

Report on Forestry Developments in West Wimmera Shire

Introduction:

The south-western parishes of West Wimmera Shire have for some time been the site of a vigorous pinus radiata industry. The largest pine plantation owner/operator in the area is Auspine Pty Ltd. During the past three years there has been a continuing dialogue between Auspine management and Shire staff concerning the suitability of local government roads in the area for the carriage of forest products. Most local roads are of light construction, suitable for access to grazing properties. The cartage of high tonnage of timber product from harvesting operations over such roads is not possible without significant damage to the roads, difficulties for transports, and safety implications for the travelling public.

In mid 1995 the first planning permit involving a eucalyptus globulus (blue gum) plantation in West Wimmera Shire was issued. A steady trickle of such applications was approved until mid 1998. From then on the pace of development of this new industry quickened. By January 2000 planning approvals had been issued for more than 12,000 hectares of property to be developed with blue gum plantations.

For the most part the blue gum plantations are also in the south-western parishes of the shire. The harvested product will need to be transported over many of the same local roads as the pine harvest. However many blue gum plantations are located further north and east of the major pine plantations, and will effect a wider network of local roads.

This report is the result of a preliminary study that has been undertaken to determine which local roads are likely to be effected by timber harvesting operations, what is the likely magnitude and timing of the tonnage to be carried, and what are the infrastructure capital funding implications.

Methodology of the Study:

- 1. Establishment of Extent of Plantation Lands:** The Shire's planning permit records were used as the source of data to determine the area and location of land where pine and bluegum plantations have been established since late 1982. It is known that there are pine plantations within the Shire established prior to this date. This study has not attempted to establish the full extent of such plantings.
- 2. Establishment of Which Roads Carry the Load:** The planning permit records provide the location of each plantation in terms of Parish and Crown Allotment. Each location was found on a parish plan and the local roads providing immediate access to the allotment were identified. The route likely to be taken by timber trucks was determined on the basis of the type of timber harvested and its likely end destination. For pine in the Dergholm/Dorodong area the most likely destination has been taken to be a processing plant in South Australia. Auspine's major plant is at Tarpeena. For blue gum the most likely destination has been taken as Portland for either chipping or direct shipment from the port.

3. **Magnitude and Timing of Harvest Loadings:** The magnitude and timing of harvest loadings on local roads has been established using data provided by Mr. Charles Hajek, Private Forestry Industry Development Officer, of the department of Natural Resources and Environment.
 - Mr. Hajek's data is attached to this report as Appendix 4.
4. **Infrastructure Capital Funding Requirements:** The Infrastructure capital funding requirement for the provision of new or up-graded local roads has been calculated using the unit rates presented in Appendix 3 of this report.
5. **Lower Bound Solutions:** All calculations in this preliminary study have been made in order to arrive at a 'lower bound' solution. For example:-
 - Where a planning permit has been issued for the entire area of a crown allotment, the area used for the calculation of harvest volume has been taken as 75% of the whole.
 - Where a planning permit has been issued for a portion of a crown allotment, the area used for the calculation of harvest volume has been taken as 85% of the portion.
 - Mr Hajek's information is that the yield from a blue gum plantation is 150 – 250 tonnes per hectare, harvested at 8 – 12 years of age. The study yield figures are based on 150 tonnes per hectare at 12 years of age, with a second harvest of the same size at 24 years. No predictions for blue gum harvesting have been made beyond 24 years. For pine harvesting Mr Hajek's information is that the yield will be 70 – 120 tonnes per hectare per operation, with up to 4 thinnings plus the final harvest. The study yield figures are based on 3 thinning operations at 12 year intervals and a final harvest at 48 years of age, with all operations yielding 80 tonnes per hectare.
 - The rates used for estimating the infrastructure capital requirements have been calculated on providing the cheapest form of construction likely to withstand the traffic loads imposed on each local road classification.
 - No estimation has been made of the increased routine maintenance costs, which will flow, from increased downstream road usage.
6. **Accuracy of Predictions:** There are two factors, which could adversely effect the accuracy of this study's predictions:-
 - The wide range of possible yields for both pine and blue gum is an obvious source of possible error. For blue gum the range is wide because there is no hard evidence yet as to actual yields or timing in this area. For pine the suggested range is not as wide as for blue gum but there is anecdotal evidence that the stated range overstates the yield from thinning operations, and understates the yield from the final harvest. As well as this the yield from pines planted prior to 1982 has been only partially brought to account. Auspine has provide us with yield figures for their harvesting operations in our area from 1998 to 2010. These figures include the yield from mature trees harvested in this period.

- The timing of harvests will be more diffuse than is shown in the graphs. Not all blue gums planted in 1999 will be harvested in 2011. Even if all 1999 plantations matured evenly, physical and commercial restraints would most likely spread the harvest period over two or three years.
- The use of 'lower bound' solutions as detailed in item 5 above negates the effect of these possible sources of error because what the study looks at is the **minimum likely loading** on the public road system and the resultant **minimum likely cost**.

Presentation:

The results of this study have been presented in two forms.

Appendix 1 shows a series of tables which list each road likely to be part of a timber-harvesting route in the Local Minor Road, Local Access Road and Local Service Road categories and the likely minimum capital expenditure required to bring each road to timber-harvesting standard. The total capital expenditure required for each of these categories is shown. The local Collector Roads that will be part of a timber-harvesting route are listed, but capital costs for collector roads have not been stated as each local collector road requires a separate detailed assessment of the extent of the capital upgrade required.

For each timber harvesting road, including local collectors and declared main roads, a graph has been produced which plots time (in years) against the total tonnage of timber carted over that road (thousands of tonnes) in that year. The estimated minimum capital expenditure for the road is shown at the top of the graph, together with the date for the latest completion of the work. These graphs are located in Appendix 2. When interpreting these graphs please note that each thousand tonne of timber equates to approximately 50 B-double truck movements.

Conclusions:

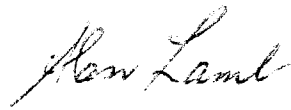
1. West Wimmera Shire, as a result of the developing timber industry, is facing the need to undertake a significant expansion of its infrastructure capital upgrade program. This expansion needs to be superimposed on top of its normal infrastructure capital renewal program. The **minimum extent** of the capital upgrade extension is listed below:

Local Minor Roads	\$ 887,800
Local Access Roads	\$1,198,700
Local Service Roads	\$1,447,100
Local Collector Roads	\$1,639,000
Project Management	\$ 518,000
<u>TOTAL</u>	\$5,691,000

A further extension of this capital upgrade amount needs to be determined after a careful assessment of the work required on a number of local collector roads is carried out.

2. All of this capital up-grade needs to be completed prior to the year 2012, and a significant proportion of it in the Dergholm/Dorodong area, needs to be completed by the year 2006.
3. In order to better understand the scope, timing and cost of the need for construction of timber-harvesting standard roads the Shire should establish and maintain officer to officer relations with timber producing companies at a technical level. Hard data as to projected tonnage and timing is required and can only be obtained from the producers.
4. The sources of funding for this work need to be explored. Possible sources include (but are not limited to):
 - Federal funds via the Tires program
 - State infrastructure development funds
 - Increases in rate revenue as a result of the increase in capital value of forestry land.
 - General increases in rates
 - Levying special rates, charges or tolls against forestry producers.

Signed,



Alan Lamb
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