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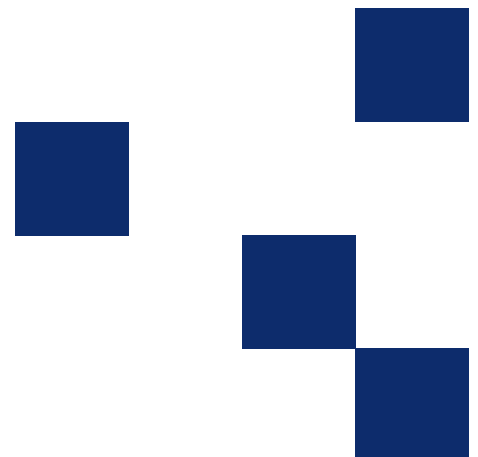
ECONOMIC EVALUATION OF TOWN BYPASSES

Final Report

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Economic Evaluation of Town Bypasses

FINAL REPORT

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for

NSW Roads and Traffic Authority

Executive Summary

In December 1993 the University of New South Wales was contracted to undertake a Research and Development project (original study) for the NSW Roads and Traffic Authority (RTA) over eighteen months to investigate the economic impacts of bypass roads at selected towns along the Hume Highway, NSW.

The original study made a number of findings, these included:

- As a proportion of the estimated total economic output of the affected communities the reduction in gross annual turnover at affected businesses is relatively small.
- The reduction in employment due to the impact of a town bypass varied, although was much smaller than predicted.
- Several businesses within the affected towns made compensatory adjustments in response to the diversion of traffic.
- There was no correlation made directly as a result of the town bypass on business closure.
- The economic impacts of a bypass tend to be of short-term duration, within the first year of the bypass opening.

Given that 16 years have passed since completion of the original study, the RTA has sought to evaluate the longer term economic impact of town bypasses against the findings presented in the original study and identify areas requiring further research. To this end, the RTA engaged the University of New South Wales in October 2010 to undertake the re-evaluation.

The objectives of this project are to:

- Review the current literature on the economic impact on town bypasses in Australia and overseas (completed May 2011).
- Re-evaluate the findings of the previous study concentrating on a small number of case studies.
- Identify areas for further study where gaps in previous research exist.

Three of the five original communities studied were selected for the present project; a small community – Gunning; a medium sized community – Yass; and a large community – Goulburn.

The objectives and scope of the present project allows investigation of several research questions:

- What is the nature and types of longer-term economic impacts of the bypasses on the case study communities?
- How important is the highway and stopping traffic to the economic base of the case study communities given the long lapse of time since the original study?
- How have highway related businesses adjusted over this long period of time?
- What changes have occurred to the main street of the case study communities?
- How adequate is the methodology developed for the project in monitoring the longer term economic impacts of town bypasses?

The results of present re-evaluation studies undertaken at Yass, Gunning and Goulburn indicate that the longer term economic impacts of town bypasses are positive and have conveyed important economic benefits to these towns. The key findings from the studies are as follows:

Importance of the highway and stopping traffic

- Number plate surveys undertaken at Yass indicate that 22.8% of light vehicles and 24.6% of heavy vehicles approaching the town on either side of the Hume Highway during the day that travel through actually stop for highway related needs. The average number of vehicles stopping in Yass since the opening of the bypass has increased from 1188 vehicles per day to 2929 vehicles per day in 2011 and this number exceeds the average number that stopped per day before the opening of the bypass (2395) – an increase of 22.2 %. Only 4.4% of light vehicles and 2.9% of heavy vehicles approaching Gunning on either side of the Hume Highway came into the main street and stopped for highway related needs; this is equivalent to 176 vehicles per day. Number plate surveys undertaken in Goulburn indicate that 10.2% of light vehicles and 11.4% of heavy vehicles approaching the city on either side of the Hume Highway during the day that travel through actually stop for highway related needs; on average, approximately 2,272 through vehicles per day now stop in Goulburn – a 127% increase over the figure of 1000 vehicles per day recorded in 1994, but a 37.7% decrease over through stopping vehicles recorded in 1992 prior to the opening of the Goulburn bypass.
- Of the estimated 1536 light vehicles and 370 heavy vehicles that were through stopping vehicles at Yass, approximately 65.8% and 61.5% respectively stopped at the Yass service centre. In the case of Goulburn, 64.1% of light vehicles and 57.7% of heavy vehicles that travel through stop at the service centre located off the western interchange.

- It is estimated that the total value of highway generated trade originating from expenditures made by travellers stopping and staying overnight in 2011 is likely to be in the order of \$71.5 million at Yass; \$4.4 million at Gunning, and; \$84.6 million at Goulburn. This corresponds to 23.1% of total town product at Yass, 15.6% at Gunning and 13.7% at Goulburn – a more realistic measure of the relative contribution of highway generated trade to the total town economy.
- Using estimates of highway generated trade and total economic output at Yass from the original study, the value of 23.1% of total town product is larger than the corresponding value before the opening of the Yass bypass (13.2%), after adjusting for inflation. Therefore, highway generated trade in 2011 has a significantly larger input to the local economy of Yass than it did even before the bypass opened.

The nature and types of economic impacts of bypass roads and changes on the main street

- There has occurred a high level of turnover of highway related businesses since the original study on the main street of the case study towns. At Yass, 40% of the businesses surveyed in the original study (83 businesses) have closed and 37.8% are under new ownership. At Gunning only 1 of the businesses included in the original study (10 businesses) had closed but there are now a total of 9 new businesses on the main street and on surrounding streets that serve the needs of highway travellers. There has occurred considerable change on the main street of Goulburn as well, and there has occurred the development of the service centre.
- In total, the 77 highway related businesses surveyed at Yass were estimated to account for approximately \$118 million in gross annual turnover for 2009-2010. At Gunning, the 20 highway related businesses accounted for \$4.22 million in turnover, while the 135 businesses surveyed at Goulburn accounted for \$141.2 million in turnover for 2009-2010.
- A comparison of the gross annual turnover figures for businesses in the original study with total town product, before the opening of the Yass and Goulburn bypasses, with corresponding turnover figures for 2009-2010 for businesses surveyed as part of the present study indicates that, after adjusting for inflation, the turnover at highway related businesses at Yass is 28.5% larger than before the opening of the Yass bypass. At Goulburn, the gross annual turnover of highway related businesses before the opening of the bypass (1992) was 26.1% of the indicative value of total economic output, whereas in 2009-2010 it is estimated to be only 12.1% of the

total town economy – an indicator of the declining importance of the highway related sector in Goulburn despite the growth in through stopping traffic.

Business adjustments in the post bypass environment

- Very few businesses were affected in the longer-term in the post bypass environment. Those that were experienced some further declines in their gross annual turnover, but this did not affect jobs, salaries or working hours at these businesses. Many of the business adjustments in the post bypass environment now focus on advertising and promotion using the new internet media, and on diversifying their product range and improving service levels to customers to remain competitive
- Perceptions by business survey respondents of the longer-term impacts of the bypass on the economy of the town more generally, on the town as a place to live and on their respective businesses highlights, with some exceptions, overwhelming positive responses. Quality of life aspects and potential for longer term economic development were two key positive perceptions of a highway bypass.

Conclusion

- Application of the methodology to the re-evaluation of the original study at the three case study towns highlights that in the longer-term these communities do recover to varying degrees from the negative impacts of bypass roads as documented in the original study, even the smallest community, and as anticipated in the original study and in the review of literature. This is an indication that the methodology used in the original study and in the present study is appropriate and sufficient for monitoring long term impacts of bypass roads.
- To a large extent the findings of this study mirror those identified in the review of literature – that in the longer term highway bypasses do not have adverse economic impacts on towns that are bypassed and that in most cases bypasses have resulted in economic development benefits for towns which have been bypassed. The findings highlight that the most significant economic benefits of being bypassed have occurred at the medium sized town of Yass and not at the largest centre (Goulburn) as expected from the review of literature.
- The conclusion to be made from the above findings is that degree of dependence on highway

generated trade is a more critical variable than population size in understanding post bypass economic change at the case study communities.

- The findings of the present study indicate that proximity to a larger centre is in fact of benefit to highway related businesses, especially at the medium and smaller places, and influential in post bypass economic change – a contrary finding to that reported in the review of literature.
- Whether the economic benefits to towns that have been bypassed or are to be bypassed in the future, and that are not in close proximity of a larger centre or have no service centre, will be similar to those of the case study communities remains a topic for future research.

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1. Introduction

In December 1993 the University of New South Wales was contracted to undertake a Research and Development project (original study) for the NSW Roads and Traffic Authority (RTA) over eighteen months to investigate the economic impacts of bypass roads at selected towns along the Hume Highway, NSW.

As a result of the original study a number of working papers were produced together with two reports – a *Final Report* (Parolin and Garner, 1996a) and a *Guide to Good Practice* (Parolin and Garner, 1996b). These studies provided a number of key findings and methods that have been used in assessing the potential economic impacts of town bypasses.

Five communities were studied as part of the original study: Mittagong, Berrima, Goulburn, Gunning, and Yass. The studies involved significant field work over the period of the study, and included a number of different methods to analyse possible economic impacts. The *After* study method was used to evaluate retrospectively the impact of the bypass roads at Mittagong, Berrima, Goulburn, and Gunning. Since the Project commenced before the bypass and associated Barton connector were completed at Yass, it was possible to undertake a full '*Before and After*' study of the economic impact on this community. The data used in the original study include assessment of census data, direct stakeholder surveys and traffic studies.

The objectives of the original study were to:

- Empirically document and quantify the nature and extent of the economic impact of bypass roads directly and indirectly on businesses in the selected communities.
- Identify the factors which determine the level and type of impacts.
- Provide guidance to researchers undertaking similar impact studies in the future.

The original study made a number of findings, these included:

- As a proportion of the estimated total economic output of the affected communities the reduction in gross annual turnover at affected businesses is relatively small.
- The reduction in employment due to the impact of a town bypass varied, although was much smaller than predicted.
- Several businesses within the affected towns made compensatory adjustments in response to

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the diversion of traffic.

- There was no correlation made directly as a result of the town bypass on business closure.
- The economic impacts of a bypass tend to be of short-term duration, within the first year of the bypass opening.

Given that 16 years have elapsed since completion of the original study, it is prudent to evaluate the longer term economic impact of town bypasses against the findings presented in the original study and identify areas requiring further research. This research would be used to further understand the longer-term impact of substantial road projects on towns that are bypassed.

The objectives of this project are to:

- Review the current literature on the economic impact on town bypasses in Australia and overseas (completed May 2011).
- Re-evaluate the findings of the previous study concentrating on a small number of case studies.
- Identify areas for further study where gaps in previous research exist.

The scope of the project required a thorough review of data obtained in the original study, identification of new data sources, especially census data, developing an appropriate methodology suitable for longer-term assessment of bypass impacts, undertaking the research, evaluating the results in relation to previous findings and presenting the results in a final report. Three of the five original communities studied were selected for the present project; a small community – Gunning; a medium sized community – Yass; and a large community – Goulburn.

The objectives and scope of the present project allows investigation of several research questions:

- What is the nature and types of longer-term economic impacts of the bypasses on the case study communities?;
- How important is the highway and stopping traffic to the economic base of the case study communities given the long lapse of time since the original study?;
- How have highway related businesses adjusted over this long period of time?
- What changes have occurred to the main street of the case study communities?
- How adequate is the methodology developed for the project in monitoring the longer term economic impacts of town bypasses?.

This report presents the results of studies undertaken at the three case-study communities as part of the re-evaluation of the original study and longer-term assessment of the economic evaluation of town bypasses. The document includes the following information:

Economic evaluation of town bypasses

- Background on the case study communities since the original study;
- Key findings of the study in terms of traffic and business impacts; and
- Conclusions and recommendations.

The final report is one of two documents produced by this study. A review of literature is also available that has assessed the overseas and Australian bypass literature since the original study.

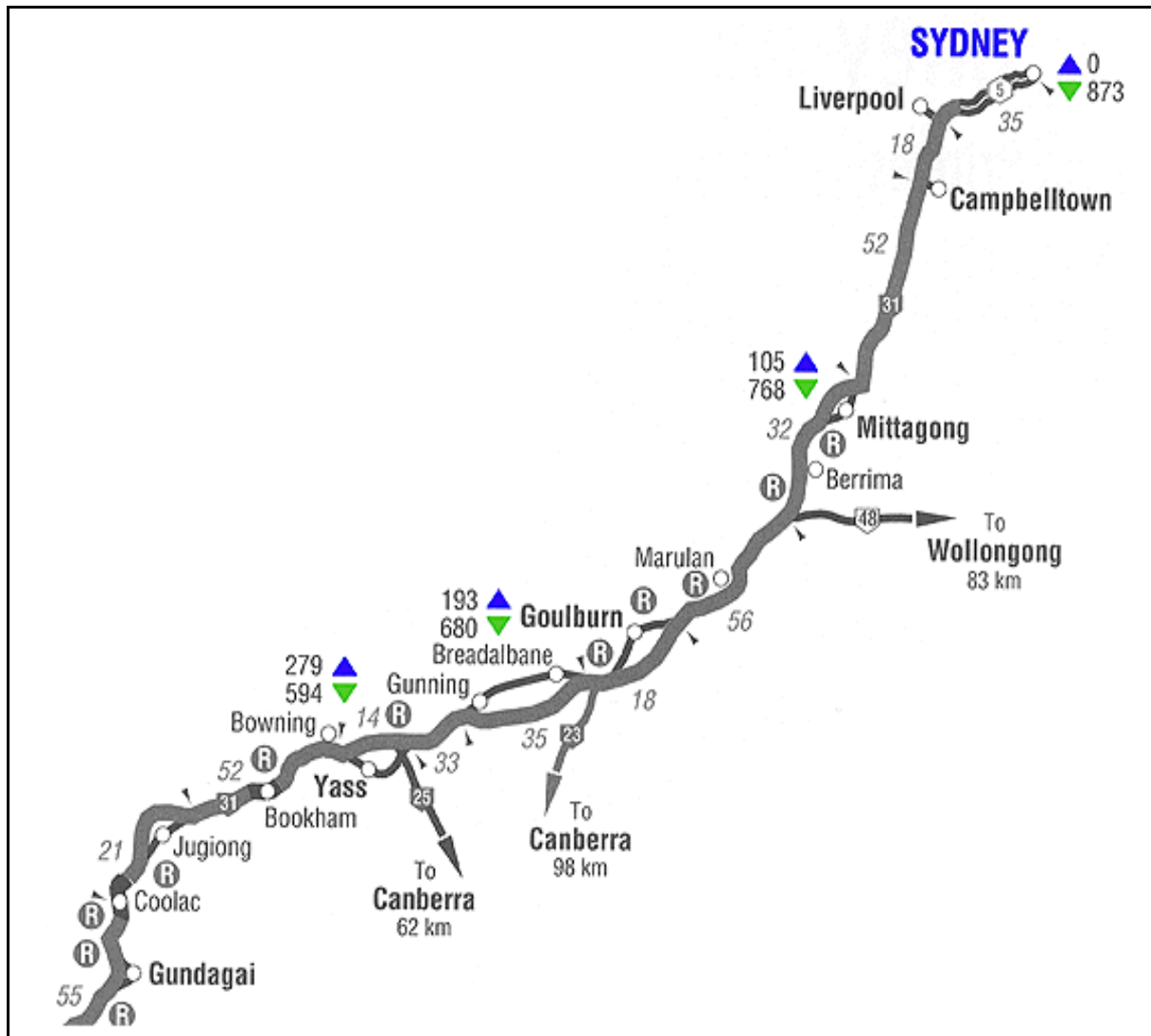
2. Case study towns: the post-bypass environment

This section presents an overview of the changing socioeconomic conditions at the three case study communities since the original study. In essence, the interest is on changes to population and employment in the post-bypass environment, and on other more general social-economic factors that may have affected business growth in these towns.

The geographical setting for this study is the section of the Hume Highway between Goulburn and Yass (Figure 1). A key geographical attribute of these towns is their proximity to Canberra and Sydney. Yass is located approximately 62 km from Canberra, while Gunning and Goulburn are located 67 km and 98 km respectively from Canberra. The influence of Canberra on these towns has been, and continues, to be important for changes in population and housing demand and for commuting and retailing opportunities (NSW Government, 2008). Yass, in particular, is likely to be even more accessible to Canberra in terms of travel time in the near future due to continued upgrading of the Barton Highway between Yass and Canberra.

Gradual improvements to the Hume Highway between Sydney and Melbourne, which have generated travel time savings for highway users, means that the case study towns are also now more within the sphere of influence of Sydney. The distance from Yass to Sydney is 279 km; Gunning to Sydney – 246 km; Goulburn to Sydney – 193 km. These distances are equivalent to a 2-3 hour drive from Sydney, which places the case study towns within the day trip tourism market of Sydney. Furthermore, most of the proprietors of accommodation establishments in Yass that were interviewed as part of this study remarked that Yass is now a comfortable 7 hour drive from Melbourne (594 km) and, as a result, is a key overnight stopping location for Melbournians travelling to Sydney. The equivalent proprietors in Goulburn remarked that Goulburn is an ideal overnight stopping location for persons coming down from the mid north coast areas of NSW; an easy 6-7 hour drive from these areas due to significant improvements on the Pacific Highway and to the development of freeways in metropolitan Sydney. Not only are the case study towns within close proximity of larger centres within the region but they are also strategically located on the Hume Highway between Sydney and Melbourne.

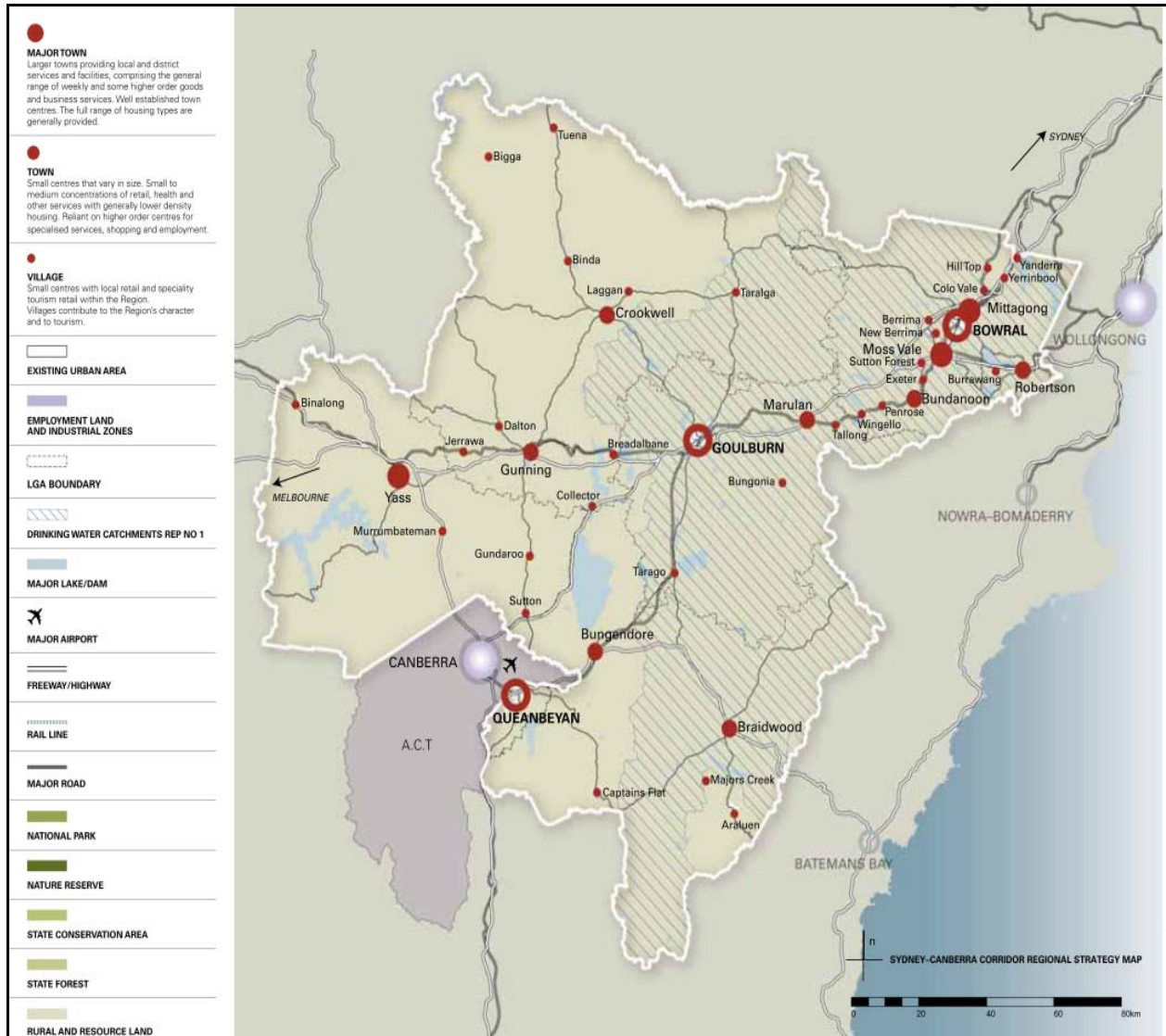
Figure 1 Distances between case study towns



Source: <http://atn.com.au/maps/Sydmelb1.html>

Figure 2 illustrates that the case study towns sit within the Sydney-Canberra corridor region (NSW Government, 2008) that is the subject of key regional planning strategies for the next 25 years. The Sydney-Canberra corridor regional strategy document views the corridor between Sydney and Canberra as a key State and national corridor for transport, communication flows and goods and services. All three case study towns figure prominently in future regional strategies given the anticipated growth in population, housing and jobs in the region.

Figure 2 Settlement hierarchy within the region



Source: NSW Government (2008) Sydney-Canberra Corridor Regional Strategy, NSW Department of Planning, Sydney.

In the regional strategy, Goulburn is designated a regional centre, Yass as a major town and Gunning as a town. The regional strategy notes the highly valued regional setting and proximity of these, and other, centres to Sydney and Canberra and that this is one of the key pressures for growth in these communities in the near future.

2.1 Background - environmental conditions post 1995

The original study documented that the case study towns, apart from having a role of serving the needs

of highway travelers to varying degree, also cater to the needs of their rural hinterlands – they serve as agricultural and rural service centres (Parolin and Garner, 1996a). As such, there are other external pressures related to the decline in agriculture in Australia that continue to affect these, and similar, rural towns in the post bypass environment - *'the farm sector - for so long the backbone of the regional economy - continues to be faced with long term adjustment pressures and an uncertain trading environment. Farmers have had to contend with drought, flood, declining commodity prices, low profitability, and the consequences of past high interest rates and rising debt. The last decade has seen substantial industry restructuring.'* (Kenyon and Black, 2001). One immediate impact of these external pressures is less spending on the part of farm families on businesses in town. The business community may therefore be faced with several economic pressures, the negative impacts of a bypass road being one of many impacts that work their way through the economies of the case study towns. Many of the businesses that participated in the original study had indicated that these external pressures had a greater negative impact on turnover and employment than the effects of the bypass.

Kenyon and Black (2001) note that growing environmental concerns, rapid technology changes, changing lifestyle options and consumer habits, decline in education and health services, national competition policy and practices, and government services rationalisation have had a cumulative impact on rural towns of varying size. To this list of negative impacts could be added the more recent impacts of the global financial crisis and the rising value of the Australian dollar. Among the case study towns, Goulburn in particular had experienced substantial employment losses due to government sector rationalisation even before the opening of the bypass in 1992 and this continued into the post bypass environment with further public sector rationalisation. Water shortages associated with prolonged drought have been of particular concern for the future growth of Goulburn (SGS, 2003). The small town of Gunning has also experienced rationalisation with the closure of several banks on the main street. In addition, the Shire of Gunning amalgamated with Lachlan Shire Council in 2001 which led to the closure of shire offices in Gunning and the transfer of personnel and services to Crookwell.

While Yass may have been spared the impacts of services rationalisation, declining farm incomes have had a negative impact on agricultural businesses in the town and this has led to the closure of rural related businesses in town such as the stock and station agents, rural tractors and implements dealers and several of the hay and feed merchants. These have been replaced in part by more corporate and national service providers like Landmark that provide a one-stop shop for the farming community of the region.

The impact of technological change is not only in terms of greater use of electronic banking but increasing use of the internet for business services. At the time of the original study none of the businesses used internet services or had internet sites. Now it is pervasive in all aspects of business operations and a critical tool for advertising and organising buying and selling of goods and services. In Gunning, this new technology has enabled establishment of a Rural Transaction Centre, located in the Post Office, that allows online payments of fees and bills for government and private services, and withdrawal of funds. Internet services for public use are now available in the Gunning Public Library.

From the above discussion it is clear that the post bypass environment in the three case study towns has been subject to various macro-economic influences associated with restructuring. The bypass is but one of many influences on the economic base, the business community and the main street of these towns. One aim of this study is to isolate the actual longer-term impacts of the highway bypass in the context of these broader economic pressures across the case study towns.

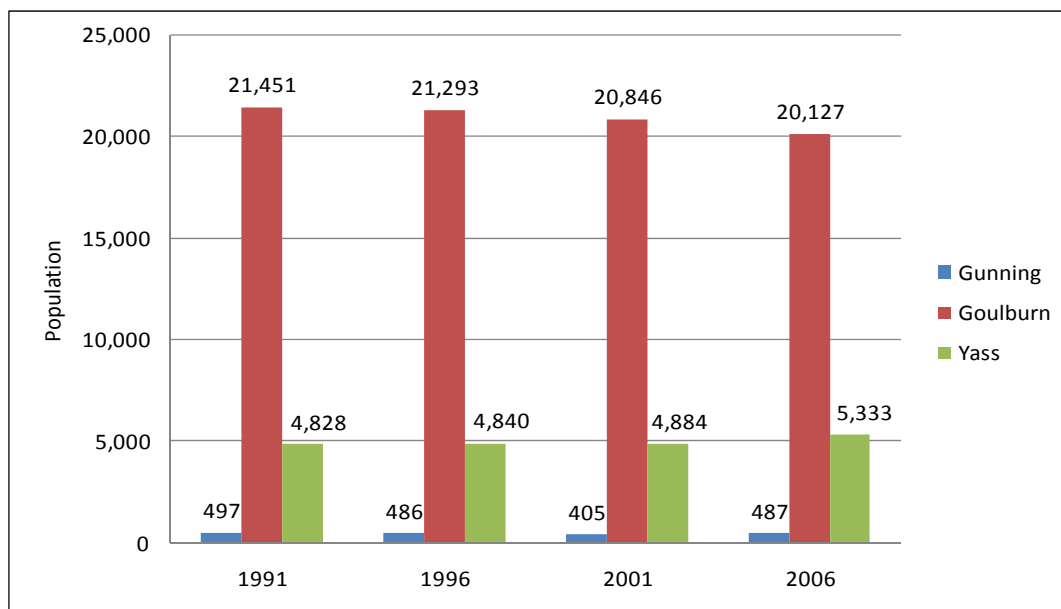
These towns are resilient and in most cases have stable or increasing populations as discussed in the following section (Black and Kenyon, 2001). The role of the local community and of Local Government has been influential in the post bypass environment. In all the three case study towns, the local Council initiated a main street program that beautified the main street, added additional parking spaces and enhanced the heritage character of many main street buildings – an initiative that was important in encouraging locals to come into town more often to shop. All three case study towns have been or are currently pursuing economic and social strategies for future growth: the Strategic Vision 2030 in Yass (Yass Valley Council, 2011); the Community Strategic Plan Vision 2021 in Gunning (Upper Lachlan Shire Council, 2011), and ; the Economic Development Plan in Goulburn (Goulburn Mulwaree Council, 2008).

2.2 Population and employment

Since the time of the original study, population figures reveal some interesting patterns for the three case study communities (Figure 3). Goulburn, the regional centre and the larger of the three case study towns, lost approximately 1,324 persons between 1991 and 2006 (a 6.1% decrease in population). In fact, population has declined by small amounts between each census period. This is ironic given that Goulburn had experienced lower job losses (58 jobs lost - less than one per cent of the total employed) and lower business turnover losses (decline of 8.9%) as a direct result of the opening of the bypass (1992) than the medium sized town of Yass.

The town of Yass, on the other hand, which experienced a larger number of job losses (93 jobs lost – 4.5 per cent of the total employed) and a 16.7% drop in business turnover as a result of the opening of the bypass (1994) has experienced a 10.1% increase in population (from 4840 to 5333 persons) in the post-bypass environment between 1996 and 2006. Much of this increase is attributable to in-migration of households from Canberra due to lower housing costs and people moving off the land to retire in Yass. As a result there has occurred extensive new residential developments in Yass over the past 10 years and a further 474 lots are due to be developed over the next 5 years. Yass is also increasingly part of Canberra’s dormitory zone and service hinterland.

Figure 3 Case study towns – urban centre population



Source: Australian Bureau of Statistics, Basic Community Profile – Urban Centre Locality files, various years.

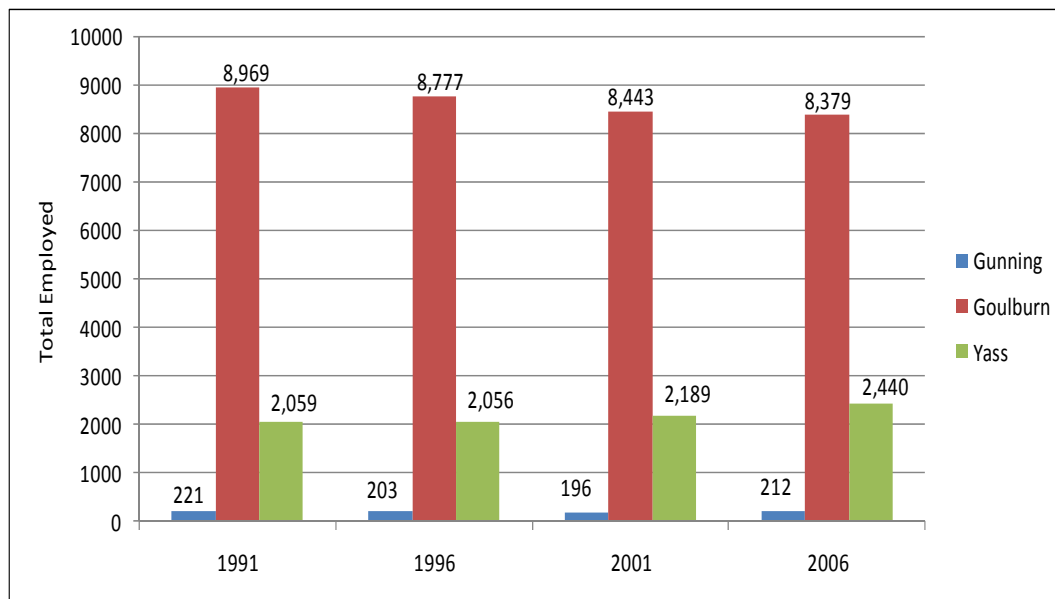
Gunning, the small village located halfway between Goulburn and Yass, experienced a 2% decline in population between 1991 and 2006 (bypass opened in 1993) but a 20% increase in population between 2001 and 2006. This is consistent with anecdotal evidence from the survey of businesses in Gunning that families are moving into Gunning from Canberra for housing and lifestyle reasons and that this is a positive contribution to economic activity for businesses on the main street.

The original study documented that only 5 jobs had been lost in Gunning as a direct result of the bypass opening; mainly because most of the 18 businesses at the time were oriented more to serving the needs of the local population. As pointed out in the original study, Gunning is also within the dormitory zone of

Canberra. Highway generated trade undoubtedly made a significant contribution to the local economy before the opening of the bypass. However, given its relative location between Yass and Goulburn, it is unlikely that Gunning was ever more than an optional stopping place for fuel for most through traffic on the Highway. Nevertheless, the loss of population between the census periods 1991 and 2001 would suggest that main street business activity declined further in the post-bypass environment, mainly due to other factors besides the bypass, only to be followed by a resurgence between 2001 and 2006.

All three case study towns have experienced changes in employment across industry sectors in the post-bypass environment (Figure 4). At Goulburn the employment losses between 1991 and 2006 have primarily occurred across the non-highway related sectors of the economy; mining, manufacturing, wholesale trade, electricity, gas and water and personal services. In contrast, the increase in employment at Yass in the post-bypass period between 1996 and 2006 is most noticeable in the construction sector, government services sectors and property and business services sector. In Gunning, the increase in employment between 2001 and 2006 is found in the government services sectors and in the highway related sectors of retail trade and accommodation, cafes and restaurants.

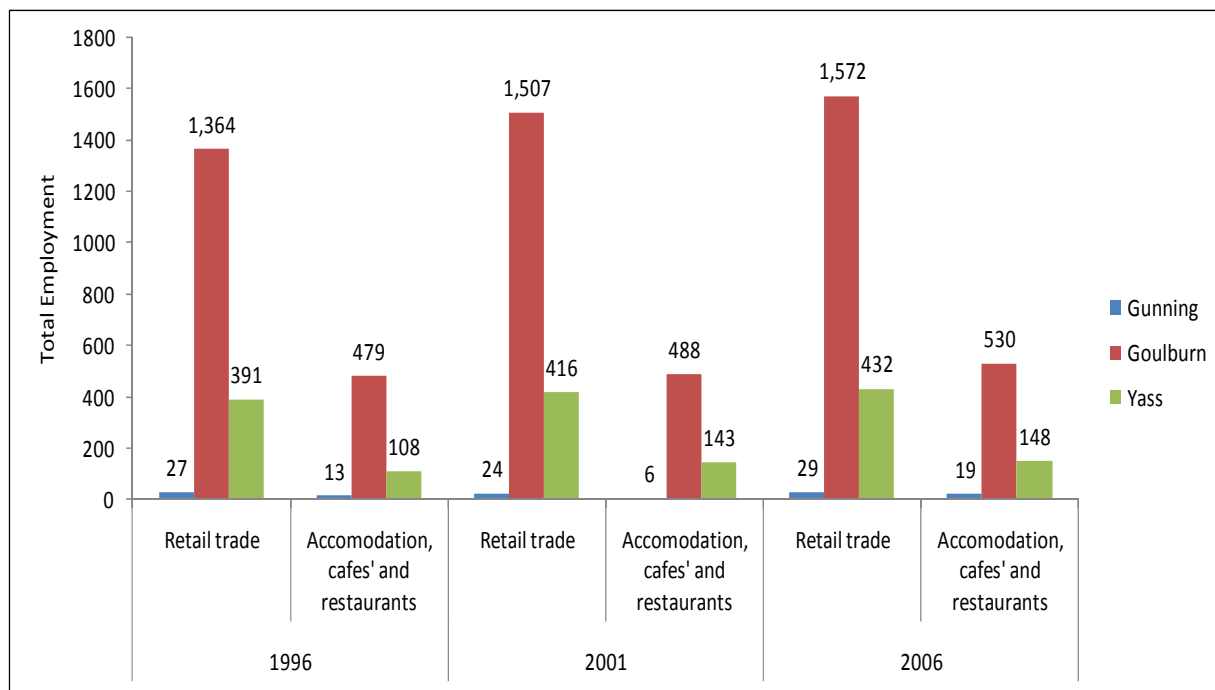
Figure 4 Case study towns – total employed



Source: Australian Bureau of Statistics, Basic Community Profile – Urban Centre Locality files, various years.

A separate analysis of those industry sectors most closely aligned with highway generated trade – retail trade and accommodation, cafes and restaurants – highlights that these sectors increased employment across all three case study towns in the post-bypass period between 1996 and 2006 (Figure 5). These two sectors were also the most rapidly expanding industry sectors across the economies of the case study towns. This is a significant finding in terms of the census data because it suggests an increased level of traffic and business activity on the main street, either from local clientele or through motorists stopping for highway related needs, or both, and from through motorists staying overnight or longer in accommodation establishments. This aspect is investigated in Section 4 of the report.

Figure 5 Case study towns – total employment in selected industry sectors



Source: Australian Bureau of Statistics, Basic Community Profile – Urban Centre Locality files, various years.

3. Data and methods

A key objective of this project is to re-evaluate the economic impact of town bypasses, as part of a longer-term monitoring effort, and those findings presented in the original study. To satisfy this objective and ensure comparable results, it was necessary to use the same types of formally structured questionnaire surveys of businesses and their customers, and traffic surveys of through and stopping traffic, as in the original study. The survey work was undertaken in the case study towns during the months of February-March 2011 following the January school holiday period.

In summary, the methodology consisted of the following tasks at each of the case study towns:

- Traffic counts and number plate surveys of through and stopping traffic on the Hume Highway and in the town centres to identify changes in traffic volumes and stopping behaviour of through travellers since the original study.
- Through stopping motorists were interviewed at key stopping locations on the main street and at Service Centres in the respective case study towns to determine travel patterns and highway related expenditure patterns since the original study.
- Overnight stayers at accommodation establishments were surveyed using a self-completion questionnaire to determine changes in expenditure patterns and travel patterns since the original study.
- Highway related businesses were surveyed to identify changes in employment and turnover, degree of dependence on passing trade, and to establish business perceptions of the longer-term impacts of the bypass on their business and on the economy of the town more generally.

Informal interviews were also held with business leaders, local council economic development staff and tourism staff, and with several councillors to identify broader community perceptions of how each community managed the post-bypass environment since the original study, the nature of further mitigation measures, if any, and perceptions about the future of each respective town. The information collected has not been used for analysis purposes, but has provided useful background information for the discussion in Section 5 of the report.

3.1 Traffic counts

Traffic counts of daily volumes of traffic approaching the case study towns from the Sydney and Melbourne sides were organised through the RTA. Traffic counters collected counts of all light and heavy vehicles across the day from midnight to midnight for a period of seven days; five days for the

working week and two days for the weekend. (The Ausroads classification of light and heavy vehicles was used). Traffic counters were placed before the entry and after the exit points for the Hume Highway on the Melbourne and Sydney side at each of the case study towns (See Appendix 1). At Yass, traffic counters were also placed on the northern and southern side of Yass Valley Way on the Barton Highway to measure volumes heading to and coming from Canberra. An additional counter was placed on the main street (Comur Street) at the edge of town on the Sydney side to capture internal vehicle movements in Yass. The location of traffic counters at Yass corresponded to the locations used in the original study (see Figure 1). Traffic count locations at Gunning and Goulburn are shown in Figures 6-8 respectively.

Figure 6 Classifiers and number plate survey locations at Yass

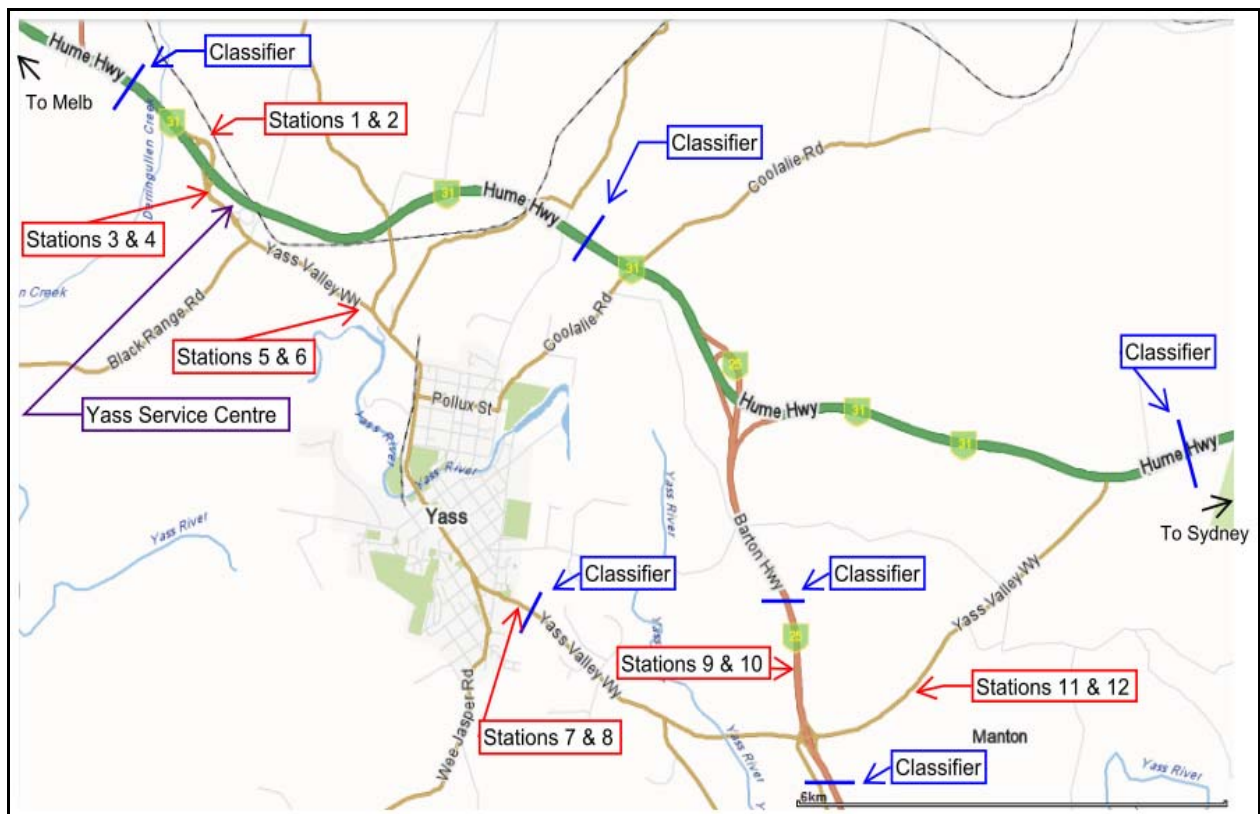


Figure 7 Classifiers and number plate survey locations at Gunning

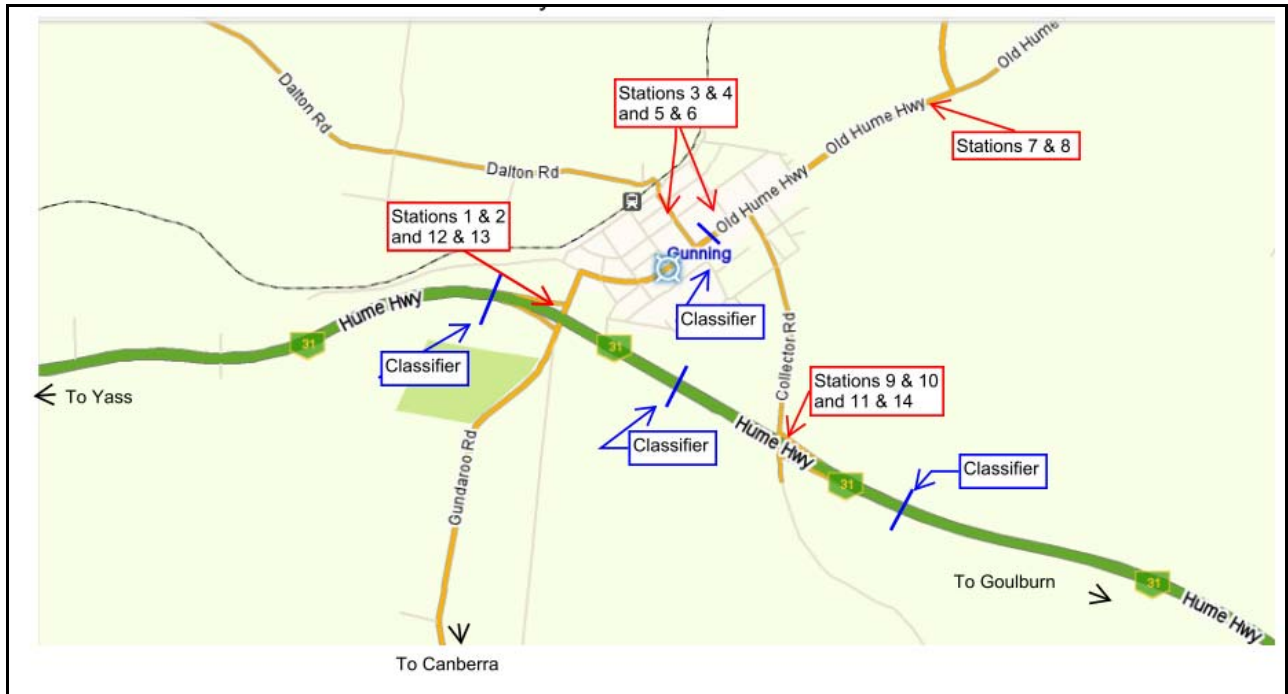
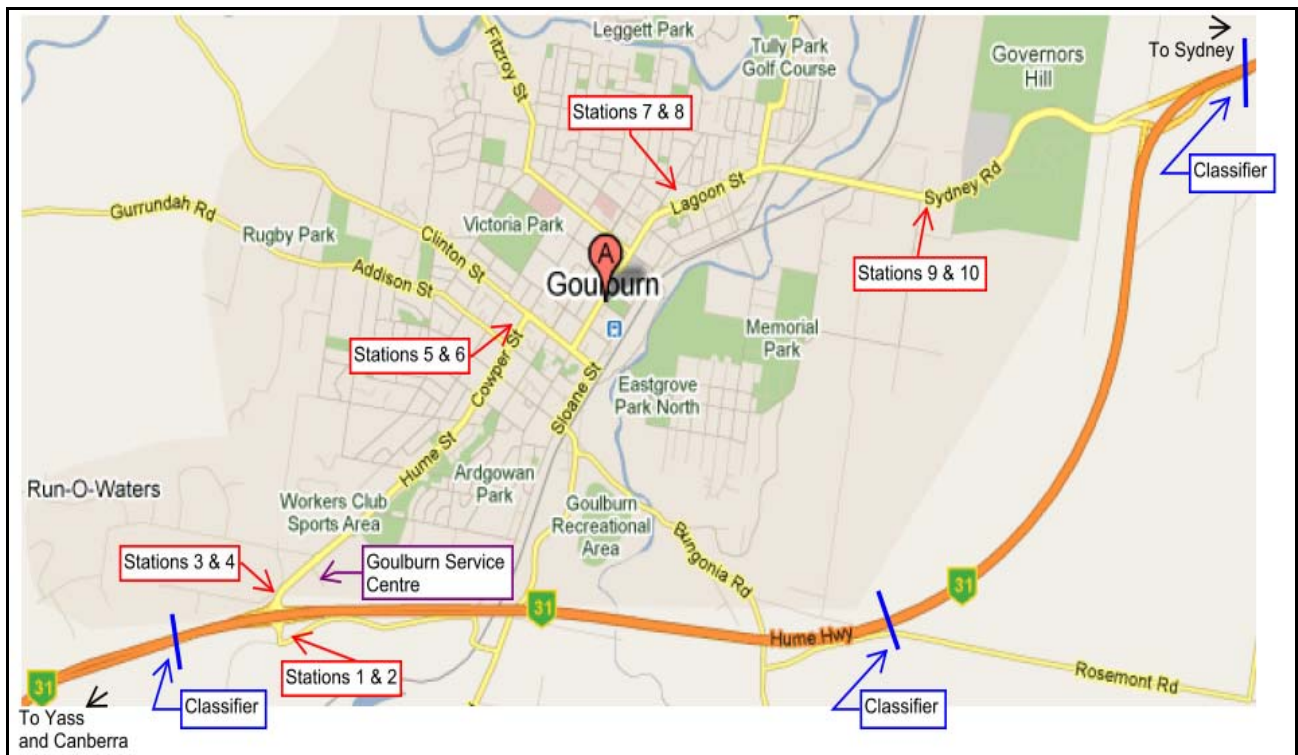


Figure 8 Classifiers and number plate survey locations at Goulburn



The dates of the traffic counts coincided with the number plate surveys (conducted over one day only) and with all other surveys conducted at each case study town. Traffic counts were conducted over the following periods:

- Yass: Monday 21 February – Monday 28 February 2011
- Gunning: Monday 28 February – Monday 7 March 2011
- Goulburn: Monday 7 March – Monday 14 March 2011

Summary reports of traffic count data enabled assessment of hourly and daily vehicle counts, day-time and night-time vehicle counts and average weekday and weekend counts – this information was comparable to similar data collected in the original study.

3.2 Number plate surveys

A number plate survey was conducted on the Friday of each week corresponding to the traffic counts at each case study location. Number plate survey recording stations are shown in the maps in Appendix 1. Recording stations were placed on the entry and exit points on the Sydney and Melbourne side of the Hume Highway, and on the main street (original highway route) at each case study location. At Yass and at Goulburn additional stations were located on the original highway route close to their respective service centres on the Melbourne side of the two towns to assess the proportion of through traffic stopping at these strategic locations. All number plate surveys were conducted between the hours of 9am and 5.20pm. RTA procedures for number plate field surveys were used that specified recording of all heavy vehicles and only the number plates of white coloured light vehicles (approximately 30% sample of all light vehicles).

The Number Plate Origin-Destination software (*NUMPOD*) developed by the RTA was used to analyse the data. Basically the software matches the number plates passing the different recording stations and calculates the time taken to travel between them. Since by definition through traffic must be composed of all vehicles approaching a town from either side on the Hume Highway that came into town and went out again, it is possible to separate out the long-distance traffic from the local traffic and thus estimate the daily volume of through traffic.

Through traffic stopping in the town is identified as all of the vehicles taking longer than the average time it takes to drive between two adjacent recording stations. For example, the average time taken for a vehicle to travel between stations on either side of Yass was calculated to be 15 minutes; 8 minutes in Gunning and 20 minutes in Goulburn. Estimates of the proportion of light and heavy vehicles stopping

can then be calculated by comparing the number of vehicles that stopped with the total number of vehicle movements on either side of the town. These proportions have been adjusted upwards by 10% to account for sources of error in recording the numberplates.

Outputs of *NUMPOD* and the traffic counts are used to estimate the average annual daily total (AADT) volume of vehicle movements approaching a town on the Hume Highway, and the proportion of AADT that is through traffic stopping in the town. All AADT figures from the traffic counts have been adjusted for seasonality effects. These estimates are then used, when supplemented by average expenditure of through stopping vehicles, to determine the dollar value of highway generated trade to the local economy. The estimates of through stopping traffic and highway generated trade are directly comparable with those estimated in the original study.

3.3 Survey of through stopping motorists

Data on the expenditures made by the occupants of through vehicles during a stop at one of the case study towns was collected over a five day period Wednesday to Sunday during the respective survey weeks. The questionnaire surveys were completed by interview during the day between 9.00 am and 5.00 pm. Relating to their stop, drivers were asked among other things to estimate how much money per vehicle was actually spent, or they thought would be spent, during their stop in the town. The average value of expenditure by vehicle type is calculated from the total number of responses. In all cases, average expenditure per vehicle included petrol costs.

The total number of motorists who completed the surveys at each case study town is given below:

- Yass: 338 surveys
- Gunning: 619 surveys
- Goulburn: 559 surveys

Drivers were also asked to provide information on the origin and destination of their journey, their last stop and next stop, information on frequency and length of stop in town, reasons for stopping, businesses visited and selected socioeconomic characteristics. The same survey questionnaire was used for the stoppers surveys at the three case study towns and is similar to that developed and used in the original study (see Appendix 1).

In order to obtain a representative profile of those stopping, the surveys were undertaken at various locations in each town: in Yass, at the service centre, in the main street, and at the Tourist Information Centre and adjacent park located at the edge of the town centre on the Sydney side; in Gunning, on the

main street, and; in Goulburn, along every block of the CBD on the main street, at the park in the centre of town and at the service centre.

3.4 The stayers survey

Data on the average expenditures made by those staying overnight or longer in each town were collected from a self administered questionnaire deposited at all of the commercial accommodation establishments – motels, hotels, bed and breakfast establishments and caravan parks – during the respective survey week. Those providing the information were asked to estimate how much they, or the group they were part of, spent at the place they were staying and on different goods and services elsewhere in the town during the stop. The survey ran for a period of four weeks at each town.

The total number of individuals who completed the questionnaire in each town is given below:

- Yass: 61
- Gunning: 3
- Goulburn: 58

The low response rate at Gunning is due to the absence of businesses at which to spend money after 5pm when all except two establishments are closed. Only the local Chinese restaurant and one pub remain open (the restaurant closes at 9pm).

Those staying overnight or longer were also asked to provide information on the origin and destination of their journey, their last stop and next stop, information on frequency and length of stay in town, reasons for staying and selected socioeconomic characteristics. The same survey questionnaire was used at the three case study towns and is similar to that developed and used in the original study (see Appendix 2).

3.5 The business survey

The main street of each town was initially inspected prior to the commencement of the survey work to determine which of the businesses that were part of the original survey had closed, the number of new businesses and, as far as possible, those that had changed hands. This was possible after so many years as the original business surveys completed at Yass and Gunning were held in storage. At Goulburn this proved more difficult as the original post-bypass business surveys were not kept. However, the data

base of all businesses surveyed in Goulburn recorded the street block location of the business and the type of business. From this information an attempt was made to determine those businesses that had closed and those that were new in the post-bypass environment.

The business survey in each town was divided into two parts – one for those businesses still in existence with the same proprietors, and another for new businesses or those businesses that had changed ownership but were still trading under the original business name. In the case of the former, the business survey sought to gather information on further changes to business turnover, employment, dependence on highway generated trade, extent of reliance on local suppliers, business adjustments and perceptions of positive/negative impacts from what had been recorded in the original study, that were directly attributable to the highway bypass.

In the latter case, the survey sought information on year of opening, employment level, dependence on highway generated trade, extent of reliance on local suppliers, business adjustments and perceptions of overall impact on the individual business and on the town economy overall. New businesses included in the surveys were not restricted to those usually identified as being ‘highway-oriented’ in nature. Many ‘other retail’ business establishments were also included in order to better understand the extent of likely dependence on passing trade relative to dependence on local customers – a similar procedure to that used in the original study.

The information collected in the business surveys allows estimation of current levels of gross annual turnover and total levels and type of employment – indicators that can be directly compared with similar findings in the original study. In turn, these indicators can be expressed relative to the indicative value of town product to assess whether or not the highway related sectors in each town are more or less important than what was documented in the original study. From the preliminary analysis of census data presented in Chapter 2, the evidence suggests that there may have occurred an expansion of the highway related sectors of the town economy at Yass and Gunning, associated with increased through stopping traffic and increased numbers of persons staying overnight in these towns.

A copy of the business survey as used in the three case study towns is provided in Appendix 3. All businesses included in the survey were initially contacted by letter to introduce the study, explain the study rationale and invite their participation. A copy of this letter is provided in Appendix 4. The business survey was conducted as a face-to-face interview with the owner, manager or proprietor of the business, and only after permission had been granted for the interview to take place.

Economic evaluation of town bypasses

As part of the analysis and presentation of results, all businesses that completed the interview based questionnaire are first classified by their Australia and New Zealand Standard Industrial Classification (ANZSIC) code and then grouped into eight broad functional categories according to their general nature:

- Motels,
- Hotels,
- Clubs,
- Food stores,
- Automotive,
- Service stations,
- Eateries (including take-aways, cafes, and restaurants), and
- 'Other retail' establishments.

These broad categories are used in summarising the findings in this report.

4.0 Long-term impacts of town bypasses: traffic, travel behaviour and highway generated trade

This section presents results of the traffic counts, number plate surveys and surveys of stopping motorists and those who stay overnight or longer in the three case study towns. The expenditures made in the towns by through travellers who stop or who stay overnight for highway related needs is used, together with volumes of through stopping traffic, to estimate the dollar value of highway generated trade to the local economy of the case study towns.

4.1 Traffic

The following sub-sections report on the results of the traffic count and number plate surveys undertaken in the case study towns. Results are compared, where possible, with those from the original study in order to assess longer-term changes in the proportions of through stopping traffic. Of particular interest is whether or not the proportion of through traffic that now stops in the case study towns is approaching those of pre bypass levels – one of the key findings of the literature review undertaken for the current study and one of the unanswered questions in the original study.

4.1.1 Yass

The results of the number plate surveys undertaken on Friday 25 February 2011 indicate that 22.8% of light vehicles and 24.6% of heavy vehicles approaching Yass on either side of the Hume Highway during the day time that travel through actually stop for highway related needs (Table 1). Moreover, in the 16 years since the opening of the Yass bypass and Barton Connector there has been an increase in the proportion of through traffic stopping at Yass (Table 1). This is the case for light vehicles and particularly so for heavy vehicles during the day and at night time – a reflection of the continued importance of Yass as a major truck-stop on the Hume Highway and the strategic importance of the Yass service centre as a major stopping location for heavy vehicles. (The Yass service centre has ample refuelling and parking facilities for a variety of heavy vehicles including B-Doubles).

Table 1*Percentage of vehicles stopping at Yass before and after the diversion of through traffic and in 2011*

	Day Light	Night Light	Day Heavy	Night Heavy
<i>Before Bypass</i>				
<i>1993</i>				
Daily average	46.8	23.4	19.0	30.4
<i>After Bypass 1994</i>				
Daily average	24.1	12.0	24.3	38.9
<i>After Barton</i>				
<i>Connector 1995</i>				
Daily average	18.7	9.3	12.7	20.4
<i>2011 Study</i>				
Daily average	22.8	11.4	24.6	39.0
<i>% Change pre- bypass 1993-2011</i>	-51.2	-51.2	29.4	28.2
<i>% Change 1995- 2011</i>	+21.9	+22.5	+101.6	+91.1

It should be noted that the proportions of light and heavy vehicles stopping in Yass at night in the present study (Table 1) are based on assumptions from the original study and Yass bypass EIS (Kinhill, 1988) and not on the number plate surveys as is the case for traffic stopping during the day. It is assumed that the proportion of light vehicles stopping during the night is half that during daytime and the proportion of heavy vehicles stopping at night is 60 per cent more than the daytime equivalent. These proportions may be on the high side. However, discussions with the managers of the three businesses located at the Yass service centre indicates that this is a valid assumption for heavy vehicles stopping in Yass during night time hours. In the absence of night time number plate survey data these assumptions are used in the present study to determine the proportions of light and heavy vehicles stopping at night, and in subsequent calculations of highway generated trade.

The estimated number of vehicles stopping at Yass is calculated by applying the proportions in Table 1 to the total through traffic recorded on the week of the traffic counts in 2011 (Table 2). Table 2 indicates that the number of vehicles stopping at Yass is reasonably consistent throughout the days of the week except for Saturday where the number of heavy vehicles stopping at night is far less. A comparison of

these figures with those after the bypass opened (from Table 3) indicates that the total weekly number of vehicles stopping in the town has increased by 146.0 per cent—from 8,319 to 20,500 vehicles. Further it should be highlighted from Table 3 that the total number of vehicles estimated to be stopping in the town in 2011 exceeds the total number estimated to have stopped before the opening of the bypass in 1993 (16,759 vehicles).

Table 2
Estimated number of vehicles stopping at Yass, February 2011

Day of Week	LV	LV	LV	HV	HV	HV	Total
	Day	Night	Total	Day	Night	Total	
Monday	1243	376	1619	399	1156	1555	3174
Tuesday	1063	369	1432	382	1171	1553	2985
Wednesday	1086	404	1490	395	1136	1531	3021
Thursday	872	440	1312	396	1125	1521	2833
Friday	1536	541	2077	370	741	1111	3188
Saturday	1419	305	1724	181	277	458	2182
Sunday	1788	485	2273	214	630	844	3117
Total	9007	2920	11927	2337	6236	8573	20500
Average per Day	1287	417	1704	334	891	1225	2929

Of equal significance is that the average number of vehicles stopping in Yass since the opening of the bypass has increased from 1188 vehicles per day to 2929 vehicles per day in 2011. The average number of vehicles now stopping in Yass also exceeds the average number that stopped per day before the opening of the bypass (2395) – an increase of 22.2 %. These findings and those presented above are consistent with those reported in the literature review where many of the overseas bypass studies had documented that longer-term traffic levels in medium and larger bypassed towns may approach those of pre-bypass levels.

Of the estimated 1536 light vehicles and 370 heavy vehicles that were through stopping vehicles on the day of the number plate survey (Friday), approximately 65.8% and 61.5% respectively stopped at the Yass service centre and then returned to the Hume Highway to continue their journey. While it is difficult to determine how many of the through stopping vehicles that first stopped at the service centre then came into the main street or visited the Tourist Information Centre, the number is likely to be small and certainly under 10% of stopping vehicles. Those through vehicles entering Yass from the Barton Highway (mainly Canberra residents) were more likely to have stopped at the Tourist Information Centre and on the main street. The survey of stopping motorists (see Section 4.2) indicated that the Tourist

Information Centre was popular with motorists coming from and going to Canberra as it provides rest-room facilities, a gift shop with coffee and adjacent picnic and playground facilities.

Table 3

Change in the total number of vehicles stopping at Yass before and after the diversion of through traffic, and in 2011

	Day Light	Night Light	Total Light	Day Heavy	Night Heavy	Total Heavy	TOTAL
<i>Before Bypass 1993</i>							
Total vehicles	8216	3475	11691	931	4145	5078	16769
Daily average	1174	496	1670	133	592	725	2395
<i>After Bypass 1994</i>							
Total vehicles	4052	1659	5711	791	3287	4078	9789
Daily average	578	237	816	133	470	583	1398
% Change 1993-94	-51.0	-52.0	-51.0	-15.0	-21.0	-20.0	-42.0
<i>After Barton Connector 1995</i>							
Total vehicles	3859	1343	5202	584	2533	3177	8319
Daily average	551	192	743	83	361	454	1188
% Change 1993-95	- 53.0	- 61.4	- 55.5	- 37.3	- 38.9	- 37.4	- 50.4
<i>2011 Study</i>							
Total vehicles	9007	2920	11927	2337	6236	8573	20500
Daily average	1287	417	1704	334	891	1225	2929
%Change pre- bypass 1993-2011	9.6	-15.9	2.0	151.0	50.4	68.8	22.2
% Change 1995- 2011	+133	+117	+129	+302	+146	+170	+146

4.1.2 Gunning

Given the smaller size of Gunning, the difficulty of re-fuelling for heavy vehicles (the exception being smaller heavy vehicles of the commercial type) and the closure of petrol and food services after 5.30pm, the amount of through stopping traffic can be expected to be much less than at Yass. A proportion of the through traffic from the Hume Highway and from Gundaroo Road is likely to be heading out of town on the Old Hume Highway to Crookwell – the location of the offices of Upper Lachlan Shire Council.

The results of the number plate surveys undertaken on Friday 4 March 2011 indicate, as expected, that only a very small proportion of Hume Highway traffic comes off the highway and stops in Gunning for highway related needs (Table 4). Only 4.4% of light vehicles approaching Gunning came into the main street, stopped for more than 5 minutes and left (the proportion of heavy vehicles stopping was half that of light vehicles).

Table 4

Percentage of vehicles stopping at Gunning 2011

	Day Light %	Day Heavy %
Daily average	4.4	2.9
(Number)	145	32

The estimated number of vehicles stopping at Gunning is calculated by applying the proportions in Table 4 to the total through traffic recorded on the week of the traffic counts in 2011. The results are shown in Table 5. An average of 176 through vehicles per day stop in Gunning. Of this amount, 145 (82%) are light vehicles and 32 (18%) are heavy vehicles. The total number of through light vehicles on the day of the number plate survey was 360 vehicles and 50 were heavy vehicles.

Further analysis of the number plate survey data found that of the 360 through light vehicles in Gunning, 141 (39%) came in from Gundaroo Road; that is they approached Gunning from Canberra. The remainder – 219 light vehicles (61%) - approached Gunning from the Hume Highway; these were light vehicles that exited the Hume Highway and came into Gunning. Of the total through light vehicles (360 vehicles), 182 (50.5%) actually stopped for more than five minutes and then left Gunning.

Table 5

Estimated number of vehicles stopping at Gunning, March 2011

Day of Week	LV	HV	
	Day	Day	Total
Monday	150	28	178
Tuesday	101	70	171
Wednesday	100	31	131
Thursday	120	32	152
Friday	182	27	209
Saturday	134	16	150
Sunday	227	17	244
Total	1014	221	1235
Average per Day	145	32	176

It was not possible to compare current traffic count and number plate survey data for Gunning with data from the original study as this was not collected as part of the earlier study given the traffic data focus on Yass, Goulburn, and the Marulan and Sutton Forrest service centres. Thus it is not possible to determine if there has occurred an increase or decrease in stopping traffic in comparison to pre-bypass or immediate post bypass levels. However, the original study did conclude that, given its relative location between Goulburn and Yass, it is unlikely that Gunning was ever more than an optional stopping place for fuel for most through traffic on the highway.

Nevertheless, the number of through vehicles per day that stop in Gunning (plus local and regional traffic) generates a relatively busy main street which attracts expenditure on the part of stoppers and highway generated trade for several businesses (see Section 4.4.3).

4.1.3 Goulburn

The results of the number plate surveys undertaken on Friday 11 March 2011 indicate that only 10% of light vehicles and 11.4% of heavy vehicles approaching Goulburn on either side of the Hume Highway during the day that travel through actually stop for highway related needs (Table 6). This is considerably less than at the medium sized town of Yass.

Table 6

Percentage of vehicles stopping at Goulburn before and after the Yass bypass (1993-1994) and in 2011

	Day Light %	Night Light %	Day Heavy %	Night Heavy %
<i>Before Bypass</i>				
<i>1993</i>				
Daily average	13.9	6.9	12.2	19.5
<i>After Bypass 1994</i>				
Daily average	10.6	5.3	12.2	19.5
<i>2011 Study</i>				
Daily average	10.2	5.1	11.4	18.2
<i>% Change pre- bypass 1993-2011</i>	-26.6	-26.0	-6.5	-6.6
<i>% Change 1994- 2011</i>	-3.7	-3.7	-6.5	-6.4

In the period between the traffic counts at Goulburn in the original study, undertaken just two months after the opening of the Yass bypass, and those undertaken in March 2011, there has occurred a -3.7% decrease in the proportion of light vehicles stopping and a -6.5% decrease in the proportion of heavy vehicles stopping in Goulburn.

It is not possible to present the equivalent of Table 3 – total stopping traffic on an average day in the pre- and post Yass bypass period by vehicles type across periods of the day – for Goulburn as this information was not generated in the original study. Only the proportions were available from the original study, as shown in Table 6. Working Paper 5 (Parolin and Garner, 1996c), produced as part of the original study, only indicates the number of through light and heavy vehicles stopping in Goulburn, on the particular days of the number plate surveys undertaken at that time; these figures are shown in Table 7. The study by McKenzie (1992) provides estimates of through stopping traffic (based on a number plate survey) made 6 months prior to the opening of the Goulburn bypass and, therefore, enables comparison with the surveys undertaken before and after the opening of the Yass bypass and with those undertaken in 2011.

Table 7

Number plate surveys at Goulburn before and after the Goulburn bypass (1992), Yass bypass (1994) and 2011 study

	Through Stopping Traffic in Goulburn		
	Light Vehicles	Heavy Vehicles	Total
Before Goulburn Bypass 1992¹			
Daily Average	3200	450	3650
After Goulburn Bypass and Before Yass Bypass 1993			
Weekend	770	10	780
Weekday	440	100	540
Total	1210	110	1320
% Change 1992-1993	-62.8	-75.0	-63.8
After Yass Bypass 1994			
Weekend	440	10	450
Weekday	410	140	550
Total	850	150	1000
% Change 1993-1994	-29.7	36.3	-24.2
2011 Study			
Daily Average	1573	699	2272
% Change 1993-2011	30.0	535.0	72.1
% Change 1994-2011	45.9	366.0	127.2
% Change 1992-2011	-50.8	55.3	-37.7

¹Based on the study by McKenzie (1992).

In comparison to the 'Before Goulburn Bypass 1992' situation, the figures highlight the dramatic decrease in stopping vehicles after the opening of the Goulburn bypass, with a continued drop in through stopping traffic after the opening of the Yass bypass as motorists took advantage of further travel time savings. However, the figures also highlight that over the longer-term post bypass environment there has occurred an increase in through stopping traffic in Goulburn. In comparison to

the figures for 1994, the number plate surveys undertaken in 2011 show that, on average, approximately 2,272 through vehicles per day now stop in Goulburn – a 127% increase over the figure recorded in 1994 and a 72% increase over the number of stopping vehicles per day before the opening of the Yass bypass (Tables 7 and 8).

The city of Goulburn, just like the town of Yass, has re-captured a large portion of through travellers in light vehicles and, especially, heavy vehicles on the Hume Highway in the post bypass environment, as anticipated from the review of literature, but this is not equivalent to pre-bypass levels. Through stopping traffic in 2011 is estimated to be 37.7% less than before the opening of the Goulburn bypass. While the average number of through vehicles stopping per day in Goulburn is 22.4% less than the number stopping at Yass, there is no doubt that Goulburn is also an important stopping location for through travellers between Sydney and Melbourne and Canberra, and other destinations.

Table 8

Estimated number of vehicles stopping at Goulburn, March 2011

Day of Week	LV		LV Total	HV		HV Total	Total
	Day	Night		Day	Night		
Monday	991	255	1246	277	439	716	1962
Tuesday	882	261	1143	293	571	864	2007
Wednesday	877	245	1122	304	604	908	2030
Thursday	1067	282	1349	295	582	877	2226
Friday	1674	465	2139	287	501	788	2927
Saturday	1554	309	1863	125	246	371	2234
Sunday	1789	357	2146	113	259	372	2518
Total	8834	2174	11008	1694	3202	4896	15904
Average per Day	1262	311	1573	242	457	699	2272

Of the through light vehicles that stop in Goulburn, 64.1% stop at the service centre located off the western interchange and 35.9% stop on the main street. By comparison, only 57.7% of through heavy vehicles stop at the service centre; other heavy vehicles also use the service station at the Sydney end of Goulburn. The service centre is not suited for large heavy trucks such as semi-trailers, but is suitable for smaller dual axle heavy trucks. Services for large heavy trucks are located at the Marulan truck stop on the Sydney side of Goulburn (approximately 30 minutes from Goulburn) or at the Yass service centre (one hour from Goulburn).

At Goulburn and at Yass the service centres are attracting about two-thirds of all through stopping vehicles. The original study had anticipated that service centres would attract a larger portion of the stopping traffic and money spent by motorists stopping on a journey at the expense of businesses in the communities that have traditionally served the needs of motorists. This trend was seen as irreversible.

The evidence presented for Yass and Goulburn indicates that their respective service centres are strategic locations for Hume Highway motorists stopping for highway related needs, but they do not appear to have adversely affected main street businesses. Through stopping traffic is also coming onto the main street of Yass and Goulburn in significant volumes for highway related needs and contributing to highway generated trade.

4.2 The stoppers survey

Through stopping motorists were interviewed at key stopping locations on the main street in the respective case study towns to determine highway related expenditure and travel patterns since the original study. The key findings were as below.

The average expenditures (including petrol) per light vehicle and heavy vehicle are shown in Table 9. The higher average light vehicle expenditures in Goulburn may reflect the greater range of establishments for highway related travellers. Average expenditures for heavy vehicles at all three towns are probably on the low side, except for Gunning, as heavy vehicles were not surveyed at night. As a result, the calculated dollar figures are likely to be smaller than they actually are.

Table 9
Average expenditure of through stopping vehicles (including petrol)

	Yass	Gunning	Goulburn
Vehicle type			
<i>Light vehicles (\$)</i>	51	59	63
<i>Heavy vehicles (\$)</i>	58	76	90
<i>All vehicles (\$)</i>	54	67	76

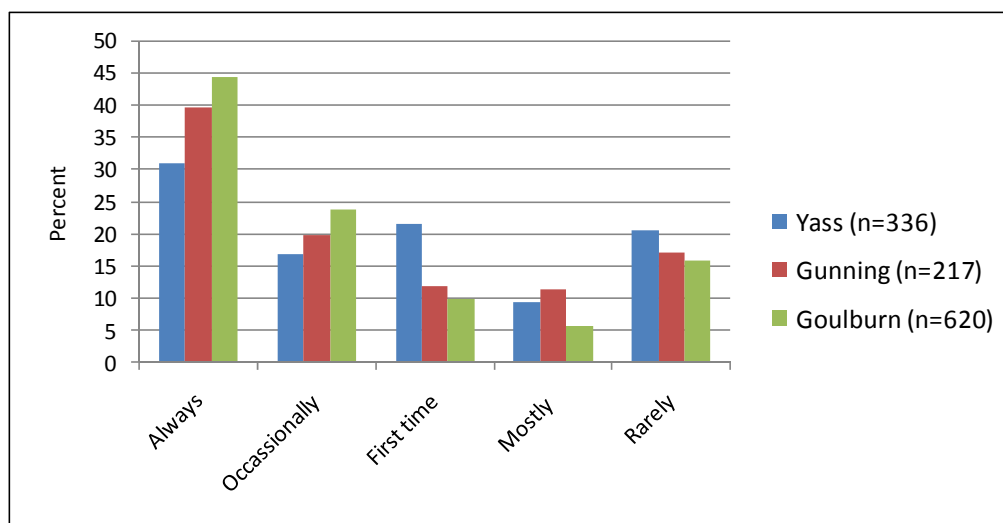
Analysis of the survey responses indicated the following profile of through motorists who stopped in the three towns:

For 57% of respondents in Yass this was their first stop since commencing their journey; in Gunning and Goulburn 72% of respondents indicated this was their first stop – an indication of the importance of these towns for stopping motorists.

Over 30% of respondents indicated that they are regular travellers through the case study towns, especially at Gunning and Goulburn where up to 45% are regular stoppers (Figure 9). When combined with occasional stoppers, these towns are popular stopping locations for highway travellers.

Figure 9

How often do you stop in town when passing through?



At Yass, the purchase of petrol and food was the main reason given for the stop; in Gunning the main reason was to purchase food, followed by food and petrol and looking around; in Goulburn the main reason given was to purchase food, followed by food and petrol.

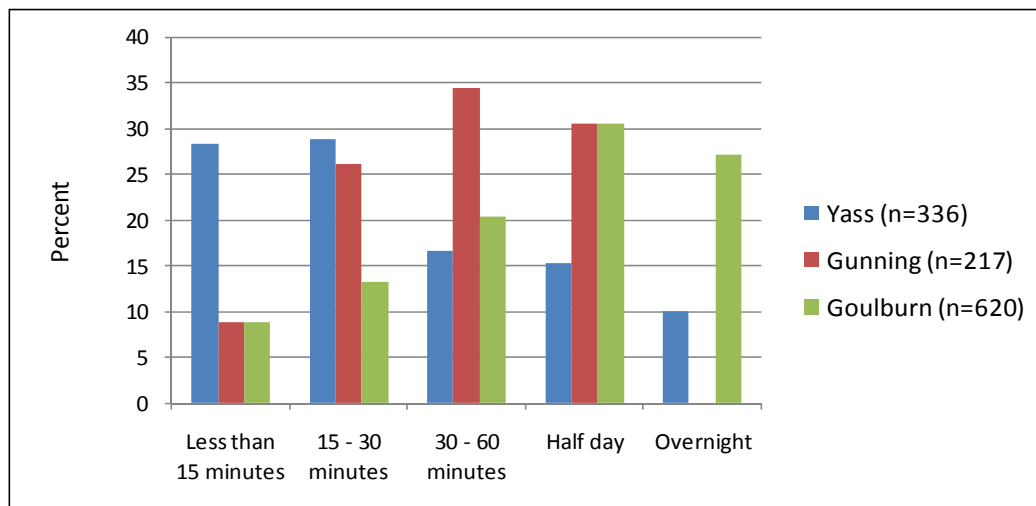
At Gunning and Goulburn the majority of survey respondents indicated that they are travelling to visit relatives and friends; in Yass the main reason given was that they are on a motoring holiday and have stopped for highway related needs.

The majority of respondents are spending between 15 and 60 minutes on their stop. Gunning and Goulburn have a higher proportion of half day stoppers (Figure 10). The results generally suggest that the likelihood of stopping in each of the case study towns is high, and that those who stop do so for basic highway related needs such as petrol and food services. These figures suggest that all three towns

are important stopping locations for through motorists, but the source of stopping traffic differs across the three towns.

Analysis of the origins and destinations of stoppers indicates the very strong influence of Canberra as an origin for stoppers in Yass and Gunning, and Canberra is a major destination for those stopping in all three towns (Table 10). The influence of Canberra as an origin and destination for through stopping traffic was also noted in the original study. For Gunning, the importance of day trippers from Canberra for main street business activity cannot be underestimated.

Figure 10
How long have you stopped or do you plan to stop in town?



In terms of the age profile of stopping motorists there is clear a trend toward ‘older’ travellers. At Yass, Gunning and Goulburn those aged 51 years or older represented 47.9%, 57.6% and 55.6% respectively of the sample survey respondents. It is interesting to note that the age profile of stoppers at Yass from the original study was much younger; only 23.4% were aged 51 years or older. Many of the business owners across the three case study towns had commented about the importance of the ‘grey nomads’ to their business.

Table 10

Stoppers surveys: most frequently mentioned trip origins and destinations

	Yass		Gunning		Goulburn			
	N	%	N	%	N	%		
Origins			Origins		Origins			
Canberra	79	23.4	Canberra	42	19.4	Sydney	136	21.9
Sydney	52	15.4	Sydney	40	18.4	Canberra	86	13.9
Melbourne	23	6.8	Melbourne	15	6.9	Melbourne	23	3.7
Albury	8	2.4	Goulburn	14	6.5	Wollongong	14	2.3
Total	338	48%*	619	41%	559	41.8%		
Destinations			Destinations		Destinations			
Sydney	37	10.9	Sydney	29	13.4	Canberra	81	13.1
Canberra	37	10.9	Canberra	25	11.5	Sydney	67	10.8
Melbourne	32	9.5	Melbourne	14	6.5	Melbourne	17	2.7
Wagga Wagga	24	7.1	Crookwell	12	5.5	Crookwell	15	2.4
Albury/Griffith	8	2.4	Goulburn	11	5.1	Wollongong	6	1.1
Total	338	41%	619	42%	559	30.1%		

* Per cent values do not sum to 100% as only the most frequently mentioned origins and destinations are shown.

4.3 The stayers survey

The responses from the stayers surveys produced a lower response rate than expected, especially at Gunning, but as most of the proprietors of the accommodation establishments pointed out this was the 'low tourism season' traditionally associated with lower numbers of guests staying overnight or longer. However, the average expenditure figures would be expected to be approximately the same regardless of the response rate.

Analysis of responses from the stayers surveys that relate to staying and stopping patterns indicates that, on average, there is a very high proportion of short stays at Yass (88%) and at Goulburn (79%) – mainly of one night (Figure 11). While there is a group of first time overnight stayers in the case study towns, about 40% are regular stayers (always and occasional stayers), also overwhelmingly on a short stay of one night (Figure 12). Even those who are very infrequent travellers tend to only stay for one night. The respondents who stayed for more than two nights in Gunning were workers associated with infrastructure projects in the region. Workers made up approximately one-quarter of all room bookings at the one motel in Gunning and almost all the bookings at the few rooms available at the hotel. These findings suggest that Yass, Gunning and Goulburn are not tourist destinations and that potential conversion of overnight stays to longer stays at accommodation establishments would require a tourism strategy that champions and promotes local attractions.

Figure 11
How long are you staying in town?

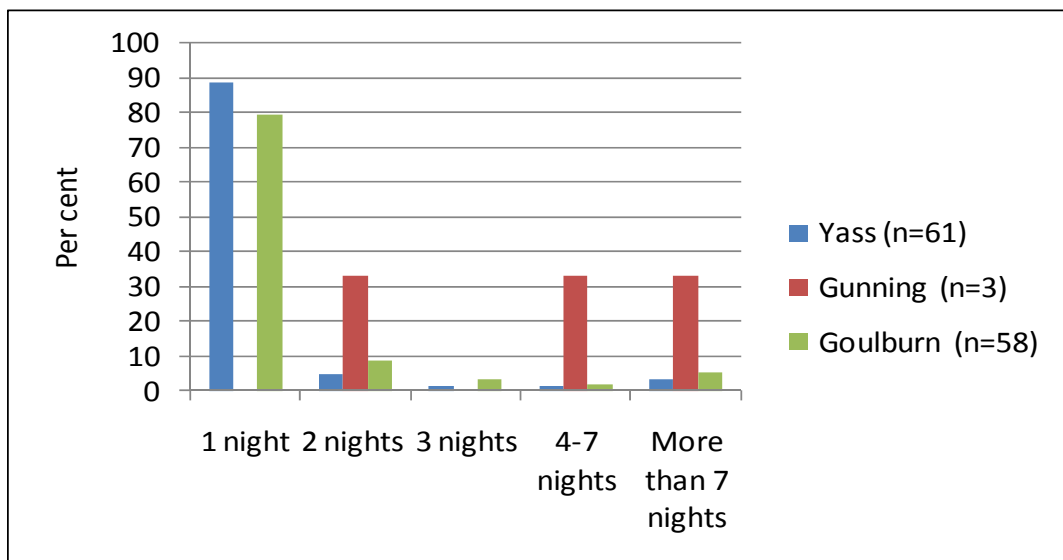
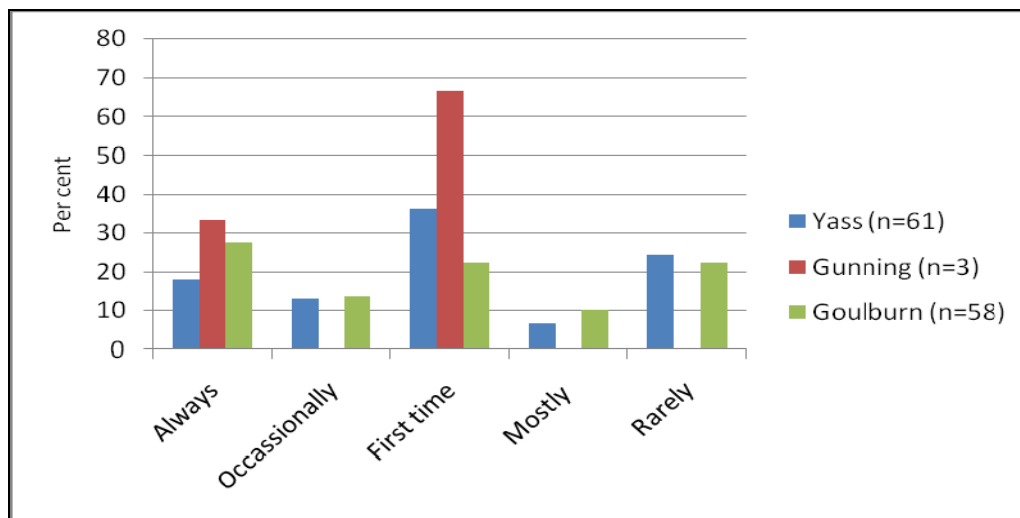


Table 11 highlights that over 50% of respondents indicated that the decision to stay was made in advance. Analysis has indicated that 'spur of the moment' decisions were primarily associated with business/work related trips. Decisions which were made in advance were mainly associated with all three major categories of trip purpose (business/work, holiday, and visiting family and friends) at the three case study towns.

Figure 12
Frequency of overnight stay when on this journey?



The stayers were primarily on business/work related trips, visiting family and friends or on motoring holidays (Table 11). A cross-tabulation of trip purpose with ‘Frequency of overnight stay while on this journey’ indicates, that for all three towns, the more frequent stayers were predominantly those on business/work related trips. Holiday makers, as well as those visiting family and friends, generally stay in the three towns less frequently.

Table 11 also indicates that persons who stayed overnight or longer in the three case study towns were dominated by an older group of travellers. In Yass, close to half (47.5%) of all survey respondents were aged over 60, while 41.4% were in this age category in Goulburn.

Analysis of patterns of origins and destinations indicated that they were very similar to patterns observed in the original study (Table 12). Values for Gunning are not presented in Table 12 due to the low number of responses. Sydney, Melbourne and Canberra dominate as both origins and destinations at Yass and Goulburn. As mentioned previously, Yass is ‘about the right’ distance from Melbourne and attracts overnight stayers accordingly. Many of the least frequently mentioned places of origin, for those staying at Yass, were regional Victoria and also regional NSW – particularly the Riverina region

Table 11*Stayers survey: stopping and travel related characteristics*

Characteristic	Yass (n=61)	Gunning (n=3)	Goulburn (n=58)
	%	%	%
<i>First Stop Since Beginning This Journey</i>			
Yes	63.9	100.0	60.3
No	36.1	-	39.7
<i>Frequency of Travel</i>			
Daily	1.6	-	1.7
Weekly	1.6	-	5.2
Monthly	13.1	-	12.1
Every few months	8.2	-	22.4
Once a year	14.8	-	19.0
Seldom	60.7	100.0	37.9
<i>Trip Purpose</i>			
Business / Work	23.0	66.7	22.4
Motoring holiday	16.4	-	19.0
Going on holiday	6.6	-	6.9
Returning from holiday	13.1	-	10.3
Visiting family and friends	29.5	33.3	31.0
Other	9.8	-	8.6
<i>Decision to Stay</i>			
Made in advance	75.4	100.0	67.2
Spur of the moment	24.6	-	25.9
<i>Age of Respondent</i>			
18-25	-	33.3	8.6
26-30	4.9	-	3.4
31-50	24.5	66.7	22.4
51-60	21.3	-	22.4
Over 60	47.5	-	41.4

Table 12
Stayers survey: most frequently mentioned trip origins and destinations

	Yass		Goulburn		
	N	%		N	%
Origins			Origins		
Melbourne	8	13.1	Melbourne	8	13.8
Tasmania	4	5.5	Sydney	6	10.3
Sydney	3	4.9	Taree	3	5.2
Newcastle	2	3.3	Newcastle	3	5.2
Total	61	26.8%*		58	34.5%
Destinations			Destinations		
Canberra	9	14.8	Melbourne	5	8.6
Sydney	8	13.1	Sydney	5	8.6
Melbourne	5	8.2	Canberra	3	5.2
Nowra	2	3.3	Brisbane	2	3.4
-	-	-	Albury	2	3.4
Total	61	39.4%		58	29.2%

* Per cent values do not sum to 100% as only the most frequently mentioned origins and destinations are shown.

Table 12 also indicates that Goulburn attracts overnight stayers from the central and mid-north coast areas of NSW, for similar reasons to the town of Yass – it is perceived to be 'the right distance' in terms of travel time to stay overnight if coming from the central and mid-north coast of NSW. This suggestion was also supported by anecdotal evidence from motel managers in Goulburn who indicated that persons from these coastal areas have increasingly been making Goulburn an overnight stop following significant upgrades to the Pacific Highway and to the freeway system in Sydney.

The above response profile suggests that Yass and Goulburn, in particular, are important locations for through motorists who are staying overnight or longer while travelling between Sydney and Melbourne, and for other types of travellers as well. Gunning, due to the limited availability of motel style

accommodation, does not have a similar role and this is reflected in a lower number of room nights occupied for the town (see Section 4.4.2).

Data on the average expenditures made by those staying overnight in each town were collected from the questionnaire survey. Those providing the information were asked to estimate how much they, or the group they were part of, spent at the place they were staying and on different goods and services elsewhere in the town during their stay. The results are presented in Table 13.

Stayers spent a total average of between \$206 and \$302 per room occupied during a stay in one of the three towns. Goulburn and Yass have similar total average expenditure figures per room indicating some similarities in the amounts spent on various items and similarities as regards the number of survey respondents. The high per room expenditure at Gunning reflects the longer stay of two of the three respondents and the fact that the sample size is so small. As a result, the average expenditure estimates for Gunning are likely to be on the high side. It should be noted that the estimated expenditure outside the place of stay at Yass and Goulburn is probably lower than the true figure because of the small number of respondents providing information for some categories.

Table 13

Average expenditure of stayers (2011)

<u>Item</u>	<u>N*</u>	<u>Average expenditure per room (\$)</u>				
		<u>Yass</u>	<u>N</u>	<u>Gunning</u>	<u>N</u>	<u>Goulburn</u>
At place of stay	52	131	3	128	45	158
Groceries	15	98	2	60	16	45
Takeaway	15	26	2	33	20	26
Newsagents	4	2	1	2	9	13
Fuel	24	94	2	75	19	63
Alcohol	16	34	1	14	11	52
Meals	20	49	2	76	17	66
Other items	9	46	1	20	12	52
Total average expenditure		\$206		\$302		\$206

* N is the number of survey respondents that incurred that item of expenditure.

4.4 Highway generated trade

4.4.1 Total stoppers' expenditure

Estimates of the total expenditures made by vehicles stopping at the three towns are obtained by applying the total average expenditures per vehicle shown in Table 9 to the figures for vehicles stopping in the town shown in Tables 2, 5 and 7. This enables estimates of the weekly totals and the daily averages to be calculated for the two vehicle types stopping during the daytime and at night. A yearly estimate of total expenditure by vehicles stopping in the three towns is obtained by multiplying the average daily figures by 365. The results are shown in Table 14.

Table 14

Estimated total annual value of stoppers highway-generated trade at each town, 2011

Estimate	Light Vehicles	Light Vehicles	Light Vehicles	Heavy Vehicles	Heavy Vehicles	Heavy Vehicles	Total \$m
	Day	Night	Total	Day	Night	Total	
	\$m	\$m	\$m	\$m	\$m	\$m	
Yass	23.8	7.7	31.5	7.0	18.8	25.8	57.3
Gunning	2.9	0.0	2.9	0.9	0.0	0.9	3.8
Goulburn	28.9	7.1	36.0	7.9	14.9	22.8	58.8

From the figures in the table, it is estimated that in 2011, vehicles stopping in the town on a longer journey will contribute directly in the order of \$57.3 million annually to the gross annual turnover of businesses in Yass; \$3.8 million in Gunning, and; \$58.8 million in Goulburn. Light vehicles generate a higher percentage of the annual total as compared to heavy vehicles.

4.4.2 Total stayers expenditure

The expenditures made by those staying overnight in the town also makes an important contribution to gross annual turnover. From the surveys, the estimated total average expenditure on accommodation

and purchases made at other businesses in each town is shown in Table 13. This is equated to average expenditure per room occupied.

Figures from ABS *Tourist Accommodation* (2010) statistics indicate that a total of 69,259 room nights were occupied in Yass during 2010; 125,697 room nights were occupied in Goulburn during 2010. In the case of Gunning an estimate has been made that approximately 2000 room nights were occupied during 2010 (this takes into account rooms at the motel, hotel and at the bed and breakfast accommodation establishments).

Multiplying the total room nights by the total average expenditure on all items from Table 13 suggests that stayers in Yass contributed an additional \$14.2 million to the gross annual turnover of businesses in the town; stayers in Gunning contributed an additional \$0.6 million, and; stayers in Goulburn contributed an additional \$25.8 million to the gross annual turnover of businesses in the town.

4.4.3 Total value of highway generated trade

It is estimated that the total value of highway-generated trade originating from expenditures made by travellers stopping and staying overnight in each case study town in 2011 is likely to be in the order of:

- Yass: \$71.5 million a year
- Gunning: \$4.4 million a year
- Goulburn: \$84.6 million a year

The importance of highway generated trade to the local town economy can be better appreciated if it is compared to some measure reflecting the total economic product or output of the town as opposed to just its highway-related and retail trade output. A crude indicator of total town product can be calculated by dividing the 2010 *per capita* national Gross Domestic Product of Australia (\$57,975) by the population of the respective town (Figure 1). The indicative value of the total town product of each case study town is given below:

- Yass: \$309.1 million
- Gunning: \$28.2 million
- Goulburn: \$1.16 billion

Using this measure, the value of highway generated trade is estimated to correspond to 23.1% of total town product at Yass, 15.6% at Gunning and 13.7% at Goulburn. Of interest is that the 23.1% value at

Yass is equivalent to the proportion of highway generated trade to indicative value of the town's annual total product (about 25%) in 1993 before the opening of the bypass. However, if one adjusts the 1993 value of highway generated trade at Yass from the original study (approximately \$26.5 million) for the effects of inflation, the equivalent value in 2010 dollars is \$40.9 million, or 13.2% of total town product. Therefore, highway generated trade in 2011 has a significantly larger input to the local economy of Yass than it did before the bypass opened.

The evidence strongly suggests that the value of highway generated trade recovered relatively quickly in the years since the bypass opened and that highway generated trade in Yass is now more important to the local economy than it was before the bypass opened. This is a positive success story for Yass and an indication that through stopping motorists can return to a bypassed community under certain conditions. It is also important to note the contribution to highway generated trade of the number of travellers staying overnight in these communities – a number that has been increasing in the post bypass environment.

The above finding is also consistent with observations made in the original study – “given the time lags involved in adjustments to driver behaviour, however, it is not unreasonable to assume that the bypassed communities will re-capture a larger proportion of trade originating from the highway in future.” (Parolin and Garner, 1996a).

It was not possible to generate similar statistics for Gunning or Goulburn as no highway generated trade figures were calculated for businesses there as part of the original study or in the McKenzie (1992) study. However, it is very likely that the value of highway generated trade relative to total town product (15.6%) at Gunning represents an increase from the time of the original study. All that is reported for Gunning in the original study is the indicative value of town product for 1991 – a value of \$13 million. If one adjusts this value for inflation, the equivalent value in 2010 dollars is \$21 million. The estimated indicative value of total town product in Gunning in 2010 is \$28.2 million. It is very likely that the higher value for 2010 could be due to increases in highway generated trade associated with a re-capturing of stopping traffic.

In the case of Goulburn, it is likely that the value of highway generated trade relative to total town product (13.7%) represents a small increase from the time of the original study – mainly based on the increase in the number of through vehicles that now stop since the original study (reported in section 4.1.3). The original study reported that the indicative value of town product for Goulburn in 1991 was

\$550 million. If one adjusts this value for inflation, the equivalent value in 2010 dollars is \$891 million. The estimated indicative value of total town product in Goulburn in 2010 is \$1.16 billion. The higher value for 2010 could be due to increases in highway generated trade associated with a re-capturing of stopping traffic but, in a large regional centre, the increase could also be due to other economic activity.

In summary, the findings presented in Section 4 have provided a response to one of the key research questions of the current study – how important is the highway and stopping traffic to the economic base of the case study towns given the long lapse of time since the original study? It was shown that through stopping traffic levels in the post bypass environment at Yass and at Goulburn are now at higher levels than before the opening of the Yass bypass, but in the case of Goulburn they have not returned to pre Goulburn bypass levels. The same is likely to be true for Gunning as well. For Yass, in particular, the contribution of highway generated trade to total town output is higher in 2011 than before the opening of the bypass. These findings are consistent with what might have been expected from the literature review, and from the original study. The case study towns have been able to re-capture a large portion of Hume Highway through traffic and its highway related expenditure. Being close to a larger centre such as Canberra and Sydney has contributed to this process.

5.0 Long-term impacts of town bypasses – business

This section presents results from the survey of businesses at the three case study communities and assesses the nature and types of longer-term economic impacts of the highway bypasses, if any, on the changing nature of the main street and how highway related businesses have adjusted over this long period of time. In the 16 year period since the original study was completed other economic factors have been influential in their impacts on the economic performance of both the highway and non-highway related businesses on the main street. Changes in agricultural commodity prices, especially the lowering of wool prices in the late 1990s, the onset of the drought in rural NSW, the increasing price of fuel and the proliferation of national retail and food outlets into smaller towns are likely to have left a more adverse economic impact than the highway bypass.

It is in this context of economic flux that highway related businesses were surveyed to identify changes in employment and turnover, degree of dependence on passing trade, and to establish business perceptions of the longer-term impacts, if any, of the diversion of traffic from the town centre on their business and on the economy of the town more generally. New businesses that commenced after the original study may have done so because of the perceived opportunities brought about by the presence of a bypass road, to a steadily growing population at Yass and the more recent growth in Gunning.

The number of businesses surveyed across the three case study towns and their grouping into eight broad functional categories are shown in Table 15.

Table 15*Classification of businesses by ANZSIC Code and functional category*

Category	ANZSIC Code	Description	Yass	Gunning	Goulburn
<i>A Accommodation</i>	9990	Caravan Parks	1 (1)	-	1
	9980	Bed and Breakfast	2 -	2 (1)	-
	9999	Motels	6 (6)	1 (1)	12
<i>B Clubs</i>	5740	Clubs	1 (2)	-	1
<i>C Food</i>	5110	Supermarket/Grocery	2 (2)	-	
	5121	Butcher	1 (3)	1 (1)	2
	5122	Fruit-Vegetables	- (1)	-	2
	5124	Bread/Cakes	- (1)	-	1
	5129	Other Food	- (1)	1	3
<i>D Automotive</i>	5311	Car Dealers	1 (4)	-	6
	5322	Auto Electrical	1 (1)	-	-
	5323	Smash Repairs	1 (3)	-	-
	5324	Tyre Retailing	2 (1)	-	-
	5329	Repairs/Service	8 (10)	2 (2)	9
<i>E Service Stations</i>	5321	Service Stations	3 (6)	1 (1)	3
<i>F Eateries</i>	5125	Take-away Food	5 (5)	-	18
	5730	Cafe/Restaurant	11 (9)	4 (1)	4
<i>G Hotels</i>	5720	Pubs/Taverns/Bars	3 (4)	1 (1)	3
<i>H Other Retail</i>	5221	Clothing	7 (4)	-	14
	5222	Foot-ware	1 (1)	-	4
	5231	Furniture	1 (1)	-	-
	5233	Hardware	1 (1)	-	8
	5234	Appliances	1 (2)	-	1
	5241	Sports/Camping	2 (2)	-	1
	5243	Newspapers/Books	2 (2)	1 (1)	3
	5251	Pharmacies	2 (2)	- (1)	2
	5255	Jewellers	1 (1)	-	3
	5259	Other Retail n/c	10 (6)	6	33
	9980	Tourist Centre	1 (1)	-	1
		TOTAL	77 (82)	20 (10)	135

Note: Codes 9000-9999 are arbitrary values assigned for this study, not the ANZSIC codes. Values in brackets are the number of businesses in each category in the original study (not available for Goulburn).

5.1 Business closures and openings

5.1.1 Yass

In the case of Yass, the survey of businesses in 2011 indicates substantial changes to the original 83 businesses in the post bypass environment.

A total of 33 (40.2%) out of the 82 original businesses have closed outright (Table 16). During interviews with the proprietors of new business establishments at the old address it was repeatedly made clear that these 33 businesses did not close due to bypass related reasons – the main reasons cited for closure were retirement, the unwillingness on the part of family members to take over the business, the rural recession and drought. Most of these businesses had closed by the late 1990s. Establishment of the Yass service centre was not a factor in the decision to close a business. In two instances, a pizza shop and pie shop, the owners had passed away and the family decided to sell the business. From Table 16 the types of businesses that closed occur across most categories except the accommodation sector where all motels have new owners (all have been sold at least twice since the original survey).

All closures have occurred on the main street except for the three service stations at north Yass, in the area called 'gasoline alley', and two smash repair businesses located in the industrial park. The three service stations with their restaurants were progressively closed after the opening of the Yass service centre in 1995, and many of those employed at the petrol stations found employment at the service centre based on findings from the original study.

In the food sector, a family owned supermarket, two butcher shops, the only greengrocer on the main street, a health food store and bread/cake shop have closed. Only one of the four auto dealerships remains in Yass. Interviews with current business proprietors provided anecdotal evidence that closure of the auto dealerships had occurred due to competition from Canberra and, in one instance, on the unwillingness of family members to take over the business.

A total of six eateries have closed and nine 'other retail' businesses. Several of the eateries were restaurants at motels/hotels that were privately run businesses at the time of the original study. Among the 'other retail' not classified (n/c) categories are included several gift stores and rural based real estate agents.

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Table 16

Current status of surveyed businesses at Yass from original study, and new businesses

Category	Description	Closed	New Ownership	Continuing	New Business
A	<i>Accommodation</i>				
	Caravan Parks	-	-	1	-
	Bed and Breakfast	-	-	-	2
	Motels	-	6	-	-
B	<i>Clubs</i>	-	-	1	-
C	<i>Food</i>				
	Supermarket/Grocery	1	1	-	1
	Butcher	2	1	-	-
	Fruit-Vegetables	1	-	-	-
	Bread/Cakes	1	-	-	-
	Other Food	1	-	-	-
D	<i>Automotive</i>				
	Car Dealers	3	-	1	-
	Auto Electrical	1	-	-	1
	Smash Repairs	2	-	1	-
	Tyre Retailing	-	-	1	1
	Repairs/Service	2	2	6	-
E	<i>Service Stations</i>	3	2	1	-
F	<i>Eateries</i>				
	Take-away Food	3	-	2	3
	Cafe/Restaurant	3	6	-	5
G	<i>Hotels</i>	1	3	-	-
H	<i>Other Retail</i>				
	Clothing	2	2	-	5
	Foot-ware	1	-	-	1
	Furniture	-	-	1	-
	Hardware	-	-	1	-
	Appliances	1	1	-	-
	Sports/Camping	-	2	-	-
	Newspapers/Books	-	2	-	-
	Pharmacies	-	1	1	-
	Jewellers	-	-	1	-
	Other Retail n/c	4	2	-	8
	Tourist Centre		-	1	-
	TOTAL	32	31	19	27

Note: Codes 9000-9999 are arbitrary values assigned for this study, not the ANZSIC codes.

Thirty-one (37.8 %) out of the 82 original businesses are trading with new owners (commenced trading after 1995) and 19 (23.1%) are continuing businesses that are included in the current survey of

businesses (Table 16). There is no doubt that the retailing landscape on the main street has changed dramatically as a result of closures and new ownership patterns, and new businesses as well.

Of the 77 businesses that were surveyed in 2011, 50 were businesses from the original study (new owners plus continuing businesses). Of the completely new businesses that have opened up on the main street and at the Yass service centre, mostly since the year 2000, 3 are take-away businesses at the service centre, 5 are cafe's/restaurants on the main street, 5 are boutique dress shops (including a national clothing store), 1 is a foot-ware store and 1 is a new supermarket. At the time the business surveys were underway, an additional national chain supermarket (ALDI) had opened in the main street of Yass, but were not surveyed as part of the study. The town now boasts 3 national supermarkets. Two new bed and breakfast establishments opened up to cater for the Sydney and Canberra market. Among the 'Other Retail' category are included a new computer store, several gift stores and several real estate agents. It can be expected that this new mix of retailing on the main street will go some way to stem retail leakage to Canberra – a problem that had been identified in the EIS for the Yass bypass (Kinhill, 1988) and the Sydney-Canberra corridor study of 1994 (EEAWP, 1994).

5.1.2 Gunning

In the village of Gunning over this period, the changes are also significant as they represent the opening of completely new business establishments. Only 1 business from the original survey of 10 businesses closed over the 16 year period – the local pharmacy – while several others have changed owners but continue to trade using the same business name (Table 15) – as is the case with the Old Hume Cafe.

Among the new highway related business establishments on the main street of Gunning are 3 cafe's (the Old Hume Cafe is also included here due to the refurbished building and modern cuisine on offer), 1 photography/gift store, a rural transaction centre, 1 antiques store and a picture gallery and book store. The cafe's feature seating and umbrellas on the main street footpath and, in one case, features a garden setting for patrons. These businesses attract local, regional and through stopping motorists to create a very active main street for a small village. Over the next six months it is anticipated that a new photography studio/cafe' will be opening up at the former Gunning Soldiers Club building located off the main street. A bed and breakfast establishment also opened to the public in 2008 and is located close to Gunning railway station.

From Table 15 only 1 service station is included in the survey as this is the only establishment that sells petrol and diesel as its core business. It also has a convenience store attached to the premises that provides an extensive array of everyday grocery items that were once available only at the newsagents (which had acted as the local grocery store). However, in the original study there were 3 establishments that sold petrol; one has since ceased to offer petrol sales and the other has scaled back sales – both establishments focus primarily on auto and farm machinery repairs. At the time of the original study there also existed an NRMA tow service and repairer located at the eastern end of main street; this business was not included in the survey due to non-response. Since that time this business has closed which means that all NRMA road recovery services are coordinated from Goulburn and Yass.

5.1.3 Goulburn

Documenting the degree of business openings and closings in Goulburn has proved difficult as a result of unavailability of the original business questionnaires. However, there is no doubt from examining the ANZSIC codes on the original database with the types of businesses now on the main street (CBD part of Goulburn) that there has occurred a large amount of turnover of highway related businesses – especially in the eateries sector. The western end of the main street is now devoid of most of the take-aways and cheap eateries that were present in the original study. While there has occurred some redevelopment, this end of main street is characterised by a relatively high vacancy rate.

In the middle section of the main street, the CBD is still dominated by the iconic *Paragon Cafe*. Other eateries have also sprung up on this part of main street and in the immediate side streets. The study by SGS Economics and Planning (2003) noted that, “Relatively wide streets with attractive tree plantings and paved footpaths create a favourable atmosphere for alfresco dining and general outdoor activity, which is starting to occur in the city”. The railway end of the middle section of main street has been redeveloped from wool warehouse functions to supermarket and national chain retailing establishments.

At the eastern end of main street there is redevelopment taking place for a new Target store, and most of the take-away businesses present in the original study appear to be present in 2011. Noticeably absent from this end of main street is one car dealership – since transferred to a location close to the service centre. At the very eastern end, on Sydney Road, a tourism related business has closed down. Irrespective of the location on the main street of Goulburn (Auburn Street), the width of the street with

its ample parking attracts local and regional traffic and, as mentioned previously, through stopping traffic.

In Goulburn all of the motels (with two exceptions) have changed ownership several times since the original study. Two motels have closed over the past 5 years, with one closing in 2010 as part of a sale to another business enterprise. In the meantime, however, several boutique motels have opened up close to the main street and railway station. A major development in this time period has been the new service centre on the old highway close to the western interchange with the bypass. In 2004 the Big Merino moved location from just a few kilometres away to the site of the service centre. The addition of Caltex and McDonalds together with 2 motels and other take-aways has transformed this service centre into an important stopping location for Hume Highway travellers and for those from Canberra, in addition to local and regional customers.

5.2 Reasons for opening a new business or purchasing an existing business

The business surveys conducted at the three case study towns sought information from new businesses and those businesses that had changed ownership as to the reasons for establishing a business in the post bypass environment in each respective town. Each business that was new or had changed ownership was allowed up to list up to three reasons. Responses from the relevant businesses (new or changed ownership), which have been pooled for analysis purposes, indicate that the most frequently mentioned reason in all cases was perceived business opportunity, sometimes associated with growing population as in Yass and Gunning or with potential expansion as in Goulburn (Table 17). There is a clear perception among these business respondents that these communities are viable, vibrant and have a future. Many of the new business owners live in the respective town or live in the local area, and many have previous experience with businesses in each town, mainly as employees of other businesses.

The location of these towns was also another reason given for establishing a business – location relative to Sydney and Canberra and, in the case of Gunning, some businesses mentioned location relative to Goulburn and Yass. The regional centre status of Goulburn was the second most frequently mentioned reason among businesses in Goulburn. This highlights the potential of Goulburn to attract additional businesses, in addition to population – this is consistent with economic assessments made in the study by SGS (2003) and with the potential for Goulburn envisaged by the Sydney – Canberra Corridor Regional Strategy (NSW Government, 2008).

Table 17
Reasons for establishing a business in town

Most frequently mentioned reasons by businesses	Frequency	Per cent*
<u>Yass</u>		
See business opportunities in Yass – growing population	20	34.4
Live in town or live locally – commitment to the town	10	17.2
Lifestyle of town (e.g. great coffee shops, rural lifestyle)	8	13.7
Cheaper buildings and cheaper rents	7	12.0
Many good businesses in town - competition	5	8.6
Because there is a bypass – attracts more locals to town	3	5.1
<u>Gunning</u>		
Business opportunities in Gunning – good location and growing population	7	100.0
Good lifestyle in Gunning	5	71.0
Availability of vacant buildings and good leasing terms	4	57.0
<u>Goulburn</u>		
Business opportunities in Goulburn – business growth potential	50	37.0
Location of Goulburn – it’s the regional centre but also is close to Sydney and Canberra	20	14.8
Attractive lifestyle and community – Goulburn is a nice place to live	15	11.1
Purchased building at a good price / cheaper rent than Sydney	10	7.4

* Percentage figure represents responses from only those businesses that are new or under new ownership. For businesses in Goulburn it is the percent response over all businesses (n=135).

The impact of lifestyle availability in these communities was also a very frequently mentioned reason for establishing a business. Each of these communities was described as a nice place to live. At Yass, the business respondents made specific mention of the ‘great coffee shops’ as an attraction for living there.

In many cases the business owners were looking for a lifestyle change, especially if they came from outside the area, and these communities matched their requirements for either urban or rural living. The fact that these communities are bypassed was also mentioned by some business respondents – an indication that the lifestyle of these towns is perceived to be associated with the presence of a bypass.

Several of the business respondents also made mention of the fact that buildings were available to purchase or rent in these towns, and that purchase prices and rents were much lower as compared to Sydney or even Canberra.

5.3 Dependence on passing trade

As a result of the resurgence of through stopping traffic at Yass and Goulburn, and to some extent at Gunning, and the establishment of new highway related businesses since the original study, it can be inferred that there should have occurred an increase in dependence on passing trade in these communities.

The business survey provided owners and managers with the opportunity to indicate the extent to which their respective business has a dependence on passing trade. Each town is discussed in turn. Table 18 highlights considerable variation in the relative importance of passing trade between the major business categories for the 77 business respondents in Yass. Twenty-one businesses (27.2%) estimated that more than half of their annual turnover is generated by those stopping or staying in the town; 24 businesses (31.1%) estimated that passing trade accounted for less than 10 per cent of turnover. The figures for the other businesses show considerable variation; 23 (29.0%) of these, however, estimated that passing trade accounts for between 10 and 30 per cent of total turnover.

Half of the businesses indicated that more than 20% of turnover (the median value) was attributable to passing trade. Included among these are all of the motels and service stations, most of the eateries, 3 of the hotels and 11 other retail businesses. Just as many businesses across these sectors are below the median value of 20% of turnover.

A comparison of perceived dependence on passing trade among the 77 businesses with those in the original study indicates that there has occurred an upward shift in the median value for dependence on passing trade. In the original study the median value among the 83 businesses was the category of 15-19%; in 2011 the median value is the category of 20-24% dependence on passing trade. The upward shift in the median value confirms the previous data presented on increased levels of stopping traffic and of increases in the number of new highway related businesses.

Table 18

Perceived extent to which businesses in Yass depend on passing trade

Passing Trade	Accommodation	Auto Services	Clubs/ Hotels	Eateries	Food	Other Retail	Service Stations	Total
Less than 5%		9	1	2		7		19
5-9%		1				4		5
10-14%		1			3	8		12
15-19%				1				1
20-24%*		1	1	1		2	1	6
25-29%				1	1	1		3
30-34%				3			1	4
35-39%			1	2		1		4
40-44%			1	1		2		4
45-49%						1		1
More than 50%	9			6		5	1	21
Total	9	12	4	16	3	30	3	77
	11.7%	15.6%	5.2%	20.8%	3.9%	39.0%	3.9%	100.0%

* This category represents the median value for responses among the survey respondents.

The dependence on highway generated trade among the 20 businesses surveyed in Gunning is even more pronounced than at Yass and Goulburn (Table 19). Nine businesses (45.0%) estimated that more than 50% of their annual turnover is generated by those stopping or staying in the town; this included all of the accommodation businesses, all the eateries, the one petrol station and two of the other retail establishments.

Unfortunately it was not possible to compare the degree of dependence on highway generated trade for current businesses with those surveyed as part of the original study at Gunning in 1993 – a question on degree of dependence on highway trade was not included in the questionnaire survey.

The perceived importance of passing trade in Goulburn among the 135 businesses surveyed is shown in Table 20. The responses reveal considerable variation in the relative importance of passing trade between the major business categories, as is the case in Yass. Twenty-three businesses (17.2%) estimated that more than 50% of their annual turnover is generated by those stopping or staying in the

town; this included all the accommodation establishments, 3 of the eateries, 1 food store and 1 petrol station, and several other retail stores. Fifty two businesses (39%) estimated that passing trade accounted for less than 10 per cent of turnover.

Table 19
Perceived extent to which businesses in Gunning depend on passing trade

Passing Trade	Accommodation	Auto Services	Hotels Clubs/ Hotels	Eateries	Food	Other Retail	Service Stations	Total
Less than 5%						2		2
5-9%								
10-14%		2				2		4
15-19%						1		1
20-24%						2		2
25-29%								
30-34%								
35-39%			1			1		2
40-44%								
45-49%								
More than 50%	2			4		2	1	9
Total	2	2	1	4	-	10	1	20
	10.0%	10.0%	5.0%	20.0%		50.0%	5.0%	100.0%

Half of the businesses indicated that more than 10% of turnover (the median value) was attributable to passing trade. Included among these are all of the motels and service stations, most of the eateries, 3 of the hotels and 11 other retail businesses. Just as many businesses across these sectors are below the median value of 10% of turnover. It is interesting to note that 8 out of the 22 eateries reported that less than 5% of their turnover is generated by those stopping or staying in the town – they are predominantly catering for local customers.

A comparison of perceived dependence on passing trade among the 133 businesses that provided this information, with those in the original study, indicates that there has occurred a downward shift in the median value for dependence on passing trade. In the original study the median value among the 198

businesses was the category of 15-19%; in 2011 the median value is the category of 10-14% dependence on passing trade. The downward shift in the median value is associated more with the increased importance of local and regional traffic on the main street than to the importance of through stopping vehicles in Goulburn. As discussed in Section 4, Goulburn has experienced a significant increase in through stopping traffic but relatively speaking this appears to be a smaller amount of traffic when compared to the volume of local and regional traffic coming into Goulburn.

Table 20

Perceived extent to which businesses in Goulburn depend on passing trade

Passing Trade	Accommodation	Auto Services	Hotels/ Clubs/	Eateries	Food	Other Retail	Service Stations	Total
Less than 5%		6		8	2	32		48
5-9%		2	1			1		4
10-14%*		4	2	4	1	11		22
15-19%		1		2		8		11
20-24%		1		2		7		10
25-29%				1	1	1		-
30-34%		1		2		5		8
35-39%								-
40-44%						4		4
45-49%								-
More than 50%	12			3	1	6	1	23
Total	12	15	3	22	5	75	1	133**
	9.0%	11.3%	2.3%	16.5%	3.8%	56.4%	0.8%	100.0%

* This category represents the median value for responses among the survey respondents.

** Two businesses did not provide this information.

5.4 Gross annual turnover

The gross annual turnover figures for the businesses that provided this information at the three towns is summarised in Table 21 from the original study and in 2011, and is disaggregated by business category for Yass in Table 22. Not all businesses in Yass, Gunning and Goulburn provided data on gross annual turnover in the original study.

In general, Table 21 indicates that the distribution of businesses across the various gross annual turnover categories is very similar for Yass in the post bypass period (original study) and in 2011 – the only exception being the fewer number of businesses in the over \$1 million category in 2011. At Goulburn there is a more even distribution of businesses across the various categories, and a relatively higher number of businesses in the over \$1 million category in comparison to Yass. Equally striking from Table 21 is that the majority of businesses at Gunning are small businesses earning less than \$150,000 per annum.

Table 21

Gross annual turnover by category of turnover – original study and in 2011

Category	Number of Businesses					
	Yass		Gunning		Goulburn	
	1995	2011	1993	2011	1993	2011
Less than \$50,000	2	4		10	7	9
\$50-\$100,000	8	4	1	3	12	18
\$100-\$150,000	6	3	1	4	20	10
\$150-\$250,000	18	16	1	2	23	13
\$250-\$500,000	12	13	1		21	26
\$500-\$1mil	10	19	2		21	14
\$1.0-\$1.5mil	5	1			12	27
Over \$1.5mil	13	7		1	28	18
Total	74	77	6	20	144	135

Half of the businesses included in the survey at Yass reported an annual turnover less than \$250-\$500,000 (the median category in the original classification on which Table 17 is based). Just under a

quarter of all businesses had a turnover greater than \$1 million annually, prominent among which are the larger service stations, 1 hotel, two supermarkets, 2 fast food outlets, 3 auto service businesses and 5 businesses in the other retailing category.

Half of the businesses included in the survey at Yass reported an annual turnover less than \$250-500,000 (the median category in the original classification on which Table 21 is based). Just under a quarter of all businesses had a turnover greater than \$1 million annually, prominent among which are the larger service stations, 1 hotel, two supermarkets, 2 fast food outlets, 3 auto service businesses and 5 businesses in the other retailing category.

Table 22

Gross annual turnover by major business category – Yass, 2011

Category	Accommodation	Auto Services	Clubs/ Hotels	Eateries	Food	Other Retail	Service Stations	Total
Less than \$50,000	1					3		4 5.2%
\$50-100	1			2		1		4 5.2%
\$100-150				1		2		3 3.9%
\$150-250		1	3	3		9		16 20.8%
\$250-500*	4			6		3		13 16.9%
\$500-1million	2	8		2	1	6		19 24.7%
\$1m-1.5m						1		1 1.3%
Over 1.5m	1	3	1	2	2	5	3	17 22.1%
Total	9	12	4	16	3	30	3	77
	11.7%	15.6%	5.2%	20.8%	3.9%	39.0%	3.9%	100%

*The median response category.

In total, the 77 businesses at Yass were estimated to account for approximately \$118 million in turnover for the 2009-2010 financial year. At Gunning the 20 businesses accounted for \$4.2 million in turnover

for 2009-2010, while the 135 businesses at Goulburn accounted for \$141.2 million in turnover for 2009-2010. These figures indicate the relative importance of highway related businesses to the Yass economy in comparison to those at Goulburn. The total turnover figure at Yass is 83.5% of the total turnover figure at Goulburn, and Yass has about one quarter of the population of Goulburn.

A comparison of changes in the relative size of the highway related sectors to the total town economy at the three case study towns indicates that:

- Before the opening of the Yass bypass in 1994, gross annual turnover at 74 businesses was \$59.4 million, or 47.5% of the indicative value of the town product (\$125 million). The figure of \$59.4 million is equivalent to \$91.8 million in 2010 dollars.
- In 2009-2010, gross annual turnover at 77 businesses in Yass is \$118 million (38.1% of the indicative value of the town product of \$309.1 million) which indicates that the local economy is now larger in size (about 28.5%) than before the opening of the Yass bypass when compared to the figure of \$91.8 million in 2010 dollars. – a further indicator of the growth of the highway related sector in Yass to pre-bypass levels.
- At Gunning the pre-bypass figures for gross annual turnover are not available and so a similar comparison as that for Yass or Goulburn is not possible; however, the gross annual turnover at the 20 businesses in 2009-2010 is \$4.22 million, or 14.7% of the indicative value of the town product (\$28.1 million).
- Before the opening of the Goulburn bypass in 1992, gross annual turnover at 144 businesses was \$143.8 million, or 26.1% of the indicative value of the town product (\$550 million). The figure of \$143.8 million is equivalent to \$230.7 million in 2010 dollars.

In 2009-2010, gross annual turnover at 135 businesses in Goulburn is \$141.2 million (12.1% of the indicative value of the town product of \$1.16 billion). This figure is 38.7% of the equivalent value of \$230.7 million in 2010 dollars before the opening of the Goulburn bypass – a further indicator of the declining importance of the highway related sector in Goulburn relative to the larger town economy, and despite the significant increase in through stopping traffic in the post bypass environment. While Goulburn is an important stopping place for through motorists, the highway related sector of the

economy is small in relation to the rest of the economy, and is smaller in comparison to what it was before the bypass opened.

5.5 Business adjustments in the post bypass environment

In the original study it was noted that the impact of bypass roads on the ways that businesses operate is a continuing one and is expected to evolve over a longer period than that covered by the original business surveys – particularly at Yass. However, the study found that many businesses adjust the way they conduct business relatively quickly in response to a reduction in sales and a more competitive environment created by the opening of bypass roads.

The adjustments most frequently mentioned by businesses surveyed at Goulburn and Yass in the original study are shown in Table 23. The two most commonly adopted strategies at the time were to increase promotions and advertising, and to diversify either by varying the product lines or the services provided.

Table 23
Strategies adopted to maintain business profitability- original study

Type of Strategy	Frequency of mention
Increase promotions and advertising	20
Diversify product lines	10
More emphasis on customer service	8
Attract more local sales	7
Longer operating hours	3
Relocation of business	5
Improve appearance of premises	3
Reduce inventory	6
Reduce advertising costs	2
Reduce rent	2
Reduce opening hours	5
Reduce level of service	1

Note: *The frequency of mention is the combined total for surveys undertaken at Goulburn and Yass.*

In the present study of the long-term effects of bypass roads on the case study communities, the business surveys found that for businesses that were present in the original study, and have continued into the post bypass environment, did not make any further changes to the way they operate their business in direct response to the opening of the bypass. In particular, it was mentioned that no further job losses had occurred as a direct result of the opening of the bypass. The finding of the original study that businesses adjust the way they conduct business relatively quickly in response to the opening of bypass roads is largely confirmed. Nonetheless, all businesses present in the case study communities in the post bypass environment, whether under new ownership, new businesses or continuing businesses, have had to make changes to the way they conduct business as part of the changing competitive environment and changes brought about by economic conditions associated with those factors discussed in Section 2. Table 24 indicates the types of changes made by businesses in the present study as part of the business surveys.

It is interesting to note that increased advertising, which is the most frequently mentioned change by businesses across the three case study towns, is still the dominant change when compared to that listed in the original study (Table 23). However, most businesses in the post bypass environment have quickly made use of internet technology to advertise on the internet – no businesses were using web based services in the original study. Many have also established web based services for internet orders and on-line bookings. This is certainly true of all the motels and hotels that were surveyed in the case study towns, even in the village of Gunning. Many businesses mentioned that this was now a critical way of doing business and that a significant portion of their sales were from internet orders.

For some businesses in the village of Gunning, the importance of signage on the highway was considered a critical factor in business survival strategies and an example of a successful local strategy that emanated from the business community itself. Large signs have been placed on the Sydney and Melbourne side of Gunning, on the Hume Highway, to advertise most of the highway related businesses in the village. The aim, of course, is to encourage motorists to exit the highway and visit the main street of Gunning – a strategy that appears to be very successful according to local businesses. It is worth noting that only businesses in Gunning mentioned this particular strategy. There is no similar signage on the approaches to the Goulburn or Yass bypass.

As reported in the original study, businesses in the post bypass environment continue to diversify the range of products and services they offer and to improve level of service to customers (Table 24).

Table 24

Changes made to the composition or running of a business in the post bypass environment

Most frequently mentioned changes by businesses	Frequency	Per cent*
<u>Yass</u>		
Increased advertising in Canberra and Sydney, and web based advertising	15	19.4
Set up of web based services – internet orders (sales) and bookings	10	12.9
Increased range of products and services offered to customers	7	9.0
Renovation of business premises	6	7.7
Improve quality of service offered	5	6.5
Simplifying business processes – reduce costs	2	2.6
<u>Gunning</u>		
Increased advertising in Canberra and Sydney, and web based advertising	8	40.0
Set up of web based services	4	20.0
Added signage on the highway	4	20.0
Renovation of premises	3	15.0
<u>Goulburn</u>		
Increased advertising locally and in Sydney and Canberra , and web based advertising	30	22.2
Set up of web based services – internet orders (sales) and bookings	22	16.3
Increased range of products and services offered to customers	18	13.3
Improved level of service	10	7.4

One of the research questions raised in Section 1 was how have highway related businesses adjusted in the long period of the post bypass environment. From the findings presented above the evidence suggests that very few business continued to be directly affected by the opening of a bypass after the original study was completed. Highway related businesses across the three case study towns made significant changes and adjustments over the post bypass environment in response to competition and other economic factors not related to the bypass. Their focus was on advertising in the new medium and on diversifying product lines and improving services. These adjustments have contributed to them attracting highway generated trade and to making the highway related sector at Yass and Gunning a more important sector of the local economy than before the bypass. In Goulburn, these changes and adjustments have also been geared for the significantly larger local and regional population, and for through stopping motorists.

5.5.1 Indirect effects

In the original study it proved difficult to assess the impacts of bypass roads on those wholesale and retail businesses supplying inputs to highway related businesses, particularly to eateries and to accommodation establishments – mainly because of the problems in obtaining sufficient information about the dollar-value of linkages between establishments within and outside the local economy. From the limited data collected, however, it was found that the second round effects were relatively small—considerably smaller than might be anticipated on *a priori* grounds, despite the fact that there was a relatively high degree of interdependence among local businesses, particularly at Goulburn.

The indirect impacts appeared to be highly localised and to affect gross annual turnover rather than employment at a relatively small number of businesses, and to be of a short-term duration. Information obtained from interviews at the time with several large wholesale food suppliers at Goulburn indicated that they had all experienced a small reduction in gross annual turnover as a result of changes in the volume of local purchases following the opening of the bypass roads. However, none of these had laid-off staff as a result. Most non-food wholesale suppliers indicated that they had not been adversely affected; several indicated that business had actually increased since the bypass as a result of the opening of new businesses in the town.

Retail businesses at the time of the original study appear to have been affected to a greater extent than wholesale businesses, particularly those supplying inputs to eateries and the food outlets at service stations—butchers, bakeries, greengrocers, food stores, and supermarkets. It was reported, however, that even these were able to absorb the reduction in turnover and maintain acceptable profit margins without displacing staff.

The original study concluded that from the limited information collected the indirect effects made only a relatively minor contribution to the total economic impact of bypass roads on the affected communities.

In the present survey of businesses across the three case study communities it was found that there existed no interdependence among local businesses – local businesses did not purchase products or services from local suppliers. This represents a very dramatic change in the nature of linkages between local businesses compared to what had been reported in the original study.

For all businesses that responded to the question on purchases from local businesses, the overwhelming response was that all products are purchased from major suppliers in either Sydney, Canberra or Melbourne; there are no local purchases apart from minor amounts of stationary from the local newsagents in Yass or Goulburn. In the accommodation sector, it was mentioned that all supplies, even food supplies for the restaurants, come from outside the town – usually from distributors in Canberra and Sydney. Meat supplies were predominantly from a major distributor in Wagga Wagga. A few of the bed and breakfast businesses in the case study towns did shop at the local national supermarket chain for their food items. A similar situation exists with the auto services and service station sectors where all products are purchased from national distributors in Sydney, Canberra and Melbourne.

Among the eateries, what is purchased locally – mainly green groceries, breads and cold products – is purchased from local national supermarket chains or from distributors in Canberra and Sydney. There is no longer interdependence with the local butcher, greengrocer or bread shop – one likely reason for the decline in the number of these businesses, especially at Yass.

The trends identified above with respect to interdependence among local businesses in the case study communities is consistent with findings from the review of literature that noted the increased influence of national chain stores in bypassed communities, but also the restructuring of distribution networks that has led to greater dependence on city based supply chain networks as opposed to local suppliers.

5.6 Employment

The information presented in the previous two sections would suggest very strongly that further job losses are not likely to have occurred as a direct result of the opening of the Yass bypass in the years following completion of the original study. Information from Figure 2 (section 2) indicates that during the census period 1996-2001, Yass had experienced a net gain of 133 jobs while Gunning and Goulburn had experienced a loss of jobs.

Information provided by the 5 businesses at Yass that indicated they continued to be affected by the bypass after the original study stated that they had not laid off any additional staff in response to lower gross annual turnover. None of the businesses surveyed at Gunning or Goulburn that were interviewed as part of the original study indicated that they had made any further changes to their workforce after the study was completed.

In the years that have passed since the original study it is now opportune to assess how the employment profile of highway related businesses has changed in the three case study towns and, particularly, to examine the relative size of employment in 2011 compared to the original study in 1995. Table 25 summarises total employment at the three case study towns by category of employment.

Several conclusions can be made from Table 25 when compared to employment at the survey of businesses in 1995. In Gunning the number of jobs at the highway related businesses in 2011 (85 jobs) is more than double the job levels in 1995 (33 jobs). The current number of persons (85) employed in highway related businesses in Gunning represents 40% of total employment at the 2006 census; this compares with 14.9% of total employment at the 1991 census; the highway related sector in Gunning is a significant employer.

At Yass the number of jobs at the highway related businesses in 2011 (559 jobs) is slightly lower (1.5%) than corresponding job numbers just after the opening of the Yass bypass (a total of 568 jobs). The current number of persons (559) employed in highway related businesses in Yass represents 22.9 % of

total employment at the 2006 census; this compares with 27.5% of total employment at the 1991 census. In relative terms there are fewer people employed in highway related businesses in 2011 compared to 1995, despite the significant increases in through stopping traffic and growth of the highway generated sector of the economy.

In the case of Goulburn the number of jobs at the highway related businesses in 2011 (942 jobs) is 44.7% less than the corresponding job numbers at the time of the original survey. This would be due to businesses having less dependence on highway generated trade and stopping traffic in the post-bypass environment and to a lower number of highway related businesses in the survey sample (despite the actual growth in through stopping traffic in the post bypass environment). The current number of persons (942) employed in highway related businesses in Goulburn represents 11.2 % of total employment at the 2006 census; this compares with 17.3% of total employment at the 1991 census. In relative and in absolute terms there are fewer people now employed in the highway related sector of the economy in 2011 compared to 1995.

Table 25
Employment structure – original study (1995) and in 2011

Category	Yass		Gunning		Goulburn	
	1995	2011	1995	2011	1995	2011
Full-time						
Male	136	97	12	10	404	262
Female	89	68	4	14	305	133
Part-time						
Male	29	34	3	9	51	26
Female	86	52		13	179	69
Casual						
Male	57	88	3	3	196	189
Female	171	215	11	26	422	222

Paid Family						
Male		1		2		13
Female		1		3		16
Unpaid Family						
Male		1		4		6
Female		2		1		6
TOTAL	568	559	33	85	1557	942

Note: Paid family and unpaid family employment in 1995 is included in the other totals.

Casual jobs that are held by females continue to be the largest category of employment at the businesses in 2011 across the three case study communities when compared to the situation in 1995. They now represent 54.2%, 34.1% and 43.6% respectively of total highway related jobs at the three towns, but are a more dominant form of employment among the highway related businesses at Yass and Goulburn in comparison to their status in 1995. Female casual jobs at the case study communities are the main form of employment in the eateries and accommodation sectors and in many of the businesses that make up the 'other retail' category.

5.7 Business perceptions

The questionnaire survey form contained three questions that sought to establish business perceptions of the longer-term impacts of the bypass on the economy of the town more generally, on the town as a place to live and on their respective business. The same questionnaire was used at the three case study towns. (Appendix 3).

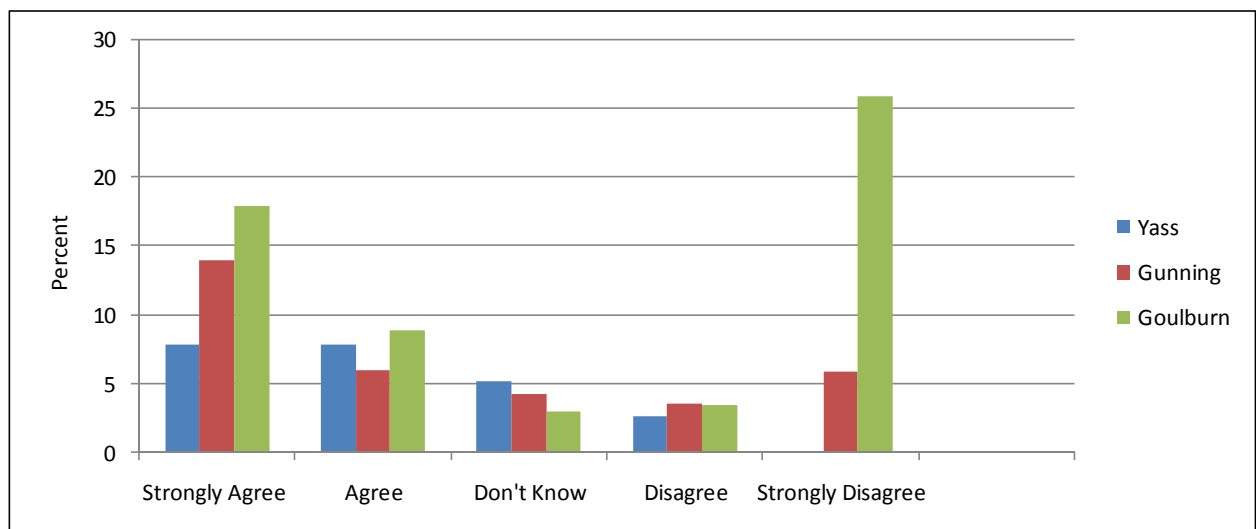
Responses to these questions are given below. Figure 13 indicates that while there is a general consensus that the bypass had a long term positive effect on individual businesses, there is a group of businesses in Goulburn who strongly perceive that the long term effect has not been positive. Further analysis of the 'strongly disagree' views for Goulburn indicates that they emanate from a group of 35 businesses – 12 of which have been there since before the bypass opened, with the remainder being established after 1995. They are mainly made up of take-away businesses, auto services, an

accommodation establishment and ‘other retail’ businesses. The overwhelming response given by 95% of these businesses, when asked about the reason for strongly disagreeing, is that the profitability of their business had been adversely affected in the longer-term.

It is interesting to note that the 35 businesses that indicated they strongly disagree with the statement that the bypass has had a long term positive effect on their business did not, in turn, indicate that they laid off more employees or reduced salaries in the post bypass environment. The major business adjustments made by these businesses was to increase advertising, alter their product range and to refurbish their place of business. The small percent (2.6%) of businesses in Yass who indicated they ‘disagree’ that the long term effect of the bypass had been positive on their business are made up of several take-away and eatery businesses that have a relatively high dependence on passing trade. All indicated that they continued to experience further declines in their turnover after the original study. However, all of them indicated that no further changes were made to their employee numbers, to salaries or to operating hours as a result. No business survey respondents from Yass strongly disagreed with the statement.

Figure 13

Bypass has had a long term positive effect on your business?

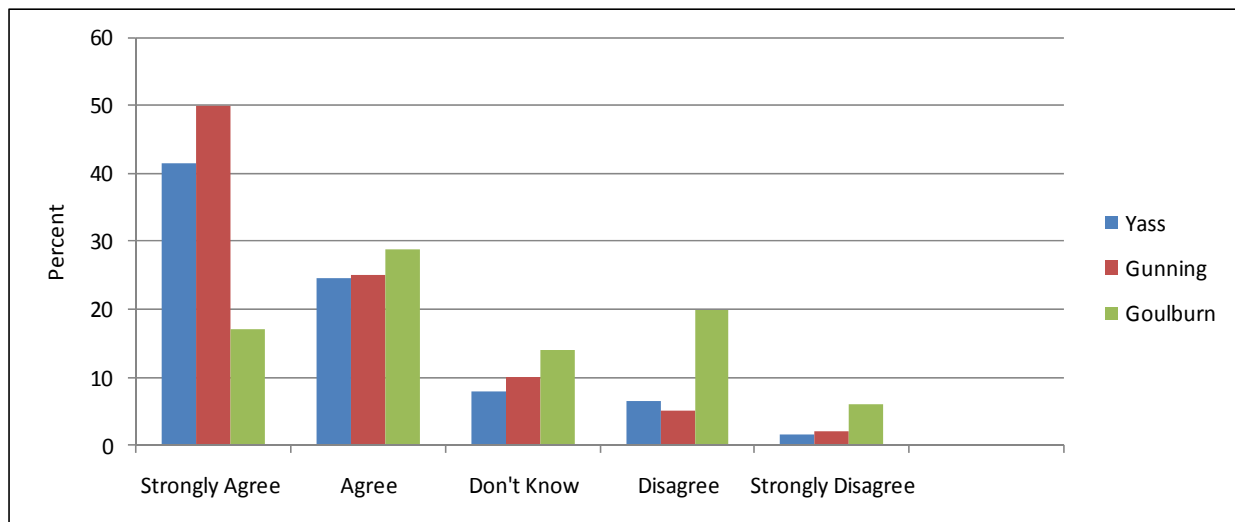


Business survey respondents in the three case study towns perceive that the long term impact of the bypass on the economy of their respective town is overwhelmingly positive, despite some concerns on

the part of individual businesses in Goulburn – the ‘disagree’ and ‘strongly disagree’ categories (Figure 14). Most of the businesses in these two categories are also those who strongly perceive that the long term effect of the bypass has not been positive. When asked about the reasons for disagreeing or strongly disagreeing, the majority of businesses in these two categories stated that there are ‘fewer stopping motorists’ and, as a result, there is ‘less passing trade in Goulburn’. These views correlate with findings presented earlier that highlighted the percentage decline in the number of through stopping vehicles in Goulburn since the original study (section 4.1.3) and declining importance of the highway related sector in Goulburn (section 5.4).

For the economy of the towns of Yass and Gunning, the bypass has enabled further population growth and employment growth – all positive benefits that generate additional trade and sales. Businesses from Gunning in particular – the smallest of the three communities – have rated the economic benefits highest of all – an indication that Gunning itself is growing and attracting more people to the main street.

Figure 14
Bypass has had a long term positive effect on the economy of the town?



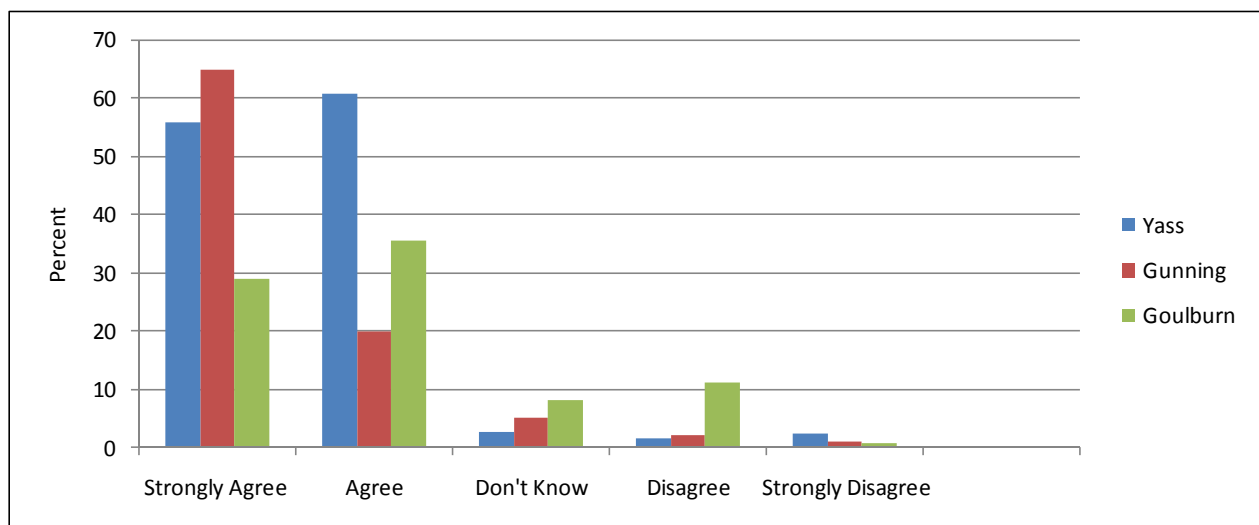
The original study provided evidence of the quality of life aspects of a bypass road that are valued by the business community; removal of trucks from the main street and associated pollution, safety concerns and parking problems to name a few. The view of the majority of businesses at the time was that the

town is a more pleasant place with a better lifestyle and that quality of life of the residents had been improved. Figure 15 reinforces this strong perception on the part of the business community that, in turn, reflects the perceived longer-term economic growth potential of the town – a growth potential that is delivering actual results on the main street.

In summary, findings presented and discussed in Section 5 have provided a response to another of the research questions of the present study – what is the nature and types of longer-term economic impacts of the bypasses on the case study communities? The business surveys conducted in the three case study communities generally indicate a very different main street landscape in the post bypass environment than what had been there when the original study was undertaken.

Figure 15

Bypass has made the town a better place to live?



At Yass in particular, but also at Gunning and Goulburn, there has occurred a dramatic change to the original businesses surveyed as part of the original study. Many businesses have closed at Yass and Goulburn and many new highway related business have opened. At Gunning, more new businesses are present on the main street now than in the original study and many are catering to the needs of stopping and staying traffic. For new businesses or those under new

ownership the primary reason for getting into business in town was the perception of business opportunities. This was closely linked to lifestyle in the three case study communities and the view that these were vibrant communities with a bright future.

The new businesses, those that are under new ownership and those that are continuing now employ a higher level of casuals compared to what was reported in the original study. At Yass in particular the present mix of highway related businesses have reported a higher level of dependence on passing trade than at the time of the original study. A key finding is that the highway related sector and the businesses that make it up are very important to the economy of Yass and Gunning, more so than at the time of the original study. At Goulburn, the highway related sector is less important now than previously but this appears due to the growth of the local economy not to the decline in the number of stopping travelers or those staying overnight – these have increased substantially in the post bypass environment at Goulburn, just as they have at Yass and Gunning.

Moreover, the present study has found that very few businesses were affected in the longer-term in the post bypass environment. Those that were (namely 5 businesses at Yass and 35 businesses at Goulburn) experienced some further declines in their gross annual turnover, but this did not affect jobs, salaries or working hours at these businesses. The data indicated that many businesses made adjustments to their business operations in the post bypass environment but this was not related in any way to the direct and longer term impacts of the bypass – most were changes brought on by other economic factors affecting rural and regional Australia. Many of the business adjustments in the post bypass environment now focus on advertising and promotion using the new internet media, and on diversifying their product range and improving service levels to customers to remain competitive. This focus has not changed since the original study, only the technology to implement the business adjustments has changed dramatically.

The overwhelming view of business survey respondents is that the bypass has had a long term positive effect on their business, on the economy of the town and has made their respective town a better place to live. The bypass dramatically improved the amenity of each case study town and this, over the long-term, has allowed these towns to re-capture a larger portion of trade originating from the highway and to attract new businesses that cater to the needs of the highway traveler and to day-trippers from Sydney, Canberra and elsewhere. These findings are largely consistent with what might have been expected from the review of literature, and from the original study.

6.0 Further study

The methodology employed as part of this study, which is similar to that of the original study, has generated a set of results presented in Sections 4 and 5 of the report that highlights that motorists have, and are, adjusting their patterns of stopping behavior on longer journeys and returning to stop on main streets and at service centres to acquire services. As a result, both the small village of Gunning and the medium sized town of Yass have re-emerged as places that serve the needs of the highway traveller and of travelers from nearby cities such as Canberra and Sydney. The evidence indicates that the influence of Canberra and Sydney in particular is paramount in understanding the major flows of through stopping traffic at all three of the case study communities. Whether from the analysis of origins and destinations of through stopping traffic or from the number plate survey analysis, the proximity to Canberra and Sydney plays a major role in attracting through stopping travellers and this has likely been an important factor in mitigating the impact of the bypass in the longer term. It is unlikely that the three case study

communities could have experienced a re-emergence of stopping traffic and of highway generated businesses, to the same extent, had they been located beyond the sphere of influence of these larger centres.

The presence of service centres at two of the three case study communities has also been influential in attracting through stopping motorists back into these communities. These have become, as anticipated in the original study, strategic locations for stopping traffic. However, they have not, as anticipated in the original study, attracted all the through stopping traffic – the main street remains an important attractor as well. In turn, they have played an important role in mitigating the overall extent of job losses at communities affected by bypass roads.

In light of the above findings for the three case study communities this raises questions as to the longer-term economic impacts of town bypasses on communities that are not in proximity of a larger centre, or beyond the sphere of influence of a centre, or that do not have a service centre or plan to have one in the future. These questions are of relevance for the planning of bypass roads where additional town bypasses are to be constructed in the future. Further studies are therefore recommended that focus on yet to be bypassed communities, or those soon to be bypassed, that meet the above criteria in order to assess the impacts of the bypass road on through stopping traffic, highway generated trade, dependence on passing trade, gross annual turnover and employment impacts in the absence of these influences. This is considered important in terms of the community developing appropriate mitigation measures and managing change in a post bypass environment.

Furthermore, there are several additional questions and issues that merit further study. First, the three case study communities on the Hume Highway appear to defy the conventional wisdom from the review of literature that smaller communities (less than 2,500 population) are generally more at risk from adverse economic impacts from a highway bypass than medium

and larger towns. The smallest of the case study communities – Gunning – has been shown to be re-emerging as a place for motorists and day-trippers to stop, and the highway related businesses now have a very high dependence on passing trade. These effects are no doubt confounded with those of proximity to a larger centre (Canberra) and to being located between two much larger centres – Goulburn and Yass. In addition, the town that lost the most jobs as a direct result of the opening of a bypass (93 jobs lost at Yass) as documented in the original study is the town that has re-captured a higher proportion of trade originating from the highway. What may be beneficial is to consider studies of small communities the size of Gunning and Yass that are also not in proximity of a larger centre in order to more accurately assess the effects of population size on economic impacts of a highway bypass.

Second, the three case study communities have many similarities in terms of their economic base and the hinterland population they serve. They are for the most part agricultural service centres that meet the needs of their local population and the hinterland population – this is certainly true for Yass and Gunning. Goulburn acts as a major regional service centre and has a more diversified economic base. In general the case study communities do not have an economic base that is based on or dependent on tourism. The potential economic impacts of a bypass on a town with a tourism base has not been investigated in Australia.

On a more pragmatic note, the methodology used for the present study, in particular the survey of stopping motorists, has made several assumptions related to night time stopping patterns for light and heavy vehicles. This highlights the lack of information and studies on night time stopping movements along the Hume Highway and possibly other highways. These types of studies would prove valuable in providing the documentary evidence of night-time stopping patterns and also expenditure for highway related needs, and would contribute to greater accuracy in estimates of highway generated trade.

Although not related to the present study, the issue of the influence of construction workers on the economic impacts of a town bypass is also timely. In the original study, the effects of construction workers were excluded, as best could be determined, as part of the survey of businesses. However, this assumes that construction workers leave the town once the bypass is opened. This is not necessarily the case as construction workers can be contributing to the economy of the town long after the bypass has opened as part of other road related construction work along other sections of the highway, or at other highways in the region. It would be beneficial to conduct studies in communities where there is no highway related or highway bypass construction activity in order to more accurately assess highway generated trade, dependence on passing trade and gross annual turnover.

It is anticipated that the additional bypass related studies suggested above, and undertaken in quite different location settings, would add considerable value to our already well developed understanding of the economic impacts of town bypasses.

6.1 A note on methodology for past and future bypass monitoring studies

It is likely that the future bypass studies mentioned above would be implemented using the methodology adopted for the present study – a methodology also used in the original study. In the original study, the methodology was specifically developed and used to monitor in detail the ‘*Before*’ and ‘*After*’ economic impacts of the Yass bypass, and the ‘*After*’ impacts of the bypasses at Goulburn, Gunning, Mittagong and Berrima. There is no doubt that the methodology implemented at the time of the original study was very successful in empirically documenting and quantifying the nature and extent of the economic impact of bypass roads directly and indirectly on businesses in the selected communities – impacts that were found to be of short-term duration and generally within the first twelve months of a bypass opening.

One of the research questions of the present study is the adequacy of the methodology implemented in

monitoring the longer-term economic impacts of town bypasses. The methods employed in the three case study communities – traffic surveys, surveys of stopping motorists and overnight stayers, and surveys of highway related businesses – were for the most part consistent with those from the original study. The use of a standard questionnaire to collect the data has ensured comparability of the results between the case study communities and with results from the original study.

What differed in the present study is that the formally structured questionnaire surveys of individual businesses at each community were designed to determine the longer-term direct economic impacts of bypass roads on employment, turnover, dependence on highway generated trade, changes to business operations and perceptions of impacts on the business, the town economy and on the town itself. Given the influence of other economic factors in the 16 year period since the original study was completed, the business questionnaire survey was designed to filter out these particular effects in the post bypass environment and to focus specifically on the longer-term changes directly attributable to the diversion of traffic. For those businesses that were part of the original study and the present study, and for new business in the post bypass environment, this proved to be relatively easy to do. A key factor that facilitated this filtering process on the part of businesses is that the bypass remains a topical issue across the three communities as a result of the bypass being associated with increased economic activity in the case of Yass and Gunning, and with declining profitability on the part of some businesses in Goulburn.

It is on this basis that the methodology used in the present study is considered appropriate and sufficient for monitoring both the short- and longer-term economic impacts of a highway bypass on a community in the post bypass environment and that the results are believed to reliably document the nature and extent of the impacts on business activity that is attributable directly to the opening of bypass roads.

The methodology provides a firm basis for not only undertaking the future studies discussed in section 6.0 above, but also for assessing the reliability and accuracy of predictions made in Environmental Impact Statements (EISs), in assisting communities to be bypassed in the future to establish a baseline economic profile of potential bypass related impacts (a 'Before' study), and in undertaking both short- and longer-term monitoring studies to manage change in the post bypass environment.

7.0 Conclusion

The two key objectives of this project were to re-evaluate the findings of the previous (original) study

concentrating on a small number of case studies, and; identify areas for further study where gaps in previous research exist. The latter objective has been treated in the above section. The scope of project work led to several key questions dealing with the nature of the longer term economic impacts of bypasses, the importance of the highway and of stopping traffic, changes to main street businesses, adjustments by highway related businesses and an assessment of the value of the methods used to monitor longer term bypass impacts, if any, in the post bypass environment.

The overwhelming conclusion to be made from application of the methodology to the re-evaluation of the original study at the three case study towns is that in the longer-term these communities do recover to varying degrees from the negative impacts of bypass roads as documented in the original study, even the smallest community, and as anticipated in the original study and in the review of literature. The three case study communities are success stories in terms of how to recover from the economic impacts of a bypass. The economic impact of a bypass road at these communities appears to have been short-term, certainly within the first year of the bypass opening. What has emerged in the post bypass environment are communities at Yass and Gunning that are for the most part vibrant, growing and full of business potential as a result of the bypass. Goulburn, despite its static population and employment growth, is also a vibrant city that has economic development potential but this is not dependent on the bypass and on highway generated trade. Other factors such as tourism and its growing role as a road freight hub are, among other things, likely to encourage economic development in Goulburn (Goulburn Mulwaree Council, 2008).

The highway bypasses at these communities has resulted in varying levels of economic development benefits. This has been driven to a large extent by the re-capture of a larger portion of trade originating from the highway to pre bypass levels in the case of Yass (and possibly Gunning) and to pre Yass bypass levels in the case of Goulburn. As a result, highway generated trade is now more important to the local economy at Yass and Gunning in particular than before the opening of their respective bypass roads. Understanding the role of proximity to larger centres such as Canberra and Sydney, location on the Hume Highway, and degree of dependence on highway generated trade at the case study communities was important in the assessment of positive changes that occurred in the post bypass environment.

To a large extent the findings of this study mirror those identified in the review of literature – that in the longer term highway bypasses do not have adverse economic impacts on towns that are bypassed and that in most cases bypasses have resulted in economic development benefits for towns which have been

bypassed. Furthermore, the review of literature notes that population size, economic base and distance from a larger economic centre of a town that is bypassed are three main indicators of post-bypass economic change. Small towns (less than 2,500 persons) were shown to be more at risk of adverse economic impacts than medium or larger sized towns. In the present study, the findings indicate, as they did in the original study, that the largest economic impacts were at the medium sized town of Yass not at the smallest community (Gunning). More importantly, the findings of the present study highlight that the most significant economic benefits of being bypassed have occurred at the medium sized town of Yass and not at the largest centre (Goulburn).

The conclusion to be made from the above findings is that degree of dependence on highway generated trade is a more critical variable than population size in understanding post bypass economic change at Yass. In particular it is the location of Yass on the Hume Highway relative to Sydney, Canberra and Melbourne, the presence of a service centre and proximity to the larger centre of Canberra that has influenced the ability of the town to re-capture a larger proportion of trade originating from the highway and to the fact that highway generated trade is now higher than at pre bypass levels. At Goulburn, the largest centre, there has also occurred a re-capture of highway travelers but highway generated trade relative to growth in the local economy is smaller now than before the bypass. Contrary to the conventional wisdom in the review of literature, the findings of the present study indicate that proximity to a larger centre is in fact of benefit to highway related businesses, especially at the medium and smaller places, and influential in post bypass economic change. Whether the economic benefits to towns that have been bypassed or are to be bypassed in the future, and that are not in close proximity of a larger centre or have no service centre, will be similar to those of the case study communities remains a topic for future research.

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Appendix 1

Stoppers Survey

THE UNIVERSITY OF
NEW SOUTH WALES



Dr Bruno Parolin
Faculty of the Built Environment

YASS BYPASS IMPACTS RESEARCH PROJECT
STOPPERS SURVEY

This questionnaire is being used to collect information about motorists who stop while travelling through YASS. The data will be used in a research project being undertaken to monitor the longer-term impacts of the Yass bypass.

Day of Week: _____

Time of Day: _____

Station: _____

Are you a local resident or through traveller? If a through traveller, please answer the following questions:

PART A: TRAVEL RELATED

1. How long do you plan to stop (or have you stopped) in YASS?

Are they Arriving **or Leaving** (Tick box)

Less than 15 minutes Half day

15 to 30 minutes Overnight (Use Stayers Survey)

30 to 60 minutes

2. Where do you live? POSTCODE _____

SYDNEY 2052 AUSTRALIA
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Email: b.parolin@unsw.edu.au

2

3. Your present journey is FROM _____ TO _____

4. Is this your first stop since beginning this journey?

Yes No

If No, where was your last stop? _____

5. Where do you plan to make your next stop before reaching your final destination?

.....

6. How often do you travel through YASS?

Daily Every Few Months

Weekly Once a year

Monthly Seldom

7. Do you always stop in YASS when passing through it?

Always Occasionally First Time

Mostly Rarely

8. Which of the following applies to your stop? (tick as many as necessary)

To purchase food/drink To obtain information

To purchase petrol Toilet (pit stop)

Repairs to car To look around

Only for a break from driving

9. What kinds of businesses have you visited (or do you intend to visit) in Yass?

- a. d.
- b. e.
- c. f.

10. Approximately how much money do you think that you will spend (or have actually spent) during your stop in Yass?

\$_____ Per Interviewee

\$_____ Per Vehicle

11. What is the primary purpose of your trip?

- Business/work related Returning from holiday
- Motoring holiday Visiting Friends/Rel
- Going on Holiday Other Specify _____

12. What sort of vehicle are you travelling in?

- Car Truck
- 4WD Motorcycle
- Coach Minibus Other (Specify: _____)

If a coach or minibus traveller, go to question 14.

13. Are you travelling alone? Yes No

If No, how many are travelling in your vehicle?

ADULTS _____ Children (under 18): _____

Males: _____

Females: _____

Go to question 15.

14. How many people are travelling in your party?

ADULTS

Children: _____

Males: _____

Females: _____

15. Have you stopped at any of the Service Centres on the freeway on this journey?

Yes No

If Yes, which one?.....

PART B: SOCIO-ECONOMIC

20. Gender of Respondent: Male Female

21. Age of Respondent:

18-25 46-50

26-30 51-60

31-40 Over 60

41-45

22. What is your Occupation?

.....

END OF QUESTIONS

Remember to thank the person for their help and say how much you appreciate that they have taken the time to answer these questions.

Appendix 2

Stayers Survey

THE UNIVERSITY OF
NEW SOUTH WALES



Dr Bruno Parolin
Faculty of the Built Environment

GUNNING BYPASS IMPACTS RESEARCH PROJECT

STAYERS SURVEY

This questionnaire is being used to collect information about the longer-term effects the opening of the Gunning bypass has had on the local economy. A study is part of a monitoring project that began in Yass before the bypass opened where the emphasis is on changes to highway generated trade and employment, and to the types of adjustments made by businesses.

All of the information you provide will be considered as STRICTLY CONFIDENTIAL and you will not be separately identified in any discussions relating to, or in any reports resulting from, the project.

1. Where do you live? POSTCODE _____

2. Your present journey is FROM _____ TO _____

3. Is this your first stop since beginning this journey?

Yes No

If No, where was your last stop? _____

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4. **Where do you plan to make your next stop?**

5. **What is the primary purpose of your trip? (Please tick one)**

Business/work related Returning from holiday

Motoring holiday Visiting Friends/Rel

Going on Holiday Other

6. **How often do you travel through Gunning? (Please tick one)**

Daily Every few months

Weekly Once a year

Monthly Seldom

7. **Do you always stop overnight in Gunning when you make this journey? (Please tick one)**

Always Occasionally First Time

Mostly Rarely

8. **How long are you staying in Gunning? (Please tick one)**

One night More than 3 nights but less than one week

Two nights One week or more

Three nights

9. **Was your decision to stop in Gunning**

Made in advance Made on the spur of the moment

10. **How many people are you travelling with?**

On my own

If not on your own, please indicate the following:

ADULTS Children: _____

Males: _____

Females: _____

11. **How much have you and the people travelling with you spent?**

A. Where you're staying (room and meals)

\$ _____

B. In town on:

Groceries \$ _____

Take-away food \$ _____

Newspapers \$ _____

Petrol/car repairs \$ _____

Beer/wine/etc \$ _____

Sit-down meals \$ _____

Other things \$ _____

12. **Are you?** Male Female

13. **What age category do you belong to?**

18-25 46-50

26-30 51-60

31-40 Over 60

41-45

14. **What is your Occupation?**

.....

Please leave your completed survey with reception.

MANY THANKS FOR YOUR ASSISTANCE

Appendix 3

Business Survey

THE UNIVERSITY OF
NEW SOUTH WALES



Dr Bruno Parolin
Faculty of the Built Environment

YASS BUSINESS SURVEY

This questionnaire is being used to collect information about the long-term effects the opening of the bypass has had on business activity in Yass. The survey is part of a research project being undertaken by the Faculty of the Built Environment, University of New South Wales, and is funded by the NSW Community Grants Program through the NSW Roads and Traffic Authority.

All of the information you provide will be considered as STRICTLY CONFIDENTIAL and neither you nor your business will be separately identified in any discussions relating to or in any reports resulting from the project.

We would like to stress that it is only *THE EFFECTS OF THE BYPASS* that we are interested in. We appreciate that drought, interest rate rises and changing agricultural prices, etc has affected business in the town as well since 1994.

Business type:..... Location:.....

Q1. How long have you been operating this business? since 19_____

Q2. Has your business been affected by the bypass since you were last interviewed in 1995?

YES.....

NO.....

Q3. How many employees do you have now (including paid and unpaid family members)?

Full time: Male..... Female.....

Part time: Male..... Female.....

Casual: Male..... Female.....

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Q4. Did you have you had to put off staff *BECAUSE* of the opening of the bypass since the last interview in 1995?

YES..... NO.....

Q5. If YES, how many?

Full time: M..... F.....
Part time: M..... F.....
Casual: M..... F.....

Q6. Did any of these live outside Yass? If YES, where did they live?

(Place of residence) (indicate M or F)

Full time:	M	F
.....	M	F
.....	M	F
Part time:	M	F
.....	M	F
.....	M	F
Casual:	M	F
.....	M	F
.....	M	F

Q7. Did you reduce the hours of staff *because* of the opening of the Bypass after we interviewed you in 1995?

YES..... NO.....

(If No, go to Question 8)

If YES, give details:

.....
.....
.....
.....
.....

Q8 Did you take on additional staff *because* of the opening of the bypass after we interviewed you in 1995?

YES..... NO.....

Q9. If YES, how many?

Full time: Males..... Females.....
Part time: Males..... Females.....
Casual: Males..... Females.....

Q10. Do any of these live *outside* Yass?

YES..... NO.....

(If No, go to Question 11)

If YES, where do they come from?

Full time: M F
..... M F
..... M F
Part time: M F
..... M F
..... M F
Casual: M F
..... M F

4

Q11. Was your wages bill further affected by the bypass after 1995?

YES.....

NO.....

(If No, go to Question 12)

If Yes, what would have been the % decline from figures you provided us in 1995? (per week)

Q12. Was your Turnover further affected by the bypass since 1995?

YES.....

NO.....

(If No, go to Question 13)

If Yes, what are the turnover figures now, or for the 2009-2010 financial year?

- | | |
|----------------------------|--------------------------------------|
| 1 Less than \$50,000 | <input type="checkbox"/> 1 SHOW CARD |
| 2 \$50-100..... | <input type="checkbox"/> 2 |
| 3 \$100-150..... | <input type="checkbox"/> 3 |
| 4 \$150-250..... | <input type="checkbox"/> 4 |
| 5 \$250-500..... | <input type="checkbox"/> 5 |
| 6 \$500-1million..... | <input type="checkbox"/> 6 |
| 7 \$1m-1.5m..... | <input type="checkbox"/> 7 |
| 8 Over 1.5m..... | <input type="checkbox"/> 8 |

Q13a. Did your business experience any further decreases or increases in Turnover *because* of the opening of the bypass since the last interview in 1995?

Less than 5% 5 - 9% 10-14% 15-19% 20-24% 25-29%
30-34% 35-39% 40-44% 45-49% over 50%

4

5

Q13b. How much of your trade do you think now comes from people who are passing through but stopping in town, i.e. passing trade?

%..... \$.....

Q14. How has the composition of your business or the way that you do business changed since the last interview in 1995?

Q15. Can you comment on the ways in which the opening of the bypass has changed your dealings with any of the suppliers you have mentioned since the last interview in 1995?

.....
.....
.....
.....

Q16. Do you believe the bypass has had a long-term positive effect on your business ?

- Strongly Agree*.....
- Agree*.....
- Don't Know*.....
- Disagree*.....
- Strongly Disagree*.....

Specific longer-term Positive effects

5

Specific longer-term Negative effects

Q17. Do you believe the bypass has had a long-term positive effect on the ECONOMY of Yass as a whole?

- Strongly Agree*.....
- Agree*.....
- Don't Know*.....
- Disagree*.....
- Strongly Disagree*.....

Specific longer-term Positive effects

.....

.....

.....

.....

Specific longer-term Negative effects

.....

.....

.....

Q19. Do you believe the bypass has made Yass a better place to live?

- Strongly Agree*.....
- Agree*.....
- Don't Know*.....
- Disagree*.....
- Strongly Disagree*.....

Thank you for your participation in the survey.

Appendix 4

Letter to Businesses

THE UNIVERSITY OF
NEW SOUTH WALES



Dr Bruno Parolin

Faculty of the Built Environment

YASS BYPASS IMPACT RESEARCH PROJECT

BUSINESS SURVEY

Owner/Manager

Dear Sir/Madam,

16 February 2011

I am writing to you in regards to a research and development project investigating the long term economic impact of town bypasses.

In the 1990s Yass was bypassed by the Hume Highway. The University of New South Wales at the time completed a study, funded by the Roads and Traffic Authority (RTA), which investigated economic impacts of the bypass on local businesses and the community. The study relied on the support and cooperation of the business community of Yass. The results were used to develop several key reports and resulted in a *Guide to Good Practice* (1996). It also helped develop methods to assess the economic impacts of bypass roads nationally and internationally. The study has had international recognition and is frequently referred to in American and European bypass studies.

14 years have passed since the original study was undertaken. I am now writing to you about your participation in a follow up study to investigate the longer term economic impacts that a bypass can have on businesses and the community. This study will be conducted by the University of New South Wales with funding provided by the RTA. This new study will replicate the surveys completed in the previous study (1990s). This includes traffic counts, surveys of both passing and overnight travellers, and interviews with businesses which depend directly, or indirectly, on trade generated from motorists travelling through the town.

Your business has been identified as one who can provide valuable information for this study. With your permission, I would like to include your business in the survey which I will undertake in Yass between **Wednesday 23 February and Saturday 27 February 2011**, where a research assistant or I would like to visit your business during normal business hours.

The survey will be conducted as an interview with the aim of obtaining information on any impact the bypass may have had on businesses in Yass since its opening in 1994. All information provided by you will be kept strictly confidential as per the ethical requirements of the New South Wales Government and the University of New South Wales and be stored in a secure location. The data from the study will be collated to provide a summary of all the businesses in the town as a whole. Individual businesses will not be identified.

Reports of the study will be made freely available to businesses and the community at the completion of the study. If you wish to contact me at any time during the study, or do not wish to participate in this study, please phone me on 02 9385 4399 or email b.parolin@unsw.edu.au with the title 'Yass Bypass Survey'.

In advance I would like to thank you for your time and co-operation in the study.

Yours sincerely,

Bruno Parolin – Project Director

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