

Mildura: “A Labour Forecasting Model for TDL Operators”

A Transport & Distribution Training Victoria sponsored
Research Project undertaken by:



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1. Introduction

1.1 Background

In August 2002 Minister Brumby launched the Victorian Transport, Distribution and Logistics (TDL) Industry Action Plan. The plan underpinned a strategy whose core tenet was to develop Victoria as the "State of supply chain excellence & gateway of choice". The plan was produced following an extensive industry consultation process and audit.

The plan articulated a number of key strategic initiatives that were to underpin implementation. Of those, strengthening both the consultative mechanisms and the education and training framework have had the greatest influence on the development of this "Career Strategy".

The establishment of the Victorian Supply Chain Consultative Group (VSCCG), the Industry Round Table (IRT) and subsequent emergence of the Regional Round Tables (RRT) have been instrumental in shaping this proposal. Skill shortages have been a key issue identified by each RRT in Wodonga, Gippsland and Mildura together with the Education and Training Partner Reference Group.

In addition, the Department of Education has identified TDL as a priority industry in terms of skill shortages and determined to raise the level of training delivery across the industry.

The importance of education and training in all aspects of the current plan is highlighted by the shift in emphasis toward developing higher order skills, broadening the consultative base and advisory mechanisms and raising the awareness and importance of TDL within industry and government alike.

1.2 This Report

The VSCCG, the IRT, Education and Training Partner Reference Group, and RRT assessed that skill shortages exist in the TDL industry, and in the Mildura region. A project outline and brief was established by Transport and Distribution (TDT) Training Victoria in conjunction with the Chief Executive Officer Sunraysia Mallee Economic Development Board, and in consultation with Regional Development Victoria. TDT then engaged Extran Consulting to undertake the project.

This report summarises the findings, conclusions, and data sets for the Mildura Labour Forecasting project which is a sub-set of a broader "Career Strategy" Victorian government sponsored initiative. The "Career Strategy" is predicated on a number of discrete elements, activities, reports and products. The final mix of those "parts" will be determined by a steering committee comprising representatives from Department of Innovation, Industry & Regional Development (DIIRD Chair), Department of Education, (DET) Victorian Transport Association (VTA) and TDT Victoria (TDT Vic).

1.3 Acknowledgments

Four significant Mildura TDL businesses were consulted to undertake a Questionnaire and participate in interviews for this project. Special thanks go to George Buckley from Pickering Transport Group, Ken Wakefield from Wakefields Transport, Larry Piscioneri from Piscioneri Transport, and Tina Bell from GTS Freight Management. Without their willing participation we would not have had data to work with.

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2. Objectives

One of the key issues impacting the Mildura region is skill shortages and awareness that over the next few years the demand will only increase. A critical factor is predicting the number of people a business will need, particularly in a period of growth. The project objective is to review actual TDL commercial calculations and develop formulas that can be applied to forecasting data to determine future labour demands.

3. Approach adopted

The approach taken to gather TDL commercial calculations was to prepare a questionnaire and interview key TDL businesses in the Mildura region. Although the sample size was small, the four businesses targeted represents approximately 75% of the freight task for the Mildura region.

The focus of the questionnaire was to assess the impact on TDL businesses should a significant portion of work be won or indeed, assess the impact on their business should their freight increase by 50%. The questionnaire also looked at the impact on their businesses in a number of key areas including:

- Impact on equipment
- Impact on personnel
- Impact on recruiting
- Impact of IT demands on staffing
- Impact on training requirements
- Level of tertiary qualifications
- Impact of regulatory compliance with national/state requirements and policies

The questionnaire was sent to the TDL business key contacts prior to interview. Answers to the questionnaire formed the basis of the discussions/interviews which were designed to gather qualitative data to verify and support the quantitative data.

A copy of the Questionnaire is attached as Appendix A.

4. Analyses and Discussion

4.1 *Establish the size of the current freight task*

The four TDL businesses moved a total of approximately 2.2 million tons over a distance of 158 million kilometres in one year. The four businesses collectively employ approximately 484 personnel consisting of Drivers, Storeperson, Mechanics Admin/Clerical, Managers/Supervisors, Fleet Controllers, Forklift operators and Casuals. The TDL industry accounts for 4 per cent of employment in the region.

All businesses were concerned by the skills shortages in the region particularly in the driver occupation categories, however, each business had different strategies for dealing with key skills shortages.

4.2 *Impact on equipment*

Although this report focuses on labour forecasting it is prudent to summarise the impact on equipment due to the link between the employment of labour for the provision of supporting services areas such as workshop personnel.

To move the annual freight task the four businesses collectively utilise over 200 Prime Movers, 25 Rigid, 485 trailers, and 12 other (light commercial) vehicles. The number of units would increase dramatically if it were not for the use of rail by one business to move predominantly export freight to the Ports of Melbourne and Adelaide. Currently the businesses collectively employ approximately 20 workshop staff inclusive of mechanics and trade assistants. This figure would increase significantly if all businesses relied on road movement of all freight.

To gauge the impact on equipment if the freight task was to increase by 50%, the number of equipment required would be: 288 Prime Movers, 33 Rigid, 677 trailers, and 14 other vehicles. In equipment terms this represents an increase of 16%.

4.3 *Impact on personnel*

The questionnaire requested businesses to provide a response to the scenario of increasing their annual freight task by 25% and 50%. One respondent had almost doubled their freight task in the previous 12 months highlighting the realistic claims contained in the 2006 SKM "Twice the Task" Report which forecasts that Australia's land freight transport task will increase significantly in a relatively short time period, and expected to double from 2000 – 2020. The following paragraphs provides an overview by labour category on the impact on TDL businesses should their annual freight task increase by 25% and 50% respectively:

4.3.1 Drivers

The total number of drivers employed collectively during a one-year period by the four businesses was 306 drivers, which includes the use of sub-contractors. This represents 73% of total staff employed.

In terms of labour forecasting in the Mildura region, if the freight task were to increase by 25%, the number of additional drivers required would increase from 306 to 364, or an increase of 16%. The analysis found that if the freight task increased by 50%, the number of drivers required in the region, or at least across the four companies would increase from 306 to 402, an increase of 24%.

The Victorian Government and the Commonwealth Department of Employment and Workplace Relations conducted a Regional Skills Shortage Survey Project in Oct 2005, where out of 23 employers, 190 vacancies for Intermediate Production and Transport Workers were difficult to fill and 25 remained unfilled. The majority of vacancies (filled and unfilled) were for Truck Drivers. This supports the findings in this project where if the freight task were to increase by 50%, then 96 additional drivers would be required in addition to 25 driver positions being unfulfilled. This sends a clear message that this region has a driver skills shortage.

A simple labour forecasting formula for drivers is shown below in Figure 1.

Position	25 % increase in freight equals	50 % increase in freight equals
Drivers	16%	24%

Figure 1 - Driver Labour Forecasting Model

In reviewing the commercial calculations the analysis concludes should an increase of freight occur to a TDL business in the Mildura region, then an increase in the requirement for drivers will occur. By way of explanation, if a TDL business employed 100 drivers to conduct their annual freight task, then a 25% increase in the annual freight task would equate to an additional requirement for 16 drivers, or 24 drivers if the annual freight task increased by 50%.

Most businesses interviewed agreed more work could be done internally to increase the level of vehicle utilisation, which would reduce the number of drivers required, however, this was minimal as all businesses understood the importance of maximising vehicle utilisation.

4.3.2 Other

The total number of other personnel employed collectively during a one-year period by the four businesses was 178 staff which includes Storepersons, Mechanics Admin/Clerical, Managers/Supervisors, Fleet Controllers, Forklift operators and Casuals. This represents 27% of total staff employed.

In terms of labour forecasting in the Mildura region, if the annual freight task were to increase by 25%, the number of other staff required would increase from 178 to 211, or an increase of 16%. The analysis found that if the annual freight task increased by 50%, the number of other staff required in the region, or at least across the four companies would increase from 178 to 242, an increase of 26%.

A simple labour forecasting formula for other staff is shown below in Figure 2.

Position	25 % increase in freight equals	50 % increase in freight equals
Storeperson	14%	16%
Mechanics	20%	30%
Admin/Clerical	11%	19%
Managers/Supervisors	8%	18%
Fleet Controllers	11%	21%
Forklift operators	29%	32%
Casuals	20%	49%

Figure 2 - Other Labour Forecasting Model

Interestingly the average increase is 16% and 26% respectively, almost identical to the driver ratio of 16% and 24%. In terms of additional staff required should the annual freight task increase by 25% or by 50%, Figure 3 below summarises the regional requirement by employment category.

Position	Additional staff required @ 25% increase	Additional staff required @ 50% increase
Drivers	58	96
Storeperson	4	4
Mechanics	5	8
Admin/Clerical	4	8
Managers/Supervisors	4	9
Fleet Controllers	2	4
Forklift operators	10	12
Casuals	5	19
Total	92	160

Figure 3 - Labour Requirement for Mildura Region

It should be noted that several of the TDL businesses interviewed expressed their concern not only about the lack of truck drivers in the region, but also good quality warehouse operators and mechanics.

4.3.3 Contract labour

The development of technology and business skills in an industry that is dominated by a growing trend towards outsourcing and contract employment, is an imperative in the development of a more dynamic and responsive workforce. All respondents employed sub-contractors and casuals to cater for fluctuations in workloads and seasonality particularly notable in one of Australia's largest horticultural regions.

A total of 33 sub-contract drivers were employed by the four businesses over a year period. Should the annual freight task increase by 50%, that number would increase to an additional requirement for 21 drivers, an increase of 63%. Similarly, all respondents employed casual staff, usually warehouse operators. Currently the four businesses employ 20 casuals. Should the annual freight task increase by 50%, that number would increase to an estimated additional requirement for 19 casuals, an increase of 95%.

4.3.4 Labour forecasting model

The objective of this project is to develop a working model to assist in the forecasting of future labour needs based on actual business activity within the Mildura region. The model should be sufficiently robust to be transferable across businesses and regions and have as its basis indicators that TDL businesses can readily identify. Figure 4 below summarises the formula based on the analyses conducted for this project. It should be noted that these formulas are based on the commercial data on TDL businesses in a specific region and may not necessarily be applicable or transferable to other TDL businesses or regions.

This much freight: (annual freight moved)	550,000 tons	Typically equals	77	Drivers
			6	Storeperson
			5	Mechanics
			8	Admin/Clerical
			10	Managers/Supervisors
			4	Fleet Controllers
			6	Forklift operators
			5	Casuals
This much more freight: (25% increase in annual freight moved)	685,000 tons	Typically triggers these additional positions	15	Drivers
			1	Storeperson
			1	Mechanics
			1	Admin/Clerical
			1	Managers/Supervisors
			0	Fleet Controllers
			3	Forklift operators
			1	Casuals
This much more freight: (50% increase in annual freight moved)	825,000 tons	Typically triggers these additional positions	24	Drivers
			1	Storeperson
			2	Mechanics
			2	Admin/Clerical
			2	Managers/Supervisors
			1	Fleet Controllers
			3	Forklift operators
			5	Casuals

Figure 4 - TDL Operators Model for Labour Forecasting

4.4 Impact on recruiting

Recruitment in the transport and logistics industry is presenting continuing challenges across many of the industry sectors. Reasons for recruitment problems include the image of the industry, the lack of clear career pathways and particular issues relating to the employment of young people.

The TDL businesses were asked whether they would have problems recruiting across all categories if their annual freight task were to increase by 50%. Half of the respondents indicated they would have trouble recruiting B-double drivers, however the majority of respondents indicated they were unlikely to have problems recruiting across all driver categories because of their specific business strategies associated with training and retention, and most importantly, pay and employment conditions.

Where one company had trouble retaining and recruiting drivers for example, another company did not see any major issues due to their pay and employment conditions. This has resulted in the same pool of drivers leaving one company then working for another depending on pay and employment conditions. Essentially it is the same pool of drivers moving from one company to the next, highlighting the continuing problem that needs to be addressed where there is insufficient supply to meet the increasing demand.

This was emphasised in the Regional Skills Shortage Survey Project in Oct 2005, where 23 employers from the TDL industry responded. 78 per cent had recruited over the past 12 months, 14 per cent of vacancies remained unfilled compared with the average of 9 per cent for all industries, and employers reported widespread recruitment difficulties with 50 per cent unable to fill all vacancies.

As at Oct 2005 there were 25 truck driver vacancies unfilled. So despite this project finding that some companies do not anticipate driver recruiting difficulties, evidence suggests this to be a problem for the Mildura region.

4.5 *Impact of IT demands on staffing*

It is known that TDL customers want a one-stop for all their transport and logistics needs. They want transport and logistics services provided just in time, by exceptional service staff, at competitive prices and they want to know where their products are at any time of the day or night. These demands are major drivers of change within the transport and logistics industry.

Respondents were asked how many full time IT staff does their company employ to support the annual freight task and what would be the impact if their annual freight task were to increase by 50%. All respondents indicated that the impact would be a doubling of the number of IT staff required to support their operation. This confirms the links between technology platforms and staff required to support these platforms and that a bi-product of increasing the freight task would result in an increase in the number of IT staff.

4.6 *Impact on training requirements*

The TDL industry has been a strong performer and will continue to grow into the future. Opportunities exist for TDL firms to perform supply chain management and logistics functions previously regarded as core functions within other enterprises. However, this expansion will not necessarily translate into a requirement for additional workers who require additional training. Rather, training for existing workers will be required in new and innovative business processes.

Respondents were asked whether they saw a benefit at the operational level if employees were given a basic understanding of the supply chain and their role in the bigger picture. All respondents agreed this was crucial. They were also asked whether they believe customer service skills were vital as customers are the next links in the supply chain. Once again all respondents agreed their staff would benefit in customer service skills training.

The importance of training can not be overstated. Training of staff in key skills and competencies will continue to be a challenge as the freight task increases. One of the bi-products of an increase in the annual freight task in the Mildura region will be the requirement to have access to appropriate training institutions that can cater for the training demand. Whilst it is difficult to quantify it should be clear to the uninitiated that any increase in labour will result in an exponential increase in the training requirement. This should be viewed as an opportunity for government bodies and training institutions alike.

4.7 Level of tertiary qualifications

For an industry which has embraced technology and advances in supply chain practices in recent times the level of tertiary qualified personnel amongst the respondents was poor. Of the administrative, clerical, supervisory, and managerial roles across the four companies, a total of 5 people had any tertiary qualifications relevant to their employment.

Transport and Logistics Management is becoming increasingly specialised and sophisticated which results in a demand for professionally trained staff. Managerial staff need to develop skills which can be applied to solve business and management problems in general, but with particular emphasis on transport, logistics and supply chain management related situations.

There may be link and a benefit of having tertiary qualified professionals to smarter work practices thereby reducing the need for labour in some employment categories, particularly in rolling out new technologies. This also represents an opportunity for government bodies and tertiary institutions to work together and provide the infrastructure, and if warranted, incentives to increase the level of tertiary qualified staff in the TDL industry in the Mildura region.

4.8 Impact of regulatory compliance with national/state requirements and policies

The TDL industry is subject to a broad range of national and state regulations and policies. The nature of the transport task means that the regulatory arrangements applying in many other industries can also impact. There are moves by all Australian jurisdictions for more efficient and effective regulation with the removal of regulations that are anti competitive.

With the introduction of new regulatory requirements such as PBS, Fatigue Management, Intelligent Transport Systems, Higher Mass Limits, and Chain of Responsibility etc, all respondents agreed introduction and ongoing reporting regulatory & administrative work generated additional staff. Each business had at least one person dedicated to ensuring compliance with new policies. When asked

whether current manning levels would cope should an increase in the annual freight task by 50%, each business would anticipate at least 1 additional staff member.

Furthermore, several of the businesses complained that cross border regulation requirements impacted negatively on efficiencies and potentially additional administrative staff numbers. This highlights the need for consistency across the industry in terms of stamp duty registration, and compliance with regulatory legislation especially in a region sharing three borders.

5. Conclusions

The project focussed on assessing the labour impact on TDL businesses in the Mildura region should an increase in the freight task occur. Four of the largest TDL businesses in the region were involved in supplying commercial data for the project. It is estimated out of the total freight task in the Mildura region, the four businesses account for over 75% of the total freight task.

The report concludes that in terms of labour forecasting in the Mildura region if the annual freight task were to increase by 25%, the number of additional drivers required would increase from 306 to 364, or an increase of 16%. The analysis found that if the annual freight task increased by 50%, the number of drivers required in the region, or at least across the four companies would increase from 306 to 402, an increase of 24%. The analyses found across the categories a 50% increase in the annual freight task for the Mildura region typically triggers an **additional** requirement for:

- 96 Drivers
- 4 Storepersons
- 8 Mechanics
- 8 Admin/Clerical
- 9 Managers/Supervisors
- 4 Fleet Controllers
- 12 Forklift operators
- 19 Casuals

With the freight task increasing at a rapid rate, the analyses suggests there will continue to be key skill shortages for the Mildura region in the employment categories of truck drivers, warehouse operators, and mechanics. Should the freight task increase at the current rate then the analyses suggests there will be additional demands for supervisors, managers, and support staff such as IT, and staff associated with compliance with legislative and regulatory requirements. With similar freight hubs located at Horsham, Shepparton, Swan Hill, Echuca, Wodonga, Traralgon, Portland – this project highlights the need for strong and focused recruitment programs for the regions right across the State to meet the growing freight task.

The project also highlights the need for government and training institutions to raise the level of educational and employment programs designed to attract people to the TDL industry where critical skills shortages exist. It can be argued that supervisors and managers play an influential role over how business is conducted, particularly with new innovations and advances in technology. To have managers who are appropriately trained and qualified would be beneficial to the industry and to the

company's bottom line. The analysis from this project shows more work needs to be done to bring supervisors up to speed with tertiary qualifications and competencies.

As a result of this project, more targeted recruitment and training programs can be developed with the prospect of better achieving the outcomes sought, as the results should provide clarity for future efforts to address the predicted skills shortage in the region. The results of the report may provide improved outcomes to the TDL industry specifically by using the formulas and percentages as a means of estimating the number of TDL positions across regions or within companies should an increase in the annual freight task occur.

6. Appendices:

A. Questionnaire to Respondents

Appendix A – Mildura Labour Forecasting Project – Questionnaire to Transport Businesses

Q	High Level Commentary	Related Question to Respondent	Response	Unit of Measure	Additional Comments
14	The transport and logistics industry has been a strong performer and will continue to grow into the future. Opportunities exist for transport and logistic firms to perform supply chain management and logistics functions previously regarded as core functions within other enterprises. However, this expansion will not necessarily translate into a requirement for additional workers who require additional training. Rather, training for existing workers will be required in new and innovative business processes.	At the operational level would you see a benefit in employees being given a basic understanding of the supply chain and their role in the bigger picture Do you believe customer service skills become vital as customers are the next links in the supply chain How many middle managers and above are tertiary qualified in business or logistics, that is have a degree, or masters relevant to their employment ?		Yes/No Yes/No Qty	
15	Major reforms to the transport and logistics industry coupled with extreme pressure of profit margins and the effects of world events, such as terrorist attacks, war and the price of oil, have all combined to create a very intense business environment for operators within the industry. The industry must work smarter. The challenge will be to increase the industry's investment in its people in order to remain competitive	Qualitative Response: The challenge will be to increase the industry's investment in its people – to increase the pool of suitably skilled workers to successfully research, develop, implement, use, manage and maintain the new processes that are introduced into the industry. In your opinion what key skills are required for: operational employees ? Managers and supervisors ? Additional Comments :			
16	The transport and logistics industry is subject to a broad range of national and state regulations and policies. The nature of the transport task means that the regulatory arrangements applying in many other industries can also impact. There are moves by all Australian jurisdictions for more efficient and effective regulation with the removal of regulations that are anti competitive.	With the introduction of new regulatory requirements such as PBS, Fatigue Management, Intelligent Transport Systems, Higher Mass Limits, Chain of Responsibility etc, has this required additional staff as part of complying with policies ? How many ? If your company gained 50% more work next year, would you be able to cope with current manning the additional burden of complying new policies ? If not, how many additional staff would you require ? What skills would additional staff be required to possess ? How does cross border regulation impact on your companies efficiencies and staff numbers? How many sub-contractors would you use on a per annum basis assuming current freight task ? How many sub-contractors would you use on a per annum basis assuming current freight is doubled ? How many casual employees would you use on a per annum basis assuming current freight task ? How many casual employees would you use on a per annum basis assuming current freight task is doubled ?		Yes/No Qty Yes/No Qty	
17	The development of technology and business skills in an industry that is dominated by a growing trend towards outsourcing and contract employment, is an imperative in the development of a more dynamic and responsive workforce.			Qty Qty Qty Qty	