PACIFIC HIGHWAY BYPASS ECONOMIC IMPACTS KEMPSEY

for Kempsey Shire Council

by Dr Bruno Parolin
Transport Consultant

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EXECUTIVE SUMMARY
This report documents the findings of a study undertaken between October-November 2013 to monitor the impacts of the opening of the bypass at Kempsey and Frederickton on local businesses. The principal findings, which are based on a detailed survey of 115 businesses in the town are:

- There has occurred a high level of turnover of highway related businesses on the main street since the original study in 2005. Twenty three of the businesses in the original survey had closed and another 23 were under new ownership. It was estimated that the closure of 23 businesses was associated with a loss of 141 jobs in the pre-bypass period between 2005 and 2012 and business closures did not occur in anticipation of the opening of the bypass but were related to personal, management and lifestyle decisions. The retail landscape of Kempsey has been changing with the location of national brand stores in the town centre.

- The total reduction in gross annual turnover is estimated to have decreased from $124.7 million before the opening of the bypass in 2012 to $110.13 million after the diversion of all through traffic – a reduction of $14.6-17.3 million a year directly and indirectly.

- In relative terms, this represents a reduction of about 12.4% of the total gross annual turnover for 2012 as reported by the 115 businesses in the survey of businesses undertaken in 2013, and amounts to $6-7 million less than what was expected from the 2005 study, after allowing for inflation.

- Sixty-eight out of the 115 businesses (59.1%) included in the survey had been adversely affected directly or indirectly – through a downturn sales and turnover. Most of these were service stations, food stores and eateries which together accounted for about $12 million (82.0%) of the total reduction in gross annual turnover. For just over half the businesses, the decrease in gross annual turnover was considered minimal to moderate and for 10 out of the 68 businesses (14.7%) the decrease in turnover was considered to be serious. The least affected businesses were in the accommodation and clubs/hotels sectors.
• A total of six businesses (5.2%) reported that their turnover had increased since the opening of the bypass – 3 take-away establishments, 1 food store, 1 caravan park and 1 homewares/hardware store. The increase in turnover was attributed to increased access to business premises following the bypass that, in turn, enabled more locals to frequent their respective establishments.

• Ninety-four jobs had been lost from 34 individual businesses during the 8 months after the opening of the Kempsey bypass itself.

• Six businesses reported that 20 new jobs were created as a direct result of the bypass – 75% of the new jobs created were for casual positions.

• The net effect on employment of the opening of the bypass is a net loss of 74 jobs. This corresponds to only 2.5% of the gainfully employed in the town in 2011, but 6.0% of the total employed by the 110 businesses in 2012.

• Redundancies have primarily affected those in casual and full-time employment: these accounted for 90.9% of the total jobs lost. Females have been most affected - 62 women lost their jobs, compared to 32 men, corresponding to 14.8% of the total females employed at the 110 businesses in 2012.

• The largest number of jobs were lost at businesses directly servicing the need of motorists, principally at the eateries, service stations, food stores and at other retail stores. The accommodation sector has not been affected in the same way or to the same extent.

• The actual reduction in employment and the net loss of jobs is significantly smaller by about a half than the forecasts presented in the Environmental Assessment for the Kempsey bypass – 94 jobs or a net loss of 74 jobs recorded in this study compared to up to 176 jobs.

• Thirty-four out of the 68 businesses (50%) that reported a decrease in their turnover as a direct result of the diversion of through traffic from the town reduced the hours worked by staff – predominantly in the eateries, food and service station sectors. For remaining businesses the preference was to absorb the downturn in turnover rather than reduce staff hours or shed labour.
Among the businesses that reported they reduced the hours worked by staff, it is estimated that total hours worked by staff was reduced by 1887 hours per week since the opening of the bypass – over half (57.8%) of the reduction occurred in the eateries sector.

It has been estimated that the combined loss of income from reduced staff work hours and loss of jobs is in the order of $71,547 per week. This corresponds to only 2% of total weekly personal income in Kempsey from the 2011 census. The loss of disposable income as a result of the bypass has not only affected businesses in town but is likely to have affected families as well until alternative employment is found.

About half of the businesses that experienced a downturn in turnover had made compensatory adjustments to their operations following the diversion of through traffic from the town, principally through increased advertising and promotions, diversifying product lines, and reducing operating times. Other businesses that experienced a downturn in turnover have adopted a ‘wait and see’ attitude. Developing or enhancing a web presence or enhancing customer service skills did not figure highly in adjustment strategies mentioned by businesses. There is no evidence to suggest that the opening of the bypass directly resulted in the closure of businesses.

The indirect impacts appear to be relatively insignificant, predominantly affecting gross annual turnover rather than employment at only a small number of businesses. Those most affected are businesses providing inputs to food outlets in the town (butchers, bakeries, greengrocer, and supermarkets). Only 2 businesses reported that they displaced staff because of a downturn in orders from highway related businesses following the diversion of traffic from the town and a total of 4 staff were displaced – 2 male casuals and 2 part-time females.

There is division among the business community as to the perceived outcome of the bypass on the economy of Kempsey. Just over half (54.9%) of all businesses perceive that the impact of the bypass on the economy of the town has not been positive. On the other hand, there is a widespread belief that the diversion of through traffic from the town has had positive environmental effects as a result of the reduction in noise
levels (particularly from heavy traffic) and pollution and dust levels, and that the main street has become safer for pedestrians.

- It is expected that these positive effects of the diversion of through traffic will progressively enhance the quality of the town centre as a place for shopping and service provision for local residents as well as making it more attractive as a stopping place for motorists in future.

- Many businesses have directed criticism at Council as a result of the adverse impacts of the bypass, yet many of these impacts are out of Council’s control. There is a view among the business respondents that Council should be doing more to assist the highway related sector. Businesses perceive that the priorities for Council in the post-bypass environment should focus on completion of the beautification of the main street scheme, rectifying the signage on the bypass and in bringing more jobs and people to the town. The perceived opportunities for Council focus primarily on the need for strong economic growth.

- Proactive measures adopted by Council in the pre- and post-bypass period have led to the development of a post-bypass strategy targeted at highway related businesses that attempts to mitigate against the adverse impacts of the bypass documented in this study. A key focus of this strategy is additional employment opportunities in town.

- Among the proactive measures adopted by Council is the development of a highway service centre that is expected to be opened by the end of 2014. The highway service centre is expected to create over 100 jobs. When this initiative is combined with other employment opportunities, the number of new jobs to be created over the next 12-24 months will more than offset the jobs lost as a direct result of the bypass or the net loss of 74 jobs in town.
1. INTRODUCTION

2 The Kempsey bypass was opened on March 27 2013 as stage 1 of the 40 kilometre Kempsey to Eungai project. A key justification for this critical infrastructure project was the need to meet existing and future traffic and population increases on the Mid North Coast between the Sydney–Brisbane corridor, the need to alleviate major traffic bottlenecks at Kempsey and Frederickton, especially during holiday periods, and to improve the safety of travel between Kempsey and Eungai.

3 The traffic study completed by the NSW Roads and Traffic Authority (2007) indicated that south and north of the Kempsey town centre, the Pacific Highway carried average weekday traffic volumes of about 10,000 to 12,000 vehicles per day over the survey period. Of this volume, 20.5% was through traffic and the proportion of stopping traffic as a percentage of through traffic was 20.4% (approximately one in five through travellers). Most of the through traffic was expected to use the Kempsey bypass and it was expected that there would be a significant reduction in through stopping traffic as travellers used the alternative bypass route. The modelling undertaken by Roadnet (2011) came to a similar conclusion. This would have a negative impact on highway generated trade and gross annual turnover of highway related businesses.

4 The socio-economic assessment conducted in Kempsey and Frederickton, prior to construction of the bypass as part of the Environmental Assessment process (NSW RTA, 2007), identified likely negative and positive impacts on highway related businesses and on employment in the town based on a detailed survey of 79 businesses. The key findings are as follows:

- As a direct result of the proposed upgrade the town of Kempsey is likely to see an overall reduction of between $3.4 - $4.7 million in expenditure by through motorists stopping in town.
- The town of Kempsey is not likely to see any loss of trade from overnight stayers – at best the losses will be very minimal and of short-term duration.
• The total reduction in gross annual turnover is estimated to be in the order of $17-$20 million – the largest component being the loss of trade by the service stations and eateries.

• A total of up to 176 jobs could be lost as a direct result of the opening of the upgrade, with the highest losses likely to occur in the eateries sector.

• The loss of jobs, particularly casual and part-time positions, could result in a marked reduction in job opportunities for females in the area.

• It is not expected that the upgrade will be associated with any indirect impacts on local businesses, or that these will be negligible.

• A Highway Service Centre proposal for the southern interchange is likely to employ 65-70 full-time equivalent positions, approximately equal to 130 jobs, thereby compensating for a large number of jobs which are likely to be lost as a direct result of the upgrade.

• The loss of highway related trade in the main commercial shopping areas in Kempsey is likely to be partly offset by the benefits to trade of an improved shopping environment.

5 In 2011 Kempsey Shire Council allocated funding to the development of a bypass strategy (Kempsey Shire Council, 2011). The recommendations of the Background Issues Paper that was developed were expanded upon to, in effect, became the Kempsey Shire Council Bypass Strategy. The strategy indicates the priorities and timing of actions that Kempsey Shire Council intends to take to mitigate against the expected negative impacts of the bypass, including steps to take advantage of the opportunities created by the bypass. One priority identified in the strategy was the monitoring and assessment of economic impacts on highway dependent businesses.

6 This report, commissioned by Kempsey Shire Council, aims to address the Bypass Strategy requirement for monitoring and assessment of economic impacts of the opening of the Kempsey bypass. The objective is to assess the actual direct and indirect economic impacts of the bypass on highway related businesses within the Kempsey CBD and at Frederickton, north of Kempsey, in the eight months following the opening of the bypass.
The approach adopted in this report has been based on the author’s involvement with extensive studies of the economic impacts of bypass roads on country towns, especially on the Hume Highway - studies that use and promote a ‘Before and After’ approach to the assessment of economic impact on a community (Parolin and Garner, 1996a, 1996b, 2011a, 2011b). A similar approach has been adopted by other researchers in the study of the one year and five year impacts of the Karuah bypass (Rowe and Phibbs, 2005; Phibbs, Heidrich and Cooney, 2009). The present study of Kempsey, therefore, represents only the second example of a ‘Before and After’ bypass study of communities that have been bypassed on the Pacific Highway between Sydney and Brisbane.

The report presents the results of the assessment of actual direct and indirect economic impacts of the bypass on highway related businesses within the Kempsey CBD and at Frederickton. The document includes the following information:

- Background on Kempsey in the pre-bypass environment;
- Key findings of the study in terms of economic impacts on businesses; and
- Conclusions and recommendations.

### 2. KEMPSEY AS A SERVICE CENTRE – THE PRE-BYPASS ENVIRONMENT

The Environmental Assessment completed for the Kempsey to Eungai Pacific Highway Upgrade (NSW Roads and Traffic Authority, 2007) and the recently completed workforce projections study (Kempsey Shire Council, 2013) both indicate that, despite past economic fluctuations in the towns economic base associated with deregulation and restructuring in the public and private sectors, the town is a growing employment centre for the region’s forestry, agriculture, manufacturing, education, government, and health and community industries (service industries). Skills in trades and professional services also support the growing area. Between the 2006 and 2011 census years, employment in Kempsey urban locality grew from 2293 to 2869 jobs – an increase of 25% (ABS, 2006, 2011).
Of the categories used in the 2011 Census of Population and Housing, Retail Trade was the second largest in terms of employment after Health and Community Services (452 compared with 544 out of a total of 2869 employed) (Appendix 1). When Retail Trade is combined with the category of Accommodation, Cafés and Restaurants - two categories that are most directly linked to highway-generated trade – they account for 24.4% of the total number of jobs in the town – 698 out of a total of 2869.

Figure 1 highlights that these sectors increased employment between the 2006 and 2011 census period at a time when there were significant challenges to the retail trading environment and the impacts of the global financial crisis (GFC) were filtering down the urban hierarchy to rural and regional areas. Other increases were experienced in the transport and storage category, personal services, health and community services, education, professional, government and administrative services, and in the construction category – jobs that are not likely to be significantly affected by the bypass (Details of employment by industry type for Kempsey are given in Appendix A).
2.1 THE IMPORTANCE OF HIGHWAY GENERATED TRADE

Situated approximately half way in terms of trip time (4.45 and 5.40 hours respectively) and distance on the Sydney-Brisbane corridor, Kempsey has developed a strong role as a mid-journey service centre serving the demands of motorists travelling on the Pacific Highway. Given its strategic location, Kempsey has also become an important truck stop on the Pacific Highway in large part because it is one of the locations of the 5-hour heavy vehicle stopping areas between Sydney and Brisbane (UNSW Consulting, 2005).

As a result, a proportion of the jobs in the town have been created by the highway (directly or indirectly), and many businesses (especially the service stations, eateries and accommodation establishments) exist because of, or depend in significant measure on, expenditures made by motorists stopping or staying overnight in the town.
The values in Figure 1 also suggest that the importance of highway-generated trade at Kempsey may have increased in recent years following the upgrading of the Pacific Highway. Increased employment in the Retail Trade and Accommodation, Cafes and Restaurants categories suggests an increased level of traffic and business activity on the main street, either from local customers or through motorists stopping for highway related needs, or both, and from through motorists staying overnight or longer in accommodation establishments. Another contributing factor may have been the presence of a larger number of construction workers present in town as a result of the construction of the bypass (work on the bypass commenced in 2010).

Highway-generated trade therefore could have formed a more significant component of the economic base of the town as compared to that documented in the 2005 study, and it would have made an important contribution to the town’s total economic output. The traffic study completed by the NSW Roads and Traffic Authority (2007) in 2004 estimated that 1900 vehicles per day were classified as through traffic and that about 20% of the total average daily through traffic on the Pacific Highway at Kempsey stopped for services in the town. By 2011, through traffic was predicted to reach about 3142 vehicles per day and through stopping traffic to increase as well.

The total value of trade generated by travellers stopping and staying overnight in the town is therefore estimated to have been in the order of $16.83 million in 2005 – eight years before the actual opening of the bypass. This corresponded to 4.3% of the indicative value of the town’s total economic output in 2005. If one adjusts the value of $16.83 million for inflation, the equivalent value in 2012 dollars is $20.5 million – the true value is likely to be significantly higher than this value. This represents about 3% of the indicative value of the town’s total economic output in 2012 - a crude measure of the total economic output of the town as opposed to just its highway-related and retail output, which was estimated to be of the order of $671 million in 2011-2012. The indicative value of town product is calculated by multiplying
the 2011-2012 per capita GDP for Australia ($64,683) by the town’s population (10,374 in 2011).

During the past decade, the town has also become increasingly a part of Port Macquarie’s service hinterland and is now a significant shopping destination for residents of Kempsey as well as for the provision of higher-order services. Kempsey Shire Council and Kempsey and District Chamber of Commerce and Industry have both conducted fairly extensive shopper surveys in an attempt to better gauge the level of shopper leakage from the Kempsey CBD. The 2011 shopper survey indicated that 42.88% of local shopping dollars is being spent in Kempsey; 34.26% is being spent in Port Macquarie; 10.89% is being spent in Coffs Harbour, and; 5.98% is being spent in South West Rocks (Kempsey and District Chamber of Commerce and Industry, 2011). While there are no estimates of total annual retail expenditure by Kempsey residents made in Port Macquarie and elsewhere from the 2011 shopper survey, the percentage figures and the fieldwork undertaken for his study suggests that these are likely to be significant amounts, and have had the effect of increasing the dependence of many Kempsey businesses on highway-generated trade.

Many businesses interviewed for the present study were of the view that retail leakage was a significant negative impact on their businesses – as much as and, in some cases, more than that of the bypass. However, the 2011 shopper survey results indicated that the main reasons for Kempsey losing 46% of its shopper dollars to Port Macquarie and Coffs Harbour combined related to insufficient range of stores and products, inconvenient trading hours, an unattractive CBD, higher priced goods and poor quality customer service, etc. (Kempsey and District Chamber of Commerce and Industry, 2011). These results have implications for highway related businesses in Kempsey in a post-bypass environment as they indicate a range of business adjustments that could be undertaken to reduce the amount of retail leakage so that more locals shop in Kempsey. In turn, this is likely to reduce dependence on highway generated trade. For Kempsey Shire Council the results suggest the
need to enhance the quality of the retail environment through beautification of the main street and other retail planning measures – actions that are currently a part of Council’s Bypass Strategy.

2.2 THE IMPACT OF CONSTRUCTION WORKERS

Many businesses in Kempsey have also benefited during the past 2-4 years as a result of the construction of the bypass. In 2011, the number of construction workers enumerated in the town was higher than that recorded at the 2006 Census and accounted for 7% of the total workforce - a figure that was substantially higher than the average for smaller country towns in New South Wales at the time. Many of those included in this category would have been temporarily resident in the town while working on the construction of the Kempsey bypass - a fact documented by local real estate agents, moteliers, and hoteliers.

Data are not available to enable the total amount of income brought into the town by the construction workforce to be calculated nor to estimate the dollar value of additional expenditure generated by construction workers locally. However, it is reasonable to assume that this amounted to several million dollars annually during the construction period. As a result, expenditures by construction workers had undoubtedly inflated the gross annual turnover of a number of retail businesses, the hotels and motels for some 2-3 years before construction of the bypass roads was finally completed.

From information collected during fieldwork for this study, the hotels and motels in particular reported higher than normal occupancy rates as a result of construction workers and several garages and auto repairers indicated that turnover had increased, and substantially so in the case of some establishments, as a result of the extra work servicing vehicles and equipment associated with construction activities.
The loss of this additional income and expenditure following the departure of workers upon completion of the construction phase has compounded the impact caused by the diversion of traffic following the opening of the bypass roads at Kempsey. This can be expected to be the case, to some extent, for all communities impacted by the construction of bypass roads (Parolin and Garner, 1996b; Parolin, 2011a). In the case of Kempsey, however, following the completion of the Kempsey bypass some of the construction workers are subsequently employed in the construction of the section from Frederickton (north of Kempsey) to Eungai, and several of these continue to live in Kempsey—and presumably will do so for the duration of that project. The commencement of upgrades to the Pacific Highway between Port Macquarie and Kempsey in 2014 will see more construction workers and their families residing and spending in Kempsey.

At the time the surveys for this study were undertaken, some effect of construction workers was therefore still being felt in the town although the local economy already had experienced a substantial reduction in construction-related expenditure as a result of the departure of the main body of workers following the opening of the Kempsey bypass itself in March 2013.

**2.3 BUSINESS CLOSURES AND OPENINGS**

The reconnaissance and fieldwork undertaken for this study in 2013 indicates substantial changes to the original 79 businesses in the pre-bypass environment (2005-2013).

A total of 23 (29.1%) out of the 79 original businesses have closed outright (Table 1). During interviews with the proprietors of new business establishments at the old address, the main reasons cited for closure of the 23 businesses were retirement, mismanagement, unwillingness on the part of family members to take over the business, the negative impacts of retail leakage to Port Macquarie, and the deteriorating economic environment. None of the 23 businesses had closed in anticipation of the opening of the bypass. Most of these businesses had closed by 2012, despite the positive multiplier
effects of bypass related construction activity and construction workers. From Table 1 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). One motel in South Kempsey had closed during this time period.

Most closures have occurred in the town centre (Smith and Belgrave Street) except for several businesses in South Kempsey (a motel, car dealer and mini-mart). A total of eight eateries have closed and ten ‘other retail’ businesses. A most notable closure was that of the Red Rooster fast food outlet on Smith Street which closed in 2005 after the original study was completed. Among the ‘other retail’ category are included a furniture/bedding store (Clarks), a national brand toy store (ToyWorld), a sporting goods store, clothing store and craft stores. Twenty three (29.1%) out of the 79 original businesses are trading with new owners (commenced trading after 2005) and 33 (41.7%) are continuing businesses that are likely to be included in the current survey of businesses. 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.
### Table 1

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

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Surveyed in 2005</th>
<th>Closed</th>
<th>New Ownership</th>
<th>Continuing Business (since 2005)</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>Motels</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Caravan Parks</td>
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<td></td>
<td>Motels</td>
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<td>7</td>
<td>-</td>
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<tr>
<td>B</td>
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<td>Food</td>
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<tr>
<td></td>
<td>Supermarket/Grocery</td>
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<td>-</td>
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<td></td>
<td>Butcher</td>
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<td>2</td>
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<td></td>
<td>Liquor Retailing</td>
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<tr>
<td></td>
<td>Bread/Cakes</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>2</td>
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<tr>
<td>D</td>
<td>Automotive</td>
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<td>Motorcycle</td>
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<td>Tyre Retailing</td>
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<tr>
<td></td>
<td>Repairs/Service</td>
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<td>-</td>
<td>2</td>
<td>1</td>
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<tr>
<td>E</td>
<td>Service Stations</td>
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<td>Eateries</td>
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<tr>
<td></td>
<td>Take-away Food</td>
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<td>Café/Restaurant</td>
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<tr>
<td>G</td>
<td>Other Retail</td>
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<tr>
<td></td>
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<td>Fabrics/Software</td>
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<td>Furniture/Bedding</td>
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<td>Gifts/Homewares</td>
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<td></td>
<td>Appliances</td>
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<td>Sports/Camping</td>
<td>3</td>
<td>1</td>
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<td>2</td>
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<td>Newspapers/Books</td>
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<td>Toys &amp; Games</td>
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<td>Pharmacies</td>
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<td>Garden Supplies</td>
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<td>Photographic Equip</td>
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<tr>
<td></td>
<td>Florists</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Jewellers</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Other retail n/c</td>
<td>7</td>
<td>2</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Other Business</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>23</strong></td>
<td><strong>23</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>
From the survey data collected as part of the 2005 study it was possible to determine that the closure of 23 businesses was associated with the loss of 141 jobs. Half of these positions (70 out of 141) were associated with the closure of Red Rooster. Only 19% of these job losses were associated with casual positions – the majority were either part-time or full-time positions. However, a total of 112 out of 141 (79.4%) jobs lost at the 23 businesses were occupied by females. It can only be assumed that many of the 141 persons who lost their jobs at these businesses found employment elsewhere in Kempsey – possibly at one of the 48 new businesses or in public sector positions that were established in the town over the same time period.

Of the 48 completely new businesses that have opened up since 2005, it is interesting to note that 12 are in the eateries sector. Included among these are noted national brands such as Subway, Dominoes and Gloria Jeans, and a more regional brand such as Favourite Noodle, etc. Other new businesses associated with national brands are Supercheap Autos in the automotive sector; EB Games, Bunnings, Millers Fashions, Target Country, Cignall Tobacco, Crazy Clarkes in the ‘other retail’ sector, United Petroleum in the service station sector which opened in 2013 (not surveyed) and; Coles and ALDI supermarkets in the food sector. The ALDI supermarket opened in 2013 after the opening of the bypass. The increased market penetration of national firms and national brands into regional and sub-regional centres was also noted in the study of bypassed towns on the Hume Highway (Parolin, 2011b).

This section has highlighted the fact that Kempsey has been undergoing substantial change as a mid-journey service centre and as a sub-regional service centre for a considerable period of time before the opening of the bypass. However, the role of Kempsey as a highway service centre for motorists, and the number of jobs dependent on this role, have generated much concern in the community as to likely adverse economic impacts and on how to mitigate these impacts.
3. BUSINESS SURVEY METHODOLOGY

30 The primary emphasis in this study is the direct and indirect impacts of the opening of the Kempsey bypass on local businesses that result from the reduction in expenditures by motorists stopping and staying overnight in the town. The methodology used in this study differs somewhat from that used in the Hume Highway studies, especially at Yass, where the impact of the bypass at Yass was based on the monitoring of actual impacts based on a systematic comparison of data collected just before the opening of the bypass road with those collected at various times afterwards (Parolin and Garner, 1996a).

31 In this study the baseline ‘Before’ data was collected eight years ago as part of the UNSW Consulting (2005) study and summarised in the Environmental Assessment (2007). Given the extent of changes in the highway related retail sector of Kempsey since that time (discussed in Chapter 2), the baseline data provides forecasts of the likely drop in gross annual turnover and job losses by highway related businesses in the town as a result of the diversion of through traffic that can be compared with actual figures determined from the present study. Data relevant to events just “Before” the opening of the bypass was collected from a detailed questionnaire survey of businesses.

32 This report summarises the results of findings from a study undertaken between October 20 and November 22, 2013, approximately 8 months after the opening of the bypass. Extensive reconnaissance work was undertaken prior to the commencement of the survey work to (i) determine which of the businesses that were part of the original survey had closed, were under new ownership, were continuing, were new businesses, and (ii) determine those businesses to be included in the present study.

33 The businesses included in the surveys were not restricted to those usually identified as being ‘highway-oriented’ in nature – those businesses that are directly servicing the needs of travellers for fuel, meals and accommodation.
Many ‘other retail’ business establishments were also included in order to better understand the diverse nature and extent of the impact of the diversion of traffic on the local economy. Another reason for including a wider range of businesses in the surveys was to shed light on those businesses that may be affected indirectly by the bypass.

The information collected in the business surveys allows assessment of changes in business turnover and employment levels that are directly attributable to the opening of the bypass. Information is also sought on reductions in staff working hours, wages/salaries, dependence on highway generated trade, extent of reliance on local suppliers, business adjustments and perceptions of positive/negative impacts of the bypass on the local economy and liveability of the town. After consultation with Kempsey Shire Council several questions were added to the survey seeking business perceptions of priorities and opportunities for Council in the post bypass environment.

A total of 120 business establishments were initially selected for inclusion in the survey. All businesses included in the survey were personally visited in order to meet the manager or proprietor, to briefly explain the purpose of the study, to leave a cover letter outlining in more detail the scope of the study and ethical considerations, and inviting them to participate in the questionnaire based survey. A copy of this letter is provided in Appendix B. This occurred at the same time as a press release appeared in *The Macleay Valley Argus* announcing the study and its objectives. 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. A copy of the business survey is provided in Appendix C.

Of the 120 businesses selected for inclusion in the survey, two declined to participate and three indicated that they were not highway related and that they relied solely on local customers – these businesses were mainly in
the ‘other retail’ category. A total of 115 businesses therefore participated in and completed the interview based questionnaire survey. The businesses are classified by their ANZSIC code in Table 2. For the purpose of analysis, they have been grouped into seven broad functional categories according to their general nature: accommodation, clubs/hotels, food stores, automotive services, service stations, eateries (including take-away places, cafes, and restaurants), and ‘other retail’ establishments. These broad categories are used in summarising the findings in this report.
### Table 2

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

<table>
<thead>
<tr>
<th>Category</th>
<th>ANZSIC Code</th>
<th>Description</th>
<th>Number</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Accommodation</td>
<td>9990</td>
<td>Caravan Parks</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A</td>
<td>9999</td>
<td>Motels</td>
<td>7</td>
<td>9</td>
<td>7.82%</td>
</tr>
<tr>
<td>B Clubs/Hotels</td>
<td>5740</td>
<td>Clubs</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>B</td>
<td>5720</td>
<td>Pubs</td>
<td>3</td>
<td>4</td>
<td>3.47%</td>
</tr>
<tr>
<td>C Food</td>
<td>5110</td>
<td>Supermarket/Grocery</td>
<td>5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>5121</td>
<td>Butcher</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>5122</td>
<td>Fruit-Vegetables</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>5124</td>
<td>Bread/Cakes</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>5129</td>
<td>Specialised Food</td>
<td>1</td>
<td>13</td>
<td>11.30%</td>
</tr>
<tr>
<td>D Automotive Services</td>
<td>5311</td>
<td>Car Dealers</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>D</td>
<td>5322</td>
<td>Auto Electrical</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>D</td>
<td>5323</td>
<td>Car Maintenance</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>D</td>
<td>5324</td>
<td>Tyre Retailing</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>D</td>
<td>5329</td>
<td>Repairs/Spare Part Services</td>
<td>9</td>
<td>18</td>
<td>15.65%</td>
</tr>
<tr>
<td>E Service Stations</td>
<td>5321</td>
<td>Service Stations</td>
<td>5</td>
<td>5</td>
<td>4.34%</td>
</tr>
<tr>
<td>F Eateries</td>
<td>5125</td>
<td>Take-away Food</td>
<td>8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>F</td>
<td>5730</td>
<td>Cafe/Restaurant</td>
<td>14</td>
<td>22</td>
<td>19.13%</td>
</tr>
<tr>
<td>G Other Retail</td>
<td>5123</td>
<td>Liquor Retailing</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5210</td>
<td>Department Stores</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5221</td>
<td>Clothing</td>
<td>7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5222</td>
<td>Foot-ware</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5231</td>
<td>Furniture</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5233</td>
<td>Hardware/Gifts/Homewares</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5234</td>
<td>Appliances</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5241</td>
<td>Sports/Recreational/Camping</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5242</td>
<td>Toys &amp; Games</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5243</td>
<td>Newspapers/Books/Stationary</td>
<td>5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5251</td>
<td>Pharmacies</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5252</td>
<td>Antiques</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5255</td>
<td>Jewellers</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5259</td>
<td>Other Retail n/c</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>5313</td>
<td>Caravans/Trailers</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>9521</td>
<td>Laundries and Drycleaners</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>9980</td>
<td>Visitor Information Centre</td>
<td>1</td>
<td>44</td>
<td>38.26%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td>115</td>
<td>115</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Several business types within the study area were excluded from the business surveys including banks and building societies, building, painting and home improvement outlets, personal services (eg. massage therapy), and
professional services (eg. accountants/ financial planners, solicitors, real estate agents, recreation and travel outlets, medical centres, doctor’s offices, chiropractors and optometrists). On a priori grounds these are highly unlikely to service the needs of travellers and to be affected by a reduction in highway generated trade following the opening of the bypass.

Most of the businesses included in the survey (58 establishments) are concentrated in the town centre along Belgrave Street and Smith Street, and in streets that are one or two blocks behind these main streets. The town centre is bordered by Stuart Street, Sydney Street, Verge Street and York Lane. This is especially the case for the hotels and clubs, eateries, service stations, accommodation, most of the businesses in the ‘other retail’ and food categories, and some of the automotive businesses. Smith Street also includes a number of accommodation, service station, eatery, and automotive businesses from the McDonalds Restaurant north to the Coach terminal. A number of businesses are located in South Kempsey, from the southern interchange to Lord Street, in which are found accommodation establishments, a 24 hour service station and some automotive businesses. Several businesses are also located in East Kempsey along Lord Street to the Macleay River bridge and several are also located in Rudder Street – these are in the accommodation, eatery and ‘other retail’ categories. The remainder of businesses are located north of Kempsey in Frederickton and include businesses in the eatery, club/hotel, food and ‘other retail’ categories.

4. THE DIRECT IMPACTS

The reduction in the value of highway-generated trade will impact retail, service, and accommodation establishments in the town directly and indirectly. The primary emphasis in the study was to estimate the direct impacts of the diversion of through traffic - the impacts on local businesses that result from the reduction in expenditures by motorists stopping and staying overnight in the town. This component of the total impact is typically the most important in environmental impact assessment.
The immediate effect of the decrease in expenditure by motorists is a reduction in the gross annual turnover of many local businesses. When this is significant enough to affect profitability, adjustments are typically made to the way the affected businesses operate. The most important of these from an economic and social viewpoint is to reduce labour costs either by decreasing the hours worked by staff or by making staff redundant. Subsequently changes may be made to the way business is conducted, for example by shortening opening hours or varying product lines.

The strategy adopted by entrepreneurs to maintain a profitable business will vary between establishments depending on their type and the size of their profit margin. In some cases, the full range of adjustments may be made in logical sequence, while in others they may be made concurrently. In the case of businesses operating close to the margin of profitability, the reduction in gross annual turnover may lead to a decision to sell the business as a going concern or to cease trading altogether.

**4.1 The effect on gross annual turnover**

Sixty eight (68) of the businesses included in the survey (59.1%) claimed to have been directly and negatively affected by the opening of the bypass – through a downturn in sales and turnover (Table 3). As might be expected, the majority of these were businesses primarily servicing the needs of motorists. Fourty businesses (34.7%) reported that their gross annual turnover had not changed since the opening of the bypass, and 6 (5.2%) reported that their gross annual turnover had increased.
Table 3
Change in gross annual turnover by business category

<table>
<thead>
<tr>
<th>Decrease in turnover</th>
<th>Accommodation</th>
<th>Clubs/Hotels</th>
<th>Food</th>
<th>Auto Services</th>
<th>Service Stations</th>
<th>Eateries</th>
<th>Other Retail</th>
<th>Total No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5%</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>10</td>
<td>4</td>
<td>68</td>
<td>14.7</td>
</tr>
<tr>
<td>5-9%</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>9</td>
<td>13.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-14%</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td>11.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-19%</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>11.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-24%</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>14.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-29%</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>4.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-34%</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td>11.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-39%</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>4.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-44%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-49%</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 50%</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>8.8</td>
<td></td>
</tr>
<tr>
<td>Total Affected</td>
<td>8</td>
<td>4</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>16</td>
<td>20</td>
<td>68</td>
<td>100.0</td>
</tr>
<tr>
<td>No Change</td>
<td>2</td>
<td>11</td>
<td>1</td>
<td>3</td>
<td>23</td>
<td>40</td>
<td>34.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase</td>
<td>1</td>
<td>1</td>
<td></td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>5.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total businesses</td>
<td>9</td>
<td>4</td>
<td>13</td>
<td>18</td>
<td>5</td>
<td>22</td>
<td>44</td>
<td>115</td>
<td></td>
</tr>
</tbody>
</table>

Note: The figures in italics in the last column indicate the proportion of the total number of businesses in each category.

One way of making sense of the relative magnitude of the reduction in turnover is to categorise it into various degrees of impact. While these may be considered subjective, they do provide a sense of the magnitude of impact ranging from minimal to very serious:

- **Minimal impact** — less than 10 per cent decrease in turnover.
- **Moderate impact** — decrease in turnover of between 10-19 per cent.
- **Serious impact** — decrease in turnover of between 20-39 per cent.
- **Very serious impact** — decrease in turnover of more than 40 percent.

Table 3 indicates that there is considerable variability in the magnitude of the decrease in gross annual turnover at establishments between the major business categories. Just on half (51.3%) of the affected businesses experienced minimal to moderate impacts with a reduction of up to
20 per cent, but for at least half of these the decrease was less than 9%.

Twenty three businesses (33.7%) experienced what could be considered a serious impact with a decrease in gross annual turnover of between 20-39%. Only 10 businesses out of the total of 68 (14.7%) indicated that they have been very seriously affected, and for 6 of these the reduction was over 50%. The 6 businesses which experienced more than a 50% reduction in turnover are composed of a service station, three cafés, and two ‘other retail’ shops – all which indicated they were very dependent on through stopping motorists.

Generally speaking, most of the service stations (4 out of 5) experienced either serious or very serious impact with a decrease in gross annual turnover of more than 30% and most other businesses - particularly those in the automotive and other retailing categories, by less than 24%. It is interesting to note that the impact on auto-services establishments was not as pronounced as might have been expected. Most businesses in this category apparently depend predominantly on local customers rather than on passing trade. Over half of the businesses in the food category experienced a decrease in gross annual turnover of less than 20% and for 2 businesses (bread/cake shops) the reduction was considered serious and very serious. In the eateries category, over half of businesses (68.7%) were either seriously or very seriously affected and for 3 of these the reduction was over 50%.

It should be noted that the accommodation sector also experienced variability in the magnitude of decrease in gross annual turnover. Five out of the 8 accommodation establishments experienced a decrease in turnover of more than 20% while 3 out of the 8 experienced a minimal impact (less than 10%). One establishment indicated that their gross annual turnover had increased since the opening of the bypass. While the decrease in turnover for the accommodation establishments might be considered higher than anticipated – at least from the Environment Assessment and UNSW Consulting study – it should be noted that 2 such establishments were sold in
2013 and 1 in 2012 – a sign of the perceived financial viability of the accommodation sector in Kempsey in a post bypass environment.

Of the 6 businesses (5.2%) which increased their turnover because of the bypass, 3 were takeaway establishments in the eateries sector, 1 in the food sector (a butcher), 1 in the accommodation sector (a caravan park) and 1 in the other retail sector (a hardware/gifts/homewares business). In all cases, except for the caravan park, the business owner/manager made it clear that the main reason for the increase in turnover was improved access to their premises as a result of the drop in through traffic (especially heavy vehicle traffic) that enabled more locals rather than non-locals to frequent their establishment. In the case of the caravan park, the significant reduction in traffic noise as a result of the opening of the bypass attracted more motorists on holidays that could now ‘get a good night’s sleep’.

4.1.1 The reduction in gross annual turnover

Following the opening of the bypass at Kempsey, the total number of vehicles stopping in the town is expected to have significantly decreased, although the actual percentage decline in stopping traffic is not known as there was no Origin-Destination study undertaken in the post bypass period. However, the Environmental Assessment (NSW RTA, 2007) and the traffic study undertaken for Kempsey Shire Council by Roadnet (2011) indicated that most of the through traffic, including 90% of heavy vehicle traffic, would use the bypass.

The estimate of the decrease in gross annual turnover is based on figures provided by individual businesses in Table 3 and its application to gross annual turnover in 2012. All businesses were able to provide this information as nearly all had a good sense of the magnitude of their respective downturn in gross annual turnover. Most businesses were able to recall their gross annual turnover figures. For the few businesses where this information was not provided in the form requested in the questionnaire survey, they were able
to provide sufficient information to enable calculation of the gross annual turnover figures for 2012 or even 2013.

51 The downturn in sales resulting from the decrease in expenditures by motorists stopping and staying in the town during the first 8 months after the opening of the bypass, for the 114 businesses that provided information, amounted to a reduction of between $14.6–17.3 million in gross annual turnover. In relative terms, this represented a reduction of about 12.4% of the gross annual turnover ($124.7 million) for 2012 reported by the businesses in the survey. The value of gross annual turnover for all businesses following the diversion of through traffic from the town in 2013 was in the order of $110.5 million.

52 In the Environmental Assessment (2007) and the UNSW Consulting (2005) study for the Kempsey bypass, the total reduction in turnover after all through traffic had been diverted was predicted to be of the order of $17.0 – 20.0 million – measured in 2005 dollars. Allowing for inflation, the reduction in gross annual turnover predicted in the Environmental Assessment would be equivalent to $20.7-24.3 million in 2012 dollars. The actual reduction of between $14.6 – 17.3 million in gross annual turnover amounts to $6-7 million dollars less than what was expected from the 2005 figures, after allowing for inflation. This corresponds reasonably well with that recorded in that study and the figures obtained from the survey of businesses undertaken during 2013 in this study.

### 4.1.2 Effects by business category

53 The relative magnitude of the reduction in gross annual turnover by major business category is shown in Table 4.

54 The major share of the decrease in gross annual turnover was accounted for by the eateries and service stations – approximately $5.4 million and $5.1 million respectively. Virtually all of the service stations and well over half of the cafes, restaurants, and take-aways reported a downturn in business —
and for some of these the impact was substantial. In addition, all of the clubs/hotels, half of the auto businesses and half of the other retail establishments reported a decrease in turnover. In relative terms, the least affected sectors were the accommodation and clubs/hotels sectors.

Table 4
Total decrease in gross annual turnover by business category

<table>
<thead>
<tr>
<th>Category</th>
<th>Turnover in 2012 ($millions)</th>
<th>Estimated Decrease ($000's)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Accommodation</td>
<td>3.27</td>
<td>375</td>
</tr>
<tr>
<td>Clubs/Hotels</td>
<td>5.09</td>
<td>191</td>
</tr>
<tr>
<td>Food</td>
<td>11.22</td>
<td>1,583</td>
</tr>
<tr>
<td>Auto Services</td>
<td>44.69</td>
<td>924</td>
</tr>
<tr>
<td>Service Stations</td>
<td>15.02</td>
<td>4,926</td>
</tr>
<tr>
<td>Eateries</td>
<td>17.73</td>
<td>5,063</td>
</tr>
<tr>
<td>Other Retail</td>
<td>27.73</td>
<td>1,564</td>
</tr>
<tr>
<td>Total</td>
<td>$124.78m</td>
<td>$14.62m</td>
</tr>
</tbody>
</table>

Note: The low and high estimates of the decrease in gross annual turnover result from the fact that businesses were asked to indicate gross annual turnover within specified ranges.

In some cases in the accommodation sector, the decrease in turnover most likely resulted from a reduction in dining-room clientele – 3 out of the 7 motels have restaurants on their premises – and this may have been due to the loss of patronage from construction workers as much as it was from the reduction in motorists staying overnight in the town. Some accommodation proprietors also indicated that their turnover was affected by a very slow Easter holiday period (the bypass was opened just as the Easter holiday and school holiday period commenced) and from the slowdown in corporate and public sector stays as a result of the federal election. In addition, for many businesses in the other retail sector the impact of the bypass was also aggravated by a reduction in holiday makers in the area during the Easter period and by the reduction in disposable income associated with jobs losses and reduced work hours. Apart from the effects of job losses and reduced work hours, it is difficult to quantify these additional effects separately from those resulting directly from the diversion of through traffic from the town.
4.2 THE EFFECT ON EMPLOYMENT

Following the diversion of through traffic from the town, a total of 94 jobs had been lost from 34 individual businesses (Table 5). This represented 7.6% of the 1231 workers employed by the 110 businesses in 2012 (new businesses in 2013 are excluded from this calculation) and 3.27% of total jobs (2869) recorded for Kempsey urban centre at the 2011 census. All of the 94 workers had been made redundant directly as a result of the reduced volume of traffic stopping or staying in the town.

Workers in casual employment were affected most of all: 74 casual employees were made redundant (Table 5). Together, these categories accounted for 90.9 per cent of the total jobs lost. The 82 workers in casual and part-time employment that were made redundant represent under ten per cent (8.6%) of the total employed in these two categories at businesses before the opening of the bypass. Only 12 full-time workers (12.7% per cent of the total jobs lost) were made redundant as a result of the diversion of through traffic from the town. This constitutes only a very small proportion (0.9%) of the total number employed full-time at businesses before the opening of the bypass.

Table 5
The effect of the bypass on employment

<table>
<thead>
<tr>
<th>Employees</th>
<th>Total</th>
<th>Percent of Total</th>
<th>Employees in 2012 (pre-bypass)</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time</td>
<td>12</td>
<td>12.7</td>
<td>284</td>
<td>23.2</td>
</tr>
<tr>
<td>Part-time</td>
<td>8</td>
<td>8.5</td>
<td>280</td>
<td>22.7</td>
</tr>
<tr>
<td>Casual</td>
<td>74</td>
<td>78.2</td>
<td>667</td>
<td>54.1</td>
</tr>
<tr>
<td>Total</td>
<td>94</td>
<td>100.0</td>
<td>1231</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note: ¹ As recorded in the 2013 survey of businesses.

Females have borne the brunt of the redundancies - 62 women lost their jobs compared to only 32 men - an overall reduction of 8.0% of the total females (772) employed at the 110 businesses in 2012 before the opening of the bypass (Table 6). Females employed part-time and as casuals who lost their
jobs correspond to a reduction of 3.6% of the female part-time employment and 11.2% of the females in casual employment respectively for 2012 as reported by businesses in the 2013 survey.

The reduction in employment by major business category is shown in Table 6. As might be expected, the majority of the workers made redundant were employed in businesses closely tied to servicing the needs of stoppers and stayers in the town - the eateries, service stations, food businesses and, to a lesser extent, the accommodation businesses. Of the 94 jobs lost, 68 (72.3%) were at businesses in these three categories.

Table 6
Job losses by employment status and business category

<table>
<thead>
<tr>
<th>Category</th>
<th>Accommodation</th>
<th>Clubs/Hotels</th>
<th>Food</th>
<th>Auto Services</th>
<th>Service Stations</th>
<th>Eateries</th>
<th>Other Retail</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of estabs.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>10</td>
<td>10</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Full-time male</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>6.3%</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Full-time female</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>6.3%</td>
<td></td>
<td>6.3%</td>
</tr>
<tr>
<td>Part-time male</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2.1%</td>
<td></td>
<td>2.1%</td>
</tr>
<tr>
<td>Part-time female</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6.3%</td>
<td></td>
<td>6.3%</td>
</tr>
<tr>
<td>Casual male</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Casual female</td>
<td>5</td>
<td>4</td>
<td>12</td>
<td>15</td>
<td>14</td>
<td>14</td>
<td>50</td>
<td>53.1%</td>
</tr>
<tr>
<td>Total loss</td>
<td>11</td>
<td>15</td>
<td>4</td>
<td>20</td>
<td>22</td>
<td>22</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>Total jobs 2012</td>
<td>45</td>
<td>75</td>
<td>251</td>
<td>93</td>
<td>66</td>
<td>332</td>
<td>369</td>
<td>1231</td>
</tr>
<tr>
<td>% Loss</td>
<td>24.4%</td>
<td>5.9%</td>
<td>4.3%</td>
<td>30.3%</td>
<td>6.6%</td>
<td>5.9%</td>
<td>7.6%</td>
<td></td>
</tr>
</tbody>
</table>

In terms of relative size, job losses were greatest at the eateries (food outlets) and other retail businesses (42 out of 94 jobs or 44.6%). All of the jobs lost at the service stations (20 out of 66 jobs) occurred at only 2 service stations: This corresponds to 44.6% of the total workers employed at the service stations in 2012 before the opening of the bypass. Although more businesses in the eateries category displaced workers, a smaller number of jobs were lost.
at these than at service stations: a total of 21 jobs were lost from 6 of the 14 eateries (26.3 per cent of those originally employed). At all three types of businesses, females bore the brunt of the redundancies – 60.0% of the total jobs lost at the service stations, 90.9% of those lost at establishments in the eateries category and 68.1% of jobs lost in the other retail category.

While the loss of jobs in the accommodation sector is relatively low – 11 out of 94 jobs lost (11.7%) – this figure corresponds to 24.4% of the total workers employed at the accommodation businesses in 2012 before the opening of the bypass. Many business proprietors in this sector mentioned that this year (2013) had been an uncharacteristically ‘bad’ year. The opening of the bypass was only one of several economic shocks that affected their respective businesses – several accommodation establishments located in Smith Street were also affected by the floods in February, most reported a poor trading period in the Easter/school holidays and also a very noticeable slowdown in fixed corporate and public sector bookings both before and after the federal election in September.

In the other retail sector, which is traditionally much less dependent on highway trade, the job losses (mainly casuals) were just as high as in the eateries sector and higher than at the service stations. This is an unexpected result, but can be partly explained by the presence of 10 businesses that reported a high to very high dependence on through stopping motorists, especially the tourists. In particular, some of the bookstores, gift, homewares, variety, lifestyle furniture and clothing stores were very dependent on passing trade, in addition to local customers, and their response to the bypass was to shed jobs. However, while the loss of jobs at other retail stores was partly attributable to the same effects mentioned above for the accommodation sector, it was also attributable to the impact of leakage of retail spending to Port Macquarie.
63 The loss of jobs at the food stores was partly attributable to the above factors – flooding, poor tourist season and the election – but this also reflects a reduction in the dollar value of food purchases made by other businesses in town that were directly affected by the diversion of through traffic from the town. In addition, most of the supermarkets mentioned that they were negatively affected by the opening of the new supermarket; one supermarket noted that approximately 20 casuals lost their jobs after the opening of the global supermarket giant in April 2013.

64 A total of 6 businesses reported an increase in jobs as a direct result of the opening of the bypass (Table 7). These increases occurred across the highway related sector but also included one business in the more non-highway sector – the other retail sector. These 6 businesses added jobs irrespective of whether they experienced a downturn in turnover or not - 3 reported an increase in turnover and 3 reported a decrease in turnover as a direct result of the diversion of through traffic from the town.

Table 7
The effect of the bypass – job gains

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of businesses</th>
<th>Total staff added</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation - caravan park</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Clubs/Hotels</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Food - supermarket</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Auto Services</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Service Stations</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Eateries – Café and a take-away</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Other Retail – home improvements</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>20</td>
</tr>
</tbody>
</table>
A total of 20 persons were reported as having been employed by the 6 businesses. These were new positions created by the businesses, not the filling of vacant positions. Of the 20 jobs added because of the bypass 5 were filled by part-time females, 5 by casual males and 10 by casual females – 75% of the new jobs created were casual positions.

The 6 businesses which employed 20 additional staff as a result of the bypass were made up of a caravan park, a supermarket, café, take-away, and home improvement business. The increase in jobs at these businesses was attributable to the effects of improved access to premises following the diversion of through traffic from the main highway; this led to an improved trading environment and, in turn, the need to hire additional staff. For the 3 businesses that did not experience a decrease in turnover, the new jobs were added within a short period following the opening of the bypass. For the 3 businesses that did experience a decrease in turnover there was a lag effect of several months before the new jobs were added - these businesses had to wait until sales began to pick up.

From the job loss figures presented in Table 6 and the jobs added from Table 7, the effect on employment of the opening of the bypass is a net loss of 74 jobs. This represents a reduction of only 6.0% of the total employed by businesses in 2012 as recorded in the business survey, and 2.57% of total jobs (2869) recorded for Kempsey (urban centre) at the 2011 census. The net loss of 74 jobs is considerably less than the up to 176 jobs that were estimated could be lost as a direct result of the bypass from the Environmental Assessment (NSW RTA, 2007) and from the UNSW Consulting (2005) study.

It is not possible from the data collected in the business survey to determine if those persons – mainly female - who lost their jobs as a result of the bypass would easily find alternative employment at other businesses in Kempsey or elsewhere although the proposed new service centre could generate a number of new job opportunities for females. In this regard, one fast food restaurant that participated in the business survey noted that they had already
commenced hiring approximately 120 mainly casual positions over the coming months to train for jobs to staff the service centre business that is scheduled to open in 2014.

This important initiative, and others on the part of Council, will play an important role in mitigating the adverse effect of the bypass on employment in Kempsey and Frederickton.

4.2.1 Comparisons with other studies

It is interesting to compare the direct effect on employment observed at Kempsey on the basis of the business survey of actual impacts of the bypass on local businesses with attempts to forecast the direct impact on employment. This was done in the Environmental Assessment for the Kempsey to Eungai Pacific Highway upgrade prepared in 2007, some six years before the Kempsey bypass itself was opened (NSW RTA, 2007). The figures for predicted job losses presented in the EA were based on a study undertaken by UNSW Consulting (UNSW Consulting, 2005).

Assuming a linear relationship between turnover and employment on average at establishments, it was predicted in the EA and UNSW Consulting (2005) study that there could be a loss of up to 176 jobs at highway-related businesses in the town as a result of the diversion of through traffic - a reduction in employment of 19% of the 919 workers employed by the 79 businesses surveyed in 2005, or 7% of employment in Kempsey (urban centre) at the 2001 census (Table 8). The forecasted total reduction in employment, from fewer businesses, was almost twice as large as the 94 jobs lost observed (176 compared to 94). When the net loss of 74 jobs is considered, the difference between the predicted loss and the net loss is even more substantial.
Table 8

Predicted employment loss in the EA for the Kempsey Bypass

<table>
<thead>
<tr>
<th>Business Category</th>
<th>Number of jobs lost</th>
<th>Percentage of total loss of employment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motels</td>
<td>7</td>
<td>4.0%</td>
</tr>
<tr>
<td>Food Stores</td>
<td>4</td>
<td>2.3%</td>
</tr>
<tr>
<td>Automotive</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>Service Stations</td>
<td>50</td>
<td>28.4%</td>
</tr>
<tr>
<td>Eateries</td>
<td>109</td>
<td>61.9%</td>
</tr>
<tr>
<td>Other Retail</td>
<td>5</td>
<td>2.8%</td>
</tr>
<tr>
<td>Total</td>
<td>176</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Based on Table 18-2, EA for the Kempsey-Eungai Pacific Highway Upgrade (NSW RTA, 2007)

Most of the jobs to be lost were predicted to be in the eateries and fuel sectors: 109 and 50 jobs respectively. The losses observed in this study were much smaller than this: 22 and 20 jobs respectively. It should be remembered, however, that 1 service station and 8 eateries, including a fast food restaurant, closed in the eight years 2005-2013 and would largely account for the difference in the figures for the loss of jobs in the eateries sector between the two studies. Five businesses, including a service station, indicated in the 2005 survey that they would close after the opening of the bypass; however, these closures have not eventuated and further contributed to the difference between the predicted loss of jobs and those actually observed in this study. The predicted loss of jobs for the other retail sector completely underestimated the actual reduction in employment (5 compared to 22) – a similar underestimation occurred for the food, automotive and motel sectors.

In relative terms, however, the figures are reasonably close – with two exceptions. The loss of jobs in the eateries sector accounted for 61.9% of the total reduction in employment that was predicted in the EA, compared to the 6.6% at the eateries observed in this study. Similarly, the forecasted loss of
jobs in the accommodation sector accounted for 4.0% of the total compared to 24.4% recorded at the accommodation establishments in this study.

The closure of a large number of highway related businesses, and associated changes in the retail landscape of the main street, in the seven year period before the opening of the bypass was not anticipated in the UNSW Consulting (2005) study. The growth in employment between 2006 and 2011 was also not anticipated, especially the growth in the eateries, food and other retail sectors that was associated with an expansion of the Kempsey economy. It is likely that if these scenarios had been considered then the absolute number of jobs predicted to be lost may have been much closer to the actual jobs lost recorded in this study.

Despite the differences in the absolute magnitude of the figures, it is clear from the predictions made in the EA and the observations made in this study that businesses predominantly servicing the needs of through traffic are the ones that have felt the major impact of the opening of the bypass at Kempsey.

### 4.3 The Effect on Working Hours

About half of the businesses that reported a decrease in their turnover as a direct result of the diversion of through traffic from the town reduced the hours worked by staff (34 out of 68). Eight of these (3 eateries, 4 service stations, and a supermarket) had also put-off staff as well. Over two-thirds of businesses (76 out of 110) did not reduce the hours worked by staff (Table 9).

#### Table 9

<table>
<thead>
<tr>
<th>Reduced Working Hours</th>
<th>Accommodation</th>
<th>Clubs/Hotels</th>
<th>Food</th>
<th>Auto Services</th>
<th>Service Stations</th>
<th>Eateries</th>
<th>Other Retail</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>14</td>
<td>6</td>
<td>34</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>3</td>
<td>7</td>
<td>16</td>
<td>2</td>
<td>8</td>
<td>38</td>
<td>76</td>
</tr>
<tr>
<td>Total Businesses</td>
<td>6</td>
<td>4</td>
<td>12</td>
<td>17</td>
<td>5</td>
<td>22</td>
<td>44</td>
<td>110(^1)</td>
</tr>
</tbody>
</table>

*Note: Total excludes the 5 businesses that commenced in 2013.*
Those businesses that reduced staff working hours are, as expected, found in the highway related sector of the economy with businesses in the eateries sector dominant among those that reported a reduction in hours worked by staff - 41.1% of businesses that reduced staff working hours. Among the 14 eateries are 6 cafés and restaurants and 8 take-away establishments. Included in the food sector are 3 supermarkets, 1 butcher and 1 bread and cake shop. Businesses in the other retail sector that reduced staff working hours are made up of newsagents and bookstores, a furniture store, homewares store, several clothing stores and a department store. In the accommodation sector, only 4 motels reduced the working hours of staff.

While about half of the businesses that reported a decrease in their turnover reduced the hours worked by staff, further analysis of data provided by businesses indicates close to half of the businesses that did not reduce staff working hours were also those that experienced a decrease in gross annual turnover (34 out of 81) as a result of the diversion of through traffic from the town. For both types of businesses, about half were only minimally to moderately affected by the bypass. Six businesses that reduced staff working hours were very seriously affected by the bypass and reported a downturn in turnover of over 50%.

Over half (19 out of 34) of the businesses that were affected by the bypass reduced working hours and laid-off workers (Table 10). For these businesses the effect of the reduction in gross annual turnover brought about by a decrease in expenditure by through motorists has been significant enough to affect profitability. They have reduced labour costs by making staff redundant and by decreasing the hours worked by staff. Eleven out of these 19 businesses were either seriously or very seriously affected by the bypass and are predominantly in the eateries sector. However, not all businesses responded in the same way as some of the businesses either just shed labour or just reduced the hours worked by staff.
Table 10

Reduced working hours and job losses because of the bypass

<table>
<thead>
<tr>
<th>Job Losses</th>
<th>Reduced Working Hours</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>19 (16.5%)</td>
<td>15 (13%)</td>
</tr>
<tr>
<td>No</td>
<td>15 (13%)</td>
<td>66 (57.4%)</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>81</td>
</tr>
</tbody>
</table>

Note: Figures in brackets are percentages of the total number of businesses.

It is not possible to determine the reduction in wages and salaries in the pre- and post-bypass period from the surveys given the sparse data collected from businesses. Most businesses had difficulty in remembering their total wage/salary figures for the 2011-2012 and 2012-2013 financial years. However, nearly all businesses that reduced the working hours of staff as a result of the diversion of through traffic were able to report the total number of hours per week that were reduced for staff and also report the average wage paid to workers whose hours were reduced. From these two sets of figures it was possible to estimate that the total hours worked by staff was reduced by 1887 hours per week (Table 11). Over half (57.8%) of the reduction in hours worked by staff occurred in the eateries sector at 14 businesses. The food and service station sectors had the second and third highest reduction in hours worked by staff – at 5 and 3 businesses establishments respectively. These figures indicate that in the eateries sector the reduction in hours worked by staff was spread across affected businesses, whereas in the food and service station sectors the reductions in hours worked by staff is concentrated at fewer businesses.
It is possible to provide a crude estimate of the reduction of income in the town that has resulted from the reduction in hours worked by staff as a result of the diversion of through traffic given the information on the average wage collected from the survey – especially for casual employees whose hours of work were reduced. The average wage rate mentioned by most businesses that reduced the hours worked by staff was $21 per hour. Using this value and multiplying it by the reduced hours worked by staff it is estimated that there occurred a reduction in income in the town in the order of $39,627 per week.

Using the same wage rate and making some assumptions about hours worked by full-time, part-time and casual staff it is possible to crudely estimate the reduction in income that has resulted from the loss of 94 jobs as a result of the bypass. By using the wage rate of $21 per hour for full-time, part-time and casual jobs, and the assumed hours for these categories of jobs, it is estimated that the loss of 94 jobs was associated with a further reduction of $31,920 per week. The combined loss of income per week is therefore estimated to be in the order of $71,547 per week. This figure is likely to be a gross underestimate of the true value - given the assumptions made – but
provides a crude measure of the loss of disposable income in the town that has primarily affected part-time and casual female employment where such income is a significant source of supplementary household income. The loss of this disposable income on the part of locals has been felt by many highway related businesses and also by those in the other retail sector.

In order to provide some context for the combined loss of income, the estimated value of $71,547 per week is compared to total weekly personal income for Kempsey urban centre from the 2011 census. Using Table B17 from the Basic Community Profile data for Kempsey urban centre and the mid-point of the ranges of income categories, it is estimated that total weekly personal income was in the order of $3,565,000 per week in 2011. Therefore, the combined loss of income represents about 2.0% of estimated total weekly personal income. While this is not an unexpected result given the diversity and strength of the Kempsey economy, the loss of disposable income as a result of the bypass has not only affected businesses – as documented in this study - but is likely to have affected families as well until such time that alternative employment is found at other businesses.

4.4 ADJUSTMENTS TO BUSINESS OPERATIONS

Although reducing labour costs (shedding staff and reducing hours worked) has been the most typical response by businesses, some have also changed the way they conduct business in response to the reduction in sales resulting from the opening of the bypass at Kempsey. Businesses have made adjustments to their operations in response to the more competitive trading environment created as a result of the diversion of through traffic from the town. The way that businesses respond to the changing environment is, however, an evolving one that could be expected to continue beyond the period covered in this study.

Prior to the opening of the bypass, very few businesses had actually done anything to change the way business was conducted as reported in the business survey. Only 4 businesses reported that they had begun to diversify
their product lines and reduce certain inventory items that would no longer be in demand by construction workers following opening of the bypass. In view of the considerable uncertainty about the extent of the impact of the diversion of through traffic, the majority of businesses appeared to have adopted a ‘wait and see’ attitude. However, once the bypass opened, about half of the businesses that experienced a downturn in turnover (32 out of 68) found it necessary to make changes to business operations in order to remain profitable – the other half indicated they had not made any changes to business operations and were adopting a ‘wait and see’ attitude. The most frequently cited strategies are shown in Table 12.

86 The main concern of businesses that made a change to business operations was to try to make up the loss in sales originating from passing trade by relying to a greater extent in future on local patronage – from the town and its hinterland. The most commonly cited ways in which businesses thought that this might be achieved were to advertise more and have promotions, and diversify product lines and range of services offered. Of the 21 businesses that mentioned more advertising and promotions, only 4 businesses indicated that they plan to improve their web-based presence and web-based advertising as part of a broader advertising strategy – the remaining businesses will continue to use more traditional methods of advertising and promotions. At some businesses owners and/or managers were working longer hours themselves, particularly at those which had either made staff redundant or reduced hours worked by casual staff.

87 There is some evidence that some businesses adopted strategies aimed at lowering operating costs following the opening of the bypass by reducing opening hours, the costs of advertising, and by stocking smaller lines. A few businesses thought that becoming more price competitive, modifying the menu board or attracting more local customers would help. Businesses mentioning these strategies clearly had in mind the idea of capturing some of the leakage in spending by Kempsey residents to Port Macquarie and providing a better quality retail environment – these were some of the key
reasons cited in the 2011 shopper survey for loss of retail dollars outside of Kempsey (see Section 2.1). Strategies aimed at improving customer service were, surprisingly, not mentioned by any of the businesses and those aimed at developing a web presence were only mentioned by two businesses. There is no clear association, however, between the type of business and the kinds of changes made to business operations. In general though, businesses that depended more on highway-generated trade – service stations, eateries, food stores, and some other retail businesses (eg gift shops) were the ones that had been most active in making adjustments.

Table 12

Changes to business operations

<table>
<thead>
<tr>
<th>Most frequently mentioned changes by businesses</th>
<th>Frequency¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased promotion and advertising, including web-based advertising</td>
<td>21</td>
</tr>
<tr>
<td>Diversify product lines</td>
<td>13</td>
</tr>
<tr>
<td>Reduce opening and closing times</td>
<td>11</td>
</tr>
<tr>
<td>Owner/manager putting in longer hours</td>
<td>7</td>
</tr>
<tr>
<td>Reduce inventory or stock</td>
<td>5</td>
</tr>
<tr>
<td>Improve price competitiveness</td>
<td>5</td>
</tr>
<tr>
<td>Diversify or modify menu</td>
<td>5</td>
</tr>
<tr>
<td>Attract more local sales</td>
<td>3</td>
</tr>
<tr>
<td>Renovations to premises</td>
<td>3</td>
</tr>
<tr>
<td>Developing web-based services</td>
<td>2</td>
</tr>
<tr>
<td>Extend opening/closing hours</td>
<td>2</td>
</tr>
<tr>
<td>Reduce running costs of business</td>
<td>1</td>
</tr>
<tr>
<td>Set up signage at bypass exits</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: ¹ The frequency figures are total number of mentions: some businesses intended to implement more than one change to business operations
In some follow-up analysis, the business cards provided by each of the 115 businesses in the survey were categorised according to whether they indicated an email address, web address or social media presence, or a combination of some or all three elements. All of the 22 businesses that are part of national brand companies have a corporate website with store location facilities that also provided closing and opening times and other information. However, from the business cards, there were only another 22 businesses that indicated a website on the business card. In total, only 44 out of 115 businesses (38.2%) have a web presence. Included in these 44 businesses are all the motels which have websites with on-line booking systems. If one excludes the 22 national brand businesses, another 46 businesses had an email address and only 1 business had a social media link indicated on their respective business cards. These results are quite different to those reported elsewhere.

In a recent study on the longer-term impacts of bypass roads on country towns along the Hume Highway (Parolin, 2011b) it was reported that all businesses surveyed at Yass – a total of 77 businesses - had an on-line presence and that all use internet technology to advertise on the internet and for internet orders and on-line bookings. Many of the businesses at Yass mentioned that embracing internet technology was an important part of their adjustment process in a post-bypass environment, that it was a critical way of doing business and that a significant portion of their sales were from internet orders.

It is difficult to establish a direct link between the sale of businesses or business closures and the opening of the bypass road. The evidence suggests however, that no businesses closed at Kempsey or Frederickton, and hence displaced workers, solely as a result of the diversion of through traffic. Several businesses included in the business survey had been sold in 2013 in the post-bypass environment – mainly accommodation establishments, an eatery and a book store. At the time of the business surveys there were 9 businesses that were for sale of which 4 were cafés,
1 was in the food sector and the remainder were in the other retail sector. The reduction in passing trade, and the fear that this could worsen, were among the many reasons (for the most part not in any way bypass-related) given for the decision to sell businesses. Other reasons included the desire to retire, unwillingness on the part of family members to take over the business, inability to compete with retailers in Port Macquarie, retail leakage to Port Macquarie, and a perceived deterioration in the economic environment that meant profitability could not be sustained. At least 2 other eateries indicated that they will ‘wait and see’ for another 3 months (the holiday/tourist season) and if turnover does not improve they are likely to close and sell the business. A similar approach was being taken by 2 of the service stations.

5. **THE INDIRECT IMPACTS**

The *indirect* impacts (or spin-off effects) of the opening of bypass roads result from the reduction in the dollar value of purchases made by individual businesses from other businesses (wholesale and retail) within and/or outside the local community. These secondary impacts are typically less significant in terms of magnitude although of course they contribute towards the total impact.

The UNSW Consulting (2005) study identified the presence of important linkages between the highway related sector and local businesses acting as suppliers. The most important of these in terms of the number, types of linkages and dollar value of linkages were between those establishments that provide meals – the eateries, food stores and motels - and service stations that operate restaurants. Particular local businesses such as the butchers, food and grocery wholesalers, business supply establishment, select local farmers, the fruit market and other local specialty retailers appeared to be the key linkages to the highway related sector of the study area at the time of the 2005 study.
At the time of the 2005 study, the accommodation sector made the next significant purchases with local businesses in the study area. Most of the local purchases were associated with the preparation of in-room meals and restaurant meals (6 out of the 9 motels at the time had restaurants). Cleaning products and electrical items (radios and television sets) were mainly purchased from local retailers.

Linkages in the automotive and other retail categories appeared to be the smallest in terms of dollar value as turnover in these business categories was generated largely by local residents.

A crude estimate of the expenditures made by the businesses in the 2005 study on the purchase of local goods and services amounted to $1.359 million annually or $26,134 per week. This figure was recognised as a gross under-estimation of the likely true amount spent on local purchases - mainly as a result of sparse data from the surveys at the time. The study concluded that the opening of the bypass at Kempsey would not be expected to be associated with any indirect impacts on local businesses, or that these would be negligible.

The survey of businesses undertaken in 2013 for the present study also encountered difficulties with access to detailed accounts on purchases made from local suppliers. Most businesses were only able to provide very general and ‘sketchy’ figures so it was neither possible to provide a comprehensive picture of the structure of linkages within the local economy nor a detailed breakdown of the monetary flows involved. From the sparse data available, however, two distinct sets of linkages between retail and service businesses at Kempsey can be identified from the present study.

As with the 2005 study, the most important of these in dollar terms is that based on purchases made by establishments providing meals, particularly the eateries but also the hotels and clubs, the motels operating restaurants, and the service stations with food outlets. The other, which is more weakly
developed, comprises the linkages between establishments in the automotive category based on purchases of spare parts and components by garages and workshops. However, given the fact automotive businesses do not appear to have a decrease in gross annual turnover to the same extent as other sectors (only 1 job lost and a reduction of only 5 hours worked by staff), it is unlikely that they experienced any significant indirect effects resulting from the diversion of through traffic from the town.

In addition to these two clearly identifiable sets of linkages between establishments, virtually all of the businesses surveyed make some purchases from others in the town even though the dollar amounts involved appear to be relatively small. For example, many businesses indicated that they purchase stationary and other items from the local newsagencies and business supply store. The newsagencies themselves supply magazines and newspapers for sale at several of the service stations. Fuel is purchased from local service stations and the one petroleum wholesaler. Businesses also rely principally on local retailers and tradespeople and for repairs, installation, and maintenance. This is especially the case for the motels because repairs and maintenance constitute an important component of ongoing expenditure. However, for the motels there were now more significant linkages with distributors in Port Macquarie and Sydney than what was recorded in the 2005 study.

Apart from 3 of the restaurants, all of the 30 establishments providing meals purchased virtually all of their provisions locally from one distributor (milk) and 12 other retail businesses in the town – two bakeries, four butchers, the fruit and vegetable shop, the four supermarkets, and a stationary shop. There are no food or grocery wholesalers as such in the town. These 12 businesses estimated that they depended on passing trade for less than 5.0 per cent of their gross annual turnover. Therefore the reduction in sales to the businesses providing meals, rather than reduced expenditures by passing motorists, is likely to have been the main cause of the observed decrease in their gross annual turnover. Three restaurants purchased all their inputs from Sydney.
Using the sparse data in the present survey on the dollar value of purchases made locally and the per cent drop in orders from suppliers following the opening of the bypass, it was estimated that before the bypass the 30 establishments providing meals were spending in the order of $150,000 per week on orders to local food suppliers. In the period following the bypass the value of orders to local suppliers was estimated to be in the order of $90,000 per week – a reduction of 60%. Purchases of meat and meat products from local butchers, green groceries from a local fruit and vegetable store, and milk products formed the largest component of items purchased from local suppliers and, in turn, the largest drop in orders from eateries and restaurants.

Given the difficulty in obtaining the required data in sufficient detail, however, it was not possible to quantify the indirect effects on businesses in the town resulting from the opening of the bypass by calculating a value of a multiplier as has been done in other studies. For example, in an early study that attempted to predict the impact of the bypass roads at Yass, a Type II Keynesian employment multiplier was used to determine the indirect effects (Holsman et al 1981). The value of the multiplier in that study was calculated to be 1.35: for every job lost directly as a result of the diversion of through traffic, an additional 0.35 jobs would be lost in the short-term through the multiplier effect. Applying this value to the 94 jobs lost directly as a result of the opening of the bypass in Kempsey recorded in this study, an additional 33 jobs would be expected to have been lost in the town indirectly and through induced effects.

The limited information obtained during this study indicates that the indirect effects have contributed in only a small way to the overall economic impact of the bypass at Kempsey, and that these have affected gross annual turnover more than employment. The few businesses that have been affected indirectly would have appeared to be able to absorb the reduction in gross annual turnover resulting from the reduction in purchases from other business in the town, presumably by accepting lower profit margins. Only 2 businesses – a
butcher and a grocery store – reported that they displaced staff because of the downturn in orders from highway related businesses following the opening of the bypass. A total of 4 staff were displaced – 2 male casuals and 2 part-time females. These 4 jobs have been counted in the total of 94 jobs lost.

Following the opening of the bypass, many of the 30 establishments providing meals began to alter their linkages with local suppliers as part of an adjustment strategy. Among the eateries, what is purchased locally – mainly green groceries, breads, milk and meat products – is now increasingly being purchased from the 4 local national supermarket chains. The opening of ALDI in April 2013 had the effect of increasing price competitiveness among the other supermarkets, and many eateries took advantage of this as a way of reducing their costs and extending their profit margins. In the accommodation sector there was also more of a shift to the supermarkets and to national distributors. These trends are consistent with findings reported by Parolin (2011a, 2011b) for bypassed towns on the Hume Highway and from a 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.

6. BUSINESS PERCEPTIONS: ECONOMY, ENVIRONMENT, PRIORITIES AND OPPORTUNITIES

The attitudes and perceptions of businesses to the broader environmental and economic impacts of the bypass provide evidence of the quality of life and development aspects of bypass roads which are valued by the community. In addition, business perceptions of the priorities and opportunities that Kempsey Shire Council could support as part of set of actions for a post-bypass strategy provides businesses in the highway related sector with an opportunity to voice their specific concerns. The last section of the business survey provided businesses an opportunity to articulate their perceptions of priorities and opportunities.
6.1 BUSINESS PERCEPTIONS - ECONOMY AND ENVIRONMENT

The business survey contained two questions that sought to establish business perceptions of the impacts of the bypass on the economy of the town more generally and on the town as a place to live (Appendix C). Sixty two out of the 115 businesses (54.9%) in the present study perceive that the impact of the bypass on the economy of the town has not been positive while 48 businesses (41.8%) perceive that it has had a positive impact on the town economy (Figure 2). Among the 62 businesses that perceived the bypass was not a positive for the town economy are included 16 businesses (25.8%) whose gross annual turnover was not affected by the bypass – 6 of these are in the other retail sector and 3 are eateries. It is not surprising to find that among the 48 businesses that perceive the bypass has had a positive economic impact on the town are another 16 businesses that were affected by the bypass and who reported a decrease in gross annual turnover.

The evidence from Figure 2 suggests that the business community is divided as to whether or not the bypass has had a positive or negative impact on the economy of the town, and the issue remains controversial among the businesses. Most of the businesses in the ‘disagree’ or ‘strongly disagree’ categories were asked about the reasons for their perceived negative view. The most frequently mentioned negative aspects of the bypass were ‘loss of trade’ and ‘loss of jobs’, even though the reduction in gross annual turnover and employment recorded in the surveys was relatively small in overall terms (Table 13). There was also a view expressed that some businesses in the highway related sector were more affected than others, that the loss of through travellers cannot be re-gained, that there is nothing in the town centre to bring them back and that the bypass has added another burden to highway related businesses on top of an already difficult retail environment. In most cases, the perceived negative impacts reported by the local businesses were perceived to be short-term in nature.
Figure 2

Bypass has had a positive effect on the economy of the town?

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>20</td>
</tr>
<tr>
<td>Agree</td>
<td>15</td>
</tr>
<tr>
<td>Don't Know</td>
<td>8</td>
</tr>
<tr>
<td>Disagree</td>
<td>4</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Survey of businesses 2013

Table 13
Perceived negative impacts of the bypass on the town economy

<table>
<thead>
<tr>
<th>Negative impacts</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of trade – many businesses are suffering</td>
<td>20</td>
</tr>
<tr>
<td>Loss of jobs</td>
<td>15</td>
</tr>
<tr>
<td>Affected some businesses more than others</td>
<td>8</td>
</tr>
<tr>
<td>Has taken business away from the town</td>
<td>3</td>
</tr>
<tr>
<td>Loss of through travellers</td>
<td>2</td>
</tr>
<tr>
<td>No compulsion for through travellers to come back to town</td>
<td>2</td>
</tr>
<tr>
<td>Another burden for retailers in the town</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Businesses were able to identify more than one impact.

The study undertaken in 2005 (UNSW Consulting, 2005) provided evidence of the perceived positive aspects that are likely to result from the diversion of through traffic on the town. At the time, the most important positive effect of the diversion of through traffic was perceived to be the reduction in level of
noise, especially from heavy vehicles. Improvements to local accessibility and safety in the main street were also very frequently mentioned as likely positive outcomes in addition to improvements to local shopping, to local trade, and to parking. A friendlier town centre in which to shop and do business was also perceived as a very likely outcome. The view of the majority of businesses at the time was that the bypass would lead to a better quality of life for the town.

In the post-bypass surveys undertaken for this study, businesses were asked to respond to the question, ‘Do you believe the bypass has made Kempsey a better place to live?’ Figure 3 indicates that there is very strong agreement on the part of businesses in the post-bypass survey that the bypass has made the town a better place to live. About 73.9% of respondents (85 out of 115) indicated that they strongly agree or agree with the statement – half of these respondents had been adversely affected in their turnover by the bypass. Among the 23 out of 115 businesses (20%) that disagree or strongly disagree, are businesses that were adversely affected by the bypass and that reported a serious or very serious downturn in gross annual turnover.
The 73.9% of businesses that perceive that the bypass has made the town a better place to live, indicated that positive effects were similar to those anticipated by businesses in the 2005 study. Table 14 indicates the importance of the following beneficial effects on the town centre of the diversion of through traffic: fewer trucks, friendlier and quieter atmosphere, a safer place for older people, easier parking, less dust and pollution, and fewer accidents, etc. The responses from all businesses — particularly motels - indicated that the most important beneficial effect was the reduction in noise from trucks in the town. Underlying many of the responses was the view that the ‘streets belong to the people again’, and that ‘local people will now come back to shop in the town’. Many businesses commented on just how busy the main street was in the post-bypass period – an unexpected surprise to many of them.
Table 14
Perceived positive impacts of the bypass on the town

<table>
<thead>
<tr>
<th>Positive impacts</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fewer trucks</td>
<td>13</td>
</tr>
<tr>
<td>Improved parking</td>
<td>9</td>
</tr>
<tr>
<td>A nicer, quieter and friendlier main street</td>
<td>9</td>
</tr>
<tr>
<td>Less pollution</td>
<td>5</td>
</tr>
<tr>
<td>Less noise</td>
<td>4</td>
</tr>
<tr>
<td>Less congestion</td>
<td>4</td>
</tr>
<tr>
<td>More local people shopping in town</td>
<td>4</td>
</tr>
<tr>
<td>Ease of shopping</td>
<td>3</td>
</tr>
<tr>
<td>Improved safety</td>
<td>3</td>
</tr>
<tr>
<td>Improved access for businesses</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Survey of businesses 2013

The strong perceptions held by respondents about the positive environmental and quality of life impacts of the bypass on the town is indicative of the importance attached to such issues relative to the economic outcomes even though the trade-off between the two is difficult to quantify in cost-benefit terms. There is ample evidence from the Hume Highway studies and from the study at Karuah (Parolin and Garner, 2006; Parolin, 2011; Phibbs et.al, 2009) that the beneficial environmental effects which eventuate from the diversion of through traffic, especially heavy vehicles from the town centre, offset to a large extent the adverse economic impacts on job losses and reduction in gross annual turnover at businesses that has resulted from the opening of the bypass.

6.2 BUSINESS PERCEPTIONS – PRIORITIES AND OPPORTUNITIES

The last question in the business survey sought information from businesses on their perceptions of the priorities and opportunities that Kempsey Shire Council could support as part of the development of its post-bypass strategy to mitigate the adverse economic impacts of the bypass on the town.
Kempsey Shire Council has been very proactive since the bypass was first announced in working with the community and other stakeholders in an attempt to mitigate the adverse effects of the bypass. At the time of the 2005 study (UNSW Consulting, 2005) Council was actively encouraging economic growth, had proposed the development of a highway service centre to create employment for the town following the opening of the bypass, and developed the Macleay Valley Coast Tourism Strategic Plan, part of which involved the development of the Slim Dusty Heritage Centre. Since 2008 funds have been allocated to the development of a post-bypass strategy document – a key feature of which has been completion of the Kempsey Corridor Master Plan.

Despite these proactive efforts, the discussions with businesses in relation to the last survey question revealed that a significant number of businesses were not satisfied with the steps taken by Council since the opening of the bypass. Many were quite vocal in their perceptions that Council should be doing a lot more to assist the town, should be taking more notice of business views and should be more proactive in supporting the economic feasibility of businesses that have been adversely affected. Other businesses were of the view that Council lacks an economic development vision; that Council projects were characterised by wastage of funds; and that Council workers should not reside in Port Macquarie and contribute to retail leakage to that regional centre. Council also had its supporters among the business community but these were fewer in number.

6.2.1 Priorities

In this context of blaming the Council for problems, businesses proposed a set of priorities and opportunities for Council to consider in development of a post bypass strategy for the highway related sector. Many of the priorities and opportunities provided by businesses in the survey are variations on a theme and have therefore been classified under some broader dimensions. These are presented in Table 15 and discussed separately below.
• Beautification of the main street and town centre

114 Most businesses were aware of aspects of the Corridor Master Plan and the plan to beautify the main street. Businesses mentioned that this should apply to South Kempsey and Frederickton as well. The main concern by businesses was with the perceived delay in the beautification program and expressed a desire for Council ‘to get on with it’ as the bypass had been open for 8 months up to the time of the surveys. Completion of beautification works was seen as important in attracting travellers back to the town centre as soon as possible. The change to parking and additional parking were seen as very positive. There were varied and vocal opinions among the business respondents as to the more ‘suitable’ design aspects of beautification works.
Table 15
Perceived priorities and opportunities for a post-bypass strategy

<table>
<thead>
<tr>
<th>Priorities and Opportunities for Council</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Priorities</strong></td>
<td></td>
</tr>
<tr>
<td>Beautification of the main street and town centre</td>
<td>35</td>
</tr>
<tr>
<td>Urgent need for better signage at either end of the bypass</td>
<td>18</td>
</tr>
<tr>
<td>Urgent need for jobs, industry, people and growth</td>
<td>15</td>
</tr>
<tr>
<td>Need to make Kempsey a destination for travellers</td>
<td>15</td>
</tr>
<tr>
<td>Urgent road infrastructure improvements</td>
<td>10</td>
</tr>
<tr>
<td>Fix up the mall</td>
<td>4</td>
</tr>
<tr>
<td>Need to improve facilities for persons with caravans – need a good RV park</td>
<td>4</td>
</tr>
<tr>
<td>Tackle crime problem in the town centre</td>
<td>3</td>
</tr>
<tr>
<td>Need a movie theatre in Kempsey</td>
<td>3</td>
</tr>
<tr>
<td>No highway service centre</td>
<td>2</td>
</tr>
<tr>
<td><strong>Opportunities</strong></td>
<td></td>
</tr>
<tr>
<td>Vision to encourage more economic growth – jobs, industry, tourism</td>
<td>30</td>
</tr>
<tr>
<td>Develop Kempsey as a transport interchange</td>
<td>10</td>
</tr>
<tr>
<td>Encourage more indigenous employment projects</td>
<td>8</td>
</tr>
<tr>
<td>Need for more events based tourism</td>
<td>8</td>
</tr>
<tr>
<td>Make better use of the river as an asset for tourism etc.</td>
<td>6</td>
</tr>
<tr>
<td>Encourage more government departments to locate in town</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Survey of businesses 2013

- **Urgent need for better signage at either end of the bypass**

Many businesses expressed their disappointment at the inadequate signage at both ends of the bypass and were of the view that Council and Roads and Maritime Services (RMS) should rectify this as a matter of urgency. Business respondents mentioned that the signage at the interchanges was confusing even for locals, let alone travellers. Another example mentioned was that
signage at either end of the bypass did not alert travellers of the availability of 24 petrol and food services in Kempsey. Proper signage that promotes services in Kempsey was viewed as critical in attracting travellers back into town. Many businesses suggested that Council also develop a proper town entrance statement as part of a signage strategy that encourages travellers to come off the highway and stop in town. It is interesting to note that a town entrance statement was also under consideration by Council in 2005 (UNSW Consulting, 2005).

- Urgent need for jobs, industry, people and growth

Many respondents also indicated that as part of a post bypass strategy there is an urgent need for Council to support strategies for jobs, industry, residential development and overall economic growth. There was a view among the businesses that Council was not doing enough in this area and that too many potential businesses/industries that had looked at establishing in the area had not been captured by Council due to perceived conflicts over the nature of development in the town, or to the perception that there were long delays in processing development applications on the part of prospective businesses.

- Need to make Kempsey a destination for travellers

Respondents expressed concern that Council had developed tourism initiatives for the Macleay Valley but that there was no perceived focus on Kempsey – the town that was actually bypassed. Most expressed a need for Council to quickly develop strategies designed to make Kempsey a destination and to bring travellers back into the town. Additional events based tourism was perceived as important to this strategy.
• Urgent road infrastructure improvements

Respondents mentioned the need to repair roads in South Kempsey, especially in the industrial area, and several respondents mentioned the need for Council to consider provision of turning lanes along Smith Street between Woolworths and the Shell station.

• Fix up the mall

There was a perception among respondents that problems with the mall were on-going and that there remained specific problems with design aspects of the mall that were not conducive to encouraging more local shopping in the post bypass environment.

• Need to improve facilities for persons with caravans – need for a good RV park

Respondents mentioned that Council promote the attraction of travellers with caravans who are on a motoring holiday as part of a strategy to making Kempsey a destination. Facilities for these holiday makers were perceived to require significant improvements – especially parking and toilet facilities – if Kempsey was to become known as a town that welcomes the caravan and RV market.

• Tackle crime problem in the town centre

Some businesses perceived this problem as a deterrent to both locals shopping in town and to through motorists stopping in the town centre for highway related needs, especially after dark. Several mentioned the need for Council to support the installation of CCTV cameras as a way of encouraging a safer town centre for shopping on the part of locals and travellers.
• Need a movie theatre in Kempsey

Only a few respondents mentioned this as a priority that Council could support. The perception was that such a facility would not only be an entertainment outlet for the town, but could potentially reduce the amount of retail leakage to Port Macquarie.

• No highway service centre

Only a few respondents mentioned this as a priority for Council to support. There is a view among some businesses that such a facility has the potential to further adversely affect highway related businesses in town – especially the petrol stations and eateries. Most businesses had very limited knowledge of the service centre proposal and some were not even aware of the proposal.

6.2.2 Opportunities

The list of perceived opportunities mentioned by business respondents (Table 15) are predominantly characterised by the economic development dimension. Many businesses were of the view that Council develop a vision for the economic development of Kempsey as opposed to other parts of the Shire. Underlying these perceptions was the perceived need for Council to scale up efforts at economic development and to ‘get out there’ and attract the businesses and industries to town that will ensure economic growth through employment and multiplier effects. There was a perception among business respondents that other competing centres such as Port Macquarie and Coffs Harbour were more successful in the economic development game than Kempsey.

In relation to the economic development dimension, a group of respondents expressed the desire for Council to support the establishment of a transport interchange in Kempsey that would capitalise on the strategic location of Kempsey and on its transport orientation. This interchange was not perceived as being located at the highway service centre, but would be a separate
facility, possibly located north of the town centre or in South Kempsey. It is interesting to note that the concept of a transport interchange at Kempsey was also recommended for further investigation in the Kempsey Shire Council Bypass Strategy (2011). In that document the specific recommendation was for Council to consider whether Kempsey could provide a transport logistics function for the distribution of goods across northern NSW. The document recommended that investigations should focus on both Kempsey’s potential as an intermodal site or as a road haulage logistics site. Respondents did not appear to be aware of this strategy document or that it had been developed by Council.

126 One specific aspect of the perceived need or an economic development vision and strategy was the need to support additional employment problems to tackle high levels of unemployment in the indigenous population and employment programs for kids and school leavers. In regards to the latter, there was a view expressed that too many young people have to leave Kempsey for education and employment opportunities and that this represented a loss of social and economic capital to the town. In relation to these views was the perceived need for Council to work to encourage government departments to locate in Kempsey – there was a perception that the larger regional centres were attracting these departments and that Kempsey was missing out. Many business respondents commented on the desirability of Council to make better use of the local state member and federal member to assist Council and other stakeholders in making this a reality.

127 Opportunities for events based tourism and for making better use of the river for tourism and industry were also mentioned by respondents as opportunities for Council to support. While it was recognised that this opportunity would require a large injection of funds, most indicated it was a great shame that this asset was so underutilised for tourism and event-based tourism purposes. One business mentioned the desire to have a maritime museum on the river that captured the era of the butter and cheese boats, and the timber boats.
Others mentioned the opportunities of opening up the town to the river – as in Taree - and having cafés and restaurants facing the river.

6.2.3 Summary

In sum, the business respondents appear to be divided in terms of their perceptions of whether the bypass has been a positive for the town. While more businesses perceive it has been a negative for the economy there are businesses that have been negatively affected by the bypass who still perceive it has been a positive for the town. However, close to 75% of businesses, even some of those that have been adversely affected by the bypass, perceive that the bypass has made Kempsey a better place to live and have valued the environmental and amenity improvements associated with the opening of the bypass on the town. Despite the perceived negative views about the effects of the bypass, there is cautious optimism on the part of many businesses about the post-bypass economic environment, and that the perceived priorities and opportunities that have been identified could assist Council in the development of post-bypass strategies for the longer-term sustainability of the highway related sector in Kempsey.

However, many of the business respondents were not aware that some of the most frequently mentioned priorities and opportunities they have identified are already action plans or schemes in Council’s post bypass strategy document. Many businesses were not aware that such a document had been developed by Council and that it provides a set of action guidelines and timetable for a post-bypass strategy. Many business respondents were aware of and participating in the Macleay Valley tourism initiative but did not appear to be aware of the Jobs for Kempsey initiative – both sponsored by Council. There appears to be a need for developing a better communication strategy to keep businesses up to date about the efforts of Council and to more actively promote post-bypass related economic and tourism plans, and to advertise new businesses or government agencies and departments that decide to move to Kempsey.
7. DISCUSSION

The impact of bypass roads on local businesses is measured principally by the reduction in gross annual turnover and the flow-on effects this has on levels of employment. The loss of jobs in communities affected by the opening of bypass roads is considered to be the most important because this has important social and economic implications. The loss of jobs results in a reduction of household income which in turn results in a decrease in expenditure. That part of the decrease in spending previously made locally will further affect the gross annual turnover of local businesses.

The creation of additional employment opportunities as well as increasing levels of expenditure locally are therefore key issues facing all bypassed communities as part of strategies to offset the reduction in the value of highway-generated trade resulting from the diversion of through traffic. Kempsey is no exception. The opportunities for creating new jobs in a town are limited to initiatives by the local Council, local businesses expanding, entrepreneurs with new businesses and public sector agencies that make decisions about the need for new or upgraded facilities in the town. In the town of Kempsey all of the above employment generation activities appear to be occurring simultaneously in the post-bypass environment.

In discussions with personnel at Kempsey Shire Council – particularly in the Economic Sustainability Unit – the extent of employment opportunities in the post-bypass environment include the following developments:

- $80M redevelopment of Kempsey Hospital – will bring 110 new allied health jobs online;
- Anticipated opening of the new Highway Service Centre prior to Christmas 2014 – will bring about 100 new jobs online;
- An $18.5 million expansion of Nestlé’s Smithtown factory on the NSW Mid North Coast will create around 30 full time jobs and turn the site into the company’s production hub for its Nescafé Café Menu range in Australia;
- Kempsey based manufacturing company Akubra Hats announced a new partnership with DKM Blue. Under new licensing agreements, DKM Blue
will create a new range of Akubra branded products, securing the iconic company’s presence in the Macleay Valley and bringing new jobs online;

- Stages 2 & 3 of one of the Macleay’s largest employers, Macleay Valley House, anticipated to commence in the next 12-24 months;

- The new Green Leaf Farm development at Clybucca provides 26-41 seasonal jobs in a high value agricultural enterprise;

- New ‘Discovery Something New’ branding and marketing campaign for the Macleay Valley Coast – proactive campaign to increase visitor numbers and the visitor economy.

There are other developments in the pipeline as well that are also likely to bring additional employment to Kempsey and to mitigate against the adverse impacts of the bypass.

The proactive nature of Council in the pre- and post-bypass period, through development of a post-bypass strategy and other economic development plans, has been and continues to be critical in the recovery of highway generated trade and lost jobs in the town. From the above initiatives it appears that the new employment opportunities will exceed the jobs lost directly from the bypass and the net loss of jobs.

Local businesses that have been adversely affected by the bypass need to quickly make adjustments to business operations by increasing their advertising, diversifying their products and services and increasing their customer service levels in particular. These adjustments are likely to have significant positive effects on business profitability and sustainability and to assist with re-capturing losses of highway generated trade by re-focussing on local and regional customers that are looking for a better quality retail experience. The implementation of local initiatives and beautification of the main street and corridor is also likely to re-capture through motorists to the town centre in the longer-term – as occurred at Yass, Goulburn and Gunning on the Hume Highway (Parolin, 2011b).
However, this study found that only half the affected businesses had undertaken adjustments to business operations with many adopting a ‘wait and see’ approach. The evidence from the Hume Highway studies (Parolin, 2011) and from those at Karuah (Phibbs et al., 2009) is that businesses that make adjustments in response to the bypass were found to have better outcomes than businesses that did not make adjustments. To assist more of the highway related businesses in Kempsey to make the necessary adjustments it is recommended that Council facilitate workshops for affected businesses through the Australian Retail Association, Chamber of Commerce and other relevant bodies. One such workshop was successfully sponsored by Council and run by the Australian Retail Association in 2013, but additional workshops are required given the number of highway related businesses that have been adversely affected.

8. CONCLUSION

The findings from this study indicate that the negative impacts of the bypass at Kempsey and Frederickton on employment and gross annual turnover, although important, have been considerably smaller than might have been expected on a priori grounds and substantially less than predicted in earlier studies. Moreover, the evidence suggests that these occurred relatively quickly—within a little over 8 months after the initial diversion of through traffic from the town in March 2013. However, it is likely that the full effects of the bypass are not likely to be known for some time.

It is difficult to predict how long it will take for the local economy to recover from the considerable loss of highway-generated trade. In large part this will depend on initiatives taken by individuals, the businesses community, and the Shire Council. There is reason to believe, however, that the immediate effects of the opening of the bypass roads probably will be of short-term duration and this is certainly the view held by many in the business community. Studies of bypassed communities in Australia and overseas have indicated that towns the size of Kempsey (and larger) generally experience full recovery after
5 years and that after 10 years traffic levels on the 'old' route are close to or higher than pre-bypass levels (Parolin, 2011a).

There was considerable optimism in the community that once things 'settled down', Kempsey would become a much better place for shopping and to visit and that the future environment for business would be enhanced. At the time of the survey of businesses for the present study, several businesses reported signs that sales were starting to improve. It was believed that this was due to the fact that more of the town’s residents and those from the hinterland were spending money in the town than before, in itself not unrelated to the positive environmental effects the diversion of through traffic has had on the town centre.

Implementation of the Kempsey Corridor Master Plan by Kempsey Shire Council, which commenced in 2013 with new parking arrangements in the town centre, will make the town an even more attractive place for shopping and service provision when fully completed. Improvements to the streetscape and the renovation of buildings, some of which have heritage value, will do a lot to restore Kempsey’s character as a country town. This could result in the town becoming more attractive as a tourist centre and a place to visit in the longer term. With effective advertising and markedly improved signage on the bypass, the town should be able to recapture some part of the expenditure formerly made by motorists stopping – the competition from the new service centre notwithstanding - and staying overnight in the town.
In the longer term, it is likely that the positive environmental effects resulting from the diversion of through traffic from the town coupled with proactive and significant local initiatives, particularly those by Kempsey Shire Council, the Chamber of Commerce, and individual business persons, will ensure that Kempsey continues to play a role as an important mid-journey service centre serving the needs of motorists travelling along the Pacific Highway.

Dr Bruno Parolin
REFERENCES


Kempsey Shire Council (2013) *Pacific Highway bypass strategy and Kempsey bypass background issues paper*.


UNSW Consulting (2005) *Evaluation of the economic impacts of the Kempsey to Eungai, Pacific Highway upgrade on Kempsey and Frederickton town centres and activities at Clybucca and Eungai*, New South Global Pty Ltd, University of New South Wales.
APPENDIX A

Employment By Industry – Kempsey Urban Centre 1996-2011
<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Agriculture, Forestry and Fishing</td>
<td>54</td>
<td>2.2</td>
<td>59</td>
<td>2.5</td>
<td>36</td>
<td>1.6</td>
<td>52</td>
<td>1.8</td>
</tr>
<tr>
<td>Mining</td>
<td>6</td>
<td>0.2</td>
<td>6</td>
<td>0.3</td>
<td>3</td>
<td>0.1</td>
<td>4</td>
<td>0.1</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>281</td>
<td>11.3</td>
<td>238</td>
<td>10.1</td>
<td>183</td>
<td>8.0</td>
<td>205</td>
<td>7.1</td>
</tr>
<tr>
<td>Electricity, Gas and Water Supply</td>
<td>30</td>
<td>1.2</td>
<td>18</td>
<td>0.8</td>
<td>18</td>
<td>0.8</td>
<td>31</td>
<td>1.1</td>
</tr>
<tr>
<td>Construction</td>
<td>166</td>
<td>6.7</td>
<td>145</td>
<td>6.1</td>
<td>180</td>
<td>7.8</td>
<td>198</td>
<td>6.9</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>98</td>
<td>3.9</td>
<td>85</td>
<td>3.6</td>
<td>78</td>
<td>3.4</td>
<td>66</td>
<td>2.3</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>520</td>
<td>20.9</td>
<td>549</td>
<td>23.2</td>
<td>386</td>
<td>16.8</td>
<td>452</td>
<td>15.8</td>
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<tr>
<td>Accommodation, Cafes and Restaurants</td>
<td>147</td>
<td>5.9</td>
<td>130</td>
<td>5.5</td>
<td>196</td>
<td>8.5</td>
<td>246</td>
<td>8.6</td>
</tr>
<tr>
<td>Transport and Storage</td>
<td>105</td>
<td>4.2</td>
<td>135</td>
<td>5.7</td>
<td>119</td>
<td>5.2</td>
<td>165</td>
<td>5.8</td>
</tr>
<tr>
<td>Communication Services</td>
<td>70</td>
<td>2.8</td>
<td>43</td>
<td>1.8</td>
<td>25</td>
<td>1.1</td>
<td>23</td>
<td>0.8</td>
</tr>
<tr>
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<td>2.4</td>
<td>55</td>
<td>2.3</td>
<td>41</td>
<td>1.8</td>
<td>38</td>
<td>1.3</td>
</tr>
<tr>
<td>Property and Business Services</td>
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<td>6.3</td>
<td>141</td>
<td>6.0</td>
<td>29</td>
<td>1.3</td>
<td>26</td>
<td>0.9</td>
</tr>
<tr>
<td>Professional, Government and Services</td>
<td>122</td>
<td>4.9</td>
<td>107</td>
<td>4.5</td>
<td>301</td>
<td>13.1</td>
<td>403</td>
<td>14.0</td>
</tr>
<tr>
<td>Education</td>
<td>178</td>
<td>7.2</td>
<td>143</td>
<td>6.0</td>
<td>159</td>
<td>6.9</td>
<td>212</td>
<td>7.4</td>
</tr>
<tr>
<td>Health and Community Services</td>
<td>301</td>
<td>12.1</td>
<td>333</td>
<td>14.1</td>
<td>364</td>
<td>15.9</td>
<td>544</td>
<td>19.0</td>
</tr>
<tr>
<td>Cultural and Recreational Services</td>
<td>28</td>
<td>1.1</td>
<td>30</td>
<td>1.3</td>
<td>26</td>
<td>1.1</td>
<td>24</td>
<td>0.8</td>
</tr>
<tr>
<td>Personal and Other Services</td>
<td>96</td>
<td>3.9</td>
<td>97</td>
<td>4.1</td>
<td>92</td>
<td>4.0</td>
<td>126</td>
<td>4.4</td>
</tr>
<tr>
<td>Not Classifiable</td>
<td>15</td>
<td>0.6</td>
<td>9</td>
<td>0.4</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
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<tr>
<td>Not Stated</td>
<td>52</td>
<td>2.1</td>
<td>43</td>
<td>1.8</td>
<td>57</td>
<td>2.5</td>
<td>54</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>2,486</td>
<td>100.0</td>
<td>2,366</td>
<td>100.0</td>
<td>2,293</td>
<td>100.0</td>
<td>2,869</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics, Basic Community Profile, Urban Centre Locality Files.
APPENDIX B

Letter to Businesses
OUR REF: J084246

24 October 2013

KEMPSEY POST-BYPASS IMPACT STUDY
BUSINESS SURVEY

To: Owner/Manager

Dear Sir/Madam,

I am writing to you in regards to a study investigating the positive and negative economic impacts of the Kempsey bypass. The study is being undertaken by UNSW Global Pty Limited for Kempsey Shire Council.

As you know the Kempsey bypass was opened on 27 March 2013 and adequate time has now passed to allow for an assessment of both positive and negative impacts. 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 Kempsey between Friday 25 October and Saturday 23 November, where 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 your own business and businesses in Kempsey since its opening in March. 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 0423948745 or email b.parolin@unsw.edu.au with the title Kempsey Post-Bypass Survey.

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

Yours sincerely,

[Signature]

Dr Bruno Parolin – Study Director
APPENDIX C

Business Survey
KEMPSEY POST-BYPASS BUSINESS SURVEY

This questionnaire is being used to collect information about the effects the opening of the bypass has had on business activity in Kempsey. The survey is part of a research project being undertaken by UNSW Global Pty Limited for Kempsey Shire Council.

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 the Global Financial Crisis and other factors such as the high Aussie dollar, etc. may have affected business in the town as well.

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

Q1. How long have you been operating this business? since 19____ or since 20____

Q2. Do you believe that your business has been affected by the bypass?

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

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

Q3. How many employees do you have now (including paid and unpaid family members) and how many did you have one year ago?

<table>
<thead>
<tr>
<th>2013 (now)</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full time:</td>
<td>Male</td>
</tr>
<tr>
<td>Part time:</td>
<td>Male</td>
</tr>
<tr>
<td>Casual:</td>
<td>Male</td>
</tr>
</tbody>
</table>
Q4. Have you had to put off staff **BECAUSE** of the opening of the bypass?

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

Q5. If YES, how many?

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full time:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part time:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casual:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Place of residence</th>
<th>M</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full time:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part time:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casual:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q7. Have you had to reduce the hours of staff **because** of the opening of the bypass?

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

(If No, go to Question 8)

If YES, give details:

-------------------------------------------------------------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Q8. Have you taken on additional staff **because** of the opening of the bypass?

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

Q9. If YES, how many?

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full time:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part time:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casual:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q10. Do any of these live outside Kempsey?

YES.......... NO............
(If No, go to Question 11)

If YES, where do they come from?

<table>
<thead>
<tr>
<th>Full time:</th>
<th>M</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part time:</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casual:</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q11. Has your wages/salaries bill been affected by the bypass?

YES.......... NO............
(If No, go to Question 12)

If Yes, what are the wages/salaries figures for the 2011-2012 and 2012-2013 financial years?

In 2011-2012 $........................................In 2012-2013 $........................................

Q12. Has your Turnover been affected by the bypass?

YES.......... NO............
(If No, go to Question 15)

If Yes, what are the turnover figures for 2011-2012 and 2012-2013 financial years?

<table>
<thead>
<tr>
<th>2011-2012 (000s)</th>
<th>2012-2013 (000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $50,000</td>
<td>1</td>
</tr>
<tr>
<td>$50,000-$100,000</td>
<td>2</td>
</tr>
<tr>
<td>$100,000-$150,000</td>
<td>3</td>
</tr>
<tr>
<td>$150,000-$250,000</td>
<td>4</td>
</tr>
<tr>
<td>$250,000-$500,000</td>
<td>5</td>
</tr>
<tr>
<td>$500,000-$1 million</td>
<td>6</td>
</tr>
<tr>
<td>$1 million-$1.5 million</td>
<td>7</td>
</tr>
<tr>
<td>Over $1.5 million</td>
<td>8</td>
</tr>
</tbody>
</table>
Q13. By how much do you estimate that your turnover has decreased or increased for the 2012-2013 financial year \textit{BECAUSE} of the opening of the bypass?

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

Q14. Since June has your turnover:

(a) IMPROVED
(b) STAYED THE SAME
(c) GOT WORSE

If (a) or (c) by how much do you estimate that your turnover has decreased or increased this financial year \textit{BECAUSE} of the opening of the bypass?

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

Q15. How much of your trade do you think now comes from people who are passing through but stopping in town, i.e. passing trade?

- %
- $
Q18. Do you buy any goods from Kempsey?

<table>
<thead>
<tr>
<th>Item (name)</th>
<th>$ Amount (or % of total)</th>
<th>Name and Place of Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q19. 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?

- 
- 
- 
- 
- 

Q20. Do you believe the bypass has had a positive effect on the ECONOMY of Kempsey as a whole?

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

Specific Positive effects

- 
- 
- 
- 

Specific Negative effects

- 
- 
- 
- 
-
Q21. Do you believe the bypass has made Kempsey a better place to live?

- Strongly Agree
- Agree
- Don’t Know
- Disagree
- Strongly Disagree

Q22. From a big picture perspective, what are the priorities and opportunities for local economic growth that you would like to see Council support as part of its post-bypass strategy?

Priorities

Opportunities

Thank you for your participation in the survey.
APPENDIX D

Curriculum Vitae
Dr Bruno Peter John Parolin

Qualifications

- PhD, The Ohio State University, USA, 1982
- MSc, Oklahoma State University, USA, 1979
- BA (Hons), Monash University, Australia 1976

Present Position

Senior Lecturer
Faculty of the Built Environment
The University of New South Wales

Areas of Expertise/
Special Interests and Key Qualifications

- School Mapping and School Location Planning
- Geographical Information Systems
- Socioeconomic Impact Assessment of Transport Infrastructure
- Questionnaire Survey Design and Survey Methods
- Spatial Analysis
- Quantitative Data Analysis

Dr Bruno Parolin has significant and long-standing experience in the areas of educational planning and management and the use of School Mapping and Geographical Information Systems (GIS). In particular he has expert knowledge of the development of school mapping systems in developing countries and poor rural areas. He also has specialist skills in needs assessment studies where focus is on the use of GIS technology, and in developing strategic and implementation work plans for GIS within government and planning authorities. His expertise also extends to developing and implementing school facilities maintenance management assessment systems. Another feature of his consultancy background is quantitative and GIS related applications in the transport-land use planning domain, especially as they relate to socioeconomic impact assessment of transport infrastructure. Dr Parolin has 30 years experience in the supervision, design and management of research projects, and in the design and delivery of GIS related workshops and short courses. He currently resides in Sydney, Australia.
Affiliations

- Member, Institute of Australian Geographers
- Member, Royal Geographical Society of New South Wales
- Member, Planning Institute of Australia

Professional Experience

March 2010

International School Mapping and GIS Expert
UNESCO – International Institute of Educational Planning (IIEP)
(12 – 17 March 2010)

Project Name: First Meeting for School Mapping and Enrolment Projections, Ministry of Education, Riyadh, Kingdom of Saudi Arabia, Country: Saudi Arabia 2010

The Terms of Reference (ToR) of the mission as indicated in the Kingdom of Saudi Arabia MoE-IIEP agreement were to:

- Find out what exists at the Ministry in terms of data and trained officers,
- Put together a plan, including activities and a timeframe, for developing the tools needed and for capacity development/training, and
- Starting the process of developing the tools and training/coaching of staff during the mission.

The above ToRs were developed into a five day program for School Mapping (SM) which was approved between MoE and IIEP, the SM consultant, and coordinated with the population and enrolment projections consultant – Fadi Abillama. MoE selected a total of 15 participants (male and female) for the SM component, drawn from the General Directorate of School Planning and from several education districts.

The purpose of the mission, which took place between March 12 -17 2010, was to deliver the five day program. In particular, the focus was to be on: understanding the data and training requirements for SM in MoE; delivering an understanding of what SM is, and the components of SM; to demonstrate the various roles of Geographical Information Systems (GIS) in SM; to initiate training in how to undertake SM, particularly in the importance of spatial data (geo-education data layers) and the use of GIS for SM, and; to develop an Action Plan for how SM could be implemented and sustained within MoE.
December 2009 – January 2010  

**International School Mapping and GIS Expert Oxford Policy Management**

Project Name: Basic Education in Western Areas Project (BEWAP), Country: China 2009

A World Bank/DFID funded Basic Education project has been designed for and is currently being implemented in five provinces in Western China (BEWAP project). The role of the consultant was to prepare a *Policy Briefing Note* for the two organizations that funded the project and to present the results of the briefing note at a workshop in China.

A general outline of the *Policy Briefing Note* is as follows: to an overview of selected impacts of School Mapping Restructuring (SMR) that have been identified from the School Mapping (SM) component of the BEWAP study that clearly have policy implications for MoE in Beijing in terms of the impact assessment of SMR in the future. Section 2 presents a selection of key findings with respect to the impacts of SMR on schools, students and parents, particularly those that resonate with overseas experiences, and delineates emerging policy issues. Section 3 presents an argument for the use of Geographical Information Systems (GIS) and spatial analysis techniques to monitor and document the impact assessment of SMR. Section 4 draws the main policy implications and concludes on the following questions:

- What do the lessons of other countries bring to the understanding of the impacts of SMR policy in China?
- What scope is there to mitigate against certain impacts and to enhance the effectiveness, efficiency and equity of SMR policy?

The contents of the *Policy Briefing Note* were presented at the ‘Training and Dissemination Workshop, Impact Assessment and BEWAP Research Studies’, held in Huangzhou, China 2009, December 20-23.

Two presentations were made at the workshop:

- The role of GIS in determining school mapping structure
- GIS and impact assessment of School Mapping reform
February 2009 –
June 2009

Socio-economic Impacts Expert
UNSW Global Pty Ltd

Project Name: Socio-economic Impact Study – Hume Highway, Phase 1 – Tarcutta

Project Name: Socio-economic Impact Study – Hume Highway, Phase 2 – Holbrook and Woomargama

Appointment as a consultant to undertake an assessment of the economic impacts of the proposed Hume Highway bypasses of the towns of Tarcutta, Holbrook and Woomargama. The specific objectives of Phase 1 and 2 were:

Economic Profile

- Establish an economic profile of businesses in each town in terms of their dependence on passing trade, employment and turnover characteristics, and their expectations of business viability and profitability after the bypass,

Economic Impact on Tarcutta, Holbrook and Woomargama

- identify and evaluate the potential economic impacts and benefits relating to the bypass
- identify and measure the direct and indirect impacts on gross annual turnover, employment and viability and sustainability of businesses
- define those businesses likely to be directly and indirectly affected
- determine if these impacts are likely to be temporary or longer term and when they are likely to occur in the short- or long-term
- ensure that both positive and negative economic impacts of the proposal are examined in the assessment.

Evaluation and Proposed Mitigation/Management Measures

- evaluate the significance and magnitude of the economic impacts identified
- identify and evaluate possible strategies to mitigate and manage any identified negative impacts from the bypass on the town of Tarcutta, Holbrook and Woomargama.

A Before study methodology was developed that enabled a thorough examination of current businesses in each study area that are likely to be subject to the direct and indirect impacts of the construction and operation of the proposed bypass. Several surveys were undertaken between February and April 2009:

- Stopping motorists were interviewed at key locations within each
town centre such as the petrol station, café/takeaway and the truck driver's memorial/park. Their reason for travel, origin and destination, previous stop location, length of stop and expenditure patterns were established.

- Overnight stayers at all accommodation establishments in each town were surveyed using a self-completion questionnaire which established origin and destination of their journey, purpose and mode of travel, length of stay, frequency of travel, and expenditure on accommodation and on other goods and services in each town.

- Highway related businesses were identified and surveyed by the consultant. A profile of the business, including employment and turnover, degree of dependence on passing trade, estimates of a potential downturn in passing trade with the opening of the bypass road and any changes to business operations was obtained, as well as information on any linkages with other businesses in the study area.

Use was also made of a traffic survey conducted by Parsons Brinckerhoff Pty Ltd in December 2008. Information from all four surveys was used, together with census data for 2006, to estimate the direct and indirect impacts of the proposed bypass at each respective town. An employment-turnover ration model was developed to estimate potential employment losses due to the bypass in each town.

This work was undertaken for the client, Parsons Brinckerhoff Pty Ltd. These projects – Phase 1 and 2 - were completed on 30 June 2009.

**June 2008 – December 2008**

**Senior School Location Planning Expert**

Ministry of Education, Hashemite Kingdom of Jordan


The scope of this consultancy involves the development and completion of a school planning study which assesses the utilization of existing facilities, the consequences of enrolment growth (using current population census data) on future needs for school construction, and simulating various cost-effective ways of expanding capacity from 2009-2013, and projecting beyond these dates, while maintaining and enhancing quality gains. The report, data base and modeling tools that would emerge from the study will inform decisions about construction of additional schools under ERfKE II.

The scope of my work has consisted of the following:

1. A review key ERfKE I documents with respect to the intentions, progress and results of school construction and renovation from
2003-7 with particular respect to the National Education Strategy and appropriate infrastructure policy documents.

2. To conduct site visits to a representative sample of schools in both urban and rural areas and in different locations (North, Middle, South) to determine criteria for assessment of the physical condition of schools,

3. To conduct a situational analysis of the utilization and physical condition/status of school buildings and facilities given current population needs (actual gap analysis),

4. Review current demographic data and projections for population growth (by age groups) for the next five and ten years (projected gap analysis),

5. With reference to MOE policies for student access and school facilities provision, develop a variety of models based on assumptions of cost-effectiveness and locational coverage,

6. Provide a report on the application of the models to the current and projected data (with an analysis of the pros and cons of each scenario),

7. Lead Ministry and stakeholder discussion groups and focus sessions to discuss the implications of the suggested approaches,

8. On the basis of the above, develop a school and school facilities planning report that describes and delineates the best case scenario for long-term school planning, based on principles of cost-effectiveness and fiscal prudence, and the specific blueprint for school construction, extension and renovation for the coming five years.

The in-country period of 55 days has been completed and the full project was completed in December 2008.

May 2007 – August 2007

School Mapping Expert Consultant
Ministry of Education and Higher Education, Lebanese Republic


The Ministry of Education and Higher Education (MEHE) desired to establish a Geographical Information System (GIS) for School Mapping to support decision-making.

The goal of the “Professional Development Consultancy” as it related to GIS/School Mapping was to conduct an assessment of requirements, a gap analysis, and to formulate an action plan for improvement, in addition to recommendations relating to building capacity within the unit and identifying training requirements for the school mapping unit staff.
The scope of my work consisted of 3 phases.

**Phase 1 – Needs Assessment & Inception Report**
The first phase focused on the preparation of a Needs Assessment Report. This involved a detailed assessment of the needs of the School mapping unit:

- current structure,
- role,
- Staffing and organizational structure - GIS and information technology capacity of staff
- functionalities and responsibilities distribution among the unit staff members,
- business framework,
- Existing system tools and applications: Detailed technical description including general software assessment (Microsoft office, etc), and GIS specific, remote sensing, GPS specific software. Specifics on the compatibility, versions etc
- Existing system hardware equipment specifications: Not only GIS specific hardware but overall IT infrastructure: computers, scanners, printers, GPS receivers, digital cameras, network availability (LAN), internet connectivity, etc.
- Existing data including digitized Maps and educational information: sources, coding system, storing format, etc. For the school mapping itself: where datasets already exist, the consultant need to perform some data quality checks, also field test, and report on the checks not only the results but also on how it was done, and present recommendations on how to correct errors (if any) and on how it should be done.

The needs of other MEHE GIS stakeholders:

- Engineering Coordination Unit needs
- Information Management Unit/ Educational Management Information System and its requirements in terms of interfacing with GIS.

At the end of this phase a GIS Needs Assessment Report was submitted. After submitting the report a one day validation workshop was held with national GIS participants to discuss findings and recommendations. The report and workshop were reviewed and accepted by the assigned committee. Phase 1 was completed in May 2007.

**Phase 2 – GIS School Mapping Strategy and Work Plan**
The second phase focused on the preparation of a strategy and work plan for establishing a GIS and a school mapping system for MEHE. The proposed strategy was supported by a detailed work plan which clearly identified:

- Human Resource Requirements
- Software Technical Requirements (detailed description of the
functionalities of the needed GIS - Terms of Reference.)

- Data Collection Requirements (Maps digitization and georeferenced school data)
- Hardware Technical Requirements (All equipment needed to set a proper environment for operating the GIS – Technical Specifications)
- GIS technical management requirements (database, network, etc), and
- Building Capacity Requirements – Propose training programs for the School Mapping unit Staff.

At the end of this phase a GIS Strategy and Work Plan Report was submitted which included a detailed description of each of the performed tasks during this phase with related findings and conclusions. The report was reviewed and accepted by the assigned committee.

**Phase 3 – Final Report**

This phase focused on delivering a workshop for all GIS/School Mapping stakeholders and other agencies on a national level. The aim of the workshop was to share the findings, strategy and work plan that MEHE will be adopting for establishing a GIS for the education sector in Lebanon.

A Final Report was presented which included:

- Final version of the GIS/School Mapping strategy and work plan.
- Minutes of the workshop and feedback of the attendees (comments, recommendations)
- Consultant mission wrap-up conclusions and recommendations.

Phases 2 and 3 were completed in August 2007.

**June 2006 – November 2007**

**School Mapping Expert Consultant**

Oxford Policy Management Ltd., Oxford, United Kingdom

Project Name: Basic Education in Western Areas Project (BEWAP), Country: China (June 2006- March 2008).

A World Bank/DFID funded Basic Education project has been designed for and is currently being implemented in five provinces in Western China (BEWAP project). The development objective of the project is: “Improved access to and completion of affordable quality basic education for poor girls and boys in Sichuan, Gansu and Yunnan provinces and Ningxia Hui and Guangxi Zhuang Autonomous Regions.”

The project has three main components:

- Improving school facilities, including school infrastructure, equipment and teaching materials;
• Strengthening management and administration, including training of provincial and county education staff, the development of management information systems, and the introduction of community level school development planning (SDP); and
• Implementing strategies to improve the quality of teaching and learning, including teacher training and an innovations-piloting project that will generate policy-relevant findings.

My tasks as the school mapping consultant are to:
• Investigate and assess the effectiveness of current school location planning methods for primary and secondary schools in rural areas of western China
• Compare international experiences and best practice on primary and secondary school mapping
• Forecast the future demand of primary and secondary education and their ability to meet that demand.
• Provide new designs for school mapping to the Government of China that could be practically implemented and have a positive impact on school enrolment and completion rates.

This was achieved by undertaking three visits each of two weeks duration between June 2006 – March 2008. A policy brief for the Chinese Ministry of Education is currently under preparation. This will be presented at a workshop in Beijing in May 2009.

July 2005 – September 2005
Socio-economic Impacts Expert
Unisearch Pty Ltd

Project Name: Economic Impacts of the Proposed Upgrade of the Pacific Highway from Kempsey to Eungai, Country: Australia (July 2005- September 2005).

Appointment as a consultant to undertake an assessment of the economic impacts of the proposed upgrade of the Pacific Highway from Kempsey to Eungai on highway dependent businesses in the Kempsey and Frederickton town centres and at the Clybucca service station and Nambucca Farmers Kitchen at Eungai. Questionnaire based surveys of businesses, stopping motorists and over-night stayers were used as the basis for data collection and analysis of likely impacts. A major report was prepared for the client. This work was undertaken for the client, Parsons Brinckerhoff Pty Ltd. This project was completed on 30 September 2005.
August 2004 – February 2005  
GIS Expert  
Unisearch Pty Ltd


Appointment as a consultant to undertake a GIS analysis of water consumption patterns in Sydney using data covering a three year period. The specific focus is to apply geo-statistical models which relate consumption to spatial aspects of topography, rainfall, geology and the cadastral system of the Sydney metropolitan area. My duties were to prepare all relevant spatial and non-spatial databases, check for the accuracy of these databases, undertake various spatial analyses, prepare a series of maps, prepare a series of reports on the different stages of the project. The client was the Water Futures Research Alliance, University of Western Sydney and Sydney Water Authority. This project was completed on 3rd February 2005.

May 2004 – February 2005  
Court Expert  
Unisearch Pty Ltd


Appointment as a court expert for the New South Wales Land and Environment Court to prepare a report on the socio-economic impacts of the proposed Highway Service Centre at Karuah, in New South Wales, on the towns of Karuah and Bulahdelah. This involved extensive field work and surveys of all highway related businesses in the towns of Karuah and Bulahdelah. I was required to be present in the court proceedings and to give expert evidence on my findings. This project was completed in July 2004.

January 2001 – August 2001  
Consultant  
UNESCO, Architecture Section


Production of a School Facilities Maintenance Manual for widespread use by education authorities throughout the world. The scope of the work involves:
- Development of school facility condition assessment criteria, including a method for rating various maintenance elements.
- Development and testing of maintenance survey audit forms for
use by technical personnel to assess maintenance conditions.

- Development of maintenance cost figures for various elements and sub-elements.

A draft manual was prepared and submitted to UNESCO in August 2001.

December 1997 – January 1999

School Mapping and GIS Consultant
ACIL Australia Pty Ltd


Consultant on the Palestine Schools Mapping and Maintenance Scheduling Project undertaken for the client, Palestinian Economic Council for Development and Reconstruction (PECDAR). Complete responsibility for a multi-phase project with the following tasks:

- Development of school mapping databases for Palestine which allow the PNA Ministry of Education to develop multi-year plans for new school construction and major maintenance. This component involved implementation of appropriate GIS infrastructure and collection of relevant digital map data at various scales to build school mapping databases.

- Establishment of schools maintenance scheduling databases in Palestine for use by the Ministry of Education and by district offices.

  This component involved development of the following: a maintenance manual which specifies assessment criteria for maintenance problems and defects; a mechanism to collect data on school maintenance needs and requirements using the assessment criteria; an audit priority system for identified maintenance problems, and; a software application for the input, analysis and reporting of the schools maintenance data.

- Integrating the geographic and educational management systems to enable school planners at national and district levels to engage in more informed decision-making. This component involved suggestions for upgrading the existing EMIS in terms of range of attributes to be collected and in linking EMIS contents to a geographic locations of schools.

- Training to expert level relevant personnel in the Ministry and district level in the analytic use and updating of these databases. This component involved intensive training in GIS, and in the collection and application of school mapping databases and schools facilities maintenance databases for planning and management purposes.

This project was completed in January 1999.
July 1997 – November 1997 **Consultant**
University of New South Wales – Unisearch Pty Ltd

Project Name: Light Rail Strategic Plan for New South Wales, Country: Australia (July 1997- November 1997).

To provide technical assistance in the preparation of a “Light Rail Strategic Plan for New South Wales” for the NSW Department of Transport. The work involved an extensive review of the international literature on Light Rail, and a quantitative assessment of potential Light Rail corridors throughout New South Wales. The basis of the quantitative assessment was field surveys of each identified corridor, collections of specified data on a set of criteria, use of GIS to assemble the databases for each corridor and to determine an overall score for each corridor. The strategic plan was published in November 1997.

June 1996 – June 1997 **Principal Co-Researcher**
University of New South Wales – Unisearch Pty Ltd

Project Name: Mapping Staff and Student Travel at a University, Country: Australia (June 1996- June 1997).

My tasks were to design, implement and analyse a questionnaire based travel survey of staff and students at the University of New South Wales. Stage two involved development of an appropriate database of travel survey results for mapping with MAPINFO. The main task in this stage was the geo-coding of staff and student addresses, and the mapping of locations relative to the university. Stage three involved using the university’s existing total student and staff database for geo-coding and mapping purposes. The objective is, firstly, to map student and staff catchment areas and, secondly, to use the spatial information (combined with additional transport and feature layers) to investigate the feasibility of establishing car pool schemes to the university and of enhancing public transport access to the university campus.

February 1996 – December 1996 **Principal Researcher**
University of New South Wales

Project Name: Day Trip Travel Behaviour in the Illawarra Tourism Region, Country: Australia (February 1996- December 1996).

To provide a quantitative assessment for Tourism New South Wales of the nature of the day trip travel market in the Illawarra Tourism Region of NSW. To develop a digital database of an application to be used by ARCINFO and TRANSCAD which involves the mapping
and spatial analysis of day trip travel structures.

March 1993 – December 1996

**Principal Co-Researcher**
University of New South Wales – Unisearch Pty Ltd


This project, undertaken for the NSW Roads and Traffic Authority, had the task of assessing the socioeconomic impacts of highway bypass roads on communities located on major highways. The objectives of the project were to empirically document and quantify the nature and extent of such impacts on the businesses in selected communities, identify the factors which determine the level and type of impact, and provide guidance to researchers undertaking similar studies in the future.

The findings from the case studies were of practical significance for decision-makers and policy-makers. They provided a firm basis for assessing the reliability and accuracy of predictions as well as improving the methods used to forecast the economic impacts of bypass roads. This is particularly relevant for the preparation of Environmental Impact Statements (EISs).

January 1993 – December 1993

**Consultant**
University of New South Wales – Unisearch Pty Ltd


Design and implementation of a road network based GIS model for the Roads and Traffic Authority of New South Wales to calculate and map accessibility indicators to services and opportunities in the state of New South Wales. This application involved the development of point, line and area databases for integration into ARCINFO and TRANSCAD formats, for the purpose of modelling accessibility using network attributes and the mapping of accessibility indicators to assist the client in decisions about road funding priorities in NSW.

February 1992 – December 1992

**Consultant**
University of New South Wales – Unisearch Pty Ltd


Develop and implement a series of six workshops for Roads and Traffic Authority of New South Wales dealing with the theory and applications of urban transport land use modelling. These
workshops coincided with a major study being undertaken by the RTA on Future Directions for the City of Sydney.

**March 1991 – August 1991**

**Consultant**
University of New South Wales


This work was undertaken for National Survey Research Pty Ltd and involved an extensive review and critical assessment of the overseas literature dealing with specialised transportation services in urban areas; in particular, demand responsive services for the elderly and disabled. The assessment focussed on the potential application of overseas service delivery models to the city of Sydney.

**January 1988 – December 1988**

**Consultant**
University of New South Wales – Unisearch Pty Ltd


Responsible for the design, implementation and project management of the public transport study of Shellharbour/Kiama for New South Wales Department of Transport. Involved extensive liaison with potential public transport users and client of the scope of public transport in this low density and high car dependency area of the greater Sydney metropolitan region. In addition, the work involved questionnaire design, application of new travel survey methods, training of field survey staff and preparation of a training manual, quantitative data analysis, and the preparation of reports for the client.

**March 1986 – December 1986**

**Consultant**
University of New South Wales – Unisearch Pty Ltd


Co investigator responsible for the database design, liaison with client and system users, and application development of a GIS based (ARCINFO) location/allocation system for the re-organisation and regionalisation of the NSW Fire Brigades services. This project involved developing interfaces between location/allocation software and GIS, application of models, and the mapping of optimal fire headquarters locations and their regions for NSW in order to assist the management review of the structure of the NSW Fire Brigades.
March 1985 – August 1985

Consultant
University of New South Wales – Unisearch Pty Ltd


Development and preparation of a workshop manual for use with the Statistical Analysis System (SAS). The manual was to be used by employees of the client. A second stage of the work involved the consultant training staff in the use of SAS for marketing analysis purposes.

January 1983 – December 1983

Principal Researcher
Ohio State University


Design and implementation of travel surveys to assess the presence of non-compensatory travel behaviour among a sample of elderly and handicapped travellers using specialised transportation services in the city of Columbus, Ohio. Responsible for developing a database for use with travel models which provides the client with information on the importance of attributes associated with respective travel modes. Preparation of a final report for the client, Central Ohio Transit Authority.

January 1983 – December 1979

Principal Co-researcher,
Stillwater Board of Education and Oklahoma State University, Stillwater.

Project: Development of Optimal School Bus Routes and Catchment Areas for Stillwater Schools. USA, 1979 (12 months).

Design and implementation of location/allocation utilities for the client in order to optimise the allocation of school students to various schools within the Stillwater School District. To optimise the travel costs associated with the transport of school students to various schools by determining optimal school bus transport routes within optimally allocated school districts. To develop a framework for the establishment of an educational management information system for school transport tasks.

Development of a wide range of utilities for the client to enable an interface between location/allocation outputs and mapping software, and the provision of training for the client to permit repeat application of the utilities and the educational
management software. The outputs of the developed system enabled the client to:

- Update student address databases for use in the system;
- Update school district zonal information and centroid locations based on changing demographics for the city;
- Input student and district data into location/allocation utilities to evaluate optimum allocations;
- Assess the impact of the opening of a new school or the removal of an existing school;
- Assess the impacts of travel costs on school budgets.

List of Previous Publications and Research:
Publications and Academic Articles (Selected Only)

(a) Monographs/Books


(b) Refereed papers


(d) Other significant reports


