation Council.

2.2.2 Public exhibition of the Environmental Assessment

The Environmental Assessment for the proposed Intermodal Terminal at Parkes was exhibited from 16 June to 19 July 2006 at the following locations:

- Department of Planning Information Centre - 23-33 Bridge Street, Sydney;
- www.planning.nsw.gov.au (under Major Project Assessments / On Exhibition);
- Parkes Shire Council - 2 Cecile Street, Parkes; and
- Nature Conservation Council - Level 5, 362 Kent Street, Sydney (9279 2466).

2.3 Submissions received

In total, 11 submissions were received which comprised:

- 4 written submissions from government bodies;
- 3 written submissions from the public; and
- 3 written submissions from private organisations.

The submissions and key issues of each are summarised in Appendix A.

2.4 Processing of Submissions

Each submission was given a unique identification number. The comments raised in submissions were classified against issues headings. GHD has sorted the comments, analysed the issues raised and assisted Terminals Australia in the preparation of responses.

2.4.1 Key issues

Table 2 provides an overview of the key issues raised and illustrates the number of submissions that raised each key issue.

Table 2 Key issues raised in submissions

Key issue	Number of submissions raising the issue
Air quality	2
Strategic planning	3
Consultation	1
Contributions	2
Flood management	1
Indigenous Heritage	1
Noise (construction)	2

Key issue	Number of submissions raising the issue
Noise (operation)	3
Planning	1
Concept plan	1
Licences	1
Privacy	1
Property impacts	5
Soil degradation	1
Social impacts	1
Support for the project	1
Traffic and transport	23
Rail infrastructure	2
Flora and fauna management	2
Visual amenity/impacts	2
Waste water management	1
Water management	1

Terminals Australia's responses to issues raised in submissions are provided in Chapter 3.

3. Responses to issues raised in submissions

3.1 Air quality

Issues

Submitter 9 notes that dust monitors were set up 2 months prior to the construction and operation of North Parkes Mines. The submitter requests that a dust monitor be set up at their property boundary.

Submitter 10 resides immediately north of the proposed development site and is concerned their property will be affected by dust from the terminal.

Submission numbers

9, 10

Response

A construction environmental management plan (CEMP) would be prepared and implemented and would outline environmental management practices and procedures to be followed during site preparation, and construction of the proposal. The CEMP would include mitigation measures included in the Environmental Assessment together with this Preferred Project Report and any Conditions of Approval. The CEMP would provide details of works to be monitored, including measures to monitor and manage dust emissions.

Appropriate locations for dust monitors would depend on the location of sensitive receptors to construction activities being undertaken at the time, as well as climatic influences such as wind speed and direction and dry soil conditions.

3.2 Strategic planning

Issues

Submitters 4 and 5 recognise the strategic location of the proposed Parkes Intermodal Terminal, which has existing rail access to the north, west and south, and offers two rail routes to Sydney. Parkes is directly accessible by rail from Port Botany, allowing transport of goods to and from Port Botany by rail as well as providing efficiencies in shipping through reducing the number of docking ports in Australia. The proposed Intermodal Terminal would take pressure off the Greater Metropolitan rail networks by transferring rail freight between Melbourne and Brisbane to west of the Dividing Range.

Submitter 1 supports the Major Project Application, which meets Council's aim to develop the Parkes Industrial Hub for freight and transport related industrial operations. Submitter 4 believes the proposal is an important piece of infrastructure which will allow rail to play a more significant role in freight transport, thus reducing truck freight's role in interstate and national transport and believes the Intermodal Terminal will play a key role in the solution of a range of logistics and distribution issues.

Submission numbers

1, 4, 5

Response

It is agreed that the proposed Intermodal Terminal is located in a strategic location, allowing for connections to existing road and rail infrastructure.

3.3 Consultation

Issues

Submitter 9 owns the property that borders the western side of the hub. The submitter indicated they are not against the proposal but disappointed in not being contacted by Parkes Shire Council or by the Department of Planning with regard to the Intermodal Terminal.

Submission numbers

9

Response

The Environmental Assessment went on display on 16 June – 19 July 2006. The exhibition ran for 30 days, during which time submissions were invited. Issues have been summarised and responses provided throughout this section of the Preferred Project Report. So although Submitter 9 was not contacted by Terminals Australia directly regarding the proposal, the exhibition process provides an opportunity for the community to comment on the proposal and if necessary, the proponent can make modifications to the proposal and the Statement of Commitments (see Chapter 5 and Chapter 5.2).

3.4 Contributions

Issues

Submitters 1 and 2 note that Council will require relevant contributions in regard to civil infrastructure and servicing, as well as social, economic and community issues and infrastructure. In particular, contributions would be required for the upgrading of Brolgan and Condobolin Roads, which both provide access to the proposed Intermodal Terminal site, and will both need to accommodate the future development of the land.

The Parkes Section 94 Contributions Plan will require Terminals Australia to fund services and facilities so that existing residents of the Shire do not have to subsidise development. It is believed that a Planning Agreement would provide the greatest certainty for securing contributions under the Part 3A process. Council are willing to enter into such an agreement, if Terminals Australia is agreeable, and made the formal offer.

It was requested that the Minister make Parkes Shire Council a party to a Planning Agreement to ensure the protection of Council's and the community's interests.

Section 94B would provide an alternative route for the imposition of a condition to require a contribution. A contribution under Section 94A would deliver a contribution of $1,500,000 which Council considers would be sufficient to cover the costs of the impacts of the development and Council would be happy to consider staging the payments.

Submission numbers

1, 2

Response

Terminals Australia recognises the requirement for reasonable contributions towards infrastructure and other requirements generated by the project and is prepared to enter into a Planning Agreement or other reasonable arrangement such as the Consent Authority might propose. The company submits however, that the Planning Agreement or other instrument should reflect that the project will take ten to fifteen years to reach completion of the Ultimate Stage. That is why Concept Approval is being sought now and why the elements comprising the project are proposed to be brought forward as asset-specific Development Applications as market forces determine.

It should be recognised that Terminals Australia has already formally committed to contribute $150,000.00 to a project proposed by Parkes Shire Council under the auspices of AusLink to upgrade Brolgan Road including the Westlime Road intersection. This commitment was conditional on the AusLink proposal being approved by the Australian Government. Such approval has been formally notified.

3.5 Flood Management

Issues

The submitter recognises that the proposal is at the concept stage, however recommends developing a plan for the routing of flood waters through the site.

The same submitter is aware that significant flood waters have in the past flowed down the shallow watercourse through the proponent's land as a result of runoff from higher up the catchment. Further development of the catchment may cause more frequent flood events with higher peak flows. This should be reflected in Figure 7-16.

Submission numbers

1

Response

The Concept Stormwater Management Plan, which is Figure 7-20 of the Environmental Assessment, has been developed with consideration to potential impacts to the existing situation. At this concept stage it is believed that there is ample opportunity to route larger flood events around the northern edge of the development. The development would need to consider flood risk and planning levels in the detailed design in accordance with the NSW Floodplain Development Manual.

Environmental Assessments would need to be prepared for each subsequent stage of development, to reach the Ultimate Stage of the proposed Intermodal Terminal. The Environmental Assessments for further development at the Intermodal Terminal site would need to take into account any development within the catchment that may have taken place subsequent to the Environmental Assessment for the Initial Stage, that may impact on potential flooding characteristics of the site.

3.6 Indigenous heritage

Issues

The DEC notes that the site will not have an impact on Aboriginal Cultural Heritage.

Submission numbers

6

Response

Noted.

3.7 Noise (construction)

Issues

Submitter 7 is concerned that noise from heavy vehicles, hydraulic cranes, forklifts, and beeping reversing indicators during construction would adversely impact the rural amenity of their land. Requests advice as to how the developer proposes to ensure this noise does not adversely impact the rural amenity of their land.

Submitter 9 notes that noise monitors were set up two months prior to the construction and operation of North Parkes Mines. The submitter requests that a noise monitor be set up at their property boundary.

Submission numbers

7, 9

Response

GHD has undertaken a qualitative assessment of potential noise generated during the construction phase of the project. As the exact number and type of machinery proposed for use during construction activities is unknown, GHD has undertaken distance attenuation for a variety of construction equipment, based on previous experience. This was included in Table 7.24 of the Environmental Assessment.

Table 9.1 of the Environmental Assessment provides a summary of all proposed mitigation measures, including those that would be imposed to minimise noise impacts.

Appropriate locations for any noise monitors would depend on the location of sensitive receptors to construction activities being undertaken at the time, and may change during the construction period.

3.8 Noise (operation)

In order to ensure compliance with the DEC's Industrial Noise Policy, submitter 6 recommends that the proponent apply the management and mitigation measures outlined in the GHD Report "Noise Assessment, Proposed Intermodal Terminal, Parkes NSW" (Appendix C).

Submitter 7 is concerned that noise from heavy vehicles, hydraulic cranes, forklifts, and beeping reversing indicators during operation would adversely impact the rural amenity of their land and asks how the developer proposes to ensure that noise from these activities will not adversely affect the rural amenity of my land.

The same submitter requests the Department of Planning appropriately condition any development consent granted to take into consideration and minimise the noise impacts of the terminal. The submitter has noted that sound walls would be effective along the rail corridor, or at least where trains will enter and leave the site, to prevent noise from affecting my land.

Submitter 7 understands that the development is proposed with the objective of re-opening/re-constructing a rail line from Parkes to Brisbane, allowing freight to move from Brisbane to Parkes and beyond by rail. This will significantly increase noise by an unknown amount. An issue that does not appear to have been addressed by the developer.

Submitter 7 requests to be advised in relation to what additional noise is projected should the line to Brisbane be complete, and what measures will be taken to ensure the current rural amenity of Lot 3 DP 859593 will not be affected.

Submitter 10 resides immediately north of the proposed development site and is concerned their property will be affected by noise created at the terminal.

Submission numbers

6, 7, 10

Response

The mitigation measures outlined in the GHD Report "Noise Assessment, Proposed Intermodal Terminal, Parkes NSW" (Appendix C of Environmental Assessment) were transferred into Table 9.1 Mitigation Measures, in the Environmental Assessment. These measures, together with this Submissions Report and any Conditions of Approval would be translated into the Construction EMP and the Operation EMP (OEMP).

Table 9.1 of the Environmental Assessment provides a summary of all proposed mitigation measures, including those that would be imposed to minimise noise during construction and operation of the Intermodal Terminal.

The Department of Planning would issue Conditions of Approval for the proposal. These would need to be incorporated into the CEMP and OEMP for the Intermodal Terminal. Modelling of anticipated site activities was undertaken under a number of different meteorological conditions, including worst case scenario for inversion layers. Modelling results did not indicate exceedance above the site specific adopted noise

criteria (Section 7.2.2 of the Environmental Assessment), therefore no recommendations were made for the provision of noise walls.

The proposal does not have an objective of re-opening/re-constructing a rail line from Parkes to Brisbane. However, Section 5.2 of the Environmental Assessment acknowledged that the Federal Government is investigating the feasibility of an Inland Rail Corridor linking the Port of Melbourne to the Port of Brisbane. Two popular alignments for the rail corridor are via Parkes. This will see a need for trains to be redirected and reconfigured from the Sydney-Adelaide-Perth line to the Melbourne-Brisbane line or vice versa. The Inland Rail Corridor would be subject to a separate Environmental Assessment and development approval process as it is not part of this proposal.

However, operational modelling undertaken for the proposed Intermodal Terminal has incorporated additional trains entering and leaving the site. Rail noise was modelled in conjunction with site activities, with all activities (including train noise) modelled operating simultaneously. The results indicated that there will be no noticeable increase in the $L_{eq(24hr)}$ levels.

Note that the proposed residential dwelling (for which development consent has been granted) was identified throughout the Noise Assessment as "Parkes 3" and has been included in noise modeling for the proposal.

3.9 Planning

Issues

The submitter notes that work would generally need to be in accordance with documentation and that any further development applications will need to be lodged seeking approval for each stage of the concept. The submitter notes that Council's Draft Industrial Hub Development Control Plan, which has been exhibited, would require consideration.

The same submitter requires an annual audit to be provided to the appropriate authority with regard to noise monitoring, water and air quality, traffic management and complaints handling.

Submission numbers

1

Response

The proposal has been submitted as a concept plan in accordance with Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act). Under the provisions of the Act, a concept approval is being sought for this plan. Conditions of Approval will be issued by the Department of Planning and the works would need to be undertaken in accordance with them. Under clause 75B(3) of the EP&A Act, the other parts of the development (that is, the subsequent developments leading to the Ultimate Stage) are also subject to Part 3A.

Council's Draft Industrial Hub Development Control Plan has been considered and has been addressed in Section 4.2.

Monitoring has been included in the Statement of Commitments for the project. An annual audit with regard to noise monitoring, water and air quality, traffic management and complaints handling would be undertaken for the Intermodal Terminal.

3.10 Concept plan

Issues

The submitter states that both the private sector and Parkes Shire Council have been putting the necessary environmental, regulatory, financial and engineering building blocks in place for many years, which lends credibility to the concept plan.

Submission numbers

5

Response

The planning for Parkes Multi-Modal Transport Logistics HUB has been undertaken for many years. This included rezoning of approximately 516 hectares of land previous used for agricultural and industrial purposes from 1(a) Rural "A" to 4(a) Industrial Hub. The *Rationale for the Parkes Multi-Modal Transport Logistics HUB, 2002* forms part of the strategic need for the proposal.

3.11 Licences

Issues

The submitter states that the activity does not constitute a "scheduled" activity under the Protection of the Environment Operations Act (1997) and, as such, the proponent will not require an environment protection licence to operate the Intermodal Terminal.

Submission numbers

5

Response

It is noted that an environment protection licence is not required for the operation of the Intermodal Terminal.

3.12 Privacy

Issues

Submitter 9 has experienced issues with a former member of Parkes Shire Council giving permission for people involved with the hub to come onto their property without consulting them. The submitter believes that as the owners of the property (Millers Lookout) they should have been contacted with regard to persons entering their property.

Submission numbers

9

Response

The submitter should contact Council directly if they have concerns with Council members giving permission for people entering their property. Terminals Australia does not have responsibility over Council's actions.

3.13 Property impacts

Issues

Although not opposed to the proposal, Submitter 7 is concerned certain issues relating to the project will adversely affect Lot 3 DP 859593, a site for which development consent has been granted for the future construction of a dwelling house. The same submitter requests consideration of the future erection of a private dwelling be taken in the final design of the Intermodal Terminal, with particular regard to noise, lighting and visual amenity.

Submitter 8 owns the land to the south side of Brolgan Road, opposite the Intermodal terminal site, and has commenced development of a rail freight facility for SCT logistics on that location. They are therefore, strongly interested in the proper planning of developments abutting, and in close proximity to their site.

Submitter 9 received notice that they have 300 acres of land that lies in the project's buffer zone, and have been told that if their dwelling house is destroyed, it may not be rebuilt in the same place.

Submitter 5 asks whether the easement through Lot 200 DP627302 will be fenced and whether it will allow for an internal 'accommodation' level crossing for stock and farm vehicles to access the dams?

Submitter 10 is concerned that the necessity for an overpass at the Condobolin Road crossing will extend beyond the front boundary of their block.

Submission numbers

7, 8, 9, 5, 10

Response

The potential noise, lighting and visual amenity impacts of the proposed Intermodal Terminal on Lot 3 DP 859593 have been considered in the Environmental Assessment. In the Noise Assessment, Lot 3 DP 859593 was referred to as Parkes 3. Modelled results suggest that project specific noise goals can be met at Parkes 3 (Section 7.2.2 of the Environmental Assessment). The visual assessment (Section 8.6 of the Environmental Assessment) has noted that the residence would be within close proximity to the eastern edge of the proposed Intermodal Terminal and the existing Parkes-Narromine rail line. Proposed plantings would filter the development, however the prominence of the development would still be apparent due to the movement, proximity and nature of the development. The Environmental Assessment notes that

the lighting for the Intermodal Terminal would contribute to night glare and increased prominence of the site at night. However the specification of lights is intended to reduce the visual impact of the terminal at night.

The Environmental Assessment outlines the statutory planning framework for the proposal (see Chapter 3 of the Environmental Assessment), as well as the strategic planning associated with the proposed Intermodal Terminal (see Chapter 5 of the Environmental Assessment). In addition, the exhibition process provides an opportunity for modifications to the proposal, and any necessary modifications to the draft Statement of Commitments.

In relation to the issue raised by Submitter 9, the site of the proposed Intermodal Terminal is zoned 4(a) (Industrial 'Hub' Zone) under Parkes Local Environmental Plan 1990. Dwelling houses are prohibited under the zone. If a dwelling house exists within the zone, then it would be subject to the existing use rights provisions under the Environmental Planning and Assessment Act.

Chapter 9 of the Environmental Assessment outlines the draft Statement of Commitments for the proposal, and notes that dust and noise monitoring may be required during certain stages of construction or operation of the proposed Intermodal Terminal. Details of measures to monitor and mange dust emissions and noise emissions would be outlined in the CEMP and the OEMP (see Section 9.2 of the Environmental Assessment).

The easement through Lot 200 DP627302 will be fenced and will allow access for stock and farm vehicles to the dams, most likely through way of a tunnel.

At this stage in the planning process it has not yet been decided if an overpass will be provided at the Condobolin Road crossing. Detailed examination of a proposed overpass at this location would be required to determine the extent of any crossing. This level of investigation is not warranted at this stage in the project.

3.14 Soil degradation

Issues

The submitter states that the proponent should ensure that a high standard of sediment and erosion controls and general site management is adopted by the proponent, or any contractor engaged by the proponent, in accordance with the relevant guidelines.

Submission numbers

6

Response

Section 7.3 of the Environmental Assessment outlines the stormwater management strategy for the proposed Intermodal Terminal, and Figure 7-20 outlines the concept Stormwater Management Plan for the site. A number of mitigation measures have been included in Section 7.3.3 of the Environmental Assessment and Section 9.3.2 outlines water quality monitoring proposed. The CEMP and OEMP would further

address sediment and erosion controls and general site management. The CEMP and OEMP would also address the roles and responsibilities for all relevant employees, including contractors.

3.15 Social impacts

Issues

The submitter understands that the project will create up to 800 new skilled and semi-skilled jobs in Parkes.

Submission numbers

4

Response

The Environmental Assessment has estimated that at the Ultimate Stage of the operation of the Intermodal Terminal, approximately 600 employees would be required. This is an estimate only and would depend on the warehousing facilities and activities to be undertaken at the site during the Ultimate Stage.

3.16 Support for the project

Issues

Submitter 6, the DEC, is able to support the proposal.

Submission numbers

6

Response

It is noted that the DEC is able to support the proposal.

3.17 Traffic and transport

Issues

Submitter 1 states that a number of upgrades to existing road infrastructure will be required as a result of the development and that triggers for the need and timing of these upgrades and others identified in the development application should be included in the development conditions. Upgrades included in the submission include:

- Traffic lights at the intersection of Blaxland and Hartigan Avenue;
- Lighting at the intersection of Brolgan Road and Westlime Road;
- Brolgan Road to the Westlime Road intersection needs to be upgraded;
- Brolgan Road from the SCT access heading west and fronting the proponent's land must be upgraded.

Submitter 3 is concerned about Level Crossing Delays. Submitter 3 considered the parameters proposed in the EA and questions the veracity of information used in

assessing delay times. Submitter 3 envisages that the grade separation of all three public road-rail crossings noted in the EA will be required to reduce the impact of the development upon the road network to an acceptable level.

Submitter 3 considers that the Hartigan Ave-Newell Highway intersections would be incapable of operating at an acceptable level under the proposed traffic generation. Submitter 3 asserted that traffic analysis of the intersection was not provided by the proponent, as requested in the response to the draft EA. Submitter 3 also argued that traffic data should include more than AADT data and that turning movement and queue lengths (both existing and development-generated) are essential for a meaningful traffic assessment. Submitter 3 envisages that in the short term (construction and possibly the initial stage) the key intersections will require coordinated signalisation and the level crossing widened to four lanes capable of accommodating heavy vehicle sweep paths. In the medium to long term (initial ti ultimate stage), it is thought that completion of Parkes Ring Road will be required to alleviate the traffic generation issues caused by this development.

Submitter 3 states that the EA proposes that, as an interim option, southbound heavy vehicles could bypass the key intersections by utilising Blaxland Street level crossing. This intersection is in close proximity to a level crossing of the Main Western Line, and does not currently provide sufficient storage for a semi-trailer. Page 67 of the EA claims that the Parkes Local Traffic Committee recommended that the priority of this intersection be changed to give priority to Hartigan Ave traffic. Inspection of the minutes shows the Parkes Local Traffic Committee recommended the priority remains as is, with both the Police and RTA representatives strongly opposing a change in priority.

Submitter 3 requests that consideration is required to be given to access for emergency response vehicles during the closure of level crossings.

Submitter 4 understand that the project will have some local impacts, particularly on local traffic however they believe the benefits to the broader community and State in facilitating a shift from road to rail transport would outweigh local impacts.

The same submitter states that the proposal is consistent with both freight transport strategies and private sector trends.

Submitter 5 states that the proponent's commercial assumption is that 55% of inbound truck movements will transfer to rail for their outbound leg. If this development succeeds, NSW can reduce its investment in the rural road network over the next medium to longer term.

Submitter 5 sees no impediment to approving the concept plan for Parkes Intermodal Terminal however, encourages the proponent and Parkes Shire Council to seek assistance from the Ministry of Transport's Regional Coordinator for the transportation of up to 600 employees to and from the Parkes Intermodal Terminal.

The facility would not increase traffic but rather re-organise existing freight. The majority of current truck movements occur along the Newell Highway. The Intermodal facility could induce some of the traffic on to rail.

The 2010 predictions of traffic on the haulage routes to and from the terminal are an average of 20 heavy vehicles in both directions per hour (48 in peak hour). The largest increase by 2020, resulting in a total of 2,375 Average Annual Daily Traffic (AADT) on Brolgan Road east of the site, will still be within RTA two lane rural road criteria of 'free flow with low volumes with little or no delay' (Level of Service A).

Comforted that the proponent has committed the future operator, yet to be identified, to prepare detailed traffic impact statements as part of Development Applications for each facility proposed on the site.

The fact that Parkes Shire Council Traffic Committee has authorised road trains along roads situated in Parkes augurs well for the identification of suitable routes for road trains to access the Parkes Intermodal Terminal from Locations west of the Newell Highway.

The proposal could affect traffic across a number of level crossings although they do not present any problems that cannot be safely managed.

Level crossing affected by the proposal will be made wide enough for freight vehicles, have boom gates installed and advance warning where sight distances are shown to be compromised.

Pavements will be cross-hatched to discourage vehicles blocking the rail tracks. Queuing at Hartigan Avenue can be remedied by changing the priority at the intersection and installing turning lanes sufficient to accommodate freight vehicles.

Delays to road traffic caused by long trains shunting across level crossings when entering or departing the intermodal site could cause some temporary frustration amongst road users or diversion to alternative routes.

The proposed interim ring road route for trucks via Saleyards Road increases road traffic across one additional existing level crossing compared to the current route via the Newell Highway. However, once the Parkes Ring Road southern link to the Newell Highway is constructed, the truck route then returns to a single level crossing upgraded to the highest level of protection. Even at the Ultimate development in 2020, with an inland rail route operating between Melbourne and Brisbane, this crossing will only see just over an average of one train per hour.

A new level crossing on Brolgan Road is proposed (and a new private level crossing within the complex in the Ultimate Stage). The policy of the NSW Level Crossings Strategy Council is that no new level crossings should be installed on public roads. However, there have been precedents where closure of an existing level crossing has allowed a new level crossing to be opened.

Final decisions on level crossings will rest with the responsible road and rail authorities: for Brolgan Road, these are Parkes Shire Council and the Australian Rail Track Corporation (member of the Level Crossings Strategy Council).

The Ultimate plan includes a grade separated crossing of the Narromine rail line by a new road link from Condobolin Road to the site. The proposed grade separation would not need to be built if land were available for this road link to remain west of the

Narromine Line. The cost of the land is likely to be less than the cost of the grade separation.

Submitter 5 seeks to clarify whether the third explanatory dot point below the table on the second page of Appendix H of Appendix B, *Estimated Growth in Daily Train Frequency with the Proposed Intermodal Terminal*, should read:
The number of train movements of the new level crossing on Brolgan Road to the west of the site would be **9** (not 2) during the initial stages and **12** (not 4) during the ultimate stage?

Submission numbers

1, 3, 4, 5

Response

Submitter 1 has recommended traffic signals at the intersection of Hartigan Avenue with Blaxland Street. Analysis undertaken as part of the *Additional Traffic Information* report reveals that signals at this location are not required as a result of poor performance resulting from the proposed development, however, if provided in the form of grade separation connected to the proposed western ring road, it would provide local, regional and national benefits.

It should be noted that Terminals Australia has subsequently committed to contributing to the improvement of the Hartigan Avenue with Blaxland Street intersection.

The same submitter recommended lighting at Brolgan Road / Westlime Road Intersection. The requirement to light this intersection is recognised as being justified on the grounds of safety during night operations.

It should be noted that Terminals Australia has subsequently committed to contributing to upgrading the lighting at the intersection of Westlime Road and Brolgan Road.

As part of the development it is proposed to upgrade Brolgan Road to B double standard from the Westlime Road intersection west to the western boundary of the Parkes Intermodal Terminal site.

In response to concerns raised by submitter 3 further assessment of train speeds, train lengths and closure periods has been completed, together with a comparison of operations at other level crossings situated around Parkes was undertaken as part of the Additional Traffic Information Report, Sections 2 and 4 (Appendix B).

GHD agrees with the assumption made by submitter 3 that train speeds into rail yards should be limited to 10km/h and have adjusted calculations to reflect this situation at all level crossings impact by rail terminal operations.

The assessment indicates that the level crossing at Forbes Street has the longest queue lengths and highest associated travel time delay costs and in comparison the impacts on Condobolin Road and Brolgan Road are much lower. It is also noted that road freight according to Federal Government statistics is expected to grow significantly over the next 20 years with or without the development and will result in extended queue lengths and higher travel time delay costs. In comparison, the

majority of traffic impacted by the level crossing closure on Brolgan Road will be generated by the proposed development itself, as existing and predicted local traffic levels are minimal. It is also noted that train movements will not grow significantly and as a result the impact is likely to be infrequent.

The assessment also noted that the rail crossings at Forbes Street and Blaxland Street are also impacted by rail terminal operations.

It should be noted that Terminals Australia and the NSW Department of Planning have subsequently agreed that the treatment of rail crossings associated with this project will be agreed as part of the approval process associated with specific stages of development.

No intersection turning movement count information was available at the time of undertaking the previous assessment. However, as part of the Additional Traffic Information Report (Appendix B), further work has been completed using recent traffic movement survey information and growth assumptions. This intersection assessment work indicated that the intersection of Forbes Street with Hartigan Avenue would perform poorly with or without the development by 2010 and needs to be upgraded to traffic signals. The assessment indicates that Federal Government predicted growth in road freight along the Newell Highway is the driver for this upgrade and is likely to have further impacts on the township of Parkes.

It should also be noted that the Hartigan Avenue route is an approved B Double route and has been assumed to be of a suitable standard to accommodate heavy vehicle swept paths.

GHD agrees that the construction of a proposed western ring road around Parkes would provide significant benefit to national, regional and local road freight movement through Parkes, improve safety and amenity for the community of Parkes, other emergency response vehicles an alternative route and improve access to both industrial and residential land precincts situated to the west of Parkes.

After a site inspection with relevant stakeholders, GHD agrees that the Salesyard Road route is currently unsuitable for road freight traffic and that the intersection of Hartigan Avenue with Blaxland Street should not be reprioritised without significant improvement.

The assessment of the intersection performance at Hartigan Avenue with Blaxland Street indicated that the current traffic arrangements are adequate for accommodating the ‘with’ development scenario traffic conditions. Refer to Additional Traffic Information Report sections 4.4, 5.2 and 6.11 (Appendix B) for further details.

As noted earlier, it should be noted that Terminals Australia has committed to contributing to the improvement of the Hartigan Avenue with Blaxland Street intersection.

Delays caused by level crossing closures are a current concern for response times to emergency situations. Often the existing road network offers no feasible alternative route when crossings at either Forbes Street (Newell Highway), the Newell Highway (south of Parkes), Blaxland Street, Salesyard Road, Brolgan Road or Condobolin Road

are closed. The planning of the future road network will need to address this issue, which is likely to become a larger issue in the future with growth expected in both road and rail freight. BTRE predictions indicate that there will be a significant increase in rail freight travelling along the strategic Auslink corridors, some of which pass through Parkes.

A noted earlier, Terminals Australia and the NSW Department of Planning have agreed that the treatment of rail crossings associated with this project will be agreed as part of the approval process associated with specific stages of development.

A number of potential investment opportunities together with associates outcomes and beneficiaries have been identified as part of the Additional Traffic Information Report (Appendix B). All of these investment opportunities offer improvements in road safety and traffic operations and will therefore result in improved response times to emergency situations.

Chapter 9 of the Environmental Assessment outlines the draft Statement of Commitments for the proposal, including the requirement for a CEMP and OEMP to be prepared that would provide mitigation and management of potential traffic impacts.

It is noted that the submitter states that the proposal is consistent with freight transport strategies and private sector trends.

The comments made by submitters 4 and 5 are generally positive and focus on the national importance and national benefits afforded by the proposed development. The Additional Traffic Information report (Appendix B) outlines a number of national benefits some of which are outlined below:

National Benefits

In broad terms, the Parkes Intermodal Terminal has the potential to lessen downstream impacts by encouraging a shift from road to rail and offering the opportunity to consolidate loads. This will tend to:

- Reduce heavy vehicle numbers on key roads, resulting in less wear and tear on pavements and reduced risk of crashes;
- Improve the efficiency of freight movement along the National transport network;
- Offer the ability to keep freight on rail or shifting freight from road to rail to then travel to its final destination;
- Reduce congestion in the vicinity of key transport hubs in the major cities.
- Aims to redirect and draw mostly from existing and predicted road freight movement, which would travel by road if such a facility were not established.

The proposed Parkes Intermodal Terminal has been identified to offer the following national benefits (source - http://www.parkes.nsw.gov.au/planning/5677/5766.html) and is consistent with both State and Federal Government objectives as follows:

- The Parkes Intermodal Terminal provides the best strategic location in Australia for rail freight reconfiguration and a multimodal site (refer to Section 5.3, Part B, EA for Concept Approval, June 2006).

- The site currently provides good connectivity to the Transcontinental Railway linking Sydney, Adelaide and Perth. Parkes is the easternmost point on the east-west rail corridor that allows for high stacking of rail wagons and the assemblage of long trains.
- The facility offers readily accessible rail connections to Melbourne, Wollongong (Port Kembla), Sydney (Port of Botany), Newcastle (Port of Newcastle) and Brisbane as well as regional branch lines.
- It offers freight operators with the opportunity to breakdown trains, store freight and reconfigure assignments before continuing to the final destinations.
- Offers operational advantages as it can be used as a holding point for both freight and trains or as a point for redirect trains wanting to enter the Sydney network, due to rail bottlenecks and freight access windows restrictions.
- Offers operational advantages in that the proposed intermodal terminal has sufficient capacity to both breakdown and assemble trains up to 1800m in length (without engines) to meet the standards of the downstream railway.
- Unlike most terminals it offers significant timesaving advantages in that it can accommodate and load or unload train lengths of up to 1800m in length (without the engines) without shunting sections of the train or constant carriage safety checks;
- The Parkes Intermodal Terminal would assist both Federal and State Government's meet their targets for reducing greenhouse emissions and shifting more freight on to rail. The benefits are demonstrated as being, for example, rail uses just one third of the fuel of road transport per tonne of freight hauled. One freight train between Melbourne and Sydney replaces 150 semi-trailers and saves 45,000 litres of fuel and 130 tonnes of green house gases compared with road haulage.
- The proposed Parkes Intermodal Terminal within the Parkes transport HUB has the ability to provide enormous improvements in ecological sustainability of the nation's freight distribution task and assist Australia in meeting the 1997 Kyoto Protocol on greenhouse gas emission reductions.
- If the Commonwealth acts on its Auslink policy of providing an inland rail link between Melbourne and Brisbane, the site is well placed in the east-coast logistics chain.
- The Ernst and Young, "North-south Rail Corridor Study 2006" indicates that the proposed rail line could reduce rail journey times between the two capital cities from 35 hours to as few as 20.4 hours for an investment of $3.1 billion. A 20.4 hour transit time is below the 27 hour door-to-door time recognised as the driver for competition between road and rail. The intermodal terminal would assist the National Freight Task by offering an access opportunity to possibly two major rail corridors from a national road corridor.
- Meets the objectives set out in Auslink in that it offers Auslink Network advantages in terms of improvements in handling capacity and efficiency, safety and security, productivity on nationally strategic and export-oriented freight corridors, reliability and is delivered through the development of sustainable transport solutions.

- Offers operational advantages by constructing a new direct Y-link rail connection for rail traffic travelling between the Orange – Broken Hill railway and the Parkes – Narromine Railway.

Terminals Australia does not think that it is feasible as a stand alone project to coordinate the transportation of employees to and from the Parkes Intermodal Terminal but states that it may be a matter for the specific employers as project elements are developed.

The third explanatory dot point below the table on the second page of Appendix H of Appendix B of the *Environmental Assessment*, Estimated Growth in Daily Train Frequency with the Proposed Intermodal Terminal is correct and should read "the number of train movements of the new level crossing on Brolgan Road to the west of the site would be 2 during the initial stages and 4 during the ultimate stage."

3.18 Rail infrastructure

Issues

Submitter 8 recommends that any infrastructure built beside and over the Parkes/Narromine rail line not pose any restriction to preclude this line from being part of the future inland route between Melbourne and Brisbane.

The same submitter suggests the location of the Terminals Australia siding connecting to the Parkes/Narromine rail line should be adequately set back to allow duplication and or emergency access along this rail corridor.

Submitter 5 notes that the concept plan offers further advantage to the rail network by constructing a Y-link between the Broken Hill and Narromine lines. The fact that the Australian Rail Track Corporation will consider a shared funding arrangement for the Y-link emphasises its strategic advantage.

The same submitter also notes that if the Commonwealth acts on its AusLink policy of providing an inland rail link between Melbourne and Brisbane, the site will be even better placed in the east coast logistics chain as both proposed inland north-south rail routes go through Parkes.

Submitter 5 states that approval for a major freight facility in Parkes would advance the case for the Commonwealth to invest in an inland rail corridor. This has significant advantage for parts of inland NSW, taking considerable pressure off passenger and freight rail networks in the Greater Metropolitan by transferring through rail freight between Melbourne and Brisbane to west of the Dividing Range.

Submission numbers

8, 5,

Response

Any infrastructure built beside or over the Parkes/Narromine rail line would not restrict or preclude the line from being part of the future inland route between Melbourne and Brisbane.

The location of the Terminals Australia siding, connecting to the Parkes/Narromine rail line would be adequately set back to allow duplication and or emergency access along the rail corridor.

The proposed Intermodal Terminal is strategically located at the junction of the national road and rail corridors and as such, is considered an important development as it would allow for the flexibility of rail movements and access to either the east-west rail line or the proposed inland rail corridor.

The site is suitability situated to take advantage of a potential Inland Rail Corridor. Currently there are two popular alignments for the inland rail corridor, both via Parkes. The total freight task is forecast to almost double in the next 20 years and as such, an improvement in intermodal transfers among road, rail and ports is required. The Intermodal Terminal would provide such a facility.

3.19 Flora and fauna management

Issues

Submitter 1 recommends a noxious weed management plan for the site due to the scale of development. Experience in weed management along transport corridors is that the spread of noxious weeds through road and rail from other areas of Australia will occur. As such, there is a need for a rigorous monitoring and a proactive approach to ensure noxious weeds are eradicated as they occur.

Submitter 6 notes that the site will not have an impact on threatened species or ecological communities.

Submissions

1, 6

Response

The draft Statement of Commitments notes that initial and continual treatment of weeds within the woodland and potential rehabilitation. Terminals Australia would look at the need to extend to monitoring other areas as part of the Operational EMP.

It is noted that development of the Intermodal Terminal will not have an impact on threatened species or ecological communities.

3.20 Visual amenity/impacts

Issues

Submitter 1 reiterates that consultation be undertaken with Coonabarabran Sidings Spring Telescope with regards to the proposed lighting of the development.

Submitter 7 requests that the Department of Planning appropriately condition any consent issued to the developer to ensure the visual rural amenity of their land is not affected. A condition should include that lighting of the site and surrounding

infrastructure (road and rail corridors) does not illuminate/lighten surrounding rural properties.

The same submitter questions the effectiveness of landscaping the boundary nearest the property and suggests that an earthen mound with landscaping would be more appropriate, and would also assist with control of noise leaving the site.

Submissions

1, 7

Response

GHD undertook consultation with Sidings Springs Observatory regarding the proposal and a response was received in a letter format from Site Manager of Sidings Springs Observatory on 25 August 2006. The representative was happy that the observatory had been considered and that the proposal had adopted the principles of good lighting considering the proposal is outside the 200km zone from Siding Spring Observatory.

Consideration has been given to using fully cut off lights to avoid glare for neighbours and skyglow and the use of high pressure sodium lights along roadways. The observatory request that consideration be given to minimising energy consumption, which reduces the emission of greenhouse gases (though realise that safety and security must be accounted for). Terminals Australia would aim to minimise energy consumption through incorporating 'best practice' for the proposal.

The Preferred Project Report cannot comment on what conditions the Department of Planning will put on the developer. However, the concept design for the proposed facility has attempted to minimise visual impact by the following features:

- Positioning of the development site between hills to the north, east and south-east and the ridgeline running north-east/south west;
- Location of the container storage to the north and warehousing to the south to enable the ridgeline and warehouses to filter views of the terminal and loading areas;
- Planting along the eastern, north and western end of the proposed terminals. Where possible this would happen at the inception of construction planting to screen the development;
- The proposed external lighting has been designed to limit obtrusive light onto abutting properties in accordance with AS4282 – Control of the Obtrusive Effects of Outdoor Lighting;
- Artificial sky glow from external lighting would be minimised by utilising environmentally friendly cut-off floodlights that limit the upward light and provide good glare control; and
- The occupants of the dwelling at the south-west of the site would be relocated and the existing dwelling made redundant.

The project specific noise goals can be met and as such, earth mounding is not proposed for the project however vegetative screening has been proposed as part of the proposal.

3.21 Waste water management

Issues

Submitter 1 notes that an aerated type waste water treatment facility is proposed and recommends that the sewerage system be designed with appropriate infrastructure in such a way that it could be, in the future, connected back into the reticulated system.

The same submitter recommends that areas likely to produce trade waste (i.e wash bays) should be directed to a pre-treatment device before being discharged to the chosen sewerage treatment system.

Submissions

1

Response

The design of the sewerage system would be undertaken during the detailed design stage of the project. At this stage it is considered unlikely that a reticulated sewerage system would be in place at the site.

Areas likely to produce trade waste would be directed to a pre-treatment device before being discharged to the chosen sewerage treatment system.

3.22 Water management

Issues

Submitter 1 states that Internal water reticulation (including metering) will be at the full cost of the developer. Section 64 developer services charges should be applied with site specific development application.

The same submitter notes that infrastructure for stormwater generated onsite has been indicated and appears satisfactory.

Submitter 1 also notes that it will be the developers' responsibility to obtain the necessary plumbing and drainage permits and provide all internal plumbing and metering in accordance with AS 3500 and the NSW Code of Practice; Plumbing and Drainage.

Submissions

1

Response

It is noted that the internal water reticulation would be at the full cost of the developer.

It is noted that Submitter 1 considers the stormwater infrastructure to be satisfactory.

It is noted that the developer would need to obtain all plumbing and drainage permits and provide all internal plumbing and metering in accordance with AS 3500 and the NSW Code of Practice; Plumbing and Drainage.

4. Additional investigations

4.1 Terminals Australia: Additional Traffic Information

4.1.1 The Process at a Glance

An *Engineering Masterplan* together with the *Environmental Assessment* and supporting *Traffic Assessment (GHD, June 2006)* for the proposed Parkes Intermodal Terminal – Concept Design was exhibited in June 2006.

A number of submissions were received in response to the public exhibition and its supporting documentation. A record of responses to these queries is provided in Table Table 3, below.

An Additional Traffic Information report[1] was prepared by GHD to address the Samsa Consulting *Review of Road Transport Infrastructure Assessment* (August 2006) as well as issues raised in the submissions received during the public exhibition period.

Based on input received during a meeting with the NSW Department of Transport and key stakeholders (Monday 5th February 2007) the *Additional Traffic Information Report* was revised to a small degree.

A full copy of the revised *Additional Traffic Information Report*[2] is provided in Appendix B and a summary of key aspects of the report is provided in the following subsection.

4.1.2 Key Aspects of the *Additional Traffic Report*

Introduction

In addition to providing responses to submissions, the *Additional Traffic Information*[3] Report also:

- Explains, through the selection of a 'trigger point' criteria, when it is necessary to upgrade road infrastructure; and
- Identifies national and regional benefits provide by the project and identifies issues that will need to be addressed as part of the 'AusLink' transport corridor and regional planning strategies.

'Trigger Point' Analysis

The following are the main points resulting from the 'trigger point' analysis:

- The future performance of rural and urban road sections in Parkes will be satisfactory under both the '*with'* or '*without*' development scenario.

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[1] GHD for Terminals Australia (November 2006). *Parkes Intermodal Terminal – Concept Design. Additional Traffic Information*

[2] GHD for Terminals Australia (February 2007). *Parkes Intermodal Terminal – Concept Design. Additional Traffic Information*

[3] GHD for Terminals Australia (February 2007). *Parkes Intermodal Terminal – Concept Design. Additional Traffic Information*

- The future performance of Hartigan Avenue with Forbes Street (Newell Highway) intersection in the future is poor and will require upgrading to traffic signals by 2010 '*with'* or '*without'* the proposed development.
- The future performance of Hartigan Avenue with Bogan Street (Newell Highway) intersection in the future is poor and will require upgrading to traffic signals under the '*with*' development scenario by 2020. This intersection will also be directly impacted by the future development of the Parkes Transport Hub and Parkes Industrial Estate and should be considered for upgrade as part of signalising the Forbes Street with Hartigan Avenue intersection.
- The performance of all other intersections in the future under the *'with'* or '*without*' development scenario is satisfactory.
- Outputs from the level crossing performance assessment indicate that the longest queues (number of vehicles delayed) and highest cost associated with travel time delay occurs at the Forbes Street (Newell Highway) level crossing, which caters for local, regional and national freight movement. This level crossing will attract the highest traffic volumes and is currently impacted by rail operations associated with the Parkes Goods Yard.
- The performance of level crossings indicates that both Brolgan Road level crossings and the Condobolin Road level crossings will be impacted by extended time delays caused by slower trains entering or existing the proposed site under the '*with'* development scenario.

Recommendations

The following improvement scenarios where developed based on existing issues and key findings for the 'Trigger Point' Analysis

- Signalisation of the intersection of Hartigan Avenue with Forbes Street (Newell Highway) and Bogan Street (Newell Highway) with Hartigan Avenue;
- Lighting at Brolgan Road / Westlime Road Intersection;
- Salesyard Road Ring Road Connection (Interim Option);
- Southern Section of the Western Ring Road;
- Construction of the Western ring road (comprising northern and southern sections)
- Upgrade of Existing Level Crossings

From the proposed improvement scenarios outlined above two road upgrade options have been outlined in the Additional Traffic Information Report. The delivery of either of the proposed upgrade options would require the co-operation of a number of agencies including the RTA, PSC, ARTC and private developers.

An assessment of the two road upgrade options determined that option 2 offers greater benefit to the community of Parkes, future industrial development within Parkes, regional through traffic movement and development within the Parkes Transport Hub.

RTA (Western Region) Input

The RTA (Western Region) set out a number of comments and recommendations with regard to the proposed Intermodal Terminal in a letter to the Department of Planning dated 18 January 2007 as summarised below[4]:

- Construct an intersection that is appropriate for road trains at the proposed entrance point from Condoblin Road (MR61). It is envisaged that RTA type CHR (dedicated right turn bay) and RTA type BAL (ADDT>50), adjusted for road train turning circles, are the appropriate treatments. Detailed engineering plans must be submitted to RTA for comment and approval.
- The RTA has modelled the Newell Highway / Forbes Street / Grenfell Street intersection using different background traffic growth than GHD and higher development related traffic[5]. The RTA modelling indicates that *'without'* both the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections will operate satisfactorily without signals beyond 2020[6]. However both the GHD and RTA modelling concur that for future years (2020) *'with'* development the Newell Highway / Forbes Street / Grenfell Street intersection should be signalised together with the Newell Highway / Bogan Street intersection and that the Grenfell Street leg of the intersection should be closed.
- The developer is required to provide a single set of traffic signals to service both of the Newell Highway / Forbes Street / Grenfell Street and Newell Highway / Bogan Street intersections before the commencement of the development to offset the expected traffic volumes for the initial stage of the development.
- The following recommendations were made with regard to level crossings in the area:
  - The proposed new level crossing on Brolgan Road will need to be grade separated;
  - RTA does not see the need for the proposed grade separated crossing of the northern access road, the existing Brolgan Road east crossing should be grade separated in preference;
  - The existing Condoblin (MR61) level crossing requires advance warning lights due to sight distance issues. The proposed boom gates are not considered to be necessary, however the RailCorp Level Crossing Unit should be consulted for their recommendation;
  - All of the existing and proposed level crossing need to be forwarded to the Level Crossing Unit for comment;
  - All of the existing and proposed level crossing need to be forwarded to all emergency services for comment;

[4] RTA letter (ref: 353.5395 05/2-4) to Department of Planning dated 18 January 2007.

[5] Letter dated 1st February 2007, titled: Proposed Parkes Intermodal Freight Terminal, Review of 'Sidra' Intersection Modelling, Samsa Consulting Transport Planning & Traffic Engineering

[6] RTA letter (ref: 353.5395 05/2-4) to Department of Planning dated 18 January 2007.

  - The level crossings should be monitored at regular intervals with the proponent correcting any arising issues caused by their development;
- The proposed north south road link between Condoblin Road (MR61) and Brolgan Road is not seen as being necessary.
- It is recommended that the proposed 5 access points onto Brolgan Road be consolidated and minimised. Any new intersections should be provided at a minimum RTA type CHR (right turn bay) intersection.

Agreed undertakings by Terminals Australia

Subsequent to the *Additional Traffic Information* Report analysis being undertaken and following the meeting with the NSW Department of Transport and key stakeholders (Monday 5th February 2007), Terminals Australia agreed with Planning NSW to commit to a number of road network improvements as outlined below:

- Terminals Australia has agreed that the proposed configuration and design of rail crossings will be submitted as part of asset-specific development applications to the relevant road and rail authorities for approval.
- Terminals Australia has made a binding commitment to contribute to a project approved and part funded under AusLink for improvements to Brolgan Road, including the upgrading and lighting of the intersection with Westlime Road. The project also includes improvements to the Hartigan Avenue / Blaxland Street intersection.
- Terminals Australia has agreed with the RTA and Council to commit to the upgrading of the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections to the satisfaction of the RTA.

Summary of Comments Addressed in the *Additional Traffic Information* Report

A summary of the comments addressed and the section of the report where they are addressed are outlined in Table 3.

Table 3 Summary of Comments Addressed in the *Additional Traffic Information* Report

	Comment	Response
Samsa Report	Westlime Road not included in analysis	The midblock assessment of Westlime Rd undertaken in Section 2.2.1 was not considered to be a critical issue, however the operation of the Brolgan Rd and Westlime Rd intersection is more likely to be a concern and is addressed in Table 9, Table 18 and Table 25.
Samsa Report	Newell Highway at Hartigan Ave not included in analysis	This query is addressed in Table 8, Table 17 and Table 24.
Samsa Report	Road Safety not adequately addressed	A review of critical road safety issues and analysis of Crash Statistics is included in Section 2.3.
Samsa Report	Traffic generation and distribution methodology and assumptions need to be clarified	Section 3.2 Methodology and assumptions provide further explanation of the approach used for this assessment. In summary the approach used is associated with current travel patterns, expected future growth in freight movement by road and rail, and the

	Comment	Response
		sites known maximum potential throughput capability.
Samsa Report WRDC	Intersections on the road network were not assessed	Section 2.2.2 Intersections provides an assessment of critical intersections that could potential be impacted by the opening of the PIT. Refer to Table 9, Table 18 and Table 25 for further detail.
Samsa Report WRDC	Level Crossing Delays and Safety	Issues associated with safety are identified in Sections 2.1 and 2.3, these relate to identified on-site issues and crash statistics. Traffic impacts associated with the closure of level crossings (current and future) are identified in terms of time delays, queuing and potential time cost and presented in Sections 2.5.3, 4.2, 4.3.2 and 4.4.2.
Department of Planning	Level crossing delay	GHD supports the approach taken by the Department for rail crossings and agrees that the proposed infrastructure upgrades would manage these facilities satisfactorily, when considering their location, purpose and activity levels. Refer to Sections 1.7 and Appendix D.
Department of Planning	The concept facilitates mode shift to rail	Sections 1.6 & 1.7 provides an understanding of the national and local benefits from the implementation of this type of facility.

4.2 Parkes Industrial Hub Development Control Plan 2006

The Parkes Industrial Hub Development Control Plan, 2006 provides development guidelines for the subject site. It is not a statutory document requiring strict adherence to the stated requirements. Where possible, the Parkes Intermodal Terminal would be developed in accordance with these guidelines.

The following comments have been provided in response to the Parkes Industrial Hub Development Control Plan guidelines where they might not be met:

Table 4 Matters for consideration relating to the Intermodal Terminal

Issue	Requirement	GHD Comment
1.6 Parkes Industrial Hub Structure Plan Transport Routes	The Parkes Industrial Hub is located on Brolgan Road which will provide the main access to the area. These roads will need upgrading to accommodate the future development of the land and Council will require contributions from developers for the purposes of this road upgrading.	It is acknowledged that Brolgan Road will be directly impacted by the future development of Parkes Industrial Hub. However, Condobolin Road is under the control and maintenance of the RTA and is a designated B Double route, which permits road train movements under certain weather, time and period operating conditions. Condobolin Road is planned to be a secondary access to the site and only likely to attract minor traffic volumes. However, if a suggested access road between Brolgan Road and Condobolin Road is constructed, it is likely that the traffic volumes could increase (in particular during the transport of seasonal crops

		along Brolgan Road) when the crossing is closed (x4 times a day under the ultimate stage). Condobolin Road was identified to be currently operating at LOS A and is predicted to continue operating at LOS A after the ultimate PIT development is in place.
2.3 Building site and Design Requirement 2	The height of buildings or structures on all other land within the plan area must not exceed 15 metres above natural ground level.	The maximum height of buildings and structures on the site (>50m beyond the site boundary) is limited to 15m above natural ground level. This requirement may have ramifications should the Terminal use rail mounted gantry cranes for the transhipment of containers. In reviewing several manufacturer websites, the hoisting heights average between 10-12m for a '3+1 TEU rail mounted gantry crane'. In addition to this 10-12m height would be the crane gantry members and additional miscellaneous equipment on the gantry itself. The '3+1 cranes' allow for 3 TEUs to be stacked vertically with an additional TEU being transported above the 3 high stack. As such, the 15m maximum height requirement may limit the type of rail mounted gantry for the intermodal terminal. If this height restriction cannot be changed, Terminals Australia may have to apply for a concession to Council on this requirement of the DCP once the final decision on whether a rail mounted gantry will be used and the overall height of the gantry is determined once the operational model from an operator and the detail design is completed.
2.3 Building site and Design Requirement 2	The height of buildings or structures on all other land within the plan area must not exceed 15 metres above natural ground level.	This 15m height restriction will also impact on the conceptual external lighting of the hardstand areas. In the masterplan, 30m high light towers were conceptually proposed. If Terminals Australia is required to comply with the proposed 15m restriction, this will largely affect the number of light masts required to efficiently light the hardstand area. Additional towers would be necessary to compensate for the loss of lighting spread that 30m towers would have provided which would be unfeasible from a capital cost perspective as well as operating costs, due to the increased number of lights required. This would impact on the spacing of the lighting towers and the layout and efficient

		operation of containers on the hardstand area. Roadway widths would also be affected. If this requirement remains in the DCP, Terminals Australia would have to seek a dispensation (as with the Rail Mounted Gantry Cranes should they be used) from Parkes Shire Council. We would propose that 30m high masts (from hardstand ground level) be developed in the preliminary design as this is the most efficient from cost and operation perspectives. The design would comply with the other lighting requirements in the DCP including the Orana SEPP as well as no light spill to adjoining land owners.
Section 2.5 Site Access, parking, loading and unloading Requirement 3	One vehicle access point is to be provided from the Parkes Industrial Hub to Condobolin Road unless Council grants specific approval for additional access points.	The wording suggests that we must provide an access point to Condobolin Road from the site. The basis of providing an access point to Condobolin Road in the Masterplan Final Stage is dependent on the market and the type of operations/users of the site. For example, the justification for constructing the Condobolin Road access point (including the grade separation across the Parkes-Narromine Railway Line) at the Final Stage was to minimise the interface between fuel road transport vehicles and the Intermodal Terminal, should the containerised Fuel Storage Facility be constructed.
Section 2.5 Site Access, parking, loading and unloading Requirement 5	Rail crossings on Brolgan Road or Condobolin Road are to be grade-separated crossings.	A more detailed Traffic Assessment and Analysis Report was prepared, which reviewed several options including issues relating to railway crossings (see Appendix B, Section 2.5.3, 4.2, 4.3.2, 4.4.2, 6.9 & 6.10).
Section 3.3 Noise Requirement 3	Noise from industrial and commercial premises including traffic noise shall not exceed a LAeq15min noise level of 35dB(A) measured at a distance of 30 metres from the closest point of any existing residence within a 1km radius of the development.	30 metre distance should be omitted and control should be left as “Noise from industrial and commercial premises including traffic noise shall not exceed a LAeq15min noise level of 35dB(A) from the closest point of any existing residence within a 1km radius of the development”.
Section 3.3	Night time intermittent	30 metre distance should be omitted and

Noise Requirement 4	noise levels should not exceed the background noise level by more than 15dB(A) measured at a distance of 30 metres from the closest point of any existing residence within a 1km radius of the development.	control should be left as “Night time intermittent noise levels should not exceed the background noise level by more than 15dB(A) from the closest point of any existing residence within a 1km radius of the development”.

5. Modifications to the Project

5.1 Modifications to the project

No modifications to the project have been made since the original Environmental Assessment (February 2006) was submitted.

Further information on project staging has been provided in Section 5.2.

A number of new commitments to the project have also been made and are included in Section 6.2.

As Terminals Australia has agreed that the proposed configuration and design of rail crossings will be submitted as part of asset-specific development applications to the relevant road and rail authorities for approval, the concept layout plans for the Initial Stage and Ultimate Stage have been updated to reflect this. The updated concept layout plans have been included in Appendix C.

5.2 Proposed development staging

The Additional Traffic Information report outlines the findings of more in-depth investigations undertaken to address issues raised with respect to *Traffic Assessment (GHD, June 2006)* and the *Environmental Assessment for Concept Approval* (GHD, June 2006) that it performed.

Whilst the proponent continues to seek concept approval for the full development, which may take 10-15 years, they advise that the first project approval to be sought is highly likely to be Stage 1a of the "Initial Stage".

Initial Stage

This stage as described in the EA can be chronologically subdivided into three main elements:

Initial Stage 1a: This comprises rail terminal works, with associated road access and office and equipment depot facilities, sufficient to service the existing rail market. It will be brought forward by way of an asset specific DA after concept approval and when Terminals Australia finalises its joint venture or other arrangements.

At this Stage 1a, it is foreseen that the terminal would cater for an annual throughput of 50,000 TEU and that the following elements of the *initial* development would be established:

- 1 x 1,800 to 2,000 long metre siding
- 1 x 1,200 metre siding
- Hardstand to load 900 metre train lengths (from one side)
- Cargo storage facility
- Terminal operation centre
- Access roads

Initial Stage 1b: This will comprise partial expansion of the intermodal terminal to the capacity identified in the EA for the Initial Stage. The expansion project will be brought forward as an asset-specific DA as market forces develop.

Initial Stage 1c: This may or may not be concurrent with Stage 1b. It is likely to comprise a number of unrelated third-party asset-specific DAs for warehousing and distribution facilities within the area defined in the EA and contiguous to the intermodal terminal. These DAs could be brought forward either by Terminals Australia or by the parties themselves, depending on the nature and timing of the particular asset.

Ultimate Stage

The progression of the project from the Initial to the Ultimate Stage is likely to be gradual and spread over a number of years, generating a number of further asset-specific DAs which could include:

- Full-scale expansion of the intermodal terminal to the ultimate capacity identified in the EA. Such expansion is probably dependent upon the construction and commissioning of a Melbourne-Brisbane direct rail route (“The Inland Rail Project”).
- Development of further warehousing, distribution and engineering facilities, as identified in the EA, by third parties. Again, each of these would be brought forward by asset-specific DAs.

6. Statement of commitments

This section provides the final statement of commitments for the proposal. The overall commitments for the project as outlined in the Environmental Assessment are included Section 6.1. New or amended measures are included in Section 6.2.

6.1 Overall commitments

6.1.1 Mitigation measures

Terminals Australia commits to implement the measures included in the Environmental Assessment (February, 2006) and outlined in Table 5, to minimise the potential for environmental impacts.

Any mitigation measures modified since the Environmental Assessment have been removed from Table 5 and included in Table 7 – New commitments.

Table 5 Mitigation measures outlined in Environmental Assessment

Outcome	Mitigation measure	Timing
Traffic & transport		
Construction traffic movements operate in a safe environment.	◗ An on-site traffic management plan would be prepared as part of the Construction Environmental Management Plan to manage construction traffic.	Construction
The existing road network is upgraded to provide a safe operating environment for existing road users and traffic generated by the proposal.	◗ The Intersections listed below, which are deemed to be directly impacted by container movement generated or redistributed to the proposal, would be evaluated: – Brolgan Road with the West lime Road (Western Section of the Parkes Ring Road); – Condobolin Road with West Lime Road; – Newell Highway (Forbes Street) and Hartigan Avenue; and – Hartigan Avenue with Blaxland Street.	Design
	◗ Provide appropriate high quality intersection along Condobolin Road. The intersection should be designed to accommodate B double and road train type vehicle. Based on the guidelines specified in the *Austroads Part 5: 'Intersections at Grade'* it would be desirable to provide types 'AUR' or 'CH' intersection layout.	Operation
Safe site access is provided.	◗ Appropriate high quality intersections, such as type 'AUR' and 'CH' intersections, would be installed at access points to the site along Brolgan Road.	Operation
Timing	◗ All of the above except the new access point onto to Condobolin Road should be undertaken in the initial stage of site development with the Condobolin Road provided in the Ultimate Stage.	Initial & Ultimate Stage

Outcome	Mitigation measure	Timing
Noise		
Construction noise managed.	◗ All combustion engine plant, such as generators, compressors and welders should be checked to ensure they produce minimal noise with particular attention to residential grade exhaust silencers. ◗ Vehicles would be kept properly serviced and fitted with appropriate mufflers. The use of exhaust brakes would be eliminated, where practicable. ◗ Where practical, all vehicular movements to and from the construction site must be made only during normal working hours. ◗ Where practical, machines should be operated at low speed or power and would be switched off when not being used rather than left idling for prolonged periods. ◗ Machines found to produce excessive noise compared to industry best practice should be removed from the site or stood down until repairs or modifications can be made. ◗ Where practical, impact wrenches should be used sparingly with hand tools or quiet hydraulic torque units preferred.	Construction
Traffic noise managed during construction and operation.	◗ With regard to potential traffic noise, by keeping vehicles serviced, fitted with mufflers, eliminating exhaust brake usage and posted speed limits, noise due to trucking activity associated with the operation and construction of the terminal can be significantly mitigated.	Construction, operation
Operational noise managed.	◗ Best practice noise management measures would be implemented to control operational noise.	Operation
Water quality		
Quality and flows of receiving waters are protected during construction.	◗ A construction phase soil and water management plan, detailing stormwater management strategies, would be developed and implemented in accordance with Section 7.3.3 of the EA to minimise erosion, sedimentation and pollution.	Construction
Quality and flows of receiving waters are protected during operation.	◗ Site drainage and stormwater management features would be designed in accordance with the concept stormwater management plan shown in Figure 7-20 of the EA.	Design, operation

Outcome	Mitigation measure	Timing
Opportunities for reuse/recycling of water are maximised.	◗ The following would be provided: – Stormwater retention strategies; – Rainwater harvesting (roof water and on ground stormwater); and – Management and monitoring of onsite activities and infrastructure.	Operation
Land use safety		
Transportation and on-site storage of hazardous materials to remain below SEPP 33 storage or transport thresholds for Class 3PGII hazardous materials.	◗ The proposed development would be designed in accordance with AS1940, incorporating the requirements outlined in Section 7.4.2 of the EA relating to: – Separation distances; – Bunding requirements; and – Fire protection requirements.	Design, construction, operation
Non-indigenous heritage		
Compliance with requirements under Section 139(4a) of the NSW Heritage Act.	◗ An exception notification would be lodged, together with this report as the supporting documentation, with the NSW Heritage Office seeking exception under Section 139(4a) of the NSW Heritage Act. ◗ Acceptance of that notification would be received prior to the commencement of construction taking place.	Construction
Recording of non-indigenous heritage.	◗ A photographic record of the Farm Complex and its key components would be taken before and during the proposed works. Copies of these records would be forwarded to the NSW Heritage office and to Parkes Shire Council.	Construction

Outcome	Mitigation measure	Timing
Indigenous heritage		
Indigenous heritage sites and artefacts are protected.	◗ Should any Indigenous artefacts be unearthed during construction, works within the immediate vicinity of the find would temporarily cease and move to another area of the site (allowing for a curtilage of at least 50 metres), and DEC would be contacted, and permission sought from the relevant Aboriginal organisations to collect the items.	Construction
Flora & Fauna		
Natural ecosystems surrounding the site are protected from construction impacts.	◗ The development area boundary would be clearly defined to prevent construction works breaching the site boundaries and potentially impacting adjacent vegetation.	Construction
	◗ Stockpiles would be placed away from the woodland at the site.	Construction
Habitat values are preserved and protected.	◗ Soil that may contain seeds of exotic species, would be placed away from the woodland where they could be spread during wind or rainfall events.	Construction
	◗ Where possible, the removal of mature and hollow-bearing trees at the site would be avoided.	Construction
	◗ Stock from the remaining woodland at the site would be removed to allow natural regeneration.	Construction
	◗ Initial and continual treatment of weeds within the woodland and potential rehabilitation.	Construction, operation
Bushfire		
Reduce the threat at the site and on adjacent lands and property.	◗ The principles of *Planning for Bushfire Protection* (PBP) (Planning NSW), 2001, would be applied to the proposal where appropriate.	Design, construction, operation

Outcome	Mitigation measure	Timing
Asset Protection Zones provide clear zone between vegetation (fuel for bushfires) and the development, reducing opportunities for fire to spread quickly.	◗ Based on the vegetation class present at the site an Asset Protection Zone of 20 m is recommended. Road and fire trails may form part of the APZ and therefore reduce the need for further vegetation clearance. ◗ A fire trail would be incorporated into the APZ and would include the following attributes: – located within a minimum 6 m wide reserve (4 m wide trail and 1 m wide cleared area each side of the trail); – constructed in accordance with design criteria outlined in Section 5.2.2 of PBP; – be trafficable by firefighting vehicles under all weather conditions; – appropriate drainage and erosion controls; – not traverse any wetlands or other land potentially subject to periodic inundation; – should link to Brolgan Road; – be maintained in a serviceable and accessible condition at all times; and – have passing bays at regular intervals of 200 m. ◗ Any vegetation within the APZ, which in this case is likely to be grasses, would be managed through regular mowing.	Design

Outcome	Mitigation measure	Timing
Appropriate site access for firefighting vehicles to access site, and for evacuation of site during construction and operation.	◗ Access to the site would be established and maintained and include a perimeter fire trail. This is a managed fire trail surrounding the buildings and incorporated within the 20 m APZ measured from the edge of the building. If Brolgan Road is within 20 m of a building and meets the bushfire standards, then construction of a perimeter access trail on this side of the building is not required. ◗ This would include the following attributes: – a minimum trafficable width of 4 m with an additional 1m wide strip on each side of the road kept clear of bushes and long grass; – the road should have a passing bay about every 200 m where possible, which should be 20 m long by 3 m wide, making a minimum trafficable width of 7 m at the passing bay; – the capacity of the road should be sufficient to carry fully loaded firefighting vehicles (approximately 28 tonnes or 9 tonnes per axle); – a minimum vertical clearance of 6 m to any overhanging obstructions, including tree branches; – curves should have a minimum inner radius of 6 m and be minimal in number to allow for rapid access and escape; – the minimum distance between inner and outer curves should be 6 m; – roads would provide sufficient width to allow firefighting vehicle crews to work with firefighting equipment around the vehicle. ◗ If possible two access roads to the site are recommended along paths that are unlikely to be cut simultaneously by fire and therefore ensure there is at least one safe evacuation point.	Design, construction, operation
Adequate water supply for potential firefighting during operation.	◗ Appropriate watering points would be provided along the perimeter trail from a series of fire hydrants. These hydrants would meet the requirements of Australian Standard 2419–*Fire Hydrant Installation* and be delivered by a ring main system.	Operation

Outcome	Mitigation measure	Timing
Air quality		
Air quality is protected during construction.	◗ An Air Quality Management Plan would be prepared for the construction phase of the proposal, and would be included as part of the CEMP.	Construction
	◗ All activities undertaken would be carried out in a manner, as outlined in Section 8.8.4 of the EA, that minimises: – Air pollution; – Dust generation; and – Emission of dust from the site (wind-blown, from transit or traffic generated).	
Air quality is protected during operation.	◗ Tree planting would be undertaken on the site, hence reducing CO^2 levels in the atmosphere.	Design, operation
	◗ All activities undertaken would be carried out in a manner that minimises emission of pollutants and dust, as outlined in Section 8.8.4 of the EA.	Design, operation
	◗ Terminals Australia would promote government initiatives such as the Alternative Fuels Conversion Programme, that are designed to assist operators and manufacturers of heavy commercial vehicles to convert to Natural Gas or Liquefied Petroleum Gas (LPG).	
Visual amenity and landscape		
The visual impact of the proposal on the landscape would be minimised.	◗ Existing vegetation, outside the areas required to be cleared for the development, would be retained.	Design, construction
	◗ Additional planting would be provided to screen the development, from the inception of construction if possible.	Operation
	◗ Appropriate building materials and treatments would be chosen, including: – Minimal use of reflective elements, and use of textual cladding where practicable; and – Use of green/brown colour tones on the buildings (including the upper portion of built elements) to minimise the contrast with surrounding bushland.	Design

Outcome	Mitigation measure	Timing
Socio-economic		
Procedures are in place to ensure that any social impacts are minimised and can be dealt with without delay.	◗ A consultation and communication plan would be developed covering the local residents and wider community to ensure employment opportunities for the local community are maximised and to detail activities to be implemented in the lead up to, and during implementation of the proposal. ◗ Consultation tools used would include: – Ongoing liaison with the community, Council and local businesses; – A community hotline to enable response to questions, complaints etc; – Regular meetings with key stakeholders and the community in Parkes. This should include discussions with local businesses regarding economic and employment opportunities; – Project newsletter/information sheets distributed to surrounding landowners, businesses and residents; and – A project information signboard erected in the vicinity of the site providing regular updates on the progress of the proposal, contact details etc.	Design, construction, operation
Waste management		
Minimise construction waste.	◗ Minimise cut and fill. If this cannot be avoided, reuse excavated material onsite.	Design
	◗ Include waste management clauses in contracts to ensure contractors are aware of the waste management targets and objectives of the development and their obligations.	Construction
	◗ If possible, design for standard sizes, this avoids unnecessary offcuts and waste generation.	Design
	◗ Use pre-fabricated components. Usually, pre-fabricated components are delivered to site where they are assembled, saving money and reducing onsite waste.	Design, construction
	◗ Specify for materials that are easily reusable and recyclable, avoiding potential future waste.	Design, construction

Outcome	Mitigation measure	Timing
	◗ Design for disassembly to ensure the buildings are able to be easily taken apart, thus facilitating future resource recovery.	Design
	◗ Look at ways of using materials that have recycled content.	Construction
	◗ Avoid specifying and ordering potentially harmful substances and materials.	Design, construction
	◗ Arrange supplier take-back for excess or damaged material and for excess packaging.	Construction
	◗ The type and the volumes of waste expected to be generated by the operation of the proposed development would be calculated during the detailed design phase to ensure adequate waste storage facilities are provided on site. This would include waste generated from the office, landscaped areas, refuelling facilities and warehousing and distribution activities.	Design
	◗ Waste storage areas would be required on site. These would have sufficient room to store the required containers to accommodate the estimated quantity of waste and recyclables generated and to allow for manoeuvrability.	Design
	◗ Waste storage areas would be undercover and drained to sewer.	Design
	◗ Terminals Australia needs to select appropriate waste handling equipment and the design has to allow adequate space for onsite separation, storage and manoeuvring of waste prior to collection and transport.	Design
	◗ Adequate space would be required for the storage of containers of at least three waste streams – recovered waste (for reuse or recycling), residual waste (for disposal or Alternative Waste Technology) and hazardous waste (wastes that are toxic, corrosive, flammable, explosive or reactive).	Design
	◗ A separate storage area would be designed for liquid wastes (oils etc) that would be bunded and drain to grease traps. Liquid wastes from grease traps must only be removed by a licensed contractor approved by the relevant water authority or NSW DEC.	Design
	◗ Adequate space for bulky items would be provided.	Design
	◗ A separate storage and collection area for hazardous/ special wastes would be provided.	Design

Outcome	Mitigation measure	Timing
	◗ Waste storage areas and wash down areas would have smooth, impervious floors, be graded to a silt trap and connected to the sewer.	Design
	◗ The site would have adequate drainage.	Design
	◗ Detailed design would required provisions would be made to prevent waste water, liquids, solid waste and debris from entering stormwater drains.	Design
	◗ The proposed development must comply with the Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Waste (DEC) http://www.epa.nsw.gov.au/resources/waste_guide.pdf.	Design
	◗ The waste storage areas would be developed so as to not compromise fire safety objectives by having adequate fire protection measures in accordance with Australian Standards.	Design
	◗ As the site would be used for goods receival and export, waste storage areas would be designed to be separated from the goods receiver dock, particularly if more than 10 m^3 of uncompacted recyclable materials and waste is likely to be generated per day. Compaction units would be used where appropriate.	Design
	◗ Design of the storage area would require appropriate security access measures to prevent entry to the waste storage areas, scavenging, vandalism and illegal dumping. Measures could include fences, lockable gates, natural barriers such as ditches and embankments and surveillance systems.	Design
	◗ Appropriate access would be provided for servicing and for the collection of waste by a private contractor where desirable and/or necessary.	Design
	◗ A proper transport route to the main or communal storage area would be provided.	Design
	◗ If a private contractor were employed, access to the storage areas by collection trucks would implement measures for road design to have adequate strength, clearance and geometric design for truck movements on access driveways and internal roads.	Design
Minimise construction and operation waste.	◗ Wastewater (from cleaning the waste storage area (s) and bins) would be prevented from entering the stormwater system.	Construction, operation
	◗ WorkCover NSW requirements for the storage of dangerous goods would be complied with.	Construction, operation

6.1.2 Environmental management

Construction environmental management plan

A construction environmental management plan would be prepared and implemented. The construction environmental management plan would outline environmental management practices and procedures to be followed during site preparation, and construction of the proposal.

The construction environmental management plan would cover the environmental protection practices, resources and sequence of activities required to comply with relevant environmental legislation, conditions of any applicable licence, approval and permit. The plan would include:

- A description of all activities to be undertaken on the site during site preparation, construction and commissioning of the stage of the development being undertaken;
- Statutory approvals and other obligations that would be fulfilled during site preparation, construction and commissioning, including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;
- Details of how the environmental performance of the site preparation and construction works would be monitored, and what actions would be taken to address identified adverse environmental impacts. In particular, the following environmental performance issues would be addressed:
  - Measures to monitor and manage dust emissions;
  - Measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/ or waters during construction;
  - Measures to monitor and manage any contaminated soils/ materials encountered during construction and demolition;
  - Measures to monitor and manage any groundwater encountered during construction and demolition;
  - Measures to monitor and control noise emissions during construction and commissioning;
  - Measures to monitor and control air emissions during construction and commissioning, and to ensure that air emissions are both minimised and in compliance with the requirements of this consent and the Environment Protection Licence for the site;
  - Measures to manage traffic during construction; and
  - Measures to manage bushfire risk.
- A description of the roles and responsibilities for all relevant employees involved in the construction of the development;
- The management plans and mitigation measures listed in Table 5 relevant to construction and commissioning; and

- Complaints handling procedures during construction.

Operation environmental management plan

A dedicated operation environmental management plan would be developed for the operation of the proposal and this would include:

- Environmental policy, objectives and performance targets for operation;
- Identification of all statutory and other obligations, including consents, licences, approvals and voluntary agreements;
- Identification of the roles and responsibilities of all personnel and contractors to be employed on site;
- Management policies, procedures and review processes to assess the implementation of environmental management practices and the environmental performance of the proposal against the objectives and targets;
- The management plans and mitigation requirements listed in Table 5 relevant to operation;
- Incorporation of environmental protection measures and instructions in all relevant Standard Operating Procedures and Emergency Response Procedures;
- The environmental monitoring practices described in Section 6.1.3; and
- Specific procedures in relation to the following, as defined by this Environmental Assessment and the conditions of consent for the proposal:
  - Traffic management;
  - Noise management;
  - Soil and water management;
  - Air quality management; and
  - Landscape management.

6.1.3 Monitoring

Air quality

Any monitoring would comply with DEC guidelines for the Sampling and Analysis for Air Pollutants in NSW. In addition, the proponent would comply with any conditions of licences or approvals, in relation to the maximum air pollutant levels.

Water quality

Monitoring would be undertaken to ensure that stormwater management measures are working effectively. Monitoring would rely primarily on visual inspections and sampling. Visual inspections should be undertaken of sediment basins, pits, diversion and catch drains and all other stormwater conveyance structures. A general indication of frequencies for inspections is provided in Table 6. An inspection log detailing the monitoring program would be kept.

Table 6 Monitoring program

Sample location	Collection mechanism	Frequency first six months	Frequency normal operation
Sediment Basins	Visual Inspection	Every runoff event	First runoff event of any month
Inlet Pits	Visual Inspection	Every runoff event	First runoff event of any month
Trunk Drainage Channels	Visual Inspection	Every runoff event	First runoff event of any month
Overland Flow Paths	Visual Inspection	Every runoff event	First runoff event of any month
Trafficable Areas	Visual Inspection	Every month	
Bunded areas	Visual Inspection	Every runoff event	
Other works areas, potentially contaminating stormwater	Visual Inspection and system operation testing	Every month	

Notes:

- Runoff event must be sufficient;
- Inspect after 24 hour retention period (ie 24 hrs after runoff event);
- For every inspection undertaken, the date, time and ambient weather conditions would be recorded.

6.2 New commitments

Terminals Australia commits to implement the measures outlined in Table 7 to minimise the potential for environmental impacts.

Table 7 New commitments

Environmental issue	Mitigation measure	Timing
Contributions	Terminals Australia recognizes the requirement for reasonable contributions towards infrastructure and other requirements generated by the project and is prepared to enter into a Planning Agreement or other reasonable arrangement such as the Consent Authority might propose. The company submits however, that the Planning Agreement or other instrument should reflect that the project will take ten to fifteen years to reach completion of the Ultimate Stage. That is why Concept Approval is being sought now and why the elements comprising the project are proposed to be brought forward as asset-specific Development Applications as	Design

	market forces determine.	
Noise (operation)	As part of subsequent Development Applications traffic noise assessments would be undertaken and where appropriate mitigation measures would be developed.	Design
Planning	Monitoring has been included in the Statement of Commitments for the project. An annual audit with regard to noise monitoring, water and air quality, traffic management and complaints handling would be undertaken for the Intermodal Terminal.	Operation
Traffic and transport	The proposed configuration and design of rail crossings will be submitted as part of asset-specific Development Applications to the relevant road and rail authorities for approval.	Design
	Terminals Australia has made a binding commitment to contribute to a project approved and part funded under AusLink for improvements to Brolgan Road, including the upgrading and lighting of the intersection with Westlime Road. The project also includes improvement to the Hartigan Street/ Blaxland Street intersection.	Operation
	Terminals Australia commits to the upgrading of the complex of intersections in the area of the Newell Highway/Bogan Street/rail crossing in Parkes, to the satisfaction of the relevant road authority (RTA). TA would propose that be effected by way of a management agreement between Terminals Australia, RTA and Parkes Shire Council.	Operation
	Existing level crossings situated along Brolgan Road and Condobolin Road would be upgraded in accordance with statutory requirements.	Operation
	A new rail crossing point would be situated along Brolgan Road to the west of the proposed development, in accordance with statutory requirements.	Operation
	Brolgan Road, between the western section of the Parkes ring road system and the proposed western most site access point, would be upgraded to incorporate road design specification to accommodate B double and road trains in accordance with statutory requirements. It is understood that it would be desirable to provide two 3.5m wide traffic lanes with a shoulder width of 2.0m and 1.0m of this being sealed.	Operation

	The study identifies that the analysis is based on a preliminary level of information and a series of assumption, which will only be confirmed once an operator for the facility is identified. The proposed operator will have the understanding of the resulting traffic impacts produced from each stage of the proposed development. These impacts should be identified and addressed with the submission of Development Applications for each facility proposed to be located in the Parkes Intermodal Terminal. The supporting detailed traffic impact statement will as part of this exercise address issues associated with the following: ◗ Proposed truck routes at each stage of the development; ◗ Intersection upgrades at each stage of the development; and ◗ Rail crossings at each stage of the development.	Prior to lodgement of subsequent applications
Flora and fauna management	The draft Statement of Commitments notes that initial and continual treatment of weeds within the woodland and potential rehabilitation. Terminals Australia would look at the need to extend to monitoring other areas as part of the Operational EMP.	Construction, operation
Visual amenity/impacts	Terminals Australia would aim to minimise energy consumption through incorporating 'best practice' for the proposal.	Operation

Appendix A

Summary of submissions

Summary of issues raised in submissions

No.	Submitter	Issue Category	Date Received	Position	Issues raised / Comments
1	Parkes Shire Council	Strategic planning	21/07/2006	Support	Wholeheartedly supports the Major Project Application which meets Council's aim to develop the Parkes Industrial Hub for freight and transport related industrial operations.
1		Planning			Work would generally need to be in accordance with documentation.
1		Planning			Further development applications will need to be lodged seeking approval for each stage of the concept.
1		Contributions			Recommend consideration be given to the level of contribution the development should be levied in regard to civil infrastructure, as well as social, economic and community issues.
1		Contributions			Require the applicant pay contributions pertaining to requirements under Section 94 of the *Environment Planning and Assessment Act* 1979.
1		Planning			An annual audit should be provided to the appropriate authority (i.e Council or Department of Planning) providing detail of noise monitoring, water and air quality monitoring, traffic management and complaints handling.
1		Traffic and Transport			A number of upgrades to existing road infrastructure will be required as a result of the development triggers for the need and timing of these upgrades and others identified in the development application should be included in the development conditions, they include: ◗ Traffic lights at the intersection of Blaxland and Hartigan Avenue; ◗ Lighting at the intersection of Brolgan Road and Westlime Road; ◗ Brolgan Road to the Westlime Road intersection needs to be upgraded; ◗ Brolgan Road from the SCT access heading west and fronting the proponents land must be upgraded.
1		Planning			Require consideration of Council's Draft Industrial Hub Development Control Plan which has been exhibited.
1		Visual Amenity			Reiterate that consultation be undertaken with Coonabarabran Sidings Spring Telescope with regards to the proposed lighting of the development.

No.	Submitter	Issue Category	Date Received	Position	Issues raised / Comments
1		Water Management			Internal water reticulation (including metering) will be at the full cost of the developer. Section 64 developer services charges should be applied with site specific development application.
1		Water Management			It will be the developers' responsibility to obtain the necessary plumbing and drainage permits and provide all internal plumbing and metering in accordance with AS 3500 and the NSW Code of Practice; Plumbing and Drainage.
1		Water management			Infrastructure for stormwater generated onsite has been indicated and appear satisfactory.
1		Flood Management			Recognise that the proposal is at the concept stage, however recommends developing a plan for the routing of flood waters through the site.
1		Flood Management			Aware that significant flood waters have in the past flowed down the shallow watercourse through the proponents land as a result of runoff from higher in the catchment. Further development of the catchment may cause more frequent flood events with higher peak flows. This should be reflected in figure 7-16 [of the EA].
1		Waste water			It is noted that an aerated type waste water treatment facility is proposed. Recommends that the sewerage system be designed with appropriate infrastructure in such a way that it could be, in the future, connected back into the reticulated system.
1		Waste water			Areas that are likely to produce a trade waste (i.e wash bays) should be directed to a pre-treatment device before being discharged to the chosen sewerage treatment system.
1		Flora and fauna			Recommends a noxious weed management plan for the site due to the scale of development.
1		Flora and fauna			Experience in weed management along transport corridors is that the spread of noxious weeds through road and rail from other areas of Australia will occur. As such, there is a need for a rigorous monitoring and a proactive approach to ensure noxious weeds are eradicated as they occur.
2	Council (Prepared by private organisation)	Contributions	21/07/2006	Not clear	Council will require contributions for the upgrading of Brolgan and Condobolin Roads, which both provide access to the proposed Intermodal Terminal site, and will both need to accommodate the future development of the land.

No.	Submitter	Issue Category	Date Received	Position	Issues raised / Comments
2		Contributions			The Parkes Section 94 Contributions Plan will require Terminals Australia fund services and facilities so that existing residents of the Shire do not have to subsidise development.
2		Contributions			Believe that a Planning Agreement would provide the greatest certainty for securing contributions under the Part 3A process. Council are willing to enter into such an agreement, if Terminals Australia was agreeable, and made the formal offer.
2		Contributions			Would request that the Minister make Parkes Shire Council a party to a Planning Agreement to ensure the protection of Council's and the community's interests
2		Contributions			Believe that Section 94B would provide an alternative route for the imposition of a condition to require a contribution. A contribution under Section 94A would deliver a contribution of $1,500,000 which Council considers would be sufficient to cover the costs of the impacts of the development and Council would be happy to consider staging the payments.
3	Western Region Development Committee	Alterations to the Road Environment	21/07/2006	Concern	Level Crossing Delays - Submitter 3 considered the parameters proposed in the EA and questions the veracity of information used in assessing delay times. It is envisaged that the grade separation of all three public road-rail crossings noted in the EA will be required to reduce the impact of the development upon the road network to an acceptable level.
3					It was considered that the Hartigan Ave-Newell Highway intersections would be incapable of operating at an acceptable level under the proposed traffic generation. Traffic analysis of the intersection was not provided by the proponent, as requested in the response to the draft EA. Traffic data must include more than AADT data, turning movement and queue lengths, both existing and development generated, are essential for a meaningful traffic assessment. It is envisaged that in the short term (construction and possibly the initial stage) the key intersections will require coordinated signalisation and the level crossing widened to four lanes capable of accommodating heavy vehicle sweep paths. In the medium to long term (initial ti ultimate stage), it is thought that completion of Parkes Ring Road will be required to alleviate the traffic generation issues caused by this development.

No.	Submitter	Issue Category	Date Received	Position	Issues raised / Comments
3					The EA proposes that, as an interim option, southbound heavy vehicles could bypass the key intersections by utilising Blaxland Street level crossing. This intersection is in close proximity to a level crossing of the Main Western Line, and does not currently provide sufficient storage for a semi-trailer. Page 67 of the EA claims that the Parkes Local Traffic Committee recommended that the priority of this intersection be changed to give priority to Hartigan Ave traffic. Inspection of the minutes shows the Parkes Local Traffic Committee recommended the priority remains as is, with both the Police and RTA representatives strongly opposing a change in priority.
3					Consideration is required to be given to access for emergency response vehicles during the closure of level crossings.
4	Department of State and Regional Development	Strategic planning	19/07/2006	Support	The proposal is an important piece of infrastructure which will allow rail to play a more significant role in freight transport thus reducing trucks' role in interstate and national transport.
4		Strategic planning			Believe the Intermodal Terminal will play a key role in the solution of a range of logistics and distribution issues.
4		Strategic planning			Parkes is directly accessible by rail from Port Botany, allowing transport of goods to and from Port Botany by rail as well as providing efficiencies in shipping through reducing the number of docking ports in Australia.
4		Social			Understand that the project will create up to 800 new skilled and semi-skilled jobs in Parkes.
4		Traffic and transport			Understand that the project will have some local impacts, particularly on local traffic.
4		Traffic and transport			Believe the benefits to the broader community and State in facilitating a shift from road to rail transport would outweigh local impacts.
4		Traffic and transport			The proposal is consistent with both freight transport strategies and private sector trends.
5	Department of Planning	Strategic planning	07/07/2006	Support	The major advantage of the proposed Parkes Intermodal Terminal is its strategic location, which has existing rail access to the north, west and south, and offers two rail routes to Sydney.

No.	Submitter	Issue Category	Date Received	Position	Issues raised / Comments
5		Strategic planning			The concept plan offers further advantage to the rail network by constructing a Y-link between the Broken Hill and Narromine lines. The fact that the Australian Rail Track Corporation will consider a shared funding arrangement for the Y-link emphasises its strategic advantage.
5		Strategic planning			If the Commonwealth acts on its AusLink policy of providing an inland rail link between Melbourne and Brisbane, the site will be even better placed in the east coast logistics chain as both proposed inland north-south rail routes go through Parkes.
5		Strategic planning			Approval for a major freight facility in Parkes would advance the case for the Commonwealth to invest in an inland rail corridor. This has significant advantage for parts of inland NSW, taking considerable pressure off passenger and freight rail networks in the Greater Metropolitan by transferring through rail freight between Melbourne and Brisbane to west of the Dividing Range.
5		Traffic and transport			The proponents' commercial assumption is that 55% of inbound truck movements will transfer to rail for their outbound leg. If this development succeeds, NSW can reduce its investment in the rural road network over the next medium to longer term.
5		Traffic and transport			The facility would not increase traffic but rather re-organise existing freight. The majority of current truck movements occur along the Newell Highway. The Intermodal facility could induce some of the traffic on to rail.
5		Traffic and transport			The 2010 predictions of traffic on the haulage routes to and from the terminal are an average of 20 heavy vehicles in both directions per hour (48 in peak hour). The largest in crease by 2020, resulting in a total of 2,375 Average Annual Daily Traffic (AADT) on Brolgan Road east of the site, will still be within RTA two lane rural road criteria of 'free flow with low volumes with little or no delay' (Level of Service A).
5		Traffic and transport			Comforted that the proponent has committed the future operator, yet to be identified, to prepare detailed traffic impact statements as part of Development Applications for each facility proposed on the site.
5		Traffic and transport			The fact that Parkes Shire Council Traffic Committee has authorised road trains along roads situated in Parkes augurs well for the identification of suitable routes for road trains to access the Parkes Intermodal Terminal from Locations west of the Newell Highway.

No.	Submitter	Issue Category	Date Received	Position	Issues raised / Comments
5		Traffic and transport			The proposal could affect traffic across a number of level crossings although they do not present any problems that cannot be safely managed.
5		Traffic and transport			Level crossing affected by the proposal will be made wide enough for freight vehicles, have boom gates installed and advance warning where sight distances are shown to be compromised.
5		Traffic and transport			Pavements will be cross-hatched to discourage vehicles blocking the rail tracks. Queuing at Hartigan Avenue can be remedied by changing the priority at the intersection and installing turning lanes sufficient to accommodate freight vehicles.
5		Traffic and transport			Delays to road traffic caused by long trains shunting across level crossings when entering or departing the intermodal site could cause some temporary frustration amongst road suers or diversion to alternative routes.
5		Traffic and transport			The proposed interim ring road route for trucks via Saleyards Road increases road traffic across one additional existing level crossing compared to the current route via the Newell Highway. However, once the Parkes Ring Road southern link to the Newell Highway is constructed, the truck route then returns to a single level crossing upgraded to the highest level of protection. Even at the Ultimate development in 2020, with an inland rail route operating between Melbourne and Brisbane, this crossing will only see just over an average of one train per hour.
5		Traffic and transport			A new level crossing on Brolgan Road is proposed (and a new private level crossing within the complex in the Ultimate Stage). The policy of the NSW Level Crossings Strategy Council is that no new level crossings should be installed on public roads. However, there has been precedent where closure of an existing level crossing has allowed a new level crossing to be opened.
5		Traffic and transport			Final decisions on level crossings will rest with the responsible road and rail authorities: for Brolgan Road, these are Parkes Shire Council and the Australian Rail Track Corporation (member of the Level Crossings Strategy Council).
5		Traffic and transport			The Ultimate plan includes a grade separated crossing of the Narromine rail line by a new road link from Condobolin Road to the site. The proposed grade separation would not need to be built if land were available for this road link to remain west of the Narromine Line. The cost of the land is likely to be less than the cost of the grade separation.

No.	Submitter	Issue Category	Date Received	Position	Issues raised / Comments
5		Operational transport			Encourages the proponent and Parkes Shire Council to seek assistance from the Ministry of Transport's Regional Coordinator for the transportation of up to 600 employees to and from the Parkes Intermodal Terminal.
5		Property impacts			Seeks to clarify whether the easement through Lot 200 DP627302 will be fenced and whether it will allow for an internal 'accommodation' level crossing for stock and farm vehicles to access the dams?
5		Traffic and transport			Seeks to clarify whether the third explanatory dot point below the table on the second page of Appendix H of Appendix B, *Estimated Growth in Daily Train Frequency with the Proposed Intermodal Terminal*, should read: The number of train movements of the new level crossing on Brolgan Road to the west of the site would be **9** (not 2) during the initial stages and **12** (not 4) during the ultimate stage?
5		Concept plan			Both the private sector and Parkes Shire Council have been putting the necessary environmental, regulatory, financial and engineering building blocks in place for many years, which lends credibility to the concept plan.
5		Traffic and transport			The Environmental Assessment of the Parkes Intermodal Terminal is based on a number of traffic and freight assumptions that seem reasonable. The analysis demonstrates that impacts are either minimal or manageable. Sees no impediment to approving the concept plan for Parkes Intermodal Terminal.
6	Department of Environmental Conservation	Support	26/06/2006	Not clear	The DEC is able to support the proposal.
6		Licences			The activity does not constitute a "scheduled" activity under the Protection of the Environment Operations Act (1997) and as such, the proponent will not require an environment protection licence to operate the Intermodal Terminal.
6		Erosion and sediment control			The proponent should ensure that a high standard of sediment and erosion controls and general site management is adopted by the proponent, or any contractor engaged by the proponent, in accordance with the relevant guidelines.

No.	Submitter	Issue Category	Date Received	Position	Issues raised / Comments
6		Operational Noise			In order to ensure compliance with the DEC's Industrial Noise Policy, it is recommended that the proponent apply the management and mitigation measures outlined in the GHD Report "Noise Assessment, Proposed Intermodal Terminal, Parkes NSW" (Appendix C).
6		Flora and fauna			The DEC notes that the site will not have an impact on threatened species or ecological communities.
6		Indigenous Heritage			The DEC notes that the site will not have an impact on Aboriginal Cultural Heritage.
7	Individual Submission	Property Impacts	17/07/2006	Concern	Although not opposed to the proposal, concerned certain issues relating to the project will adversely affect Lot 3 DP 859593 – A site for which, development consent has been granted for the future construction of a dwelling house.
7		Construction Noise			Concerned that noise from heavy vehicles, hydraulic cranes, forklifts, and beeping reversing indicators during construction would adversely impact the rural amenity of my land.
7		Operational Noise			Concerned that noise from heavy vehicles, hydraulic cranes, forklifts, and beeping reversing indicators during operation would adversely impact the rural amenity of my land.
7		Construction noise			Requests advice from the developer as to how they propose to ensure that noise from construction activities will not adversely affect the rural amenity of my land.
		Operational Noise			Requests advice from the developer as to how they propose to ensure that noise from operational activities will not adversely affect the rural amenity of my land.
7		Operational Noise			Requests the Department of Planning appropriately condition any development consent granted to take into consideration and minimise the noise impacts of the terminal.
7		Operational Noise			Understand that the development is proposed with the objective of re-opening/re-constructing a rail line from Parkes to Brisbane, allowing freight to move from Brisbane to Parkes and beyond by rail. This will significantly increase noise by an unknown amount. An issue that does not appear to have been addressed by the developer.

No.	Submitter	Issue Category	Date Received	Position	Issues raised / Comments
7		Operational Noise			Requests to be advised in relation to what additional noise is projected should the line to Brisbane be complete, and what measures will be taken to ensure the current rural amenity of Lot 3 DP 859593 will not be affected.
7		Operational Noise			Notes that sound walls are used for new freeways and considers that such a solution would be effective if implemented along the rail corridor, or at least where trains will enter and leave the site, to prevent noise from affecting my land.
7		Visual impact			Requests that the Department of Planning appropriately condition any consent issued to the developer to ensure that lighting of the site and surrounding infrastructure (road and rail corridors) does not illuminate/lighten surrounding rural properties.
7		Visual Impacts			Questions the effectiveness of landscaping the boundary nearest the property and suggests that an earthen mound with landscaping would be more appropriate, and would also assist with control of noise leaving the site.
7		Visual impacts			Requests that the Department of Planning appropriately condition any consent issued to the developer to ensure that necessary works are carried out to ensure the visual rural amenity of my land is not affected.
7		Property Impacts			Requests consideration of the future erection of a private dwelling be taken in the final design of the Intermodal Terminal, with particular regard to noise, lighting and visual amenity.
8	Private Organisation	Property Impacts	14/07/2006	Concern	Owns the land to the south side of Brolgan Road, opposite the Intermodal terminal site, and have commenced development of a rail freight facility for SCT logistics on that location.
8		Property Impacts			Strongly interested in the proper planning of developments abutting, and in close proximity to our site.
8		Rail infrastructure			Recommend that any infrastructure built beside and over the Parkes/Narromine rail line not pose any restriction to preclude this line from being part of the future inland route between Melbourne and Brisbane.
8		Rail infrastructure			Suggest that location of the Terminals Australia siding connecting to the Parkes/Narromine rail line should be adequately set back to allow duplication and or emergency access along this rail corridor.

No.	Submitter	Issue Category	Date Received	Position	Issues raised / Comments
9	Individual Submission	Consultation	19/07/2006	Concern	Owns the property that borders the western side of the hub. Not against the proposal but disappointed in not being contacted by Parkes Shire Council or by the Department of Planning with regard to the Intermodal Terminal.
9		Property Impacts			Received notice that we have 300 acres of land that lies in the project's buffer zone, and have been told that if our dwelling house is destroyed, it may not be rebuilt in the same place.
9		Property Impacts			Have owned 1000 acres of land prior to the North Parkes Mines being commissioned, and at that time were approached in person and informed of what was to happen. Dust and noise monitors were also set up 2 months prior to the construction and operation of the mines.
9		Privacy			Have experienced issues with a former member of Parkes Shire Council giving permission for people involved with the hub to come onto our property without consulting us. Believe that as the owners of the property (Millers Lookout) we should have been contacted with regard to persons entering our property.
9		Construction Noise			Request a noise monitor be set up at our boundary.
9		Construction air quality			Request a dust monitor be set up at our boundary.
10	Individual Submission	Construction air quality	18/09/2006	Concern	Resides immediately north of the proposed development site and is concerned their property will be affected by dust from the terminal.
10		Noise (operational)			Resides immediately north of the proposed development site and is concerned their property will be affected by noise from the terminal.
10		Property impacts			Concerned that the necessity for an overpass at the Condobolin Road crossing will extend beyond the front boundary of their block.

Appendix B

Additional Traffic Information

CLIENTS | PEOPLE | PERFORMANCE

Terminals Australia

Parkes Intermodal Terminal - Concept Design

Additional Traffic Information

February 2007

INFRASTRUCTURE | MINING & INDUSTRY | DEFENCE | PROPERTY & BUILDINGS | ENVIRONMENT

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1. Introduction

1.1 Background

Terminals Australia is proposing to develop a greenfield site in Parkes for the purpose of providing a national road and rail intermodal hub.

GHD was engaged by Terminals Australia in 2005 to prepare an Engineering Masterplan for the proposed Parkes Intermodal Terminal (PIT). The resulting study produced a report known as the 'Design Brief for Road Traffic Infrastructure' and was used to broadly understand the road infrastructure requirements resulting from the operation of the proposed PIT. This report was later revised for the purpose of incorporating it into the Part 3A - Concept Design application. This revised document was submitted and formed part of the Environmental Assessment (EA). For the purpose of this revised report it is known as the *Traffic Assessment (GHD, June 2006)*.

The aim of the '*Traffic Assessment (GHD, June 2006)*' was to inform the EA. This was undertaken through identifying the key likely impacts associated with the development of the proposed PIT, as it was known at that time, and by presenting possible mitigation measures that would help to manage and minimise these potential effects.

The Engineering Masterplan together with the EA and supporting *Traffic Assessment (GHD, June 2006)* was exhibited in June 2006. A number of submissions have since been received in response to the public exhibition and its supporting documentation. This report has been prepared to provide responses to these comments.

Based on input received during a meeting with the NSW Department of Transport and key stakeholders (Monday 5th February 2007) the *Additional Traffic Information Report* was revised to a small degree and is re-issued here dated February 2007.

1.2 Study Purpose

This report constitutes an addendum to the *Traffic Assessment (GHD, June 2006)* and should be read in conjunction with that report.

The purpose of this report is to:

» Identify and respond to relevant comments received as part of submissions received during the public exhibition period relating to traffic and transport aspects of the project;

» Explain through the selection of a 'trigger point' criteria when it is essential to upgrade road infrastructure; and

» Identify national and regional benefits provide by the project and identify issues that will need to be addressed as part of the 'Auslink' transport corridor and regional planning strategies.

1.3 Approach

The following approach has been taken:

» Agree with the RTA and Council on acceptable performance measures for the identification of infrastructure upgrades;

» Understand existing situation and spare capacity;

» Verify likely traffic generation and distribution assumptions associated with the proposed development;

» Through an iterative process of traffic assessment, determine the traffic levels that would take-up spare capacity before 'triggering' the need to invest in the *network improvement scenario*;

» Work backwards from these traffic levels to determine the level of development that would give rise to the identified traffic generation; and

» Develop *network improvement scenarios.*

1.4 Report Structure

The rest of this document has been structured as follows:

Table 1 Document Structure

Section	Title	Comment
Section 1	Introduction	This Section
Section 2	Existing Conditions	Understanding the existing context.
Section 3	Trip Generation and Distribution Assumptions	Verify likely traffic generation and distribution assumptions.
Section 4	Assessment of Road Network with & without PIT	Determine future spare capacity on the network and identify what level of background traffic or PIT development would trigger improvements to the network.
Section 5	Assessment of Required Network Improvements	Develop network improvement scenarios based on the outcomes of Section 4.
Section 6	Key Findings and Recommendations	Key findings and the identification of future impacts, their association with the proposed PIT and recommended mitigating measures.

1.5 Comments Review

As outlined in Section 1.1, a number of submissions commenting on the public exhibition were received. Relevant comments pertaining to traffic and transport issues are addressed as part of this report.

The majority of comments relating to traffic and transport queries were contained within the Department of Planning review of the *Traffic Assessment (GHD, June 2006)*[1] (Samsa Report), and the Western Region Development Committee in their letter dated 17 July 2006. Separate responses to these two submissions were prepared and are attached in Appendix A.

This report has been prepared to provide further information, where required, to respond to these comments. A summary of the comments requiring further explanation and the relevant section of the report that addresses this matter is outlined in Table 2.

Table 2 Responses to Submissions Received During the EA Exhibition Period

	Comment	Response
Samsa Report	Westlime Road not included in analysis	The midblock assessment of Westlime Rd undertaken in Section 2.2.1 and was not considered to be a critical issue, however the operation of the Brolgan Rd and Westlime Rd intersection is more likely to be a concern and is addressed in Table 9, Table 19 and Table 25.
Samsa Report	Newell Highway at Hartigan Ave not included in analysis	This query is addressed in Table 8, Table 17 and Table 24.
Samsa Report	Road Safety not adequately addressed	A review of critical road safety issues and analysis of Crash Statistics is included in Section 2.3.
Samsa Report	Traffic generation and distribution methodology and assumptions need to be clarified	Section 3.2 Methodology and assumptions provide further explanation of the approach used for this assessment. In summary the approach used is associated with current travel patterns, expected future growth in freight movement by road and rail, and the sites known maximum potential throughput capability.
Samsa Report WRDC	Intersections on the road network were not assessed	Section 2.2.2 Intersections provides an assessment of critical intersections that could potential be impacted by the opening of the PIT. Refer to Table 9, Table 19 and Table 25 for further detail.
Samsa Report WRDC	Level Crossing Delays and Safety	Issues associated with safety are identified in Sections 2.1 and 2.3, these relate to identified on-site issues and crash statistics. Traffic impacts associated with the closure of level crossings (current and future) are identified in terms of time delays, queuing and potential time cost and presented in Sections 2.5.3, 4.2, 0 and 4.4.2.
Department of Planning	Level crossing delay	GHD supports the approach taken by the Department for level crossings and agrees that proposals infrastructure upgrades would manage these facilities satisfactorily, when considering their location, purpose and activity levels. Refer to Sections 1.7 and Appendix D.
Department of Planning	The concept facilitates mode shift to rail	Sections 1.6 & 1.7 provides an understanding of the national and local benefits from the implementation of this type of facility.

[1] Parkes Intermodal Terminal – Concept Design, Review of Road Transport Infrastructure Assessment, August 2006, Samsa Consulting

1.6 National Benefits

In broad terms, the Parkes Intermodal Terminal has the potential to lessen downstream impacts by encouraging a shift from road to rail and offering the opportunity to consolidate loads. This will tend to:

» Reduce heavy vehicle numbers on key roads, resulting in less wear and tear on pavements and reduced risk of crashes;

» Improve the efficiency of freight movement along the National transport network;

» Offer the ability to keep freight on rail or shifting freight from road to rail to then travel to its final destination;

» Reduce congestion in the vicinity of key transport hubs in the major cities.

» Aims to redirect and draw mostly from existing and predicted road freight movement, which would travel by road if such a facility were not established.

Issues relating to network capacity and impacts on local communities are acute around major transport hubs and ports in Australia. The impacts from significant volumes of freight moving through constrained networks in urban centres can be reduced by promoting a mode shift from road to rail at appropriately located intermodal terminals. This type of facility also complements the movement in logistics market and the emerging national transport strategy, by offering appropriate infrastructure along the National Transport Network that helps the economy and industry move towards reducing emissions and improve transport efficiency. It also complements the strategies and major projects currently being implemented at ports around Australia and by the shipping industry worldwide, which aims to reduce congestion in urban centres by shifting more freight on to rail and offer goods being exported access to the larger ships that stop at less ports.

The proposed Parkes Intermodal Terminal has been identified to offer the following national benefits (source - http://www.parkes.nsw.gov.au/planning/5677/5766.html) and is consistent with both State and Federal Government objectives:

» The Parkes Intermodal Terminal provides the best strategic location in Australia for rail freight reconfiguration and a multimodal site (refer to section 5.3, Part B, EA for Concept Approval, June 2006).

» The site currently provides good connectivity to the Transcontinental Railway linking Sydney, Adelaide and Perth. Parkes is the easternmost point on the east-west rail corridor that allows for high stacking of rail wagons and the assemblage of long trains.

» The facility offers readily accessible rail connections to Melbourne, Wollongong (Port Kembla), Sydney (Port of Botany), Newcastle (Port of Newcastle) and Brisbane as well as regional branch lines.

» It offers freight operators with the opportunity to breakdown trains, store freight and reconfigure assignments before continuing to the final destinations.

- Offers operational advantages as it can be used as a holding point for both freight and trains or as a point for redirect trains wanting to enter the Sydney network, due to rail bottlenecks and freight access windows restrictions.
- Offers operational advantages in that the proposed intermodal terminal has sufficient capacity to both breakdown and assemble trains up to 1800m in length (without engines) to meet the standards of the downstream railway.
- Unlike most terminals it offers significant timesaving advantages in that it can accommodate and load or unload train lengths of up to 1800m in length (without the engines) without shunting sections of the train or constant carriage safety checks;
- The Parkes Intermodal Terminal would assist both Federal and State Government's meet their targets for reducing greenhouse emissions and shifting more freight on to rail. The benefits are demonstrated as being, for example, rail uses just one third of the fuel of road transport per tonne of freight hauled. One freight train between Melbourne and Sydney replaces 150 semi-trailers and saves 45000 litres of fuel and 130 tonnes of green house gases compared with road haulage.
- The proposed Parkes Intermodal Terminal within the Parkes transport HUB has the ability to provide enormous improvements in ecological sustainability of the nations freight distribution task and assist Australia in meeting the 1997 Kyoto Protocol on greenhouse gas emission reductions.
- If the Commonwealth acts on its Auslink policy of providing an inland rail link between Melbourne and Brisbane, the site is well placed in the east-coast logistics chain.
- The Ernst and Young, "North-south Rail Corridor Study 2006" indicates that the proposed rail line could reduce rail journey times between the two capital cities from 35 hours to as few as 20.4 hours for an investment of $3.1 billion. A 20.4 hour transit time is below the 27 hour door-to-door time recognised as the driver for competition between road and rail. The intermodal terminal would assist the National Freight Task by offering an access opportunity to possibly two major rail corridors from a national road corridor.
- Meets the objectives set out in Auslink in that it offers Auslink Network advantages in terms of improvements in handling capacity and efficiency, safety and security, productivity on nationally strategic and export-oriented freight corridors, reliability and is delivered through the development of sustainable transport solutions.
- Offers operational advantages by constructing a new direct Y-link rail connection for rail traffic travelling between the Orange – Broken Hill railway and the Parkes – Narromine Railway.

Refer to submissions received during the EA public exhibition period from the Department of Planning (signed by the Acting Director, Freight Strategy and Planning) and Department of State and Regional Development (signed by the Director, Major Projects) for a further understanding of the regional and national benefits provided by the proposed Parkes Intermodal Terminal.

1.7 Local Impacts and Benefits

The proposed Parkes Intermodal Terminal will bring a range of local benefits and impacts to Parkes.

These benefits include:

» It will maintain Parkes' position as a hub of national and regional importance for freight and logistics and build upon existing demand generated by both the FCL and SCT intermodal facilities.

» Situated within an area zoned as for multi modal transport hub purposes;

» Redirect existing and future predicted freight carried by heavy vehicles on to rail;

» Reduce the impact on downstream local communities situated along main roads.

» Provide significant local employment.

Impacts include:

» Increases in heavy vehicle activity to the west of Parkes.

» Increases commuter traffic along the local road network to the west of Parkes Town Centre.

» Reduce the operating performance of intersections serving the Parkes Transport Hub under both initial and ultimate stages;

» Extend the time delays experienced at level crossings situated in close proximity to the proposed intermodal site.

» Could potentially restrict emergency vehicle access.

The aim of the intermodal freight terminal is not to induce road freight movement, but instead target existing and predicting freight growth, especially from the Newell Highway, by offering infrastructure that encourages a shift from road to rail and reduces traffic through consolidation and likely cost savings to the operator. The resulting reorganisation of road freight to the proposed terminal under the current road environment will result in additional traffic travelling on the local road network situated in Western Parkes. These roads are low trafficked environments (for both train and vehicles) with spare capacity, identified as designated truck routes and as the current access route to the Parkes Transport Hub. It is also acknowledged that a bypass for through traffic and grade separated level crossings, would provide significant local amenity, safety and operational benefits for the community of Parkes. However, it is difficult to associate this need based on the impacts from the proposed intermodal terminal. This development is located appropriately, in that it is situated in an area zoned for this use, the transport network has sufficient capacity and the proponent proposes to investment in local infrastructure that will provide performance/ congestion, safety and emission level benefits to the nation and state, and potentially on other areas of the local road network.

It is acknowledged, that level crossing points in the vicinity of the Parkes Transport Hub could be potentially impacted from the operation of the proposed development. However, these are placed in environments that only attract low levels of road and rail

traffic movements, are proposed to be safely managed with the highest form of protection and will be designed to accommodate the type of vehicles likely to require access. The major impact is likely to be through delay from slow moving trains entering and leaving the proposed facility. This would close roads for extended periods of time and can be managed by offering an alternative route. It is highly unlikely that both Brolgan Road and Condobolin Road will be closed at the same time from the PIT operations and thus one would be available to access the other if a new north south link road is constructed. It should also be acknowledged that the current rail network and existing or approved rail terminals in Parkes have a number of operational deficiencies, which could equally cause major delays across the local road network. In the case of the Parkes Goods Yard, this directly impacts on the Forbes Street level crossing, which is part of the National Transport Network with higher traffic levels and impacts than those presented by existing and new level crossings situated on Brolgan Road or Condobolin Road.

This document investigates ways in which the benefits to the national, regional and local economy and environment can be achieved while minimising the impacts at the local level.

2. Existing Conditions

The existing conditions relating to the site are outlined in Section 2 of the *Traffic Assessment (GHD, June 2006)*. This section expands on the information contained in Section 2 of the *Traffic Assessment (GHD, June 2006)*. A site location plan is shown in Figure 1 and identifies key road links associated with the proposed development.

Additional consultation with Parkes Shire Council (PSC) and the RTA has been undertaken since receiving the submissions in response to the public exhibition. Information contained from this meeting is presented in this section.

2.1 Current Deficiencies

The following section provides an understanding of existing road safety and network operational deficiencies that were identified during a site visit and consultation with the RTA and Parkes Shire Council.

Sealed Road Width, Alignment and Pavement Conditions

» Saleyards Rd route has not been designed to accommodate regular B double movement and has poor pavement conditions, narrow carriageways and a number of curves with low speed/ restricted radius situated between the following:
  – Federal St to Ackroyd St;
  – Rail level crossing and Blaxland St; and
  – On Ackroyd St between Saleyards Rd and the rail level crossing.

» The Brolgan Road route has not been designed to accommodate regular B double movement with poor pavement conditions, narrow carriageways and limited shoulder area.

» There are known locations of pavement failure along the Newell Highway in the PSC area, which are expected to be addressed under RTA's and Federal Government funded maintenance programmes.

Sight Distance Concerns

» At the intersection of Hartigan Avenue with Blaxland St, both the alignment and roadside embankments along the northern and western approaches restrict sight distances.

» The intersection of Brolgan Rd with Westlime Rd and Hartigan Ave is built on a crest (as a result of the positioning of new utility services), which restricts driver sight distances from all approaches except to the east.

» The alignment of approaches to the Salesyard Road level crossing offers restricted sight distances to rail movement and creates a risk to users under the current speed environment.

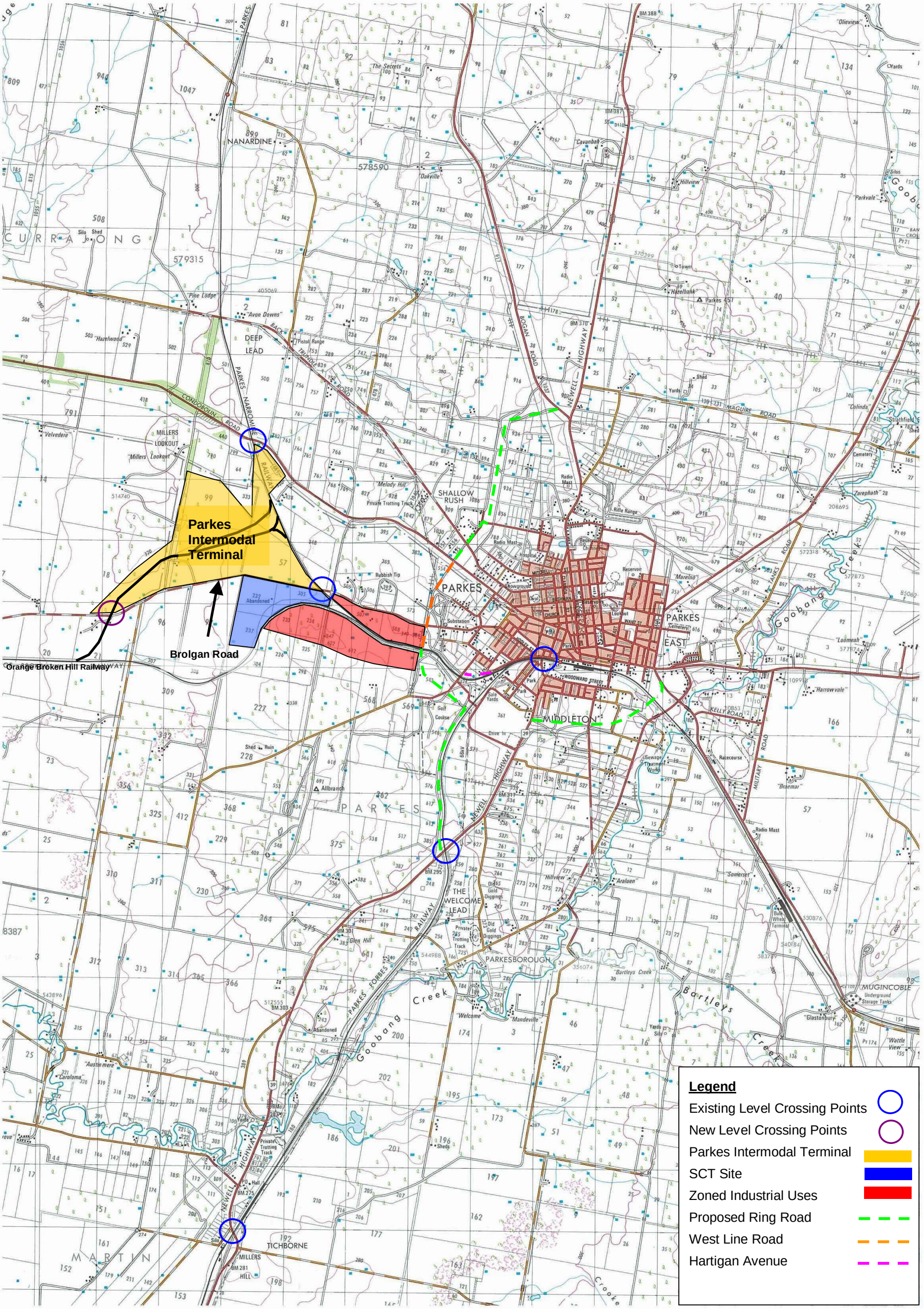


Figure 1 – Locality Plan

» The alignment of approaches to the Blaxland Street level crossing offers restricted sight distances.

Lighting

» The intersection of Brolgan Road, Hartigan Avenue and Westlime Road does not have street lighting.

Stacking Issues at Level Crossings (LX)

» The southern approach to the intersection of Blaxland Street and Hartigan Avenue has a limited stacking capacity between the Blaxland Street level crossing and Hartigan Avenue.

» The current configuration of the Saleyards Rd with Ackroyd Street priority controlled intersection and Salesyard Road level crossing provides limited stacking capacity.

Network Operations

» Hartigan Avenue has been approved as the main truck route to the Parkes Transport Hub and is currently not given priority at the following intersections:

  – Hartigan Avenue with Blaxland Street; or

  – Hartigan Avenue, Brolgan Road and Westlime Road.

» RTA have indicated that a recent assessment of the combined intersection and level crossing arrangement at Hartigan Avenue with the Newell Highway (Forbes Street) indicated that it was operating close to capacity during the peak periods.

» Site observations during the PM peak period indicated that there was minimal delay to traffic and short queues for right turn movements to and from Hartigan Avenue.

» Council has indicated that the current intersection arrangement of Saleyards Road and the Newell Highway is not to a standard that could accommodate significant increases in heavy vehicle traffic.

Emergency Access

» Delays caused by level crossing closures are a critical concern to the response travel times of emergency services. The closure of current crossings situated on Forbes Street (Newell Highway), the Newell Highway (south of Parkes), Blaxland Street, Salesyard Road, Brolgan Road and Condobolin Road can be critical for the success of the emergency team responding to the situation, if other alternatives are not available. The design of the existing road network in many situations does not offer a feasible alternative.

The above issues are taken into consideration in the identification of future issues in Section 4.2 and the assessment of required network improvements in Section 5.

2.2 Existing Traffic Flows

Existing traffic flows were previously sourced from both Parkes Council and the RTA and included in Section 2 of the *Traffic Assessment (GHD, June 2006)*. To respond to

comments made as a result of the public exhibition and to support the findings previously resented in the *Traffic Assessment (GHD, June 2006)*, additional mid block and intersection counts were carried out by PSC in September 2006. Analysis of this information is presented in the following section.

2.2.1 Mid Block

Mid block counts were undertaken on Hartigan Avenue and Salesyard Road in September 2006. Table 3 presents both new and previously sourced daily traffic flows and percentage heavy vehicle data for the road network in the vicinity of the site.

Table 3 Existing Traffic Flows

Rural/Urban	Road Name	Count Location	Traffic Volume (AADT or ADT)	% HGV
Urban	Hartigan Avenue	50m west of Forbes Street	3,743	6.1%
Urban	Hartigan Avenue	200m west of Blaxland Street	469	37%
Urban	Salesyard Road	50m west of the Newell Highway	694	9.7%
Urban	Salesyard Road	100m east of Blaxland Street	341	11%
Urban	Bogan Street (Newell Hwy)	North of Hartigan Avenue	5427	16%
Urban	Forbes Street (Newell Hwy)	South of Hartigan Avenue	9,865	16%
Urban	Dalton Street	West of Bogan Street	1943	5%
Rural	Brolgan Road	East of the site and west of the level crossing	188	9%
Rural	Condobolin Road	At level crossing, west of Parkes	1,036	13.1%
Rural	Newell Highway – north	Parkes, 3.2km north of Court St	5,337	32.7%
Rural	Newell Highway – south	At Forbes/Parkes boundary	5,620	26%
Rural	Orange Road	Parkes, at Billabong Ck bridge	2,031	16.1%
Rural	Wellington Road	Parkes, 8km north of SH17, Newell Hwy	408	11.1%
Rural	Eugowra Road	At Forbes/Parkes boundary	488	11.6%

Sources – AADT volumes for state roads have been taken from RTA Western Region traffic data 2002. ADT volumes for all other roads have been obtained from Parkes Shire Council supplied information.

Note - Traffic volumes have been factored up to 2005 traffic levels and include estimated per annum (pa) growth rates for background light traffic and a 3.6% pa increase in road freight (see Appendix F of the *Traffic Assessment (GHD, June 2006)*).

It should be noted that the midblock capacity of Westlime Road has not been analysed. This was deemed unnecessary after discussions with Council and on-site observations indicated that the road carried low traffic volumes. The *Traffic Assessment (GHD, June 2006)* indicated that the proposed PIT would only result in minor road movements to the west and therefore not affect midblock capacity on this road link.

The information presented in Table 3 indicates the following:

» The Newell Highway accommodates the main traffic flow through Parkes;

» The Forbes Street section of the Newell Highway accommodates the high traffic levels due to its combined function as a local and regional route for traffic travelling across the Orange - Broken Hill railway.

» Hartigan Avenue 50m west of Forbes Street carries a high proportion of light traffic, which is transferred onto other local roads east of Goobang Junction.

» The rural sections of the Newell Highway carry a high proportion of heavy vehicle traffic (26% to 33%), which reflects its function as a National Highway carrying intrastate road freight between Brisbane and Melbourne.

2.2.2 Intersections

To obtain a better understanding of existing intersection operation, classified intersection turning counts were undertaken. These intersections counts were carried out during the identified AM (0700 – 0900) and PM (1600 – 1800) peak periods in September 2006. The intersection counts were undertaken at the following locations:

» Brolgan Road / Hartigan Avenue / Westlime Road;

» Hooley Ave / Hartigan Avenue;

» Blaxland Road / Hartigan Avenue; and

» Newell Highway / Salesyard Road

Recent intersection counts (December 2005) were also obtained from the RTA for similar peak periods at the following locations:

» Newell Highway / Hartigan Avenue / Grenfell Street; and

» Newell Highway / Hartigan Avenue / Bogan Street

These intersection counts will be used to understand the current and future performance of intersections as presented in Sections 2.5.2, 0 and 4.4.2. The criteria for performance and trigger points for upgrading intersections are outlined in Sections 2.4.2 and 4.1 respectively.

2.3 Crash Statistics

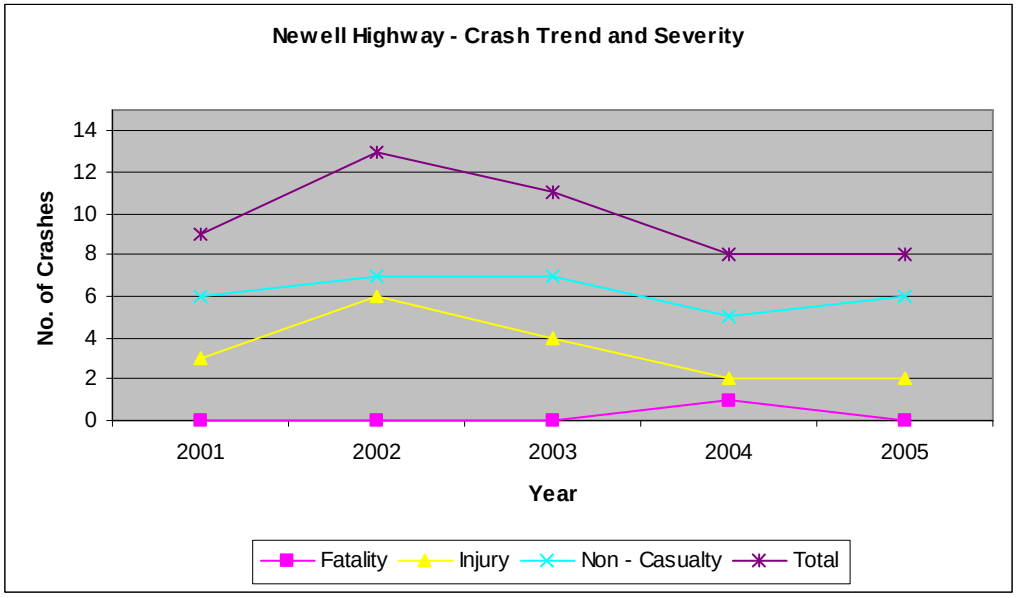
Crash data for the Newell Highway and Main Road 61 (Condobolin Road and Orange Road) in Parkes was obtained from the RTA for a 5-year period between 2001 and 2005. In order to identify any local road deficiencies, crash data for all relevant routes including Brolgan Road was also obtained for the period between 1992 and 2006.

The location and severity of crashes recorded on the Newell Highway and MR61 are presented on maps in **Appendix B**[2]. These maps cover a 5 year period from 2001 to 2005 and a 5km radius area of Parkes. The data maps also include crashes along relevant section of the local road network in Parkes for a 15 year period from 1992 to 2006.

2.3.1 Newell Highway

The number and severity of crashes recorded over the latest 5-year period along a 5km section of Newell Highway is shown in Chart 1.

Chart 1 Newell Highway: Crash Trends and Severity



Source – RTA Western Region Crash data (2001 – 2005)

Key Findings – Newell Highway

The key finding from the analysis of the crash statistics for the Newell Highway are summarised below:

» In total, 49 crashes were recorded on the Newell Highway during this period.

» 1 (2%) crash was classified as fatal, 17 (35%) of crashes resulted in an injury and 31 (63%)resulted in property damage. The number of injury crashes peaked at 6 in

[2] Source: RTA Western Region

2002 and fell to 2 in 2005. The number of non casualty crashes has remained relatively stable over the 5 year period

» The fatal crash occurred on the Newell Highway 50m south of Webb Street. The crash occurred on a Saturday night / Sunday morning just after midnight and was caused by the car leaving the carriageway and colliding with a utility pole.

» Over the 5 year analysis period 7 (14%) crashes involved a heavy vehicle. Heavy vehicles represent 16% of the traffic mix on Newell Highway along town centre sections and 33% along rural sections to the north of town. Only 1 of crashes involving a heavy vehicle resulted in an injury and involved a pedestrian.

» The majority of crashes occurred during daylight hours (78%) and dry weather conditions and there does not appear to be a strong relationship between peak traffic volumes and crashes (20%).

Historical traffic data supplied by the RTA Western Region and information contained in the BTRE Working Paper 66, indicates that heavy vehicle traffic is likely to increase significantly on the Newell Highway. However, despite growth in traffic volumes the total number of crashes on the Newell Highway fell from a high of 13 crashes in 2001 to 8 crashes in 2005. This fall in the number of crash is consistent with the implementation of a lower urban travel speed in Parkes, which is identified as a high contributor to crashes in Parkes[3].

A number of crash clusters were identified from the RTA Crash Mapping and data supplied for the Newell Highway and is summarised below.

» 8 crashes occurred along Newell Highway south of Hartigan Avenue between Baker Street and Woodward Street during the 5-year period. The primary cause of these crashes was rear end collisions in a northbound direction. 1 crash involved a heavy vehicle and one involved a pedestrian. The RTA have recognised that northbound rear end collisions along this length of road is an issue and are currently considering appropriate treatments for preventing cross highway movements around Middelton.

» 6 crashes occurred at Newell Highway / Hartigan Avenue intersection over the 5 year period. All crashes were classified as non-casualty and the cause was identified to be cross traffic movement not involving heavy vehicles.

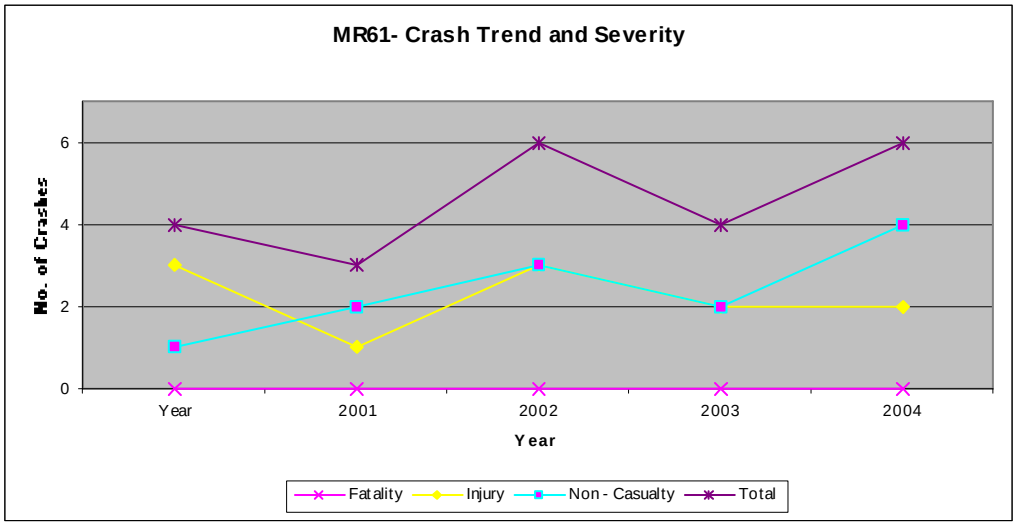
A site inspection of the Hartigan Avenue with Newell Highway intersection in September 2006, highlighted that this intersection arrangements was unusual (Newell Highway is part of the National Highway system) and combined with worn linemarking and unclear regulatory signage made it difficult to understand who had priority. It was also noted that no advanced warning or guidance signs was provided at or before the intersection. The dominant movement through the intersection is north south, a high number of trucks undertake this movement and are currently forced to travel via an unusual staggered intersection arrangement in order to cross the Orange-Broken Hill railway.

[3] Road Safety Action Plan for Parkes, Forbes and Lachlan Shire Councils, Page 10.

2.3.2 Main Road 61

The number and severity of crashes on Main Road (MR) 61 (includes both Condobolin Road and Orange Road) over the 5 year period is shown in Chart 2.

Chart 2 Main Road 61: Crash Trends and Severity



Key Findings – MR61

The key finding from the analysis of the crash statistics for MR61 are is summarised below:

» 23 crashes were recorded on MR61 during the 5 year period.

» No crashes were classified as fatal, 11 (48%) crashes resulted in an injury and 12 (52%) resulted in property damage.

» The number of injury type crashes peaked at 3 in 2003 and fell to 2 in 2004/2005.

» The number of non casualty crashes peaked at 4 in 2005.

» Over the 5-year period analysed only 1 (4%) crash involved a heavy vehicle and resulted in a non-casualty. Heavy vehicles represent 13% of the traffic mix on Condobolin Road and 16% on Orange Road.

» Pedestrians were involved in 2 (9%) crashes. These crashes occurred in an area with no traffic control and both crashes resulted in injury.

» The majority of crashes occurred during daylight hours (61%) and dry weather conditions and there appears to be a relationship between peak traffic volumes and crashes (34%).

Historical data provided by the RTA Western Region indicated that the volume of traffic together with the proportion of heavy vehicles increases annually on MR61. During the 5-year period the number of crashes on the MR61 ranged between 4 and 6 crashes per year and had no distinct pattern.

Only 1 crash cluster was identified from the RTA Crash Mapping and data supplied for the MR 61. This occurred at the intersection of Clarinda Street with East Street

Intersection and involved 5 crashes. 3 of the crashes involved an injury with the other 2 being non-casualty type crashes. 2 of the crashes were attributed to vehicles *emerging from a driveway*, another 2 from *side swipe* in the same direction and the other involved a *pedestrian*. None of the crashes involved a heavy vehicle.

2.3.3 Local Roads

The location of crashes on local roads in Parkes was obtained for the period between 1992 and 2006. The information presented the following:

» In the vicinity of the proposed site during a 14-year period only 3 crashes all involving an injury were recorded on Brolgan Road west of Westlime Road. None of these 3 crashes involved a heavy vehicle.

» 1 crash involving an injury was recorded on Salesyard Road at the level crossing. This crash involved a single light vehicle, resulted in an injury and occurred in the early hours of a Sunday morning.

2.3.4 Summary

It is apparent from the analysis of regional road network crash data that heavy vehicles make up a relatively low number of recorded crashes and currently have little or no relationship with peak hour movements.

The dual intersection arrangement of Hartigan Avenue with Forbes Street and Bogan Street is highlighted to be a road safety concern. This dual intersection is identified to be a focal point for traffic and pedestrian activity in Parkes, recorded a number of crashes during the period analysed, has poor delineation and signing, and an unusual intersection configuration linked with a level crossing and high north south truck movement activity. Due to its importance in the local and national road networks, this intersection requires improvements to its current traffic management arrangements.

Overall, there appears to be no apparent safety issues associated with local roads in Parkes, which includes Hartigan Avenue, Salesyard Road and Brolgan Road.

2.4 Road Performance Criteria

Road performance criteria of rural and urban mid block road sections are outlined in Section 2.3 and 2.4 of the *Traffic Assessment (GHD, June 2006)*. This section provides further clarification of the road performance criteria used for midblock (rural and urban) and states the criteria to be used for the intersection analysis. The road performance criteria outlined in this section are used to determine trigger points outlined in Section 4.1.

The performance criteria are based on Level of Service (LOS), which is a qualitative measure describing the operational conditions within a traffic stream. This performance measure takes into consideration the perception of motorists and/or passengers and is typically based on typical volume/capacity (V/C) ratio. The characteristic conditions for each level of service can be graded on several measures from level of service A (good) to level of service F (unsatisfactory).

2.4.1 Midblock

As presented in section 2.2.1 midblock assessment is separated into urban and rural road sections, each type has a different performance criteria.

Mid block Rural Road Sections

A criteria for evaluating the operational performance of mid block rural road sections is provided in the Austroads - Guide to Traffic Engineering Practice: Part 2 –Roadway Capacity, section 3.4.

The performance criteria outlined in the Table 4 below will be used to evaluate traffic conditions on all rural road in the vicinity of the development.

Table 4 Level of Service Criteria for Two Lane Two-Way Rural Roads

Level of Service	Description	Maximum AADT
A	Free flow with low volumes with little or no delay	2,400
B	Stable flow with minimum delays and spare capacity	4,800
C	Stable conditions with spare capacity	7,900
D	Close to the limit of stable flow, operating near capacity	13,500
E	At capacity with high delays for motorists	22,900
F	Forced flow capacity exceeded unsatisfactory operating conditions	>22,900

Source: Austroads Part 2 (Table 3.9): assuming two lane two-way road, level terrain, K factor = 0.10, a total traffic heavy vehicle mix of 18% and 60/40 directional split

For rural mid block sections, a road performing at a LOS D is typically used as the trigger point at which further investigation or an upgrade is required. Therefore, for rural roads an AADT of 7,900 will be used as the trigger point for rural mid block sections.

Mid block Urban Road Sections

The mid block capacities presented in Table 5, will be used to evaluate traffic conditions on urban road sections within Parkes and the likely impact from traffic generated by the proposed development.

Table 5 Urban Road Peak Hour Flows per direction

Level of Service	One Lane (veh/hr)	Two Lanes (veh/hr)
A	200	900
B	380	1400
C	600	1800
D	900	2200
E	1400	2800

Source: RTA Guide to Traffic Generating Developments, Version 2.2, October 2002

The desirable maximum operating capacity of an urban traffic lane is stated in the RTA Guide to Traffic Generating Developments as being a volume of 900 veh/hr/lane during the peak hour. This equates to an urban mid block road section performing at the end of a LOS D and is typically used as the trigger point at which further investigation or an upgrade is required for an urban road. Roads that are urban in character, which will be evaluated as part of this assessment include Hartigan Avenue, Salesyard Road, Bogan Street and Dalton Street.

2.4.2 Intersections

The performance of the existing road network, especially in urban areas, is largely dependent on the operating performance of key intersections, which as critical capacity control points on the network. The capacity of a road network is generally governed by the operation of its intersections. It is therefore appropriate to consider intersection operation as a measure of capacity on the urban road network in Parkes.

The criteria for evaluating the operational performance of intersections is provided by the *RTA Guidelines to Traffic Generating Developments* and reproduced in Table 6. The criteria for evaluating the operational performance of intersections is based on a qualitative measure (i.e. level of service), which is applied to each average delay, per vehicle band.

Table 6 Performance Criteria at 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
D	43 to 56	Operating near capacity	Near capacity and other accident study required
E	57 to 70	At capacity; at signals incidents would cause excessive delays	At capacity and requires other control mode
F	Greater than 70	Roundabouts require other control mode	

The intersection analysis software aaSIDRA will be used to analyse key intersection in the area. Outputs from the aaSIDRA analysis will provide level of service, average delay and degree of saturation for each intersections, which will be used to identify operational deficiencies with or without the proposed development. Similar to the midblock analysis, a Level of Service D is typically used as a measure or trigger point for further investigation or the upgrading intersections and will be used as the trigger point measurement. The maximum average delay before LOS D is reached is 42 seconds and will be used at estimate available spare capacity at the intersections.

2.4.3 Level Crossings

There are currently no criteria for determining an acceptable operating conditions for a level crossing. It is understood that the policy or approach adopted (from 58 recommendations) by members of the Level Crossing Strategy Council (consisting of ARTC, RailCorp, RTA and Shire Councils) is that all new road-rail crossings should be grade separated (recommendation 22). This, combined with a policy for the closure of existing level crossings (recommendation 23), were possible. Both recommendations, are known to have some flexibility when it can be proven that larger benefits can be obtained from redirecting funding towards other more critical level crossing infrastructure projects.

The approval authority that assesses the merits and risks associated with each crossing is the Level Crossing Safety Committee, which are made up of members of both the rail and road authorities. Together these authorities are responsible for undertaking the risk assessment at level crossings.

In the project meeting held with RTA and Council in September 2006, GHD indicated that the preferred approach was to measure delay and queue length at the crossings. This approach was included in GHD memo dated 23/08 and will be used to measure

and understand impacts. These measurements will also be used to compare the findings with situations at other nearby level crossings.

2.5 Existing Road Performance

The following section provides an understanding of midblock (rural and urban road sections) and intersection operations under existing conditions.

2.5.1 Midblock Performance

The midblock performance of urban and rural road sections of the relevant section of Parkes road network is presented below.

Midblock Performance - Rural Roads

Table 7 presents the existing performance levels of rural road routes through the Local Government Area of Parkes. The analysis is based on traffic volumes provided by the RTA and Council and evaluated against the LOS criteria provided in Table 4.

Table 7 Existing Rural Road Performance

Rural/Urban	Road Name	Count Location	Traffic Volume (AADT or ADT)	Level of Service (LOS)
Rural	Brolgan Road	East of the site and west of the level crossing	188	A
Rural	Condobolin Road	At level crossing, west of Parkes	1036	A
Rural	Newell Highway – north	Parkes, 3.2km north of Court St	5337	C
Rural	Newell Highway – south	At Forbes/Parkes boundary	5620	C
Rural	Orange Road	Parkes, at Billabong Ck bridge	2031	A
Rural	Wellington Road	Parkes, 8km north of SH17, Newell Hwy	408	A
Rural	Eugowra Road	At Forbes/Parkes boundary	488	A

Midblock Performance - Urban Roads

Table 8 presents the existing performance levels of urban road routes in the Local Government Area of Parkes. The analysis is based on traffic volumes provided by the RTA and Council and evaluated against the LOS criteria provided in Table 5.

Table 8 Existing Urban Road Performance

Road Name		Traffic Volume (AADT or ADT)	Hourly Traffic Flow per lane	V/C Ratio	Level of Service (LOS)
Hartigan Avenue	50m west of Forbes Street	3,743	225	0.22	B
Hartigan Avenue	200m west of Blaxland Street	469	28	0.03	A
Salesyard Road	50m west of the Newell Highway	694	42	0.04	A
Salesyard Road	100m east of Blaxland Street	341	20	0.02	A
Bogan Street (Newell Hwy)	North of Hartigan Avenue	5427	326	0.33	B
Forbes St. (Newell Hwy)	South of Hartigan Avenue	9,865	592	0.59	C
Dalton Street	West of Bogan Street	1943	117	0.12	A

Note: Hourly traffic flows are assumed to be 10% of AADT/ADT with a 60:40.

Generally, a road with an operating performance (Level of Service) of A or B is desirable and a Level of Service of C is viewed to be acceptable. Using this evaluation criteria, it appears that both urban and rural road sections, which could potentially be impact by traffic from the proposed development are operating satisfactorily and don't require upgrading in the short term.

2.5.2 Intersection Performance

The aaSIDRA[4] traffic model has been used to assess the existing peak hour operating performance of the following intersections:

» Brolgan Road / Hartigan Avenue / Westlime Road;

» Hooley Ave / Hartigan Avenue;

» Blaxland Road / Hartigan Avenue;

» Newell Highway / Salesyard Road;

» Hartigan Ave / Newell Hwy / Grenfell St; and

» Bogan Street / Hartigan Ave / Newell Hwy.

[4] aaSIDRA2.0 – Computer modelling package which analyses the operation of intersections controlled by traffic signals, priority signs and roundabouts.

Refer to Section 2.4.2 for a further understanding of the performance criteria used in this assessment. The performance of the above intersections during the morning and evening peak periods is presented in Table 9.

Table 9 Existing Intersection Performance - Year 2006

Intersection	Peak Period	Average Delay (sec) (a)	Level of Service (b)	Degree of Saturation (c)	Spare Capacity (Base on 42 Sec)
Brolgan Rd/ Hartigan Ave/ Westlime Rd	AM	10.6	A	0.017	31.4
	PM	10.7	A	0.030	31.3
Hooley Ave / Hartigan Ave	AM	7.0	A	0.108	35.0
	PM	7.1	A	0.115	34.9
Blaxland Rd/ Hartigan Ave	AM	9.0	A	0.036	33.0
	PM	7.1	A	0.026	34.9
Newell Hwy / Salesyard Rd	AM	12.5	A	0.110	29.5
	PM	13.8	A	0.110	28.2
Hartigan Ave /Newell Hwy /Grenfell St	AM	24.8	B	0.645	17.2
	PM	26.8	B	0.714	15.2
Bogan St/ Hartigan Ave/ Newell Hwy	AM	9.1	A	0.357	32.9
	PM	11.7	B	0.448	30.3

Similar to the performance criteria used for road sections, an intersection with an operating performance (Level of Service) of A or B is desirable and a Level of Service of C is viewed to be acceptable. Using the evaluation criteria provided in the previous section, it appears that all intersections, which could be potentially impacted by traffic from the proposed development are operating satisfactorily and don't require upgrading in the short term.

It is also noted that the Hartigan Avenue with Forbes Street intersection has the lowest amount of spare capacity of all intersections modelled. The modelling undertaken for the Forbes Street and Blaxland Street intersections have not included the impact from the closure of the level crossing, as this occurs infrequently during a typical day. An observed reduction in travel speed when travelling over the crossings was accounted for in the modelling.

2.5.3 Level Crossings

The data sources required to estimate the impact at level crossings are the length of the train, train speeds, frequency per hour and traffic volume. It is noted from Appendix H of the *Traffic Assessment (GHD, June 2006)* that daily train movements along all rail lines in Parkes are currently low and not predicted to increase significantly

in the future. Based on this knowledge and the fact that train timeslots (timetabled travel paths) are spread out throughout the day, it was assumed reasonable for the purpose of this evaluation that a train frequency of 1 movement in the peak hour would occur with or without the development.

Train Speeds

The maximum speed limits along various rail lines running in close proximity to the proposed development are present in Table 10. Based on discussions with the rail operator and information obtained during on-site observations regarding train speeds over level crossings in Parkes, it is apparent that freight trains are unlikely to achieve the maximum permitted travel speed. Subsequent discussions with the rail operator have indicated that the freight train travel speeds are more likely to be lower and could have a range depending on there load, destination, stopping patterns and start position.

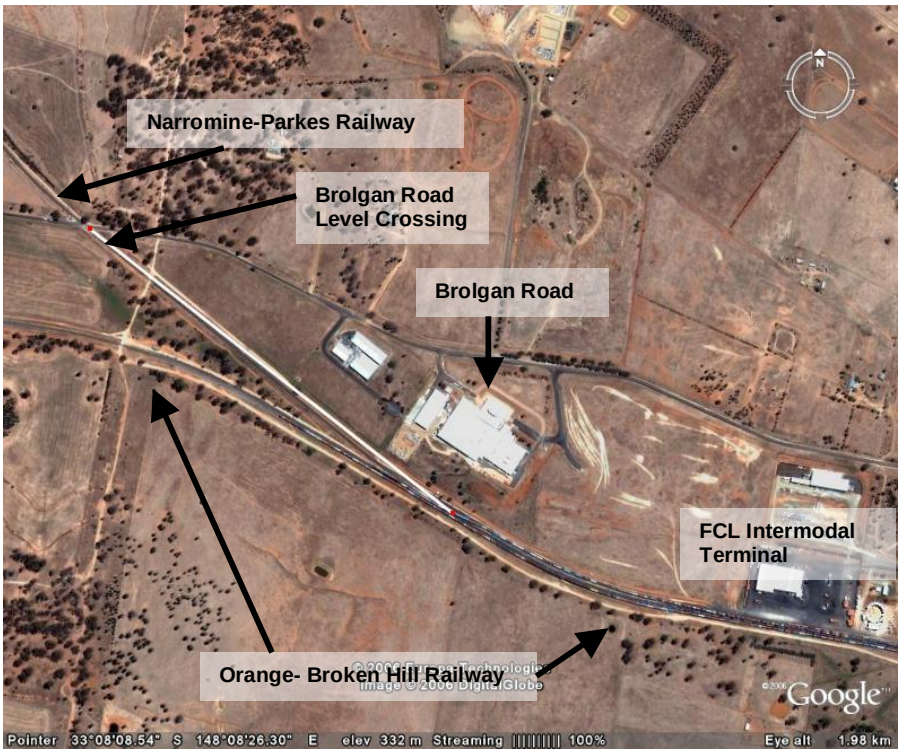
The Photograph 1, Photograph 2 and Photograph 3 provide an understanding of existing operating conditions along the Orange-Broken Hill Railway.

Photograph 1 Forbes St Level Crossing and Parkes Goods Yards

Sources – Google Earth (www.earth.google.com)

Photograph 2 FCL Intermodal Terminal & the Blaxland St Level Crossing

Photograph 3 Parkes-Narromine & Orange-Broken Hill Rail Connection



Source – Google Earth (www.earth.google.com)

In the case of the level crossings at Forbes Street, Blaxland Street and Brolgan Road, freight train speed are impacted by the existing rail freight operations at the FCL intermodal terminal, Parkes Goods Yards or rail line access deficiencies.

The rail access deficiencies are associated with there being no direct connection for trains travelling eastbound on the Orange-Broken Hill Railway and the Parkes-Narromine Rail Line. Trains wanting to travel from west to north or north to west are forced to stop and change direction and will therefore travel over surrounding level crossings, such as the Blaxland Road level crossing, at very low travel speed. This movement could be required by trains from either the SCT or FCL sites wanting to travel north, via the Parkes-Narromine rail line.

These low freight train speeds are a worst-case scenario for delays at level crossings and the train length will vary depending on its origin and destination and stopping patterns. Slow travel speeds from trains entering and leaving the existing FCL and Parkes Goods Yard rail terminals may also cause extended delays at nearby level crossings.

Table 10 provides an understanding of maximum train speeds and a range of likely rail freight speeds across level crossing points in Parkes.

Table 10 Freight Train Speeds at Level Crossings

Name of Railway	Level Crossing Location	Maximum Rail Line Speed	Expected Freight Train Speed
Parkes Forbes Railway	Newell Highway 3km south of Parkes	110km/h	80 – 100km/
	Saleyards Rd West		50 – 70km/h
Orange Broken Hill Railway	Forbes St (Newell Highway)	110km/h	10 – 50km/h
	Blaxland St near Hartigan Ave		10 – 70km/h
Parkes Narromine Railway	Existing Brolgan Rd east of site	110km/h	30 – 80km/h
	Existing Condobolin Rd west of site		60 – 80km/h

In order to understand the current impacts from freight train operations at level crossings situated in Parkes the lowest expected freight train speed is used to estimate queuing and delay.

Train lengths

The current restrictions on train lengths along the rail network is understood to be as follows:

» Along the Parkes Narromine Railway to the north of the site, train lengths are restricted at the Merrygoen Junction to 630m.

» Along the Orange - Broken Hill Railway to the west of the site, train lengths are unrestricted.

» Along the Parkes - Forbes or Orange - Broken Hill Railways to the south or east of the site, train lengths are restricted at the Goobang Junction to 900m.

Impact Analysis

The results contained in Table 11 are based on the above train speed, frequency and length inputs, and the traffic volumes presented in Section 2.2.1.

Table 11 Current Peak Hour Impact to Road Traffic at Level Crossings

Level Crossing	Rail Line	Max Train Length	Min Speed (kph)	Vehicle Delay (min:sec)	Queue Length (Vehicles)	Cost of Delay ($)[5]
Existing Brolgan Rd east of the site	Parkes Narromine	630	30	2:02	1	$8.13
Existing Condobolin Rd west of the site	Parkes Narromine	900	80	1:06	2	$24.79
Newell Highway 3km south of Parkes	Parkes Forbes	900	80	1:05	10	$139.72
Forbes St (Newell Highway)	Parkes Forbes	900	10	7:23	121	$1,609.74
Blaxland St near Hartigan Ave	Orange Broken Hill	900	10	7:23	9	$108:90
Salesyard Rd near Ackroyd St	Parkes Forbes	630	60	1:37	1	$11.82

Assumptions used for the above calculation are as follows:

» The upstream crossing point for trains to activate a level crossing is 300m.

» The level crossing will keep open for an additional 10 seconds after the train crosses.

» Peak hour time value is $10.15 /person hour for private vehicles and $19.12/ per vehicle hour for road freight.

» Occupancy rate for light vehicles is 1.2 persons/vehicle.

The results presented in Table 11 indicate the following:

» The current average delay at level crossings situated in Parkes, except for the level crossing on Forbes Street or Blaxland Street, is between 1 and 2 minutes.

» The longest delays are currently experienced at both the Forbes Street and Blaxland Street level crossings with a delay of approximately 7 minutes and 30 seconds.

» The volume of traffic impacted by the closure of the level crossings is significantly higher for those situated on the Newell Highway with between 10 and 121 vehicles

[5] Value of Time, RTA Economic Analysis Manual, Version 2, 1999. Table 9.

expected to queue (includes traffic queued in both directions) under the worst case scenario.

» The value of travel time costs associated with the closure of the level crossing during the peak period is significant higher for the Forbes Street level crossing (Newell Highway) in comparison with all other relevant level crossings analysed in Parkes.

3. Trip Generation and Distribution Assumptions

The *Traffic Assessment (GHD, June 2006)* included an estimated trip generation rate and distribution characteristic for traffic from the proposed PIT under both the interim and ultimate development stages. This section summarises and provides further clarification on the trip generation rates and distribution assumptions outlined in the previous *Traffic Assessment (GHD, June 2006)*.

3.1 General Overview

The *Traffic Assessment (GHD, June 2006)* concluded that the trip generation rates identified in the *RTA Guide to Traffic Generating Guidelines* were unrealistic. This was concluded and based on the following principles:

» Surveyed data contained in the RTA Guideline did not including potential traffic generation rates for an intermodal terminal with rail and road connections;

» Surveyed data contained in the RTA Guideline did not including potential traffic generation rates for warehousing or cargo storage that are associated with the operation of an intermodal terminal with both rail and road connections;

» Surveyed data contained in the RTA Guideline does not provide an accurate representation of traffic generation rates for land uses situated in country towns or rural environments.

» The surveyed data does not account for land costs being low and not acting as a constraint to size and operations on the site, there being a limited skilled labour force in the catchment area, or there being a limited local market for the products. The development instead is likely to concentration on servicing regional and national freight throughput.

» The traffic prediction technique used under the RTA Guideline has no relationship with the targeted maximum market potential envisaged by Terminals Australia for the proposed Parkes Intermodal Terminal.

Based on these principles it was deemed more appropriate for the purpose of this assessment to estimate the traffic generating potential based on the proposed development's maximum target market potential throughput (worst case scenario). The method for calculating this is discussed below.

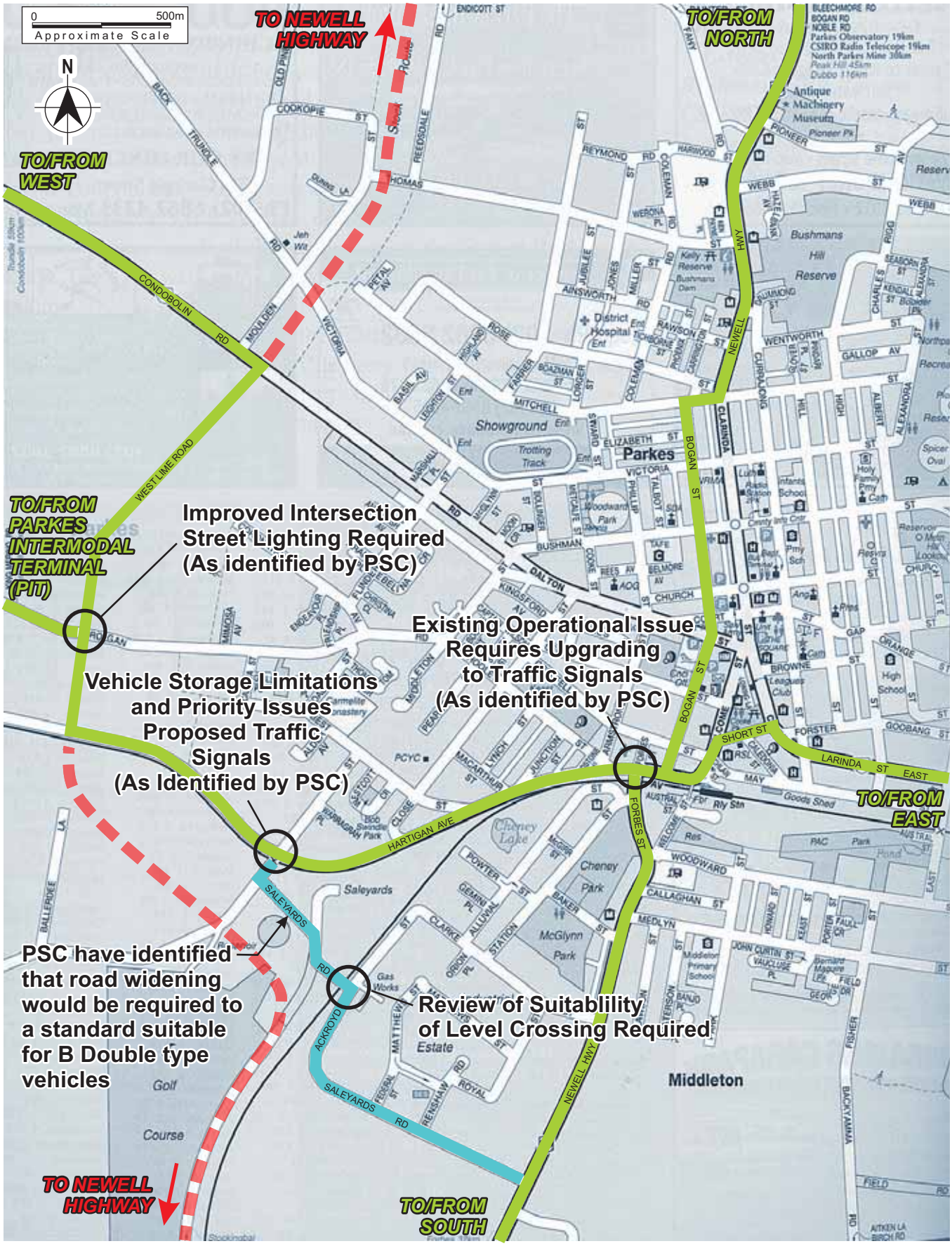
3.2 Methodology and assumptions

The assumptions used to calculate traffic demand and distribution for this proposed facility are identified below:

» The potential (existing and future) heavy vehicle capture assumption was identified as part of the May 2005 'Parkes Intermodal Terminal - Operational and Functional Brief' for the PIT. Refer to section 1.2 of the *Traffic Assessment (GHD, June 2006)* for reference to this document.

- The heavy vehicle distribution patterns are similar to that currently experienced along the regional road network.
- The distribution of heavy vehicles along the local road network will travel via the designated truck routes, as identified in Figure 2 (included as Figure 6 in the *Traffic Assessment (GHD, June 2006))* and agreed with Council.
- The high capture rate identified in Tables 27 and 28 of the *Traffic Assessment (GHD, June 2006)* is the highest possible TEU capture target that the PIT can achieve (representing the worst case scenario). This assessment assumes that the PIT under these circumstances would generate additional heavy vehicle movements, as well as, capturing existing and predicted road freight travelling along the main road network (Refer to *'Parkes Intermodal Terminal Operational & Functional Brief to Terminals Australia (GHD: May 2005)* for an understanding of the maximum target capture rates).
- Additional heavy vehicle movements are identified in the 'Operational and Functional Brief' to represent a further 50% of that actually predicted to be absorbed from capturing heavy vehicle traffic travelling along the regional main road network. Thus, Table 23 of the *Traffic Assessment (GHD, June 2006)* indicates that the PIT would generate 1,110 heavy vehicle movements per day, of this, 370 would be new heavy vehicle movements along the regional road network and 740 heavy vehicle movements would be drawn from future predicted heavy vehicle movements.
- It should be acknowledged that the traffic captured from the regional main road network would travel along these routes with or without the established of the PIT.
- The above assumption only relates to traffic travelling along the regional road network. It should also be noted that all heavy vehicle traffic associated with the PIT that travel on the local road network is new traffic, once it has been redirected from the regional road network.
- All light vehicle generated by staff movements is new traffic.
- The warehouse heavy vehicle traffic generation is based on the TEU movement likely to be generated to the site by other warehouse or cargo storage operations and is in addition to that moved for PIT purposes. All traffic associated with this operation is assumed to be new traffic along both local and regional road sections.
- Due to the site's remoteness, cheap storage costs and connectivity to various State Capital Cities and Major Ports, the spatial requirement for warehousing is not anticipated to attract high traffic movement. The site itself is likely to be used to store bulk products that can be delivered by rail to destinations along the east coast within a 24 hour period.

A further explanation on the assumptions applied is provided in the response to the *Samsa Consulting Technical Review of the Parkes Intermodal Terminal* (Draft August 2006) submission prepared on behalf of the Department of Planning.



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Legend

Approved Truck Routes to PIT

Proposed Ring Road

Proposed Interim Truck Route (Option)

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Parkes Intermodal Terminal

Approved Truck Routes to the Parkes Intermodal Terminal

scale as shown date 19 October 2006

job no 21-13701-15
file ref 2113701-15_LTN_01.cdr

Figure 2

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3.3 Fit for Purpose (Part 3A Concept Design Approval)

It is noted from previous occasions that the appropriateness or accuracy of both trip generation and trip distribution assumptions can only be confirmed once an operator is identified. It is also understood that this operator would be required to develop both a rail and road freight operations plan, which would then confirm and determine the following:

» Likely traffic levels,

» Availability of existing services travelling through the region and new service needs; and

» Major markets (desire lines or routes).

These operating conditions will not be determined in the concept design stage of the planning process, which is aimed at only highlighting the major impacts and potential infrastructure upgrades associated with the development. However, these operational activities and their impacts will be confirmed later in the planning process. It is expected that the identification of an operator would provide the opportunity to clarify proposed operations before lodging the individual DAs. The lodging of the DAs for approval will provide 'the authority' with an opportunity to identify additional mitigation measures resulting from changes to the conditions of consent under the original Part 3A Concept Approval.

The identification of trigger points as part of this additional assessment is aimed at providing the reassurance to 'the authority' of the capacity limitation of the network. The proposed condition of annual monitoring of traffic levels and safety records along the haulage routes is also another mechanism for mitigating future issues, which are currently unknown.

3.4 Total PIT Traffic Generation

The combined daily and peak hour traffic generation predicted for all the uses situated within the proposed development are as follows:

Table 12 Total Traffic Generation from the Proposed PIT

Traffic Generators	Initial Stage		Ultimate Stage	
	Peak Hour	Daily	Peak Hour	Daily
Intermodal Terminal Throughput (HV)	48	472	111	1110
Additional Warehouse Movements (HV)	3	30	7	68
Workers and deliveries (LV)	120	350	340	970
Total Traffic Movements	***171***	***852***	***458***	***2148***

3.5 Surrounding Development Traffic Generation

Areas that are approved for industrial land uses are situated to the south and west of Parkes town centre. The industrial precincts are known as follows:

» Parkes Industrial Estate situated to the south of the town centre and west of the Newell Highway: and

» Parkes Transport Hub situated to the west of the town centre and Hartigan Avenue running parallel with Brolgan Road.

Both precincts are currently not fully developed, but have approval for full development with industrial type land uses. The Parkes Industrial Estate is situated to the south of the Orange – Broken Hill Railway and between the Newell Highway and Parkes – Forbes Railway. The area zoned for industrial uses is approximately 62ha and includes areas of land that is available for development or intensification.

The Parkes Transport Hub (approved for approx 515ha) consists of the Goobang Junction Industrial Estate (mostly consisting of existing uses including the FCL, Parkes Shire Council and Austop sites), land owned by the Terminals Australia and SCT and other smaller private land holdings. Refer to Appendix C for a further understanding of these areas.

Both the Parkes Industrial Estate and Parkes Transport Hub have significant areas of land still available for development or existing sites that are not operating to their full capacity. The future expansion of operations or development on these sites is likely to direct impact on level crossings operations throughout Parkes and the Bogan Street – Newell Highway Inner Parkes bypass.

It is also understood that SCT owns two land parcels, comprising of the following:

» Land (approx 90ha in size) within the Parkes Transport Hub that is zoned and approved for industrial type uses (approx 50ha in size). This area will

accommodate the first 4 stages (approved by Parkes Shire Council) of the intermodal hub; and

» Land not within the Parkes Transport Hub and not currently zoned for industrial uses (approx 250ha in size).

It is also apparent that FCL owns land both within (approx 9ha) and outside (approx 170ha) the Parkes Transport Hub and is currently not operating to its full site potential. The Parkes Shire Council submission to the House of Representatives Inquiry May 2005 indicated in Section 2.2 that the FCL road and rail logistic centre is approved to accommodate rail sidings, warehousing facilities (3,200m^2) plus additional awning space on a 26ha site.

It is expected that both SCT and FCL could (in the future) seek approval for the rezoning of land outside of the Hub and for the intensification of activity for land parcels situated within the Hub.

3.6 PIT Traffic Distribution

The distribution of traffic generated by the PIT onto the surrounding road network was based on the following:

» A direct proportional split of the heavy vehicle traffic generated by the proposed PIT following the existing heavy vehicle traffic patterns through Parkes;

» All heavy vehicles using the most direct designated B double route when travelling along local roads; and

» All light vehicles generated by the site using the most direct route through the local road network.

The estimated vehicle distribution resulting from the operation of proposed development is assumed to be as follows and is split by classification of vehicle:

Table 13 Assumed Traffic Distribution from PIT for Different Vehicle Types

Roads	Light Vehicles	Heavy Vehicle
Brolgan Road	100%	100%
MR 61 (W) Condobolin Rd	5%	3%
SH17 Newell Hwy (N)	10%	33%
SH17 Newell Hwy (S)	10%	56%
MR 61 (E) Orange Rd	5%	4%
MR 233 Wellington Rd – NE	0%	2%
MR 238 Eugowra Rd – SE	0%	2%
Hartigan Avenue	25%	97%
Bogan Street	40%	33%
Dalton Street	70%	0%

It has been assumed that the majority of workers associated with the proposed development will live within or around Parkes LGA and that 100% will use Brolgan Road to travel to the site. It is also expected that the majority of this traffic will then travel to Dalton Road and Bogan Street before accessing the local road network.

Heavy vehicles movements from the development are assumed to follow designated B double routes as shown in Figure 2. Similar to the assumption applied for light vehicle movements, heavy vehicles will access the external road network via Brolgan Road, however, due to vehicle restrictions and the location of some sensitive land uses, it has been assumed that all heavy vehicle traffic travelling to the Newell Highway and beyond will use Hartigan Avenue. This will result in 97% of all expected heavy vehicle movement using the Hartigan Avenue route and only 3% using the West Lime Road and Condobolin Road route.

4. Comparison of Traffic Conditions '*With'* & '*Without*' PIT

The purpose of this section is to understand what spare capacity would be available on the road network in Parkes in the future and the likely affect from the proposed staged development of the PIT. A number of trigger points were identified, which are linked to a point when capacity improvements are required on the road network. The establishment of these trigger points or performance criteria will be used in this assessment to determine what level of background or PIT development traffic would trigger the need for improving road infrastructure.

4.1 Trigger Points

As indicated above, a number of '*trigger points'* have been established to highlight potential operating deficiencies along road sections and at intersections. These trigger points will be used to indicate when certain arrangements along the road network require either further examination or immediate improvement.

Both *'with'* and '*without*' development scenarios are analysed against the identified '*trigger points'* to order to understand the potential impact from the development of the PIT. It is also noted from section 3.5, that there are a number of other proposed industrial areas in Parkes, which, if developed, would require improvement to the road network or obtain benefit or advantage in terms of development opportunity from their future introduction.

The following performance measures were established in consultation with relevant agencies.

» An AADT of 7,900vpd is equal to a Level of Service (LOS) D operating condition for rural mid-block road sections;

» An peak hour traffic flow of 900 vehicles per lane is equal to the end of the LOS D operating range for urban mid-block road sections; and

» An average intersection delay of 43 seconds is equal to a LOS D operating condition during the peak periods.

These measures will be used to identify the level of available spare capacity at different traffic treatments:

All the above will be used as the trigger point measures for identifying when further investigation or upgrade is required to mitigate capacity deficiencies along the road network.

In the case of Level Crossings, there are no agreed criteria for identifying when a level crossing should be upgraded. This is usually determined by the Level Crossing Safety Committee. It is also noted that the current State Government approach to the upgrading of level crossings is that all new level crossings should be grade separated and existing crossings be closed if possible. However, the accepted performance

measures are delay and queuing for understanding operating conditions with or without the development. It is also noted that sight distance issues, crossing controls, speed and increases in road and rail movement will all influence the potential risk associated with the current or proposed level crossing arrangement. These measures will be used to identify the operating conditions and safety risks associated with a level crossing n the future with or without the development.

4.2 Critical Issues

This section is intended to build upon the network deficiencies identified in section 2.1, and highlight the traffic needs from the future development of the proposed development and all other future industrial development within Parkes. Refer to section 3.5 for an understanding of other approved and potential industrial development opportunities within Parkes and Figure 3 for Council's proposed ring road arrangement around Parkes. The delivery of the majority of this network is listed as being driven by future demand with its need not linked to any identified development trigger point. It's currently understood that Council does not have any identified funding to complete any of the proposed future upgrades, which includes the proposed western ring road. Refer to section 5.5 for an understanding of potential funding avenues for the proposed road infrastructure works.

The following together with Figure 4 provides an understanding of the issues associated with the operation of the current and future road networks and linked to the access arrangements for the Parkes Transport Hub:

Capacity and Conflict

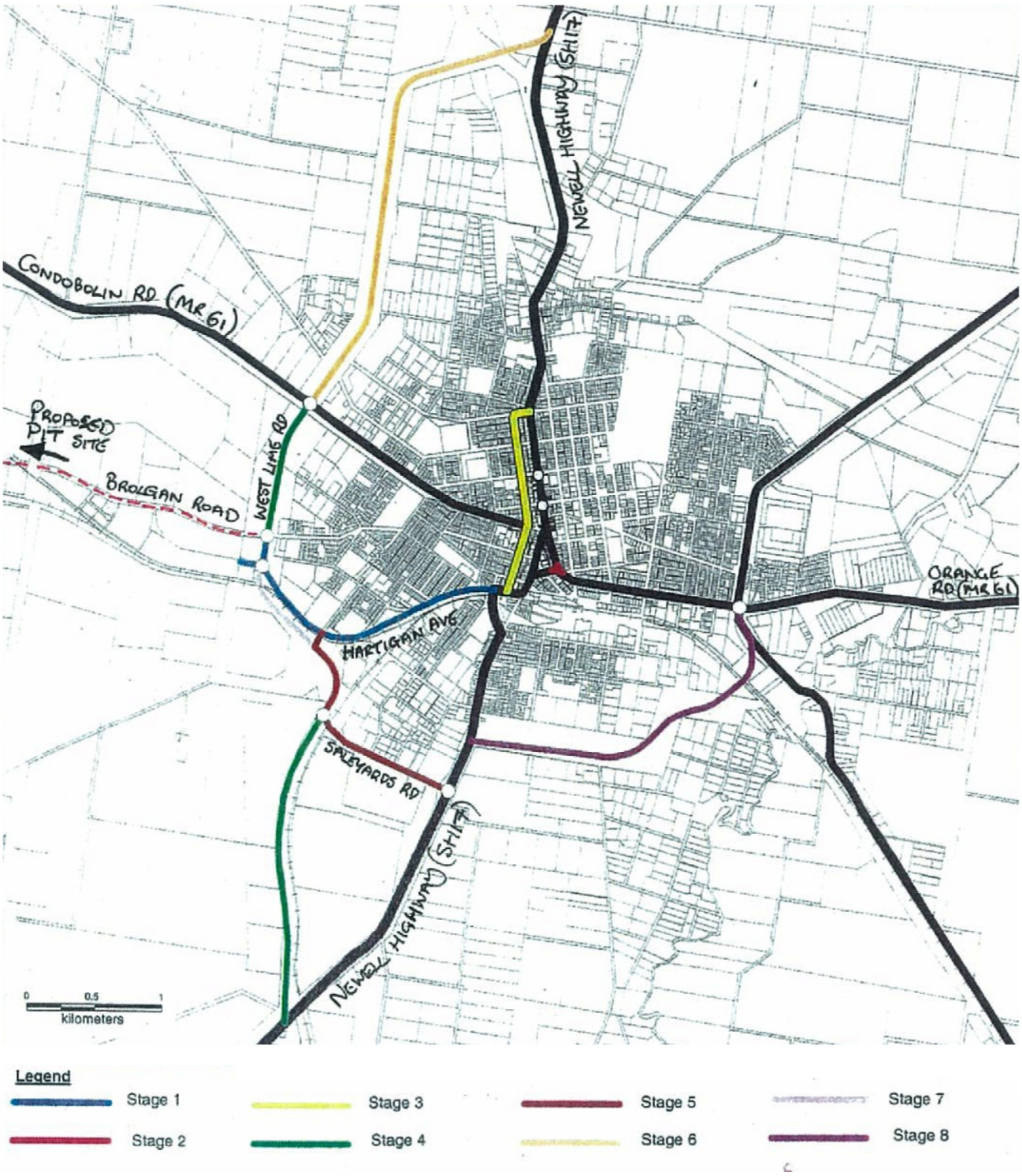
» Hartigan Avenue is an approved truck route, which was designed to serve as the main access route to Parkes Transport Hub. However, the route does not have priority at either of the intersections at Hartigan Avenue with Blaxland Street or Hartigan Avenue, Brolgan Road and Westlime Road. The performance of both intersections is expected at this point in time to be the driver for upgrade.

» Orange – Broken Hill Railway level crossing at Blaxland Street is currently under active controls and situated on south approach. This level crossing is in close proximity to the intersection of Blaxland Street with Hartigan Avenue. Stacking issues on the Blaxland Road approach has prevented the intersection from being reprioritised under its current configuration.

Substandard road sections

» Salesyard Road was identified in Council documentation to be a possible interim western ring road solution. In order for this to occur, a number of aspects will need to be addressed, such as, pavement quality, realignment of certain road sections and the upgrade of level crossing treatments.

» Road sections along Brolgan Rd will need to be upgraded to a standard that can accommodate the expected vehicle types and traffic volumes to visit the Parkes Transport Hub.



Parkes Intermodal Terminal

Parkes Ring Road

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Figure 3

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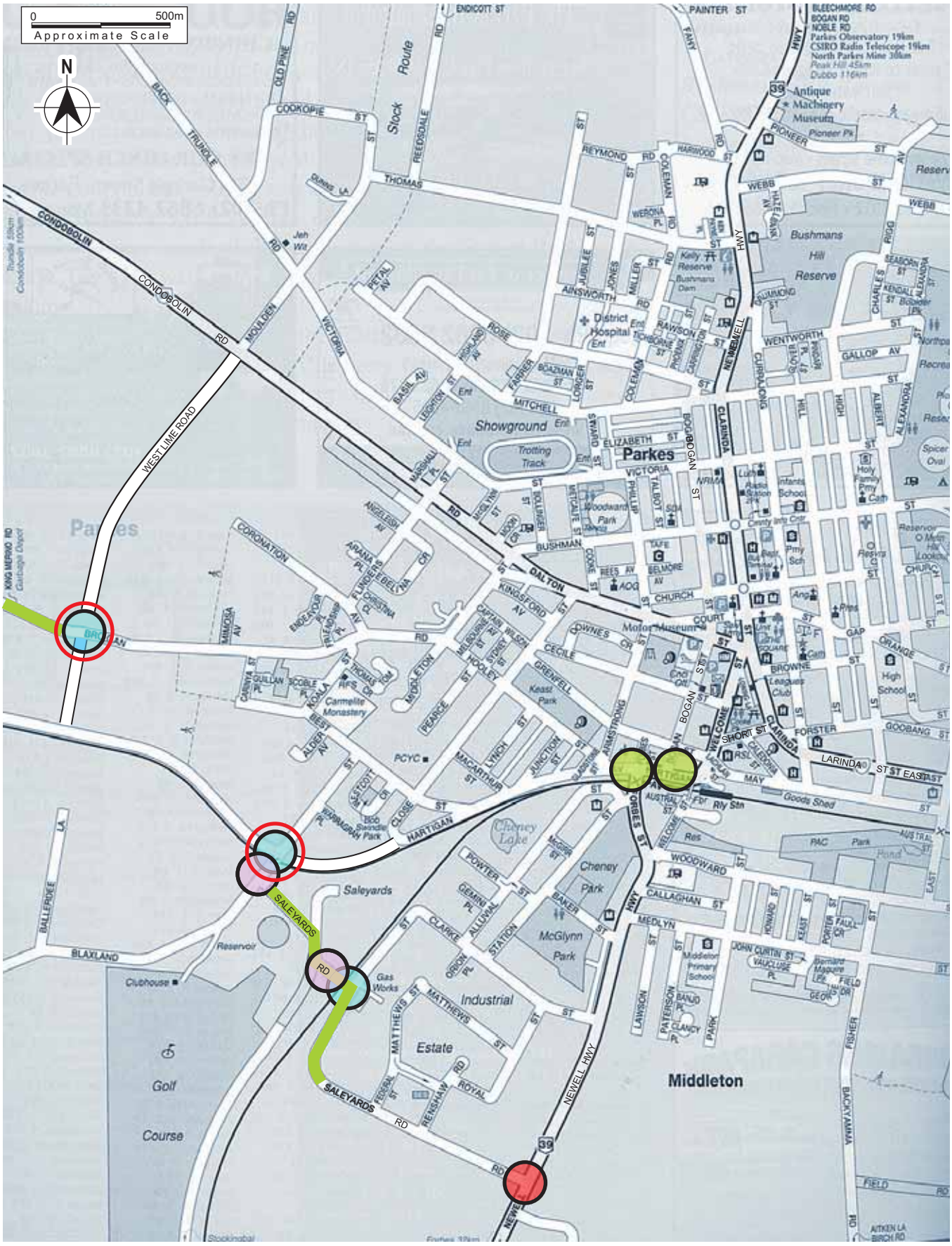

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Parkes Intermodal Terminal

Existing / Future Road Network Issues

scale | as shown | date | 19 October 2006

job no | 21-13701-15
file ref | 2113701-15_LTN_03.cdr

Figure 4

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Sub Standard Intersections

» Council's plans (refer to Figure 3) indicate that both Hartigan Avenue and Westlime Road will form part of the proposed western ring road. These recently constructed sections did not consider reprioritising the intersection of Hartigan Avenue with Westlime Road and Brolgan Road. The reprioritisation of the intersection is currently not possible due to driver visibility issues. The upgrade of this intersection is likely to require improvement to the alignment of most approaches, removal of the crest and some land acquisition. These works could be considered as part of Council's future planning for the area and the delivery of the proposed western ring road project. A solution put forward by Council was to signalise the intersection as indicated in Figure 2. In response to this mitigation measure, RTA have indicated that a signalised intersection in this situation would not be satisfactory, due to the sites remoteness and resulting enforcement concerns. This response does not appear to consider Council's future planning for the area, Brolgan Road acting as the main entry point to the Parkes Transport Hub or the likely effects from the construction of the Parkes western ring road (Newell Highway).

» Sight distance and stacking issues make it difficult to reprioritise the intersection of Blaxland Street with Hartigan Avenue to Hartigan Avenue, which is in conflict with its intended function as an approved truck route serving the Parkes Transport Hub. A solution put forward by Council was to signalise the intersection as indicated in Figure 2. In response to this mitigation measure, RTA have indicated that a signalised intersection in this situation would not be satisfactory, due to the sites remoteness and resulting enforcement concerns. Again, this response does not appear to consider Council's future planning for the area or the likely effects from the construction of the Parkes western ring road (Newell Highway).

» Reprioritisation of both the above intersections is desirable in terms of providing an eligible and safe route for traffic travelling along the Council approved truck route to the Parkes Transport Hub.

» The intersections of Hartigan Avenue with Forbes Street or Hartigan Avenue with Bogan Street have not been identified for upgrade in the draft DCP for the Parkes Transport Hub. However, this road has been identified by Council to function as the main road and designated truck route to the proposed Parkes Transport Hub. Council is currently in the process of seeking reclassification of this route, which would provide RTA with the responsibility of operating and maintaining the road. However, based on information produced to date, it is currently unknown if the existing configuration is an appropriate design to accommodate the existing or likely future traffic levels expected under a fully developed Parkes Industrial Estate and Parkes Transport Hub. The other driver for the upgrade of this intersection is the predicted increase in future intrastate road freight (BTRE, Working Paper 66, 2005), which is identified as a major driver behind the proposed western ring road (Parkes Shire Council, Local Environmental Plan – Parkes Transport Hub, 2003) and the setting up of the Parkes Transport Hub.

» The upgrade of the intersection of the Newell Highway with Salesyard Road has been identified as being required, if Salesyard Road is to be utilised as the proposed interim western ring road.

Emergency Access

As mentioned in section 2.1, delays caused by level crossing closures are a current concern for response times to emergency situations. Often the existing road network offers no feasible alternative route when crossings at either Forbes Street (Newell Highway), the Newell Highway (south of Parkes), Blaxland Street, Salesyard Road, Brolgan Road or Condobolin Road are closed. The planning of the future road network will need to address this issue, which is likely to become a larger issue in the future with growth expected in both road and aril freight. BTRE predictions indicate that there will be a significant increase in rail freight travelling along the strategic Auslink corridors, some of which pass through Parkes.

Night Time Operations

Due to the nature of the proposed Parkes Transport Hub being a 24 hour operation, street lighting will be required at key intersection used as access routes to the Parkes Transport Hub. This includes the intersection of Brolgan Road, Hartigan Avenue and Westlime Road.

4.3 Assessment of Road Network '*Without*' PIT

An assessment of the road network without the development in place has been undertaken in order to identify the likely future operating conditions of the network and potential capacity deficiencies.

4.3.1 Anticipated Traffic Growth '*Without*' PIT

Traffic volumes for the road network within Parkes has been taken from the *Traffic Assessment (GHD, June 2006)* and updated with recent traffic counts undertaken in September 2006. The estimated traffic volumes through Parkes without the development of the PIT have been calculated for both 2010 (initial PIT Stage) and 2020 (ultimate PIT stage) by apply annual traffic growth rates as shown in Appendix F of the *Traffic Assessment (GHD, June 2006)*. Growth rates used in the *Traffic Assessment (GHD, June 2006)* have been further explained in Appendix A – Memo dated 29 September 2006, Item 1.

It is noted that the annual traffic growth rates for both Hartigan Avenue and Salesyard Road was not considered in Appendix F of the *Traffic Assessment (GHD, June 2006)*. In order to understand the impact from traffic growth along these two roads the following annual traffic growth assumptions were applied:

» Hartigan Avenue 200m west of Blaxland Road – 5% pa for all traffic;

» Hartigan Avenue 50m west of Forbes Street – 1% pa for all traffic; and

» Salesyard Road – 1% pa for all traffic.

Table 14 and Table 15 present future traffic volumes along both urban and rural sections of the road network in Parkes without the development of the proposed PIT.

Table 14 Estimated Daily Traffic Movement '*Without*' PIT (Urban Roads)

Year		2010			2020	
Road link	**Total**	**HV**	**HV%**	**Total**	**HV**	**HV%**
Hartigan Ave – 50m west of Forbes St	3,895	238	6.1%	4,302	262	6.1%
Hartigan Ave – 200m west of Blaxland St	570	254	37%	929	414	37%
Salesyard Rd – 50m west of Newell Hwy	722	70	9.7%	798	77	9.7%
Salesyard Rd – 100m east of Blaxland St	355	39	11%	392	43	11%
Bogan St (Newell Hwy) – North of Hartigan Ave	5789	984	17%	6587	1252	19%
Forbes Street (Newell Hwy) – South of Hartigan Ave	10366	1743	17%	11781	2256	19%
Dalton Street	1992	100	5%	2094	105	5%

Table 15 Estimated Daily Traffic Movement '*Without*' PIT (Rural Roads)

Year	2010			2020		
Road link	**Total**	**HV**	**HV%**	**Total**	**HV**	**HV%**
Brolgan Road	200	4	2%	227	5	2%
MR 61 (W) Condobolin Rd	1064	97	9%	1138	127	11%
SH17 Newell Hwy (N)	5685	1048	18%	6597	1367	21%
SH17 Newell Hwy (S)	5914	782	13%	6684	2325	35%
MR 61 (E) Orange Rd	2099	131	6%	2276	171	8%
MR 233 Wellington Rd – NE	417	49	12%	441	64	15%
MR 238 Eugowra Rd – SE	500	62	12%	529	81	15%

It is understood that the RTA has determined a different background traffic growth rate for traffic using the Newell Highway / Forbes Street intersection than that used by GHD above[6]. The RTA has based the growth at this intersection on recent Newell Highway Traffic Growth of approximately 1.8% in the past 3 years. Based on this historic growth the RTA modelling for the Newell Highway / Forbes Street intersection adopted a 2% per anum (linear) growth rate on all intersection legs. The use of different growth rates by the RTA and GHD results in different intersection performance for the intersection as discussed in Section 4.3.2.

[6] Letter dated 1st February 2007, titled: Proposed Parkes Intermodal Freight Terminal, Review of 'Sidra' Intersection Modelling, Samsa Consulting Transport Planning & Traffic Engineering

4.3.2 Future Road Performance '*Without*' PIT

The purpose of this section is to evaluate the performance of the road network in the vicinity of the development during 2010 and 2020 without the proposed development.

Rural and Urban Road Section Performance '*Without*' PIT

Table 16 and Table 17 present the current and future road performance levels on rural and urban road sections, which could potentially be impacted by the proposed development.

All urban and rural road sections without the proposed development perform satisfactorily for the years 2010 and 2020. Available spare capacity will vary in the future for relevant rural road sections and is summarised below:

» Newell Highway sections to the south and north of Parkes are identified to have the least amount of spare capacity with the southern section only requiring an additional 1,216 vehicles per day before it begins to operate at a LOS D; and

» All other routes were observed to have sufficient spare capacity with each link able to accommodate an additional 5,600-7,600 vehicles per day before operating at a LOS D.

Available spare capacity will vary in the future for relevant urban road sections and is summarised below:

» Forbes Street section of the Newell Highway is observed to have the least amount of spare capacity and only requires an additional 193 vehicles during the peak hour before it begins to operate below a LOS D; and

» All other routes were observed to have sufficient spare capacity with them being able to accommodate an additional 500-870 vehicles per day before operating below a LOS D.

Table 16 Rural Road Performance – '*Without*' PIT

		2005			2010			2020		
Road Name	Count Location	AADT or ADT	LOS	Spare Capacity[7]	AADT or ADT	LOS	Spare Capacity	AADT or ADT	LOS	Spare Capacity
Brolgan Road	East of the site and west of the level crossing	188	A	7,712	200	A	7,700	227	A	7,673
Condobolin Road	At level crossing, west of Parkes	1036	A	6,864	1,064	A	6,836	1,138	A	6,762
Newell Highway – north	Parkes, 3.2km north of Court St	5337	C	2,563	5,685	C	2,215	6,597	C	1,303
Newell Highway – south	At Forbes/Parkes boundary	5620	C	2,280	5,914	C	1,986	6,684	C	1,216
Orange Road	Parkes, at Billabong Ck bridge	2031	A	5,869	2,099	A	5,801	2,276	A	5,624
Wellington Road	Parkes, 8km north of SH17, Newell Hwy	408	A	7,492	417	A	7,483	441	A	7,459
Eugowra Road	At Forbes/Parkes boundary	488	A	7,412	500	A	7,400	529	A	7,371

[7]The trigger point for upgrade is identified when no spare capacity is available and is based on Level of Service D or an AADT of 7,900 vpd (Austroads Part 2 Table 3.9).

Table 17 Urban Road Performance – '*Without*' PIT

		2005					2010					2020				
Road Name	Count Location	AADT / ADT	Flow / lane[8]	V/C Ratio	LOS	Spare Capacity[9]	AADT / ADT	Flow / lane	V/C Ratio	LOS	Spare Capacity	AADT / ADT	Flow / lane	V/C Ratio	LOS	Spare Capacity
Hartigan Avenue	50m west of Forbes St	3,743	225	0.22	B	675	3,895	234	0.23	B	666	4,302	258	0.26	B	642
Hartigan Avenue	200m west of Blaxland St	469	28	0.03	A	872	570	34	0.03	A	866	929	56	0.06	A	844
Salesyard Road	50m west of the Newell Highway	694	42	0.04	A	858	722	43	0.04	A	857	798	48	0.05	A	852
Salesyard Road	100m east of Blaxland St	341	20	0.02	A	880	355	21	0.02	A	879	392	24	0.02	A	876
Bogan St (Newell Hwy)	North of Hartigan Ave	5427	326	0.33	B	574	5789	347	0.35	B	553	6587	395	0.40	C	505
Forbes St. (Newell Hwy)	South of Hartigan Avenue	9,865	592	0.59	C	308	10366	622	0.62	D	278	11781	707	0.71	D	193
Dalton Street	West of Bogan St	1943	117	0.12	A	783	1992	120	0.12	A	780	2094	126	0.13	A	774

[8] Hourly traffic flows per lane are assumed to be 10% of AADT/ADT with a 60:40 split.

[9] The trigger point for upgrade is identified when no spare capacity is available and is based on the end of Level of Service D or a peak hour traffic lane flow of 900vph (RTA Guide to Traffic Generating Developments)

Intersection Performance '*Without*' PIT

Table 19 presents the current and future intersection performance without the proposed development.

The results presented in Table 19 indicates the following:

» All intersections with the exception of the Hartigan Avenue with Newell Highway and Grenfell Street intersection operate satisfactorily without the proposed development.

» The operations of the Hartigan Avenue with Newell Highway and Grenfell Street intersection passes the trigger point outlined in section 4.1 by 2010. This intersection is identified to perform at a LOS F by 2020 and has negative spare capacity by 2010 when compared to the maximum average delay of 43 seconds.

» The Newell Highway with Bogan Street and Hartigan Avenue is operating close to capacity by 2020 with the PM peak period having only 2.5 seconds of available before requiring an upgrade.

Two different traffic signals intersection arrangements were analysed in order to understand the operating conditions under the proposed arrangement. The two arrangements analysed were as follows:

» Traffic signals with all four approaches open to traffic and priority given to the Newell Highway; and

» Traffic signals with the closure of the Glenfell St traffic and priority given to the Newell Highway.

The results from the analysis are shown in Table 18.

Table 18 Intersection Performance - Upgrade Options '*Without*' PIT

			2010				2020			
Intersection	Upgrade	Peak Period	AD (secs)	LOS	DoS	SC[10] (secs)	AD (secs)	LOS	DoS	SC[11] (secs)
Hartigan Ave / Newell Hwy / Grenfell St	Traffic Signals	AM	26.8	C	0.870	15.2	36.2	C	0.909	5.8
		PM	30.1	C	0.816	11.9	63.5	E	1.103	-21.5
Hartigan Ave / Newell Hwy	Traffic Signals with Grenfell St Closed	AM	22.2	C	0.936	19.8	27.9	C	0.895	14.1
		PM	22.0	C	0.935	20.0	29.2	C	0.928	12.8

[10] Spare Capacity is based on a maximum average delay of 42 seconds.

[11] Spare Capacity is based on a maximum average delay of 42 seconds.

Table 19 Intersection Performance '*Without*' PIT

		2005/2006[12]				2010				2020			
Intersection	Peak Period	Average Delay (sec)	LOS	Degree of Saturation	Spare Capacity[13] (secs)	Average Delay (sec)	LOS	Degree of Saturation	Spare Capacity (secs)	Average Delay (sec)	LOS	Degree of Saturation	Spare Capacity (secs)
Brolgan Road / Hartigan Avenue / Westlime Road	AM	10.6	A	0.017	31.4	10.4	A	0.018	31.4	10.7	A	0.031	31.3
	PM	10.7	A	0.030	31.3	10.7	A	0.031	31.3	10.8	A	0.050	31.2
Hooley Ave / Hartigan Avenue	AM	7.0	A	0.108	35.0	7.0	A	0.111	35.0	7.0	A	0.125	35.0
	PM	7.1	A	0.115	34.9	7.0	A	0.120	35.0	7.1	A	0.133	34.5
Blaxland Road / Hartigan Avenue	AM	9.0	A	0.036	33.0	9.2	A	0.048	32.8	9.8	A	0.080	32.2
	PM	7.1	A	0.026	34.9	7.1	A	0.032	34.9	7.1	A	0.053	34.9
Newell Highway / Salesyard Road	AM	12.5	A	0.110	29.5	12.6	A	0.115	29.4	12.6	A	0.126	29.4
	PM	13.8	A	0.110	28.2	13.9	A	0.117	28.1	14	A	0.126	28
Hartigan Ave / Newell Hwy / Grenfell St	AM	24.8	B	0.645	17.2	58.1	E	1.000	-16.1	746.0	F	1.701	-704.0
	PM	26.8	B	0.714	15.2	78.6	F	1.000	-36.6	800	F	2.000	-758
Bogan Street / Hartigan Ave / Newell Hwy	AM	9.1	A	0.357	32.9	9.6	A	0.437	32.4	15.8	C	0.744	26.2
	PM	11.7	B	0.448	30.3	13.1	B	0.556	28.9	39.5	C	0.952	2.5

[12] Traffic counts undertaken at Bogan Street and Hartigan Avenue intersections were completed in 2005. All other intersection counts were undertaken in September 2006.

[13] Spare Capacity is based on a maximum average delay of 42 seconds.

The results presented in Table 18 indicate that the four-approach arrangement of Hartigan Avenue with Newell Highway and Grenfell Street under traffic signal control requires further improvements by 2020.

Site observations and examination of traffic volumes on the Glenfell Street approach indicates that the removal of this approach would have minimum impact and that an alternative route is available via Armstrong and Middleton Street. The results from the analysis of the intersection under a three-approach arrangement (Glenfell Street closed and the traffic redistributed to the Hartigan Avenue approach) are presented in Table 18. Under these conditions the intersection operates satisfactorily in 2020 and has spare capacity under both the AM and PM peaks.

Intersection modelling undertaken by the RTA indicates that both the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections will operate satisfactorily without signals beyond 2020[14].

Subsequent to the GHD and RTA modelling being undertaken Terminals Australia has agreed with the RTA and Council to commit to the upgrading of the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections to the satisfaction of the RTA.

Level Crossing Performance '*Without*' PIT

Level crossings analysed as part of section 2.5.3 (current operating conditions) assessment have been reviewed under both 2010 and 2020 traffic conditions to identify the future impacts on traffic flows. This assessment assumes that train movements during the peak hour will remain the same at one train movement. This assumption is based on there being sufficient available capacity during other non-peak periods. The assessment also assumes that current rail operating deficiencies are not addressed. This approach is deemed to be appropriate as no funding has currently been committed by Government for the upgrade of rail lines around Parkes. It is understood that this commitment is unlikely to be made until the preferred option for the North South (Melbourne to Brisbane) Rail Corridor is supported.

Table 20 provides an understanding of level crossing operations in the future without the development of the proposed PIT.

[14] RTA letter (ref: 353.5395 05/2-4) to Department of Planning dated 18 January 2007.

Table 20 Future Peak Hour Impact to Road Traffic at Level Crossings ('*Without*' PIT)

Level Crossing	Rail Line	Vehicle Delay (min:sec)	Queue Length (Vehicles)	Cost of Delay ($)[15]
Initial Stage without PIT				
Existing Brolgan Road East of Site	Parkes Narromine	2:02	1	$8.32
Existing Condobolin Road West of Site	Parkes Narromine	1:06	2	$24.90
Newell Highway South	Parkes Forbes	1:04	11	$137.54
Forbes Street Town Centre	Parkes Forbes	7:23	127	$1,700.32
Blaxland Street	Orange Broken Hill	7.23	10	$120.70
Salesyard Road	Parkes Forbes	1:37	1	$12.30
Ultimate Stage without PIT				
Existing Brolgan Road East of Site	Parkes Narromine	1:06	0	$9.45
Existing Condobolin Road West of Site	Parkes Narromine	1:06	2	$26.92
Newell Highway South	Parkes Forbes	1:04	12	$173.59
Forbes Street Town Centre	Parkes Forbes	7:23	145	$1,952.50
Blaxland Street	Orange Broken Hill	7:23	13	$160.32
Salesyard Road	Parkes Forbes	1:37	1	$13.59

Assumptions used for the above calculation are as follows:

» The upstream crossing point for trains to activate a level crossing is 300m.

» The level crossing will keep open for an additional 10 seconds after the train crosses.

» Peak hour time value is $10.15 /person hour for private vehicles and $19.12/ per vehicle hour for road freight.

» Occupancy rate for light vehicles is 1.2 persons/vehicle.

» No increase in train movements during the peak periods.

» No improvement in rail line operations.

The results presented in Table 20 indicates the following:

» The future average delay at level crossings situated in Parkes will predominantly remain the same as that identified under current conditions.

[15] Value of Time, RTA Economic Analysis Manual, Version 2, 1999. Table 9.

» The longest traffic queues at a level crossings was identified to be at Forbes Street were the number of vehicles grew from 121 vehicles in 2005, to 127 in 2010 and 145 in 2020.

» The highest cost for travel time delays at a level crossing occurs at the Forbes Street level crossing.

» The cost of travel time delays associated with the closure of the Forbes Street level crossing increases from approximately $1610 in 2005 to $1,700 in 2010 and $1,950 in 2020. In comparison, all other level crossings recorded a travel time delay cost of approximately $170 per closure in 2020 or lower.

» With exception of the Forbes Street level crossing, all other crossings have similar performance measures to that reported under current operations.

4.4 Assessment of Road Network '*With*' PIT

An assessment of the road network with the proposed development has been undertaken in order to identify the likely future operating conditions and to identify if additional upgrades are required.

4.4.1 Anticipated Traffic Growth '*With*' PIT

This section has estimated future traffic volumes along urban and rural sections of the road network by adding Table 14 and Table 15 (background traffic operations) to the proposed development traffic estimates shown in Section 3 for both (2010) initial and (2020) ultimate stages of the proposed development. Table 21 and Table 22 present future traffic volumes along both urban and rural sections of the road network in Parkes with the development of the proposed PIT.

Table 21 Estimated Daily Traffic Movement '*With*' PIT (Urban)

Year	2010			2020		
Road link	**Total**	**HV**	**HV%**	**Total**	**HV**	**HV%**
Hartigan Ave – 50m west of Forbes St	4,469	725	16%	5,687	1,405	25%
Hartigan Ave – 200m west of Blaxland St	1,144	741	65%	2,314	1,557	67%
Salesyard Rd – 50m west of Newell Hwy	722	70	9.7%	798	77	9.7%
Salesyard Rd – 100m east of Blaxland St	355	39	11%	392	43	11%
Bogan St - north of Hartigan Ave	5984	1039	17%	7105	1382	19%
Forbes St – south of Hartigan Ave	10495	1837	18%	12098	2476	20%
Dalton Street	2237	100	4%	2773	105	4%

The estimated traffic volumes shown in Table 21 for the future '*with*' development scenario indicates the following:

» Significant increases in traffic along Dalton Road, Hartigan Avenue, Forbes Street and Bogan Street in comparison with the '*without*' development scenario;

» Significantly increase in the heavy vehicle traffic mix along Hartigan Avenue in comparison with the '*without*' development scenario; and

» Saleyards Road is not impacted by traffic generated by the proposed development.

Table 22 Estimated Daily Traffic Movement '*With*' PIT (Rural)

Year	2010			2020		
Road link	**Total**	**HV**	**HV%**	**Total**	**HV**	**HV%**
Brolgan Road	1052	506	48%	2375	1183	50%
MR 61 (W) Condobolin Rd	1087	102	9%	1198	139	12%
SH17 Newell Hwy (N)	5775	1103	19%	6824	1497	22%
SH17 Newell Hwy (S)	6043	876	14%	7001	2545	36%
MR 61 (E) Orange Rd	2123	138	6%	2340	187	8%
MR 233 Wellington Rd – NE	420	52	12%	449	72	16%
MR 238 Eugowra Rd – SE	503	65	13%	537	89	17%

The estimated traffic volumes shown in Table 22 for the '*with*' development scenario indicates the following:

» Significant increases in traffic in comparison with the '*without*' development scenario along Brolgan Road and the Newell Highway north and south of Parkes;

» Significant increase in the heavy vehicle traffic mix along Brolgan Road in comparison with the '*without*' development scenario; and

» Minor increases in traffic along Condobolin Road, Wellington Road, Orange Road and Eugowra Road.

4.4.2 Future Road Performance '*With*' PIT

The purpose of this section is to evaluate the performance of relevant sections of the Parkes road network in the year 2010 and 2020 '*with*' the proposed development.

Rural and Urban Road Section Performance '*With*' PIT

Table 23 and Table 24 present the current and future road performance levels on rural and urban road sections with the proposed development.

Table 23 Rural Road Performance '*With*' PIT

		2010			2020		
Road Name	**Count Location**	**Daily Traffic**	**LOS**	**Spare Capacity** [16]	**Daily Traffic**	**LOS**	**Spare Capacity**
Brolgan Road	East of the site and west of the level crossing	1,052	A	6,848	2,375	A	5,525
Condobolin Road	At level crossing, west of Parkes	1,087	A	6,813	1,198	A	6,702
Newell Highway – north	Parkes, 3.2km north of Court St	5,775	C	2,125	6,824	C	1,076
Newell Highway – south	At Forbes/Parkes boundary	6,043	C	1,857	7,001	C	899
Orange Road	Parkes, at Billabong Ck bridge	2,123	A	5,777	2,340	A	5,560
Wellington Road	Parkes, 8km north of SH17, Newell Hwy	420	A	7,480	449	A	7,451
Eugowra Road	At Forbes/Parkes boundary	503	A	7,397	537	A	7,363

The performance of rural road sections in comparison to the '*without*' development scenario is as follows:

» Similar to the '*without*' development scenario the Newell Highway sections to the south and north of Parkes have the least amount of spare capacity with the southern section only requiring an additional 899 vehicles per day (vpd), against 1,216 vpd under the without development scenario (a reduction of 317 vehicles), before it begins to operate at a LOS D; and

» All other routes were observed to have sufficient spare capacity '*with*' THE development of the proposed PIT and in most situations can accommodate an additional 5,550-7,450 vpd, against 5,600-7,600 under the '*without*' development scenario, before operating at a LOS D.

» The development generates the most vehicles per day on Brolgan Road. However, even with the development Brolgan Road operating the LOS is A and spare capacity of 6,848 and 5525 in 2010 and 2020 respectively is available.

The performance of urban road sections in comparison to the '*without'* development scenario is shown in Table 24 and presents the following:

» Forbes Street section of the Newell Highway is observed to have the least amount of spare capacity and only requires an additional 193 vehicles during the peak hour (vph) per traffic lane, against 174vph under the '*without*' development scenario

[16] The trigger point for upgrade is identified when no spare capacity is available and is based on Level of Service D or an AADT of 7,900 vpd (AustRoads Part 2 Table 3.9).

(equates to a drop in spare capacity of 19 vehicles per hour), before it begins to operate below LOS D.

» The most effected urban road under the '*with'* development scenario is Hartigan Avenue. The spare capacity on Hartigan Avenue is reduced with the development by 35 vehicles per lane in the peak hour in 2010, and 83 vehicles per lane in the peak hour in 2020. However, the LOS remains the same with and without the development.

» All other routes were observed to have sufficient spare capacity with them being able to accommodate an additional 500-870vph per traffic lane, against 470-870vph under the '*without*' development scenario, before operating below LOS D.

Overall the findings indicate that all urban and rural road sections with the proposed development perform satisfactorily for the years 2010 and 2020 and no deterioration in LOS occurs due the development of the PIT.

Table 24 Urban Road Performance '*With*' PIT

		2010					2020				
Road Name	Count Location	Daily Traffic	Flow / lane[17]	V/C Ratio	LOS	Spare Capacity[18]	Daily Traffic	Flow / lane	V/C Ratio	LOS	Spare Capacity
Hartigan Avenue	50m west of Forbes Street	4,469	268	0.27	B	632	5,687	341	0.34	B	559
Hartigan Avenue	200m west of Blaxland Street	1,144	69	0.07	A	831	2,314	139	0.14	A	761
Salesyard Road	50m west of the Newell Highway	722	43	0.04	A	857	798	48	0.05	A	852
Salesyard Road	100m east of Blaxland Street	355	21	0.02	A	879	392	24	0.02	A	876
Bogan Street (Newell Hwy)	North of Hartigan Avenue	5,984	359	0.36	B	541	7,105	426	0.43	C	474
Forbes St. (Newell Hwy)	South of Hartigan Avenue	10,495	630	0.63	D	270	12,098	726	0.73	D	174
Dalton Street	West of Bogan Street	2,237	134	0.13	A	766	2,773	166	0.17	A	734

[17] Hourly traffic flows per lane are assumed to be 10% of AADT/ADT with a 60:40 split.

[18] The trigger point for upgrade is identified when no spare capacity is available and is based on the end of Level of Service D or a peak hour traffic lane flow of 900vph (RTA Guide to Traffic Generating Developments)

Intersection Performance '*With*' PIT

Table 25 presents the future intersection performance '*with*' the development in place. As identified under the without development scenario, it is assumed that Grenfell Street will be closed and traffic reallocated to Hartigan Avenue for movements at the intersection of Hartigan Avenue with Newell Highway. A comparison of intersection performances under the '*with*' and '*without*' development scenarios revealed that:

» The operating performance of the Hooley Street / Hartigan Avenue and Blaxland Road / Hartigan Avenue intersections remain at LOS A under both the *'with'* and '*without*' development scenarios;

» The operating performance of Brolgan Avenue / Hartigan Avenue / Westlime Road and Newell Highway / Salesyard Road reduces from LOS A under the '*without*' development scenario to LOS B under the '*with*' the development scenario. LOS B indicates that these intersections have acceptable delays and spare capacity (refer to Table 6).

» The intersection of Hartigan Avenue / Newell Highway (with Grenfell Street closed to traffic) under traffic signal controls operates at a level of service C in 2020 under both '*with*' or '*without*' development scenarios.

» The intersection of Bogan Street / Hartigan Avenue / Newell Highway operates at a LOS F in 2020 in the PM peak period compared to LOS C during the same period under the '*without*' development scenario.

The RTA has modelled the Newell Highway / Forbes Street / Grenfell Street intersection using different background traffic growth than GHD (as outlined in section 4.3.1) and higher development related traffic[19]. However both the GHD and RTA modelling concur that for future years (2020) *'with'* development the Newell Highway / Forbes Street / Grenfell Street intersection should be signalised together with the Newell Highway / Bogan Street intersection and that the Grenfell Street leg of the intersection should be closed.

Subsequent to the GHD and RTA modelling being undertaken Terminals Australia has agreed with the RTA and Council to commit to the upgrading of the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections to the satisfaction of the RTA.

[19] Letter dated 1st February 2007, titled: Proposed Parkes Intermodal Freight Terminal, Review of 'Sidra' Intersection Modelling, Samsa Consulting Transport Planning & Traffic Engineering

Table 25 Intersection Performance '*With*' PIT

		2010				2020			
Intersection	Peak Period	Average Delay (sec)	LOS	Degree of Saturation	Spare Capacity[20]	Average Delay (sec)	LOS	Degree of Saturation	Spare Capacity
Brolgan Road / Hartigan Avenue / Westlime Road	AM	11.7	B	0.113	30.3	13.9	B	0.250	28.1
	PM	11.8	B	0.126	30.2	14.1	B	0.275	27.9
Hooley Ave / Hartigan Avenue	AM	7.7	A	0.126	34.3	9.0	A	0.168	33.0
	PM	7.2	A	0.169	34.8	7.3	A	0.248	34.7
Blaxland Road / Hartigan Avenue	AM	8.9	A	0.168	33.1	9.5	A	0.365	32.5
	PM	8.1	A	0.145	33.9	8.5	A	0.323	33.5
Newell Highway / Salesyard Road	AM	12.7	B	0.126	29.3	12.7	B	0.142	29.3
	PM	14.1	B	0.117	27.9	13.8	B	0.128	28.2
Hartigan Ave / Newell Hwy - Traffic Signals with Grenfell Street Closed	AM	23.9	C	0.917	18.1	30.6	C	0.916	11.4
	PM	22.0	C	0.935	20.0	31.4	C	0.928	10.6
Bogan Street / Hartigan Ave / Newell Hwy	AM	9.7	A	0.443	32.3	16.6	C	0.762	25.4
	PM	13.8	B	0.570	28.2	64.5	F	1.011	-22.5

[20] Spare Capacity is based on a maximum average delay of 42 seconds.

The assessment of the upgraded intersection of Bogan Street with Hartigan Avenue under the '*with*' development scenario in 2020 is presented in Table 26.

Table 26 Performance of Bogan St/ Hartigan Ave '*With*' Development Under Traffic Signals

Intersection	Upgrade	Peak Period	2020			
			Average Delay (sec)	LOS	Degree of Saturation	Spare Capacity
Bogan Street / Hartigan Ave / Newell Hwy	Traffic Signals	AM	11.5	B	0.659	30.5
		PM	13.5	B	0.712	28.5

The key findings from the above assessment are as follows:

» The operating performance of the Bogan Street with Hartigan Avenue intersection passes the trigger point outlined in Section 4.1 by 2020 under only the '*with*' development scenario. When this intersection is upgraded to traffic signals it performs satisfactorily under both scenarios.

» Both under the '*with*' and '*without'* development scenarios the Hartigan Avenue with Forbes Street (Newell Highway) intersection requires upgrading to traffic signals with the Glenfell Street approach closed to traffic by 2010.

Potential Performance Benefits From the Western Ring Road

Discussion with stakeholders has indicated that the construction of the southern section of the western ring road (refer to the red dashed line running south of Westlime Road in Figure 2) could provide road performance benefits to certain sections of the road network.

It is expected that the benefit could be provided from the removal of conflicting traffic movements at the intersection of Hartigan Avenue with Forbes Street (Newell Highway). The advantages obtained from this arrangement will be further understood from analysing the performance outputs from a '*with'* development scenario assessment with or without the southern section of the western ring road in place

This assessment has been undertaken using the following assumptions

» All development traffic travelling between the Newell Highway south and the PIT using the bypass;

» All background heavy vehicle traffic currently or predicted to turn left from Newell Highway (south) into Hartigan Avenue or turning right from Hartigan Avenue to Newell Highway (south) will use the bypass.

» Half of all background light vehicle traffic currently or predicted to turn left from Newell Highway (south) into Hartigan Avenue or turning right from Hartigan Avenue to Newell Highway (south) will use the bypass.

Table 27 provides an understanding of the benefits (intersection operational improvements) resulting from the construction of the southern section of the western ring road '*with*' the development of the PIT.

Table 27 Intersection Performance Comparison for the Western Bypass (south) '*With*' PIT

Intersection	Upgrade	Peak Period	2020			
			Average Delay (sec)	LOS	Degree of Saturation	Spare Capacity
Hartigan Ave / Newell Hwy - Traffic Signals with Grenfell Street Removed	No bypass	AM	30.6	C	0.916	11.4
		PM	31.4	C	0.928	10.6
Hartigan Ave / Newell Hwy - Traffic Signals with Grenfell Street Removed	With Southern Section of Western Bypass in place	AM	26.9	C	0.927	15.1
		PM	31.0	C	0.885	11.0

The findings presented in Table 27 indicate that there is little effect or performance benefit at this critical intersection from construction of the proposed western ring road southern section.

It is envisaged that the provision of both the northern and southern section of the proposed western ring road would provide a greater benefit to the performance of the Hartigan Avenue with the Newell Highway intersection. This is also likely to remove the dominant regional north-south traffic movement from the township.

An additional study would be required to model the effect from the provision of both the northern and southern sections of the western ring road on the Hartigan Avenue with Newell Highway intersections. From a broad level review of traffic surveys presented in Table 21 and Table 22 the construction of the entire western ring road has the potential to remove as much as 4,000vpd from Bogan Street or potentially 400vph from the intersection of Hartigan Avenue with Forbes Street (Newell Highway).

Level Crossing Performance '*With*' PIT

The analysis of level crossing impacts under the '*with'* development scenario has taken the same approach as that used to assess level crossings in section 4.3.2 (future conditions without development).

Assumptions used for the future assessment of level crossings under the '*with*' development scenario are as follows:

» The upstream crossing point for trains to activate a level crossing is 300m.

» The level crossing will keep open for an additional 10 seconds after the train crosses.

» Peak hour time value is $10.15 /person hour for private vehicles and $19.12/ per vehicle hour for road freight.

» Occupancy rate for light vehicles is 1.2 persons/vehicle.

» No increase in train movements during the peak periods.

» No improvement in rail line operations.

» A new level crossing will be constructed on Brolgan Road to the west of the site under the with development scenario.

» The new level crossing on Brolgan Road will accommodate worst case train lengths of up to 1800m and the train lengths at all other level crossings will remain the same as shown under the without development scenario.

» Train speeds under the with development scenario will be reduced to 10km/h at level crossings on Brolgan Road east of the site (existing), Brolgan Road west of the site and Condobolin Road. Trains will travel at similar speeds to those shown under the '*without'* development scenario for all other level crossings. Table 28 and Table 29 provide an understanding of level crossing operations in the future *'with' and 'without'* the development of the proposed PIT in both the initial and ultimate stages.

Table 28 Future Peak Hour Impact to Traffic at Level Crossings (Initial)

Level Crossing	Rail Line	Vehicle Delay (min:sec)	Queue Length (Vehicles)	Cost of Delay ($)[21]
Initial Stage '*Without*' PIT				
Existing Brolgan Rd east	Parkes Narromine	2:02	1	$8.32
Existing Condobolin Rd west	Parkes Narromine	1:06	2	$24.90
Newell Highway south	Parkes Forbes	1:04	11	$137.54
Newell Highway Town Centre	Parkes Forbes	7:23	127	$1,700.32
Blaxland St	Orange Broken Hill	7.23	10	$120.70
Salesyard Rd	Parkes Forbes	1:37	1	$12.30
Initial Stage '*With*' PIT				
Existing Brolgan Rd east	Parkes Narromine	5:45	10	$156.29
Proposed Brolgan Rd west	New PIT rail link to Orange Broken Hill	12:46	4	$54.49
Existing Condobolin Rd west	Parkes Narromine	5:45	10	$133.31
Newell Highway South	Parkes Forbes	1:04	11	$141.29
Newell Highway Town Centre	Parkes Forbes	7:23	129	$1,730.42
Blaxland St	Orange Broken Hill	7.23	10	$120.70
Salesyard Rd	Parkes Forbes	1:37	1	$12.30

[21] Value of Time, RTA Economic Analysis Manual, Version 2, 1999. Table 9.

Table 29 Future Peak Hour Impact to Traffic at Level Crossings (Ultimate)

Level Crossing	Rail Line	Vehicle Delay (min:sec)	Queue Length (Vehicles)	Cost of Delay ($)[22]
Ultimate Stage '*Without*' PIT				
Existing Brolgan Rd east	Parkes Narromine	1:06	0	$9.45
Existing Condobolin Rd west	Parkes Narromine	1:06	2	$26.92
Newell Highway south	Parkes Forbes	1:04	12	$173.59
Newell Highway Town Centre	Parkes Forbes	7:23	145	$1,952.50
Blaxland St	Orange Broken Hill	7:23	13	$160.32
Salesyard Rd	Parkes Forbes	1:37	1	$13.59
Ultimate Stage '*With*' PIT				
Existing Brolgan Rd east	Parkes Narromine	5:45	23	$355.99
Proposed Brolgan Rd west	New PIT rail link to Orange Broken Hill	12:46	5	$61.85
Existing Condobolin Rd west	Parkes Narromine	5:45	11	$149.31
Newell Highway South	Parkes Forbes	1:04	12	$182.69
Newell Highway Town Centre	Parkes Forbes	7:23	149	$2,015.34
Blaxland St	Orange Broken Hill	7:23	13	$160.32
Salesyard Rd	Parkes Forbes	1:37	1	$13.59

Note – the train length and travel speed does not vary between initial and ultimate stages, however, the volume of traffic expected to be delayed is variable. Train travel speeds are assumed to vary at some level crossings under both the *'with'* and '*without*' development scenarios.

The results presented in Table 28 and Table 29 indicates the following:

» Future average delay at level crossings situated in Parkes will remain the same as that identified under current conditions, except for the level crossings situated on Brolgan Road and Condobolin Road.

» The longest traffic queues at a level crossings was identified to be at Forbes Street where the number of vehicles was estimated to be 127 vehicles under the '*without*' development scenario initial stage and 129 vehicles under the '*with'* development scenario initial stage. This vehicle length increased under the ultimate stage from 145 under the '*without*' development scenario to 149 vehicles under the '*with'* development scenario.

» The highest travel time delay cost from the closure of a level crossing occurred at Forbes Street, were the results indicate increases from approximately $1,700 under the *'without*' development scenario initial stage to $1,730 under the '*with'* development scenario initial stage and in the ultimate stage from $1,950 to $2,015,

[22] Value of Time, RTA Economic Analysis Manual, Version 2, 1999. Table 9.

respectively. This indicates that the difference under the '*with'* or '*without*' development scenarios in vehicle impacts at the highest trafficked level crossing in Parkes is minimal.

» The most significant difference in performance when comparing level crossing operations under the '*with'* or '*without*' development scenarios are at Brolgan Street east and Condobolin Road.

– At Brolgan Street east, the delay time in both the initial and ultimate stages extended from 2 minute and 3 seconds under the *'without'* development scenario to 5 minutes and 45 seconds under the '*with*' development scenario. The queue lengths under the ultimate stage extended from 1 under the '*without'* to 23 vehicles under the '*with*' development scenario. The cost associated with the travel time delay was minimal in comparison to that estimated for the Forbes Street level crossing and estimated to be approximately $356 under the '*with*' and $10 under the '*without*' development scenario.

– At Condobolin Road west, the delay time in both the initial and ultimate stages extended from 1 minute and 6 seconds under the *'without'* development scenario to 5 minutes and 45 seconds under the '*with*' development scenario. The queue lengths under the ultimate stage extended from 2 under the '*without'* to 11 vehicles under the '*with*' development scenario. The cost associated with the travel time delay was minimal in comparison to that estimated for the Forbes Street level crossing and estimated to be approximately $150 under the '*with*' and $27 under the '*without*' development scenario.

» The new level crossing situated at Brolgan Road west is estimated to be closed for a significant period of time (12mins:46secs) as a result of a 1800m long train passing over the crossing at 10km/h. However, during this period only 5 vehicles (Ultimate Stage) are likely to be delayed as a result of this occurring during the peak hour and costs associated with the travel time delay would be minimum (approximately $62).

» All other level crossings have similar performance measures to that shown under the '*without*' development scenario.

5. Identification of Improvement Options

The purpose of this section is to assess the required network improvements as a result of the key findings identified in Section 4.

5.1 Key Findings from Road Network Assessment

The key findings from the Road Network Assessment are outlined below:

Road Links

» All urban and rural road sections that may be affected by the development operate satisfactorily for the years 2010 and 2020 '*with*' and '*without*' the development.

» The Level of Service (LOS) for all rural and urban road sections is the same '*with*' and '*without*' the development in place. Therefore no deterioration in LOS occurs on rural and urban road sections due to the development of PIT.

» The least amount of spare capacity on a rural road section was identified to be on the Newell Highway South. The spare capacity on this section of road is reduced by 317 vehicles per day from 1,216 vehicles '*without*' the development, however still has the ability to accommodate 899 additional vehicles per day.

» The development generates the highest vehicle volumes per day on Brolgan Road. However, under '*with*' the development, Brolgan Road still continues to operate at a LOS A and has available capacity of 6,848 and 5,525 in 2010 and 2020 respectively.

» On urban road sections the minimum spare capacity occurs on Forbes Street (Newell Highway) south of Hartigan Road. This section of road has a spare capacity of 174 vehicles per lane in the peak hour in 2020. This is compared to 193 vehicles per lane in the peak hour '*without*' the development, this equates to a reduction in capacity of 19 vehicles per hour.

» The most effected urban road from the '*with'* development scenario is Hartigan Avenue. The spare capacity on Hartigan Avenue is reduced by 35 vehicles per lane in the peak hour in 2010, and 83 vehicles per lane in the peak hour by 2020. However, the LOS remains the same in both the '*with*' and '*without'* development scenarios.

Intersections

» The intersection of Hartigan Ave with the Newell Highway and Grenfell Street passes the trigger point for upgrade by 2010 under the '*without*' the development scenario, as outlined in section 4.1. This intersection will require signalisation and closure of the Grenfell Street approach by 2010 regardless of traffic generated by the PIT.

» The intersection of Bogan Street with Hartigan Avenue passes the trigger point for upgrade by 2020 during the PM peak hour under the '*with*' development scenario only.

» Both intersections at Hartigan Avenue with Newell Highway and Bogan Street with Hartigan Avenue when signalised operate satisfactorily and have available spare capacity under the '*with*' development scenario in 2020 (ultimate stage).

» From an operational perspective, it is likely that both the Forbes Street (Newell Highway) with Hartigan Avenue and Bogan Street (Newell Highway) with Hartigan Avenue would be signalised at the same time. This is due to the distance between the two intersections and their operating characteristics. Signalised coordination with other traffic management improvements would help address the current road safety concerns identified in section 2.3.4.

» The intersections of Hartigan Avenue with Newell Highway and Bogan Street (Newell Highway) with Forbes Street (Newell Highway) were modelled with the southern section of the proposed western ring road in place. The inclusion of the southern section of the proposed western ring road, under both the '*with' and 'without'* development scenarios, had little effect on improving the performance of the combined Hartigan Avenue with Forbes Street (Newell Highway) and Bogan Street (Newell Highway) with Hartigan Avenue intersections.

As outlined in Sections 4.3.1 & 4.3.2 the RTA has modelled the Newell Highway / Forbes Street / Grenfell Street intersection using different background traffic growth than GHD and higher development related traffic[23].

The RTA modelling indicates that *'without'* both the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections will operate satisfactorily without signals beyond 2020[24]. However both the GHD and RTA modelling concur that for future years (2020) *'with'* development the Newell Highway / Forbes Street / Grenfell Street intersection should be signalised together with the Newell Highway / Bogan Street intersection and that the Grenfell Street leg of the intersection should be closed.

Subsequent to the GHD and RTA modelling being undertaken Terminals Australia has agreed with the RTA and Council to commit to the upgrading of the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections to the satisfaction of the RTA.

Level Crossings

The findings from the evaluation of level crossing operations indicate the following:

» There are also significant delays to traffic from the closure of level crossings at both Forbes Street and Blaxland Street '*without*' the development. The closure period has been estimated to be approximately 7 mins: 25 secs in both cases under the worst-case scenario.

» There are significant delays to traffic from the closure of existing level crossings at both Brolgan Road and Condobolin Road under the '*with*' development scenario.

[23] Letter dated 1st February 2007, titled: Proposed Parkes Intermodal Freight Terminal, Review of 'Sidra' Intersection Modelling, Samsa Consulting Transport Planning & Traffic Engineering

[24] RTA letter (ref: 353.5395 05/2-4) to Department of Planning dated 18 January 2007.

The closure periods are estimated to be approximately 5 mins: 45 secs in both cases.

» The longest time period for a level crossing closure is estimated to occur at the new proposed crossings on Brolgan Road west under the '*with*' development scenario. The closure period has been estimated to be approximately 12 mins: 45 secs.

» The highest impact on traffic performance from a crossing closure was estimated to occur at the Forbes Street level crossing were traffic queues can generate up to 149 vehicles (compared to 5 vehicles at the new Brolgan Road west, 23 vehicles at Brolgan Road east and 11 vehicles at Condobolin Road) and associated travel time delay costs of approximately $2,015 (compared to approximately $62 at the new Brolgan Road west, $356 at Brolgan Road east and $150 at Condobolin Road)

» The traffic performance impacts at the Forbes Street level crossing were noted to be similar for both the '*with*' and '*without'* development scenarios.

» It is also noted that the majority of traffic delayed at the Brolgan Road east level crossing is generated by the proposed development and the impact on background traffic is minimal.

5.2 Potential Improvement Scenarios

A number of improvement scenarios associated with the proposed development have been developed and are based on the issues outlined in Section 2.1 and key findings from Road Network Assessment outlined above (refer to Figure 4 for a graphical representation of existing and future issues on the road network).

Signalisation of the intersection of Hartigan Avenue with Forbes Street (Newell Highway) and Bogan Street (Newell Highway) with Hartigan Avenue

The key findings associated with the signalisation of these intersections are as follows:

» Section 2.3 indicates that intersection improvement for the management of traffic flows is required on the grounds of road safety concerns under the current operations.

» The assessment of the road network undertaken in Section 4 highlights the need to upgrade the Hartigan Avenue with Forbes Street (Newell Highway) and Grenfell Street intersection to traffic signals and remove access to Grenfell Street by 2010 under the '*without*' development scenario. Signalisation is therefore required as a result of predicted traffic growth along the Newell Highway.

» The intersections of Hartigan Avenue with Forbes Street (Newell Highway) and Bogan Street (Newell Highway) with Hartigan Avenue are approximately 80m apart and service the dominant north south movement on the Newell Highway. The close proximity of these intersections suggests that they should operate as linked traffic signals.

» Both intersections at Hartigan Avenue with Forbes Street (Newell Highway) and Bogan Street (Newell Highway) with Hartigan Avenue operate with spare capacity

under signalised control under both under the '*with'* and '*without*' development scenario in 2020.

» Subsequent to the GHD and RTA modelling being undertaken Terminals Australia has agreed with the RTA and Council to commit to the upgrading of the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections to the satisfaction of the RTA.

Lighting at Brolgan Road / Westlime Road Intersection

The requirement to light this intersection has been highlighted by PSC and is recognised as being justified on the grounds of safety during night operations.

Terminals Australia has made a binding commitment to contribute to a project approved and part funded under AusLink for improvements to Brolgan Road, including the upgrading and lighting of the intersection with Westlime Road.

Salesyard Road Ring Road Connection (Interim Option)

An interim ring road connection from the Hartigan Avenue / Blaxland Road intersection to the Newell Highway via Salesyard Road and Ackroyd Street has been proposed by PSC in the *Strategic Plan for Major Road and Transport Infrastructure for Parkes and Environs* document.

A number of issues and concerns regarding this route have been identified in this report (refer to Section 2.1 and 4.2) and are identified to be:

» This route requires traffic to cross two additional existing level crossings.

» Some of the intersections along this route are inadequately designed and would require upgrading.

» The close proximity of existing level crossings to intersections creates operational issues for truck movements.

» The proposed Saleyards Road route is sub standard along certain road sections and will require upgrading to accommodate B double type vehicles.

» PSC has indicated that the intersection of Saleyards Road with the Newell Highway would require upgrading to cater for the expected truck sizes and traffic levels, if it is to be utilised as access point to the Transport Hub.

» The RTA has indicated that the operation of the existing the Blaxland Road level crossing and intersection is a concern and would benefit from grade separation. This grade separation would be required, if Salesyard Road was to be used as an interim ring road route to the Parkes Transport Hub

» The network performance assessment indicates that the existing route via Hartigan Avenue has sufficient capacity to accommodate expected traffic levels from the PIT under the ultimate development stage.

This interim ring road option would remove traffic from the Hartigan Avenue / Newell Highway intersection and improve the environmental amenity for residents and workers in the Hartigan Avenue / Newell Highway and Middleton areas. However, it would only

be an interim solution, which requires significant investment to address current road safety concerns and existing road design deficiencies.

Terminals Australia has made a binding commitment to contribute to a project approved and part funded under AusLink for improvements to Brolgan Road, including the upgrading and lighting of the intersection with Westlime Road. The project also includes improvements to the Hartigan Avenue / Blaxland Street intersection.

Southern Section of the Western Ring Road

A southern bypass connecting SH17 (Newell Highway) and MR61 (Hartigan Avenue) is proposed as part of the future Ring Road around Parkes. Refer to Figure 3 for details of the proposed Ring Road system.

A number of issues and concerns regarding this route have been identified in this report (refer to Sections 2.1 and 4.2):

» The cost and benefit received from constructing just the southern section of the western ring road appears not to be justified based on the analysis shown in Section 4.4.2.

» The proposed southern section of the western ring road is expected to provide operational benefit in terms of removing traffic from existing level crossings and the town centre road system. The cost associated with its construction will be influenced by the need to grade separate the rail crossing near Blaxland Street.

» The southern section of the western ring road is likely to require the new intersection of Brolgan Rd/ Westlime Rd/ Hartigan Ave to be upgraded. This intersection upgrade is required due to a current design deficiency, involving a crest situated in the recently constructed Westlime Road restricting driver sight distances from all approaches with exception to the east. The delivery of the western ring road would require the priority to be changed at from Brolgan Rd to Westlime Rd and Hartigan Ave at the intersection. Under the current speed environment and alignment, a change without addressing the visibility matters would raise safety concerns and not be accepted by the road authority. The signalisation or other traffic management improvement should be designed to meet the long-term objectives of the regional road network.

» Preliminary level modelling of the Hartigan Avenue / Newell Highway intersections indicated that the inclusion of the proposed western ring road southern section alone, would not improve the performance of existing Hartigan Avenue with the Newell Highway intersections, under either the '*with'* and '*without*' development scenarios.

Construction of the Western ring road (comprising northern *and* southern sections)

It is expected that additional work would be required to fully understand the extent of the benefits obtained from constructing the entire western ring road (northern and southern sections). However, it is likely that this would improve safety and local amenity for a large section of the Parkes community, reduce through traffic movement

in Parkes and assist in improving the operation of the Hartigan Avenue with the Newell Highway intersections.

It is considered prudent that both the northern and southern sections of the western ring road be developed as a single project in order to ensure that maximum return is provided for the investment. The benefits from this project would be provided in terms of the following:

» Reduced overall infrastructure costs through the provision of a single infrastructure project that addresses both existing and future 'entire town' issues instead of investing in short term isolation solutions.

» Travel time savings for all types of traffic movements. This includes regional through traffic movements, trips to or from western Parkes and local Parkes trips as a consequence of reduced traffic levels.

» Offers long term capacity and safety solutions that avoid remedial works along the inappropriately designed local road systems.

» Improves local amenity and safety through the redistribution of existing heavy vehicle and regional traffic movements to more suitable road sections.

» Improves the operation of the national transport system and meets Auslink objectives.

» Reduces traffic noise levels in the central areas of Parkes.

» Mitigates the majority of the existing road network operational and road safety concerns and provides a desirable access route for traffic movement to the Parkes Transport Hub.

Current traffic data shows that the Average Annual Daily Traffic on the Newell Highway to the north and south of Parkes is in the order of 5,500 vehicles per day (vpd). This increases to 9,900vpd just south of Hartigan Avenue. These figures suggest that the provision of the western ring road could potentially remove in the order of 4,000 vehicles per day from the Parkes Town Centre road network.

It is envisaged, that the provision of both the northern and southern sections of the western ring road would provide the greatest benefit to the performance of:

» Hartigan Avenue with the Newell Highway intersections; and

» Level crossings situated at Forbes Street, Blaxland Street and Newell Highway south.

The construction of this project is expected to:

» Remove current road safety issues associated with the Blaxland Street with Hartigan Avenue intersection and Blaxland Street level crossing.

» Reduce the dominant north-south traffic movement at the Forbes Street with Hartigan Avenue intersection and Forbes Street level crossing and could possibly delay the need to upgrade to traffic signals in 2010.

» Remove a large proportion of the heavy vehicle traffic movement through central areas of Parkes.

» Reduce the road safety risks associated with level crossings situated on main road corridors.

Upgrade of Existing Level Crossings

Upgrade of existing level crossings situated along Brolgan Road east of the proposed development and along Condobolin Road. The proponent proposed to upgrade these level crossings to accommodate both B double and road train type vehicles and provide the highest possible protection and advanced warning system.

It is recognised that under the current approach by State Government for level crossings that level crossings would require upgrading (based on policy standard for new crossings). However, it is considered prudent to instead consider using the substantial costs associate with the grade separating a level crossings serving low rail and road traffic activity, to help fund the Parkes 'ring road' project. It is expected that the proposed western ring road would provide significantly greater benefit than an isolated grade separated level crossing to the west of Parkes. The benefits received from the development of the ring road would be provided in terms of local amenity improvements, National transport corridor efficiency improvements and improved market potential for approved industrial land uses situated in Western Parkes.

Terminals Australia have agreed to that the proposed configuration and design of rail level crossings will be submitted as part of asset-specific development applications to the relevant road and rail authorities for approval.

5.3 Outline Costs

Outline costs associated with improvement scenarios are provided below.

Table 30 Outline Improvement Scenario Costs

Upgrade	Outline Cost	Responsibility
Upgrade of Brolgan Road	$2.5m	Development areas within the Transport Hub (Transport Hub)
Signalisation of Hartigan Avenue with the Newell Highway Intersection	$0.5m	DOTARS/ Parkes Shire Council (PSC) /Roads and Traffic Authority (RTA)
Signalisation of Hartigan Avenue with Bogan Street Intersection	$0.3m	DOTARS/ PSC /RTA /Surrounding Developments
Lighting of Brolgan Rd / Westlime Rd Intersection	$0.2 – 0.5m	PSC /Surrounding Developments
Upgrade of Salesyard Road (Interim Option) without level crossing improvements	$2.5m	PSC /RTA /Surrounding Developments
Southern Section of Western Bypass (3.3km)	$4.0m*	DOTARS/ PSC /RTA /Surrounding developments
Northern Section of Western Bypass (4.6km)	$5.0m*	DOTARS/ PSC /RTA /Surrounding developments
Upgrade of existing level crossings to Type 'F' signals with booms	$0.5 – 1.0m each	Australian Rail Track Corporation (ARTC)/ PSC /RTA /Transport Hub
Grade separation of level crossings. Condobolin & Brolgan Rds.	$4.0 –8.0m each	ARTC/ PSC /RTA /Transport Hub
Grade separation of level crossings associated with the proposed western ring road.	$4.0 –8.0m each	DOTARS/ ARTC/ PSC /RTA /Surrounding Developments.
Construction of a new north south road link between Brolgan Rd and Condobolin Rd through the PIT site.	$3.0m	Parkes Transport Hub/ PSC

Source – *Costs have been taken from Parkes Shire Council – *'Strategic Plan for Major Road and Transport Infrastructure for Parkes and Environ, April 2006'.*

Note - Other cost not identified as part of the 'Strategic Plan for Major Road and Transport Infrastructure' are typical indicative cost estimates and further analysis (design and survey) is required in order confirm the funding requirements for these pieces of infrastructure.

5.4 Proposed Upgrade Options

From the proposed improvement scenarios outlined in Section 5.2, two options have been developed. The delivery of either of the proposed upgrade options would require

the co-operation of a number of agencies including the RTA, PSC, ARTC and private developers.

5.4.1 Upgrade Option 1

Key elements

This upgrade option consists of the following:

» Contribute towards the funding for upgrading of the Bogan Street with Hartigan Avenue intersection to traffic signals.

Terminals Australia has agreed with the RTA and Council to commit to the upgrading of the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections to the satisfaction of the RTA.

» Contribute towards the grade separation of the existing level crossing at Condobolin Road west, which is identified to be situated on one of the preferred North South Rail Corridor Study rail alignment options. If selected for construction, the North South rail project would require this level crossing to be grade separated in order to ensure that train speeds are not impacted and to improve rail safety.

Terminals Australia has agreed to that the proposed configuration and design of rail level crossings will be submitted as part of asset-specific development applications to the relevant road and rail authorities for approval.

» Identify an alternative route for existing Brolgan Road traffic via the existing road network and Condobolin Road (unsealed roads situated approximately 5 to 7 km west of the Parkes Transport Hub offer this opportunity).

» Upgrade this route for local traffic and design the links so that they can be used as an alternative route for seasonal trucks movements.

» Upgrade the existing level crossing on Brolgan Road to active controls with advanced warning signs and boom gates and install similar active controls at the proposed new level crossing on Brolgan Road to the west of the site.

Terminals Australia has agreed to that the proposed configuration and design of rail level crossings will be submitted as part of asset-specific development applications to the relevant road and rail authorities for approval.

» Install an advanced warning sign system on Brolgan Road west of the site, which indicates that level crossings are closed and through traffic should use the alternative Condobolin Road route.

» Install similar advanced warning devices along Condobolin Road.

Assessment

This option provides local infrastructure improvements, aims to remove isolated issues along the road network, and offers alternatives through the advanced warning of the closure to local traffic and emergency services. These measures can minimise the identified impacts associated with road performance in close proximity to the Parkes Transport Hub. These measures also allow traffic to gain access to the Newell

Highway without lowering the performance of the road network to an unacceptable level.

However, the option offers limited benefit for the local community of Parkes in terms of delivering high standard road infrastructure, improving road safety in critical areas, reducing traffic levels through Parkes town centre and improving the operation of critical section of the road network. It also does not reduce the traffic impacts at the intersections of Hartigan Avenue with Forbes Street, Hartigan Avenue with Blaxland Street and Hartigan Avenue with Brolgan Road and Westlime Road. These three intersection were identified to operate satisfactorily under the '*with*' development scenario in the ultimate stage. However, these improvements do not offer travel time delay savings, reduced queuing or reduced travel time delay costs from the closure of the critical Forbes Street level crossing. This option also does not provide any benefit to emergency services at level crossing points not situated near to the Parkes Transport Hub.

5.4.2 Upgrade Option 2

Key elements

This upgrade option consists of the following:

» Do not grade separate level crossings situated in close proximity to the site, but instead contribute funds towards the future construction of both the southern and northern sections of the proposed western ring road.

» Upgrade existing level crossings on Brolgan Road to active control status including boom gates and flashing lights.

» Install active controls including boom gates and flashing lights at the proposed new level crossing on Brolgan Road to the west of the site.

» Identify an alternative route for existing Brolgan Road traffic to Condobolin Road for when the level crossing is closed.

» Install an advanced warning system on Brolgan Road, which indicates that level crossings are closed and through traffic should use the alternative Condobolin Road route.

Terminals Australia has agreed that the proposed configuration and design of rail level crossings will be submitted as part of asset-specific development applications to the relevant road and rail authorities for approval.

Assessment

This option offers both local, regional and national benefit to traffic travelling along the Parkes road network. This is presented in terms of the following:

» Reduced traffic levels and improvements in road safety along critical sections of the road network in Parkes.

» Improved operating conditions at key level crossings and intersections.

» Offers an alternative route for emergency services and local traffic.

» Removes regional traffic from road sections not identified to be appropriate for major through traffic movements.

This option appears to provide a greater community return in terms of the funds invested and meeting Federal Government's objectives in terms of improving efficiency, safety, productivity, reliability and sustainability.

Based on the above review it would appear that option 2 offers greater benefit to the community of Parkes, future industrial development within Parkes, regional through traffic movement and development within the Parkes Transport Hub.

5.5 Funding of Improvements along the Regional Road Network

A submission to the 'House of Representatives Inquiry' was prepared by Parkes Shire Council in May 2005. This submission highlighted Council's position with respect to a national intermodal freight centre in the area zoned as a 'Transport Hub' on the western outskirts of Parkes. The inquiry submission itself was titled 'Integration of regional rail and road freight transport interface with ports' and in Attachment A of the paper it identified an infrastructure plan to support the Transport Hub activities. Attachment B (page 13) titled '*The Financial Plan'* was also included to support the infrastructure items identified in Attachment A.

This funding plan identified that the proposed Parkes western ring road was part of the national road network and would therefore be funded 100% by the Commonwealth Government. Other road improvements works identified to form part of the regional road network were put forward to be funded under the following cost sharing arrangements:

» Private sector (10%)

» State Government (50%)

» Council (15%)

» Commonwealth (25%)

6. Key Findings and Recommendations

The key findings from this investigation are as follows:

6.1 Truck Routes

» Hartigan Avenue and Westlime Road have been approved and constructed as main roads to the Parkes Transport Hub and Westlime Quarry facilities. These isolated road link implements were implemented by Parkes Shire Council and are planned, in the longer term, to form part of the proposed Parkes western ring road. The intended design of this ring road system is to be built to a standard that provides priority at intersections for proposed western ring road approaches (Hartigan Avenue and Westlime Road) over less significant roads and to accommodate expected heavy vehicle volumes and types (Council approved B Double route).

» There appears to be no significant issues associated with heavy vehicle movements along the road network within Parkes. Traffic from the proposed PIT would utilise existing haulage routes, which have been approved for B Double type truck traffic.

» The Newell Highway is a major road freight route and forms part of the National Highway. The Newell Highway currently travels through Parkes via Forbes Street and Bogan Street. The route through the town itself accommodates a high proportion of heavy vehicle traffic, which is predicted to increase significantly (3.6%pa) in the future.

» Clustering of crashes was noted to occur along urban section of the Newell Highway, the risk of conflict is likely to increase with predicted increases in road freight with or without the proposed development.

6.2 Growth in Traffic

» According to BTRE, growth in road freight along the Newell Highway and other key routes is expected to grow significantly with or without the development of the Parkes Intermodal Terminal.

» The aim of the development is to attract current and predict road freight movement from the main road system in Parkes. This facility offers the opportunity to repackage and consolidate freight and shift from road to rail. The movement of freight from road to rail will remove traffic from the national and regional road network and overall reduce road maintenance costs along the National Highway and other rural main roads.

6.3 Road Safety

» The historical crash data does not highlight any significant issues associated with peak period traffic or heavy vehicles.

» The most apparent issues are relate to speeding or weekend late night crashes, the current traffic arrangements at intersection, stacking issues at level crossings, poorly maintained traffic treatments or conflict caused by cross traffic movement along the Newell Highway.

» It is noted that some sections of the local main road network are not designed to a high standard, which results in unnecessary conflict (opposed priority) along road links identified as main through truck routes. The proposed development will not alter the proposed access arrangements to the Parkes Transport Hub, however, it is likely to increase traffic volumes along routes approved as truck access routes to the site.

6.4 Rail Operations

» The Parkes Intermodal Terminal will be designed to accommodate train lengths of up to 1800m.

» The current rail network restricts train lengths to 900m or less to the east and north of the site.

» The construction of the North South Rail Corridor may remove these deficiencies and allow 1800m long trains to operate along all approaches to the site.

» Trains arriving or leaving the site will not be allowed to queue over any of the surrounding level crossings. Train movement from the site is understood to only occur when the surrounding rail lines become available. The PIT itself has the capacity to accommodate several trains at any one point in time.

6.5 Throughput Potential of the PIT

The construction of a direct inland railway between Brisbane and Melbourne will make rail more competitive with road for the movement of freight. It is likely that the Parkes Intermodal Terminal will also assist in making rail a more competitive option by providing improved access to the rail network. The delivery of a direct rail route between Melbourne and Brisbane is predicted to offer both travel time and cost savings and is likely to assist the proposed PIT reach its high capture rate TEU throughput target.

6.6 Surrounding Land Uses

It is expected that existing landowners (SCT and FCL), the Parkes Industrial Estate and the community of Parkes would benefit from the construction of the proposed western ring road.

6.7 Performance of Road links

» The future performance of rural road sections in Parkes will be satisfactory under both the '*with'* or '*without*' development scenario.

» The future performance of urban road sections in Parkes will be satisfactory under both the '*with'* or '*without*' development scenario.

6.8 Intersections

» The future performance of Hartigan Avenue with Forbes Street (Newell Highway) intersection in the future is poor and will require upgrading to traffic signals by 2010 '*with'* or '*without'* the proposed development.

» The future performance of Hartigan Avenue with Bogan Street (Newell Highway) intersection in the future is poor and will require upgrading to traffic signals under the '*with*' development scenario by 2020. This intersection will also be directly impacted by the future development of the Parkes Transport Hub and Parkes Industrial Estate and should be considered for upgrade as part of signalising the Forbes Street with Hartigan Avenue intersection.

» The RTA has modelled the Newell Highway / Forbes Street / Grenfell Street intersection using different background traffic growth than GHD and higher development related traffic[25]. The RTA modelling indicates that *'without'* both the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections will operate satisfactorily without signals beyond 2020[26]. However both the GHD and RTA modelling concur that for future years (2020) *'with'* development the Newell Highway / Forbes Street / Grenfell Street intersection should be signalised together with the Newell Highway / Bogan Street intersection and that the Grenfell Street leg of the intersection should be closed.

» Subsequent to the GHD and RTA modelling being undertaken Terminals Australia has agreed with the RTA and Council to commit to the upgrading of the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections to the satisfaction of the RTA.

» The performance of all other intersections in the future under the *'with'* or '*without*' development scenario is satisfactory.

6.9 Level Crossings

» All emergency response vehicles are currently impact by delays at existing level crossings in Parkes and the current configuration of the local road network offers no or limited number of alternatives during a closure.

» Outputs from the level crossing performance assessment indicate that the longest queues (number of vehicles delayed) and highest cost associated with travel time delay occurs at the Forbes Street (Newell Highway) level crossing, which caters for local, regional and national freight movement. This level crossing will attract the highest traffic volumes and is currently impacted by rail operations associated with the Parkes Goods Yard.

» The performance of level crossings indicates that both Brolgan Road level crossings and the Condobolin Road level crossings will be impacted by extended

[25] Letter dated 1st February 2007, titled: Proposed Parkes Intermodal Freight Terminal, Review of 'Sidra' Intersection Modelling, Samsa Consulting Transport Planning & Traffic Engineering

[26] RTA letter (ref: 353.5395 05/2-4) to Department of Planning dated 18 January 2007.

time delays caused by slower trains entering or existing the proposed site under the '*with'* development scenario.

» The construction of the northern and southern sections of the proposed western ring road with a grade separated crossing at Blaxland Street will minimise traffic activity at the two major level crossings situated on the Newell Highway. This approach offers the Level Crossing Strategy Council alternative benefits, which provide improvements in network operations, in the form of an alternative routes for local, regional and emergency vehicle traffic.

» Terminals Australia has agreed that the proposed configuration and design of rail level crossings will be submitted as part of asset-specific development applications to the relevant road and rail authorities for approval.

6.10 Guidance on Constraints, Trigger Points, Potential Investment Opportunities, Outcomes and Beneficiaries

Table 31 provides an understanding or guidance on network constraints or causes, the trigger point criteria for upgrading a certain piece of road infrastructure, potential investment options and outcomes, and the overall beneficiaries from the upgrade option.

Table 31 Guidance on Constraints, Triggers, Potential Investment Opportunities, Outcomes and Beneficiary

Ref No.	Constraint or Cause (with date)	Trigger	Investment *Indicative Typical Costs*	Outcome	Beneficiary
1	Intersection of Hartigan Ave with Forbes Street (2010 '*without'* development)	Greater than a Level of Service C	Upgrade to traffic signals *Between $0.3–0.5m each intersection.*	Offers improvement in road safety and traffic operations Terminals Australia has agreed with the RTA and Council to commit to the upgrading of the Hartigan Avenue / Forbes Street / Grenfell Street and Hartigan Avenue / Bogan Street intersections to the satisfaction of the RTA.	RTA/ PSC/ DOTARS/ Surrounding Development
2	Intersection of Hartigan Ave with Bogan St (2020 '*with*' development)				RTA/ PSC/ DOTARS/ Surrounding Development

Ref No.	Constraint or Cause (with date)	Trigger	Investment *Indicative Typical Costs*	Outcome	Beneficiary
3	Intersection of Hartigan Ave with Blaxland St		PSC recommended traffic signals *Approx $0.5m.*	Not required as a result of poor performance resulting from the delivery of the proposed development, however, if presented in the form of grade separation connected to the proposed western ring road, it would provide local, regional and national benefits. Refer to item 9. Terminals Australia has made a binding commitment to contribute to a project approved and part funded under AusLink for improvements to Brolgan Road, including the upgrading and lighting of the intersection with Westlime Road. The project also includes improvements to the Hartigan Avenue / Blaxland Street intersection.	DOTARS/ RTA/ PSC/ Surrounding Development
4	Intersection of Hartigan Ave with Brolgan Rd and Westlime Rd		RTA recommends the installation of a large roundabout with realign approaches and removal of grades and relocation of services. Approx $1.0 – 3.0m PSC recommended traffic signals *Approx $0.5m.*	Not required as a result of poor performance resulting from the delivery of the proposed development, however, it would provide both local, regional and national benefits if it formed part of the proposed western ring road.	DOTARS/ RTA/ PSC/ Surrounding Development/ Transport Hub

Ref No.	Constraint or Cause (with date)	Trigger	Investment *Indicative Typical Costs*	Outcome	Beneficiary
5	Forbes St Level Crossing	Unknown potential indicators or drivers include: Restriction on emergency vehicle access Time closed to traffic Total number of vehicles impacted Importance of route Overall cost of delay	RTA has indicated that grade separation is not feasible, alternative option would be to redistribute traffic along the proposed Western ring road. *Between $13.0-17.0m* Incorporate with traffic signals *Approx $0.5m*	Offers improvement in local, regional and national road operations and road and rail safety. Terminals Australia has agreed that the proposed configuration and design of rail level crossings will be submitted as part of asset-specific development applications to the relevant road and rail authorities for approval.	RTA/ PSC/ DOTARS/ emergency services/ Surrounding Development
6	Brolgan Rd Level Crossing east		Installation of active boom gates and flashing lights Approx $0.3m Grade separation (road above rail) *Between $4.0 - 8.0m*	Offers improvement in local road operations, road and rail safety and removal of delay to emergency response vehicles (under a grade separation option or provision of a alternative route with advanced warning signage).	ARTC/ PSC/ emergency services/ Surrounding Development
7	Brolgan Rd Level Crossing west (new)		Installation of active boom gates and flashing lights *Between $0.5-1.0m* Grade separation (road above rail) *Between $4.0–6.0m*	Terminals Australia has agreed that the proposed configuration and design of rail level crossings will be submitted as part of asset-specific development applications to the relevant road and rail authorities for approval.	ARTC/ PSC/ emergency services/ Surrounding Development

Ref No.	Constraint or Cause (with date)	Trigger	Investment *Indicative Typical Costs*	Outcome	Beneficiary
8	Condobolin Rd Level Crossing		Grade separation (road above rail) *Between $4.0-8.0m*	Offers improvement in regional road operations, road and rail safety and removal of delay to emergency response vehicles. Terminals Australia has agreed that the proposed configuration and design of rail level crossings will be submitted as part of asset-specific development applications to the relevant road and rail authorities for approval.	RTA/ PSC/ emergency services/ Surrounding Development
9	Blaxland Rd Level Crossing		RTA recommended grade separate to form a section of the proposed western ring road (road above rail). *Between $4.0-8.0m*	Offers national, regional and local road operation solutions to current and future problems, if delivered as part of the proposed western ring road. Terminals Australia has agreed that the proposed configuration and design of rail level crossings will be submitted as part of asset-specific development applications to the relevant road and rail authorities for approval.	ARTC/ RTA/ PSC/ DOTARS/ emergency services/ Surrounding Development/ Regional Traffic (under a proposed western ring road option)

Ref No.	Constraint or Cause (with date)	Trigger	Investment *Indicative Typical Costs*	Outcome	Beneficiary
10	Upgrade of Brolgan Road to B double standard	RTA B double standards	Widening and pavement improvement. *Approx $2.5m*	Offers improvements in road safety and traffic operations for truck traffic travelling to the Parkes Transport Hub Terminals Australia has made a binding commitment to contribute to a project approved and part funded under AusLink for improvements to Brolgan Road, including the upgrading and lighting of the intersection with Westlime Road. The project also includes improvements to the Hartigan Avenue / Blaxland Street intersection.	PSC/ Parkes Transport Hub/ Surrounding Development

Ref No.	Constraint or Cause (with date)	Trigger	Investment *Indicative Typical Costs*	Outcome	Beneficiary
11	Upgrade of Saleyard Road to B double standard	RTA B double standards	Widening, realignment and pavement improvement. *Approx $2.5m*	Not required as the future operation of the Hartigan Ave with Forbes St intersection is satisfactory. The route is not ideal and requires traffic to cross rail at two additional locations and would require significant improvements to intersection and level crossing situated at Hartigan Avenue (not included in the identified funding – refer to item 9). Offers a short term solution for traffic wanting to access the Parkes Transport Hub, Parkes Industrial Area and the local community in western Parkes. It is unknown if it offers significant operational and safety benefits for the investment required.	PSC/ Parkes Transport Hub/ Surrounding Development
12	Proposed Western Ring Road (southern section)	Can vary and is dependent upon general current and future needs and associated with local amenity, safety and capacity requirements. It can be used to address: Local access needs and removal of conflict in urban centres; Benefit to regional traffic	Construction of a new road link with a new grade separated rail crossing *Between $8.0 – 12.0m (includes grade separation of Blaxland Street)*	Offers improvements in national, regional and local road operations, an alternative route for emergency response vehicles and road and rail safety benefits. Part of a national, regional and local road operational solution for current and future problems, if it is delivered as part of the proposed western ring road.	ARTC/ RTA/ PSC/ DOTARS/ emergency services/ Surrounding Development/ Local and Regional Traffic

Ref No.	Constraint or Cause (with date)	Trigger	Investment *Indicative Typical Costs*	Outcome	Beneficiary
13	Proposed Western Ring Road (northern section)		Construction of a new road link. Approx *$5.0m*	Offers improvements in national, regional and local road operations, an alternative route for emergency response vehicles and road safety benefits. Part of a national, regional and local road operational solution for current and future problems, if it is delivered as part of the proposed western ring road.	RTA/ PSC/ DOTARS/ emergency services/ Surrounding Development/ Local and Regional Traffic
14	Lighting of Brolgan Rd / Westlime Rd Intersection	Safety and night time operations	Construction of street lighting around the intersection *Between $0.2 – 0.5m*	Offers local road operational and safety improvements, which could be regional and national traffic benefits if the proposed western ring road is constructed Terminals Australia has made a binding commitment to contribute to a project approved and part funded under AusLink for improvements to Brolgan Road, including the upgrading and lighting of the intersection with Westlime Road. The project also includes improvements to the Hartigan Avenue / Blaxland	RTA/ PSC/ DOTARS/ / Surrounding Development/ Local Traffic

Ref No.	Constraint or Cause (with date)	Trigger	Investment *Indicative Typical Costs*	Outcome	Beneficiary
				Street intersection.	
16	Construction of a new north south road link between Brolgan Rd and Condobolin Rd through the PIT site.	Emergency vehicle access and reduce impact on local amenity.	Construction of a new road link. Approx *$3.0m*	Offers a low number of local traffic movements an alternative road route. The importance of this facility is currently justified by emergency vehicle access needs. The RTA has stated that they do not think that the proposed north south link between Condoblin Road (MR61) and Brolgan Road is not seen as being necessary[27].	Parkes Intermodal Terminal

[27] RTA letter (ref: 353.5395 05/2-4) to Department of Planning dated 18 January 2007.

6.11 Findings from the Review of Interim Salesyard Road Improvement Measure

» The intersection of Hartigan Avenue with Blaxland Street and Hartigan Avenue with Brolgan Road and Westlime Road does not provide priority to Hartigan Avenue due poor sight lines and alignment deficiencies. The reprioritisation of these intersections has not been deemed to be necessary base on the results of the intersection analysis.

» This option does not cater for traffic travelling north, which are still required to pass through the intersection of Hartigan Avenue with Forbes Street.

» Requires trucks pass over two additional level crossings, one of which would require significant improvements.

» The intersection of Hartigan Avenue with Forbes Street is identified to perform satisfactory, once it is upgraded to traffic signals in 2010, as a result of expected growth in traffic not associated with the site. The need for the introduction of this route is not justified based on the poor performance of the Forbes Street intersection.

» The use of Salesyard Road as an interim western ring road arrangement is therefore deemed to have limited benefit and would require significant investment to rectify identified alignment, road safety and capacity deficiencies.

6.12 Benefits from Providing a Western Ring Road

The construction of the Parkes western ring road bypass will provide the following benefits:

» Improved direct access for truck traffic travelling to the Parkes Transport Hub from the Newell Highway,

» Improve amenity and safety along town centre sections of the Newell Highway by reducing heavy vehicle and through traffic movements;

» Reduce traffic levels in areas identified to have crash clustering;

» Reduce the total number of level crossings situated along main road routes in Parkes;

» Reduce delay and queuing associated with the critical crossing of the Orange – Broken Hill railway at Forbes Street;

» Offers an alternative route for emergency response vehicles;

» Offer time savings for through traffic movement along the Newell Highway;

» Provide capacity benefits and an opportunity to further expand and develop industrial land uses within Parkes;

» Offer infrastructure that provides the greatest benefit and investment return for local, regional and national based road movements through Parkes; and

» This approach would be consistent with Federal Government's Auslink objectives in providing a benefit to local, regional and the national economies.

6.13 Road Upgrade Options

6.13.1 Upgrade Option 1

This option provides local infrastructure improvements, aims to remove isolated issues along the road network, and offers alternatives through the advanced warning of the closure to local traffic and emergency services. These measures can minimise the identified impacts associated with road performance in close proximity to the Parkes Transport Hub. These measures also allow traffic to gain access to the Newell Highway without lowering the performance of the road network to an unacceptable level.

However, the option offers limited benefit for the local community of Parkes in terms of delivering high standard road infrastructure, improving road safety in critical areas, reducing traffic levels through Parkes town centre and improving the operation of critical section of the road network. It also does not reduce the traffic impacts at the intersections of Hartigan Avenue with Forbes Street, Hartigan Avenue with Blaxland Street and Hartigan Avenue with Brolgan Road and Westlime Road. These three intersection were identified to operate satisfactorily under the '*with*' development scenario in the ultimate stage. However, these improvements do not offer travel time delay savings, reduced queuing or reduced travel time delay costs from the closure of the critical Forbes Street level crossing. This option also does not provide any benefit to emergency services at level crossing points not situated near to the Parkes Transport Hub.

6.13.2 Upgrade Option 2

This option offers both local, regional and national benefit to traffic travelling along the Parkes road network. This is presented in terms of the following:

» Reduced traffic levels and improvements in road safety along critical sections of the road network in Parkes.

» Improved operating conditions at key level crossings and intersections.

» Offers an alternative route for emergency services and local traffic.

» Removes regional traffic from road sections not identified to be appropriate for major through traffic movements.

This option appears to provide a greater community return in terms of the funds invested and meeting Federal Government's objectives in terms of improving efficiency, safety, productivity, reliability and sustainability.

Based on the above review it would appear that option 2 offers greater benefit to the community of Parkes, future industrial development within Parkes, regional through traffic movement and development within the Parkes Transport Hub.

6.14 North South Rail Corridor

» The high capture rate target TEU throughput of the Parkes Intermodal Terminal would benefit from the construction of a direct inland rail link between Brisbane and Melbourne via Parkes.

» The logical route and most beneficial in terms of investment and return cost was identified to be via the existing Parkes – Narromine Railway corridor (North South Rail Corridor 2006[28]).

» The introduction of this rail connection is likely to include the grade separation of all level crossings along the proposed rail corridor, which would include the existing Brolgan Road and Condobolin Road crossing points.

6.15 Proposed *Preliminary* Stage Development

This document outlines the findings of more in-depth investigations undertaken to address issues raised with respect to *Traffic Assessment (GHD, June 2006)*. And the *Environmental Assessment for Concept Approval* (GHD, June 2006) that it informed.

Whilst the proponent continues to seek concept approval for the full development, which may take 10-15 years, they advise that the first project approval to be sought is highly likely to be a *preliminary stage* of the "Initial Stage".

At this *preliminary* stage, it is foreseen that the terminal would cater for an annual throughput of 50,000 TEU and that the following elements of the *initial* development would be established:

» 1 x 1,800 to 2,000 long metre siding

» 1 x 1,200 metre siding

» Hardstand to load 900 metre train lengths (from one side)

» Cargo storage facility

» Terminal operation centre

» Access roads

It is expected that this and subsequent project applications will be submitted to Parkes Shire Council for assessment, under the conditions imposed in the concept approval.

[28] Ernst & Young (2006). North South Rail Corridor Study. Undertaken with ACIL Tasman & Hyder Consulting. Prepared for DOTARS.

Appendix A

A - Response to EA Submissions

Department of Planning review of Road Transport Infrastructure; and Western Regional Development Committee Submissions.

Table 1 Issues and Responses

Item No.	Samsa Document Reference	Issue	Samsa Comment /Recommendation	GHD Comment
1	3.1.2 Traffic Flows (p. 8)	Estimated growth rate used for light vehicles was not documented.		The traffic growth rate used for light vehicles is a conservative estimate and based on the following. » Traffic growth along the local and urban road network was obtained from data contained in the following: – REF – Access Road for the Goobang Junction Industrial Area, Parkes Shire Council. – Strategic Plan for Major Roads & Transport Infrastructure for Parkes & Environs, Parkes Shire Council, April 2006. » Traffic growth along the regional road network was obtained from metro count information supplied by RTA Western Region.
2	3.1.2 Traffic Flows (p. 8)	Growth rate for road freight was not sourced.		The growth rate for road freight was based on the prediction provided in the AusLink 'White Paper' 2004. This document indicates that the national average growth in road freight would be 3.6%.
3	3.1.2 Traffic Flows (p. 8)	Road freight growth rate used could be considered inappropriate as it is a nationwide freight growth scenario rather than a Parkes-specific growth rate.		Refer to Note 1 below. This note indicates that the national growth for road freight along AusLink corridors is appropriate for this assessment.

Item No.	Samsa Document Reference	Issue	Samsa Comment /Recommendation	GHD Comment
4	3.1.3 Road Performance (p. 9)	Table 5 is an approximate estimate only of LOS and V/C comparisons	Not considered appropriate criteria for evaluating road capacity.	This approach is consistent with work currently being undertaken by the RTA in remote areas of South West Sydney and the lane capacity volumes identified in Tables 4.3 and 4.4 of the RTA Guide to Traffic Generating Developments (Oct 2002). Both reference documents have identified a desirable traffic lane capacity of 900vph, which equates to a Level of Service D for a traffic lane on an urban road in the peak hour.
5	3.1.3 Road Performance (p. 9)	Table 6 is considered adequate, however, a more detailed analysis could have been made.	Use section 3.2 of Austroads ' Guide to Traffic Engineering Practice: Part 2 – Roadway Capacity'	The assessment criteria shown in Table 6 is adequate for its purpose
6	3.1.3 Road Performance (p. 9) and 3.4 Road network Impacts (p.12)	In Table 8, 29 and 30, the Newell Highways are > 4800 vpd, which from table 6 earlier, is above the traffic volume threshold for LOS B	Should be LOS C	GHD agrees with the comment and has identified the error, which relates to the presentation of Newell Highway data only.

Item No.	Samsa Document Reference	Issue	Samsa Comment /Recommendation	GHD Comment
7	3.1.3 Road Performance (p. 9) and 3.4 Road network Impacts (p.12)	Table 8. Unclear how 'urban' roads Hartigan Ave, Bogan St and Dalton St have LOS A when Table 7 indicates max service flow rates for urban roads is LOS D	Unclear how this was derived as in Table 7 earlier indicates max service flow rates for urban roads is LOS D	The performance guideline used in this analysis was for the peak hour on urban type roads. The volumes shown in Table 8 are Average Daily Two Way Traffic flows. Using the commonly used formula presented under Table 6, which is taken from Guide to Traffic Engineering Practice: Part 2 – Roadway Capacity' (Table 3.9), the following was assumed: » peak hour traffic represented approximately 10% of the overall average daily traffic volume; and » a traffic directional split of 60/40. Based on these principles the peak hour traffic volumes were estimated and compared to the criteria provided in Table 5 and 7 to identify the trigger point for upgrade (LOS D or 900 vehicles per traffic lane).
8	3.1.3 Road Performance (p. 9)	Table 8 and subsequent road capacity sections. Westline Rd not included and assessed	Westline Rd could potentially be affected as it may act as a linking section of for a future Parkes 'ring road'	No traffic data was available for Westline Road, however, new survey information has recently been obtained and will be assessed as part of additional works currently being undertaken.
9	3.1.3 Road Performance (p. 9)	Table 8. Newell Highway at Hartigan Ave not included	The Council major roads document identified an average daily traffic of almost 9900 vpd at this location. This road section needs to be included in the road performance assessment.	New survey information has recently been obtained for peak hour operations along this section of the Newell Highway and will be used together with the information contained in PSC Major Roads to assess this link. This information will be presented as part of the additional works currently being undertaken.

Item No.	Samsa Document Reference	Issue	Samsa Comment /Recommendation	GHD Comment
10	3.1.4 Road Safety (p. 9)	Road safety not adequately addressed	Road safety may include: * Road safety/crash analysis along relevant road sections and intersections along proposed transport routes(particularly Hartigan Ave rail crossing intersection) * Examine crash statistics * Road safety issues at various rail level crossings that occur along proposed transport routes.	Crash data has recently been obtained from the RTA and a site meeting held with the two road agencies affected. This meeting was used to identify significant road safety issues associated with possible trucks routes that could be used by vehicles travelling to industrial areas within Parkes. The findings from this analysis will be presented as part of the additional works currently being undertaken.
11	3.3 Traffic Generation and Trip Distribution (p. 10)	Sections 4, 5 and 6 are confusing	Methodology and assumptions need to be clarified	This is based around the principles shown in note 2 below:
12	3.3 Traffic Generation and Trip Distribution (p. 10)	Unclear how quantities from figures 4 and 5 were derived		Refer to the May 2005 'Parkes Intermodal Terminal - Operational and Functional Brief' for the PIT for details.
13	3.3 Traffic Generation and Trip Distribution (p. 10)	The assumption that inbound truck movements with no return trip would be available to accommodate other goods that could be generated by the site	No sensitivity testing of this scenario has occurred in case factors cause trucks to return empty or with partial loads.	This is an operating criteria commonly used by most large truck operators and logistic companies. Empty running will impact on operating costs. The site is large enough and has various components that would support this assumption. Sensitivity testing should be a condition of consent and only undertaken once an operator is identified who can provide realistic scenarios for its proposed operations.

Item No.	Samsa Document Reference	Issue	Samsa Comment /Recommendation	GHD Comment
14	3.3 Traffic Generation and Trip Distribution (p. 10)	No discussion on of possible peaking of traffic movements	Should be evaluated as a worst case scenario in sensitivity testing	The estimated worst-case peak flow for truck movements is represented by the 10% assumption of daily HV traffic plus staff movements occurring simultaneously. This is deemed to be an appropriate worst case assessment as the site is expected to operate 24 hours a day, not target just in time goods and have sufficient storage capacity to accommodate goods for a long period before shifting to other destinations. It should also be noted that a significant amount of goods is predicted to arrive by train and would be transported directed to the warehousing or stack areas. After some time, the TEU would then be transported back to the train and therefore not result in peaking in traffic movements. It is agreed that sensitivity testing may be required, however, it is consider that this form of analysis should be included as a condition of consent and only undertaken once an operator is identified. This component will be able to present a better understanding of the proposed operations.

Item No.	Samsa Document Reference	Issue	Samsa Comment /Recommendation	GHD Comment
15	3.3 Traffic Generation and Trip Distribution (p. 10 & 11)	A worst-case traffic generation scenario is difficult to determine.	Some form of periodic monitoring of traffic generation form the proposed PIT onto the surrounding road network. In conjunction with trigger points, this would present a safeguard for potential impacts on the surrounding road network.	Trigger points are currently being identified as part of ongoing additional works. All movements over this available capacity are likely to require a contribution towards the upgrading of transport infrastructure in Parkes. GHD agrees that monitoring and sensitivity testing should be a condition of consent and only undertaken once an operator is identified who can provide a better understanding of the proposed operations. It is also apparent that other undeveloped industrial sites within Parkes would also benefit from road infrastructure improvements and should be required to contribute.
16	3.4 Road network Impacts (p.11)	No analysis at critical intersection locations, eg. Hartigan Ave, Newell Highway and Bogan St.	Intersection analysis would help identify trigger points for when upgrade works may be required at critical locations. Trigger points would be based on a min. tolerable LOS at critical locations and should be determined with input from council and RTA	No intersection turning movement counts information was available at the time of undertaking the previous assessment. However, this work is currently being undertaken and will be present in an addendum to the original report. Desirable LOS measures were presented to RTA and Council as part of the on-site network constraints meeting and no comments on this approach has been received to date .
17	3.4 Road network Impacts (p.11)	Table 26, 28 and section 6.2.4 use a nationwide growth rate as opposed to a specific Parkes growth rate		Refer to Note 1 below.

Item No.	Samsa Document Reference	Issue	Samsa Comment /Recommendation	GHD Comment
18	3.4 Road network Impacts (p.11)	Unclear how the growth rates in Appendix F Tables were derived		Growth rates and tables were provided by the RTA or obtained from Council background documents. Refer to item No. 1 for data sources.
19	3.4 Road network Impacts (p.11 & 12)	Table 28. There appear to be a number of incorrect daily traffic movements based on traffic generations from Table 23 and trip distribution from Table 25	See original document for corrections	These numbers are correct. Refer to Note 2 below for further explanation of how these were derived.
20	3.4 Road network Impacts (p.12)	Intersections in the road network were not assessed.	The conclusion that the roads would continue to operate at a satisfactory LOS throughout the proposed stages of the development are flawed	GHD agrees that additional analysis will need to be undertaken and is part of the agreed ongoing work.
21	3.4 Road network Impacts (p.13)	Level crossing delays in excess of 12 mins.	Considered likely to be unacceptable to local and other traffic	Further assessment of these potential impacts is currently being undertaken.
22	3.4 Road network Impacts (p.13)	Section 6.4. Initial stage at Condobolin Rd level crossing.	Delays would be approx. 15 mins rather than the 13 mins stated	Further assessment of these potential impacts is currently being undertaken.
23	3.5 Access and Road Safety Impacts (p. 13)	Road safety impacts were not appropriately evaluated	The potential for crashes would increase with the addition of heavy vehicle traffic	Further assessment of these potential impacts is currently being undertaken.

Item No.	Samsa Document Reference	Issue	Samsa Comment /Recommendation	GHD Comment
24	3.5 Access and Road Safety Impacts (p. 13)	5 site access points to be provided onto Brolgan Rd is considered sub-standard with respect to road safety and traffic flow movements generally	Preferable treatment would be to consolidate site access points into 1 or 2 locations.	It should be noted that the DCP does not limit the number of access points to Brolgan Road, which is a Council controlled road link and does not act as a major route for through traffic (current daily traffic volumes are recorded to be less than 200vpd). It should also be noted that the areas surrounding Brolgan Road is approved to be rezoned to accommodate a large transport/ industrial precinct. This type of precinct will generate significant volumes of heavy vehicles. Encouraging high speed through movements along this road section may be deemed to be inappropriate under the road's approved planned environment. Refer to Note 3 below for an explanation of other benefits associated with a 5 access point arrangement.
25	3.5 Access and Road Safety Impacts (p. 13)	Alternative access point on Condobolin Rd	Considered to be a prudent measure	Agreed. Preliminary analysis has indicated that sufficient sight distance can be achieved. The safety analysis required for design purposes should be a condition of consent and can be addressed as part of the next stage of the planning and design process.

Item No.	Samsa Document Reference	Issue	Samsa Comment /Recommendation	GHD Comment
26	3.5 Access and Road Safety Impacts (p. 13)	Reducing speed limits to achieve required sight distances, particularly TSSD	Preferable to create the sufficient sight distance for the current posted speed limit	A preliminary analysis of the proposed access points has indicated that sufficient sight distance can be achieved. However, it is noted that this area is approved to accommodate an industrial precinct, which will change the current road environment and attract high volumes of conflicting heavy vehicle movements. Encouraging high speeds along a road links that attracts high numbers of conflicting heavy vehicle movements could be deemed to be undesirable in terms of road safety and risk. The safety analysis required for design purposes is expected to form part of the conditions of consent and can be addressed as part of the next stage of the planning and design process.
27	3.6 Other Transport impacts (p. 13)	No mention of the feasibility of NSW rail system generally to handle the additional rail movements.	Particularly relevant since the assessment relies on rail to minimise road transport movements	The ability of the PIT is to a certain extent reliant upon the findings of the $7m assessment study currently being undertaken by Federal Government on the North South Rail Corridor. However, RIC rail capacity planning for NSW has indicated that most routes to the site have sufficient capacity. A deficiency in the network lies along rail links to the north and south of Parkes and are expected to be addressed by future improvements, if selected as the preferred route. If the rail link is not upgraded then it is unlikely to increase the heavy vehicle mode share into the site, but instead reduce the sites ability to achieve the high capture TEU target.

Item No.	Samsa Document Reference	Issue	Samsa Comment /Recommendation	GHD Comment
28	3.6 Other Transport impacts (p. 13)	No mention on the affects of increased heavy vehicle flows on the amenity in the Parkes town centre		This is indicated in Tables 26, 27 and 28 as a percentage increase in truck movements and then in the form of the LOS measures provided in Tables 29 and 30.
29	3.6 Other Transport impacts (p. 14)	No examination of potential impacts on bus routes and stops along possible freight routes		Discussion with Council has indicated that public transport movements and services are infrequent and do not clash with the proposed truck routes.
30	3.6 Other Transport impacts (p. 14)	Existing traffic conditions	No assessment provided for environmental road capacity and corresponding amenity issues.	It is currently understood that the roads impacted by proposed truck or worker to site travel routes are not classified as residential streets. Dalton Road (known as MR61) is an arterial road, which is approved as a truck route and is currently under the control of the RTA. Analysis using Table 28 also indicates that the future traffic volumes are below 3,000vpd and therefore should not impact on the desirable environmental threshold. This analysis is based on the assumption that 10% of traffic occurs in the peak hour.
31	3.6 Other Transport impacts (p. 14)	Minimal discussion of cumulative impacts of nearby developments		Discussions with Council and the RTA have not identified any information on additional traffic movement from proposed or future development. The identification of trigger points will assist in understanding future impacts and should be used to measure other development in the area, once the traffic generation rates, planned delivery timeframes and types of development are established.

Item No.	Samsa Document Reference	Issue	Samsa Comment /Recommendation	GHD Comment
32	3.6 Other Transport impacts (p. 14)	Road pavements	No discussion on the potential effects along freight routes due to increased heavy vehicle flow and how this may effect maintenance and road construction	Expected truck types and loads can be provided as an output, if required. However, further analysis is expected to form part of the DA conditions of consent and likely to be completed before detailed design is completed, approval for construction is provided and/ or once an operator is identified.
33	3.6 Other Transport impacts (p. 14)	Traffic management	No general details were provided to mitigate impacts during construction	This is a Concept Design approval, which would make it difficult to define at this point in time. It is expected that this would be addressed as part of the conditions of consent in the next stage of the planning and design process. Input would be required from the operator and construction contractor, both of which at this point in time have not been identified.
34	4. Additional Measures (p. 16)	Road network upgrade strategy (RNUS)	To cater for future traffic flows from not only the proposed PIT but also the whole Parkes Transport Hub and other development in Parkes. See original document for various staging options in regard to various road upgrades	These transport infrastructure requirements are regional issues, which should be addressed by the appropriate authority responsible for formulating plans for the release land in and around Parkes. It is expected that the identification of trigger points as part of the ongoing GHD work will inform this process.

Note 1

It is appropriate to use the National Rate (3.6% pa) for road freight growth along the regional road network around Parkes on the basis that:

» The corridor attracting road freight growth to the same level to that predicted along other significant AusLink freight moving corridors in Australia;

» BTRE predictions indicating that the inter capital freight task along the Melbourne to Brisbane corridor is expected to double between 1999 and 2025;

» The road mode share is predicted to increase along the corridor from approximately 58% in 1999 to approximately 66% in 2025;

» BTRE indicating that the future traffic profile for heavy vehicle volumes along the Parkes section of the corridor will be at the same level as other parts of the Newell Highway; and

» The corridor is importance for servicing significant NSW and northern Victoria producer belts for export and transporting of goods to service the expanding SEQ.

Note 2

Methodology and assumptions (traffic generation and distribution)

» The potential (existing and future) heavy vehicle capture assumption was identified as part of the May 2005 'Parkes Intermodal Terminal - Operational and Functional Brief' for the PIT. Refer to section 1.2 of the report for reference to this document.

» All heavy vehicle distribution patterns are similar to that currently experienced along the regional road network. The distribution through the local road network was identified through discussions with Council;

» The high capture rate identified in Tables 27 and 28 represents the highest possible TEU capture target that the PIT can achieve (representing the worst case scenario) and assumes that the PIT under these circumstances would generate additional heavy vehicle movements. Additional heavy vehicle movements were estimated in the 'Operational and Functional Brief' to be 50% higher than the potential number of heavy vehicles (HV), which could be absorbed from future predicted traffic travelling along the regional road network without the development. Thus, Table 23 indicates that the PIT would generate 1,110 HV movements per day, this would equate to 370 new HV movements along the regional road network and 740 HV movements drawn from the future predicted HV movements, which would travel along the regional road network with or without the development.

» The assumption only relates to the regional road network and assumes that all HV traffic would be new traffic if redirected along the local road network.

» All light vehicle generated by staff movements is new traffic.

» The warehouse HV traffic generation is based on the TEU movement likely to be generated to the site by warehousing itself and is in addition to that moved via the warehousing areas and associated with the PIT operation. This additional traffic is assumed to be new traffic along both local and regional road links.

Note 3

The 5 access points are considered to be appropriate due to the following:

- The size of the site,
- The approved industrial environment planned along Brolgan Road (servicing the Parkes Transport Hub).
- Access options required for emergency vehicles wanting to enter the site.
- To meet Federal and State Government objectives of improving energy and freight transport efficiency.
- Have minimal impact on the safety of the road ink as they will be appropriately designed to meet the desired safety standards.
- Reduce potential conflict caused between peak light vehicle movements and expected truck movements.
- Provide separation between the size and type of vehicles accessing different areas of the site.
- Providing acceptable distances between the internal level crossing points serving the intermodal terminal,
- Offering direct access to the warehousing and offices spread along the frontage to Brolgan Road.
- Offering flexibility.

Table 1 Issues and Responses – Western Regional Development Committee Submission

Item No.	WRDC Document Reference	Issue	WRDC Comment / Recommendation	GHD Comment
1	1. Level Crossing Delays	The WRDC considered the parameters proposed in the EA and questions the veracity of information used in assessing delay times.	It is envisaged that the grade separation of all three public road-rail crossings noted in the EA will be required to reduce the impact of the development upon the road network to an acceptable level.	Further assessment of train speeds, train lengths and closure periods has been completed, together with a comparison of operations at other level crossings situated around Parkes and is shown in Sections 2 and 4. GHD agrees with the assumption made by WRDC that train speeds into rail yards should be limited to 10km/h and have adjusted calculations to reflect this situation at all level crossings impact by rail terminal operations. The assessment indicates that the level crossing at Forbes Street has the longest queue lengths and highest associated travel time delay costs and in comparison the impacts on Condobolin Road and Brolgan Road are much lower. It is also noted that road freight according to Federal Government statistics is expected to grow significantly over the next 20 years with or without the development and will result extended queue lengths and higher travel time delay costs. In comparison, the majority of traffic impacted by the level crossing closure on Brolgan Road will be generated by the proposed development itself, as existing and predicted local traffic levels are minimal. It is also noted that trains movements will not grow significantly and as a result the impact is likely to be infrequent.

Item No.	WRDC Document Reference	Issue	WRDC Comment / Recommendation	GHD Comment
				The assessment also noted that the level crossings at Forbes Street and Blaxland Street are also impacted by rail terminal operations and controlled by boom gate and flashing light protection. This appears to be a suitable treatment for managing traffic at these locations (having little or no recorded crash histories) even when the crossing can be closed for long periods of time without advanced warning. The need to provide safer more efficient routes at rail road interface points (ie. grade separation) should concentrate on where it would provide the highest benefit, which in this case appears to be at Forbes Street or potentially a proposed western ring road. Based on this information the proposed at grade high protection level crossing treatments at Condobolin Road and Brolgan Road appear to be appropriate. It also apparent from the assessment that the grade separation of these local road level crossings would be out of character with treatments used elsewhere around Parkes. If a fund is to be created for the grade separation of level crossings in Parkes then this should be spent where it would provide the greatest benefit and contributions should be collected from all beneficiaries.

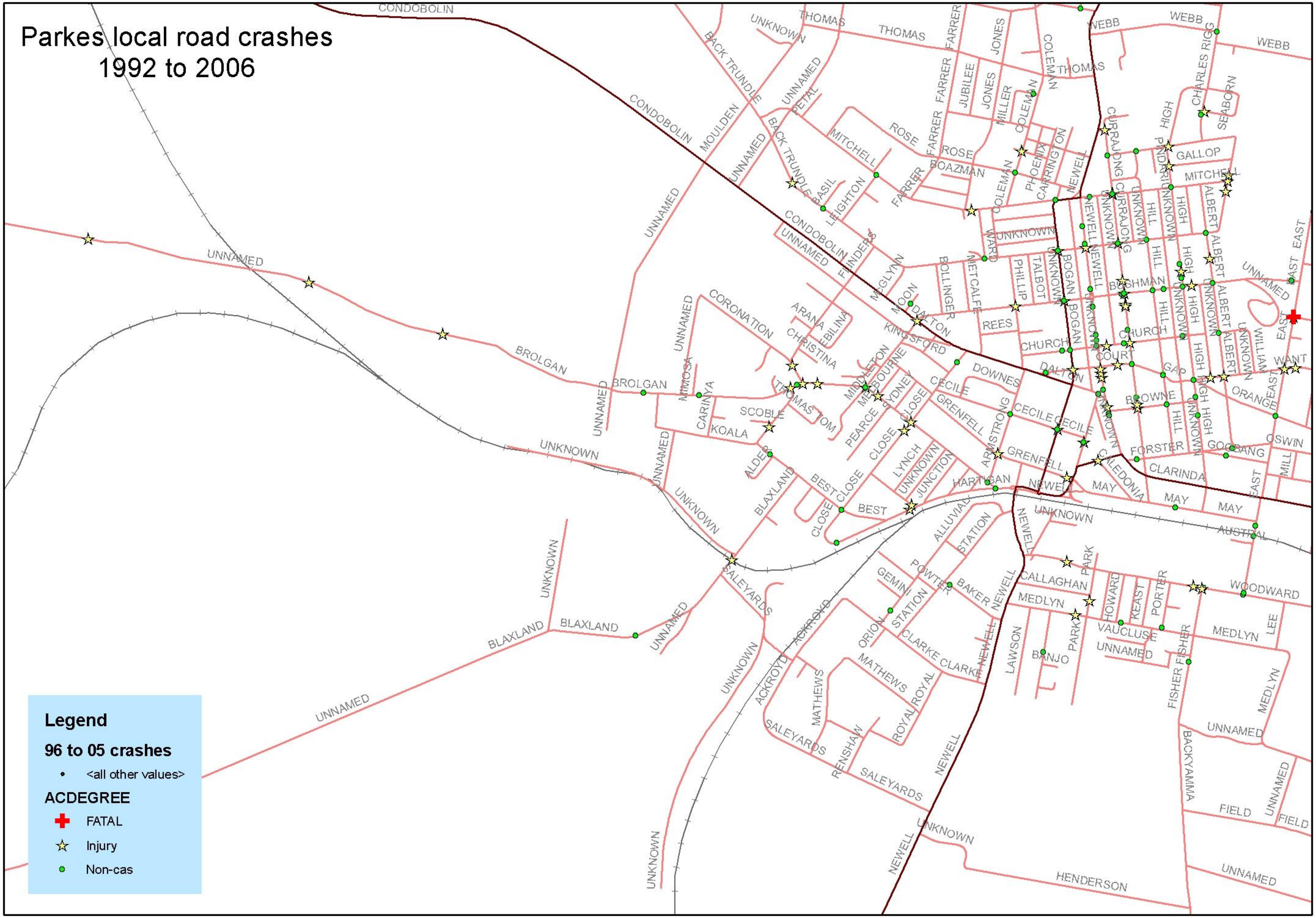
Item No.	WRDC Document Reference	Issue	WRDC Comment / Recommendation	GHD Comment
2.	2. Intersections	It was considered that the Hartigan Ave-Newell Highway intersections would be incapable of operating at an acceptable level under the proposed traffic generation. Traffic analysis of the intersection was not provided by the proponent, as requested in the response to the draft EA. Traffic data must include more than AADT data, turning movement and queue lengths, both existing and development generated, are essential for a meaningful traffic assessment.	It is envisaged that in the short term (construction and possibly the initial stage) the key intersections will require coordinated signalisation and the level crossing widened to four lanes capable of accommodating heavy vehicle sweep paths. In the medium to long term (initial ti ultimate stage), it is thought that completion of Parkes Ring Road will be required to alleviate the traffic generation issues caused by this development.	No intersection turning movement counts information was available at the time of undertaking the previous assessment. However, further work has been completed using recent traffic movement survey information and growth assumptions. This intersection assessment work indicated that the intersection of Forbes Street with Hartigan Avenue would perform poorly with or without the development by 2010 and needs to be upgraded to traffic signals. The assessment indicates that Federal Government predicted growth in road freight along the Newell Highway is the driver for this upgrade and is likely to have further impacts on the township of Parkes. Refer to section 4 for further details of this assessment. It should also be noted that the Hartigan Avenue route is an approved B Double route and is assumed to be of a suitable standard to accommodate heavy vehicle swept paths. GHD agrees that the construction of a proposed western ring road around Parkes would provide significant benefit to national, regional and local road freight movement through Parkes, improve safety and amenity for the community of Parkes, other emergency response vehicles an alternative route and improve access to both industrial and residential land precincts situated to the west of Parkes.

Item No.	WRDC Document Reference	Issue	WRDC Comment / Recommendation	GHD Comment
4	3. Blaxland Street-Hartigan Avenue Intersection	The EA proposes that, as an interim option, southbound heavy vehicles could bypass the key intersections by utilising Blaxland Street level crossing.	This intersection is in close proximity to a level crossing of the Main Western Line, and does not currently provide sufficient storage for a semi-trailer. Page 67 of the EA claims that the Parkes Local Traffic Committee recommended that the priority of this intersection be changed to give priority to Hartigan Ave traffic. Inspection of the minutes shows the Parkes Local Traffic Committee recommended the priority remains as is, with both the Police and RTA representatives strongly opposing a change in priority.	After a sight inspection with relevant stakeholders, GHD agrees that the Salesyard Road route is currently unsuitable for road freight traffic and that the intersection of Hartigan Avenue with Blaxland Street should not be reprioritised without significant improvement. The assessment of the intersection performance at Hartigan Avenue with Blaxland Street indicated that the current traffic arrangements are adequate for accommodating the 'with' development scenario traffic conditions. Refer to sections 4.4, 5.2 and 6.11 for further details.
	Emergency Vehicle access	Consideration is required to be given to access for emergency response vehicles during the closure of level crossings.		Refer to sections 4.2 , 6.10 and 6.12 for further details.

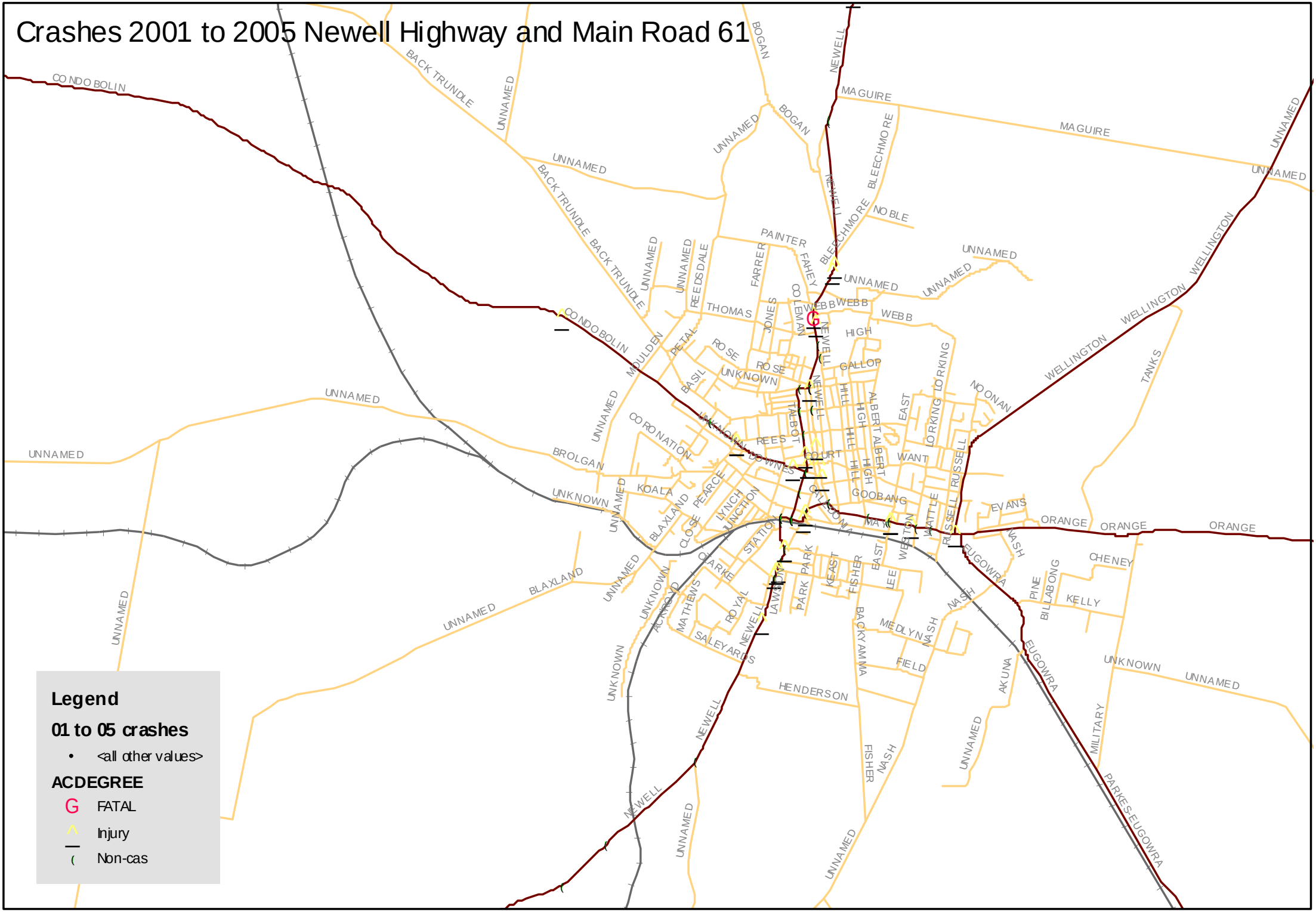
Appendix B

B - Crash Locality and Severity Mapping

RTA locality and severity crash mapping for the local and regional road network in Parkes



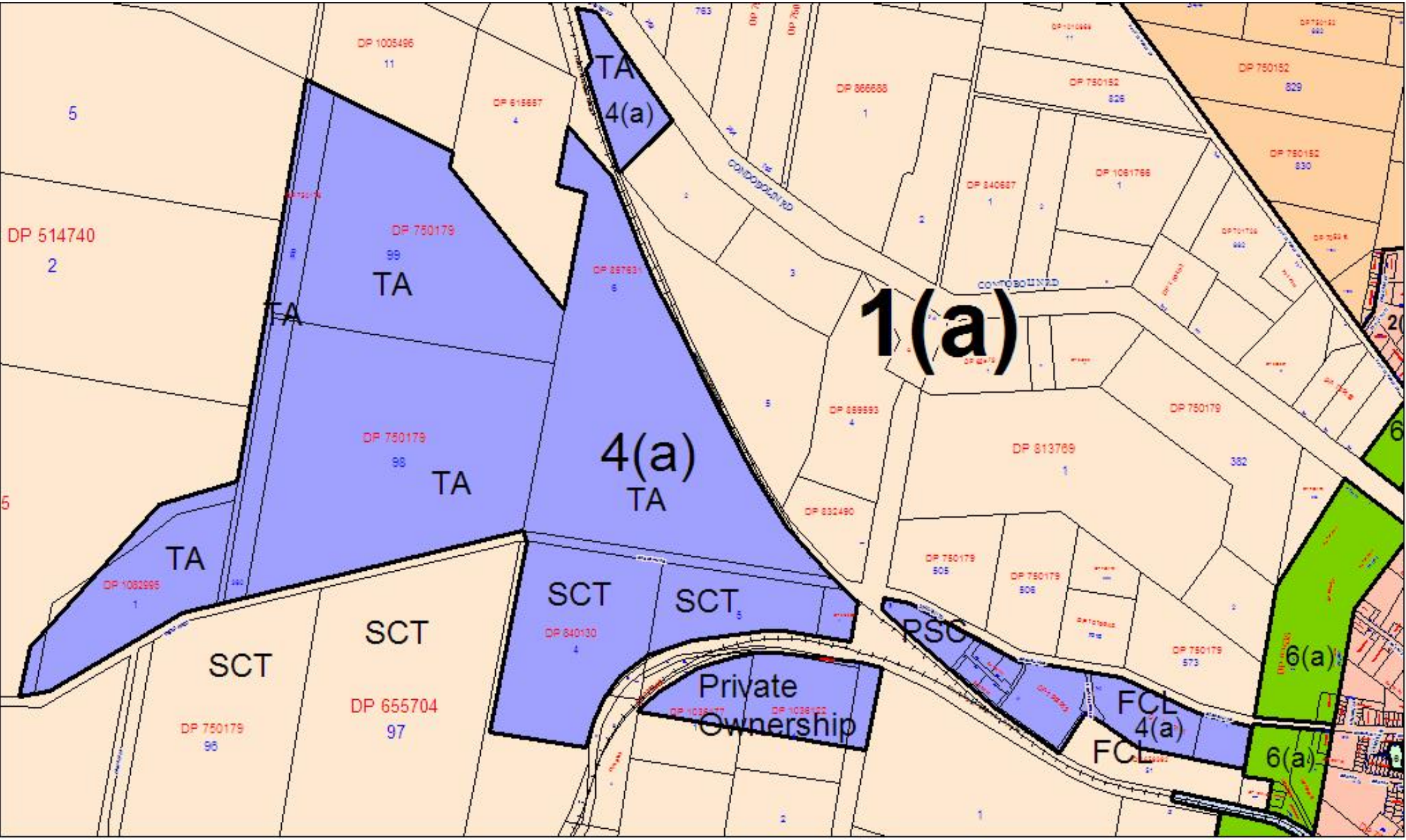
Parkes local road crashes
1992 to 2006
Legend
96 to 05 crashes
<all other values>
ACDEGREE
FATAL
Injury
Non-cas
CONDOBOLIN
THOMAS
UNKNOWN
BACK TRUNDLE
UNNAMED
PETAL
MOULDEN
FARRER
JUBILEE
JONES
MILLER
COLEMAN
WEBB
CHARLES RIGG
SEABORN
ROSE
MITCHELL
BOAZMAN
PHOENIX
CARRINGTON
NEWELL
CURRAJONG
HIGH
GALLOP
BASIL
LEIGHTON
FLINDERS
WARD
HILL
ALBERT
EAST
BOLLINGER
METCALFE
PHILLIP
TALBOT
BOGAN
BUSHMAN
MEGLYNN
MOON
DALTON
REES
CHURCH
COURT
KINGSFORD
DOWNES
GAP
WANT
WILLIAM
ORANGE
BROWNE
CORONATION
ARANA
CHRISTINA
EBILINA
MIDDLETON
MELBOURNE
SYDNEY
CECILE
GRENFELL
ARMSTRONG
CALEDONIA
FORSTER
CLARINDA
GOOBANG
OSWIN
MILL
BROLGAN
MIMOSA
CARINYA
SCOBLE
KOALA
THOMAS
TOM
PEARCE
CLOSE
LYNCH
JUNCTION
HARTIGAN
MAY
ALDER
BLAXLAND
BEST
ALLUVIAL
STATION
AUSTRAL
SALEYARDS
GEMINI
POWTER
BAKER
CALLAGHAN
PARK
HOWARD
KEAST
PORTER
WOODWARD
MEDLYN
LEE
ACKROYD
ORION
CLARKE
MATHEWS
ROYAL
LAWSON
BANJO
VAUCLUSE
FISHER
RENSHAW
BACKYAMMA
FIELD
HENDERSON


Crashes 2001 to 2005 Newell Highway and Main Road 61
Legend
01 to 05 crashes
<all other values>
ACDEGREE
FATAL
Injury
Non-cas
CONDOBOLIN
BACK TRUNDLE
UNNAMED
BOGAN
NEWELL
MAGUIRE
BLEECHMORE
NOBLE
PAINTER
FAHEY
FARRER
REEDSDALE
THOMAS
JONES
COLEMAN
WEBB
HIGH
GALLOP
ROSE
BASIL
PETAL
MOULDEN
UNKNOWN
CORONATION
REES
TALBOT
COURT
ALBERT
EAST
LORKING
NOONAN
WELLINGTON
TANKS
BROLGAN
DOWNES
KOALA
PEARCE
LYNCH
JUNCTION
STATION
CLARKE
CLOSE
BLAXLAND
ACKROYD
MATHEWS
ROYAL
SALEYARDS
LAWSON
PARK
KEAST
FISHER
LEE
WESTON
MARY
GOOBANG
WATTLE
RUSSELL
WANT
EVANS
ORANGE
NASH
EUGOWRA
CHENEY
PINE
BILLABONG
KELLY
MEDLYN
BACKYAMMA
FIELD
HENDERSON
AKUNA
MILITARY
PARKES-EUGOWRA

Appendix C

C – Industrial Zoned Land

Plans showing Industrial Zoned Land and Ownership within the Parkes Industrial Estate and Parkes Transport Hub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1(a)
TA
TA
TA
TA
4(a)
TA
SCT
SCT
SCT
SCT
PSC
Private
Ownership
FCL
4(a)
FCL
6(a)
6(a)
DP 514740
2
5
DP 750179
99
DP 750179
98
DP 655704
97
DP 750179
96
DP 813769
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505
DP 750179
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DP 750179
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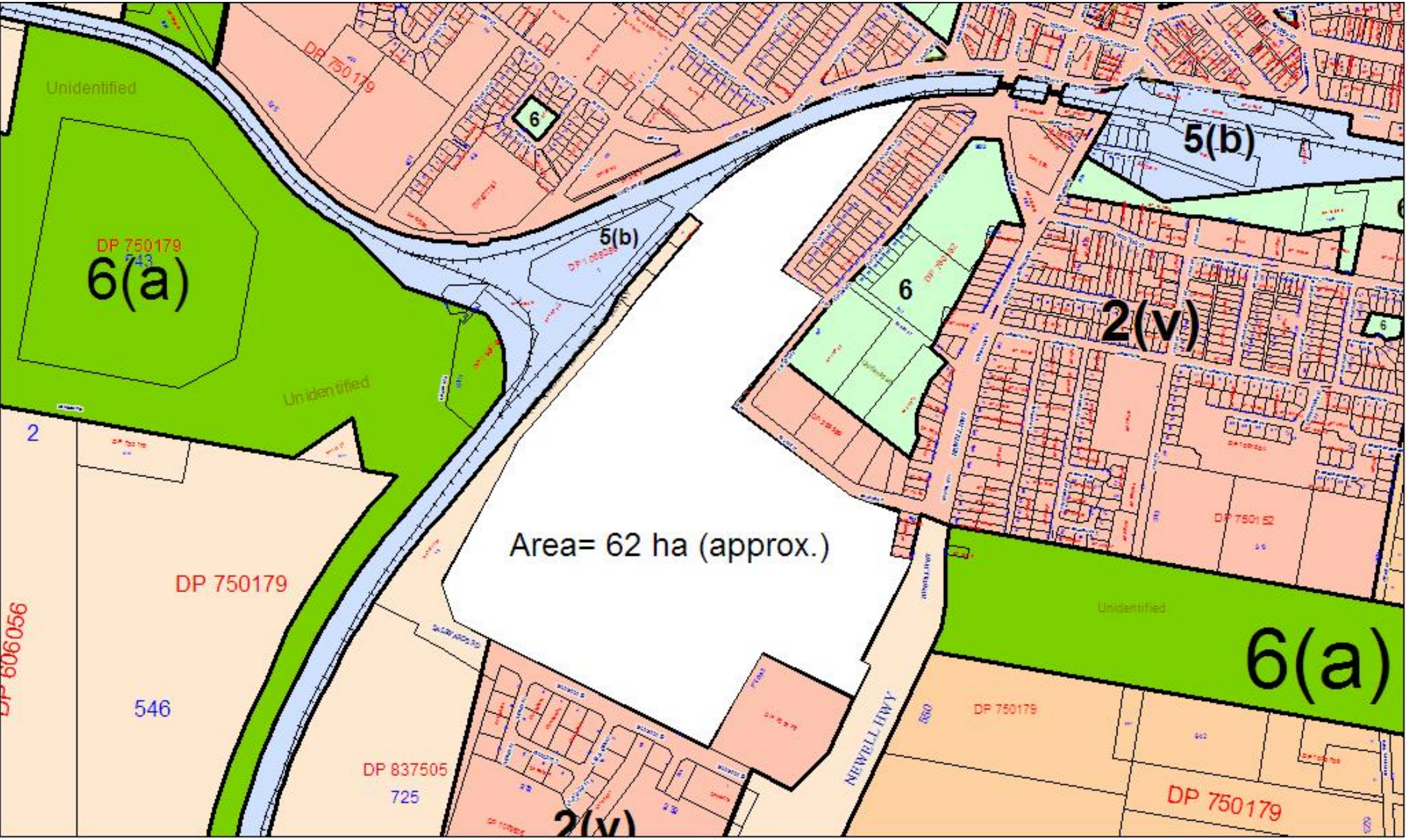
DP 750152
829
DP 750152
830
CONDOBOLIN RD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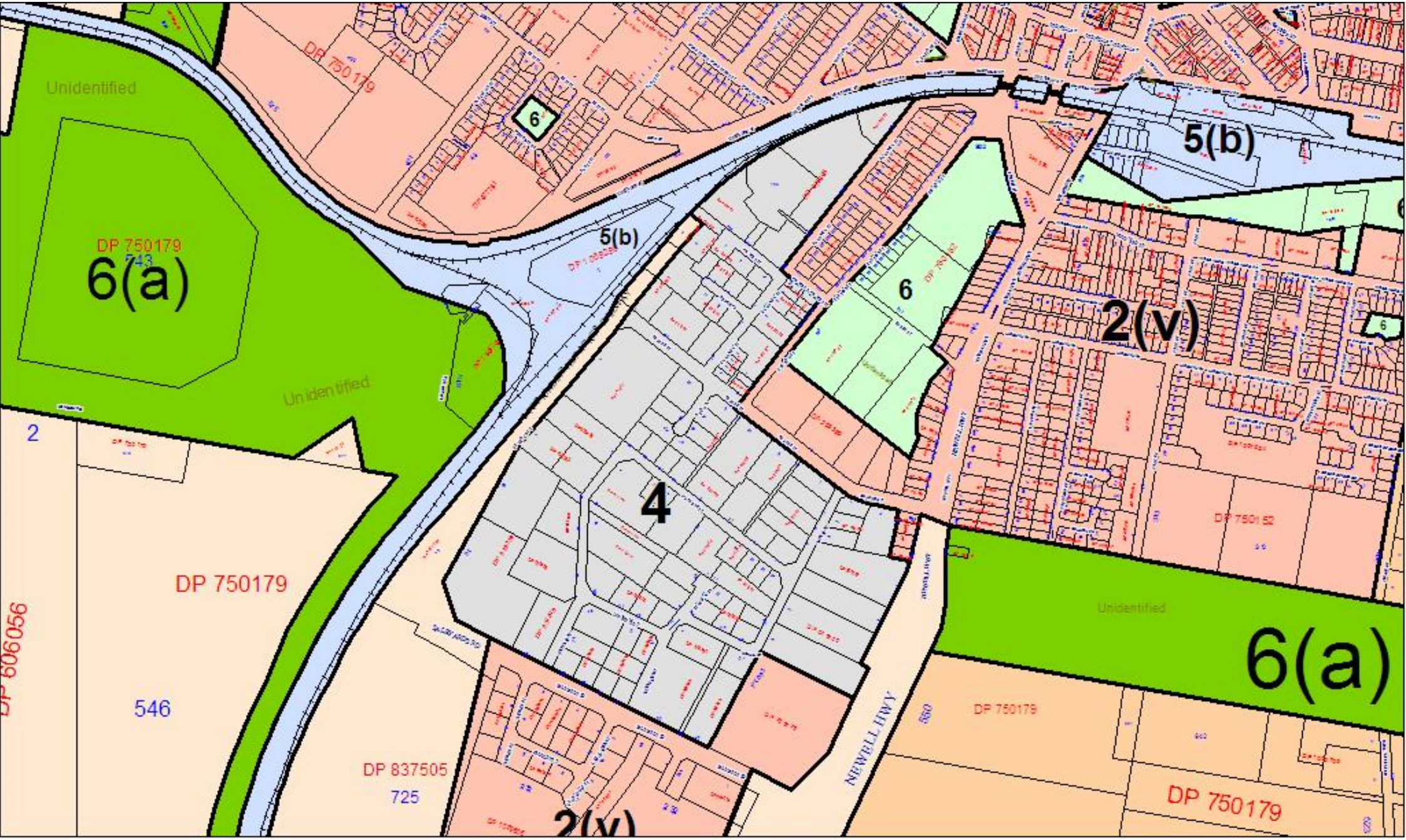
DP 750179
6
5(b)
6(a)
DP 750179
743
5(b)
6
2(v)
Unidentified
2
DP 750179
546
Area= 62 ha (approx.)
DP 606056
DP 837505
725
2(v)
NEWELL HWY
DP 750179
Unidentified
6(a)
DP 750179


Unidentified
DP 750179
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2(v)
Unidentified
2
4
DP 750179
DP 606056
546
DP 837505
725
NEWELL HWY
DP 750179
Unidentified
6(a)
DP 750179
2(v)

Appendix D

D - Relevant Transport Submissions

Submissions from Department of Planning, Department of State and Regional Development, Parkes Shire Council and the Western Regional Development Committee

Department of Planning

Parkes Intermodal Terminal – Concept Design

D

Review of Road Transport Infrastructure Assessment

August 2006

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Document Status					
Revision No.	**Author**	**Reviewer**	**Approved for Issue**		
			Name	**Signature**	**Date**
O	A Samsa	S Mack	A Samsa	**DRAFT**	10/08/06

Contents

1. Introduction

1.1 Project Background

Terminals Australia Pty Ltd (the Proponent) proposes to construct and operate an intermodal road/rail terminal on Brolgan Road, approximately 5 km west of Parkes (refer to *Figure 1* following). The terminal would provide a facility for the large scale transport and warehousing/storage of freight and the transfer of freight containers between trucks and trains.

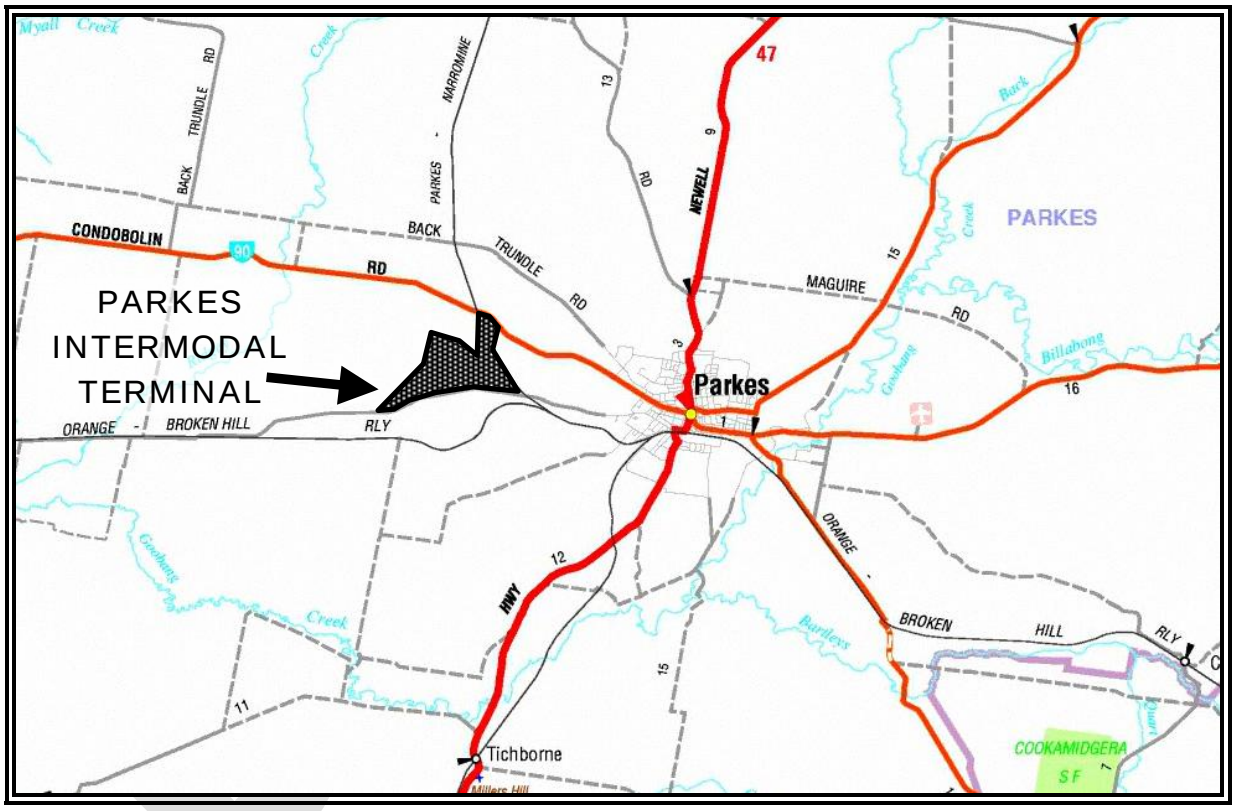

Figure 1: Site Location

The proposal is classified as a Major Project under *State Environmental Planning Policy (Major Projects) 2005* and the Planning Minister is the determining authority.

The Proponent proposes to construct the development in stages and is currently seeking concept plan approval for the road/rail freight terminal. The initial stage would be constructed and operational within five years. Approximately four train movements per day (24 per week based on a six day week) and some 350 light vehicle and 502 heavy vehicle movements per day would be generated by the facility.

Ancillary infrastructure to increase throughput and provide supplementary services for freight operators would be developed in stages over a 10 to 15 year

period, depending on demand and growth in the freight sector. The 'ultimate stage 'of the proposal would involve eight train movements per day (48 per week based on a six day week) and some 970 light vehicle and 1,178 heavy vehicle movements per day would be generated by the facility. Approval for these stages would be sought under Part 3A of the *Environmental Planning and Assessment Act, 1979*.

GHD Pty Ltd submitted a report entitled *"Parkes Intermodal Terminal, Environmental Assessment for Concept Approval"*, February 2006, to the Department on 17th February 2006. The Department subsequently requested that additional information be provided in the finalised assessment prior to exhibition.

A key issue of the environmental assessment relates to the construction and operational traffic impacts resulting from the project. A traffic assessment entitled *"Parkes Intermodal Terminal – Concept Design, Design Brief for Road Traffic Infrastructure"*, June 2006, by GHD was included as part of the environmental assessment.

1.2 Scope of Assessment and Methodology

As part of the traffic/transport review process, a technical appraisal was undertaken of the environmental assessment prepared for the proposed development, with particular focus on the traffic assessment *"Parkes Intermodal Terminal – Concept Design, Design Brief for Road Traffic Infrastructure"*. The main objectives of the review were to:

- § advise the Department of Planning (DoP) about the potential road network related impacts associated with the concept plan proposal; and
- § identify any additional information required to fully complete the impact assessment.

Specifically, the traffic/transport review includes the following.

1. A review of the traffic assessment for the proposal and any associated submissions received, with particular focus on:
   i) traffic generation;
   ii) road and intersection performance;
   iii) level crossing performance; and
   iv) adequacy of proposed mitigation measures.
2. Identification of any shortcomings in the traffic assessment.
3. Identification of additional information in order to effectively address any inadequacies.
4. Recommendations about further mitigation or upgrade measures required that should be implemented to ensure the proposal can be carried out without compromising the safety and efficiency of the road network.

During the course of this assessment, consultation was undertaken with Parkes Shire Council, RTA, and Terminals Australia and its consultant. A site visit was also undertaken to gather information and obtain greater knowledge of the site and its environs.

1.3 Report Structure

The remainder of this report is presented as follows:

Chapter 2 reviews the consultation undertaken including issues raised by RTA and Parkes Shire Council.

Chapter 3 critically appraises the proposed development's traffic assessment prepared by *GHD Pty Ltd* for *Terminals Australia*.

Chapter 4 provides comments on possible additional measures that could be considered for the development consent.

Chapter 5 provides a summary and conclusions to the review.

2. Review of Consultation

Consultation was held with NSW Roads & Traffic Authority (RTA) and Parkes Shire Council. Various issues with respect to traffic/transport were raised.

2.1 RTA Comments

The RTA raised a number of issues as follows:

- RTA concurs with the requirements of Western Region Development Committee's letter dated 17th July 2006.
- RTA has concerns with the increase of traffic at the intersection of Hartigan Avenue and the Newell Highway at Parkes. Treatments such as signalisation of this intersection initially and construction of an alternative route will be required ultimately to overcome these issues.
- RTA also has concerns regarding all of the rail level crossings as outlined in Western Regional Development Committee's letter dated 17th July 2006.
- RTA can not agree to the proposal in its current form and more work needs to be done on the traffic modelling by the proponent.

Issues that RTA raised during the assessment process and that were documented by GHD's Environmental Assessment include the following:

- Consider access to the site via a single point of access located along Brolgan Road;
- Study should investigate the potential benefits of providing a northern access point to Condobolin Road and its possible timing. However, the authority does not consider that an access to MR 61 (Condobolin Road) would be necessary as the number of trucks moving west are minimal and could be adequately served by a Brolgan Road access;
- Study should investigate the minimal level crossing upgrade requirement as a result of the development. The authority suggested that it expected that a type F level crossing was required as a minimum at level crossing points adjacent to the site. Consideration for boom gates and advanced warning systems should be based on a risk assessment of approach sight distances and heavy vehicle volumes. The authority also indicated that the existing Brolgan Road level crossing is known to be narrow with poor sight distances to the west as a consequence of the angle that the rail line and road cross. This presents a potential need for an early warning system;
- The RTA's *"Guide to Traffic Generating Developments"* be used in the assessment of road infrastructure needs as a result of developing an intermodal facility at Parkes; and
- Study should provide future traffic volumes and freight tonnage values for consideration in the upgrade of Brolgan Road.

2.2 Parkes Shire Council Comments

Council raised a number of issues in their submissions. The key principle with respect to apportioning costs is that all of the development in the Parkes Hub Industrial area should fund the traffic facilities required to accommodate the development of the Hub. The methodology to achieve this principle is as follows:

- The cumulative impacts of all development in the Parkes Hub should be assessed. This should project the total traffic trips and their makeup (eg. heavy vehicles and standard vehicles), their likely distribution (north, south, east, west) and the timing of the growth of this traffic.
- The impact of this traffic generation should be assessed against the existing and future possible road conditions in the area focussing specifically on the existing standard of road pavements to accommodate the traffic loading, the adequacy of the road cross sections (lane and shoulder widths), the adequacy and capacity of particular intersections that would accommodate this traffic, the need for specific traffic management facilities including (but not limited to) traffic signals, road marking, speed limiting devices, traffic safety measures.

Traffic and Transport

A number of upgrades to the existing road infrastructure will be required as a result of the development. Development impact triggers 'for the need and timing of these upgrades and others identified in the development application should be included in the development conditions and include:

- Traffic lights at the intersection of Blaxland and Hartigan Avenue.
- Lighting at the intersection of Brolgan Road and Westlime Road;
- Brolgan Road to the Westlime Road intersection needs to be upgraded;
- Brolgan Road from the SCT access heading west and fronting the proponents land must be upgraded.

Planning Issues

- The work is undertaken generally in accordance with documentation.
- Further development applications will need to be lodged seeking approval for each stage of the concept.
- Consideration should be given to the level of contribution that the development should be levied in regard to civil infrastructure and servicing as well as social, economic and community issues and infrastructure. Further, it will be necessary for the applicant to be required to pay relevant contributions.
- An annual environment audit to be provided to the appropriate authority (ie. Council or Department of Planning) providing detail of noise monitoring, water and air quality monitoring program, traffic management and complaints handling.
- Consideration of Council's *Draft Industrial Hub Development Control Plan* which has been exhibited.

Issues that Council raised during the assessment process and that were documented by GHD ś Environmental Assessment include the following:

- Council currently seeking to improve road infrastructure in Parkes by developing a bypass system around Parkes CBD to cater for the future growth in road freight;
- Recognises that both Brolgan and Condobolin Roads currently accommodate low volumes of heavy vehicle traffic and that any future increase in road freight may require the upgrading certain sections of these road links in order to support this type of movement;
- Requires the report to provide an understanding of the potential increases or change in heavy vehicle traffic movement through Parkes as a result of the staged development of the PIT;
- Requires the study to investigate the potential benefits from constructing an alternative local road route through the site for Brolgan Road traffic when the proposed western level crossing is fouled by a freight train;
- Requires the master plan study to review the minimum upgrade requirements for Brolgan Road from West Lime Road to the western side of the proposed site as a result of its proposed use. Council have suggested that as a minimum two 3.5m wide traffic lanes and 1.5m wide shoulders should be;
- Requires the study to provide an understanding of upgrade requirements at the Brolgan Road level crossing with the Parkes-Narromine Rail line;
- Requires the concept design for the PIT facility to ensure that there is no fouling of Brolgan Road by trucks entering and exiting the site; and
- Requires the study to minimise both road safety risks and loss of amenity along Brolgan Road through investigation of the possible benefits from reducing the current signposted speed limit.

3. Review of Road Transport Infrastructure Assessment

Terminals Australia, the Proponent, proposes to construct the development in stages and is currently seeking concept plan approval for the road/rail freight terminal. If the concept plan is approved, the Proponent would need to submit project applications for the various components/stages of the project.

The proposed terminal would be able to store up to 530,000 twenty foot equivalent Units (TEUs) of bulk containerised goods, and include:

- two intermodal sidings capable of stabling a 1,800 m long train and a master siding for a 'Y-link' between the Main Western rail line and Parkes-Narromine rail line;
- warehousing and distribution facilities on the southern side of the site fronting Brolgan Road;
- locomotive servicing centre and a heavy engineering/rolling stock maintenance centre;
- wagon storage sidings for stabling and inspection of wagons;
- temporary fuel storage and distribution centre;
- administration building and terminal plant maintenance centre; and
- site infrastructure including roads and utilities.

The initial stage would be constructed and operational within five years. Approximately four train movements per day (24 per week based on a six day week) and some 350 light vehicle and 502 heavy vehicle movements per day would be generated by the facility.

Ancillary infrastructure to increase throughput and provide supplementary services for freight operators would be developed in stages over a 10 to 15 year period, depending on demand and growth in the freight sector. The 'ultimate stage' of the proposal would involve eight train movements per day (48 per week based on a six day week) and some 970 light vehicle and 1,178 heavy vehicle movements per day would be generated by the facility. Approval for these stages would be sought under Part 3A of the *Environmental Planning and Assessment Act, 1979*.

On behalf of the proponent Terminals Australia, GHD Pty Ltd prepared an assessment of road transport infrastructure for the proposed intermodal terminal development. This took the form of a 'design brief' evaluating a concept design for the site[1].

The Director-General's Environmental Assessment Requirements are set out in a letter to *GHD Pty Ltd* dated 24th November 2005. Traffic and transport impacts form part of the 'key assessment requirements' and state that *"the Environmental Assessment must assess the traffic implications of the project, with reference to the capacity, safety and design of key haulage routes to and from the project site. Clear details of any road and rail infrastructure upgrades, particularly at the entrance to the site and at any road/rail interfaces, must be provided in the Environmental Assessment. Assessment of road and rail*

[1] GHD *"Parkes Intermodal Terminal – Concept Design, Design Brief for Road Transport Infrastructure"*, June 2006

traffic impacts must include consideration of cumulative traffic impacts and the effect of likely and target modal splits (including maximisation of rail haulage), and must be undertaken in accordance with the RTA's Guide to Traffic Generating Developments"

The RTA's *"Guide to Traffic Generating Developments"* (*Section 2.3*) advocates that, in general, a traffic impact study is required to address the following issues:

- existing conditions including road hierarchy, road environment, traffic flows, crash analysis, parking supply, intersection congestion, public transport, pedestrian and cyclist facilities;
- description of proposed development including access, internal circulation and parking supply;
- proposed development traffic generation and trip distribution during both construction and operational phases;
- future background traffic forecasts;
- impacts on road network conditions, road safety and traffic noise; and
- proposed measures to mitigate any impacts.

The requirements of Council and other agencies generally follow the RTA requirements listed above.

The following sections critically appraise the methodology and assumptions used for various aspects of the proposal's assessment, recognising that the project is at concept stage.

3.1 Current Situation

3.1.1 Road Network

The assessment adequately describes the existing road network including access to the project site, road hierarchy, carriageway widths, major intersection details and the general road environment. Major planned upgrades to the relevant road network are also identified.

3.1.2 Traffic Flows

The assessment obtained traffic count data from RTA and Council sources. This data was then factored up to 2005 levels based on estimated background traffic growth for both light vehicles and road freight. The estimated growth rate used for light vehicles was not documented. The 3.6% growth rate for road freight was not sourced, although it appears to have been obtained from the *AusLink White Paper 2004*, and therefore may be suitable for planning purposes. It should be noted that a potential shortcoming in adopting the 3.6% growth rate is that it could be considered to be inappropriate for freight growth in the Parkes area because it is a nationwide freight growth scenario rather than a Parkes-specific growth rate.

Notwithstanding the above, it is considered that the traffic count data obtained provides a reasonable 'snap shot' of typical traffic flows in the road network. Therefore, the data is adequate to be used as a basis for further assessment.

3.1.3 Road Performance

The assessment evaluated road capacity along most of the relevant routes to be used by the project's freight and light vehicles. While this was generally satisfactory, the following anomalies were noticed:

- *Table 5* (p.11) is an approximate estimate only of level of service (LOS) and volume/capacity ratio (V/C) comparisons. It is not considered appropriate criteria for evaluating road capacity.
- Although *Table 6* (p.12) is considered an adequate analysis for planning purposes, a more detailed analysis could have been made using Section 3.2 of Austroads *"Guide to Traffic Engineering Practice: Part 2 – Roadway Capacity"*.
- In *Table 8* (p.13), both sections of Newell Highway are >4,800 vehicles per day (vpd), which from *Table 6* earlier, is above the traffic volume threshold for LOS B and should be LOS C. However, it is considered that LOS C still provides adequate operations.
- Also, in *Table 8*, the 'urban roads' of Hartigan Avenue, Bogan Street and Dalton Street have been given an LOS of A. It is unclear how this was derived, particularly as *Table 7* indicates maximum service flow rates for urban roads to achieve LOS D.
- In *Table 8*, and for subsequent road capacity sections, Westlime Road was not included and assessed. It is considered that it should have been included as a road section that would potentially be affected, particularly as it may act as a linking section of road for a future Parkes 'ring road'. Also, the busiest section of Newell Highway (at Hartigan Avenue) was not included. Council information indicates average daily traffic of almost 9,900 vpd[2] at this location. This should have been included as a road section that could potentially be affected, particularly due to high existing traffic flows.

3.1.4 Road Safety

The assessment has not addressed road safety adequately. This may include a suitable road safety/crash analysis along relevant road sections and at intersections along proposed transport routes, particularly the Hartigan Avenue rail crossing intersection.

The road safety assessment should also examine crash statistics and road safety issues at the various rail level crossings that occur along proposed transport routes for the project. This would provide a 'snapshot' of any problem locations and determine the necessity for upgrading level crossings.

3.2 Description of Proposal

The assessment describes the proposed project in some detail including its functions, operating parameters, road and rail access, internal site access, and parking amongst other factors. A list of general rail and road upgrade works is also listed.

[2] Parkes Shire Council *"Strategic Plan for Major Road and Transport Infrastructure for Parkes and Environs"*, April 2006

The implementation and staging of the proposed project is described with an initial stage by approximately 2010 and the ultimate stage by 2020.

3.3 Traffic Generation and Trip Distribution

The assessment has provided detailed sections on describing the traffic generation potential of the proposed PIT as well as the complex nature of relationships between the PIT land use and freight movements. Details of staff movements and construction-related traffic generation have also been included.

It is acknowledged that the PIT development is quite unique, particularly in NSW, and that 'standard' RTA traffic generation rates are not necessarily appropriate.

Although the assessment provides a traffic generation scenario using 'standard' RTA rates, it is argued that these are not accurate and over-estimate the traffic generation. It is agreed that 'standard' RTA rates are not appropriate and that similar development rates are not readily available.

The assessment provides an alternative estimate of traffic generation based on the throughput for the PIT and its related land uses. This is described in detail in *Sections 4*, *5* and *6* where the traffic generation potential and the inter-relationships between the PIT land uses and corresponding freight movements, results in total traffic generation being estimated.

The above sections on traffic generation were found to be somewhat confusing and the methodology and assumptions being made need to be clarified with the Proponent's consultant. Notwithstanding, the final traffic generation shown in *Table 23* (p.39) appears to be in the correct 'ball park' with respect to overall throughput quantities shown in *Figures 4* and *5*, although it is unclear how this was derived.

Due to the imbalance of product throughput between inbound and outbound truck movements, the assessment makes the assumption that inbound truck movements with no return trip would be available to accommodate other goods that could be generated by the site. While this sounds reasonable in principle, there is no sensitivity testing of this scenario in case market demands, operating conditions or other factors cause trucks to return empty or with partial loads.

The assessment provided no discussion on possible 'peaking' of traffic movements, which should be evaluated as a 'worst-case' scenario in sensitivity testing. A peak-hour to daily traffic flow percentage of 10% was adopted for peak period traffic volumes.

It appears that because the proposed PIT land uses and relationships between them and external traffic generation are not yet precisely understood, a 'worst-case' traffic generation scenario is difficult to determine. The assessment seems to confirm the preliminary nature of the PIT concept in *Section 9.3*, where it acknowledges that its *"analysis was a desktop investigation based on a preliminary level of information and a series of assumptions, which will only be confirmed once an operator for the facility is identified. The proposed operator will provide further confirmation of the resulting traffic impacts produced from each stage of the proposed development. These impacts should be identified and addressed with the submission of Development Applications for each proposed activity to be located in the proposed Parkes Intermodal Terminal"*.

Therefore, it may be appropriate that there be some form of periodic monitoring of traffic generation from the proposed PIT onto the surrounding road network. In conjunction with the identification of 'trigger' points, for when upgrade works may be required at assorted critical locations, this would present a safeguard for potential impacts on the surrounding road network.

The discussion and assessment of trip distribution appears reasonable.

3.4 Road Network Impacts

Generally, the assessment examined road network impacts by looking at road capacity along various road sections, with and without the addition of the proposed PIT traffic generation in both 2010 (initial stage) and 2020 (ultimate stage). While this methodology provides a general indication of road performance, critical locations within a road network are often intersections, which is where most delays occur and where major conflict points occur.

The assessment did not undertake any analysis at critical intersection locations, eg. Hartigan Avenue/Newell Highway/Bogan Street. This is considered to be a flaw in the assessment as the intersection analysis would help in identifying 'trigger' points for when upgrade works may be required at critical locations on the surrounding road network. These 'trigger' points would be based on a minimum tolerable LOS at critical locations and should be determined with input from Parkes Shire Council and the RTA.

In *Table 26* (*Section 6.2.2*), a background heavy vehicle growth rate of 3.6% pa is adopted from the *AusLink White Paper 2004*. This is considered to be a 'strong' growth rate for freight generally and may or may not be appropriate in the Parkes area, because it is a nationwide freight growth scenario rather than a Parkes-specific growth rate. Therefore, there is the risk that by adopting the higher growth rate and resulting higher background heavy vehicle traffic volumes, the impacts of the proposed project's traffic flows may potentially be dissipated – refer to *Section 6.2.4* and *Table 28*.

Furthermore, the growth rate applied to light vehicles appears to have been adopted from Tables in *Appendix F*. However, it is unclear how the growth rates shown in the *Appendix F* Tables were derived.

In *Table 28* there appear to be numerous erroneous results for daily traffic movements based on traffic generation (from *Table 23*) and trip distribution (from *Table 25*). This has resulted in future daily traffic volumes for the following road sections being under-estimated:

- Condobolin Road – total daily movements for 'high capture' should be 1,223 not 1,198, HV daily movements should be 163 not 139, and HV% should be 13.3% not 12%.
- Newell Highway (north) – total daily movements for 'high capture' should be 7,083 not 6,824, HV daily movements should be 1,756 not 1,497, and HV% should be 24.8% not 22%.
- Newell Highway (south) – total daily movements for 'high capture' should be 7,441 not 7,001, HV daily movements should be 2,985 not 2,545, and HV% should be 40.1% not 36%.

- Orange Road (MR 61) – total daily movements for 'high capture' should be 2,372 not 2,340, HV daily movements should be 219 not 187, and HV% should be 9.2% not 8%.
- Wellington Road (MR 233) – total daily movements for 'high capture' should be 465 not 449, HV daily movements should be 88 not 72, and HV% should be 18.9% not 16%.
- Eugowra Road (MR 238) – total daily movements for 'high capture' should be 553 not 537, HV daily movements should be 105 not 89, and HV% should be 19.0% not 17%.
- Bogan Street – HV daily movements for 'high capture' should be 1,641 not 1,382, and HV% should be 23.1% not 19%.

The assessment indicates that traffic levels on Brolgan Road and the Newell Highway would increase significantly as a result of the construction and operation of the proposed PIT. However, it concludes that roads would continue to operate at a satisfactory level of service throughout the proposed stages of the development. While this could be deduced from evaluating future road capacity, the conclusions are flawed in that intersections in the road network were not assessed.

In *Table 29* (p.45), the future performance of Newell Highway (north and south) in 2005, 2010 and 2020 without PIT traffic indicates LOS B. This should be LOS C as it is above the LOS B threshold of 4,800 vpd derived in *Table 6* earlier.

Similarly, in *Table 30* (p.46) the future performance of Newell Highway (north and south) in 2005, 2010 and 2020 with PIT traffic indicates LOS B. Again, this should be LOS C as it is above the LOS B threshold of 4,800 vpd.

In *Tables 29* and *30*, the 'urban roads' of Hartigan Avenue, Bogan Street and Dalton Street have been given an LOS of A. It is unclear how this was derived, particularly as *Table 7* earlier, only indicates maximum service flow rates for urban roads to achieve LOS D.

As mentioned previously for the assessment of existing conditions, Westlime Road and the busiest section of Newell Highway (at Hartigan Avenue) were not included and assessed. It is considered that the former should have been included as a road section that would potentially be affected, particularly as it may act as a linking section of road for a future Parkes 'ring road'. The latter should have been included as a road section that could potentially be affected, particularly due to high existing traffic flows.

In addition to the assessment of road capacity along most relevant road sections, an assessment was made of delays to the road network at level crossings caused by increased train movements.

The assessment indicates that a number of level crossings and associated traffic flows would be impacted by the generation of rail and road movements from the site, eg. existing level crossing on Brolgan Road east of the site, a new level crossing along Brolgan Road west of the site, and an existing level crossing along Condobolin Road, west of the site.

It is considered that level crossing delays in excess of 12 mins (as for those at a new level crossing along Brolgan Road west of the site) are likely to be unacceptable to local and other traffic.

In *Section 6.4* for the initial stage at the Condobolin Road level crossing, delays would be approximately 15 mins rather than the 13 mins stated.

3.5 Access and Road Safety Impacts

In general, road safety impacts were not appropriately evaluated in the assessment. It is considered that the potential for crashes would increase with the addition of heavy vehicle traffic. Furthermore, crashes involving heavy vehicles generally have more serious consequences, are over-represented with respect to injuries and fatalities and therefore, an assessment should be undertaken.

The assessment proposed that five site access points be provided onto Brolgan Road, each separated by approximately 300 to 400 m. With provision of protected right-turn bays and acceleration lanes, these would potentially impact on each other. It is considered that a preferable treatment would be to consolidate site access points into one or two locations onto Brolgan Road. The provision of several access points is considered to be sub-standard with respect to road safety and traffic flow movements generally.

The assessment also proposed an alternative access point onto Condobolin Road. This is considered to be a prudent measure in that it allows future traffic generation to be sent via Condobolin Road and onto Newell Highway via a future Parkes 'ring road' as well as providing alternative access in case of emergency or quarantining of the Brolgan Road accesses.

The assessment suggested reducing posted speed limits to achieve required sight distances, particularly truck stopping sight distance (TSSD) at intersections and access site points along Brolgan Road. It would be preferable to create the sufficient sight distance for the current posted speed limit as traffic would not necessarily slow down unless the road design environment justified a slower speed, ie. traffic management measures such as road narrowing.

3.6 Other Transport Impacts

Other issues related to transport may be appropriate for a project of this size and type. Comments are made on the following issues:

- The assessment made no mention of the feasibility of the NSW rail system generally to handle the additional rail movements. This is considered relevant particularly since the assessment relies on rail to minimise road transport movements. Rail movements may well have spare capacity in the rural areas but may be restricted by the network at ports, eg. Port Botany, Port Kembla, Newcastle.
- There has been no mention on the affects of increased heavy vehicle flows on the amenity in the Parkes town centre area (eg. pedestrian movements, noise, etc.) along potential freight routes.

- The assessment does not examine potential impacts on bus routes/bus stops along possible freight routes and the impact on these services, including pedestrian access to/from bus stop areas.
- As for the assessment of existing traffic conditions, there was no assessment provided of environmental road capacity and corresponding amenity issues, which may be appropriate for collector roads such as Dalton Road.
- The assessment had minimal discussion of cumulative impacts of nearby developments, eg. SCT development and the Parkes Hub 'as a whole.
- There was no discussion on the potential effects on road pavements along freight routes due to increased heavy vehicle flows and how this may affect road construction and maintenance.
- Assessment of construction methods, work program and resources appeared to be adequate considering the imprecise nature of the proposed project and its constituent land uses. No general details of traffic management were provided to mitigate impacts during construction, and this was left to be addressed at a later stage with specific development traffic management plans as part of Construction EMPs. The assumptions that *"external construction traffic movement is unlikely to conflict with peak hour road or initial stage PIT operating periods and can be managed"* and that *"assessment of the throughput of 530,000 TEU per annum is the worst-case evaluation of external road network impacts for both construction and Intermodal Terminal 'operations"* appear reasonable, again, because of the imprecise nature of the proposed project.

3.7 Proposed Impact Mitigation Measures

The assessment recommends measures proposed to mitigate impacts for the internal road system (*Section 7.1*) and for the external road network (*Section 7.2*). A number of impact mitigation measures have been proposed by the assessment. The major recommendations focus on the following:

- Parkes Shire Council to further assess and recommend a haulage route strategy for Parkes and its surrounding industrial development lands;
- Upgrade of existing level crossings situated along Brolgan Road to the east of the project site and along Condobolin Road to the west of the project site. Construct a new level crossing point on Brolgan Road to the west of the project site.
- Upgrade Brolgan Road between Westlime Road and the proposed western site access point. The proposed two 3.5 m wide traffic lanes with a shoulder width of 2.0 m (1.0 m sealed) are considered to be appropriate.
- Provide multiple site access points onto Brolgan Road and a site access point onto Condobolin Road, eg. intersection type 'AUR' and 'CH' layouts. The locations of proposed access points should be planned to be compatible with access points to surrounding developments. Brolgan Road access points should be provided in the 'initial' stage of site development with the Condobolin Road access provided in the 'ultimate' stage.

- Further evaluation of the following intersections:
  - Brolgan Road with Westlime Road (western Section of the Parkes ring-road);
  - Condobolin Road with Westlime Road;
  - Newell Highway (Forbes Street) with Hartigan Avenue; and
  - Hartigan Avenue with Blaxland Street.
- Further investigation into an interim or ultimate route option for trucks travelling between Hartigan Avenue to the southern section of the Newell Highway via Saleyards Road.

4. Additional Measures

It is considered that the main measure that is required would be the development of a road network upgrade strategy to cater for future traffic flows from not only the proposed PIT but from the whole Parkes 'Hub' area and other development in the Parkes area.

As discussed previously, because the proposed PIT land uses and relationships between them and external traffic generation are not yet precisely understood, it may be appropriate that there is identification of 'trigger' points, for when upgrade works may be required at assorted critical locations. This would present a safeguard for potential impacts from development traffic generation and could be 'triggered' by some form of periodic monitoring of traffic generation from the proposed PIT onto the surrounding road network.

A possible road network upgrade strategy could 'stage' various road upgrade measures based on thresholds of minimum LOS (road performance 'triggers') before upgrades are required. From discussions with Parkes Shire Council and RTA, the following 'staging' may be appropriate:

- Stage 1 (Pre-Operations or During Construction)
  - Brolgan Road/West Lime Road: reverse priorities from Brolgan Road to West Lime Road.
  - Upgrade of Brolgan Road with CHR intersections at accesses to PIT.
  - Consolidate accesses to PIT (preferably a maximum of two or two in and the others left-out only).
  - Upgrade existing rail crossing at eastern end of Brolgan Road (booms and signals, etc.).
  - Upgrade existing rail crossing at Condobolin Road (booms and signals, etc.).
  - Signalisation of Newell Highway/Hartigan Avenue/Bogan Road intersection in conjunction with rail crossing, should be done as a single intersection design to improve safety and separate movements adequately (mainly because of short queue distance between intersections). This would be required as soon as the east-west traffic flows increase to a certain threshold (cost approximately $750,000).
  - Grade separation required for new Brolgan Road western rail crossing (based on policy standard for new crossings). However, it is considered that it would be prudent to use the substantial cost for grade separating this rail crossing to fund the Parkes 'ring-road' bypass project, which would provide significantly greater benefit than a grade separated rail crossing that would be used minimally (see Stages 2 and 3 below). Sightlines would require improvement for new Brolgan Road rail crossing, if it is constructed at-grade.

  - It is considered prudent that the northern and southern sections of Parkes 'ring-road' bypass should ideally be done as a single project rather than staged because of the cost savings of constructing a single project and because traffic may be directed back through the town centre along residential streets if only a partial completion of the 'ring-road' is done (cost approximately $15-20 M for bypass).

- Stage 2 (based on road performance 'triggers' before upgrades required)
  - Southern section of Parkes 'ring-road' bypass: from Westlime Road grade separated over railway south of Hartigan Avenue across Blaxland Street and grade separation onto Saleyards Road.
  - Secondary access to the north onto Condobolin Road is preferred to spread some of the traffic generation as well as act as a contingent access for the site.
- Stage 3 (based on road performance 'triggers' before upgrades required)
  - Complete northern section of Parkes 'ring-road' bypass from Westlime Road to Newell Highway north of town.

5. Conclusions

In summary, the following pertinent matters are evident from this review:

- The proposed Parkes Intermodal Terminal (PIT) is proposed to be developed in two stages – initial stage by 2010 and ultimate stage by 2020.
- The assessment has indicated that the potential traffic generation of the site would be dictated by the target throughput (240,000 TEUs in the 'initial' stage – 2010, and 530,000 TEUs in the 'ultimate' stage – 2020), and that this can be used to assess the worst-case scenario for traffic impacts. Furthermore, the assessment indicates that PIT operations are unlikely to generate significant volumes of additional road container freight movements along the regional or local road networks, but instead concentrate on capturing and redistributing both existing and identified future demand.
- There would be a significant gain in the movement of containerised freight by rail and there is an imbalance between throughput generated by inbound and outbound truck or rail movements.
- Site access to the proposed PIT would be via:
  - several access points off Brolgan Road;
  - additional access off Condobolin Road.
- While detailed sections on the traffic generation potential of the proposed PIT as well as the complex nature of relationships between the PIT land use and freight movements were described, the description of traffic generation requires clarification.
- The assumption that inbound truck movements with no return trip would be available to accommodate other goods that could be generated by the site may not necessarily be workable and should be sensitivity tested. The assessment provided no discussion on possible 'peaking' of traffic movements.
- Both intersection and level crossings are critical points along the road network, however, these have not been evaluated as part of the assessment. Evaluating road capacity along various road sections provides only a general indication of road performance.
- There is the risk that by adopting the high 3.6% *AusLink* growth rate and resulting higher background heavy vehicle traffic volumes, the impacts of the proposed project's traffic flows may potentially be dissipated.
- There appear to be numerous erroneous results for projected future daily traffic movements, which has resulted in future daily traffic volumes for the various road sections being under-estimated.
- Westlime Road and the busiest section of Newell Highway (at Hartigan Avenue) were not assessed.

- It is considered preferable that site accesses onto Brolgan Road are consolidated into one or two locations.
- It would be preferable to create the sufficient sight distance for the current posted speed limit rather than lower the speed limit to achieve adequate sight distance.
- The construction of a new level crossing on Brolgan Road to the west of the proposed development as well as existing level crossings on Brolgan Road and Condobolin Rd would cause significant delay (in some cases in excess of 12 mins) to through traffic.
- The assessment did not fully address the following aspects:
  - feasibility of the NSW rail system to handle the additional rail movements;
  - impacts on amenity, including pedestrian impacts;
  - potential impacts on bus services;
  - environmental road capacity and corresponding amenity issues;
  - cumulative impacts of nearby developments;
  - potential effects on road pavements along freight routes and how this may affect road construction and maintenance; and
  - road safety, particularly at intersections and rail level crossings.
- Assessment of construction methods, work program and resources appeared to be adequate.
- The assessment recommends measures proposed to mitigate impacts for both the internal road system external road network. The major recommendations focus on the following:
  - Parkes Shire Council to further assess and recommend a haulage route strategy for Parkes;
  - Upgrade of existing level crossings and provision of a new level crossing point on Brolgan Road to the west of the project site.
  - Upgrade Brolgan Road between Westlime Road and the proposed western site access point.
  - Provide multiple site access points onto Brolgan Road and a site access point onto Condobolin Road, eg. intersection type 'AUR' and 'CH' layouts.
  - Evaluation of various intersections, eg. Brolgan Road/Westlime Road, Condobolin Road/Westlime Road, Newell Highway/ Hartigan Avenue, Hartigan Avenue/Blaxland Street
  - Investigation into a route option for trucks travelling between Hartigan Avenue to Newell Highway (south) via Saleyards Road.
- The main additional measure that is required for the project would be the development of a road network upgrade strategy to cater for future traffic flows. In this regard, it may be appropriate that there is identification of 'trigger' points, for when upgrade works may be required at assorted critical locations. A possible road network upgrade strategy could 'stage' various road upgrade measures as follows:
  - Stage 1 (Pre-Operations or During Construction)

- § Brolgan Road/West Lime Road: reverse priorities.
- § Upgrade of Brolgan Road PIT accesses to CHR intersections and consolidate accesses.
- § Upgrade existing rail crossing at eastern end of Brolgan Road and at Condobolin Road.
- § Signalisation of Newell Highway/Hartigan Avenue/Bogan Road intersection in conjunction with rail crossing (cost approximately $750,000).
- § Grade separation required for new Brolgan Road western rail crossing. However, may be prudent to use rail crossing funds for the Parkes 'ring-road' bypass project.
- § The northern and southern sections of Parkes 'ring-road' bypass should ideally be done as a single project (cost approximately $15-20 M for bypass).

– Stage 2 (based on road performance 'triggers')
  - § Complete southern section of Parkes 'ring-road' bypass.
  - § Secondary site access to the north onto Condobolin Road.

– Stage 3 (based on road performance 'triggers')
  - § Complete northern section of Parkes 'ring-road' bypass.

In conclusion, it is considered that the assessment for the proposed PIT development has been reasonably prepared with respect to its methodology and the assumptions used. However, it is considered that a number of issues were not fully addressed or information was not available for a full assessment, eg. irregularities in road capacity calculations, project traffic generation, intersection and road network analysis, feasibility of the rail system to handle additional rail movements, cumulative impacts, impacts pertaining to amenity issues, etc.

It is considered that with the appropriate development of a road network upgrade strategy, based on identification of LOS 'trigger' points, there would suitable safeguards from any potential impacts on road network performance and road safety in the area.

AJ

Contact Person: Andrew Johns

19 July 2006

Mr David Kitto
A/ Director
Major Development Assessment
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Dear Sir

Major Project Application - Proposed Concept Plan for Intermodal Terminal, Brolgan Road, Parkes by Terminals Australia Pty Ltd

I refer to exhibition of the abovementioned application and advise that Council has reviewed the Environmental Assessment documentation and notes that the application seeks conceptual approval for an Intermodal Terminal. Council wholeheartedly supports the application which meets Council's aim to develop the Parkes Industrial Hub for freight and transport related industrial operations.

The following issues are offered for the consideration of the Department in assessing of the application and it is also noted that the Department will impose conditions on any approval issued that cover the issues outlined below.

Planning Issues

- That the work be generally in accordance with documentation.
- Further development applications will need to be lodged seeking approval for each stage of the concept.
- Consideration should be given to the level of contribution that the development should be levied in regard to civil infrastructure and servicing as well as social, economic and community issues and infrastructure. Further, it will be necessary for the applicant to be required to pay relevant contributions. Council has had Connell Wagner Pty Ltd prepare a submission on the application in regard to contributions and this has been attached for your reference.
- An Annual environment audit to be provided to the appropriate authority (i.e. Council or Department of Planning) providing detail of noise monitoring, water and air quality monitoring program, traffic management and complaints handling (9.2 Environmental Management Plan).
- Consideration of Council's Draft Industrial Hub Development Control Plan which has been exhibited.

Traffic and Transport

A number of upgrades to the existing road infrastructure will be required as a result of the development triggers for the need and timing of these upgrades and others identified in the development application should be included in the development conditions, they include:

- Traffic lights at the intersection of Blaxland and Hartigan Avenue.
- Lighting at the intersection of Brolgan Road and Westlime Road;
- Brolgan Road to the Westlime Road intersection needs to be upgraded;
- Brolgan Road from the SCT access heading west and fronting the proponents land must be upgraded.

Visual Amenity

Council will once again reiterate that consultation be undertaken with the Coonabarabran Sidings Spring Telescope with regards to the proposed lighting of the development.

Water Management

Internal water reticulation (including metering) will be at the full cost of the developer. Section 64 developer services charges should be applied with site specific development application.

It will be the developers' responsibility to obtain the necessary plumbing and drainage permits and provide all the internal plumbing and metering in accordance with AS 3500 and the NSW Code of Practice; Plumbing and Drainage.

Flood Management

Infrastructure for stormwater generated onsite has been indicated and appear satisfactory. Council recognises that the proposal is at the concept stage however it recommends that a plan for the routing of flood waters through the site be developed.

Council is aware that significant flood waters have in the past flowed down the shallow watercourse through the proponents land. These flood waters have been a result of significant runoff from higher up in the catchment towards Parkes. As this catchment is being further developed the likelihood of more frequent flood events with higher peak flows may increase. This should be reflected in figure 7-16.

Sewerage

It was noted that a aerated type waste water treatment facility is proposed. Council recommends that the sewerage system be designed with appropriate infrastructure in such a way that it could be in future connected back into the reticulated system.

Trade Waste

The identification in the preliminary stages for the need to have a trade waste agreement with Council particularly if the connection to the reticulated sewer system in future is seen as favourable or if the development involves the collection of oily waters.

Any areas that are likely to produce a trade waste (e.g. Wash Bays) should be directed to a pre-treatment device before being discharged to the chosen sewerage treatment system.

Noxious Weeds

A noxious weeds management plan is recommended for the site given the scale of the development. Council's experience in weed management along transport corridors is that the spread of noxious weeds through road and rail from other areas of Australia will occur. As such there is a need for rigorous monitoring and a proactive approach taken to ensure noxious weeds are eradicated as they occur.

Council thanks you for the opportunity to comment on the subject application. Council would like to reaffirm its support for the project which is in line with Council's strategic direction for the 'hub'.

Should you wish to discuss this matter further, please contact Council's Senior Town Planner, Mr Andrew Johns on (02) 6861 2373

Yours faithfully

Alan McCormack
GENERAL MANAGER

per:
Steven Campbell
DIRECTOR OF PLANNING & ENVIRONMENT

enc.

WESTERN REGION DEVELOPMENT COMMITTEE

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17 July 2006

Ms Jacqueline Ingham
Senior Environmental Planning Officer
Major Development Assessment
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Proposed Concept Plan for an Intermodal Terminal, Brolgan Road, Parkes
Parkes LGA (05_0072) – Terminals Australia

Dear Jacqueline,

I refer to letter reference 9040698 received 16 June 2006 and accompanying documentation concept plan.

The Western Region Development Committee (WRDC) met in Dubbo on 13 July 2006 to consider the concept plan.

The WRDC has great concern with aspects of the plans that has the potential to create an unsafe road environment, drastically reduce traffic efficiency, and force a loss of amenity upon the residents of Parkes and through traffic. The mitigating measures offered to date do not satisfactorily address the concerns of the WRDC, nor does the concept plan provide information as requested in response to the draft document.

The following provides an outline of the concerns raised by the WRDC:

1. **Level Crossing Delays.** The WRDC considered the parameters proposed in the Environmental Assessment (EA) and questions the veracity of information used in assessing delay times. Two examples follow to clarify the WRDC considerations.

    1.1 Example 1 - page 88 of the EA proposes that trains will travel through the eastern Brolgan Road level crossing at either 115km/h (trains not related to the development) or between 20km/h to 50km/h, and estimates the longest delay to road traffic at seven minutes. However, using standard rail points and operating procedures, a train is limited to 25km/h maximum speed when entering or exiting the siding, a lower speed may be applicable when the train

enters the yard, typically a maximum of 10km/h. This limit applies while any part of the train is on the section of track in question.
From the above, it is estimated that a train entering or leaving the site will cause Brolgan Road to be closed for longer than the originally estimated seven minutes. Concerns with this extended delay include, but are not limited to:

1.1.1 A period where access for emergency vehicles to the site, and others along Brolgan Road, is unavailable. Emergency vehicles will not be able to meet response time requirements.

1.1.2 A mix of fast and slow trains. Drivers may become accustomed to the extended delay caused by the slow trains and 'race' the level crossing signals or drive around boom gates. In the event that the signals are for a train travelling at 115km/h, there is the possibility of a fatal collision.

1.1.3 The flow-on effect of the platoon of eastbound heavy vehicles leaving the level crossing (estimated from EA at 14 heavy vehicles) and arriving at the Hartigan Ave-Newell Highway intersection may over-saturate the intersection, leading to long queues and delays, and driver impatience.

1.1.4 The long delay as proposed is unacceptable and causes a significant drop in local amenity, for both Brolgan Road and the Hartigan Ave-Newell Highway intersections. Generally, a delay exceeding three minutes is considered unacceptable.

1.2 Example 2 – page 89 of the EA proposes that trains will travel through the proposed new level crossing west of the site potentially at 40km/h and at 10km/h, causing a maximum road traffic delay of twelve minutes. Again, using standard rail points and operating procedures, trains are limited to 25km/h through the points and limited to the set yard speed. However, this does not take into account a train departing the site towards Broken Hill and waiting to enter the main line, blocking the level crossing for the duration.

1.2.1 Using example 2 above, points 1.1.1 and 1.1.4 apply equally to this crossing.

1.2.2 The proposed twelve-minute delay for road traffic may not be valid as trains waiting to enter the main western line may be required to wait for an extended period, blocking Brolgan Road west of the site.

1.3 The Condobolin Road (MR61) level crossing will be similarly affected as per example 1. The length of trains entering and leaving the site will determine the speed at this level crossing as entrance to and clearance of the slow areas will determine train running speed.

1.4 Another delay may occur should a train arrive when there is insufficient storage in the yard. A procedure will need to be developed to prevent holding trains on the through lines while waiting to enter the yard, and so blocking level crossings.

The WRDC cannot agree to development consent to this development while the above level crossing delays will occur. It is envisaged that grade separation of all three of the public road-rail crossings noted in the EA (i.e. existing Brolgan Road east of the site, existing Condobolin Road [MR61] north-west of the site, and the proposed Brolgan Road west of the site) will be required to reduce the impact of the development upon the road network to an acceptable level.

2. **Intersections.** The WRDC considered the calculated traffic generation of the proposed development with the possible effect upon intersection operation, in particular the key intersections: the Hartigan Avenue-Newell Highway intersections. It was considered that the Hartigan Ave-Newell Highway intersections would be incapable of operating at an acceptable level under the proposed traffic generation. Traffic analysis of the intersection was not provided by the proponent, as requested in the response to the draft EA. Traffic data must include more than AADT data; turning movements and queue lengths, both existing and development generated, are essential for meaningful traffic assessment. Likewise, this should be projected for a minimum of 20 years.

   2.1. An initial estimate of traffic movement at the key intersections using 2005 intersection movements (including the neighbouring SCT proposed generation figures) show this intersection operating adequately. However, the addition of figures estimated from the PIT data provided by the proponent suggests that the worst movement will be the right turn from Hartigan Avenue into Forbes Road, with a level of service F under existing intersection priority control. As noted in the EA, a level of service F is not acceptable.

The WRDC cannot agree to development consent to this development while the probable inability of the key intersections to absorb the extra demand is evident. It is envisaged that in the short term (construction and possibly the initial stage) the key intersections will require coordinated signalisation and the level crossing widened to four lanes capable of accommodating heavy vehicle sweep paths. In the medium to long term (initial to ultimate stage), it is thought that completion of the Parkes Ring Road will be required to alleviate the traffic generation issues caused by this development. However, due to a lack of information it is not possible to fully appreciate the effect of the development upon the key intersections and hence to draw definitive conclusions and provide appropriate advice.

3. Blaxland Street-Hartigan Avenue Intersection. The EA proposes that, as an interim option, southbound heavy vehicles could bypass the key intersections by utilising Blaxland Street level crossing. This intersection is in close proximity to a level crossing of the Main Western Line, and does not currently provide sufficient storage for a semi-trailer. Page 67 of the EA claims that the Parkes Local Traffic Committee recommended that the priority of this intersection be changed to give priority to Hartigan Avenue traffic. Inspection of the minutes shows the Parkes Local Traffic Committee recommended that priority remain as is, with both the Police and RTA representatives strongly opposing a change in priority.

In summary, the WRDC cannot agree to development consent of this project in its current form. The main grounds are the reduction in practical access and long delays for emergency vehicles and others west of the existing Brolgan Road and Condobolin Road level crossings; and the high probability that the Hartigan Avenue-Newell Highway intersections in their current form will be unable to absorb the proposed traffic generation at the initial stage of development.

Yours faithfully

W H Hazelton
Chairperson
Regional Development Committee
Western Region

Department of State and Regional Development

First for Business

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The Director General
Department of Planning
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Attention Jacqui Ingham

Dear Sir,

Parkes Intermodal Terminal

I refer to the current public exhibition for the Environmental Assessment report for the abovementioned project and would like to make the following comments.

There are several macro factors driving the private sector to view logistics nationally with rail and road transport rather than on a local basis with truck only transport. These factors include the increasing cost of fuel and road transport, Government policies to reduce emission levels, potential savings in the cost of logistics, shipping companies' desire to see bigger ships calling at lesser ports, traffic congestion and ongoing pressure on Government funding for infrastructure development and maintenance costs.

The current development of new distribution centres by Coles Myer and Woolworths are examples of companies making large investments to achieve economies from distribution systems. While these are still truck based, the distribution centres of Coles Myer and Woolworths each act as part of a national network rather than being exclusively State oriented.

The proposals for a number of intermodal transport facilities in Western Sydney to increase rail transport of containers to and from Port Botany is evidence of these trends. These planned intermodals can be used to break cargo for local distribution by truck within Sydney.

The proposed development at Parkes is an important piece of infrastructure which will allow rail to play a more significant role in freight transport thus reducing trucks' role in interstate and national transport.

DSRD believes that major importers and exporters will value Parkes Intermodal Terminal's ability to play a key role in a solution to a range of logistics issues. Parkes' location on the main inland road and rail links to major population centres make it well suited to be a major player in freight transport. Parkes is directly accessible by rail from Port Botany allowing assembly and break up of local and interstate cargos at Parkes to be exported or imported through Port Botany and possibly other ports. This not only allows transport of goods to and from Port Botany by rail but provides efficiencies in shipping through reducing the number of docking ports in Australia.

First for Business

DSRD understands that the project will create up to 800 new skilled and semi skilled jobs in Parkes.

DSRD understands that the development of this large privately developed infrastructure in Parkes will have some local impacts, particularly local traffic, however DSRD believes the benefits to the broader community and State in facilitating a shift from road to rail transport outweigh local impacts. The proposal is consistent with both freight transport strategies and private sector trends.

It would be appreciated if these issues could be considered in the current application by Terminal Australia.

Goodchild 19/7/06

Jeff Goodchild
Director Major Projects

NSW GOVERNMENT
Department of Planning

Infrastructure & Transport Planning
GPO Box 39
SYDNEY NSW 2001

Jacqueline Ingham
Senior Environmental Planning Officer
Major Development Assessment
Office of Sustainable Development Assessment
Department of Planning

Dear Jacqueline

Subject: Environmental Assessment for Parkes Intermodal Terminal

The major advantage of the proposed Parkes Intermodal Terminal is its strategic location. Apart from its existing rail access to the north, west and south, the Parkes site offers two rail routes to Sydney allowing it to cater for both time sensitive and routine freight. Significantly, containers can be double-stacked on rail to the west of Parkes. In addition, the AusLink corridor between Sydney and Dubbo also includes the rail route via Parkes. The concept plan offers further advantage to the rail network by constructing a Y-link between the Broken Hill and Narromine lines. This will be welcomed by rail operators: that the Australian Rail Track Corporation will consider a shared funding arrangement for the Y-link emphasises its strategic advantage.

If the Commonwealth acts on its AusLink policy of providing an inland rail link between Melbourne and Brisbane, the site will be even better placed in the east-coast logistics chain. Both proposed inland north-south rail routes go through Parkes. Approval for a major freight facility in Parkes would advance the case for the Commonwealth to invest in an inland rail corridor. This has significant advantage for other parts of inland NSW, including export of coal and minerals from various regions, agricultural products from the Riverina, cotton from around Narrabri and grain from Moree. It would also take considerable pressure off the passenger and freight rail network in the Greater Metropolitan Region by transferring through rail freight between Melbourne and Brisbane to west of the Dividing Range.

The concept plan is an opportunity to facilitate mode shift to rail, especially in the trans-continental rail freight market. The proponent's commercial assumption is that 55% of inbound truck movements will transfer to rail for their outbound leg. The resulting analysis in the Environmental Assessment finds that the facility could reverse the existing imbalance between road and rail from 70/30 to 40/60. If this development succeeds, NSW can reduce its investment in the rural road network over the medium to longer term.

A principal thrust of the Commonwealth's AusLink program is to encourage change within the freight industry. Parkes Intermodal Terminal is an encouraging indication that the private sector sees commercial advantage in investing in this logistics shift. The Environmental Assessment notes that failing to proceed with the terminal reinforces the existing methods of freight handling.

Even if the intermodal freight terminal does not induce a mode shift to rail, it will not increase road traffic any more than growth in the freight task would account for. The Environmental Assessment notes that the target market is *'...current and planned freight movement along the Newell Highway and the transfer of container traffic between east-west and north-south rail corridors.'* As such, the facility is re-organising existing freight rather than creating new traffic. The vast majority of current truck movements occur along the Newell Highway. The intermodal facility could induce some of the traffic on to rail.

The site is also well connected with the NSW and interstate road network. The Environmental Assessment describes the traffic impact of the terminal as *'minimal changes to predicted traffic levels along the regional road network.'* The 2010 predictions of traffic on the haulage routes to and from the terminal are an average of 20 heavy vehicles in both directions per hour (48 in peak hour).

The largest increase by 2020, resulting in a total of 2,375 Average Annual Daily Traffic (AADT) on Brolgan Road east of the site, will still be within RTA two lane rural road criteria *of 'free flow with low volumes with little or no delay' (Level of Service A)*. To put this in perspective, 2005 traffic on the two lane rural Newell Highway south of Parkes was 5,620 AADT. With the Parkes Intermodal Terminal in Ultimate operation in 2020, the AADT will rise to 7,001 at this Newell Highway measuring site. In other words, in 2020, Brolgan Road will have only one-third of the traffic already handled on a nearby two lane rural road.

Further comfort can be taken from the proponent committing the future operator, yet to be identified, to prepare detailed traffic impact statements as part of Development Applications for each facility proposed on the site.

The Environmental Assessment records that Parkes Shire Council Traffic Committee has authorised road trains along roads situated in Parkes. This augurs well for the identification of suitable routes for road trains to access the Parkes Intermodal Terminal from locations west of the Newell Highway.

The proposal could affect traffic across a number of level crossings in the Parkes vicinity although existing and new level crossings do not present any problems that cannot be safely managed. Level crossings affected by the proposal will be made wide enough for freight vehicles, have boom gates installed and advance warning where sight distances are shown to be compromised. Pavements will be cross-hatched to discourage vehicles blocking the rail tracks, while queuing at Hartigan Avenue can be remedied by changing the priority at the intersection and installing turning lanes sufficient to accommodate freight vehicles. However, delays to road traffic caused by long trains shunting across level crossings when entering or departing the intermodal site could cause some temporary frustration amongst road users or diversion to alternative routes.

The proposal for an interim ring road route for trucks via Saleyards Road increases road traffic across one additional existing level crossing compared to the current route via the Newell Highway. However, this is not a permanent arrangement: when the Parkes Ring Road southern link to the Newell Highway is constructed, the truck route then returns to a single level crossing upgraded to the highest level of protection. Even at the Ultimate development in 2020, with an inland rail route operating between Melbourne and Brisbane, this crossing will only see just over an average of one train per hour.

The proposal introduces a new level crossing on Brolgan Road (and, in the Ultimate Stage, a new private level crossing within the complex). The policy of the NSW Level Crossings Strategy Council is that no new level crossings should be installed on public roads. However, there has been precedent where closure of an existing level crossing has allowed a new level crossing to be opened.

The final decision on installing a level crossing rests with the responsible road and rail authorities: in the case of Brolgan Road, these are Parkes Shire Council and the Australian Rail Track Corporation (which is a member of the Level Crossings Strategy Council). The new level crossing

will have the highest level of protection. The report of consultation notes opinion of the Roads and Traffic Authority (also a member of the Level Crossings Strategy Council) that Brolgan Road would provide adequate access for the 'minimal' number of trucks moving west. Train numbers on that line will also be minimal; in 2010, there will only be nine trains a day and twelve in 2020. Given that both approval authorities appear to see some advantage from going ahead with the facility, the new level crossing seems more than likely to be approved.

The Ultimate plan also includes a grade separated crossing of the Narromine rail line by a new road link from Condobolin Road to the site. However, the proposed grade separation would not need to be built if land were available for this road link to remain west of the Narromine Line. The cost of the land is likely to be less than the cost of grade separation.

The Environmental Assessment notes that there will be no public transport for up to 600 employees to get to and from the Parkes Intermodal Terminal. The Freight Strategy adn Planning Branch encourages the proponent and Parkes Shire Council to seek assistance from the Ministry of Transport's Regional Coordinator. Background information on service development is available at www.transport.nsw.gov.au/countryresource/guides/develop

The Branch seeks two clarifications about the Environmental Assessment:

a) Will the easement through Lot 200 DP627302 be fenced and does it allow for an internal 'accommodation' level crossing for stock and farm vehicles to access the dams? and,

b) Should the third explanatory dot point below the table on the second page of Appendix H of Appendix B, *Estimated Growth in Daily Train Frequency with the Proposed Intermodal Terminal*, read:

> The number of train movements of the new level crossing on Brolgan Road to the west of the site would be ***9*** (not 2) during the initial stage and ***12*** (not 4) during the ultimate stage?

The concept plan for Parkes Intermodal Terminal stands out amongst proposals for inland freight hubs serving the east coast of Australia. Both the private sector and Parkes Shire Council have been putting the necessary environmental, regulatory, financial and engineering building blocks in place for many years. This lends credibility to the concept plan, especially when compared to proposals in other states.

The Parkes Intermodal Terminal site is also sizeable enough at 365 hectares, half of which will be developed, to compare very favourably with current thinking for how large intermodal sites need to be: for comparison, a proposed major metropolitan intermodal terminal site at Moorebank is 190 hectares.

In conclusion, the desktop investigation in the Environmental Assessment is based on a series of freight and traffic assumptions that seem reasonable. The analysis demonstrates that the consequences are either minimal or manageable. From a Freight Strategy and Planning Branch perspective, we see no impediment to approving the concept plan for Parkes Intermodal Terminal.

Yours sincerely

Peter Ferris

Peter Ferris
A/Director, Freight Strategy and Planning

6 July 2006

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Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	S.Francis	G.Hughes		S.Smyth		13/10/06
1	G.Hughes	G.Hughes		S.Smyth		06/11/06
2	S.Francis	S.Smyth		S.Smyth		14/02/07

Appendix C

Revised Concept Layout Plans

SITE BOUNDARY

98
DP750179

18
DP658361

200
DP627302

6
DP857631

TO NARROMINE

MR61
(CONDOBOLIN ROAD)

PROPOSED MASTER SIDING

EXISTING RAIL LINE

PROPOSED SIDING

PROPOSED LANDSCAPING

INTERMODAL TERMINAL SIDINGS
2 x 1600m AT INITIAL STAGE

GANTRY RAILS

UNDERGROUND STORMWATER RETICULATION SYSTEM

INTERMODAL TERMINAL CONTAINER STORAGE
INITIAL STAGE = 14ha

INITIAL WAREHOUSING AREA = 2ha

INITIAL WAREHOUSING AREA = 2ha

BROLGAN ROAD 40.235 WIDE

BROLGAN ROAD TO BE UPGRADED FROM PROPOSED CROSSING TO WEST LIME ROAD FOR HEAVY VEHICLES

EXISTING RAIL CROSSING TO BE UPGRADED

RESTRICTED ACCESS BY AUTHORISED VEHICLES ONLY

SITE ACCESS LOCATION TO BE DETERMINED AT DA STAGE

UNDERGROUND STORMWATER RETICULATION SYSTEM

TERMINAL ADMINISTRATION OFFICE (INCL. PARKING)
AREA = 0.5ha

TERMINAL PLANT REFUELLING & MAINTENANCE FACILITY
AREA = 0.5ha

EXPAND EXISTING DAM FOR ON SITE DETENTION #1 (OSD#1)

PROPOSED RAIL CROSSING

DRAINAGE CULVERT UNDER BROLGAN ROAD

DAM

IRON SHEARING SHED

OVERFLOW PIPE FROM OSD#1 TO OSD#2

30.175 WIDE

COOPERS ROAD

PROPOSED EASEMENT

EXPAND EXISTING DAM FOR ON SITE DETENTION #2 (OSD#2)

OVERFLOW PIPE FROM OSD#2 TO GOOBANG CREEK

TO BROKEN HILL

TO PARKES

DRAINAGE CULVERT OR BORED PIPE UNDER RAIL LINE

OVERFLOW PIPE TO GOOBANG CREEK

BROLGAN ROAD

TO PARKES

ORANGE BROKEN HILL RAILWAY

280 300 320 340 360

FIGURE 6-1 : CONCEPT LAYOUT PLAN AT INITIAL STAGE

PRELIMINARY

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Drafting Check	CC	Design Check	KT
Approved	D ROBERTS		
Date	18/01/06		

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Client: TERMINALS AUSTRALIA PTY LTD
Project: PARKES INTERMODAL TERMINAL
Title: CONCEPT LAYOUT PLAN AT INITIAL STAGE ONLY

Original Size: A0 | Drawing No: 21-13701-R020A (Fig.6-1) | Rev: A

EXISTING RAIL CROSSING TO BE UPGRADED

TO NARROMINE

NEW INTERSECTION TO RTA SPECIFICATIONS

MR61 (CONDOBOLIN ROAD)

PROPOSED RAIL CROSSING

PROPOSED NORTHERN ACCESS ROAD

98
DP750179

PROPOSED MASTER SIDING

PROPOSED RAIL CROSSING

SITE BOUNDARY

4 x 500-800m WAGON STORAGE SIDINGS WITH OPTIONAL MIN. 900m EXTENSIONS

HEAVY ENGINEERING FACILITY
AREA = 2.5ha
4 x 600m SIDINGS

6
DP857631

TRAIN REFUELLING & SANDING FACILITY AREA = 0.5ha.

EXISTING RAIL LINE

CONTAINERISED FUEL STORAGE FACILITY
AREA = 3.5ha (700m x 50m)
2 x 800m SIDINGS

PROPOSED SIDING

PROPOSED LANDSCAPING

18
DP658361

INTERMODAL TERMINAL CONTAINER STORAGE
ULTIMATE STAGE = 180ha

INTERMODAL TERMINAL SIDINGS
4 x 1800m AT ULTIMATE STAGE

GANTRY RAILS

POTENTIAL ADDITIONAL WAREHOUSING
AREA = 12ha

ULTIMATE WAREHOUSING AREA = 3ha

INITIAL WAREHOUSING AREA = 2ha

BROLGAN ROAD 40.235 WIDE

BROLGAN ROAD TO BE UPGRADED FROM PROPOSED CROSSING TO WEST LIME ROAD FOR HEAVY VEHICLES

EXISTING RAIL CROSSING TO BE UPGRADED

RESTRICTED ACCESS BY AUTHORISED VEHICLES ONLY

SITE ACCESS LOCATION TO BE AGREED AT DA STAGE

TERMINAL ADMINISTRATION OFFICE (INCL. PARKING)
AREA = 0.5ha

TERMINAL PLANT REFUELLING & MAINTENANCE FACILITY
AREA = 0.5ha

EXPAND EXISTING DAM FOR ON SITE DETENTION #1 (OSD#1)

PROPOSED RAIL CROSSING

DRAINAGE CULVERT UNDER BROLGAN ROAD

BROLGAN ROAD

TO PARKES

BROLGAN ROAD

ORANGE BROKEN HILL RAILWAY

DAM

IRON SHEARING SHED

30.175 WIDE

COOPERS ROAD

OVERFLOW PIPE FROM OSD#1 TO OSD#2

200
DP627302

PROPOSED EASEMENT

EXPAND EXISTING DAM FOR ON SITE DETENTION #2 (OSD#2)

OVERFLOW PIPE FROM OSD#2 TO GOOBANG CREEK

TO BROKEN HILL

EXISTING RAIL LINE

30.175 WIDE

OVERFLOW PIPE TO GOOBANG CREEK

DRAINAGE CULVERT OR BORED PIPE UNDER RAIL LINE

TO PARKES

NOTE:
STORMWATER DRAINAGE CONCEPT OMITTED FOR CLARITY.
REFER TO DRAWING No.21-13701-R020D REV. A FOR DETAILS

FIGURE 6-2 : CONCEPT LAYOUT PLAN AT ULTIMATE STAGE

PRELIMINARY

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Drawn CT	Designed CC	Project	PARKES INTERMODAL TERMINAL
Drafting Check CC	Design Check KT	Title	CONCEPT LAYOUT PLAN AT ULTIMATE STAGE
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Date 18/01/06			
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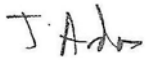
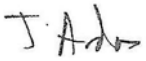
	K Smallwood	J Ardas		J Ardas		15/02/2007