

**WEST DENMAN
ROAD STRATEGY
VER04**

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1 DISTRIBUTION & REVISION HISTORY

The Asset Manager will be responsible for maintaining the latest version of this strategy on council computer network through the Controlled Document Register. View or download this document, together with other applicable system documentation, from the Controlled Document Register for an individuals use and reference. Once downloaded it becomes an uncontrolled document, with recipients responsible for ensuring they use the latest copy of the documentation and disposing of superseded documents.

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This table identifies changes to this revision, from the previous version.

Version	Date	Detail	Impact
VER04	9/10/06	Updated cost estimates Reviewed emergency access to west Added contributions to Golden Highway Intersections upgrades	Planning Staff Asset Management Staff Roads & Drainage Staff

2 BACKGROUND

The Muswellbrook Shire LEP 1985 is currently under review. The Draft Muswellbrook LEP 2005 proposes to include an area west of the Ulan Railway Line and north of the Denman Recreation Area in the current Village Zone (2d).

The Village Zone will permit the future development of residential, commercial and local light industrial land use consistent with the relevant Development Control Plans for Denman.

If this zoning pattern is adopted, the area is capable of being subdivided into residential lots. This study proposes a system of collector roads to serve the existing residential area and the proposed new development area (refer Figure 1, p6) as well as a system of cycleways.

Recommendations are made on road and cycleway standards for the complete development of the area taking into account possible staging of the development. The impact on the existing road system is also considered.

The development of this area will very much depend on mining and other industries developing in the Shire and on future demographic trends both locally, regionally and statewide.

3 DEVELOPMENT

The proposed extension of the Village zoning comprising an area of 123 Ha, will allow more flexibility in the development of the precinct. The Village zone permits a wide range of development activities including, with development consent, the development of small residential lots down to a minimum of 600m² as well as larger acreage blocks.

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3.1 Assumptions

The Village area assumed is shown outlined in green on Figure 1. This is referred to throughout the report as the “study area”. If after the finalisation of zoning, other areas to the north and west are included, the strategy recommended in this report may change.

The study area does not include the existing future development area of Yarrowa Road, which is an area of approximately 170 ha zoned 2v south of Rosemount Road and west of Paxton Street. If there is any potential for significant development in this area, a further strategy will have to be developed for such development, with potential road works contributions of a similar order of magnitude to those identified in this report likely to result.

This study assumes that in time the whole of the study area will be developed. The study does not examine predictions of population growth and future demand for land at Denman.

While the extent and type of development will depend on future demand, this study is based on an assumption that the area will predominantly be developed as residential land with larger than normal lots, having, for the purpose of assessing traffic volumes, an average size of about 2400m².

On this basis a total of approximately 450 lots can be developed.

Based on current strong commercial interest in the West Denman area, the study also assumes that the West Denman area will be developed fully in preference to the Yarrowa Road area, and that this being the case, there will not be the market to support full development of both areas. The report does not consider the possible scenario involving partial development of both areas.

If any of these assumptions prove to be incorrect, the outcomes of this strategy and/or the need for additional strategies will have to be reviewed. It should be noted however, that in this eventuality contribution rates for roadworks in Denman are unlikely to change significantly from the levels identified in this report.

4 PROPOSED COLLECTOR ROAD SYSTEM

The proposed road structure considers connectivity within the local network to Denman and upgrade of key intersections with the Golden Highway. Connections to the west would not have significant benefit to the community as the majority of movements would likely be to from Denman and Muswellbrook.

The fundamental principle established for the road system is that there should be a minimum of two points of access for traffic going into and out of the West Denman Area. Access to the West Denman area at present is provided by the railway crossing at Ogilvie St and by a gravel road and railway crossing at Kenilworth St via a road (“Turner St”) that is not dedicated as a public road.

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4.1 Local Road Issues

Several issues were considered and are discussed below.

4.1.1 Extension of Pine Ridge Road to Golden Highway

Extending Pine Ridge Road to the Golden Highway would have the following disadvantages:

- Road construction costs (including a major intersection on the Golden Highway) would be extremely expensive adding an additional \$5,000 in Section 94 charges to each block developed.
- Council would be forced to construct this road well before all Section 94 Contributions were made. This may mean an outlay of \$2,000,000 some of which would never be recovered.
- The road would attract additional traffic in the order of 600 vehicles per day through the West Denman Area travelling to/from other parts of Denman.

In its favour, development of this road would provide quicker access to and from the west for residents of West Denman and other Denman residents as well as provide an assured alternative emergency access.

RTA approval for an intersection with the Golden Highway would be required.

It should be noted that if additional areas are zoned as Village Zone west or north of the study area then the provision of a northern link would need to be re-examined.

4.1.2 Extension of Almond Street to Golden Highway

The extension of Almond Street to the Golden Highway would have the following disadvantages:

- Construction costs would be high but not as high as Pine Ridge Road. The same potential for non-recoverable Section 94 contributions would exist as at Pine Ridge Road. The magnitude of the potential outlay would be less.
- A major intersection would need to be developed on the Golden Highway close to the railway crossing which the RTA have previously indicated that they would not allow.
- The road would attract additional external traffic as an alternative means of entrance to Denman from the north.

Again, in its favour, it is a public road and would provide an assured alternative emergency access and a convenient access to the west for some residents.

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4.1.3 Kenilworth St Railway Crossing

At present the Kenilworth St railway crossing provides the second access point for the existing West Denman Area. A gravel crossing at Kenilworth St and a gravel road (Turner St – Bray to Kenilworth St), that is not dedicated as a public road, provide a less than adequate standard of access.

The disadvantages of this crossing are:

- Turner St (Bray St to Kenilworth St) would have to be made a public road. Legal advice suggests that this situation is somewhat unique and may involve a lengthy process to dedicate this as a public road.
- The crossing lies less than a kilometre from the Ogilvie St crossing and could therefore be blocked by a long coal or other goods train for a long period of time.

The advantages are:

- The crossing already exists and residents of West Denman accept it as part of the road system.

4.1.4 Construction of Turner, Bell & Almond Streets

Construction of Turner Street from Bray Street to Kenilworth Street, upgrading of the railway crossing, and the half width construction of Bell Street from Almond Street to the Pony Club grounds, are likely to require bankrolling by Council depending on the future stages of development of the land in the precinct. Future contributions from developers will be repaid to Council for this work.

As a result of the existing developments in this area, Council will have to fully fund the construction of the eastern half of Almond Street from Bray Street to the prolongation of Kenilworth Street.

Once this is programmed, it is likely that Council may also have to bankroll the construction of the western half of Almond Street from mid-way between Bell and Grey Streets to the prolongation of Kenilworth Street. Again contributions from developers under the section 94 plan for the estate will be repaid to Council for the latter work, with this provision being included in the Section 94 Plan for West Denman.

4.2 Proposed Collector Road System

From an emergency management point of view, access via Almond St or Pine Ridge Road would be preferable to Kenilworth St because of the potential for the West Denman Area to be isolated by a long train.

This is an extremely remote possibility, however it can be recognised and dealt with in Local Emergency Plans with the acknowledgement of an

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emergency temporary access through the golf course to Rosemount Road and thence via the existing railway level crossing on that road.

Taking all these considerations into account, the collector road system proposed is as follows:

- Ogilvie Street/Turner Street from existing railway level crossing to Bell Street.
- Bell Street on existing alignment to Pine Ridge Road.
- Almond Street on existing alignment to Lot 121
- Link Road from Pine Ridge Road to Almond Street.
- Kenilworth Street prolongation from Almond Street to Northern Railway level crossing or an alternative alignment north of this linking Almond St with the railway crossing.
- Bray Street/Turner Street from Almond Street to Northern Railway Level Crossing.
- Upgrading of the intersections on the Golden Highway at Palace St and Kenilworth St. (subject to detailed traffic study and design).

Refer to Figure 1 (p6)

5 TRAFFIC GENERATION

Based on nine trips per day per block, traffic has been assigned to a collector road system. Ultimate traffic flows have been calculated at strategic points in the area as shown on Figure 2.

These figures show traffic figures for the area when fully developed, however the order in which areas are developed will have a strong impact on interim traffic flows. The availability of Kenilworth Street west of the railway line as a public road will also have a major effect on traffic. If the construction of Kenilworth Street occurs at a later time than other areas in west Denman, then significant traffic will use the Bray Street/Turner Street route as the means of access to and from the north. Traffic could be as high as 1000 vehicles/day.

6 TRAFFIC IMPLICATIONS OF FULL DEVELOPMENT

1. **Ogilvie Street Level Crossing**
Increased traffic up to 3000 vehicles/day will mean that in time, the railway crossing will have to be upgraded to a “boom gate” standard.
2. **Intersections on the Golden Highway at Palace St and Kenilworth St.**
Upgrading of the intersections on the Golden Highway at Palace St and Kenilworth St. (subject to detailed traffic study and design).

In time, these intersections will need to be upgraded as a result of the development.

Kenilworth will probably receive a modified ‘Type B’ treatment. Palace St/Ogilvie St is potentially complex; the cheapest feasible treatment being signalisation. Although other treatments must be considered, realignment, or a roundabout would be very expensive.

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3. Kenilworth Street Level Crossing

The crossing will require upgrading in the near future and in time will require upgrading with warning lights. The approaches will require dedication as a public road and substantial upgrading.

4. Turner Street (Bray to Kenilworth)

This section of Turner Street and Bray Street will be used as a collector road in the earlier stages of the development of West Denman until such time as the section of Kenilworth Street west of the railway line is constructed.

At present, this road is not a public road and Council will need to take steps to dedicate it as a public road.

5. Road Widths

Road widths recommended are tabulated below in Table 1. These are determined in accordance with Austroads Design Standards.

Road Section	Estimated Traffic Volume	Traffic Lanes/ Parking	Kerbing	Shared off- road Cyclepath	Road Reserve Width
Ogilvie Street (Railway- Turner)	3630	9.0/-	Barrier	2.0	Existing reserve
Turner Street (Ogilvie – Bell)	3630	7.0/-	Barrier	2.0	Existing Reserve
Bell Street (Turner – Almond)	3630	7.0/2.0	Barrier	2.0	Existing Reserve
Bell Street (Almond-Pine Ridge)	2400	7.0/2.0	Barrier	2.0	Existing Reserve
Almond Street (Bell – Link* Road)	1650	7.0/2.0	Barrier	2.0	Existing Reserve
Link* Road (Pine Ridge – Almond)		7.0/2.0	Barrier	2.0	Existing Reserve
Kenilworth Street (Almond – Railway)	490	7.0/2.0	Barrier	2.0	20m
Bray/Turner Streets	270	7.0	Mountable	2.0	20m
Pine Ridge Road	1890	7.0/2.0	Barrier	2.0	Existing Reserve

* Note: Link Rd refers to a road to be constructed as part of development between Almond St and Pine Ridge Road

7 TRAFFIC MANAGEMENT ISSUES

1. Cycleways

It is proposed that off road shared pedestrian cycleways be provided as part of the road system. The location of these cycle paths is shown on Figure 2 and in Table 2 above.

2. Speed Environment

The development of roads in this area should encourage low speed travel. The roads should be designed to have a horizontal curved alignment where possible with the appropriate use of roundabouts and mid-block speed restriction devices.

8 SECTION 94 CONTRIBUTIONS

The current Section 94 Plan for Denman identifies contributions of road and drainage improvements of \$724.60 per lot. A significant proportion of this is for drainage work, and the amount has not been indexed for many years.

To accommodate the additional traffic impacts of development in the West Denman Area, it will be necessary to upgrade a number of existing urban roads as well as provide cycleway links from the new developments to the town.

Calculations have been on the basis of a list of projects shown in Annex "A".

The amount per lot for road upgrading is calculated as \$6855 and \$990 for cycleways.

Ultimately the provisions in the existing Section 94 plan for road and drainage works in Denman will be brought up to date following a review of road infrastructure needs resulting from development in the Yarrowa Road area. As indicated earlier in this strategy, these contributions rates are not likely to be significantly different to the rates identified in this report for West Denman.

9 SUMMARY OF RECOMMENDATIONS

The report makes the following recommendations:

- Development of a collector road system with 2 access points across the railway line at Ogilvie Street and Kenilworth Street.
- Upgrading of the intersections on the Golden Highway at Palace St and Kenilworth St. (subject to detailed traffic study and design).
- Dedication as a public road of the section of road known as Turner St between Bray St and Kenilworth St.
- Road widths of 7 to 9 metres for collector roads.
- 2 metre off-road shared pedestrian concrete cycleways.

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- Upon finalisation of the LEP, the Section 94 Plan for Denman be reviewed for roads, drainage and cycleways and incorporated in DCPs where appropriate.
- Plan for long-term extension of Almond Street through to the Golden Highway. However; that will not be funded by the currently proposed s94 Plan.
- Construct emergency short-term access over Almond Street to the Golden Highway by upgrading the existing track and still providing locked gates at the northern end so that it does not become a defacto short cut.

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Annex A

Upgrading Projects for West Denman Area as basis for S94 Costs

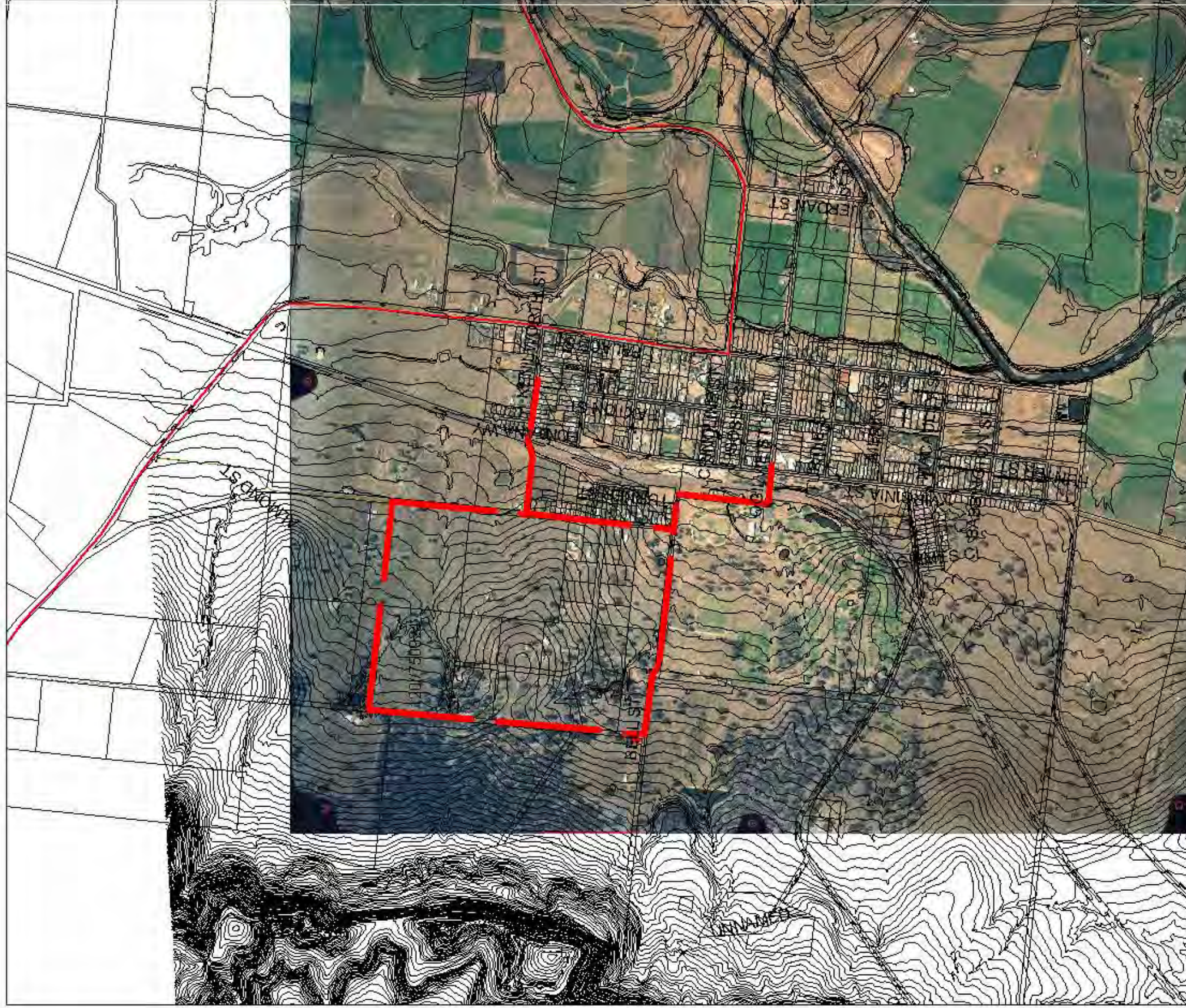
Roads

Project	Description	Cost
Ogilvie Street Railway Crossing	Upgrade Rail Crossing for boom gates	\$150,000
Turner Street (both sides) (Ogilvie – Bell)	Widen pavement and construct Kerb & Guttering	\$160,000
Bell Street (south side) (Turner – Almond)	Widen pavement and construct Kerb & Guttering	\$60,000
Bell Street (south side) (Almond – Pony Club)	½ road pavement and Kerb & Guttering (630m)	\$300,000
Bell Street/Almond Street Intersection	Roundabout	\$240,000
Almond Street/Bray Street Intersection	Roundabout	\$240,000
Kenilworth Street/Almond Street Intersection	Roundabout	\$240,000
Bray Street (north side) (Almond – Turner)	Widen pavement and construct Kerb & Guttering	\$60,000
Turner Street (entire road width) (Bray – Kenilworth)	Construct new road with Kerb & Guttering	\$360,000
Kenilworth Street Rail Crossing	Initial upgrade Rail Crossing	\$100,000
	Upgrade Crossing for Warning Lights	\$125,000
Kenilworth Street (south side) (No 19 – Palace)	Widen pavement and construct Kerb & Guttering and Stormwater Drainage System	\$200,000
Emergency Access to Golden Highway over Almond St.	Construct emergency access to Golden Highway over Almond St. with track and locked gate.	\$50,000
Palace St / Crinoline St / SH27 intersection	Upgrade with traffic signals or equivalent treatment.	\$300,000
Kenilworth Street / SH27 intersection	Upgrade to Type B intersection	\$500,000
	TOTAL	\$3,085,000
	S94 Contribution/Lot	\$6,855

Cycleways

Turner Street (Ogilvie – Bell)	2.0m concrete cycleway	\$50,000
Bell Street (Almond – Pony Club)	2.0m concrete cycleway	\$80,000
Bell Street (Turner – Almond)	2.0m concrete cycleway	\$20,000
Almond Street (Bell – Bray)	2.0m concrete cycleway	\$40,000
Almond Street (Bray – Kenilworth)	2.0m concrete cycleway	\$35,000
Bray Street (Almond – Turner)	2.0m concrete cycleway	\$20,000
Turner Street (Bray – Kenilworth) incl railway crossing	2.0m concrete cycleway	\$50,000
Pine Ridge Rd for the length of development	2.0m concrete cycleway	\$150,000
	Total	\$445,000
	S94 Contribution/Lot	\$990

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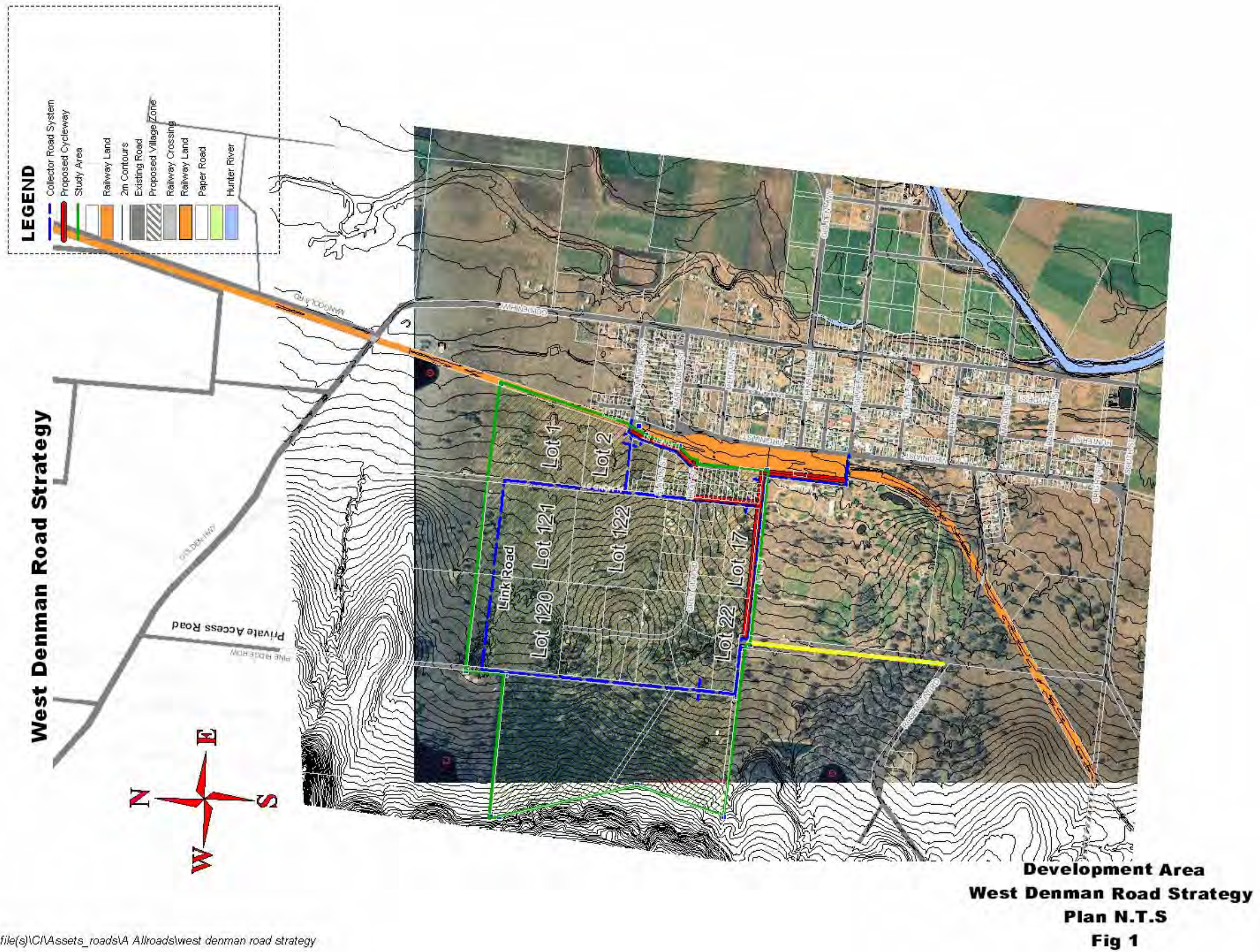
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APPENDIX C.

14/09 '06 15:32 FAX 0249240342

DEVELOPMENT SECTION

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FILE COPY

Attention: Mr Bruce Macfarlane

DRAFT WEST DENMAN ROADS STRATEGY

Dear Mr Macfarlane

I refer to your letter dated 12 December 2005 (Your reference: 590-000) regarding the subject draft West Denman Roads Strategy forwarded to the RTA for consideration.

The RTA's primary interests are in the road network, traffic and broader transport issues, particularly in relation to the efficiency and safety of the classified road system, the security of property assets and the integration of land use and transport.

In accordance with the *Roads Act 1993*, the RTA has powers in relation to road works, traffic control facilities, connections to roads and other works on the classified road network.

The RTA has reviewed the information provided and offers the following comments for Council's consideration:

Road Network Options

- a) Proposed Road Network (access via Oglive Street and Kenilworth Street railway crossings)
- Assessment of the impact of traffic, from development in the West Denman area, on intersections on the Golden Highway is required.
 - Development in the West Denman area will increase traffic demand at existing intersections on the Golden Highway.
 - Any required upgrades of intersections should be examined and if required funded through Council's Section 94 contributions plan or direct developer funding.
 - Critical intersections on this section of the Golden Highway would be Palace Street and Kenilworth Street.

Roads and Traffic Authority
ABN 64 490 155 255

