APPENDIX 1

STANDARD LEP ZONES

ATTACHMENT A. OVERVIEW ON THE GENERAL PURPOSE OF EACH ZONE

Rural zones

RU1 Primary Production

This zone is generally intended to cover land used for most kinds of primary industry production, including extensive agriculture, horticulture, intensive livestock agriculture, mining, forestry and extractive industries. The zone is aimed at maintaining and enhancing the natural resource base.

RU2 Rural Landscape

This zone is generally intended for rural land with landscape values or land that has reduced agricultural capability due to gradient, soil type, vegetation, rock outcrops, salinity etc. but which is suitable for grazing and other forms of extensive agriculture.

RU3 Forestry

This zone is generally intended to identify and protect land that is to be used for long-term forestry use. Note that land which is to be used for forestry purposes may alternatively be dealt with under the RU1 Primary Production zone.

RU4 Rural Small Holdings

This zone is generally intended for land which is to be used for small scale rural and primary industry production. Land within this zone might also provide for emerging primary industries and agricultural uses. It is not intended that this zone be used for land that is primarily residential in function—the R5 Large Lot Residential zone should be used for that purpose.

RU5 Village

This zone is generally intended to cover rural villages where a mix of residential, retail, and other uses is to be established or maintained.

RU6 Transition

The transition zone is generally intended to be used in special circumstances for land that provides a transition or buffer between rural land uses (including intensive rural land uses) and other sensitive land uses such as residential, education or community uses. Councils who intend to use this zone should approach the Department of Planning at the earliest opportunity during LEP preparation.

See footnote.[1]

[1] Note for all rural zones:

Minimum lot sizes for the subdivision of rural land are to be identified on the Lot Size Map referred to in clause 19, which councils will prepare in accordance with relevant State or regional planning guidance and local strategies prepared by councils. Minimum lot sizes may vary within a zone, depending on how the Map is drawn.

Residential zones

R1 General Residential

This zone is generally intended to provide for a variety of residential housing types and densities, including dwelling houses, multi-dwelling housing, residential flat buildings, boarding houses and seniors housing. The zone also provides for additional uses that provide facilities or services to residents, including neighbourhood shops and child care centres.

R2 Low Density Residential

This zone is generally intended to be applied to land where primarily low density housing is to be established or maintained. The zone objectives also encourage the provision of facilities or services that meet the day-to-day needs of residents.

R3 Medium Density Residential

This zone is generally intended for land where a variety of medium density accommodation is to be established or maintained. Other residential uses (including typically higher or lower density uses) could also be permitted in the zone where appropriate. A variety of residential uses have been mandated to encourage housing choice in this zone.

R4 High Density Residential

This zone is generally intended for land where primarily high density housing (such as residential flat buildings) is to be provided. Other lower density residential uses could also be accommodated where appropriate. The zone also provides for additional uses that provide facilities or services to residents, including neighbourhood shops and child care centres.

R5 Large Lot Residential

This zone is generally intended to cater for development that provides for residential housing in a rural setting. The allocation of large lot 'rural' residential land must be justified by a strategy prepared in accordance with guidelines issued by the Department. This zone was formerly known as a Rural Residential zone.

Business zones

B1 Neighbourhood Centre

The zone is generally intended to cover small neighbourhood centres that include small scale convenience retail premises, business premises or community uses that serve the needs of the surrounding area.

B2 Local Centre

This zone is generally intended for centres that provide a range of retail, business, entertainment and community functions that typically service a wider catchment than a neighbourhood centre.

B3 Commercial Core

This zone is generally intended for major centres that provide a wide range of uses including retail, employment, entertainment and community uses. The zone could be applied in major metropolitan centres or major regional centres.

Land which is zoned Commercial Core might be surrounded by other business zones such as Business Development or Mixed Use, where a variety of supporting uses provide a transition to the major centre.

B4 Mixed Use

This zone is generally intended for use where a wide range of land uses are to be encouraged, including retail, employment, residential, community and other uses.

B5 Business Development

This zone is generally intended for land where employment generating uses such as offices, warehouses, retail premises (including those with large floor areas) are to be encouraged. The zone supports the initiatives set out in the Metropolitan Strategy *City of Cities: a plan for Sydney's future* (NSW Government 2005) but might also be suitable for application in urban areas in regional NSW.

The zone may be applied to locations that are located close to existing or proposed centres, and which will support (and not detract from) the viability of those centres.

B6 Enterprise Corridor

The zone is generally intended to be applied to land where commercial or industrial development is to be encouraged along main roads such as those identified by the Metropolitan Strategy *City of Cities: a plan for Sydney's future* (NSW Government 2005). The sale of food and clothing is to be limited to ensure that Enterprise Corridors do not detract from the viability of centres.

B7 Business Park

This zone is generally intended for land that primarily accommodates office and light industrial uses, including high technology industries. The zone also permits a range of facilities and services to support the day-to-day needs of workers, such as child care centres and neighbourhood shops.

Industrial zones

IN1 General Industrial

This zone is generally intended to accommodate a wide range of industrial and warehouse uses. Councils could choose to supplement the existing mandated industrial and warehouse uses by permitting heavy, and offensive or hazardous industries, if appropriate. This zone would be suitable where a council wishes to have only one industrial zone.

IN2 Light Industrial

This zone is generally intended for land that provides light industry, warehouse and distribution uses.

IN3 Heavy Industrial

This zone is generally intended for instances where councils wish to designate particular land for heavy industrial uses that require separation from other land uses. The need for such a zone will depend on the type and nature of industrial uses that exist or likely to take place in the area. Other forms of industry might also be permitted in the zone if appropriate.

IN4 Working Waterfront

This zone is generally intended for industrial and maritime uses that require waterfront access. The zone could be applied to port facilities (particularly small commercial fishing or other ports) as well as other maritime industrial uses. An Infrastructure (SP2) zoning may be more appropriate for large commercial port facilities.

Special purpose zones

SP1 Special Activities

This zone is generally intended for special land uses or sites with special characteristics that can not be accommodated in other zones. Some examples of where this zone may be suitable might include land on which there is, or is proposed to be, a major scientific research facility, a major defence or communications establishment or an international sporting facility.

This zone should be used where the use can not be provided for in another zone. This zone is not the same as traditional Special Uses zones that appear in a number of existing LEPs. For example, a school or fire station can generally be accommodated in a Local Centre, Mixed Use, or Infrastructure zone.

The permitted use is to be annotated on the map. The use annotated on the map, along with any development that is ordinarily ancillary to that use will be permitted with consent. Other development generally permitted in the zone (e.g. roads) would also be permitted.

SP2 Infrastructure

This zone is generally intended to cover a wide range of physical and human infrastructure uses such as transport (e.g. roads and railways), utility undertakings and works, community uses, educational establishments (e.g. schools) and hospitals.

This zone would be used for some facilities where previously a special uses zone may have been used. A map notation to identify the defined type of facility will be required. For example, a council adopting this zone for a school would mark 'SP2 (School)' on its zoning map.

Where land is reserved for public infrastructure purposes (e.g. a railway), the land is to be outlined and annotated on the Land Reservation Acquisition Map and the relevant acquisition authority identified in the table in clause 24.

SP3 Tourist

This zone is generally intended to be located where a variety of tourist-orientated land uses are to be permitted, and includes uses such as tourist and visitor accommodation, pubs and restaurants.

Recreation zones

RE1 Public Recreation

This zone is generally intended for a wide range of public recreation areas and activities, including local and regional open space.

Councils may generally permit typical public recreation uses in this zone. A range of land uses compatible with the recreation use of the land should be permitted.

Where land is reserved for public recreation purposes (e.g. local or regional open space), the land is to be outlined and annotated on the Land Reservation Acquisition Map and the relevant acquisition authority identified in the table in clause 24.

RE2 Private Recreation

This zone is generally intended to cover a wide range of recreation areas and facilities on land that is privately owned or managed.

Environment protection zones

E1 National Parks and Nature Reserves

This zone is generally intended to cover existing national parks and nature reserves. All uses currently authorised under the *National Parks and Wildlife Act 1974* will continue to be permitted without consent within this zone.

E2 Environmental Conservation

This zone is generally intended to protect land that has high conservation value. A number of land uses considered to be inappropriate for this zone have been mandated as prohibited uses.

E3 Environmental Management

This zone is generally intended to be applied to land that has environmental or scenic values or hazard risk, but where a limited range of development including dwelling houses and other uses could be permitted. This zone might also be suitable as a transition between areas of high conservation value and other land uses such as rural or residential.

E4 Environmental Living

This zone is generally intended for land with special environmental or scenic values where residential development could be accommodated.

Waterway zones

W1 Natural Waterways

This zone is generally intended for waterways that are to be protected due to their ecological and scenic values.

A limited number of low impact uses that do not have an adverse effect on the natural value of the waterway can be permitted in this zone.

W2 Recreational Waterways

This zone is generally intended for waterways that are used primarily for recreational purposes such as boating, fishing and waterskiing, but which may also have ecological, scenic or other values that require protection.

W3 Working Waterways

This zone is generally intended for waterways which are primarily used for shipping, port, transport and other working uses. The zone recognises that there may also be recreational uses.

See footnote.[2]

[2] Note for all waterway zones:

Councils may choose not to apply a waterway zone to smaller waterways (such as streams and intermittent creeks) and instead zone the waterway the same as the adjacent land e.g. RU1. The waterway zones are generally intended for application to the waterway's channel and banks.

APPENDIX 2

ECONOMIC PROFILE, DYNAMICS AND POTENTIAL IMPACTS PAPER

(HVRF)

Planning Workshop Australia

Dungog Shire Council and the Tillegra Dam Project: Economic profile, dynamics and potential impacts

Final Report – July 2008

Planning Workshop Australia

Dungog Shire Council and the Tillegra Dam Project: Economic profile, dynamics and potential impacts

Final Report
July 2008

Prepared for

Planning Workshop Australia

HVRF job no. 583/08

The Hunter Valley Research Foundation

ABN 91 257 269 334

PO Box 3023	55 Downie Street
Hamilton DC	Maryville NSW
2303	Phone: 4969 4566
NSW Australia	Fax: 4961 4981

e-mail: info@hvrf.com.au

Executive Summary

THE PROJECT

This report has been prepared for Planning Workshop Australia (PWA), as the lead consultant advising the Dungog Shire Council on their land-use strategy in response to the proposed Tillegra Dam. This strategy work is being undertaken by Council using funding supplied by the Hunter Water Corporation (HWC), in their role as the proponent for the dam, with additional support provided by the NSW Department of Planning and the Department of Premier and Cabinet.

PWA commissioned the Hunter Valley Research Foundation (HVRF) in April 2008 to undertake research regarding economic activity within the Dungog Shire Local Government Area (LGA) with a view to informing upon the land-use strategy. This report provides no opinion regarding the relative merits of constructing the Tillegra Dam. The focus is placed upon Dungog LGA's economic trajectory prior to, and subsequent to, the dam's completion, *on the assumption that the construction proceeds*.

The research methodology adopted contained two approaches; desktop research and qualitative interviews with 15 major stakeholders. The participant names for the qualitative interviews were provided by PWA, in consultation with Dungog Shire Council. They were chosen to provide a broad spectrum of insights into the disparate industry sectors operating within the Dungog Shire. They were consciously sought from the different townships/valleys within the Local Government Area. They were also selected to provide a mixture of opinions from those with long family histories in the area to more recent residents.

ECONOMIC PROFILE AND PREVAILING DYNAMICS

The key insights derived from the desk-top research into the economic profile and prevailing trends within the Dungog Shire are summarised below.

Population growth

- Growth in the estimated resident population is largely static (-0.2% pa over 2006/07) and has been for the last five years. The HVRF Population Projection model forecasts that population growth will decline further over the next 20 years. This forecast is based upon the assumptions derived from historical birth/death ratios and the historical level of new dwelling stock provision into the Dungog Local Government Area (LGA).
- The model forecasts that the population, already skewed towards an elderly profile, will continue to age rapidly.
- Only a substantial change in the viable provision of housing stock is likely to change this outlook.

Employment growth

- Employment located *within* the Dungog LGA fell sharply (average of 4.6% per annum) in the five years to 2006. An age profile of this decline, demonstrates that those aged 20 to 44 years of age have been most dramatically affected.
- This contrasts with employment growth for those *resident within* Dungog LGA, which has increased substantially year on year (average of 2.7% per annum over a corresponding period), in accordance with the wider strength in the regional labour market.

Transition of the local economy

- These patterns imply that the Shire is transitioning from a detached rural community into an economy that is more integrated with regional growth, both in the Lower Hunter (Maitland, Raymond Terrace) and the Upper Hunter (new mining activity, etc).
- The Shire's role has increasingly progressed toward a commuter district for these surrounding employment centres.
- This places an increased focus upon:
  - Provision of new housing opportunities to optimise potential demand within the Shire from commuters.
  - The quality of transport options, particularly roads, between the Shire's residential areas and key employment areas.
  - A transition of key stakeholders' perception of Dungog Shire from an autonomous rural area to a community integrated with the Region.
  - The balance between competitive local retail and the retail offer in external centres.

Sectoral insights

- Agriculture remains a significant contributor to economic activity within the Shire, despite substantial restructuring and decline in the dairy and timber industries.
- Aside from *Agriculture*, *Education and training*, *Retail trade*, tourism, *Healthcare and social assistance* and *Public administration and safety* (Council) are the major employers within the Shire.
- The loss of employment (located within Dungog LGA) between 2001 and 2006 appears to have been broad-based across most industry sectors.
- Small business, employing less than four people, dominates the profile of the business community. The large operations are concentrated within *Health and community services*, tourism (*Accommodation, cafes & restaurants*), *Education* and *Property & business services*.

REGIONAL ECONOMIC TRENDS: DUNGOG SHIRE IN CONTEXT

The desk-top research into regional economic trends across Australia provides context for the analysis of economic activity within Dungog Shire. The key points are summarised in the following.

- At a regional scale, productivity, employment growth and income levels across Australia are generally aligned in a positive relationship. The net migration of younger age groups (either as young adults or as children of parents) is positively associated with these economic attributes, which in turn generate further economic growth in a positive cycle. To the contrary, low non-farm productivity, (relatively) high unemployment, low income levels and an ageing population are often associated in a negative cycle. The local economy within the Dungog Shire has been exhibiting many of the attributes associated with this negative cycle.

- The major exception to the regional analysis, concerns those region's possessing a valuable natural resource base. The proximity of Dungog Shire to the coal mining activity within the Hunter Region provides some degree of exclusion. This is exemplified by the commuters that reside within the Shire while working in the Hunter or Stratford mines. However, the extent of the Shire's exposure to this advantage is moderate and the economic outlook is therefore not immune to the dynamics summarised prior.

- The economy within Dungog Shire possesses many of the negative dynamics that could lead to a deteriorating economic trajectory. However, it is also blessed by its regional context, both in proximity to the resource-based growth *and* the economic, employment and population growth that is emerging in the Lower Hunter. This would suggest that one of the major challenges facing the local economy is to ensure that it optimises its' position within the regional growth story by more effectively engaging with the opportunities founded in the Shire's core attributes.

COMMUNITY CONSULTATION REGARDING THE DUNGOG SHIRE ECONOMY AND TILLEGRA DAM

With respect to the economic outlook, challenges and opportunities for the Dungog Shire economy, a series of themes has been identified from the stakeholder interviews. A heavily abridged summary of the key trends and issues identified is presented below.

- Dairy/beef industry – The dairy industry within the Shire has seen massive structural change following deregulation with the number of dairies declining rapidly. The participants believed that this process was not yet complete with further consolidation expected; particularly if/when the Dairy Farmers Corporation is listed/acquired. The decline of dairy has contributed to the gradual transition to beef cattle, which contributes less to the local economy. Within the Shire, few farmers of beef cattle exist without supplementary income from external sources.

- Ownership transition – Farms have been increasingly acquired by non-farmers (wealthy urban professionals) from outside the Shire. Mixed views existed regarding this transition, but most of those interviewed were generally supportive. The new owners invest substantial capital into the farms, beyond pure business requirements, and employ local staff to manage and run the operations. The elevation of land values that has accompanied this transition creates problems for generational change and makes farming as a pure business less viable.

- Rural subdivision issues – There was a general consensus among the participants that the planning instruments / associated legislation do not assist the district. Minimum subdivision areas for rural land were too low to maintain a viable sustainable farm, while holdings of this size excluded the perceived strong demand for smaller hobby farms and commuters seeking a rural lifestyle. The participants saw no insurmountable conflict between protecting the most viable agricultural holdings and opening up the Shire for further subdivision. They did, however, detail conflict, current and potential, between Rural Residential uses and intensive/professional farming, and between the *Native Vegetation Act* and local planning objectives, amongst numerous others. Again, they remained generally optimistic that these could be resolved for the betterment of the Shire.

- Housing sector – Potential demand within the Shire was seen as likely to be strongest in the commuter areas i.e. Clarence Town, Vacy. Those interviewed believed that demand would be greatest for *Rural Residential* within the commuter zone and *Rural Lifestyle* in the more remote areas. Traditional residential subdivision was seen as best placed in the new housing estates around Maitland / Thornton, with infill sites in Dungog and the other centres capable of satiating expected demand. A lack of strategy regarding the urban hierarchy was seen by some participants as hindering the Shire's progress. Conflict potentially exists between this objective and the direction of market demand.

- Other agriculture – Those interviewed reported a gradual shift toward more intensive farming/agriculture e.g. olives, grapes, cheese. Possible expansion of these niche produce industries was pictured as a complement to a broader tourism offer. This activity does not require large rural land holdings, but was not considered commercially viable without the tourism/retail overlap. Some stakeholders also envisaged an opportunity to establish the area as a tourism/educational region regarding food production and produce.

- Tourism – If the dam were to proceed, most stakeholders believed it was imperative that recreational use of the water was allowed/encouraged. Participants envisaged opportunities for boating, sailing, kayaking, bike tracks, fishing, camping, house boats, etc. They did not, however, believe that these facets alone would transform tourism within the Shire. Rather, an active dam was seen as a significant opportunity to diversify the offer and boost tourism, particularly with the heightened exposure arising from the dam's construction.

- Industrial prospects – Dungog Shire was not seen by the participants as a prime location for industry due to lack of proximity to major transport infrastructure and major markets. Prevailing industry largely reflects a legacy from the Region's primary industry. This stated, the expansion of present business premises had been found to be difficult, even infeasible, discouraging the most realistic prospects. Participants did envisage opportunities for light industry to diversify with the development of the dam and associated water sports industry. Examples raised (among others) included tractor maintenance firms expanding into boat parts and servicing, stronger tourism numbers sustaining the intensive agriculture of more niche produce.

- Dam problems – The negative economic impacts that the stakeholders believed will arise, or have arisen, include:
  - The loss of business revenue from inundated farms and the subsequent economic multipliers into maintenance, servicing, stock feed and management.
  - The loss of household income from inundated farms and the subsequent economic multipliers through lost retail expenditure, etc.
  - The lost productive capacity through the inundation of high quality agricultural land with highly reliable (relatively) water supply.
  - Losses to the Council rate base.
  - The fracturing of a previously aligned supportive community.

- Hopes for the dam – On the whole, the participants were generally optimistic and believed that many opportunities would flow from the dam's construction. These included the opportunity to:
  - Re-position Dungog Shire from its current malaise.
  - Diversify the tourism offer, through recreational uses of the water.
  - Upgrade Dungog's main street, as part of a stronger tourism offer.
  - Use the short-term boost from the dam's construction to invest/create competitive scale within local businesses e.g. engineering construction.
  - Improve the transport and telecommunications infrastructure.
  - Encourage population growth.
  - Create sufficient critical mass to support key health, transport, retail and community services.
  - Liberate the subdivision and development opportunities (housing and tourism) stifled by the current planning regime, without undermining the rural and environmental qualities that comprise the Shire's key attributes.
  - Highlight the area and bring new ideas, initiative, investment and people to the Shire.

Table of Contents

List of Tables

List of Figures

1.0 Introduction

1.1 Project overview

This report has been prepared for Planning Workshop Australia (PWA), as the lead consultant advising the Dungog Shire Council on their land-use strategy in response to the proposed Tillegra Dam. The strategy work is being undertaken by Council using funding supplied by the Hunter Water Corporation (HWC), in their role as the proponent for the dam, with additional support provided by the NSW Department of Planning and the Department of Premier and Cabinet.

PWA commissioned the Hunter Valley Research Foundation (HVRF) in April 2008 to undertake research regarding economic activity within the Dungog Shire Local Government Area (LGA) with a view to informing upon the land-use strategy. This research comprises one of several consultancy reports, including a social impact study and a study specifically focussing upon the tourism potential of the local area combined with the Tillegra Dam. Accordingly, while tourism is addressed within the report, the information is only presented where it is likely to be supplementary to the specialist research.

It is acknowledged that the Tillegra Dam has numerous regulatory hurdles to surpass before construction can proceed. This report provides no opinion regarding the relative merits of constructing the dam. The focus is placed upon Dungog LGA's economic trajectory prior to, and subsequent to, the dam's completion, *on the assumption that the construction proceeds*.

1.2 Project components

HVRF's research proposal (February 2008) identified three components to the scope of work:

i. Current economic profile and trends – Desktop research
ii. Economic trends and potential impacts from dam: Interviews with major stakeholders
iii. Economic impact - Input-output modelling of potential economic scenarios

The objective of component *iii* was to provide some quantifiable data against which the perceived impacts could be broadly benchmarked. Following discussions with PWA, it was concluded that this component would not be required at this stage.

1.3 Methodology

In accordance with the HVRF's initial proposal, the research methodology comprises two approaches, desktop research and interviews with major stakeholders.

Desktop research
The desktop research profiles economic activity within the Dungog LGA using data from published sources, including:

- The Census of Population and Housing, 2001 and 2006 - Australian Bureau of Statistics (ABS)
- Additional survey data from the ABS
- Income data from the Australian Taxation Office (ATO)
- Employment data from the Federal Department of Employment and Workplace Relations
- Population projections from the HVRF.

The data has been analysed and presented in a manner that identifies the core factors shaping the area's current economic profile and prospective economic outlook.

Regional economic comparisons and analysis is drawn from the *State of the Regions 2007* report from National Economics and the Australian Local Government Association.

Interviews with major stakeholders
The overall objective of the interviews was to contribute a *qualitative* assessment of the economic factors shaping economic activity in the Region and to identify key challenges and opportunities that might arise with the construction of Tillegra Dam. Desktop analyses of the foreseeable economic prospects are limited to defining the driving forces and dynamics that continue to shape business activity within the Shire. This qualitative approach adds sophistication to the desktop analysis, while shedding more light upon the potential economic outlook.

Data collection technique
Data was collected by telephone interviews with selected individuals, mainly from the Dungog Shire but also outside the Region. Essentially it was a *qualitative*, as opposed to a *quantitative*, survey, with participants prompted (where necessary) for their opinions on the dynamics of industry within the area and their view of the outlook with, and irrespective of, the completion of the Tillegra Dam. This approach allowed the maximum amount of information on any particular issue to be obtained since participants were encouraged to elaborate on their responses. That is, the questioning route was developed in response to answers given in order that the interviewer could understand the reasons behind the answers. The broad Question Path is provided in the Appendix I. On average, the interviews lasted between 20 and 30 minutes. Interviews were

completed in May and June 2008. Specific dates are provided in the Appendix II.

All interviews were conducted by the HVRF Project Manager, Simon Deeming. With the permission of the participants, all interviews were recorded to ensure the accuracy and completeness of the written notes. Given the potentially divisive nature of the Tillegra Dam subject matter, all recordings and notes from the interviews will be destroyed and any quotes will remain anonymous. This was felt to be a necessary step to ensure that participants could speak freely.

The purpose of the interview and the role of HVRF were explained to all participants at the commencement of the interview. A focus question was agreed with PWA, to ensure consistency across interviews. The focus question was:

> ‘What are the main economic characteristics of the Dungog LGA and the key drivers / events shaping economic activity in the area that need to be accounted for in a new land-use strategy?’

The objective was to discuss not only the current state of affairs in relevant business areas, but to lead the discussion toward the factors shaping this outcome and therefore the factors potentially shaping the economic outlook. It also aimed to keep interviewees focussed upon the ultimate objective, being guidance for the land-use strategy on the assumption that the Tillegra Dam is to proceed.

Participants
The sample of representatives to be invited to participate in the project was provided by PWA, in consultation with the Mayor (Councillor Glen Wall), the General Manager (Mr Craig Deasy) and the Economic Development Officer (Mr Greg Fenwick) of Dungog Shire Council. Details are provided in Appendix II, listed in alphabetical order according to surname.

Participants were chosen to provide a broad spectrum of insights into the disparate industry sectors operating within the Dungog Shire. They were consciously sought from the different townships/valleys within the LGA. They were also selected to provide a mixture of opinions from those with long family histories in the area to new residents with ‘fresh’ eyes. While the majority of participants reside within the Dungog LGA, several were purposely chosen because they held extensive business interests, both within the Shire and elsewhere, including individuals residing outside the Council area. Where participants from the initial list were unavailable or unwilling to be interviewed, a replacement in a similar field/profile was recommended with approval provided by PWA.

It is acknowledged that some of the major stakeholders interviewed for this research have personal interests that may be directly or indirectly affected by the construction of the Tillegra Dam and/or affected by emerging land-use strategies within the Dungog

Shire. The interviews were conducted in an open manner in this regard and this factor should be acknowledged in the interpretation of this material.

The initial project objective was to complete 15 interviews. This was extended to 16 interviews to enable a recommended stakeholder to be included. Ultimately not all the recommended interviewees were available or willing to complete an interview within the survey timeframe, and 15 interviews were finalised.

Presentation of the results

The insights gained from these interviews have been used in several ways within this report. Where relevant they have been used to provide greater depth to the explanation of the economic profile and prevailing dynamics within the Shire, particularly regarding industry-specific trends. With respect to the economic outlook, challenges and opportunities for the Shire, a series of issues has been identified by the HVRF as being either frequently raised, or deemed to be of significant importance to merit inclusion, even if not raised by the majority of participants.

Where possible, the interviewees' own words have been used to elaborate on the issues. Any quotations are indented and *italicised*. This approach is considered optimal because:

- The nature of the qualitative data collected is verbal. It is appropriate that it be reiterated to support and effectively express the points being made.
- The participants' own words are more interesting and entertaining than a purely personal summary.
- The comments provide some indication of the tone and vehemency with which the points were made.

1.4 Report structure

This draft report has been divided into the following sections:

- Section 2 – Economic profile and prevailing dynamics
  Provides a 'base-line' description of economic activity within the Dungog LGA, including the trends and key drivers shaping the area's current economic trajectory. Represents a summation of the desk-top research.

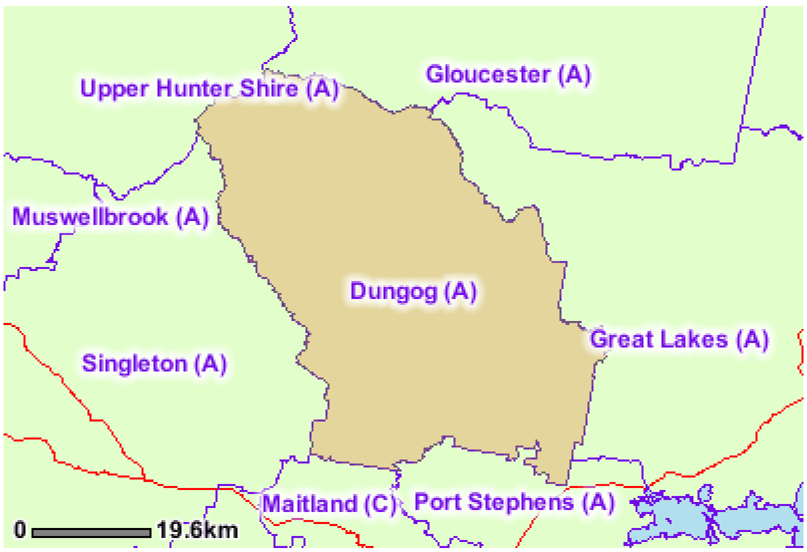
- Section 3 – Regional economic trends: Dungog LGA in context
  Summarises research explaining the attributes and drivers separating those regions across Australia with above average and those with below average economic growth. Accordingly provides some background context regarding the prospective economic outlook for the Dungog Shire, against which the opportunities identified in Section 4 can be considered.

- Section 4 – Community consultation regarding the Dungog Shire economy and Tillegra Dam
  Summarises the insights from interviews with major stakeholders in the region, focussing upon the outlook for the local economy, generally and sector by sector. Summarises the potential economic implications raised in the interviews regarding the Tillegra Dam.

1.5 Definitions

The local community most significantly impacted by the proposed Tillegra Dam lies within the Dungog Local Government Area (LGA). The following research focuses upon the economic profile, trends and drivers of activity within the Dungog LGA. Variations away from this geography, due to data limitations, have been referenced. Where data is only available according to the Australian Standard Geographical Classification (ASGC), it should be noted that the ASGC of *Dungog (A) Statistical Local Area* currently represents the same geographical area as the Dungog LGA (Figure 1).

Figure 1: Map of the area enclosing Dungog LGA and Dungog (A) Statistical Local Area



Source: Australian Bureau of Statistics (ABS), Commonwealth of Australia & PSMA 2007

1.6 Disclaimer

The information contained herein is believed to be reliable and accurate. However, no guarantee is given as to its accuracy or reliability, and no responsibility or liability for any information, opinions, or commentary contained herein, or for any consequences of its use, will be accepted by the Hunter Valley Research Foundation, or by any person involved in the preparation of this publication.

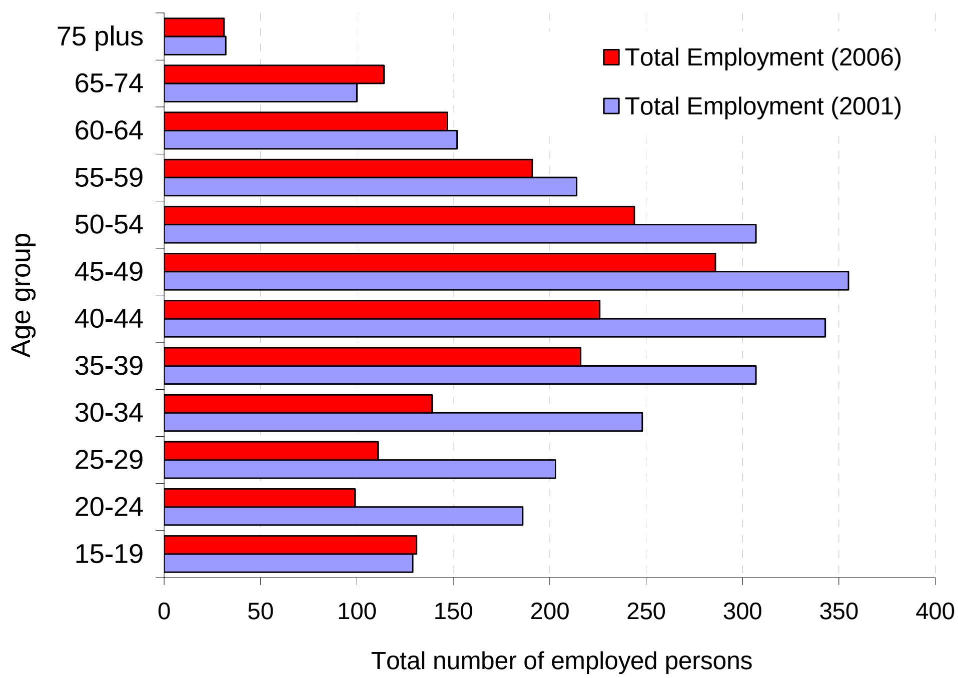
2.0 Economic profile and prevailing dynamics

2.1 Working population profile

Data captured by the census can be aggregated according to residential concerns (e.g. Usual Residents Profile) or employment location (Working Population Profile). HVRF are aware that PWA has addressed the Usual Residents Profile (URP) in other reports. Consequently, HVRF have not repeated these statistics in this report. This following analysis concentrates upon insights arising from the Working Population Profile and, where informative, makes comparisons to the URP.

Employment profile – Age and change

Figure 2: Change in total number of employed persons by age, by place of work, Dungog LGA, 2001 and 2006



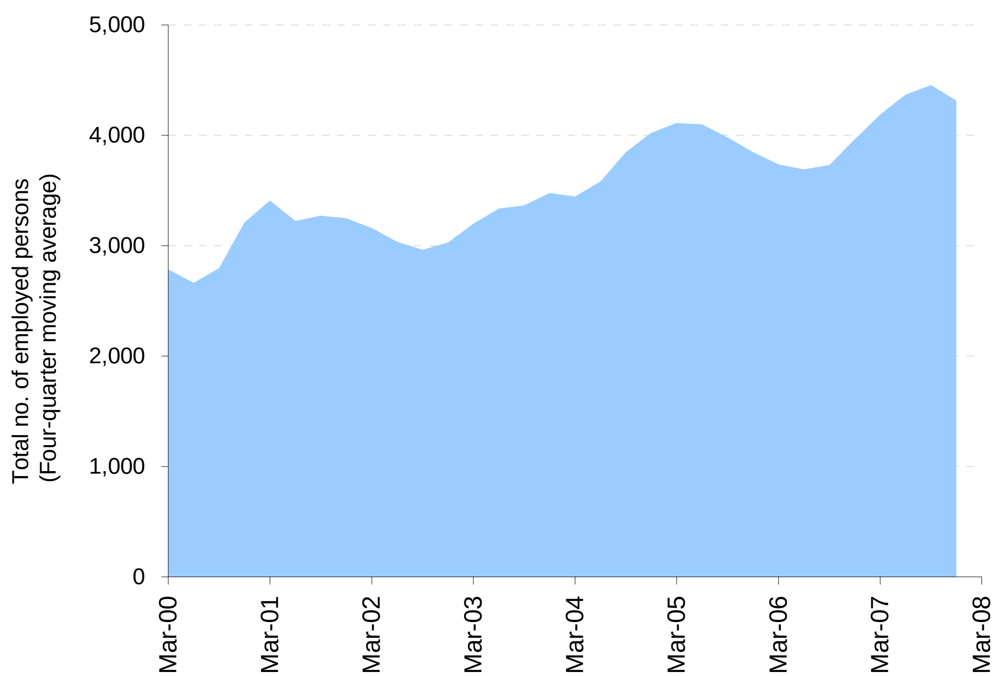
Source: ABS Census of Population and Housing 2006

A total of 2,037 people (aged 15 and over) were employed in the Dungog Shire at the time of the 2006 census. This represents a decline of 4.6% per annum from the corresponding figure in 2001. Figure 2 compares the age profile of those working within Dungog LGA from the 2001 census to the profile from the 2006 census. It demonstrates that:

- The number of persons employed within the region has markedly declined for most age categories.
- Employment opportunities within the LGA for those aged 25 – 44 years have declined substantially.
- The exceptions, with static or greater employment, include those aged 15-19 years and those aged 60 years and over.

This data contrasts to the trend in employment measured by the Federal Department of Employment and Workplace Relations and charted below (Figure 3). The small area labour market (SALM) data estimates the number of people with an employed labour status and residing within the LGA at 3,731, an average increase of 2.7% per annum over a corresponding period to the census data. The difference between these growth rates reflects the fact that SALM data refers to a worker's residential address, whereas the working population data refers to an individual's place of work.

Figure 3: Small area labour market - Estimated total number of employed persons, based on unemployment and total labour force data, Dungog LGA, by place of residence



Source: Federal Department of Employment and Workplace Relations

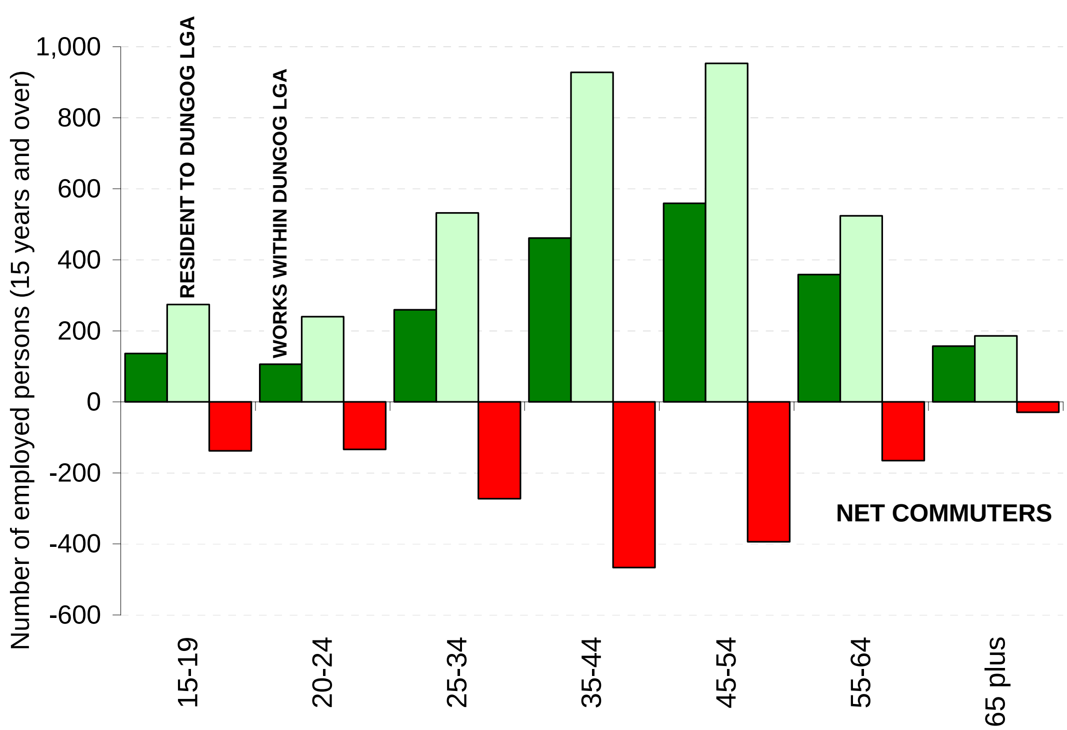
This analysis demonstrates that:

- Employment generators have been lost from within the LGA, but these have been replaced by employment opportunities based outside of the Shire. Many of those accepting these opportunities are electing to reside within the LGA.
- The Dungog Shire is adopting more of a commuter profile; a residential area of choice to surrounding employment centres.
- This transition is consistent with an economy that is evolving from a more autonomous 'rural' community to an area economy that is more connected and integrated with regional growth, both in the Lower Hunter (Maitland, Raymond Terrace, Tomago) and the Upper Hunter (new mining activity, etc).

Commuter trends

Figure 4 uses the census data to compare the number of employed persons *working* within Dungog LGA to the number of employed persons *residing* within Dungog LGA. The balance reflects the *net* flow of commuters in and out of the area, accepting that commuting from the shire obviously predominates. Commuting activity does not appear to be focused within any particular generation, with the net balance distributed in accordance with the population profile.

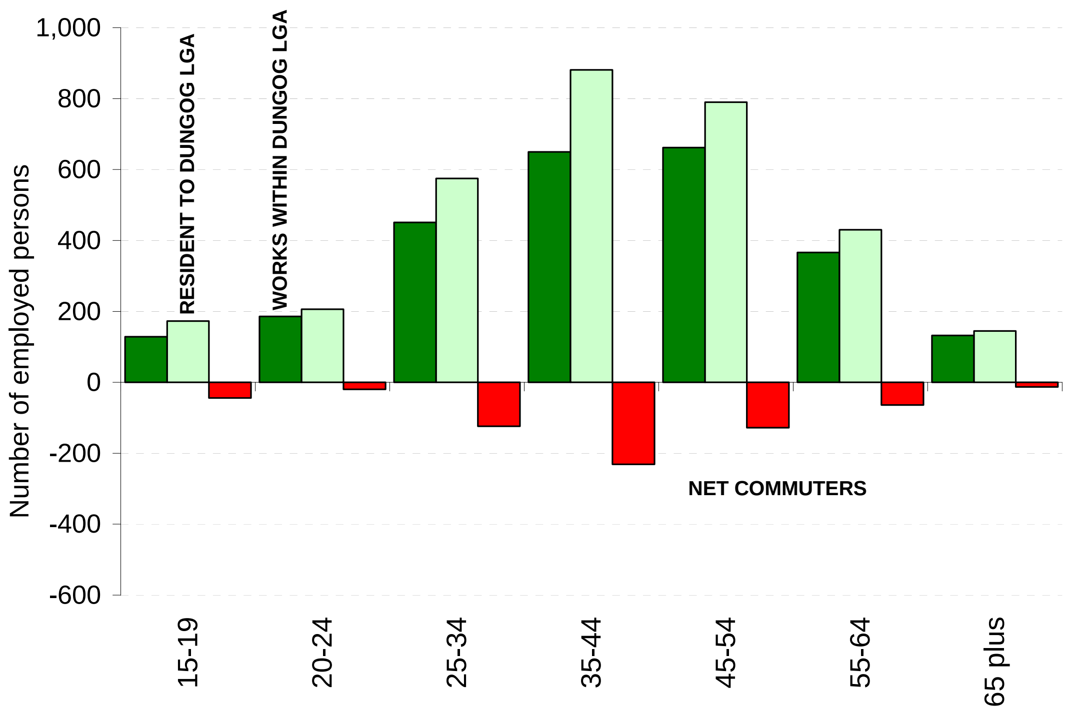
Figure 4: Total employed persons by age category – Those resident within Dungog LGA versus those employed within Dungog LGA, 2006



Source: ABS Census of Population and Housing 2006

An examination of the same data from the 2001 census demonstrates that this trend was less prevalent at the time (Figure 5). The trend in the interceding five years has seen fewer people living and working exclusively within the Dungog LGA and supports the contention of greater integration with the regional economy. This pattern can be expected to increase further over the coming decade as regional economic growth in the Lower Hunter (population growth) and the Upper Hunter (resources-driven) progresses further.

Figure 5: Total employed persons by age category – Those resident within Dungog LGA versus those employed within Dungog LGA, 2001



Source: ABS Census of Housing and Population 2006

This places an increased focus upon:

- Provision of new housing opportunities to optimise potential demand within the Shire from commuters (when the residential market cycle turns).
- The quality of transport options, particularly roads, between the Shire's residential areas and key employment areas.
- Ensuring that the perspective of key stakeholders (public and private sector, community) shifts away from an autonomous rural view i.e. How do we bring large manufacturers into Dungog Shire?, to a regionally-integrated outlook i.e. How does Dungog Shire fit into the regional economy? What are the unique attributes? How do we benefit from greater connection with the region's economic prosperity?

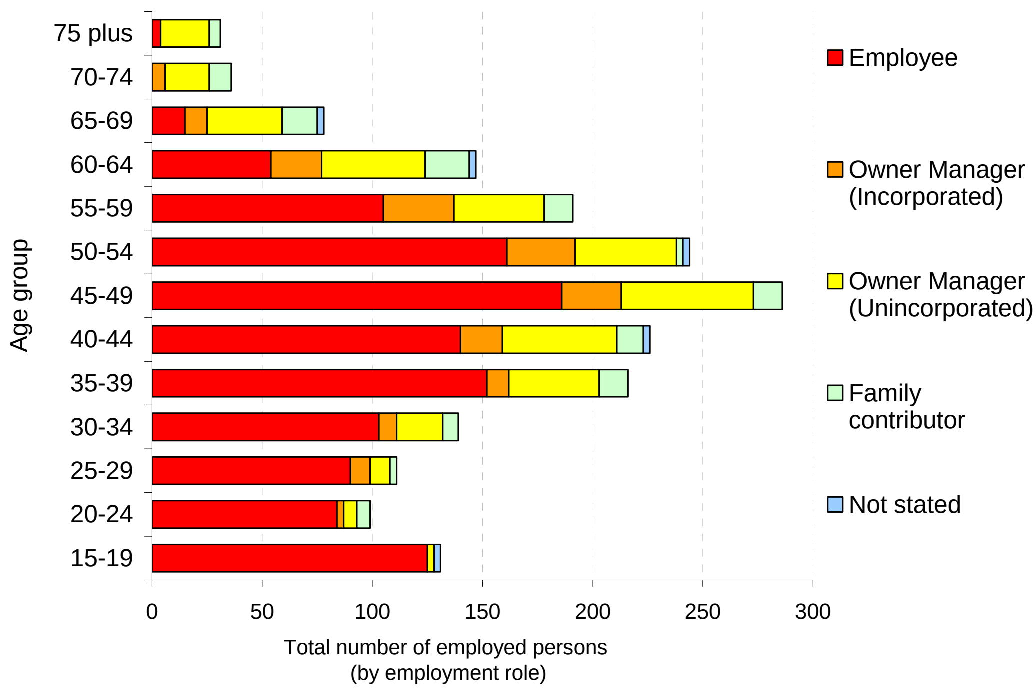
- The balance between competitive local retail and the retail offer in external centres.

Business ownership

The profile of the working population by *role* (Figure 6) demonstrates that:

- Owner-managers comprise a significant proportion of the region's employment, particularly for those aged 35 years and over
- Few people work beyond 70 years unless they are owner-managers
- Family contributors exist across all age categories reflecting the Shire's industry profile

Figure 6: Total number of employed persons by role, by place of work, Dungog LGA, 2006



Source: ABS Census of Population and Housing 2006

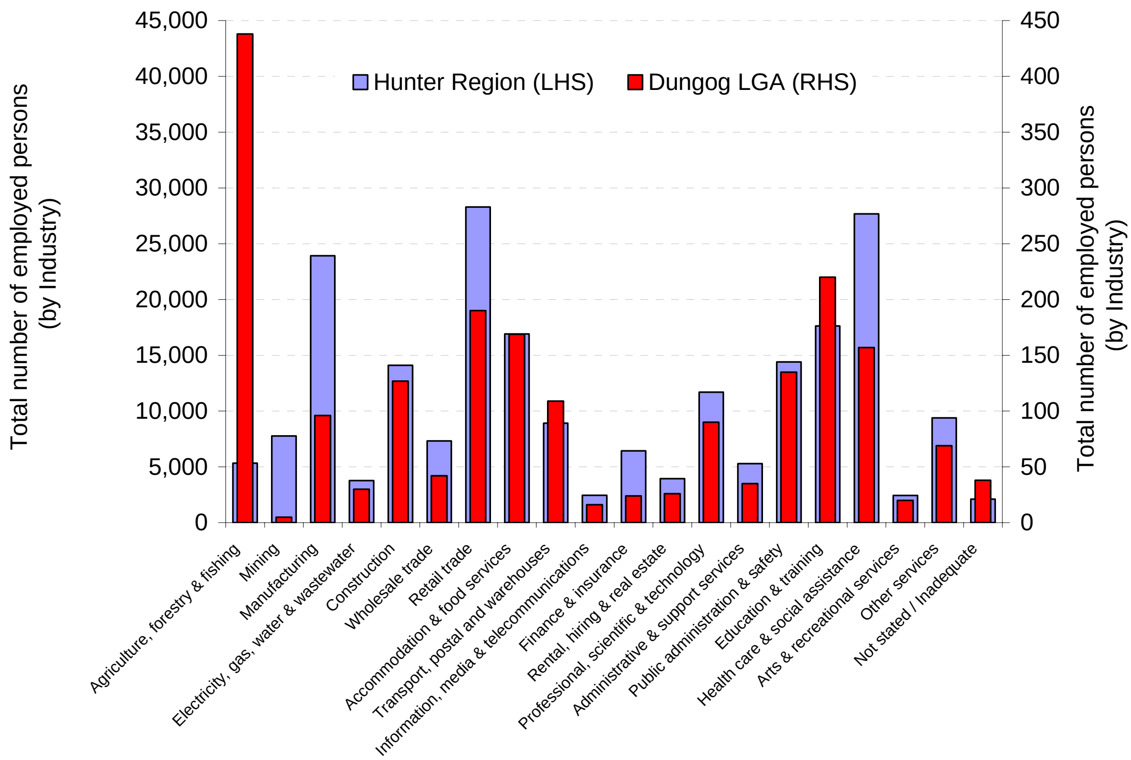
2.2 Industry structure

Census insights

Figure 7 uses the working population profile to profile the industry structure (Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006) within Dungog LGA. The Hunter Region is provided as a benchmark. The key insights to be derived from this analysis are:

- Despite the substantial changes that have passed through and continue to evolve in the agriculture and forestry industries, this sector remains the dominant activity within the Shire.
- *Mining* and *manufacturing* contribute relatively little (through direct local employment) to the Shire's economy. Both contribute to the employment of residents within the Shire.
- *Education*, *Health care & social assistance* are significant employers.
- The significance of the retail (*Retail trade*) and tourism (*Accommodation & food services*) is also clear from the employment data.

Figure 7: Number employed residents by ANZLIC 2006 industry category, by place of work, Dungog LGA and Hunter Region, 2006



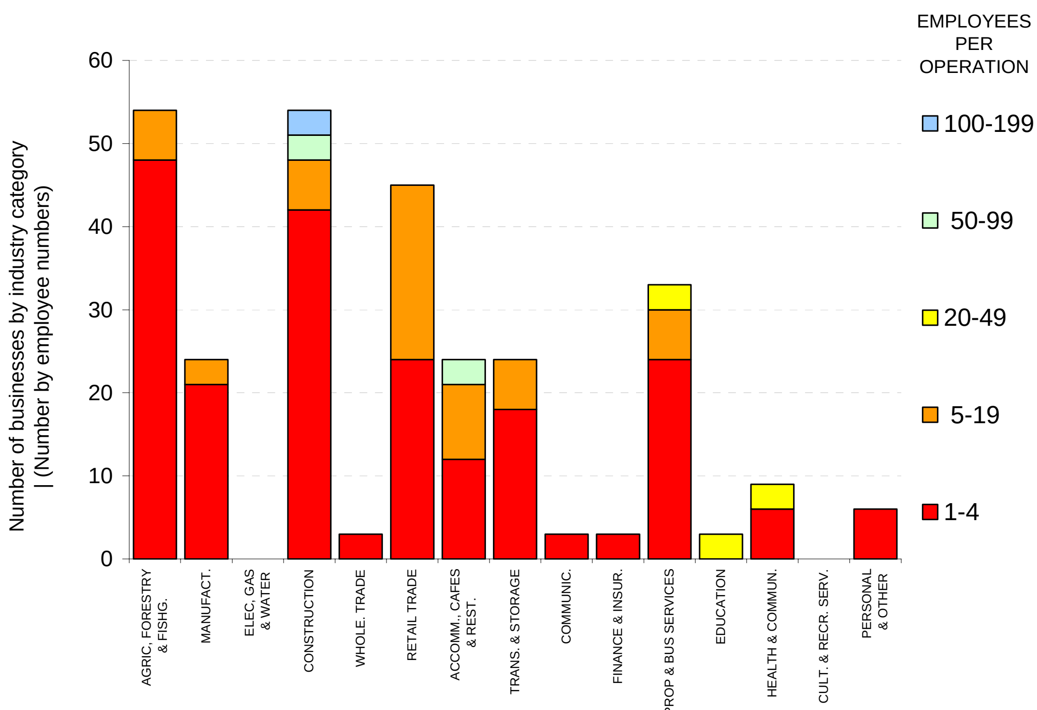
Source: ABS Census of Population and Housing 2006

Unfortunately, data for employment by industry category and place of work is not available for 2001 in the same ANZLIC 2006 categorisation as the 2006 data. This prevents a direct comparison of employment change over time for the industry located within Dungog LGA. Comparison on a broad basis, acknowledging the different classification of certain industry sub-groups, suggests that employment has declined across most sectors. The picture from a broad economic perspective and an industry-by-industry perspective has been quite dire within the Shire for some time.

Insights from business count data

Business count data can be sourced for Dungog LGA from the ABS. It measures the number of private businesses registered in the area, including those entering or exiting business between June 2003 and June 2007. It is possible that this data over counts due to multiple business numbers that are attributed to the same operation/employees or under counts due to minimum turnover measures. Further the attribution of a business count to Dungog Shire may not accurately reflect the location of actual business activity.

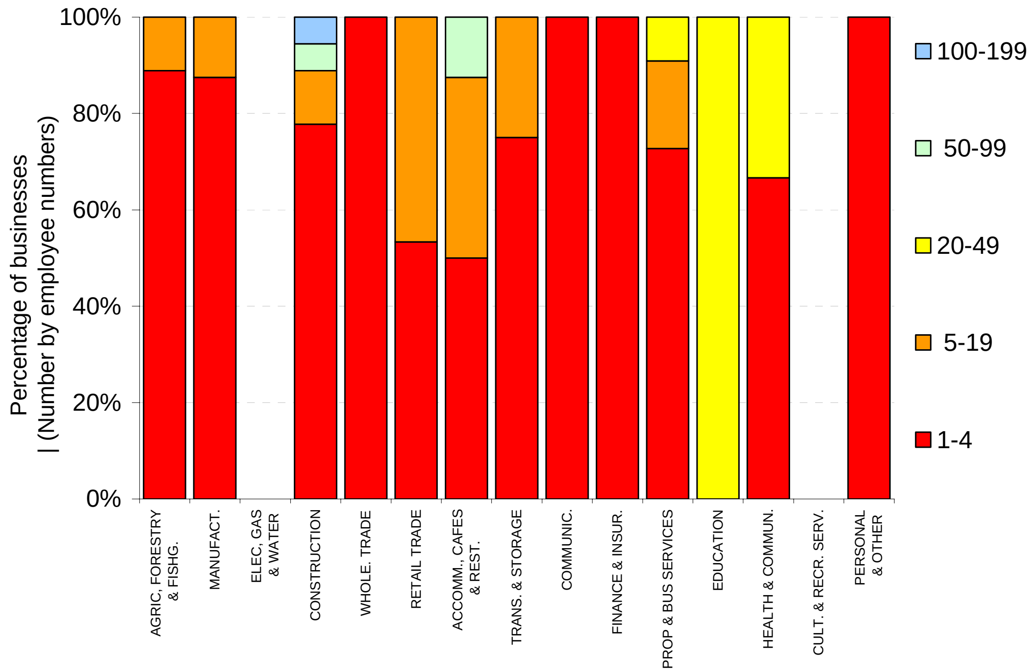
Figure 8: Count of businesses by Industry Category, by employee numbers - Dungog LGA, December 2007



Source: ABS, Counts of Australian Businesses, Including Entries and Exits, Cat. No. 8165.0, Note: The data is primarily compiled from the Australian Business Register maintained by the Australian Tax Office and, therefore, excludes businesses without a registered Australian Business Number (primarily businesses with an annual turnover of less than $50,000). Industry sectors have been defined according to the 1993 version of the Australian and New Zealand Standard Industrial Classification (ANZSIC). Included are single location and multiple location businesses. Also excluded are entities which are not considered to be actively trading in the market sector and, as such, are not considered to be businesses. These entities include charitable organisations, and 'general government' which particularly affects data for the electricity, gas and water; education and health and community services sectors.

It is notable that the Dungog IGA supermarket employs 60 to 70 employees and this is not reflected in the results. The reason for exclusion of this significant employer will depend upon whether the business was registered within the Shire, whether the two IGAs were merged at the cut-off date for the survey (1 July 2007) and whether the business was registered on the ABS Business Register (which is derived using the ATO's Australian Business Register for GST purposes). For confidentiality reasons, the ABS data cannot be scrutinised to this level, but despite these, and other, limitations (see above notes) aside, the business count data still provides insight regarding the broad industry profile and structure of local business activity by number of employees.

Figure 9: Count of businesses by Industry Category, by employee numbers - Dungog LGA, December 2007



Source: ABS, Counts of Australian Businesses, Including Entries and Exits, Cat. No. 8165.0

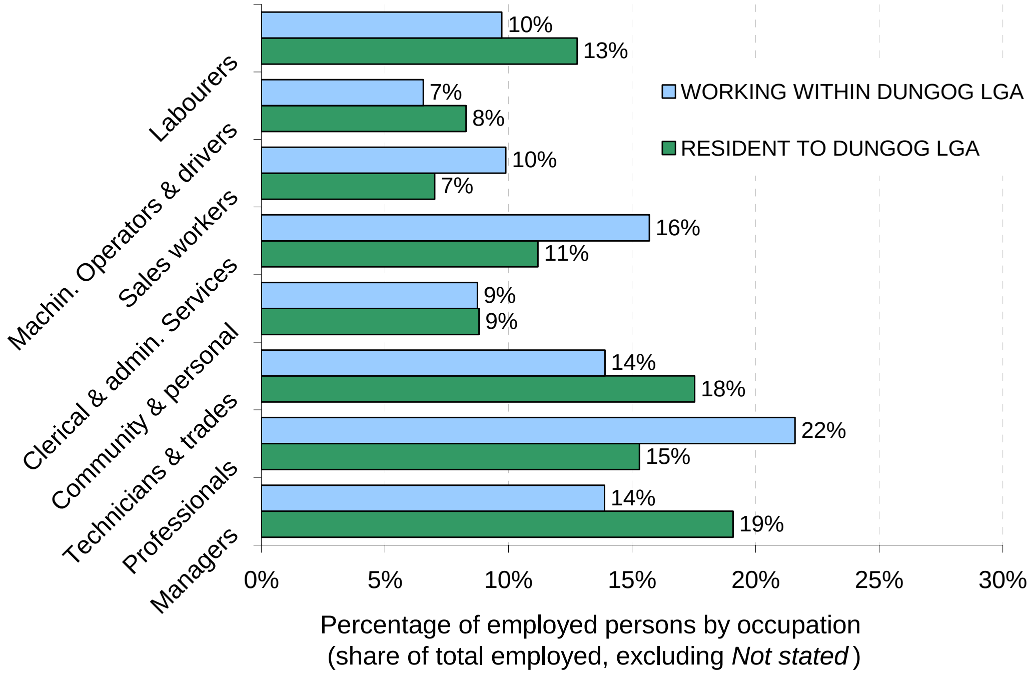
The principal observations from analysis of the business count data (summarised in Figure 8 and It is notable that the Dungog IGA supermarket employs 60 to 70 employees and this is not reflected in the results. The reason for exclusion of this significant employer will depend upon whether the business was registered within the Shire, whether the two IGAs were merged at the cut-off date for the survey (1 July 2007) and whether the business was registered on the ABS Business Register (which is derived using the ATO's Australian Business Register for GST purposes). For confidentiality reasons, the ABS data cannot be scrutinised to this level, but despite these, and other, limitations (see above notes) aside, the business count data still provides insight regarding the broad industry profile and structure of local business activity by number of employees.
Figure 9) are:

- Business based within the Dungog Shire comprises predominantly small operations with 1 – 4 employees.
- There is a moderate share of medium-size firms (5-19 employees) particularly in:
    - *Agriculture, forestry and fishing*
    - *Retail trade (note this excludes the supermarket IGA, which is a major employer)*
    - *Accommodation, cafes and restaurants*
    - *Transport and storage*
    - *Property & business services*
- The small number of large 'business' operations are concentrated in:
    - *Accommodation, cafes and restaurants*
    - *Property and business services*
    - *Education*
    - *Health and community services*
    - *Retail trade (see prior note)*
- The *construction* sector is identified as containing businesses that employ substantial numbers within Dungog Shire. However, HVRF believe this reflects the legal registration of names rather than actual operational activity.

2.3 Occupational structure

The industry structure of the region is also reflected in the occupational structure. The large primary sector produces a higher component of Managers and Labourers than the NSW benchmark (Figure 10). The regional / rural structure of the local economy is reflected in proportionally fewer *Professional services*, *Clerical and administrative workers* and *Sales workers*, which are typically concentrated in the larger urban centres.

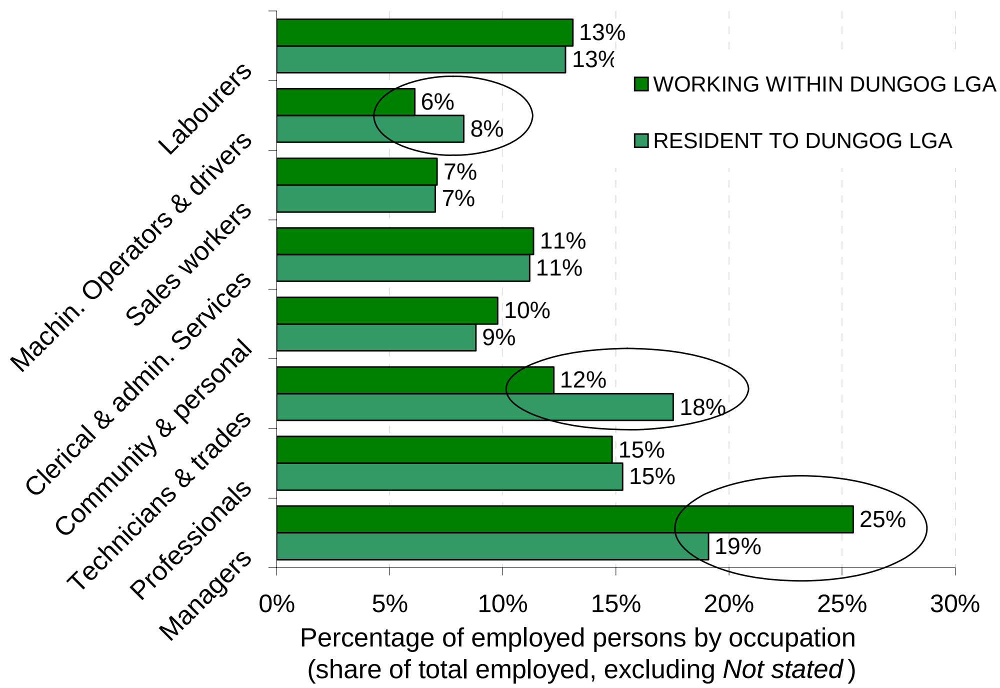
Figure 10: Occupational structure of employed residents, Dungog LGA and NSW, 2006



Source: ABS Census of Population and Housing 2006

Figure 11 presents a comparison between the occupational structure of those *employed within* Dungog LGA against those *residing within* Dungog LGA. It highlights the profile of those residents that represent the emerging commuter belt of the Shire. The occupations which are more prevalent among residents than those working within the Shire are *Machinery Operators & Drivers* and *Technicians & Trade Workers*. This is consistent with the qualitative understanding of this trend (detailed in Section 4), which suggests that the commuters are typically technical trades and machinery operators either working in the coal mines (and related industry) in the Upper Hunter or the manufacturing industry based in areas such as Tomago. The greater proportion of *Managers* reflects the agricultural farming base and high share of family businesses within the Shire.

Figure 11: Occupational structure of employed residents and workers, Dungog LGA, 2006



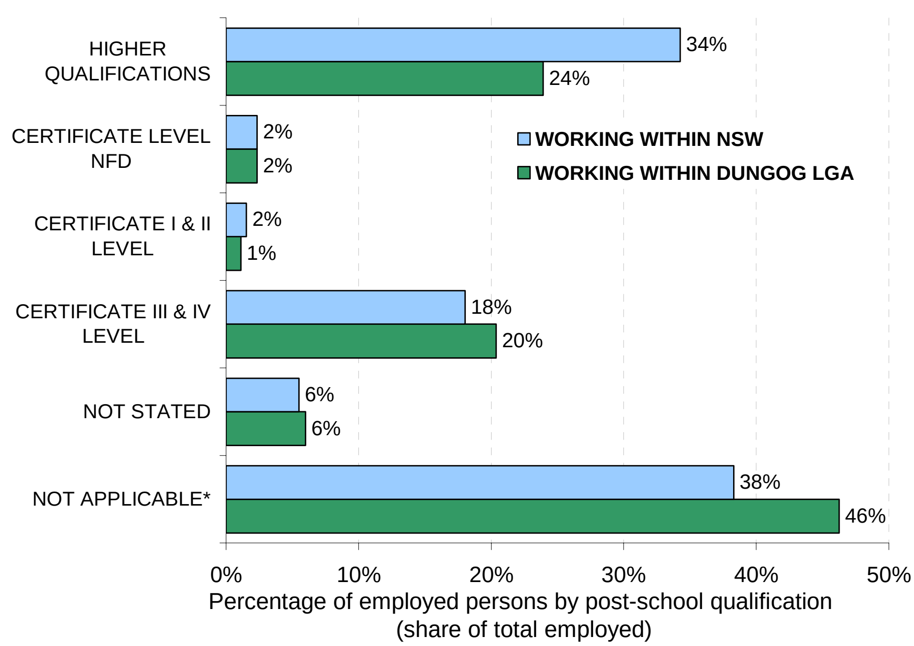
Source: ABS Census of Population and Housing 2006

2.4 Post-school education

The post school educational attainment of people employed within Dungog Shire is summarised in Figure 12. Compared to the NSW benchmark, the Shire contains a low proportion of workers with higher qualifications and a higher proportion of employees with no post school education. This might be expected given the age profile was skewed toward the older generations, although it also reflects the historical predominance of primary industry. The Shire has a similar component of workers with technical qualifications to the State benchmark, which is unusual in the Hunter Region and reflects the minimal level of mining and manufacturing activity that currently exists. HVRF are aware that in recent times skill shortages have existed within Dungog Shire Council authority in fields such as childcare, administration, information technology and engineering. While estimated unemployment is relatively low within the Shire (4.3% as at Dec-07), this suggests a mismatch still exists between the qualifications of those entering the workforce and the positions available.

Unfortunately, educational attainment data is not readily available by age category, as this would demonstrate whether the recent generations are entering the workforce more appropriately educated for the requirements of the public and private sectors. HVRF are aware that Dungog Shire Council has been working with the local high school to educate local students regarding the potential careers within the Shire and the implications this holds for education paths.

Figure 12: Post-school educational qualifications of persons employed within Dungog LGA and NSW, 2006



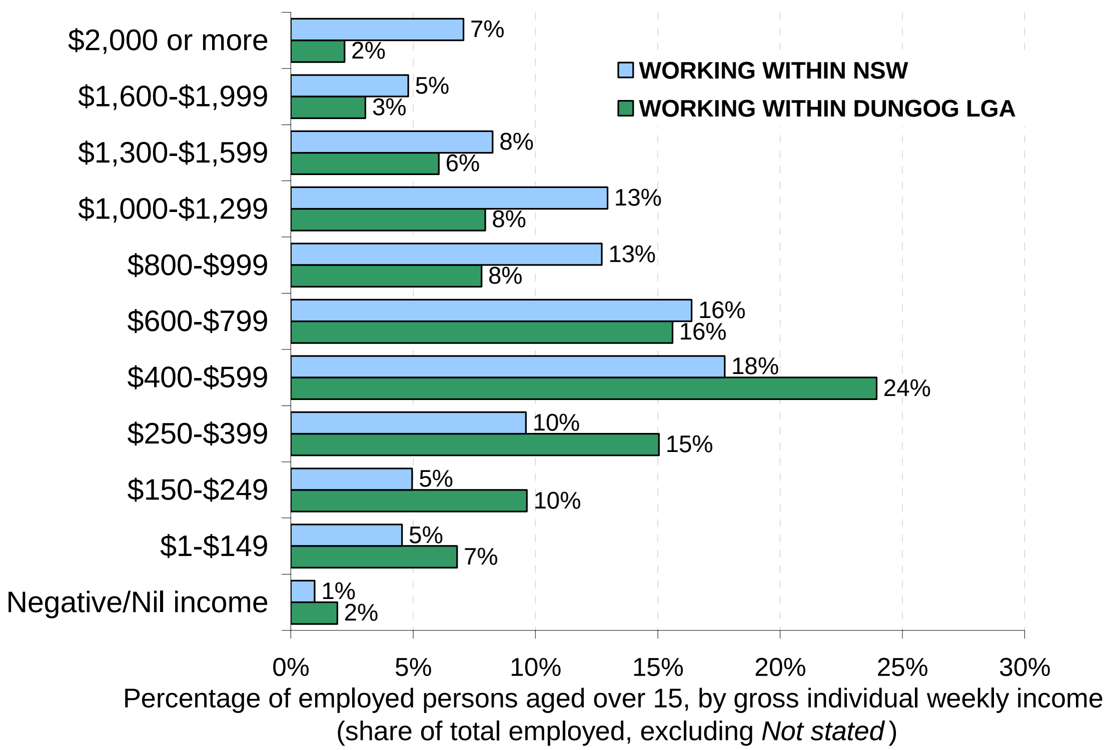
Source: ABS Census of Population and Housing 2006, Note: Includes employed persons who do not have a qualification and employed persons who have a qualification out of the scope of the Australian Standard Classification of Education

2.5 Income and economic resources

Census insights

Census data suggests that income levels were lower in Dungog LGA for those working in the Shire than for the State average. Those employed within Dungog LGA had a higher representation for all income brackets below $600 per week and a lower representation for those earning more than $600 per week.

Figure 13: Income profile of all employed over 15 years, Dungog LGA and NSW, 2006



Source: ABS Census of Population and Housing 2006

Insights from Australian Tax Office (ATO) data

The latest data from the ATO provides further evidence of the relatively low income profile of Dungog LGA. The data presented in Table 1 is available by postcode. The data presented is for postcode 2420, which represents most of Dungog Shire and some of the immediate surrounds. According to this benchmark individual incomes in the core Dungog area (postcode 2420) were 20% lower than the State benchmark. For postcode 2321, which is closer to the economic activity in the Lower Hunter, the mean income was substantially higher and close to the State benchmark. Postcode 2311, which covers the North-east and therefore a more geographically remote area of Dungog Shire, was largely the same as postcode 2420, albeit on a smaller scale.

Table 1: Income profile from personal tax records - 2005-06 income year

Postcode	Area Description	Non-taxable Individuals*	Taxable Individuals*	Total Income	Mean Income
2420	Dungog and surrounds	530 (25%)	1,560 (75%)	$61,889,207	$39,673
2321	Part Dungog and surrounds	1,010 (18%)	4,615 (82%)	$224,809,789	$48,702
2311	NE Dungog	125 (27%)	345 (73%)	$13,662,655	$39,602
	NSW State	696,395 (19%)	3,036,660 (81%)	$151,325,380,663	$49,833

Source: Australian Tax Office Personal Tax Table 3A, Note: Percentage reflects proportion of total liable individuals

The personal income profile, relative to the state average, is consistent with the level of engagement in the Lower Hunter economy. This relates to the level of employment (hours worked) and the educational attainment/skill base required; as it translates to income capacity. It should be noted that the contribution to the area's social capital i.e. community service, voluntary carers, etc. is likely to operate in an inverse pattern to the personal income profile.

Index of Economic Resources (IER)

The Socio-economic Indexes for Areas (SEIFA) indexes are derived by the ABS using census data. There are four different indexes, each representing a slightly different concept. Each index attempts to combine different information to measure an abstract concept, such as access to economic resources. These measurements enable geographic areas to be ranked across Australia in terms of their socio-economic characteristics.

The SEIFA Index of Economic Resources (IER) focuses on the 'general level of access to economic resources of people and households within an area'. The IER includes 15 variables included to measure a wide range of factors, such as: household income, housing expenditures (e.g. rent) and wealth (e.g. home ownership). The full list of variables is included in Appendix III. It should be noted that some important information, such as superannuation, was not included as it was not collected in the Census.

The IER ranking percentiles for the Dungog Shire, other LGAs in the Hunter Region and benchmark LGAs are tabled below (Table 2). The measurement suggests households in the Dungog LGA have a relatively high capacity to manage and invest in their own wellbeing, particularly in comparison to Cessnock or Newcastle LGAs, and even against more comparable regions such as Gloucester and the Great Lakes LGAs. Of the regional LGAs, only Singleton ranks higher, with Dungog ranked highly against the rest of NSW.

Table 2: Index of Economic Resources: Dungog LGA and selected comparables, rankings against all NSW LGAs

Local Government Area	Percentile of Rank
Ku-Ring-Gai (Most advantaged)	100
Singleton	82
Dungog	**76**
Maitland	66
Lake Macquarie	64
Upper Hunter	63
Port Stephens	62
Muswellbrook	60
Gloucester	44
Great Lakes	42
Newcastle	31
Cessnock	26
Brewarrina (Most disadvantaged)	1

Source: ABS Census of Population and Housing 2006

2.6 Housing sector

The strategic frame of reference for this report compels a focus upon long-term trends within the Dungog Shire. Accordingly, we have not provided extensive material regarding the cyclical status of the residential market. It is clear that activity within the new housing sector within NSW generally is very weak and the level of residential construction in the Shire is similarly subdued.

Table 3: Residential Building Approvals, Dungog LGA

	12-months to Mar-08 (Number)	**10-year Average (Number per annum)**
New Houses	25	36.4
New Other Residential	2	1

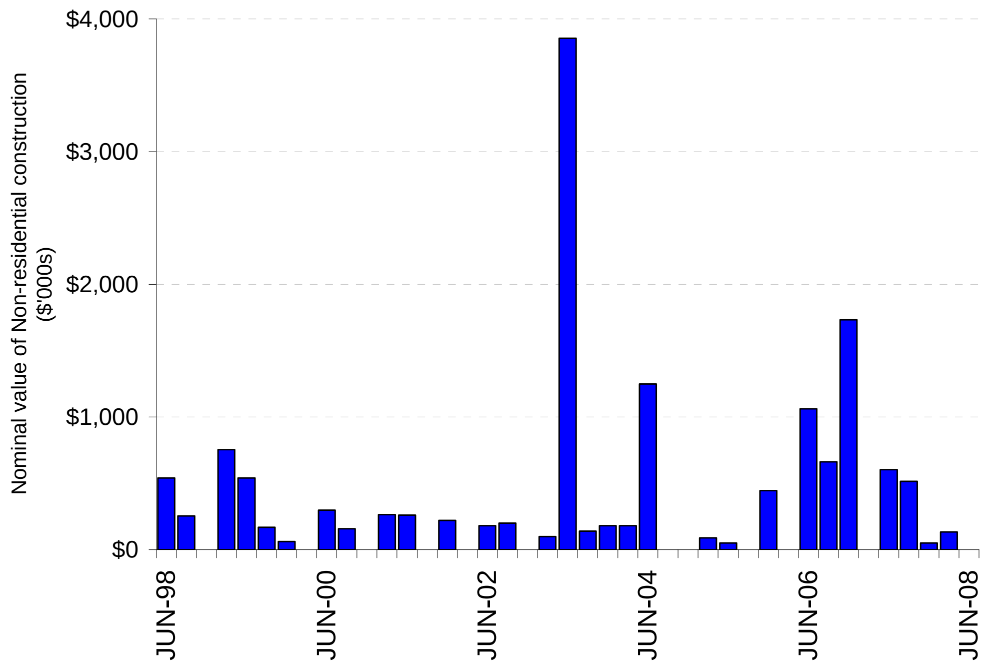
Source: ABS

The long-term average for new residential approvals within the Shire demonstrates that construction activity has been minimal compared to adjacent LGAs (Table 3). A long-term benchmark is usually considered a reference for demand (and replacement) levels on the assumption that supply has sufficient time to respond. However, it could be considered that the uncertainty surrounding the local planning regime e.g. lack of clarity regarding zoning, the application of the Native Vegetation Act, the time taken to introduce a new Local Environmental Plan, has been unusual and may have stymied the development potential for dwellings. This implies that the figures provided in Table 3 may moderately underestimate historical levels of dwelling demand within the Shire. Given the substantial housing cycle that has passed through the Region over the last ten years, the level of approvals is low.

2.7 Non-residential building activity

Similar to the housing market, the level of construction activity implied by the value of non-residential approvals is modest, but not inconsistent with a small rural area. The numbers have not been deflated for inflation due the absence of any significant trend. The occasional spike in the numbers reflects the approval of individual projects within a small local economy.

Figure 14: Total value of non-residential approvals, Dungog LGA



Source: ABS

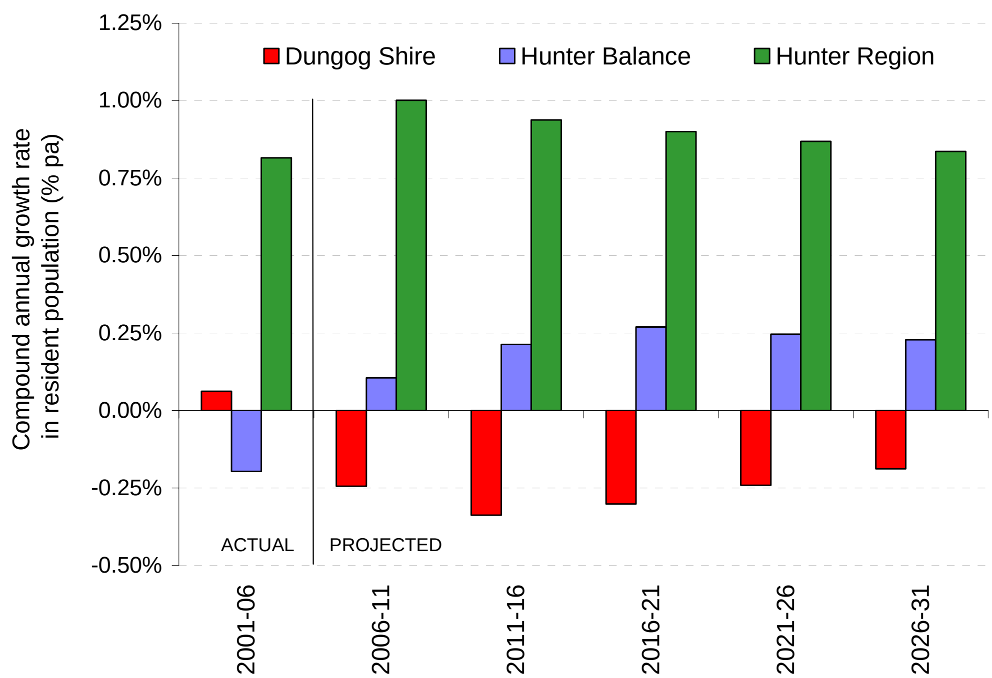
Putting aside the substantial construction activity that would occur if Tillegra Dam were to proceed, the greatest potential for growth in this area probably lies in new infrastructure, i.e. roads and activity associated with a greater subdivision of land for residential / small farm uses; and the development of new tourism facilities.

2.8 Population Outlook

Population growth in a small area, such as Dungog Shire, is not only a reflection of demographic factors i.e. births, deaths, but also the additions to dwelling stock. The provision of housing does not guarantee population growth, but the commercially feasible (therefore appealing to available demand) provision of housing will typically enable and/or encourage population growth within a particular area. The HVRF population projection model accounts for both the demographic considerations and these housing factors. Births and deaths are accounted for through age and sex-specific birth and death rates. Migration is accounted for through historical building approvals/completion trends. The model assumes that that the age-sex profile of new migrants reflects the prevailing demographic profile.

The output of the HVRF model for the Dungog LGA is charted in Figure 15. It demonstrates that, *given the current assumptions*, the modest population gains of recent years are likely to translate to a modest decline in population over the next 20 years. This is largely a reflection of a population, already skewed to the elderly, ageing further in place and therefore producing a greater number of deaths and fewer births. It also reflects the absence of any substantial migration into the area that drives population growth directly and indirectly may boost birth rates. This is consistent with the latest trend in the *Estimated resident population*, which declined 0.2% from Jul-06 to Jun-07.

Figure 15: HVRF population projections – Average annual growth in resident population between census periods



Source: HVRF, ABS Census of Population and Housing 2006, Note: Hunter Balance refers to the area within the Hunter Region (Hunter SD) that lies outside of the Lower Hunter (Newcastle SSD)

The projections for Dungog LGA contrast to the projections for the broader Hunter Region, which anticipate strong population growth over the coming decades. They also contrast with the immediate region, the Hunter Balance, which, while forecasting slower growth, is still anticipated to see the resident population increase.

Population growth is beneficial because it:

- Reflects / generates residential development and construction activity.
- Increases the rates base for the provision of council services (while increasing the demands).
- Contributes, through Section 94 charges, to local services.
- Expands the retail expenditure pool and thereby supports local retail (particularly to retain / develop a critical mass that is necessary to keep the town centres sustainable). This overlaps with the desire to provide a ‘country town/village’ offer as part of the tourism mix.
- May regenerate the age-profile.
- Provides greater opportunities for youth employment (retail and construction are significant contributors to youth employment).
- Introduces new ideas / vision to prevent stagnation.

3.0 Regional economic trends: Dungog Shire in context

The dynamics shaping the evolution and transition of the local economy are not unique to the Dungog Shire. Analysis undertaken by National Economics and the Australian Local Government Association, and reported in the *State of the Regions 2007* report, provides insight into some of the factors dividing economic success from economic malaise at a regional level across Australia. The following charts have been selected as a summary of this analysis, to highlight three inter-related points and one discrete issue.

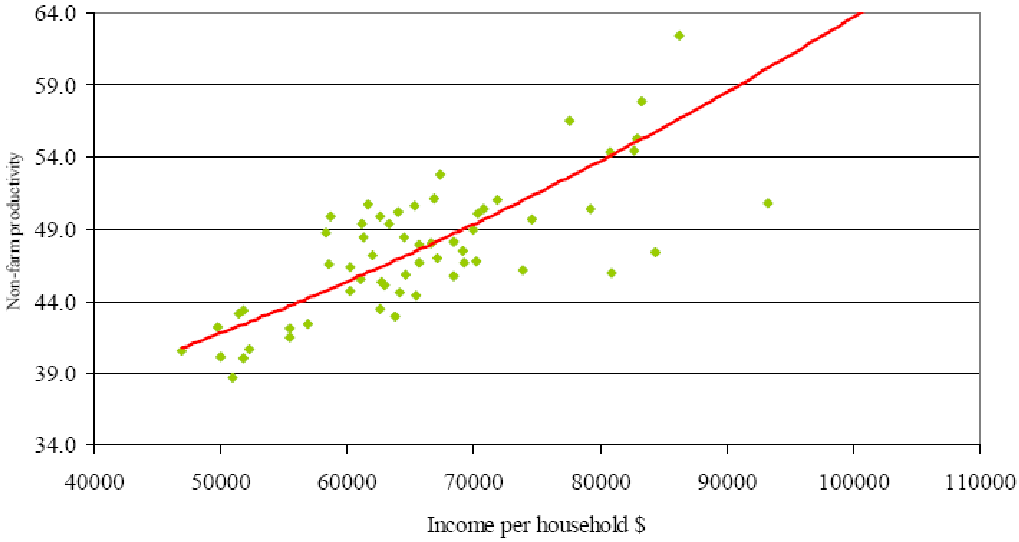
Economic momentum: Productivity, employment, income and population growth

For the following analysis, the authors allocated all the LGAs within Australia into 64 regions. Dungog LGA for example, is placed within the *NSW Hunter* region. The charts present data according to two respective variables for each region. Regression analysis has been utilised by the authors to highlight any relevant associations between these variables (red line). This context helps to explain the historical progression of the Dungog economy and asserts some of the factors that will continue to shape the Shire's economic outlook. HVRF have not highlighted the Hunter Region on the following charts because the potential implications for Dungog Shire lie with the broader context, rather than the particular positioning of the aggregated Region within this context.

This summary of the analysis does not address the specific causality of the associations presented. The scope of works does not allow for HVRF to undertake this analysis. As a consequence, the HVRF can only draw inferences from the analysis that we believe provides informative context for the both the quantitative and qualitative research presented in Sections 2 and 4. Potential implications for Dungog Shire are drawn following the charts.

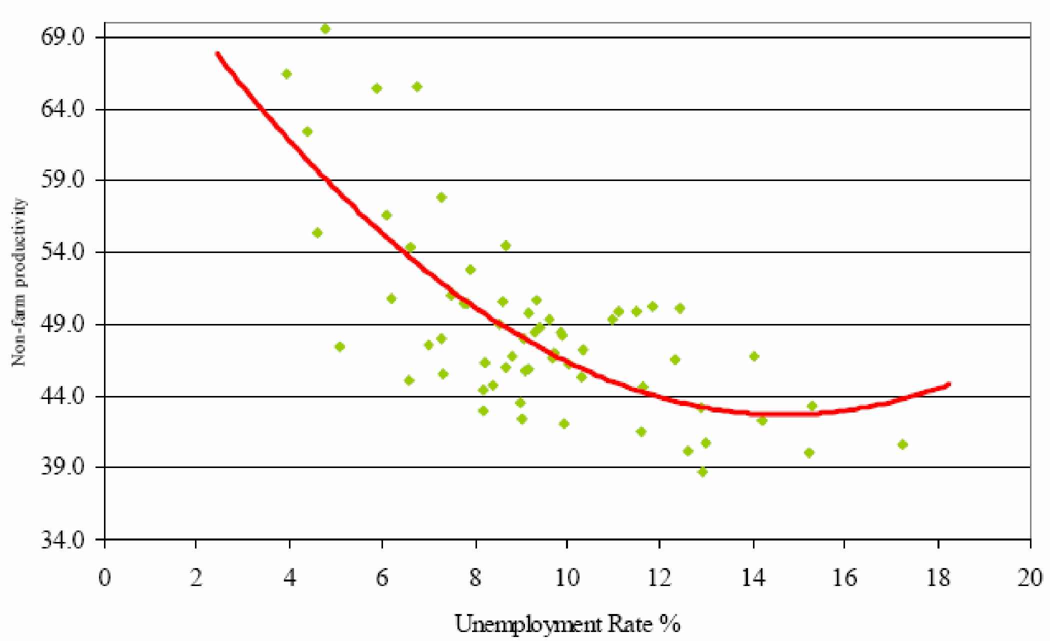
Point 1 - At a regional level, there is a strong direct relationship between the level of non-farm productivity and income (Figure 16) and a strong inverse relationship between the level of non-farm productivity and the unemployment rate (Figure 17).

Figure 16: Non-farm productivity versus household income, all regions, Australia, 1998-2006



Source: National Economics / Australian Local Government Association

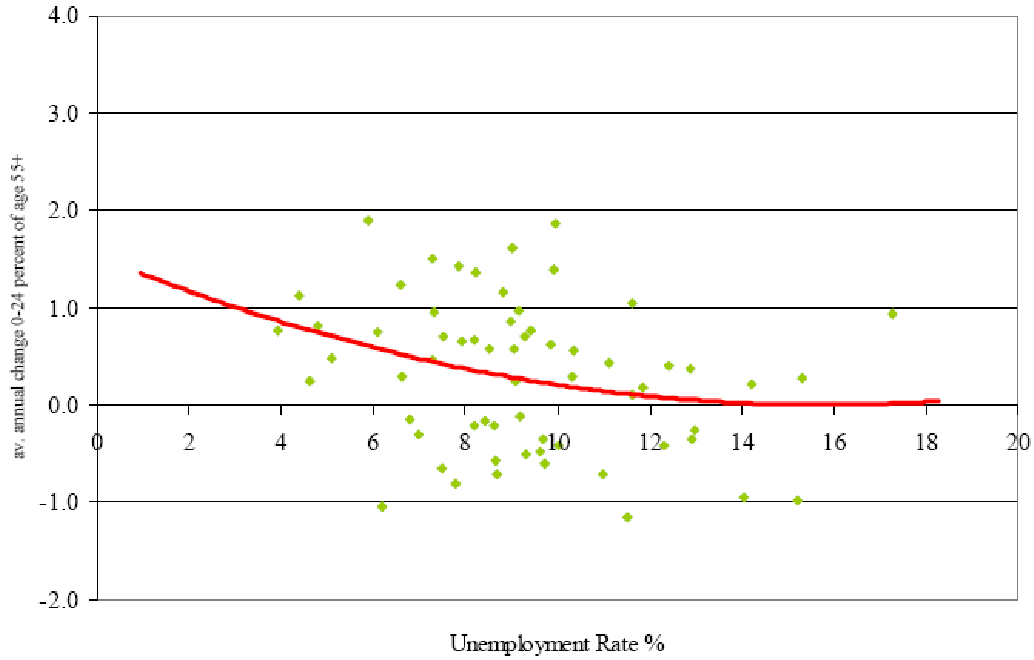
Figure 17: Non-farm productivity versus unemployment rate, all regions, Australia, 1998-2006



Source: National Economics / Australian Local Government Association, *the unemployment refers to the NIEIR rate, which is a measure of the level of long-term unemployed as a percentage of the population aged 18 to 65 years old.

Point 2 - Younger generations migrate to areas of lower unemployment

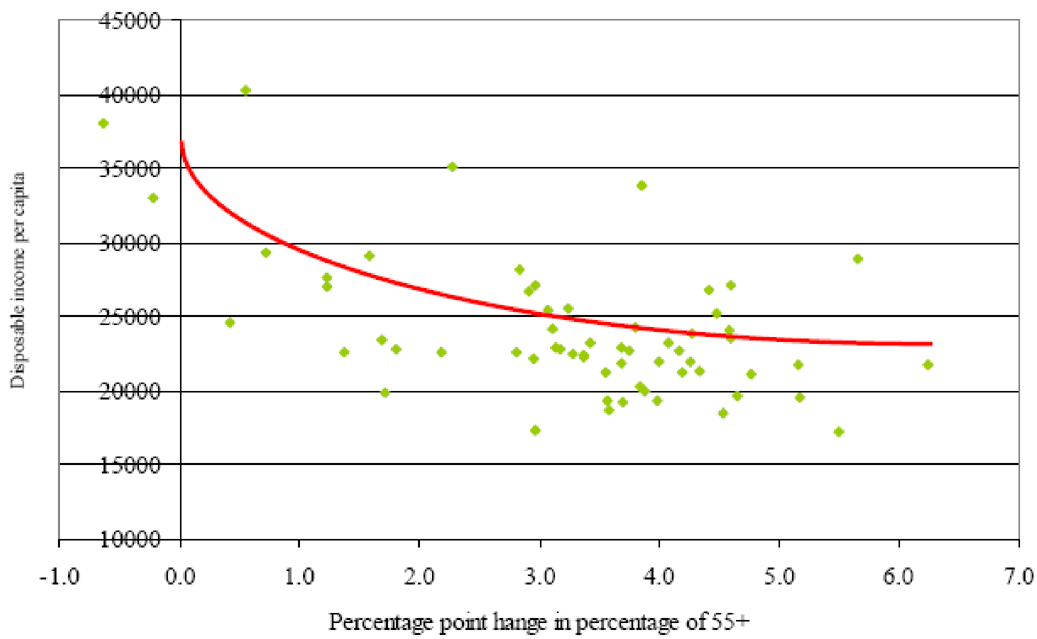
Figure 18: Average annual change in the ratio of number of residents aged 0-24 years against the number of residents aged 55 years and over versus unemployment rate, All regions, Australia, 1998-2007



Source: National Economics / Australian Local Government Association

Point 3 – Regions with an ageing population profile have lower disposable income levels

Figure 19: Average disposable income per capita versus change in percentage of population 55+, all regions, Australia, 1998-2007



Source: National Economics / Australian Local Government Association

While this summary does not address causality specifically (statistically or otherwise), the associations outlined above are clear and intuitively understandable in the light of historical trends within the Dungog Shire. At a regional scale, productivity, employment growth and income levels are generally aligned in a positive relationship. The net migration of younger age groups (either as young adults or as children of parents) is positively associated with these economic attributes, which in turn generate further economic growth in a positive cycle. To the contrary, low non-farm productivity, (relatively) high unemployment, low income levels and an ageing population are often associated in a negative cycle.

The major exception to the trends profiled above, concerns those region's possessing a valuable natural resource base. The proximity of Dungog Shire to the coal mining activity within the Hunter Region provides some degree of exclusion. This is exemplified by the commuters that reside within the Shire while working in the Hunter or Stratford mines. However, the extent of the Shire's exposure to this advantage is moderate and the economic outlook is therefore not immune to the dynamics summarised prior.

The economic profile of Dungog Shire and the potential economic outlook can be reconsidered in the light of these dynamics:

- Demographics: The present demographic trajectory for the Dungog LGA is toward a declining and ageing population.
- Employment growth: Employment within the Shire has collapsed, although unemployment remains low, as employees either emigrate outside of the LGA or commute to employment opportunities outside of the LGA.
- Income: The income profile is clearly skewed toward the lower deciles.
- Non-farm productivity: This cannot be measured at the local scale, but the industry profile and the intrinsic attributes (no universities or economic agglomerations) of the Shire, do not suggest that productivity initiatives will be sufficient to transform the region's economic outlook.
- Natural resources: Dungog Shire is located within a region benefiting from the current boom in coal mining and associated infrastructure.

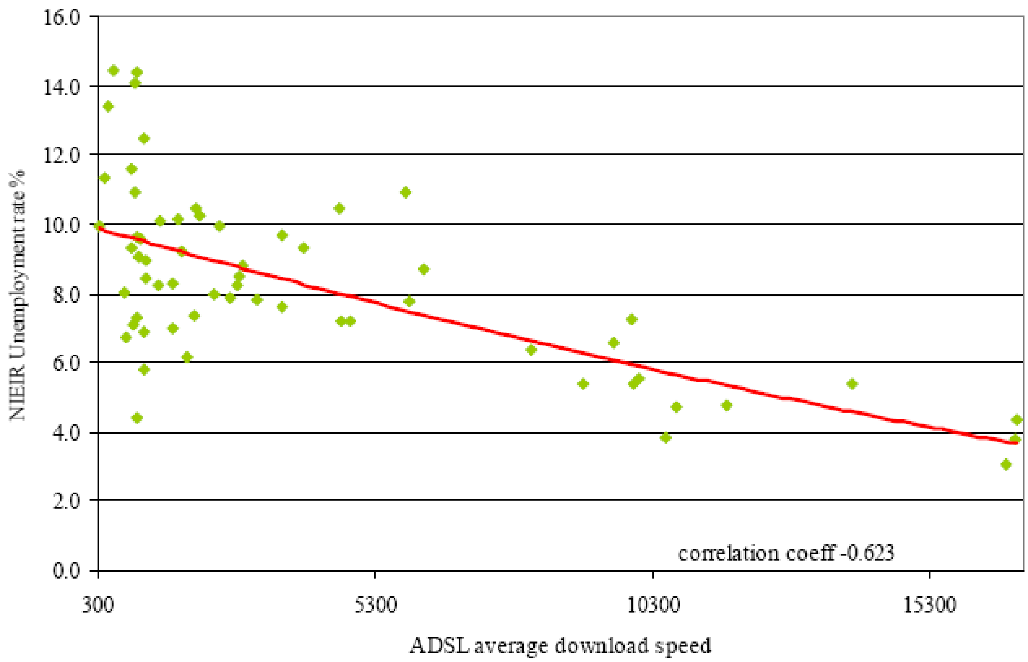
The above summary would suggest that the Shire economy possesses many of the negative dynamics that could lead to a deteriorating economic trajectory. However, it is also blessed by its regional context, both in proximity to the resource-based growth and the economic, employment and population growth that is emerging in the Lower Hunter e.g. Maitland.

The comments and opportunities identified by key stakeholders within the Dungog business community (presented in Section 4) should be considered in the light of these dynamics.

Economic integration: Internet access and quality

This final point is largely discrete from the above analysis. Figure 20 shows that, at a regional level, there is a clear association between the unemployment rate and the quality of broadband services. This analysis does not imply that the provision of high speed ADSL internet services would generate sufficient employment to drive the unemployment rate lower. However it is probably reasonable to assume that the lack of sufficient broadband services may act to hinder the potential economic growth of a localised region.

Figure 20: Average ADSL download speed versus unemployment rate, all regions, Australia, 2006



Source: National Economics / Australian Local Government Association

In a pragmatic sense regarding the Dungog Shire, this could refer to the ability to:

- Effectively telecommute from a residence within the LGA.
- Access media, banking, bill payment and social websites.
- Access public sector services on-line, including local government services.
- Access emerging medical services such as e-medicine, which may increase in significance as the national population ages and the strains upon General Practitioners increase further.
- Access education, both formally through e-learning, and informally through on-line literature, interaction and exposure to best practice.

4.0 Community consultation regarding the Dungog Shire economy and Tillegra Dam

The following section provides a summary of the points and opinions raised from the stakeholder interviews. The methodology adopted for this research is detailed in Section 1.3. During the interviews many comments were made regarding numerical estimates of industry size, land areas, income levels, etc. These figures may or may not be accurate. HVRF have not sought to verify these figures. HVRF have, however, retained the numbers within relevant comments, as they either reflect the facts accurately or they will reflect perceived fact, which may be equally informative. Similarly, HVRF have not sought to verify the opinions and beliefs of those interviewed. This understanding should be retained in the interpretation of the commentary.

With respect to the economic outlook, challenges and opportunities for the Shire, a series of issues has been identified by the HVRF as being either frequently raised, or deemed to be of significant importance to merit inclusion, even if not raised by the majority of participants. The identified issues are presented below.

The outlook for dairy, beef, timber and produce

In the opinion of many of the stakeholders interviewed, the Dungog Shire remains a fantastic area for agriculture, especially compared to many other regions, if only due to the consistency of water supply. Historically, these favourable natural resources has supported a major dairy industry, significant beef cattle and poultry interests, alongside timber production and the farming of hay/lucerne for feed. However, they do not compel profitability, nor preclude the substantial structural change that has arisen from other factors, particularly in the dairy and timber industries.

Dairy

Deregulation initiated substantial consolidation within the dairy industry with around 250 dairies falling to around 20 currently operating within the Shire. The reasons presented for this decline included:

- Costs pressures increased (such as equipment modernisation and grain), while milk prices remained static amid competition.
- Many dairy farmers reached, or are reaching, retirement age, but the expectations of the next generation are not all consistent with the practicalities of running a dairy farm (for farm owners or supporting staff) leading to divestment and consolidation.
- Land values increased, making the district a more expensive place to operate and making the traditional transfer of operations to the next generation, increasingly uneconomic.

The prevailing status of the dairy industry was described by the following:

- Recent strong rainfall has boosted production. Combined with a sharp increase in milk prices, this has made dairy farms a sustainable prospect over the short-term.
- Questions remained over the long-term viability of the industry within Dungog Shire because:
  - The summer temperatures in the region are a big drawback, when production can plummet.
  - Victorian dairy farms are simply more productive because they use less grain.
- Further consolidation is expected; particularly if/when Dairy Farmers Corporation is listed/acquired.
- The loss of good agricultural land to the proposed inundation area of the land will progress the decline of the industry because suitable farming land is a finite resource in the district and the operations cannot simply be relocated to alternative land.

  "Some of the dairy farms have been run by five or six generations of the same family. They don't want to sell, but if they do, they can't stay in the district."

Some stakeholders believed that the subsidies (the dairy wrap) provided with the deregulation of the diary industry was a wasted opportunity for the Shire. The perception was held that Gloucester Shire more effectively optimised the opportunity provided from these finances. There was a desire not to repeat this mistake with the opportunities that the dam might provide.

Beef cattle farming

As a consequence of the decline in the dairy industry, beef farming has increased its share of local activity. With the support of good rainfall, yardage numbers in the Shire are reportedly growing again. This transition from dairy to beef has implications. Those noted by the participants include:

- Beef farming in the Shire was not seen as purely viable operation with some additional sources of income typically required.

  "There are very few viable farms within Dungog Shire. If you have a look around and find the fair dinkum farmers that don't have some other income, then you could fit them on one page."

- Dairy operations provided regular monthly income, while beef grazing produces a single annual payment. This makes cash flow management a challenge with associated operational risks.
- The transition to beef grazing was seen as a less intensive activity requiring fewer rural services and contributing less to the local economy.

Timber

The timber industry underwent substantial structural change within the Shire, as the regional forests were increasingly 'locked-up' over the past two decades. This lead to significant decline in forestry activity and associated timber mills. One timber mill still exists within the district. Some sustainable timber extraction still exists, but at a subsistence level.

Specialist timber providers within the Shire no longer source any timber locally, as the supply has been reduced. A proposal for a mini-mill exists, but the industry was largely pictured as a benign contributor to the economic outlook.

Other produce

Several stakeholders believed that more intensive farming held further potential within the Shire. Olives, grapes, organic chickens, normal poultry production, mushrooms and rabbits were all raised as examples, along with downstream produce, such as cheese, wine, condiments, etc. Some niche industries already exist within the Shire, such as deer and goats, but these are reasonably static in terms of their growth profile.

It was enforced by most of these proponents that such operations are not commercially viable without the tourism / retail overlap (wine trails, cellar door, and farm gate sales). However, they were perceived as a complementary diversification opportunity that did not require the economies of scale of other farming activities to remain sustainable. The vision, presented by several participants, included establishing the Shire, as an educational / tourism centre for food production and quality produce.

Horse Breeding

Horse breeding interests within Dungog Shire (thoroughbred, show-jumping, polo, German/Dutch equestrian warm blood horses) reside in the hands of a few significant operators. The potential growth of this industry lies with the specific business plans of the individual operators, including "*two*" horse breeders that are looking to enter the Shire.

> *"I'm not suggesting that we're going to become another Scone, on the thoroughbred side, but I certainly believe that with the support, investment in infrastructure and the expansion of veterinary services* [further growth is possible]*…..It's just closer to those critical centres, Scone is a good three, three and a half hours further away from the major centres and while it obviously works from a thoroughbred breeding perspective, the equestrian industry is very much Sydney, Newcastle and then interstate, so there is an opportunity there."*

The planning regime (being the combination of local and state planning instruments and other acts that affect development e.g. the Native Vegetation Act) was seen as a constraint upon the potential expansion of these operations, rather than an enabler. The inability to provide additional dwellings (on the same rural lot) for full-time staff was raised as one example. The lack of a critical mass within the Shire was deemed a limiting problem for specialist veterinary services, which had to be sourced from Scone, Broadmeadow or Sydney at present.

Viable farms, 'Breeze-ins' and hobby farms

Another major change has been the transition of ownership, particularly of farming land, from local residents to non-farmers from outside the Shire. Farms have been, and continue to be, acquired by city-based professionals typically from Newcastle and Sydney's north shore for combined lifestyle and investment reasons. They are commonly referred to as 'Breeze-ins' by the local residents. Those interviewed estimated that around 80% of available rural land is presently sold to non-farm city interests and that the total ownership of non-farm city interests has increased from 30% to 50% of landowners.

For these owners, the farms are not their primary source of income, nor is their ownership held with a view to becoming the primary source of income. The properties acquired range from two hectares to substantial grazing properties (500 hectares). Many will typically run beef cattle or stud cattle, although some are purchasing for the environmental values. The lifestyle component is paramount, implying a nice cottage, rural outlook, adjacent forest or river aspect. Typical areas mentioned included around the Fosterton loop and along Chichester Down Road. The result of this demand has been a surge in land prices.

There was an expectation among those interviewed that a heightened awareness of Dungog may accelerate this trend. Factors presented as driving this transition included:

- The surge in asset values in Sydney/Newcastle has enabled 'Breeze-ins' to pay land values above their worth as an operational farm. The economic value of a farm may be $1 million, but the city purchasers have driven the land value to $2 million.
- The taxation benefits of farm ownership, including farming offsets
- Many family farms were looking to divest their asset. It has been tough to run a dairy farm in a deregulated environment (low prices until recently) and for those nearing retirement, these buyers represented an opportunity for transition; similar factors applied to beef farms.

There was a mix of views regarding the impact of this trend, although the balance was more favourable.

Negative comments included:

- A perception that Sydney owners will not optimise the use of productive farm land, undermining the generation of economic activity in the district.
- Heightened land values make farming as a pure business less viable, particularly for small farms.
- Transfer of farm ownership down the family becomes virtually impossible, as the returns from the farm simply cannot justify the acquisition of any sibling's rightful share of the land value.

Positive comments included:

- Since deregulation of the dairy industry it would be tough for those servicing the agricultural sector without the new investors. External owners invest substantial capital into the farms, beyond pure business requirements, supporting fencing, feed merchants, tractor sales and servicing, etc. They put substantial capital into the local economy.

  > *"They contribute, I believe, a lot more to the local economy than the owners that they have displaced. What tends to happen, if it's a working farm, then they'll buy it as long as there is a nice cottage for a weekender….They'll come in, occupy the cottage, they'll buy a new tractor, they'll improve the farm, they'll hire a manager, they'll have lots of decorative work done and spend a lot of money and they're not at all concerned about the viability of it, as long as the cattle look nice and they can go to the sale, you know… wear the moleskins."*

- External owners employ local staff to manage and run the operations; they use local tradesmen, providing gainful employment for the less-educated youth within the district.

  > *"These people can't weld gates."*
  >
  > *"The new people with small holdings have brought a lot to the area."*

- External owners also invest capital on the 'looks' of the farm, which is good for local landscaping products and services, and tourism.
- The requirements of external owners were seen as an opportunity for some businesses to diversify. One example raised related to a Gresford tradesman, who started manufacturing rustic furniture to meet the growing demand for the lifestyle landscaping considerations of 'Breeze-in' owners.

Demand for farm holdings from outside the region appears to fall into three categories:

i. Wealthy professionals seeking large lifestyle investments in the form of beef cattle farms i.e. 'breeze-ins', where the dwelling is typically not their primary residence.
ii. Demand for hobby farms – Not a viable economic concern, but the new owners may run cattle, keep horses or plan an ecological preserve. These buyers are seeking less land at a lower price. Again any dwelling will typically not comprise their primary residence, but they may retire to this property.
iii. Commuters seeking a rural lifestyle with land area for a shed, trucks and dogs. The dwelling will comprise their primary residence.

In the face of the changing ownership profile, most interviews turned to the issue of available rural land, farm sizes and related subdivision concerns. There was general consensus that the planning regime (planning instruments and related legislation were mentioned) does not assist the Shire economy. Minimum subdivision areas for rural land were deemed too low (150 acre or 60 ha lot minimum) to maintain a viable, sustainable farm, while holdings of this size excluded the perceived strong demand for both smaller hobby farms and rural lifestyle commuters.

> *"Farms need to be minimum of 100-150 hectares to be viable and productive."*
>
> *"I hate to see large areas cut up, but if you don't cut it up, no population growth"*
>
> *"The land should be 150-200 hectares or small scale, say 10 hectares. You can't do much with 50 ha."*

There was a general level of optimism among the participants that the objectives of the different groups were not mutually exclusive and could be accommodated within the Shire. It was also noted that any emerging intensive agricultural uses did not require large land holdings.

However, there was an over-riding determination that any new zoning needed to be directed to appropriate areas. Regarding the nature and quality of the land, some participants suggested that the higher class agricultural land should be reserved for the most productive uses (i.e. dairy farming, lucerne/hay production), arguing that beef cattle can be run on lower grade land. The associated implication is that any subdivision to smaller farms, where beef cattle is more likely due to the ownership profile, should be concentrated in areas with lower quality agricultural land.

> *"I am aware that one private owner has put a small golf course on prime agricultural land"*

Concerns were also raised regarding potential conflicting uses. External landowners can be separated into those seeking hobby farms and those seeking the ecological values. Presently there is no strategy to guide these disparate objectives into appropriate areas and there is an increasing risk of conflict between them. Alternatively there is potentially an opportunity to direct those seeking ecological values into adjoining areas with more sensitive environmental values, and those pursuing hobby farms into buffer zones for commercial farming ventures.

> *"I think it's a very simple thing, if you look at the aerial photos around the Tillegra dam to that north of Dungog area, there's very little river flat, it's taken up by dairies and that wouldn't change and then when you get in to the undulating ridge country it's marginal and then it runs into steeper timber country. Well in the marginal zone, where it's not too heavily timbered and not too steep, there's enormous opportunities for tourism or rural residential."*

Participants were also keen to ensure that any new planning regime:

- Enabled smaller lots, but didn't undermine the rural aesthetic e.g. hiding housing away.
- Didn't place *Rural Residential* subdivisions next door to prime or intensive farming land; participants raised several examples of known conflicts in this regard. A buffer of hobby farms was believed preferable.
- Introduced greater consistency with adjoining councils.
- Planned and programmed any new subdivision, as opposed to being led by any particular land holdings or commercial pressures.

Housing sector

Developments in the housing sector are significant for the local economy not only with respect to the generation of demand for property services, engineering, construction, landscaping and associated activity, but also as a means to population growth and the regenerative momentum that this brings.

Housing demand
Despite the lack of population growth, the participants (including residential developers) could see demand opportunities within the Shire. Whereas the community centres were once seen as remote, they are increasingly considered accessible. Singleton and the coal mines (Stratford and Hunter) were estimated at 45/50 minutes commute, while participants were aware of a significant level of commuters to Newcastle, Raymond Terrace, Tomago and Maitland.

> *"There is a whole new group of professionals, trades who live in the area, but work out. [It] provides a better mix of people in the village [Gresford]; they bring fresh ideas, I can see the village moving ahead."*

This understanding appears consistent with the commuter trend demonstrated in Section 2.

Concerns were raised by some participants as to whether petrol price rises might start to undermine this demand. At the same time, other participants saw substantial momentum in the demand arising for 'tree-change' locations, as the coast becomes increasingly unaffordable, particularly for those nearing retirement.

> *"Dungog is still cheap. You can buy a home for under $200,000, although the top-end of the market is getting dearer with the city money."*

With respect to the form of housing product, demand was expected to remain soft for traditional residential subdivision lots. The large releases around Maitland and Thornton were seen as a preferable location for this format. It was expected that the low level of demand for standard house and land packages could be met by developing infill sites within the Shire's centres.

Opinions regarding the level of demand for *Rural Residential* product were mixed. Most of those commenting believed that a market exists (when the residential cycle turns) for this product. The refusal of the NSW Department of Planning to allow *Rural Residential* lots in locations within the Lower Hunter e.g. Port Stephens, Maitland, Lake Macquarie LGAs, was also seen as an opportunity for the Dungog Shire.

> *"Dungog is quite unique in that it allows Rural Residential…..and that's why it's so popular for people who want larger blocks, particularly if they've got a horse or some other interest like that."*

The differences relate to the depth of demand away from the major employment centres with some believing this restricted demand to Clarence Town, while others believed that Gresford and areas north of Dungog had potential for *Rural Residential* servicing mining sector employees. Convenience to employment remained the key factor, although this inevitably leads to concerns with the ability of roads to cope with increased traffic.

Relatively significant demand for Rural Lifestyle housing was clearly envisaged by many of those interviewed. The interpretation of this format varied, with some picturing two-acre blocks suitable for a pony and a truck, while others envisaged larger hobby farms.

Housing sector prospects across the Shire

Many comments were made with regard to particular centres within the Shire. These are summarised below.

The Town of Dungog

The drivers of non-farm residential demand within Dungog are not clearly defined. Participants believed the opportunity for standard residential subdivision in the town was limited.

> *"It's either not zoned or terrible land for development."*

The new housing estates introduced to the area were deemed to be in poor locations i.e. near the industrial estate, residing in a gully, or offering problematic steep land. The new estates initially struggled to sell smaller lot housing with larger (half acre) lots attracting more demand. There was a sense that the financial feasibility of new development was clearly not viable at present with new supply expected to be minimal. Infill land (one-hectare blocks) was believed to be available within Dungog, with the participants inferring this was sufficient for the minimal level of standard residential lot demand.

Clarence Town, Vacy and Paterson

Demand was seen as likely to be strongest in the commuter areas i.e. Clarence Town, Vacy, Paterson (when the residential market turns). These centres are substantially closer to the Tomago industrial area, the power stations and other major employment centres in Maitland and Newcastle. It was estimated that 90% of new residents are commuters.

> *"We probably had the last two rural residential subdivisions in Clarence Town. Minimum lot sizes of four hectares and we'd like more of that. If you want a semi-rural lifestyle, Clarence Town is the closest place* (to Tomago)*."*

Those interviewed believed that demand required a minimum of rural residential and potentially larger (five or ten hectare) lots. From a development perspective, the land around these centres was also deemed more suitable, with respect to gradient, vegetation, etc. and typically comprised lower grade agricultural land.

It was acknowledged that the area remained constrained by the lack of sewerage infrastructure. The prospect of Hunter Water taking control of the water and wastewater responsibilities in Clarence Town (and potentially the Shire) was seen as a positive by several participants, particularly with respect to Council's inability to invest in any substantial capital works. Demand for remnant infill land in Clarence Town was expected to pick-up with the arrival of these services.

Many participants also anticipated a growing market for self-funded retirees in locations such as Clarence Town. They believed this market niche would seek freehold title, rather than a retirement village, but with low maintenance and a capacity to lock-up, if required.

Gresford

Those interviewed with connections to Gresford, commented upon the new migrants into the area, although population growth patterns suggest that these are replacements rather than additions. New residents are commuting to mining employment in the upper Hunter. Further growth in the mining activity may imply that further demand could be drawn to Gresford from this market.

Council and local planning issues

The Council presently occupies two roles within housing activity in the Shire, as both the authority and a joint venture developer. This practice of council involvement was perceived as a constraint upon activity by some participants with development interests.

As a planning authority, participants' views on the Council were mixed.

> *"Section 94 charges are high and dealing with Council is very acrimonious. They are not willing to encourage and they're the dearest Shire for rezoning applications."*
>
> *"Look, I believe the Mayor and Mr Deasy are generally on the right track; they just need some support."*

From the perspective of residential development, participants believed the existing planning regime is severely flawed. The current Local Environment Plan (LEP) was continually referred to as a "Clayton's LEP" with the transitional zones precluding any clear and efficient decisions regarding development potential.

Substantial concerns were also raised regarding apparent conflicts between the environment objectives of the Native Vegetation Act (managed by the Catchment Management Authority (CMA)), the agricultural objectives of the NSW Department of Primary Industries and the development potential of the Shire.

> *"I wouldn't touch any land that has trees on it (*because of the constraints arising with the Native Vegetation Act*)….and that has the effect of pushing developers onto cleared land, which of course is the prime agricultural land."*
>
> *"I think they're* (Council) *between a rock and a hard place, they never win an argument with the CMA when it comes to trees."*

For some participants, a perception exists that the Native Vegetation Act was working perversely to protect partially vegetated areas with otherwise low environmental value and low grazing value, while pushing residential development into clear areas that have strong alternative uses.

> *"There are viable development areas within the Dungog Shire, but they require conciliation with the CMA."*

At the same time, others participants were concerned with the threats the may arise with further development. These included:

- A desire to keep new housing hidden away to protect the rural aesthetic of the Shire, further development, but not at the expense of the natural rural attributes of the area.
- A perception that the river is a public asset and needs to be protected from private control.
- A determination to prevent ribbon development along the major roads.

On the whole, the participants saw a substantial opportunity to re-position the planning regime to more effectively assist and enable residential development and population growth within the Shire. This not only referred to the LEP, but more effective integration with the CMA and the NSW Department of Agriculture. They did not see this as implying a relinquishment of development controls, but a realignment to identify realistic opportunities for new housing.

Retirement villages

From an economic perspective, the nursing home (Dungog and District Retirement Living) based in Dungog is significant, not only as an essential service, but as one of the largest employers with the Shire. A community-based and run organisation, it accommodates 63 people in the residential facility and 13 in self-care. From a financial perspective, it is a privately run non-profit organisation that survives upon re-current grant funding (based on need), community fundraising and the support of major private benefactors.

The operating committee have a good reputation within the Shire. The home employs few full-time workers (manager, chef), but over 70 part-time workers. It is also heavily dependent upon numerous helpers/volunteers.

The facility has an extremely high occupancy rate and admittances are usually limited to those who are extremely ill. In the absence of a change in population growth, the demand upon a community facility such as this will increase markedly over the next 20 years, while the pool of benefactors, workers and volunteers will diminish, providing significant challenges.

Irrespective of the policy approach supporting ‘ageing in place’, the demand for retirement village accommodation is anticipated to grow rapidly over the coming decade. Participants believed that the communities within Dungog Shire were appropriate places for retirement projects, given that basic medical services could be accessed locally and, if required, specialised medical services could be accessed in Maitland and Newcastle.

Opinions were varied on the viability of retirement villages. Some stakeholders believed that a lack of appropriate sites was the sole problem in areas such as Clarence Town and Dungog. Others reported a lack of market depth for a retirement village proposal in Gresford.

A general belief existed that self-care villages should be viable in the respective centres, but the local community still perceive required entry prices (plus deferred management fee), as too high. This is despite the SEIFA data implying that the Shire's households are relatively well funded. The implication is that Council should identify appropriate sites in each community and let the market decide if and when these are viable.

One Shire?

Dungog Shire contains the centres of Dungog, Gresford, Clarence Town, Paterson and Vacy. It was noted by several participants that there is no cohesive approach to how they all relate. This lack of cohesion was seen to be to the detriment of the whole Shire's progress. Comparisons were made to Gloucester's singular focus and achievements.

Several participants questioned whether it was time for a clear hierarchy, with some favouring a clear mandate for Dungog as the centre for higher order services and retail.

> *"I think there needs to be a focus and a clear statement that the town of Dungog is the pre-eminent town of the local government area. I feel very strongly about that…the planning regime needs to support and reinforce that and I don't think it does."*

In general, it was believed that some facilities should be enabled in all centres i.e. retirement villages, while others should be concentrated. There was no clear consensus regarding the prescription of any hierarchy, but one participant counselled that:

> *"..The individual communities have to be able to have the final say in how the area is developed. We've been through this in Gresford with our last LEP, where there was very substantial discussion about it, but there was consensus in the end."*

The retail question?

The prevailing retail offer within Dungog Shire (typically referring to the town of Dungog) was summarised by the participants with the following:

- The town provides a good retail mix for a local community i.e. pharmacy, newsagents, etc.
- There is a lack of restaurants and cafes.
- Some areas of retail appeared to be struggling, implying a decline in trade.
- Mixed feelings existed regarding the recent combination of the two IGAs into a single shop, albeit with a greater floor space. The perception existed that prices have risen, but that the volume of sales has declined i.e. Greater leakage of retail expenditure due to the lack of competition.
- Commuting, as well as children's sport, specialised health appointments, etc. all take residents out of the region and there is substantial leakage to retail competition outside of the Shire. There was a belief that many fundamentals can't be purchased in Dungog.
- The local hardware shop had diversified into whitegoods, etc. to catch some leakage out of the Shire.

Factors believed to be shaping the retail outlook included:

- Most participants were aware of the proposal to develop a second supermarket. Fragmented land ownership was seen as a major constraint to a viable retail site.
- A soft tourism market has seen weekend trade decline. Rising petrol prices were seen as a key factor in this trend.
- The participants were expecting a mini-boom from construction of the dam. With 200 to 300 additional people to be working in the shire for three years, they anticipated a substantial boost to retail expenditure levels.

Recommended actions from those interviewed included:

- Reinforce the offer of local centres, before any new supply is introduced.
- Define the retail hierarchy between the centres within the Shire **and** the retail offer within access of the Shire's residents.
- Generate sufficient population growth to sustain a viable retail offer within the respective communities.

Other believed the problem lay with a 'rural' approach to retail, when the local consumer's expectations were changing.

> *"If retail within the Shire is to meet the expectations of tourists and new residents, then convenience goods shops must trade seven days and be open reasonable trading hours. You have to address shiftwork requirements, staff….."*

Industrial prospects

According to the participants, there is presently little significant manufacturing or heavy industry located within the Shire. Dungog or any locations within the Shire were generally not seen as a prime location due to lack of proximity to major transport infrastructure and major markets.

The prevailing industry with markets outside of the district, largely reflect the Region's industrial legacy. Business examples raised include:

- Gate and fence manufacturer – Evolved from the region's agricultural base
- Specialist timber providers with international market – No longer source local timber, but their location within Dungog is a legacy of the Shire's timber industry.
- Livestock Identification (National market requiring State Government approval) – Re-located to Dungog, but evolved from the region's agricultural base.

Overall there was a general consensus among the participants that Dungog is not likely to see any substantial change in industrial demand. The proximity of Dungog to significant industrial centres such as Raymond Terrace, Maitland and Singleton was seen as a limiting factor, with industrial prospects limited to servicing the local market only. It was noted that young residents within Dungog Shire were working in manufacturing, but commuting to and from Tomago.

This prospect was seen as a positive by some, believing that any significant industry could undermine the rural lifestyle attributes that offer the greatest economic prospects.

> *"You only have to drive over to Stroud and you can see the mullock heaps creeping down like great snails from Gloucester. Drive to Singleton it's the same. If you want great economic stimulation and coal mines go somewhere else. I think this, long-term, is the huge advantage that Dungog has…it's going to be our strongest asset in years to come."*

The perception amongst those interviewed was that if the dam were to proceed, then more opportunities would open up for light industry. These would probably emerge from the evolution and diversification of local business rather than the attraction of external operations. An example was raised from the construction of Gunnedah dam, where a farming machinery maintenance service (bearings, headers, etc.) was successfully diversified into boat repairs (recreational uses of the dam were permitted).

Given that the greatest prospects may evolve from current operations, the expansion of present business premises had been found to be difficult, even infeasible. Industrial land within the Shire was described as modest (transition zone excepting) in Dungog, not viable within Clarence Town, very limited in Paterson and non-existent in Gresford. Participants were aware of light industry running out of residential areas because of lack of clear options. On the whole, it was not seen as a major issue because of limited growth prospects for industry within the Shire boundaries.

Lessons from Gloucester

Comparison to the Gloucester Shire were consistently made by many participants, believing relevant lessons were apparent for Dungog.

> *"They are a bit more go-ahead in Gloucester."*
>
> *"Gloucester has always been on the front foot."*
>
> *"Far more progressive."*
>
> *"It's a well put-together town."*

Prompt access to the subsidy money available with the dairy industry, and its use to effectively initiate new industry, was seen as a demonstration of the Gloucester Shire's energy and direction. Other positive examples raised by the participants included:

- A strong tourism offer in the centre of town.
- The main street of Gloucester was seen as a real asset.
- The provision of caravan parks and camping facilities in favourable locations (i.e. near the river) to help draw tourism.
- Major sporting facilities in the centre of town draw major district sporting events, such as country cricket, which generates substantial activity.
- Sufficient critical mass generated by these facilities/activities to support a number of hotels/motels. Dungog in comparison does not have a single facility that can accommodate a coach group.

Some of the implications raised for Dungog included the requirement to:

- Take greater initiative and develop a stronger strategy.
- Drive activity within the town of Dungog.
- Upgrade the main street to its real potential.
- Provide more appropriate locations for a caravan park and/or recreational facilities adjoining the river.

With respect to the scale of rural land, Gloucester has adopted either extreme of the subdivision options, being 100 hectare minimum or *Rural Residential*. This approach was not entirely supported by the participants with the permitted locations for some rural residential seen as inappropriate. This relates to the concerns raised earlier regarding the effective implementation of any change to rural subdivision with the Dungog LGA.

With respect to retail, it was noted that Gloucester is more isolated and therefore can capture most the available retail expenditure; neither is the Shire divided amongst different centres, as in Dungog. It was also noted that the appeal of Gloucester might be challenged as open-cut coal mining progressed into the Region, undermining the rural attributes. The absence of this concern was seen as an opportunity for Dungog Shire to differentiate itself within the region.

Hard and soft infrastructure

Infrastructure, both hard and soft, can be an enabler or a constraint upon economic growth. The participants provided the following comments regarding the key infrastructure issues within the Dungog LGA.

Transport
With one notable exception, the roads within Dungog LGA were seen to range from terrible to atrocious. It was contended that the clay base to the roads would swell and consequently be damaged by the coal trucks travelling through from Gloucester. The lack of passing lanes was noted and it was generally accepted that they required upgrading with benefits anticipated for both local residents and tourism. The Raymond Terrace-Dungog and Maitland-Dungog routes were highlighted as the most significant roads. This would appear consistent with the increasing commuter trends identified in Section 2.

Dungog Railway Station was rarely mentioned, aside from the perennial cloud over its future; this despite its location on the main rail line.

Telecommunications
Section 3 highlights the significant relationship between internet access and economic growth. While provision of appropriate internet services will not guarantee economic growth, the lack of them will undoubtedly limit prospective growth. The availability of broadband services within the Shire was reported as variable, depending upon the location. Mobile phone services were also considered below requirements.

The Shire’s perceived poor capacity for broadband and mobile services was a major issue for one of the city professional stakeholders interviewed. Expectations are high for this stakeholder (potential resident) profile, where both services are deemed a necessity not an optional preference.

Education
The local high school was believed to have a good reputation, which acted to draw migrants into the Shire and retain them. The student body was believed by the

participants to be stable/growing, although analysis using the HVRF population projection model suggests that the number of residents aged 5-19 will fall by 6% to 2011 and a further 8% in the five years to 2016 (based upon current assumptions).

Some participants would like to see vocational education, such as electrical, introduced in Year 12 to assist transition into local employment and keep more of the younger generations within Dungog.

Health Services

The shortage of General Practitioners (GP) is a national problem. Amid this context, the participants felt that the Shire was fortunate to have a complement of six GPs, although they are continually over-booked. The threat to this resource was illustrated at Gresford, where the vacancy left with the departure of the last GP has not been filled. This is despite the assistance of a community nurse and practice facilities.

Dungog Community Hospital is a small 15-bed rural hospital that provides inpatient medical, post-surgical and post-natal services for patients transferring from other hospitals. It also operates a 24-hour emergency service including ambulance transfer by road or air to Maitland Hospital or other larger facilities. Participants typically raised the facility as a key attribute when around discussions of retiree migration and the ageing population.

No aged-care (higher health services level) facilities exist within Dungog, but it was believed to be more appropriate near major hospitals. The closest facilities existed in Scone, Maitland and Raymond Terrace.

The employment challenge

As noted in Section 2, the decline in employment based within the Dungog LGA is skewed towards the groups aged less than 40 years, and this was repeatedly acknowledged as a concern by the participants. It was estimated that 80% – 85% of high school graduates leave the area, often drawn to university or the mining opportunities within the Region. The younger generations left within the area were typically described as less educated and less motivated.

It was acknowledged that some of the younger generations were finding employment outside of the Shire, while residing within the area, but it was still seen as imperative to generate further employment opportunities relevant to these age and skill categories. In contrast, the Council itself has multiple skill shortages, has lost many staff and struggles to fill key posts. There is clearly an education and skill gap between labour demand and supply within the Dungog LGA.

To this end, the participants were particularly keen to encourage economic activity that drove new employment for younger residents.

> *"Dungog can grow as a service centre, managing and servicing tourism resorts, lifestyle farms; it's an opportunity to employ local youth."*

Dam problems: Negative contributions to the local economy

> *"I still believe the plusses are less than the minuses for Dungog"*

According to some participants, the announcement of the dam and associated preparatory work has already impacted upon economic activity in the area, through:

- Demand for maintenance (fencing, sheds, concrete, machinery) and equipment (tractor sales) has declined substantially as the farms within the inundation area relinquish investment in a post-dam future, either having sold their land to HWC or assuming its inevitable construction.
- What was an aligned supportive community is now '*fractious*', with inevitable negatives for communal assistance and productivity.

Other negative economic impacts potentially arising from the dam's construction included:

- The loss of business income when the farms are inundated and the economic multipliers for maintenance, servicing, stock feed, management, flowing from this loss of activity.
- The loss of household incomes from the inundated farms and the economic multipliers through retail expenditure.
- The loss of productive capacity embodied within the high quality agricultural land with a highly reliable (relatively) water supply.
- The loss to the Council rates base.

It was general acknowledged that people are typically resistant to and frightened of change, but some of the participants (resident within the Dungog Shire) were concerned that they were not being fully informed, and nor was the local community.

Hopes for the Dam: Perceived opportunities

> *"The Shire has traditionally waited for things to happened, it doesn't look forward."*
>
> *"The town won't stay the same. It's either going to go forwards or backwards and I think Dungog is right on the plateau."*
>
> *"If the dam is recreational, or made to be recreational, I can see if having a long-term effect on the area, it's probably going to be the saving of Dungog, to tell you the truth."*

On the whole, the participants were broadly positive about the contribution that the dam could make to the Shire. This partly represented a pragmatic 'if it's going to happen anyway' approach and partly reflects the progressive personality types of the stakeholders interviewed.

Several short term benefits were highlighted by those interviewed, including:

- The sale of the inundation lands has clearly been a traumatic event for some, but for others it provided the means to liquidate their asset and transition into retirement or semi-retirement.
- With 200-300 additional people expected to be working in the area during the construction of the dam, there was anticipation that the demand for accommodation, retail expenditure and the like will prove a short-term boon to the economy.
- There was a perceived opportunity to use the short-term boost from the dam's construction to invest/create competitive scale within local businesses e.g. engineering construction. Some participants envisaged that a successful tender of a major contract would provide the capacity to increase their scale of operations and compete outside the Shire for larger work. Construction of the dam near Scone was believed to have provided such opportunities.

  "At present it is hard to invest with no five-year contracts around."

Tourism and recreational use of the dam

The tourism sector is a major contributor to the local economy. The Barrington Tops National Park resides within the Shire and, being only one and a half hours from Newcastle and three hours from Sydney, it purportedly meets the short-break market. There was a view amongst the participants that the level of tourism activity within the Shire had plateaued in recent years. The dam was seen as a potential catalyst to boost tourism and the local economy.

To this end, if the dam were to proceed, it was seen as imperative that recreational use of the water was allowed/encouraged. Participants envisaged opportunities for boating, sailing, kayaking, bike tracks, fishing, camping, house boats, etc. They did not, however, believe that these facets alone would transform tourism within the Shire. Rather, an active dam was seen as a significant opportunity to diversify the offer and boost tourism, particularly with the heightened exposure arising from the dam's construction.

> *"If (the dam allows) recreational (uses), I see it being a long-term advantage."*

The indirect benefits from recreational use of the dam, included:

- The opportunities for local businesses to diversify, such as the farming/boat maintenance example raised prior.
- A potential retail outlet selling boats, spare parts and equipment.
- Greater employment opportunities for the younger generations, in the hiring and management of water sports, biking equipment, etc. as well as the additional demand from accommodation, cafes, restaurants and general retail.

Concerns raised by the participants included the perceived conflict between powerboats and the rural aesthetic. Several of those interviewed also remembered similar discussions regarding Chichester dam, but Hunter Water ultimately declined any recreational uses.

Additional ideas raised, distinct from the recreational use of the dam, included:

- A concern to appeal more to the mid-week market by offering more for the 'grey nomads' and 'morning tea bus brigades'.
- An opportunity for the Barrington Tops to be opened up again for riding parties.

These latter ideas are illustrative of the progressive thinking that, while not individually certain, would in total add momentum to tourism investment within the Shire and consequently economic growth within the local economy.

Tourism accommodation

The stock of short-stay accommodation within the Dungog LGA was seen to be inadequate. The inability to provide accommodation for a coach load in a single facility was raised by several interviewees.

> *"I had six German tourists in the tourist information centre looking for accommodation. After <u>a lot</u> of ringing around, I eventually found one room in Dungog. And this was on a Wednesday night!"*

The lack of new accommodation was blamed upon demand levels, particularly mid-week and out of season, but also planning constraints. It was seen as difficult for a small operator to start-up, given Council costs (Section 94, etc.) on top of the business set-up expenses. Despite this, several participants were aware of active interest to establish new tourism facilities within the Shire.

> *"We have a lot of interest in developing tourist facilities within Dungog Shire."*

Greater flexibility within the guidelines was encouraged by some participants, as was the identification of suitable sites for a motel.

Other prospective benefits

The dam was seen as an opportunity to source funds for major capital works improvements, including the road and telecommunications infrastructure, but also to change the funding structure for future investment.

> *"Dungog (Shire) has suffered from low rates, leading to the (problematic) situation now with the roads, sewer, water. Hunter Water taking over the rates, sewerage would be great."*

The dam was seen to present the opportunity to open up the Chichester Valley area for more *Rural Residential* and *Rural Lifestyle* development and the associated population growth.

> *"It's a question of how much population growth do you want…. I think you would have enormous demand for both weekend lifestyle and residential lifestyle development."*

> *"I think there's enormous opportunity for lifestyle development, as well as tourism in the Mile Creek and Chichester Valley surrounding the dam. Not necessarily looking at it, but if you can get a view of it that's even better…..the water and the forest."*

The potential benefits arising from improved water management were also questioned, including whether:

- The Williams River would be kept flowing.
- There was a reduced risk of major flooding downstream from dam.
- There was any potential use of the water for more intensive agriculture, particularly for produce requiring reliable supply.

In a broader sense, it was seen as an opportunity to bring new momentum to the business community.

> *"If you reflect back to the construction of the Chichester Dam, many of the prevailing businesses were established around that time."*

One of the most significant themes among those interviewed was the opportunity that the dam provided to re-position Dungog through:

- Physical presentation: The physical image of the town of Dungog was seen as reflecting its current malaise.

  "Not much going for Dungog at present."

  Some participants believed the main street could be re-positioned into something fitting for the rural idyll that the landscape provides. Some of the stakeholders were even willing to invest money into such a project. The fact that the town fails to optimise the Williams River was seen as demonstrative of the lack of strategic thought.

  "Dungog Shire is beautiful."

  "It's more of a beautification and increased services, rather than a change of architecture as such."

  "It is pretty country; we don't have open coal pits and the rivers are flowing."

- Strategic outlook: There was a general opinion that the town and the Shire lack a grander strategic vision, which could be led by both local government and successful business people.

  "The town doesn't know what it wants to be, it could be the next Bowral?"

  "These small isolated towns within Europe, they just have this ability to enhance their appeal and to create something that is worth stopping for in isolation; it doesn't have to be on the way to something…..I think that Dungog could do it so easily, if they just put there minds to it…..I just feel there's such an opportunity to do something with that."

Awareness of the Shire may have changed with the Dungog Film Festival, which appears to have attracted substantial media coverage. The challenge may be to convert the name into knowledge of the area's attributes.

On the whole it was hoped that the dam would highlight the area and bring new ideas, initiative, investment and people to the Shire. There was also a desire for on-going support to assist the Council in achieving these objectives.

Appendix I

Booking interview and question route

The following question route was adopted for each interview conducted as part of this research. With the exception of the introduction and the focus question, the question route was deliberately not prescriptive to enable those interviewed to raise the issues they believed most important and lead the interview to their areas of expertise, knowledge and opinion.

Booking Interview

Good morning/afternoon/evening. My name is _________ I'm calling from the Hunter Valley Research Foundation. May I speak with _________ please?

Obtain best time to call back if participant is not there

Hello __________(first name).

Repeat prior intro (if required)

The Foundation is conducting research on behalf of Planning Workshop Australia with the objective of guiding the development of a new land-use strategy for the Dungog Shire. The Foundation's work will comprise desk-top research of the available information, and targeted telephone interviews with informed stakeholders in the area.

Your name has been provided as someone who is well qualified to provide knowledge and opinion regarding economic activity within the area and thereby the requirements of any proposed land-use strategy. The purpose of this component of the research is to collate a broad spectrum of informed views regarding the economic dynamics and prospects within the Dungog Shire, on the assumption that the Tillegra Dam proceeds.

I do not wish to conduct the interview now, but to arrange an appropriate time for Simon Deeming, the project researcher, to conduction an open, but structured telephone interview around 20 minutes in length.

We would value your involvement. Would you be willing to participate and if so, when would be an appropriate time to conduct the interview?

Notes:

- The proposed land-use strategy will assume that the dam proceeds: noting that there are many regulatory stages through which the proposed dam has to yet pass before this would be legally permissible
- An open, but structured interview simply refers to a more free-flowing conversation, which enables the interviewee to move into areas they believe are relevant, while keeping some structure and focus upon the ultimate objective

Final Interview

Good morning/afternoon/evening. My name is _________ I'm calling on behalf of the Hunter Valley Research Foundation concerning some research. May I speak with _________ please?

Obtain best time to call back if participant is not there

Hello __________(first name), I'm calling on behalf of the Hunter Valley Research Foundation regarding the research we are undertaking into the Dungog Shire economy and the potential impact of the Tillegra Dam. Is now still a convenient time to conduct the interview?

[When formal interview begins]

I would like to record this interview to check my written notes and ensure that I don't lose any important information. Is that OK with you? Thank you/If not rely upon written notes.

[If required, confirm that all comments, opinions and information will be kept anonymous for the purpose of the research].

As a quick reminder, this research is being on behalf of Planning Workshop Australia with the objective of guiding the development of a new land-use strategy for the Dungog Shire. The Foundation's work will comprise desk-top research of the available information, and targeted telephone interviews with informed stakeholders in the area. Your name has been provided as someone who is well qualified to provide knowledge and opinion regarding economic activity within the area and thereby the requirements of any proposed land-use strategy.

A focus question has been agreed with PWA, to ensure consistency across interviews. The focus question is:

'What are the main economic characteristics of the Dungog LGA and the key drivers / events shaping economic activity in the area that need to be accounted for in a new land-use strategy?'

[Commence to sample questions/prompts]

Sample questions/prompts

1. Could you please briefly describe your involvement with business in the Dungog area?

2. So, looking at your particular area of expertise, how would you describe the:
   - The current state of the industry?
   - The factors shaping the industry and the drivers behind them?
   - The direction of the industry going forward?
   - Considering these factors, what do you believe are the key implications for any future land-use strategy?

3. Considering other sectors/issues/events outside of your immediate area of expertise, how would you describe the:
   - The current state of affairs?
   - The factors shaping the trends and the drivers behind them?
   - The direction of these factors going forward?
   - Considering these factors, what do you believe are the key implications for any future land-use strategy?

4. Focusing specifically upon the potential construction of the Tillegra Dam, what is your opinion of its potential impact upon the local economy in the Dungog Shire?
   - Negative
   - Positive

5. Are there any others factors that you believe should be taken into account regarding any future land-use strategy within the Shire?

That's the end of the interview. Thank you for your time today, it is appreciated.

Appendix II

Interview Participants

Name	Background	Sector	Interview Date
Dougal Alison	Nulla Nulla - Dairy Farm	Agriculture	22 April 2008
Brett Bailey	Gresford Post Office Store / Cafe	Retail	22 May 2008
Wayne Brorson	Registered Valuer	Real Estate	22 April 2008
Brett Cornish	Cornish Group, Torryburn Stud	Real Estate / Equine	15 May 2008
Michael Downes	Long term developer in Clarence Town	Real Estate	2 May 2008
Brad Everett	Hunter Land, Land Use Director (Gresford original)	Real Estate	15 May 2008
John Evers	Camyr Allyn Wines	Tourism	07 May 2008
Greg Fenwick	Economic Development Officer, Dungog Shire Council	General	22 April 2008
Dr Phil Jefferey	General Medical Practitioner (GP), Dungog	Health	Unavailable
John Hooke	Long standing agricultural / commercial family	Agriculture	24 April 2008
Greg Laidler	Dale Glass Industries - export industry, laminated wood	Manufacturing	24 April 2008
Anne Macdonald	Farming family in inundation area, former Councilor	Agriculture / Healthcare	13 May 2008
Kate Murphy	Drovers Rural Supplies, Chamber of Commerce	Manufacturing	22 April 2008
Mark Pepper	Addison - Chartered Accountants	General	24 April 2008
Craig Perkins	Rocky Hill Pastoral Company, horses (European warm bloods)	Tourism, Equine, general	22 April 2008
Vic Turrin	Former Councilor, antiques retailer, investor	Retail / General	22 April 2008

Appendix III

ABS Index of Economic Resources – List of included variables

Socio-economic Indexes for Areas (SEIFA) – Index of Economic Resources

The SEIFA indexes are derived by the Australian Bureau of Statistics using census data. The indexes rank geographic areas across Australia in terms of their socio-economic characteristics. There are four different indexes, each representing a slightly different concept. These concepts are abstract and difficult to measure, so the indexes aim to capture these abstract concepts by combining information that is related to the concept.

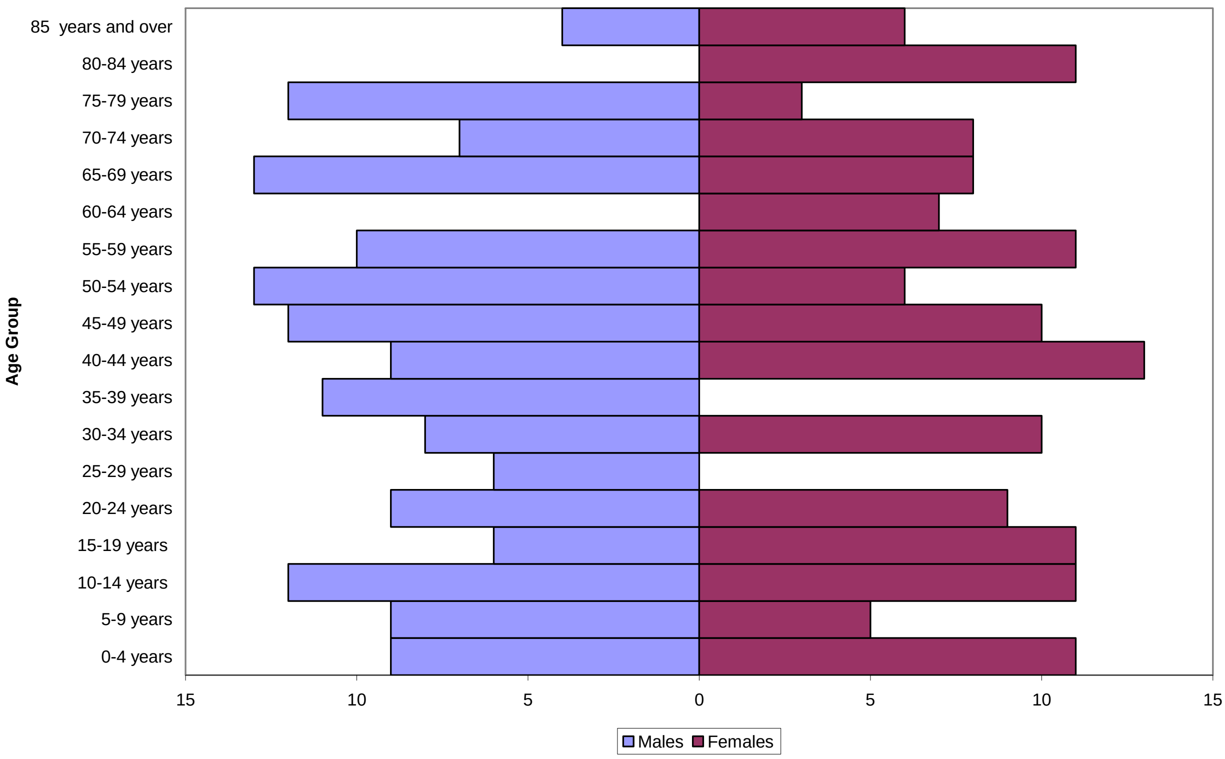
The Index of Economic Resources (IER) focuses on the general level of access to economic resources of people and households within an area. The IER includes the following variables:

- % People with stated annual household equivalised income between $13,000 and $20,799 (approx. 2nd and 3rd deciles)
- % One parent families with dependent offspring only
- % Occupied private dwellings with no car
- % Households renting from Government or Community organisation
- % Households paying rent less than $120 per week (excluding $0 per week)
- % People aged 15 years and over who are unemployed
- % Households who are lone person households
- % Occupied private dwellings requiring one or more extra bedrooms (based on Canadian National Occupancy Standard)
- % Households owning dwelling they occupy (without a mortgage)
- % Dwellings with at least one person who is an owner of an unincorporated enterprise
- % Households paying mortgage greater than $2,120 per month
- % Households owning dwelling (with a mortgage)
- % Households paying rent greater than $290 per week
- % People with stated annual household equivalised income greater than $52,000 (approx 9th and 10th deciles)
- % Occupied private dwellings with four or more bedrooms

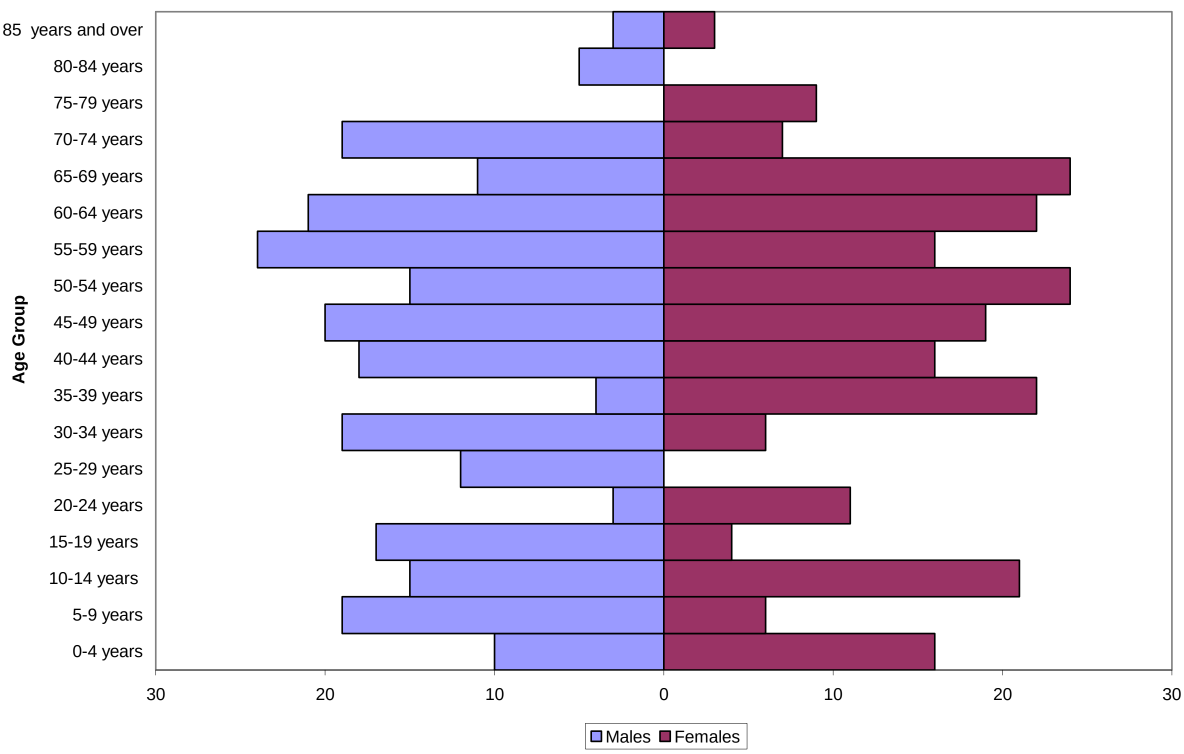
APPENDIX 3

AGE PYRAMIDS FOR GENERAL PLANNING PRECINCTS / DISTRICTS

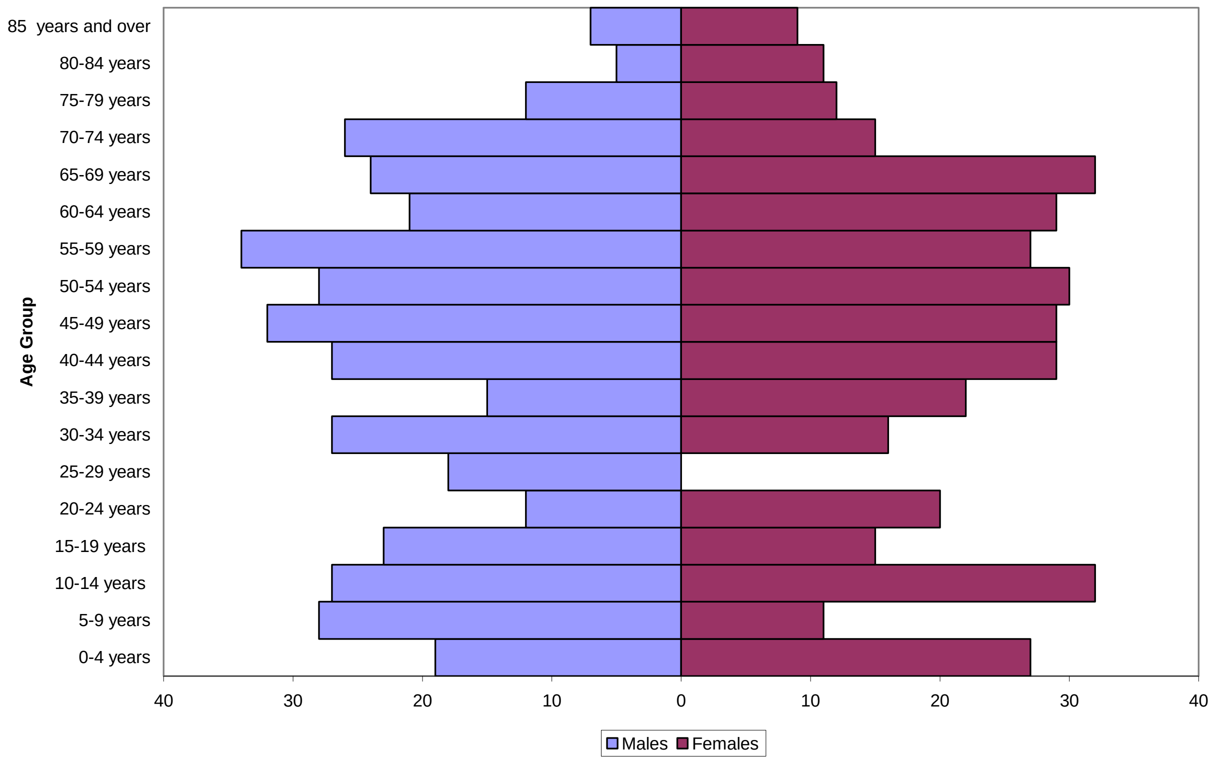
Gresford Urban Age Pyramid



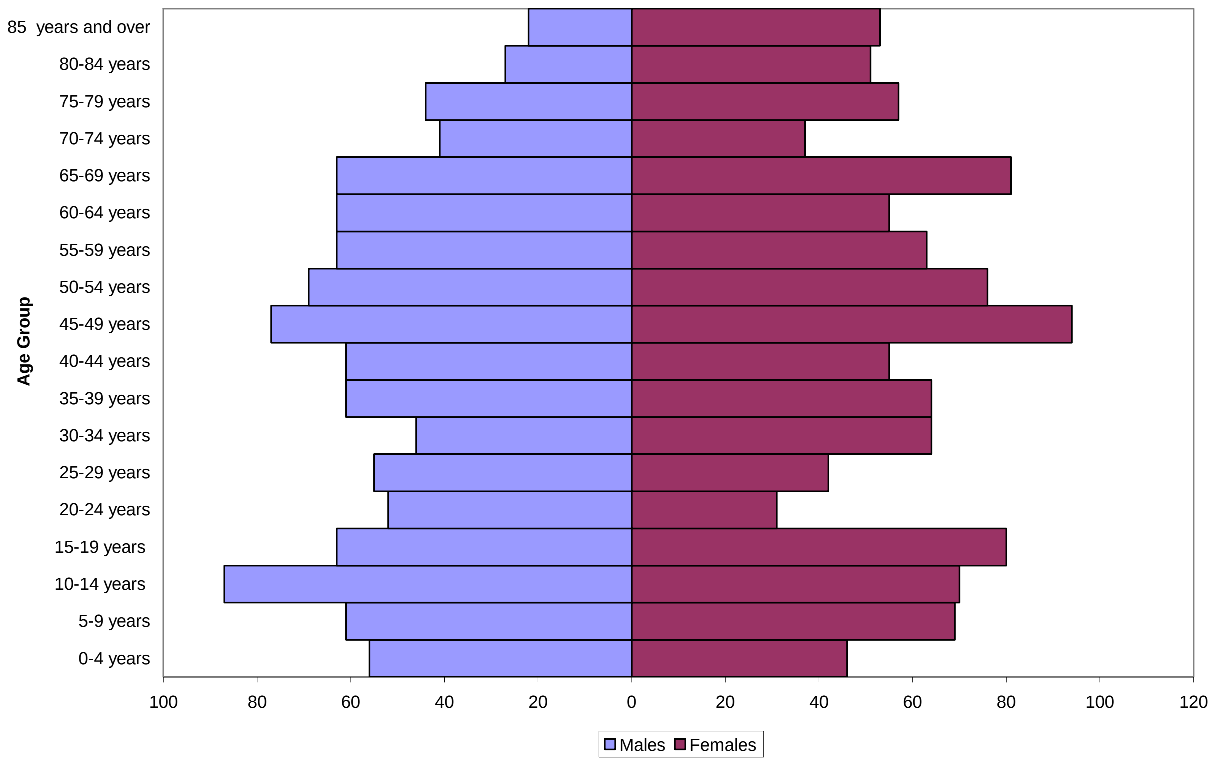
Gresford Rural Age Pyramid



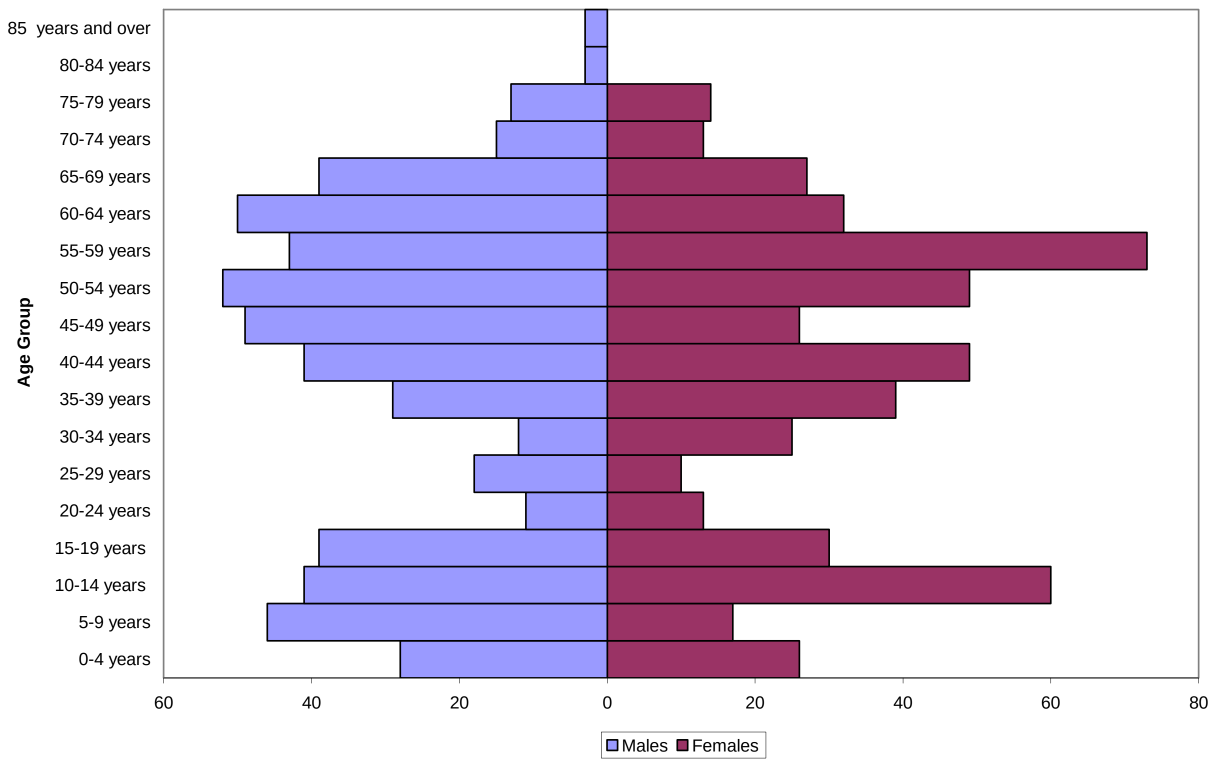
Gresford Planning District Age Pyramid



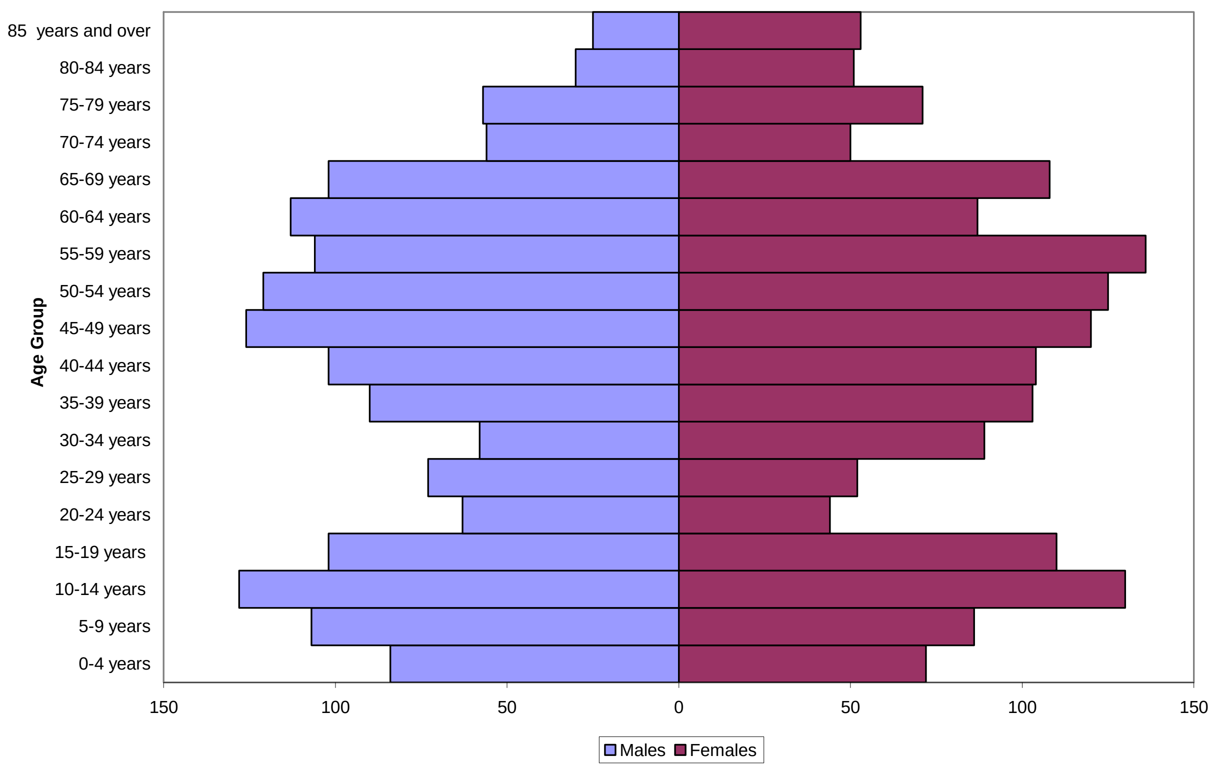
Dungog Urban Age Pyramid



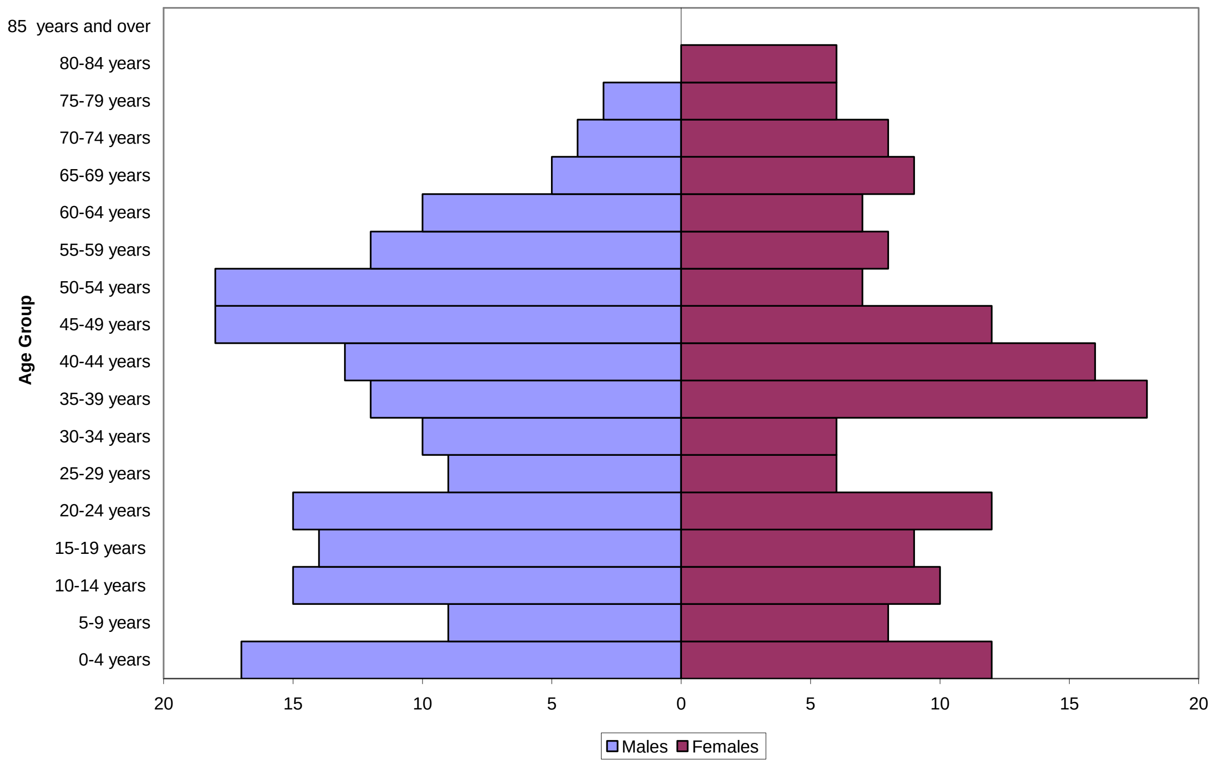
Dungog Rural Age Pyramid



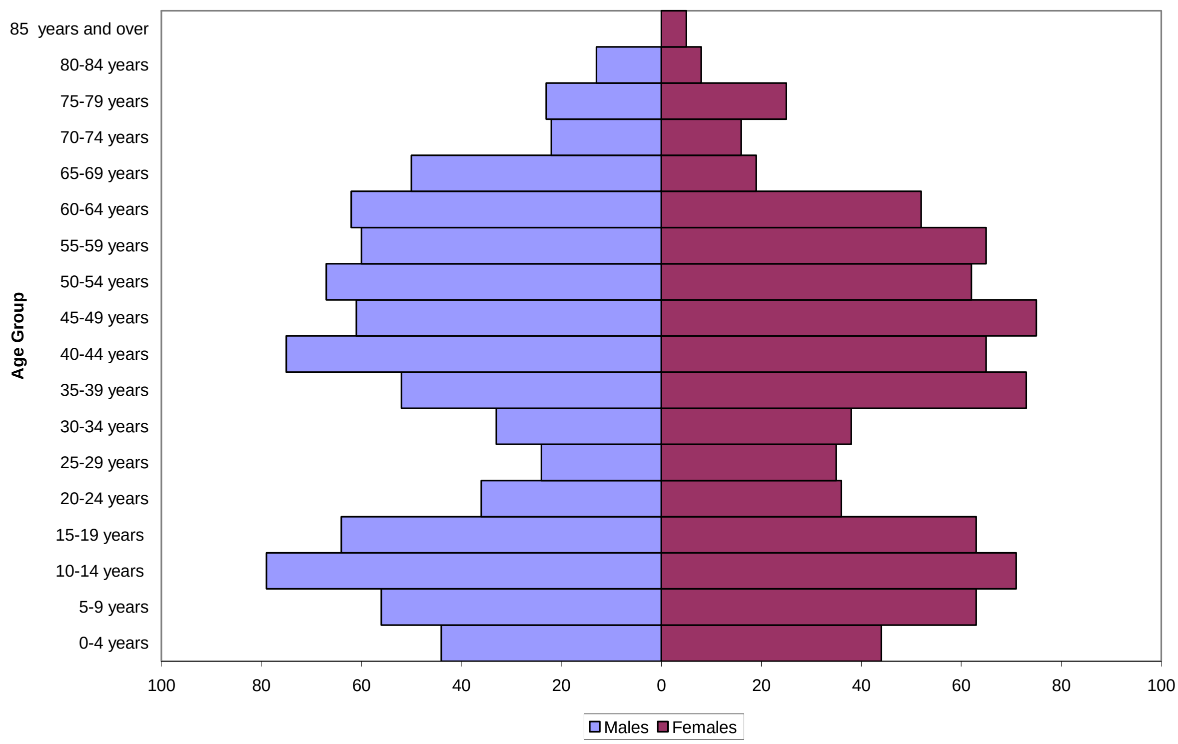
Dungog Planning District Age Pyramid



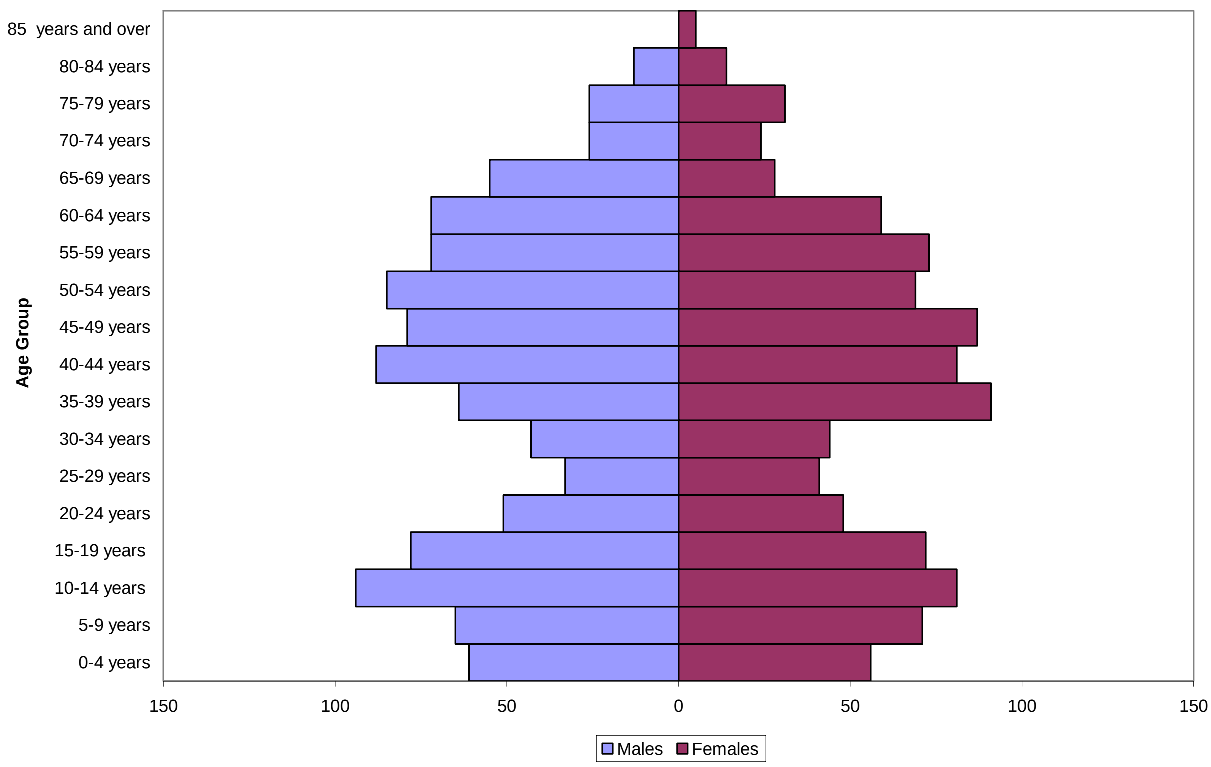
Paterson Urban Age Pyramid



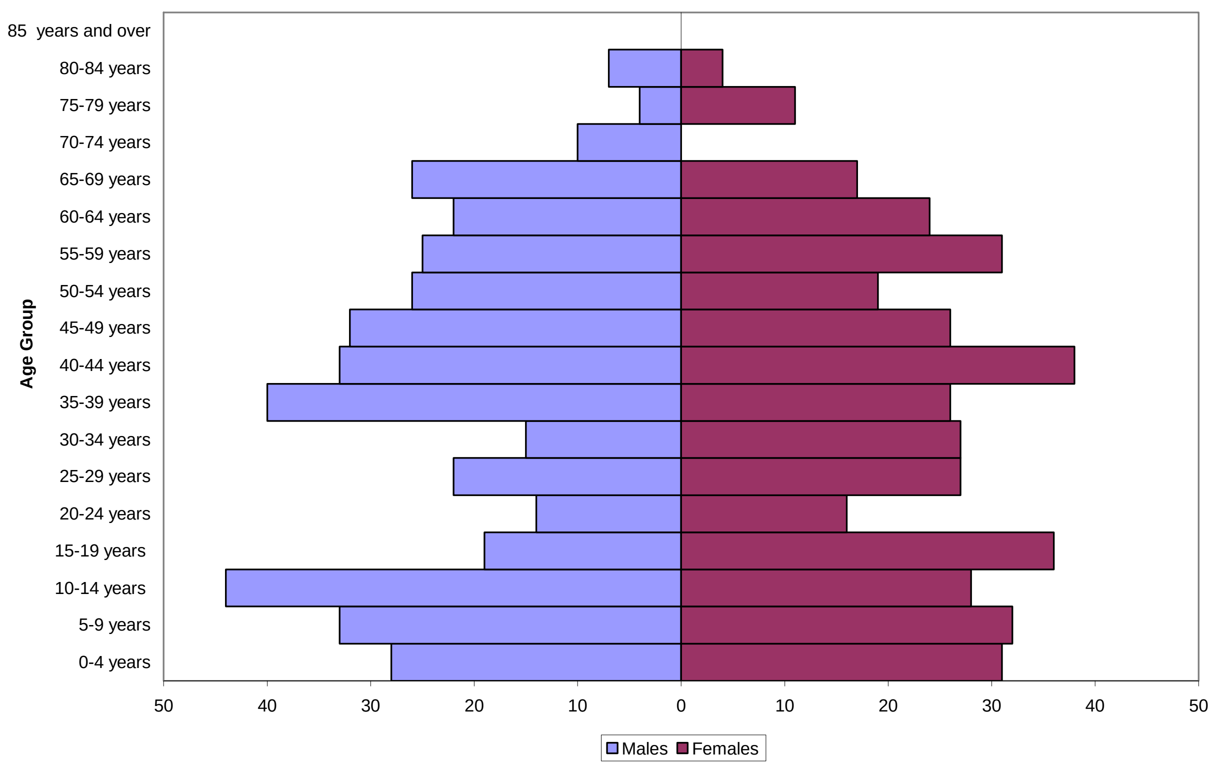
Paterson Rural Age Pyramid



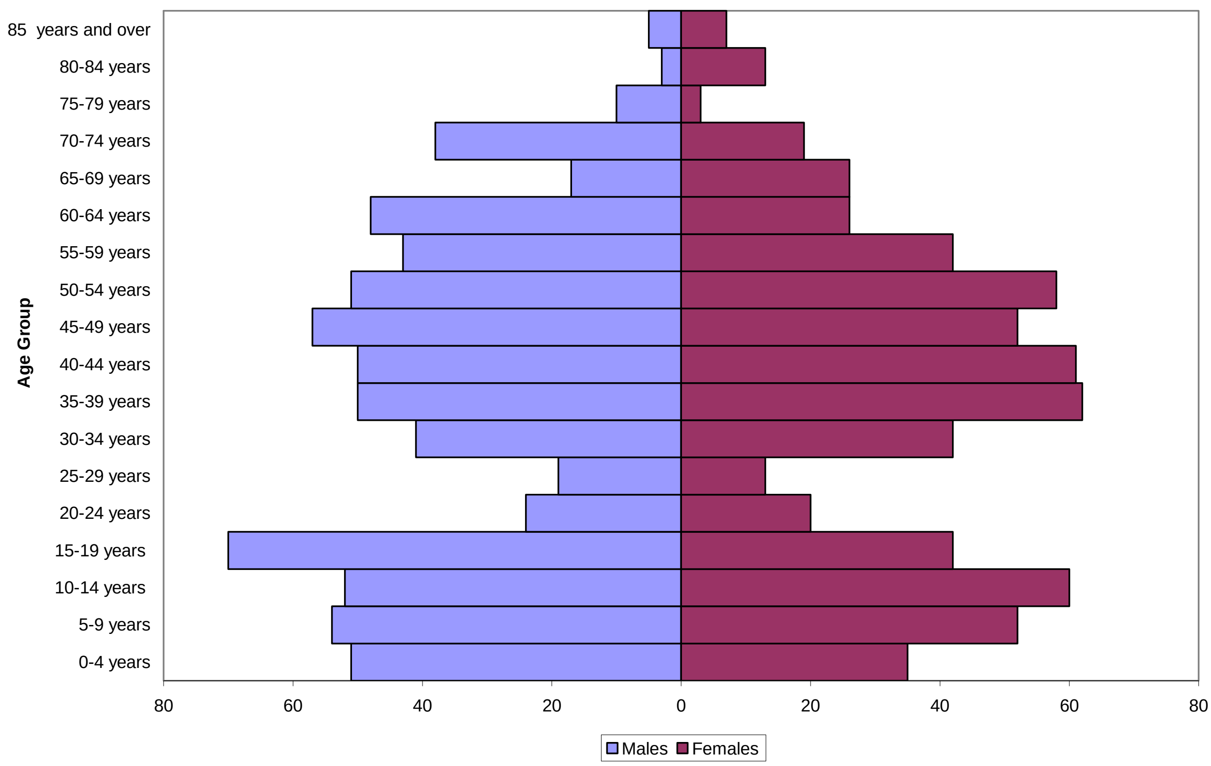
Paterson Planning District Age Pyramid



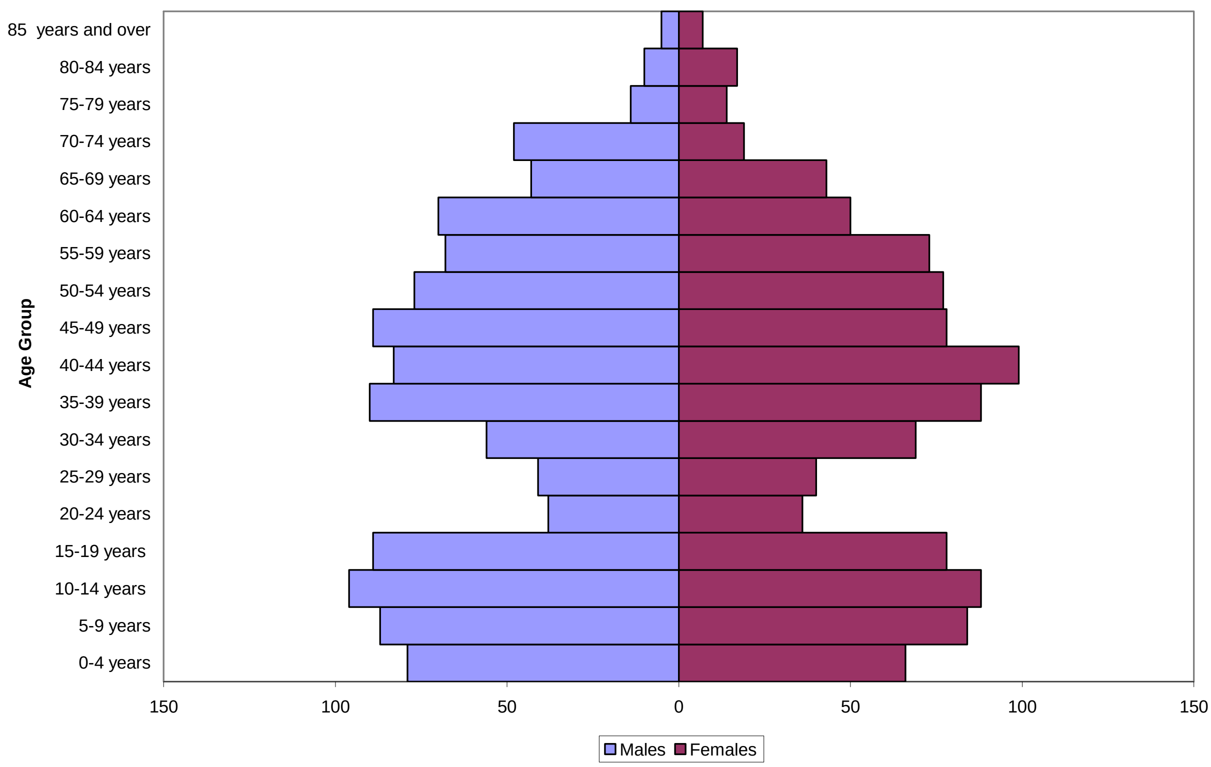
Clarence Town Urban Age Pyramid



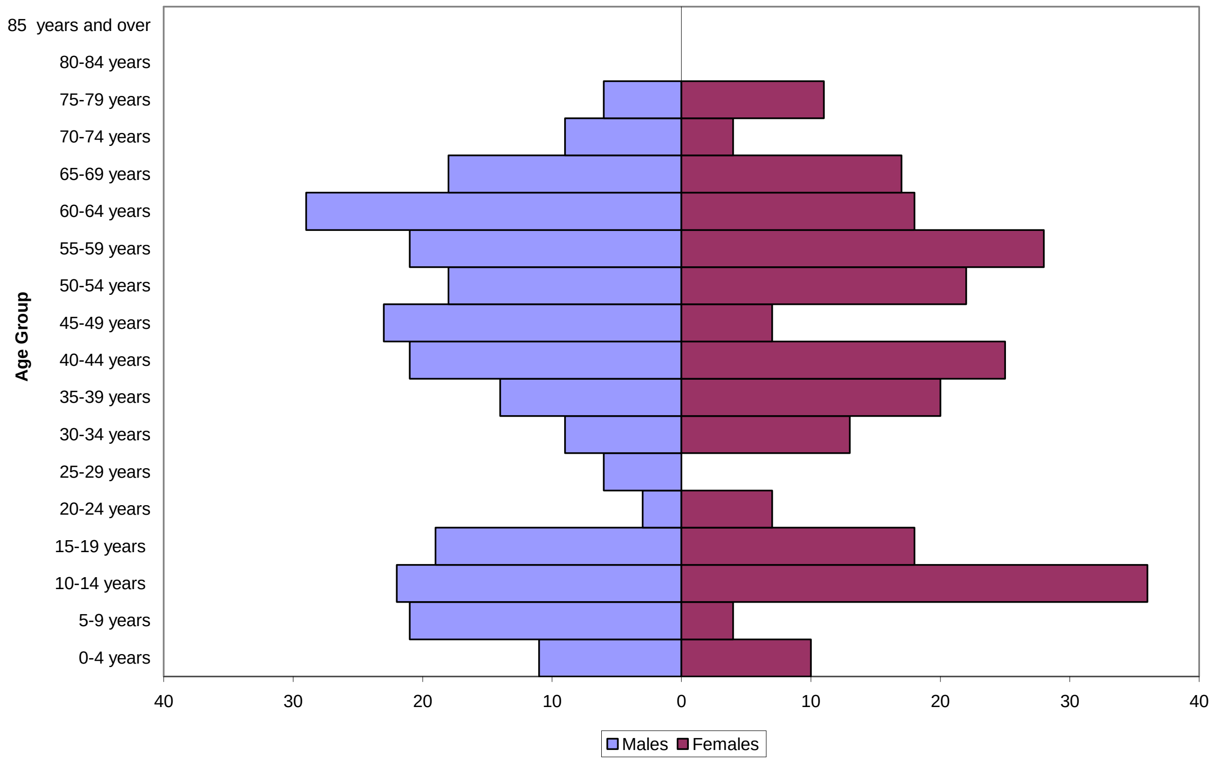
Clarence Town Rural Age Pyramid



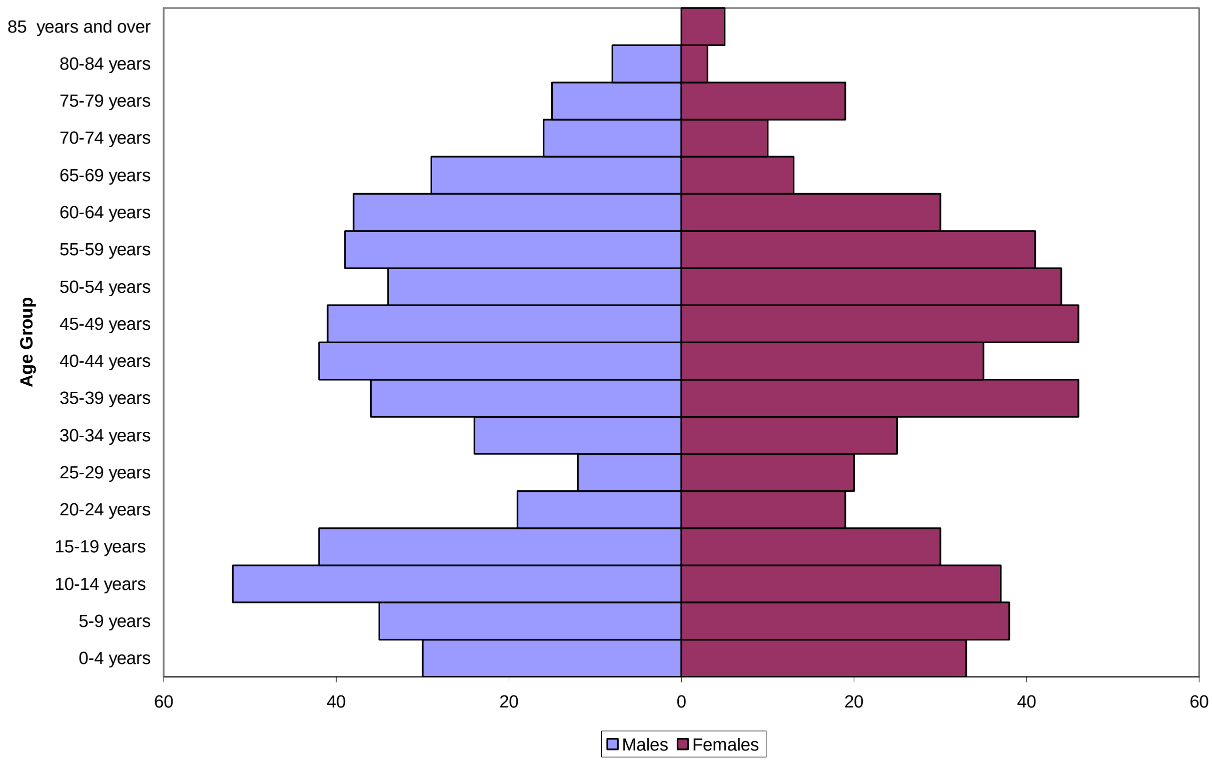
Clarence Town Planning District Age Pyramid



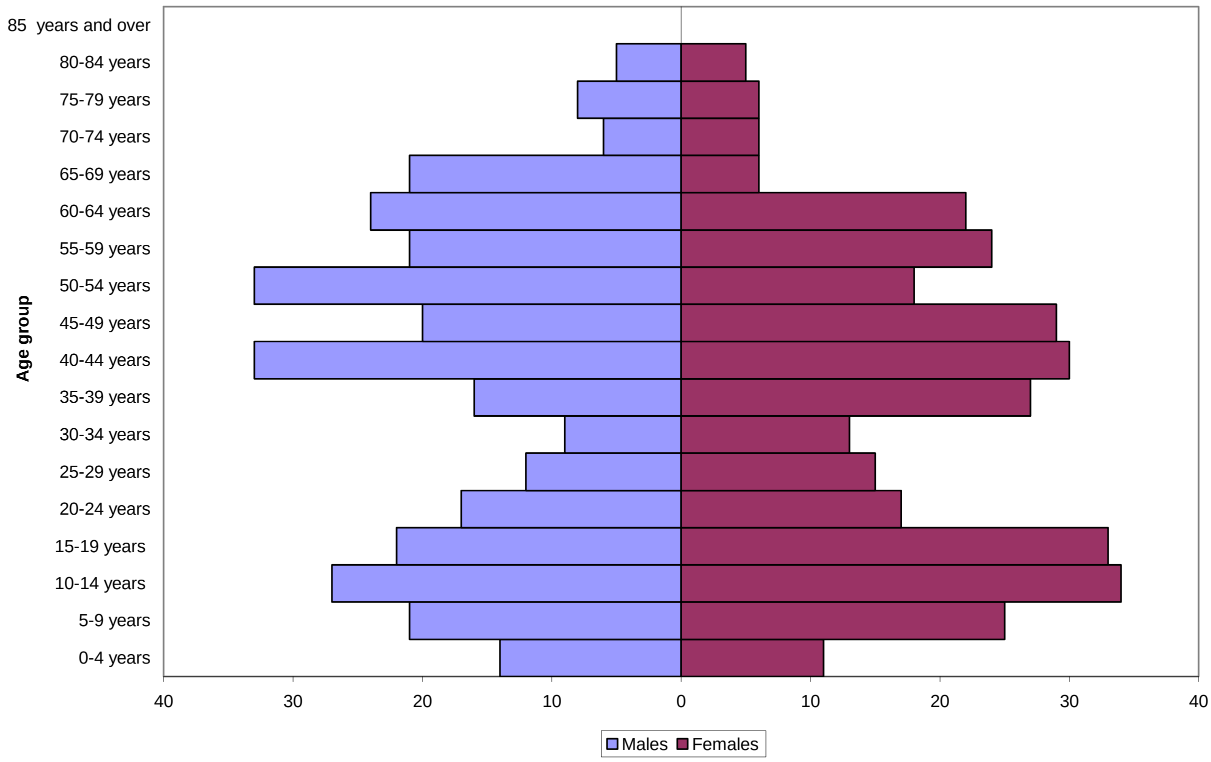
Tillegra Dam Planning District Age Pyramid



Vacy Section 94 Catchment Age Pyramid



Martins Creek Section 94 Catchment Age Pyramid



APPENDIX 4

DUNGOG SOCIAL ISSUES PAPER

(jms.services)

DUNGOG SOCIAL ISSUES PAPER

Prepared for

planning workshop Australia

By

jms.services

July 2008

Disclaimer: Any representation, statement, opinion, advice, information or data expressed or implied in this publication is made in good faith but on the basis that jms.services and the director are not liable (whether by reason or negligence, lack of care or otherwise) to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking action in respect of any representation, statement, advice, information or data referred to herein.

TABLE OF CONTENTS

1. INTRODUCTION

The goal of this report is to deliver the findings of a desk top review undertaken by jms.services on documents relating to the Dungog Local Government Area and assess current social issues. The aim of the project is to ensure social issues are adequately taken into account in the future preparation of land use strategies. Dungog Local Government Area is currently facing the challenge of the proposed Tillegra Dam and this review considers the social ramifications of this proposal and its affects on the broader community.

2. METHODOLOGY

For the purpose of this paper the term "social issue" has been applied in two ways;

1. an issue about which the community "feels and expresses" a level of concern
2. an issue arising from demographics or circumstance where people are affected

The following reports and documents were supplied for review

1. Draft Dungog Shire Situational Analysis developed by Planning Workshop Australia, April 2008
2. Dungog Community Profile, 2005 and Dungog Social and Community Plan 2004 - 2009, developed by Dungog Council
3. Consultation Notes prepared for Planning Workshop Australia by Jenny Rand and Associates, 2008 on the opportunities and threats of the Tillegra Dam proposal to the communities of the LGA
4. Web sites: Dungog Shire Council, specifically the Tillegra Dam Issues Paper developed by Dungog Council and the No Tillegra Dam Action Group
5. A number of active community members were contacted to confirm details or seek further information. These included: Council's Community Development Officer, Road Safety Officer and Traffic Engineer, The Director of Nursing at Dungog Hospital.
6. On completion of the first draft Dungog Council Officers provided detailed comment and suggested contact be made with some additional community members.
7. Following this process comment by both the additional participants and council staff was incorporated into the draft to produce this final report.

Based on the above research key social issues have been noted, discussed and recommendations presented. Social comment has been divided into two categories and presented in two tables. Table one outlines those issues raised through community consultation, and table two those identified according to social category through the Community Profile, Social and Community Plan and Situational Analysis.

Each table presents the issue, places the issue within the context of the community and makes recommendation on an achievable strategy that has the potential to mitigate or reduce the impact of the issue through land use planning or some other means. In some circumstances land use strategies can have little bearing on the issue. In these cases this has been noted.

3. INTERPRETATIONS and ASSUMPTIONS

While data and its interpretation is an important factor in the development and understanding of social issues for a community, many issues are based in human concern and "culture". Other than the consultation notes and ABS (Australian Bureau of Statistics) data presented in the situational analysis and community profile no specific community consultations or studies were undertaken for this paper. It is expected a comprehensive displacement analysis of those affected by the Tillegra Dam will be available as part of the Environmental Assessment (EA) prepared by Hunter Water and this will be considered as part of the EA review.

Culture is an important part of social assessment. This is not high culture (theatre and the arts), but what some call small c culture; the ambience of a place, how people behave, why they choose to live where they live and what that means to them in terms of community values and lifestyle. An interpretation of Culture has also been considered within this document.

4. THE CULTURE OF DUNGOG

Dungog Local Government Area (LGA) is a rural community that retains its architectural, agricultural and environmental heritage. Nestled at the foot of the Barrington Tops it has access to a rural lifestyle, while remaining close to the cities of Newcastle and Sydney, and the local towns of Maitland and Raymond Terrace. Newcastle Airport, an hour's drive from the main town of the LGA, links it to other Australian cities and through them internationally.

The community is connected to Newcastle by a limited but reliable State Rail passenger service. From Newcastle there is further connection to Sydney, the state and interstate. There are no public bus services.

Roads in the LGA are notoriously poor, with the majority being single lane. Vehicle accident rates and road related deaths are high compared to NSW averages.

To its advantage the LGA retains much of its historic character. Rural landscapes dominate the immediate environment, to a back drop of natural bushland, the major rivers of the Allyn, Paterson and Williams and the Barrington Tops Plateau. The LGA has a tranquil ambience and provides excellent visual amenity and recreational opportunities. The area receives many visitors because of this character.

Dungog LGA has remained largely undeveloped compared to its Lower Hunter neighbours of Port Stephens and Maitland. The Barrington Tops provides a natural barrier to development from the north, and current road conditions limit the amount and type of vehicle access from all other directions. While these elements have placed limits on the areas desirability for large scale residential, industrial or commercial expansion it has enabled the retention of historic rural charm. Each township, Dungog, Paterson, Gresford and Clarence Town has preserved much of their original architecture and historical character. This is difficult to find in more accessible communities.

5. RESIDENT GROUPINGS

There are some distinct resident populations within the LGA. Although these are in no way definitive, they help to understand the differing concerns of residents, their community priorities and to some degree conflicts and to describe the area's character. There is no doubt the LGA is undergoing a transition from a dominantly rural and agricultural community to one affected by regional growth.

Group one are those who have an ancestral link to the community with intergenerational connection following in the steps of their parents, grandparents and in some cases great grandparents. Many continue their connection to rural life and agricultural production while some have subsidised their income by external employment.

The second group have less ancestral connection to the community but have lived or worked there for considerable time. They live in a variety of environments: town, rural residential or on larger properties. They have chosen the LGA because they enjoy the smaller town ambience and like the lifestyle the environment offers. Some work locally, some travel outside of the LGA to work, some have a home based business. They do not necessarily associate themselves with the environment but certainly are strongly connected to rural character and what some would call country values.

The third group are those who have come to the LGA for a “tree change”. These people have actively sought a different lifestyle to a urban experience and enjoy a mixture of the natural environment, the rural space and amenity and the rural culture. They are strongly connected to the environmental character of the LGA.

The fourth group are relatively new, and are those that have purchased property in the LGA but are not permanent residents. If these properties are active farms they often employ locals to work them. They may use the property as a rural retreat. They like the rural ambience and historic amenity and find the LGA accessible to Sydney and Newcastle. Their work is not within the local community although they may maintain a home office. They rarely access the local services other than to buy farming supplies but they provide support to the community through employment (and the flow on effects of it) and the purchase of farming goods and equipment.

One thing these groupings have in common is they have a strong feeling of connectedness to the area. There is a sense through the consultation notes, the community profile, the social and community plan and through speaking to individuals that there is considerable community pride, residents appreciate rural life and its ambience, they value the natural and built heritage and they feel concern for the LGA's future in terms of architectural, environmental and agricultural sustainability.

6. COMMUNITY CHANGE

While there has been little building development in the LGA over the past ten years, economically and socially there has been considerable change. These changes have included:

6.1 Dairy Deregulation

Since 2003 up to 80% of dairies have been lost. Dungog LGA has been identified as the second highest affected LGA in Australia. This loss has been for a variety of reasons: some farmers were already contemplating retirement and the changes required gave farmers further incentive; some because the pressures of deregulation meant farms were trading at a loss and farmers could not sustain those losses; some because there was no capacity for farm improvements and therefore farms became unsustainable. The economic profile notes a 4% drop in people employed in the agricultural sector between 1996 and 2006. While there is no specific information available for this report on the percentage of people employed specifically in the dairy industry, anecdotally it is believed they represent a fair portion of this loss.

The flow through effect of deregulation has been severe. Economically, local spending has been reduced in a variety of ways: farmers have not had spare funds for land trade or purchase options; machinery dealers and servicing businesses have suffered; produce stores have reduced trade because of grain, fertilisers and general farming supplies not being needed; local carriers and grain carter services have diminished; vets have less rural business and are more reliant on domestic services.

Because rural farms are less lucrative, indirectly there has been a major flow through to other local businesses. Not all farmers affected by deregulation have moved from the land. Many have changed the focus of their enterprise from dairying to beef cattle or other less labour intensive industry.

6.2 Increase in Land Values

Another major effect on agriculture has been the increase in land values. While generational farmers who carry low land debt can maintain agricultural enterprises, farmers wishing to enter the rural market have greater difficulty. With land values and interest rates high, farming becomes less financially viable to any emerging farming industry.

6.3 Rural Residential Expansion

With the tightening of rural residential opportunities in the Lower Hunter and Sydney regions, the LGA has become a desirable and affordable destination for stress escape by "cashed up" rural life stylers. These people however are less likely to undertake labour intensive farming practices like dairying and more likely to undertake less intensive practices like beef cattle. There is also more concern about rural conflicts between intensive rural enterprises and "hobby farmers".

6.3 Centralisation of services

Over the past years the area has met with the closing or downsizing of Telstra, State Forests, and Department of Primary Industries just to name a few.

Anecdotally people have mentioned that the LGA has not only suffered financially but also emotionally and there is a general agricultural pessimism, especially now that four of the remaining major dairies in the LGA will be inundated if the Tillegra Dam proposal proceeds. It is difficult for the local industry to envisage a strong agricultural alternative. It has been suggested that should an irrigation system below the dam be implemented it could have the potential for a major agricultural turn around for the LGA, however at this stage there is no evidence to suggest that Hunter Water see this as a possibility given their charter as a domestic water supplier.

In light of the above there was a call by some contacted for a local, motivated and integrated approach in visioning the LGA's future and seeking opportunities that would mitigate some of the past losses. This need was expressed the most strongly for the township of Dungog. Those contacted saw the recreation and tourism opportunities as a strong possibility however, were keen to point out that the local economy requires diversity to remain buoyant and also mentioned the expansion of local industry.

On a brighter note there does still appear to be some optimism that the LGA has the capacity to move forward, and the belief that with strong leadership opportunities could be maximised. There is concern that community members involved with trying to make this happen are "burning out" and there was comment that Council leadership has not been strong.

7. SOCIAL/CULTURAL CONCERNS RAISED THROUGH CONSULTATION

The following table provides a review of the social/cultural issues and concerns raised through community consultation. Consultations were held by Jenny Rand and Associates and explored both the residential and business community's views of the current community, the possible effects of the dam proposal and post dam opportunities. The table outlines the social/cultural concerns, places those concerns in context through discussion and makes a recommendation on mitigation or reduced impact where this is appropriate, through land use policy.

TABLE ONE: SOCIAL/CULTURAL CONCERNS RAISED THROUGH CONSULTATION

	SOCIAL/CULTURAL CONCERNS	DISCUSSION	RECOMMENDATION
1.	Dungog LGA currently maintains an agricultural and environmental character to which the residents are strongly attached	Many residents have a strong generational link to the LGA. People continue to live in Dungog LGA because they enjoy the rural ambience, the environment and the country town feel. Tourists and newcomers are also attracted to this culture and its visual and aesthetic appeal. It is important to maintain a strong definition between urban centres and the LGA's natural environments and rural settings. Maintenance of the country town feel and the urban centres' historic character is a high priority for residents.	In the development of new land use strategies, emphasis should be given to maintaining the agricultural and environmental history and ambience of the LGA Consideration needs to be given to the separation between urban centres and the "countryside". Historic patterns of land use reflecting the density of town centres through to larger urban blocks on the fringe of towns should be maintained. A visual analysis of subdivision developments on the edge of towns should be undertaken as part of rezoning and development applications. Residential "sprawl" should be avoided and street layouts, lot layouts and building form should be reflective of current historic form.
2.	The LGA town centres maintain a historical	Tourism provides a major opportunity in regard to employment and income	Emphasis should be placed on the development of a "Historic Town

	context to which the residents are strongly attached. Residents fear the loss of rural amenity and want to keep the country town feel.	generation for the LGA. Tourists are attracted to towns that retain historic character and the LGA's lack of development over past years has become an asset. Retention of historic urban character is highly desirable.	Centre" Development Control Plan that guides urban character while allowing appropriate commercial and residential expansion. Lot layout in urban centres should be considered by drawing on current historic layouts to maintain character Historic building form and replica materials should be considered to emphasise historic character
3.	There is concern over the spread of rural residential development and the loss of viable agricultural lands.	Many farms have been owned over generations and there is concern over this cultural loss. The subdivision of rural lands threatens agricultural viability as identified in the recently gazetted "Rural Lands SEPP". Accessibility to appropriate land mass, water, fertile soils and safe and reliable transport by both rail and road are essential to agricultural viability.	Future land use planning needs to identify and protect the most important and sustainable agricultural areas before rural zonings are applied or changed.
4.	There is concern about the spread of rural residential properties destroying the visual backdrop to urban centres.	Urban subdivision and rural residential sprawl on the edges of towns can weaken historic and cultural character	Land use strategies need to address urban boundaries. A visual context analysis needs to be undertaken before decisions are made as to the appropriate sites for urban or

			rural residential expansion.
5.	Residents express the view that change is inevitable for the LGA given the current economic and environmental conditions, developer interests and the Dam proposal.	Maintenance of local historical, agricultural and environmental character.	Appropriate development control strategies need to be implemented to protect and enhance historic, agricultural and environmental sustainability.
6.	The LGA has difficulty retaining its young people.	In general young people will leave rural locations for broader education, work and living opportunities, however a stimulated and diverse local economy, expanded local recreational opportunities and improved roads and public transport will encourage young people to remain or be attracted from other communities.	The development of tourism and economic plan should consider opportunities available through the development of the Tillegra Dam, increased access to recreational sports and activities and the associated tourism opportunities, which will make the community a more vibrant place for the attraction and retention of young people. Stimulation of the local economy and increased vibrancy through appropriate economic development will provide both interesting and sustainable opportunities for young people.
7.	There is concern that the greater proportion of residents live in	Planning in the districts of Clarence Town, Gresford and Paterson needs to recognise that the greatest number of	Consideration needs to be given to developing standards for the provision of community services and

	rural areas not urban centres and that these residents get forgotten.	residents live outside of the urban areas and this raises issues of rural isolation and reduced access to services and facilities	infrastructure. In the development of local programs and services, travel distances, access to transport, starting and finishing times, and links to other activities that will make trips into “town” more productive all need to be considered in order to cater for rural residents' needs.
8.	There is a creative and cultural community within the LGA that has the opportunity for development.	Creative input into decision making provides an opportunity to maintain and enhance local culture. It is often the presence of a cultural community that attracts tourism and stimulates vibrancy. All in turn stimulate the local economy. “The culture” of a community is a strong stimulus for why people choose to visit or live in an area. There is a solid opportunity in the LGA to access and maintain this culture and for it to be used to local advantage while maintaining cultural heritage.	Identification of and consultation with the creative community would provide an opportunity for creative and cultural stimulation. Protection of the area's visual, aesthetic and historical beauty will protect one of the LGA’s greatest assets.
9.	The population, as in all other NSW communities is ageing and there is concern over the availability of	There is a general sense throughout the documentation that the capacity for the LGA to retain its older people in a comfortable living style is important to its culture and history and in general	Land use strategies need to consider the availability of land suitable to unit style, self care accommodation in accessible locations with easy access to shops and support facilities such as

	services that will support ageing people.	where possible is the preference of the people involved, providing continuing connection to the community in which they have their social supports, family and memories. This is difficult in communities where urban centres are small and the population is not available to sustain the services required. Suitable accommodation that is physically accessible and allows access to essential shops, medical and pharmaceutical services, community transport, and residential support such as Homecare, Meals on Wheels etc, is essential to people maintaining independence. 2006 Census data reveals little unit, flat or apartment style accommodation available in any of the four urban communities although a small amount is available in Dungog and Clarence Town.	doctors, pharmacies and senior citizens centres. Unit developments need to be fully accessible and where possible connected to the town centre by footpaths, both wide enough and with appropriate gradients for wheel chairs and motorised scooters. The provision of support services are more economically viable when people with similar needs live in close proximity and it is the recommendation of this study that this be taken into account when considering the availability of suitable land for aged care accommodation.
10.	Housing affordability will continue to be a major issue with increasing land values and interest rates	Housing affordability is reliant on two major factors. People's ability to pay and supply of land. People's ability to pay is reflective of	Future land use strategies need to consider the amount of land currently zoned for residential development based on local demand. At the time of this study Council was undertaking an LEP

		their income earning capacity and this is usually based on education levels and professional experience. Local training programs, distance learning programs and access to high speed technologies all contribute to economic improvement. In an isolated community like Dungog roads and access to public transport are also contributing factors. Affordability is reflected in land supply and value. There needs to be adequate supply of land and block sizes need to be of a size that is affordable.	Review of its transitional zones which has the potential to have a major effect on land availability around all communities other than Dungog. Land use strategies need to consider the variety of lot types and sizes in order to provide opportunities for people of varying incomes and household varieties. Lobbying needs to be undertaken to attract high speed reliable technology which will enhance local educational, employment and home based business opportunities.
11.	Petrol prices and therefore the capacity to access services away from the local community will be an ever increasing social issue	With current petrol prices rural isolation and access to local opportunities will continue to be a major issue for rural communities.	New residential areas if possible should be within walking distance to services and facilities Land use strategies wherever possible need to consider the stimulation of the local economy to improve local educational, employment and service related opportunities Lobbying should continue for an increase in train services to Dungog

			New residential areas if possible should be within walking distance to the rail network.

Each issue, concern or opportunity identified above was raised in consultations held by Bronwyn Seiden of Watkinson and Apperley with Dungog Chamber of Commerce, Dungog Community, Dungog Business Chamber, Gresford and Vacy Business and Community, Paterson Community and a Tourism Workshop between 10th and 15th of September 2007.

8. OVERVIEW OF THE LGA

8.1 Population

According to the ABS the population of Dungog in 2006 was 8,062 people, increasing by 404 people, or 5.3% between 1996 and 2006. Of these 3,526 lived in the urban centres with the remainder 4,535 living on rural properties. Of all precincts, Dungog was the only area where the urban population was higher than the rural population.

The following population projections were developed by Hunter Valley Research Foundation in 2002 and estimates population 2006 to 2026.

Population Projection 2006 – 2026

Location	**2006**	**2011**	**2016**	**2021**	**2026**
Dungog	7994	8083	8184	8308	8443

Source: Hunter Valley research Foundation 2002

Population projection is difficult given the capacity for a community to change over time. New industry, improved public transport and roads, expanded industry or interest by developers can all affect growth however, given past and current trends, the above table indicates an average annual growth rate based on current and projected population as being around twenty two people per year to 2026. The Dungog Community Profile identifies the inability of Council to rezone additional lands as one of the reasons for low growth over past years.

This projection highlights the need for the community to consider its future in terms of population growth, to decide on the degree to which growth is important to its vision and where land for future populations would most appropriately be made available.

From a social perspective growth in both industry and development stimulates the economy through the creation of employment and the expenditure of funds locally. Vibrant growing communities have more potential to retain their young people and attract economic investment both internally and externally, continuing the cycle of a vibrant local economy.

Currently in the LGA there are more local people employed than over previous years but there is less local employment. People are travelling outside of the LGA to work and this creates an economic leakage because they access goods and services outside of the LGA.

In 2007 the Lower Hunter Regional Strategy was released by the Department of Planning. While Dungog was outside of the strategy area, housing stress (limited land availability and increased prices) in Port Stephens and Maitland, and limited availability for new release rural residential developments in the Lower Hunter has intensified interest in the communities on the southern border, especially Clarence Town and Paterson, where rural populations in the 2006 census period increased from 2001. Access from these communities to Maitland, Raymond Terrace, Newcastle and the Hunter Valley for employment and daily services such as education choice, medical support and family services make them potential rural residential addresses even if travelling time is slightly greater than Port Stephens and Maitland.

Over the same period the population of Dungog township grew slightly but remained relatively stable, and Gresford declined substantially. There is no obvious evidence as to why the Gresford population declined however it is thought diary deregulation and agricultural decline would account for some.

The following table highlights population changes over the 2001 – 2006 census period.

Population by Planning Precinct, 2001 - 2006

Planning Precinct	**Total Persons 2001**	**Total Persons 2006**	**Population difference**
Gresford Urban	256	289	+33
Gresford Rural	783	546	-237
Gresford Planning District	**1,039**	**835**	**-204**
Dungog Urban	2,139	2,098	-41
Dungog Rural	959	1,038	+69
Dungog Planning District	**3,098**	**3,136**	**+38**
Paterson Urban	333	345	+12
Paterson Rural	1,401	1,636	+235
Paterson Planning District	**1,734**	**1,981**	**+247**
Clarence Town Urban	817	794	-23
Clarence Town Rural	1,220	1,315	+95
Clarence Town Planning District	**2,037**	**2,109**	**+72**
Total Dungog LGA	**7,908**	**8,061**	**+63**

Source: ABS Census Data 2006

Age demographic data indicates that growth in Paterson and Clarence Town is in the 40 plus and 0-15's age groupings supporting the view that families are looking to these communities for a rural lifestyle.

8.2 Incomes

The following table has been developed as an abbreviation of information on weekly household incomes collected by the ABS, 2006. Full tables and graphs are available within the Situation Analysis (Section 8.2.2.1).

Income Bracket	% of households Dungog LGA	% of households Hunter	% of households NSW
$0 - $249	8.4	7.5	6.7
$250 - $999	39.1	40.9	34.7
$1,000 - $1,999	30.0	28.1	28.2
$2,000 -$3,000	7.4	9.5	12.0
over $3,000	2.6	3.2	6.0

In summary data shows that a slightly higher proportion of people in Dungog LGA (8.4%) earn lower incomes ($0 - $249) than the Hunter (7.5%) or NSW (6.7%). Dungog (39.1%) ranked slightly lower than the Hunter in the $250 - $999 income bracket than the Hunter (40.9%) and higher than NSW on (34.7%). In the incomes $1,000 to $2,000, Dungog (30%) was slightly higher than the Hunter (28.1%) and NSW (28.2%). In the $2,000 to $3,000 category, Dungog (7.4%) was slightly lower than the Hunter (9.5%) and NSW (12.0%). Dungog also has a proportion of people on very high incomes with 2.6% of the population earning over $3,000 per week. This is not markedly dissimilar to the Hunter at 3.2%.

Consideration also needs to be given to some social indicators in regard to income levels. In both the Hunter and NSW figures, major cities and town are incorporated and more people on higher incomes live in urban centres. Some people choosing to live in rural communities do so for lifestyle reasons and higher income is sometimes an element of lifestyle they are prepared to forgo for what they consider to be quality of life measures.

The following highlights can be drawn from the income level data.

- Paterson Urban has a higher proportion of people on higher incomes than any other residential community.
- Clarence Town, Gresford and Dungog Urban centres have a higher proportion of households on lower incomes.
- All rural communities have a higher proportion of households on higher incomes than their urban counterparts.

8.3 Movement Patterns

The dominant mode of transport for people journeying to work is the private motor vehicle. Journey to work data for 2001 presented by HVRF(2006:337-8) shows

- 51% of LGA residents worked within the LGA
- Newcastle was the highest LGA of employment outside of the Dungog LGA at 10.6% with Maitland accommodating 9.7%
- 13.1% of working residents travelled outside of the Hunter region for work.

Anecdotal evidence suggests residents in different urban centres travel to different localities for work, services and entertainment not available locally. Evidence suggests residents of Paterson gravitate toward Maitland for daily or weekly needs and residents of Clarence Town toward Raymond Terrace.

There is evidence of a growing trend across the LGA toward absentee property ownership. In the 2001 Census, 560 properties across the LGA were vacant dwellings. This represented a 30% increase from 1996 and highlights the growing trend of a non resident population, those people coming from outside of the LGA Newcastle, the Central Coast and Sydney and using properties within the LGA as rural retreats.

As with most rural communities the LGA suffers a loss of its young people (19-35 year olds). This is a common rural trend as they seek broader opportunities in tertiary education, employment and general living experiences. Limited public transport and poor roads would also increase this trend.

8.4 Local Culture

Often with an increase in income within a community often comes an expansion of cultural interest and Dungog has also experienced this over past years. This change is reflected in cultural events, local markets, a community desire for an art gallery and cultural centre, and an expansion of the café culture. There is a privately owned gallery in the town of Dungog.

There are a number of local community events that have begun to meet this need including: Dungog Show and Rodeo, the Dungog Film Festival, local markets and the Pedal Fest. There is local interest in cultural activity and this holds some potential for shaping Dungog's future (Dungog Community Profile).

8.5 Supply of Community Infrastructure

The scattered nature of the population across the LGA and limited population growth makes it difficult to sustain community services and sole purpose community infrastructure. A specific study to assess service level needs taking into account resident movements, infrastructure required and alternative community service models could be advantageous in the development of services to meet future growth and accurately support Council's Section 94 planning.

Table One (above) highlighted issues and concerns expressed by residents through the consultation process. Table Two below highlights the social/cultural issues as reflected through the Situational Analysis, Social and Community Plan, Community Profile and individual discussions with local community representatives.

Table Two (below) is divided into categories of social interest and infrastructure being education, health, transport, population ageing, indigenous, social capital, employment, housing, heritage and culture, and recreation. Within each category there is also discussion of some issues related to the Tillegra Dam Proposal however this study only provides an overview and it is expected the social issues paper presented as part of the Environmental Assessment by Hunter Water will provide an in depth analysis.

TABLE TWO: SOCIAL/CULTURAL CONCERNS IDENTIFIED THROUGH the SITUATIONAL ANALYSIS, COMMUNITY PROFILE, SOCIAL AND COMMUNITY PLAN AND COMMUNITY REPRESENTATIVES

EDUCATION		DISCUSSION	RECOMMENDATION
12.	Dungog High School is overcrowded	In the development of land use strategies consultation with the Department of Education is required to consider future needs at the high school.	Liaise with the Department of Education on future planning, population projections and land availability for school expansion.
	There are no Out Of School Hours Care (OOSH) Programs operating with the LGA	In general the development of an OOSH program requires the support of an active community group or school to undertake its establishment. Establishment funds and ongoing financial assistance can be sought through the Federal Government. Family Day Care advertises the availability of flexible OOSH arrangements by local FDC providers.	A need assessment would be required in any community considering the establishment of an outside school hours program. In general three children between the ages of 5 and 12 need to express interest in attending for every one place available within the service to make it financially viable.
	Limited opportunities for childcare	There is one 60 place Long Day Care Centre available in Dungog that operates to capacity. A DA has been approved for a further centre in Clarence Town but this is not yet been established. Part time community based preschools are available in Clarence Town, Paterson and Gresford. Increased population thresholds within communities could provide further future	A need assessment would be required in any community considering expansion of local childcare services, long day care or preschool . Current service viability would be threatened if increased services were to be provided. Consider appropriate population thresholds for communities in

		opportunities of provision, however current demographics suggest the population of children less than 15 years is likely to decrease rather than increase to the year 2031.	regard to the provision of expanded childcare services
	There are limited adult education facilities within the LGA with all Tertiary education being in other LGA's, Maitland, Kurri Kurri and Newcastle	The availability of local adult education and tertiary programs is determined by demand. Given the range of programs available and the size of existing communities some small and popular courses could possibly be sustained locally, however the provision of a wide range of courses would be difficult. Technological access provides the greatest opportunity for residents in regard to a diverse range of adult education opportunities and this supports an argument for expanded and faster broadband services.	Consider joint opportunities with the upgrade of services if the Tillegra Dam should proceed.
		The condition of local roads is a major obstacle in regard to access to tertiary education.	Consider the positioning of future residential development that will support improved road infrastructure
		Access to a more regular train service would provide greater connectivity for education and employment.	Consider the positioning of future residential development that has access to train services.
	Issues in regard to Tillegra Dam	There will be a possible reduction in student numbers in local schools as some families	

		move away from the area due to dislocation. It is impossible to determine the effect without an equal understanding of construction worker migration. Student numbers directly affect teacher placements and room availability.	

HEALTH		DISCUSSION	RECOMMENDATIONS
13.	The availability of pharmaceutical, specialist and allied health services continue to be an issue for residents	The LGA currently has a small and well managed public hospital in Dungog. The hospital provides services to approximately 5000 of the 8000 residents. There are 15 permanent beds that are used for recuperation, observation and minor hospitalisation issues rather than major medical emergencies.	An increase in health services is the responsibility of the Department of Health. Population thresholds are important for sustainability in regard to local doctor's surgeries and associated pharmacies.
	Limitations of local hospital service	There is a local ambulance service that takes people to Maitland or John Hunter hospitals and a helipad for the rescue helicopter is also available for high level emergencies. While there is some local concern about the limitations of the hospital service under current health policy it is unlikely that there would be any expansion of medical functions.	

	Ageing population and the need for more local health services	Some allied health services are provided at the hospital. There are waiting lists for most services. Pharmacies are available in Dungog and Clarence Town. The hospital rents accommodation to local service providers such as Meals on Wheels, Homecare, Neighbour Care and Community Transport and this helps to provide a supportive and integrated health service to many older people or people with a disability in the area. In Dungog township there is one nursing home with ten dementia beds and two respite beds plus general nursing care. There is also a group of self care units. There is a medical centre in Dungog with four doctors and one sole operator; an outreach doctor provides a small service in Clarence Town. There are no doctors in Gresford or Paterson, although there is current hope that a doctor will be available again for Gresford in the not too distant future. Small community health services operate in Clarence Town and Gresford and Child and Family Health Services in Clarence Town, Dungog, Gresford and Paterson.	Land use strategies can provide opportunities for people with higher dependency needs, by providing opportunities for self care accommodation close to urban centres and transport and with access to community based services. Dungog township currently provides the greatest opportunity for supported aged care accommodation.

	There are no local mental health facilities or services There is no local accommodation for people suffering domestic violence.	While local services are limited, for a small rural community Dungog is better supported than many. There are no local mental health care services or facilities. Given some of the stresses in Dungog in recent years due to dairy deregulation, changes in the agricultural sector, and the Tillegra Dam Proposal people requiring support would need to access services in Maitland and Newcastle. Emergency accommodation for people suffering domestic violence is usually established by local community groups or possibly a church.	Mental Health services are supplied by the Department of Health and lobbying is required to increase the awareness of the need for local services.
	Issues in regard to Tillegra Dam	Workplace safety and implications of industrial accidents during dam construction and the stress this could place on small country health services. An influx of resident construction workers and their families could increase demand on local health services.	A suitable workplace accident incident plan needs to be developed as part of the construction phase for the dam should the project proceed. A social analysis of the workforce for the construction component of the dam and its effects on the local community should be considered as part of the Environmental Assessment being undertaken by

			Hunter Water in order to understand the effects on the local community.

TRANSPORT		DISCUSSION	RECOMMEDNATIONS
14.	The quality of the roads into the LGA is poor and requires upgrading There are not enough funds for the upgrade of road infrastructure Improved rail services would relieve accessibility issues and road pressures Improve footpaths and cycle ways No local public transport other than school buses	Funding road upgrades and maintenance is a major issue for Dungog Council given their limited income generating capacity and large quantity of local road to maintain. The quality of the roads into the LGA is poor. Single lane access creates higher driver frustration leading to greater driver risk taking. Council has been lobbying for many years to have one incoming road (Maitland, thru Paterson to Dungog) upgraded to a State Road however this has been unsuccessful to date. Poor weather conditions badly affect road surface quality. With higher rainfalls over past years, maintenance has proven to be a major problem. On average there are 1.8 deaths per year on Dungog roads. This equates to 20 deaths per 100,000 compared to a state average of 7 deaths per 100,000. Accident (defined as those collisions where the vehicle requires	Consideration in the development of land use strategies needs to focus on population distribution and how vehicle movements can be minimizes. Some suggested strategies are: limiting urban sprawl, placing development around existing road networks and in proximity to the existing rail line. Increased local employment opportunities reduces car movements as people are employed and therefore attempt to do more of their business locally. Continued lobbying for financial support to improve road quality Develop a footpaths and cycle ways plan that sets future directions and priorities and integrates parts of new subdivisions in suitable locations.

	Community transport is available	towing away or a person has been injured) statistics are also high with the average being 60 to 70 per year. Anecdotal evidence would suggest these figures are higher as accidents where there is no injury are often not officially reported. Speed, not wearing seatbelts and travelling too fast for road conditions all rank higher than the state average as reasons for motor vehicle accidents. Improved rail services would relieve accessibility issues and road pressures. There are currently five weekday services and three weekend services daily. The XPT also provides a link to Brisbane and Newcastle if booked. Access to footpaths is limited. There are some around the CBD's of some communities and occasional footpaths near some recreational facilities. Access to cycle ways is limited and if cycle ways are developed they usually serve a dual purpose with a footpath. School buses provide the only bus service across the LGA.	Encourage walking and cycling by implementing footpath and cycleway infrastructure between key movement points eg town centres, schools and public facilities. Consider the opportunities in new development for increased pedestrian friendliness and provide opportunities for walking. This does not necessarily mean footpaths but could also mean increased boundary setbacks that enable pedestrian or horse riding opportunities on road verges. Develop residential communities with easy access to rail infrastructure to enable increased focus on the railway system. Land use strategies need to consider exit and entry points for rural residential properties and the placement of bus stops and access bays on narrow roads.

		Community transport is available for eligible residents to access medical and health related facilities	
	Issues in regard to Tillegra Dam	There are local concerns about the increase in construction traffic on roads and bridges and the detrimental effect this will have on roads already under stress.	The Environmental Impact Statement being developed by Hunter Water needs to consider issues in regard to road access for heavy vehicles and, "to and from" work safety, and the effect of increased heavy vehicles on local bridges.
POPULATION AGEING		**DISCUSSION**	**RECOMMENDATIONS**
15.	Population Ageing	There is a growing population of older people with a prediction of 33% of the population being over 55 by the year 2031. There is a one complex (Lara) providing aged care in Dungog (details are outlined in the Situation Analysis). Accommodation for older people is most ideally located where there is easy access to facilities and services that allow people to remain in independent living while ever they can self manage. Most residential care for older people is now focused on high level care. Given the growing ageing population there is a need to consider the availability of accessible independent accommodation for older people.	See point 9 above.
	Issues in regard	Loss of generational heritage from the	Consideration needs to be given to

	to Tillegra Dam	inundated valley.	the reflection of this heritage. There is an opportunity before inundation for a cultural project that would record visually and verbally the history of the valley, (environmental, architectural and human) for future use in an interpretive centre and for people to return to for their own cultural connection.
YOUNG PEOPLE		**DISCUSSION**	**RECOMMENDATIONS**
16.	Loss of Young People from the LGA There are no local youth programs.	See point 6. Limited recreational, educational and employment opportunities for young people within the LGA means many move to bigger cities or away from the area to gain broader experience.	See point 6. There is an opportunity to integrate dam and community plans that will jointly stimulate employment and recreational opportunities for young people providing greater opportunity. The availability of local employment opportunities is also crucial and directly relates to the amount of employment lands available for development.
	Issues in regard to Tillegra Dam	The dam proposal provides a number of opportunities for young people. While there are few jobs anticipated post construction, there could be employment opportunities	The economic and tourism studies will consider this issue.

		available in the construction phase. Recreational opportunities at the dam post construction could expand the number of activities available for young people locally and attract interest from the broader community through recreational tourism. A well designed recreational tourism plan has the potential to stimulate the economy through integrating dam, environmental and community plans and therefore enhancing local vibrancy	
INDIGENOUS		**DISCUSSION**	**RECOMMENDATIONS**
17.	Indigenous	The Indigenous history in the LGA requires consideration and negotiation with the local indigenous community in all land use strategies	Indigenous heritage and cultural needs to be considered in the development of all land use strategies
	Issues in regard to Tillegra Dam	An archaeological study of Indigenous places and sites within the dam area needs to be undertaken and issues raised, discussed and addressed with the local indigenous community before inundation if the Dam is to proceed	Indigenous consultation and appropriate mitigation strategies need to be included in all documentation by Hunter Water. Indigenous history could also be included in any proposed interpretative centre. See point 16.
SOCIAL CAPITAL		**DISCUSSION**	**RECOMMENDATIONS**
18.	Social Capital	There is a strong sense of community pride, unitedness, community interest and volunteeerism.	There is an opportunity to support the local human resource developed through social capital to involve people in community activities such

		Social capital is related to people's feelings of connectedness e.g. do people have someone to turn to in times of stress, do family and friends live nearby, do people attend or are they involved in local activities and groups, do people feel connected to their community, do they shop locally and are they recognised by local business people. There are indications of high social capital through resident involvement in consultations, their optimism about the future for the LGA and their focus on opportunities as a result of change and the dam proposal.	as the recording of the history of the Tillegra Valley as a community keepsake and for historical interest.
	Issues in regard to Tillegra Dam	There is real potential for the proposed Dam to act as a catalyst to new enterprise and development locally. This would require a strong understanding of all aspects of the proposal and a real desire by all involved to form innovative solutions to local issues and concerns in order for Dungog to truly benefit from the potentials on offer. There is also genuine opposition to the dam	There are both positive and negative impacts in regard to the Dam proposal. The development of new locally based industries, the possibility of a boost to local infrastructure and the possible influx of funds associated with a major construction project are all positive for the community. Clear assessment of the Environmental Impact Assessment is required to gain as much advantage for the LGA as possible. It is important that the

		proposal by some community groups and individuals. There are those that have ancestral links and are mourning the loss of the valley and their family homes and there are also those who have moved to the area for isolation, the environment and the rural setting. Some people see the proposed Dam as a threat to lifestyle. The following arguments have been raised on the No Tillegra Dam Web site: • Concern for the loss of the valley and the environmental effects on the water system further down the valley. Poor planning on the part of the NSW government • Pumping water over long distances being expensive • A push for installing rainwater tanks rather than increasing dam water supply • The cost of $300,000,000 and how this amount will be financed • That stage 3 of Grahamstown would be less socially, environmentally and agriculturally damaging There is local concern that the dam proposal is dividing what was once a cohesive community.	Environmental Assessment being prepared by Hunter Water gets a balanced assessment by Council, that the positive and negative impacts are assessed across all categories. The grief and concern being experienced by residents and those people with ancestral links to communities within the inundation area are genuine and this needs to be seen as a important aspect of progression. Should the Dam proceed there is a cultural opportunity to undertake local activities that could possibly enable some personal and community completion. Recording of these experiences could provide an excellent platform for an interpretive centre.

		There is concern over the loss of people who are currently involved in community organisations, sporting groups and volunteering as a result of dislocation and how some of these community organisations will recruit new volunteers.	Without specific information on dislocation it is difficult to have a complete understanding of this issue however it reflects a possible social impact. New people will also be moving to the area as a result of the proposal.
EMPLOYMENT		**DISCUSSION**	**RECOMMEDNATIONS**
19.	Employment	The LGA needs sustainable employment opportunities as there is an increase in the number of residents travelling out of the LGA for work. It is important to: • Foster opportunities for small business • Provide increased part time and full time work opportunities • Support initiatives that focus on skill development • Support local business hubs or embryonic business opportunities • Provide sustainable part time and full time employment	Recommendations will form part of the economic analysis
	Issues in regard to Tillegra Dam	The dam will provide work during the construction phase. There will be limited opportunities for employment post construction directly related to dam operations. There is an opportunity for an expansion of	Recommendations will form part of the economic analysis

		tourist operations and other associated services post Dam construction.	

HOUSING		**DISCUSSION**	**RECOMMENDATIONS**
20.	Housing	Housing affordability in general and the availability of affordable rental accommodation There is no local crisis accommodation.	Housing affordability is an issue which has been heightened over the past 10 years due to property value increase and interest rises. See point 11. Most crisis accommodation is established through the active participation of the general community or a church group.
	Issues in regard to Tillegra Dam	Accommodation for Construction workers will pose a challenge should the Dam proceed. Rental opportunities are currently limited especially around the Dungog Township and there is the possibility that rental prices will increase with the influx of workers. There is also limited single style accommodation e.g. pubs, motels or on site vans. There is the potential to displace local residents who are currently in the rental market and have limited resources to pay increased rents, relocation costs or have the capacity to purchase.	If the proposal is successful housing for construction workers needs strong consideration and discussion. A construction village could provide a future opportunity for post construction as a possible tourism development.

		Rental housing and accommodation during construction needs to be considered	
HERITAGE /CULTURE		**DISCUSSION**	**RECOMMENDATIONS**
21.	Heritage / Culture	Maintenance of heritage buildings and local history	The development of a local Development Control Plan that maintains the heritage values of existing buildings and reflects heritage design for infill or new development appropriate to the site.
		Local interest in heritage, historical societies and museums	Utilise local knowledge and expertise to develop appropriate building controls that reflect not only buildings but historic urban form
		Desire for local art gallery and possibly cultural centre	Consider existing opportunities available in heritage buildings, Section 94 opportunities or partnerships in association with the Tillegra Dam proposal.
	Issues in regard to Tillegra Dam	Honour local history 50 families affected by the dam many of whom have been in the LGA for many generations and have extended family connections across the LGA and further afield.	Possible interpretive centre

		The inundation of Quartpot cemetery.	Appropriate consultation and mitigation strategies with historical societies and families affected.

RECREATION		**DISCUSSION**	**RECOMMEDNATIONS**
22.	Opportunities for people to increase access to recreation in the LGA and in turn increase tourism	The Dungog LGA is seeped in recreational opportunities, fishing and boating in the river systems, walking in the natural bushlands, picnics, sporting facilities, cycling on rural roads, bush walking and camping just to name a few.	Recreational opportunity is a subject to be addressed in the Recreation and Tourism report.
	Issues in regard to Tillegra Dam	Tourism, camping, fishing, adventure, extreme sports, equine industry, bush retreats, bush huts and overnight trail rides. Cycling related sports around dam and through shire, triathlon courses, abseiling International mountain bike course Serious destination point for recreational activity	As above.

The above social concerns we highlighted within Dungog Council's Community Profile, Dungog Council's Social and Community Plan, Planning Workshop Australia's Situation Analysis and conversations with individual workers or residents.

9. CONCLUSIONS

Dungog LGA is a typical rural community that stands on the precipice of change. Whether this change comes about because of the Proposed Tillegra Dam, the effects of the expansion of the Lower Hunter, road upgrades or the development of a vibrant tourism industry, it appears change is inevitable. Appropriate planning and the consideration of all positive and negative impacts through an integrated set of strategies will give the community the best opportunities into the future.

The following are the key recommendations of this social assessment:

- Maintain local architectural and agricultural heritage through review of local planning controls
- Maintain the ambience and "country town feel" through good visual assessment of developments
- Consider the placement and appropriateness of increased rural residential development opportunities
- Emphasise and strengthen the existing urban character through development control
- Develop a new, or review the existing Tourism Plan in light of the proposed Tillegra Dam and the LGA's recreation and tourism potentials
- Consider the availability of land for industrial purposes as a future employment generator
- Consider the development of a standards document or similar, that assesses the provision of local community services and examines alternative models of service delivery
- Develop opportunities to involve the "creative community" in decision making and future planning
- Protect areas of visually aesthetic and historic beauty
- Provide opportunities for unit style, self care accommodation in accessible locations for older people
- Assess the supply, demand, environmental and cost implications of rural residential development and develop strategies that minimise these costs to the community
- Provide land and housing options that maintain local affordability for lower income families
- Find opportunities to increase access to high speed and reliable technology
- Increase walking accessibility in communities through design
- Position new developments to decrease car movements and provide increased access to train services
- Liaise with Government Departments on the provision and future needs of local services specifically education and health.

- Consider road safety issues in the development of rural residential developments with specific emphasis on exit and entry points, bus stops and access bays.

Specific issues to be considered in regard to the Tillegra Dam proposal are as follows;

- The capacity of local medical services to deal with potential work place incidents and safety issues
- Accommodation both temporary and permanent for construction workers and their families
- Road access and the safety of workers commuting to the dam site
- The capacity of existing roads and bridges to manage an increase in traffic movements by both large and small scale vehicles
- Recording local history and heritage before inundation
- Indigenous consultation
- Consideration of the dynamic involvement of local residents in projects to support social capital (this is beyond local committees)
- Consideration of the construction of a housing village for construction workers and its possible future uses.

There is a strong local view that change should not be at the cost of architectural, agricultural or environmental heritage or sustainability. Residents and visitors remain attached to rural culture and amenity and Dungog LGA to its advantage, has retained that character to date. Similar areas on the South Coast and Tablelands of NSW, in the Mudgee area, in the hinterland of the North Coast and on the outskirts of Melbourne have managed to reinvigorated themselves and progress their communities into attractive and robust economies, suitable to new residents seeking an alternative to city lifestyle and tourists looking for a rural/environmental experience. With strong land use planning strategies and visionary commitment on the part of local decision makers and businesses this could also be the future for Dungog LGA to great local social advantage.

In any community the cultural community has much to offer the process of change. In many communities around Australia, enhancing local cultural and providing the right mix with tourism has been of enormous economic and social benefit, and Dungog also has this potential. Increased vibrancy increases the willingness of the investment community to be part of that change, increases the resident's feelings of connectedness and supplies interest for young people that may have previously only seen opportunities external to the local environment.

BIBLIOGRAPHY

Australian Bureau of Statistics Census 2006

Dungog Shire Council Community / Social Plan 2004

Dungog Shire Council Community Profile 2005

Dungog Shire Situation Analysis, Planning Workshop Australia, April 2008

APPENDIX 5

RECREATION AND TOURISM POTENTIALS REPORT

(Jenny Rand & Associates)

TILLEGRA DAM
ASSESSMENT OF RECREATION & TOURISM POTENTIAL
July 2008

CONTENTS

for:
PLANNING WORKSHOP AUSTRALIA

by

JENNY RAND & ASSOCIATES
272 Prince Charles Pde Kurnell NSW
Tel: (02) 9668 8474 Mobile: 0411 782 700
Fax: (02) 9668 8474
Email: jennyrand@aol.com

1. INTRODUCTION

1.1 Background

In 2006 the NSW State Government announced its strategy for securing the future water needs for the Lower Hunter and Central Coast Regions of NSW. The Strategy included a proposal to build Tillegra Dam. Tillegra Dam is to be located on the Williams River in the foothills of the Barrington Ranges in Dungog Shire. Tillegra Dam will create a large water body (2,000 ha) that has the potential to be used for a range of recreation and tourism activities. The Dam is to be operated by Hunter Water.

In 2007 Dungog Shire Council commissioned Planning Workshop Australia to prepare a Shire-wide land use strategy as a basis for a review of the existing Local Environmental Plan or the preparation of a new Plan, taking into consideration the potential impacts of Tillegra Dam.

The potential impacts of and opportunities for the Dam in terms of recreation and tourism in the Shire and surrounding region is being assessed as part of the Planning Brief.

1.2 Terms of Reference

Planning Workshop in conjunction with Dungog Shire Council has commissioned Jenny Rand and Associates to:

- Assess the recreational and tourism potential of the proposed Tillegra Dam.
- Identify and explore potential impacts of the Dam on the tourism industry.
- Explore the ability of the infrastructure and facilities available in the Shire to support recreation and tourism use of the Dam.

1.3 Study Tasks

Tasks undertaken in the preparation of this study included:

- Inspection of the Dam site and assessment of its relationship with Dungog and the surrounding attractions.

- Meetings with representatives from Hunter Water, Dungog Shire Council, NSW Department of Planning, Planning Workshop and the Tillegra Dam Community Consultative Committee and telephone interviews with the Waterways Authority and Tourism NSW.

- Business and Community Workshops - Tourist Association and Tourism Operators, Dungog Chamber of Commerce, Dungog Business Community, and community workshops in Dungog, Clarence Town, Gresford and Paterson.

- Telephone interviews with Managers of Water Storage Dams - Grahamstown, Lostock, Lake St Calir, Lake Liddell, Glenbawn, Keepit, Copeton, Burrendong, Wyangala / Grabine and Burrinjuck.

- Telephone interviews with lakeside and riverside reserve managers - Port Stephens Shire, Maitland City, Wyong Shire and Gosford City.

- Telephone interviews with potential users of Tillegra Dam - Boating Industry of Australia, Australian and NSW Waterski and Wakeboard Federations, NSW Hydroplane Association, Raymond Terrace Aquatic Club, Newcastle University Water Ski Club, Myuna Bay Tournament Waterski Club, NSW 4WD Association, Mountain Bike Australia and the Hunter Mountain Bike Association.

2. TILLEGRA DAM PROPOSAL

2.1 The Dam Setting

The proposed Tillegra Dam will be located on the Williams River, in the foothills in the Barrington Ranges in Dungog Shire. The Dam wall is approximately 12km north of the township of Dungog. Dungog Shire is located in the Lower Hunter region. The Shire covers an area of 2,248 square kilometres and is bounded by the LGA's of Port Stephens Shire to the south east, Great Lakes and Gloucester Shires to the north and north-east, Singleton to the west and Maitland City to the south.

Dungog is a rural shire, with the main economic activities being grazing, dairying, forestry and tourism. In 2006, Dungog Shire had a population of 8,500. The township of Dungog, with a population of around 2,100 people, is the administrative and service centre for the Shire. It is the closest town to Tillegra Dam and will be the service centre for the Dam. Dungog has a small shopping centre that is anchored by an IGA supermarket. There are a number of eateries in town as well as a few lifestyle, gallery and boutique shops targeted to the visitor market. The town has a hospital, two pub hotels, motel and two licensed clubs.

There are three main villages, Clarence Town, Gresford-East Gresford and Paterson. Clarence Town, population 820, is located on the Williams River in the south-eastern corner of the Shire. The River is the town's main attraction, with people coming into Clarence Town to camp by the River, fish and go boating and water skiing. Gresford, East Gresford and Paterson are located in the Paterson River Valley along the western side of the Shire. Gresford and East Gresford have a combined population of around 300 people while Paterson has a population of around 340 people. Gresford is the gateway to the upper Paterson and Allyn River valleys and has an emerging wine industry. There are also a number of very small villages, including Vacy and Martins Creek spread throughout the Shire.

Tillegra Dam is located approximately 36km from Clarence Town, 37km from Gresford and 45km from Paterson. If the Dam becomes a quality recreational area and/or tourist attraction, it will draw people into the Shire, with visitors driving through these villages to access the Dam.

The Shire incorporates the catchment areas of the Allyn, Paterson and Williams Rivers, with these rivers dividing the Shire into three distinct river valleys that run north west-south east from the Barrington Ranges to the Hunter River. The upper catchment areas in the north of the Shire are rugged and steep with the terrain graduating to hilly in the central and southern areas of the Shire.

Tillegra Dam is located in the foothills of the Barrington Ranges. The Dam will have the most scenically attractive settings of all water storages in the Hunter Region, combining very attractive rural scenery with the mountainous backdrop of the Barrington Ranges. The Williams River Valley is relatively narrow with high ridges and steep side slopes dividing the valley from the Chichester River Valley to the east and the Allyn River Valley to the west. The Barrington escarpment lies to the north, with the forested, rugged ranges forming the backdrop for the Dam.

The Upper Williams River Valley is one of the main tourist attractions in Dungog Shire, with the primary destination being the Barrington National Park (see Section 4.1). The Park is located approximately 30km north of the Dam wall and accessed via Salisbury Road, which is the Dam access road. There is a picnic area, walking trails and accommodation at the Williams River picnic area within the Park. The Chichester River Valley is the other major visitor destination in this part of the Shire, with the attractions being the Chichester Dam (16km by road from the Tillegra Dam wall) and the Chichester State Forest.

2.2 The Proposed Dam

The proposed Dam is to be developed and operated by Hunter Water. It has a lead time of approximately 10 years, with 5 years for planning, design and construction and 3 to 5 years to fill, depending on rainfall. The Dam will be used to supplement the domestic potable water supply for the Lower Hunter and Central Coast areas. The first water is expected to be available for use in 2013. The Dam will also be used to generate hydro-electricity. Hunter Water will also plant in the order of 1.5 million trees in the Dam catchment area to offset the carbon emissions produced in operating the Hunter water supply system.

Tillegra Dam will have a storage capacity of 450 gigalitres. The Dam waters will extend approximately 10km along the Williams River Valley, with the main 'trunk' area being approximately 5.5 km long and around 1 to 1.5km in width. The Dam will have three 'arms', with the Dam branching adjacent to the wall to create a small, wide arm just south of the wall, with the main trunk extending up the Williams River Valley to Quart Pot, where it branches into 2 arms, one following the Williams River to the Tunnibuc area, and the other extending west along Quart Pot Creek.

At full water level Tillegra Dam will have a surface area of approximately 2,000 hectares. In terms of surface area, it will be the third largest dam in the Hunter Region, with Grahamstown being the largest (2,800 ha) followed by Glenbawn Dam (2,615 ha). Tillegra will be approximately double the size of Lake Liddell, 4 times the size of Lake St Clair and 8 to 10 times the size of Lostock and Chichester Dams.

Hunter Water is proposing to operate Tillegra Dam at around 90% capacity. Tillegra, Chichester and Grahamstown are the only dams in the region in which the water level is retained at or close to full capacity. In contrast, the Dams operated by State Water to provide water for agriculture, experience significant fluctuations in water level. For example, over the past 6 years, the water level in Glenbawn Dam has fluctuated between 29% and 54%, Lake St Clair between 32% and 60%, and Lostock Dam between 75% and 100%. As discussed in Section 7.1, visitation levels and recreational use of water storage dams relates directly to water levels, with high water levels corresponding to high visitation and use. With the dams in the Region being in relatively close proximity to each other, dam users will 'move' between the Dams depending on water level. For recreational purposes, the high water levels at Tillegra Dam will provide it with a strong competitive advantage over other Dams in the region.

As the water from Tillegra Dam is to be released into the Williams River and then extracted downstream at Seaham for storage and treatment, the water from the Dam does not need to meet the same stringent water quality parameters as that from Chichester Dam. As such, a wider range of activities can be undertaken on the Dam and within the catchment area. Hunter Water has advised that boating and primary contact activities such as swimming will be permissible at the Dam. Development (subject to satisfactory pollution control measures) will also be permissible around the Dam foreshore.

2.3 Access

Access to Tillegra Dam

Tillegra Dam is accessed via Dungog. Dungog is linked to surrounding centres by a network of regional roads - the Clarence Town Road to Raymond Terrace and then onto Newcastle or Port Stephens; the Dungog Road to Paterson and then onto the Maitland and Cessnock areas; the Glendonbrook and Bingleburra Roads to Gresford and west to Singleton and the Upper Hunter, and the Stroud Road connecting north to Gloucester or through to Great Lakes Shire and the Taree area.

From Dungog, access to Tillegra Dam is from the Chichester Dam Road and the Salisbury Road. Travellers arriving from Clarence Town and Paterson will come through Dungog. Travellers coming via Gresford, can access the Dam via Bingleburra Road and then the Chichester Dam and Salisbury Roads, or via the Allyn River Road and the Salisbury Gap Road, which provides access to the upper reaches of the Dam. The first route is fully sealed, while the upper section of the Allyn River Road and the Salisbury Gap Roads are gravel.

All of the access roads into the Shire are two lane roads, that are relatively narrow and winding and in relatively poor condition. Chichester Dam and Salisbury Roads are very narrow local roads that are also in poor condition. In their present condition, the roads will be a deterrent to visitors, particularly to those towing a caravan or boat.

The poor condition of the access roads could also become an issue during the Dam construction phase, with workers opting to stay in the Shire rather than commuting each day from the Lower Hunter. As discussed in Section 6.3, Dungog does not have the accommodation to cater for an influx of construction workers.

Dungog is accessible by train, with the town having both Cityrail and Countrylink services. Being only 12km from Dungog, it is feasible to access the Dam by taxi or bicycle. Alternatively, the operator of any accommodation at the Dam could also run a courtesy bus service. Consideration should be given to establishing a cycle track between Dungog and Tillegra Dam, possibly along the pipeline corridor (preferred), or as part of the upgrading of the Chichester Dam and Salisbury Roads. This would enable cyclists to catch the train to Dungog and then cycle out to the Dam.

Access around the Dam

The section of Salisbury Road from Tillegra to Underbank will be inundated by the Dam, with this section to be relocated to higher ground along the eastern side of the Dam. This road will provide access to the Dam wall as well as to the eastern and northern foreshore areas.

The section of the existing Salisbury Road from Underbank to Quart Pot and the Chichester Road in the Tunnibuc area will remain open and provide access to the upper arms of the Dam.

At this stage there are no firm proposals to provide vehicle access to the western foreshore of the Dam or to the southern arm of the Dam (south of the Dam wall). Hunter Water is exploring options to provide access to properties in the Quart Pot area on the north western side of the Dam, however these roads are likely to be designed to provide property access rather than access to the foreshore.

There are a number of local gravel roads providing access to the Myall Creek area in the vicinity of the southern arm of the Dam. Whether these roads will remain open and/or provide foreshore access for visitors is yet to be determined. Providing access to the southern arm and western foreshore would increase the range of development options available and also provide access for emergency vehicles.

Access to Markets

Tillegra Dam is located approximately 250 kilometres north of Sydney and 65 kilometres north west of Newcastle. Travelling distances and times from potential source markets are summarised in Table 2.1.

Table 2.1 Accessibility to Source Markets (Travelling time to Tillegra Dam Wall)

Centre	Distance (km)	Travelling Time (hrs)*
Sydney CBD	250km	3 hours
Central Coast	150km	1.7 hours
Lake Macquarie	85km	1 hour
Newcastle	75km	1 hour
Port Stephens (Nelson Bay)	100km	1.2 hours
Raymond Terrace	65km	45 mins
Maitland	65km	50 mins
Cessnock	105km	1.2 hours
Singleton	80km	1 hour

* Approximate distance and travelling time

For day trips, Tillegra Dam is readily accessible to the Lower Hunter, Port Stephens Shire and the Singleton, Maitland and Gloucester areas. At the 2006 Census there were 528,600 people resident in these areas. Residents of these areas are also potential weekend, short breaks and holiday markets for the Dam. In addition, for weekend stays and short breaks, the Dam will potentially draw from a wider area than the Hunter. For short stays, it is within the 'acceptable' driving range for the Sydney, Central Coast, Upper Hunter LGA and Great Lakes areas. The total population within 3.5 hours drive of the Dam is around 5.3 million people. For longer stay holidays, Tillegra Dam has the potential to draw from a wider area again. Newcastle and Port Stephens LGAs both attract holiday markets from the Central West of NSW (Dubbo region) and from the southern parts of the North West Region (Gunnedah - Tamworth), with these markets also available to Tillegra Dam.

Table 2.2 Population within 3.5 hours drive of Tillegra Dam

Local Government Area	Estimated Resident Population 2006
Lower Hunter	
Cessnock	46,206
Dungog	8,500
Maitland	61,880
Newcastle	141,753
Lake Macquarie	183,138
Total Lower Hunter Sub-Region	441,377
Upper Hunter	
Muswellbrook	15,236
Singleton	21,937
Upper Hunter	12,976
Total Upper Hunter-Sub Region	50,149
Central Coast	
Gosford	158,157
Wyong	139,801
Total Central Coast	297,758
Surrounding Areas	
Gloucester	4,802
Port Stephens	60,484
Great Lakes	32,766
Sydney Metropolitan Area	4.5 million
Total within 3.5 hours drive	**5.3 million**

Source: Australian Bureau of Statistics - 2006 Census

Access to Tourist Attractions in the Surrounding Area

At this stage, minimal consideration has been given to how the Dam will link to tourist attractions and facilities within the surrounding area. The attractions in the surrounding area include:

- Williams River Picnic Area of the Barrington Tops National Park
- Chichester State Forest
- Chichester Dam
- Allyn River Valley

Salisbury Road provides the link between Tillegra Dam and the Williams River Picnic Area / Barrington Tops National Park. While the section of Salisbury Road adjacent to the Dam will be relocated, with the quality of the road improved, there is no provision to upgrade the road from the northern end of the Dam through to the Williams River Picnic Area in the Barrington Tops National

Park. This road is already in very poor condition and needs to be upgraded to accommodate the increased visitor traffic that will be generated by the Dam. From the Williams River Picnic Area the Williams Top Road (Forestry Road) connects across to the Allyn River Road. This road will also attract increased traffic, which will have implications for on-going maintenance.

Tourist traffic is also expected to increase on the Salisbury Gap Road, with this road providing the link between the Dam and Gresford, and between the Dam and the Upper Allyn River Valley (Ladies Wells area).

A road link from Tillegra Dam across to the Chichester Dam Road needs to be established to provide direct access from Tillegra Dam to the Chichester Valley and the Chichester State Forest. A mountain bike / cycling trail also needs to be provided between the two areas, with this trail linking with the forest trails in the Chichester State Forest.

2.4 Attributes of the Dam

From a tourism and recreation perspective, key attributes of the proposed Dam include:

- Proximity to major population centres, with the Dam being less than 1.5 hours drive from all major centres in the Lower Hunter Region. Around 530,000 people reside within 1.5 hours drive of the Dam, with 5.3 million people residing within 3.5 hours drive of the Dam.
- Close proximity to Dungog with the Dam close to services and potentially able to be accessed by public transport.
- Beautiful setting in the foothills of the Barrington Ranges, close to both the Barrington Tops National Park and the Chichester State Forest.
- Large water body, capable of accommodating a range of uses. Due to the surrounding topography, the waters will be relatively protected.
- Proposal by Hunter Water to maintain the Dam at 90% capacity, with the Dam not expected to have the significant fluctuations in water level experienced at other storage dams.
- Good access to the eastern foreshore and the upper arms of the Dam.

2.5 Possible Activities & Development Potential

The activities undertaken at the Dam and the development permitted will be determined by a range of factors including:

- The on-water uses permitted by Hunter Water - this decision will be fundamental to determining the development potential of the Dam.
- The physical characteristics of the water body - depth, fetch, channel width, underwater trees and snags, water range (draw-down morphology) etc.
- Restrictions placed on access to different areas of the Dam - including exclusion zones, speed limits, no wake zones and activity zones.
- Physical characteristics of the foreshore areas - topography, soil type and depth, vegetation, visual impacts etc.
- Access provisions - public, management, emergency.
- The level of interest in developing and operating facilities at the Dam by the public and/or private sector.

- Costs and logistics of servicing the recreation areas and maintaining access roads.

- Safety considerations in terms of supervision and emergency access.

Hunter Water has advised that Tillegra Dam will be able to be used for recreational activities, with on-water activities, including motorised boating, expected to be permitted on the Dam. A boating exclusion zone will operate near the Dam wall.

The water body is of sufficient size and depth to accommodate a range of activities, with space available to separate powered and non-powered boating if deemed necessary. The realigned Salisbury Road will have the potential to provide access to a number of areas along the eastern foreshore if required, while the Old Salisbury and Chichester Roads will provide access to the upper arms of the Dam. Given the topography, the Dam waters are likely to be relatively protected. On-water activities could potentially include:

- Recreational boating - general boating
- Power boating
- Jet boating
- Water skiing
- Wake boarding
- Other towing activities including biscuits
- Personal watercraft (jet skis)
- Fishing
- Swimming
- Canoeing / Kayaking
- Rowing
- Sailing (depending on the wind regime)
- Para-sailing
- House-boats
- Charter boats / boat hire / dam tours

The foreshore topography will range from undulating to steep. There appears to be suitable land for developing a range of accommodation as well as recreational activities and facilities. These could include:

Accommodation:

- Camping - car based and boat based
- Caravan Park
- Cabins
- Lodges
- Boutique Hotel
- Resort
- Residential conference centre

Recreational Facilities / Activities

- Mountain bike trails - around the dam foreshore and linking across the ridge to the Chichester Valley and Chichester State Forest
- Walking trails
- Picnic and barbeque areas
- Tennis courts
- Adventure playground / jumping pillow
- Water slides
- High ropes courses / Abseiling platforms / Flying foxes

The southern arm of the Dam (south of the wall) is removed from the main water body. There may be potential to use this area for a speciality use, for example - an up-market fishing lodge, an eco lodge, boutique resort, a health retreat, accommodation and conference centre, mountain bike park with accommodation etc.

Hunter Water's proposal to plant 1.5 million trees around the Dam foreshore provides the opportunity to plan for a network of walking, cycling and mountain-biking trails around the foreshore. This would involve a similar approach to that taken in the ACT in the development of the Mt Stromlo Forest Park following the 2004 bushfires. There is also opportunity to undertake some 'feature' planting, which in the future would provide additional attractions for the Dam and the Shire - for example - an arboretum, a rainforest valley, an Antarctic Beech forest, a Wollemi Pine Forest etc.

With appropriate facilities, Tillegra Dam could also be a suitable venue for a range of events and activities including:

- Fishing tournaments
- Water skiing, wake boarding, power boat events
- Kite surfing competition / festival
- Rowing regatta
- Triathlon, biathlons, iron man etc
- Open water swimming carnival
- Novelty / community events -eg raft races
- Adventure racing - combining different activities - mountain bike, kayaking, swimmng, cross country running etc
- Mountain bike events - cross country, off-road audax, MB orienteering etc.
- Car and motor cycle club rallies
- Caravan, campervan and motorhome club rallies
- Scout / Guide jamborees
- School excursions and camps

The various possibilities identified here are examined further in the following sections of this report.

3. COMMUNITY ATTITUDES TO TILLEGRA DAM

3.1 Community Consultation

In September 2007 a series of community workshops were undertaken in Dungog Shire to explore attitudes to Tillegra Dam, community needs and expectations in relation to the Dam and to identify potential issues and opportunities. Community workshops were undertaken in Dungog, Clarence Town, Gresford and Paterson. In addition workshops were also held with the Dungog Business Community, Dungog Chamber of Commerce and the Dungog Tourist Association and Tourism Operators.

The workshops covered a wide range of issues relating to the Dam and its potential impacts. The Workshop outcomes in relation to tourism and recreation are summarised below.

3.2 Attitude towards the Dam

The attitude towards Tillegra Dam varied throughout the community, with the sentiment generally being against the development of the Dam. If however the Dam is to proceed, there was a very strong view that the best outcome for Dungog Shire needs to be achieved. All sectors of the community were fully in support of the Dam becoming a major recreational resource for the wider region, with the community able to leverage effectively off the tourism and recreation generated.

The community also identified the need for the State Government to improve and expand the infrastructure available in the Shire to enable the Shire to accommodate the Dam and the resulting increase in visitation. There was also a strong view that Hunter Water should pay on-going royalties or compensation to the Shire for the on-going economic loss from the reduction of productive farming land and the loss of the families that farmed this land.

3.3 Desired Outcomes

From a tourism and recreational perspective, the desired outcomes that the Dungog community is seeking are:

- For the Dam to be developed as a regional recreational destination offering a wide range of recreational and tourism activities and facilities. The community was very strong in their view that they did not want to see Tillegra Dam operated in the same way as Chichester Dam, with Chichester Dam making a minimal contribution to tourism and recreation in the Shire.

- To significantly increase the level of visitation to the Shire, in particular to attract higher yielding visitors with high levels of disposable incomes.

- For the tourism and recreational facilities to be of a high standard, with the area professionally managed. The community is looking for development that is of sufficient scale that it has the resources to effectively market and promote the area.

- A style of development that is in-keeping with the character and lifestyle of the Shire, in particular:

  - Reflecting the natural beauty of the area - reinforcing the rural and bush setting
  - Having a strong 'eco-tourism' focus
  - Building with materials and to a scale that reflects the character of the area - eg using natural stone and wood, rather than prefab or massive, 'blocky' buildings.
  - Providing for outdoor, adventure based activities.

3.4 Activities & Facilities

The recreation and tourism activities and facilities identified by the Dungog Community as potentially suitable for Tillegra Dam are summarised in Table 3.1.

Table 3.1 Activities & Facilities Identified in the Community Workshops as Potentially Suitable for Tillegra Dam

On-Water Activities	Shore-based Activities & Facilities	Accommodation & Support Facilities
Kayaking / Canoeing Power Boating Water skiing / tow activities Recreational boating Rowing Sailing Para-sailing House boats Boat hire Fishing Tours Sea-plane Below Dam Wall White Water Rafting Canoeing / Kayaking Trout Farm / Aquaculture Dept of Fisheries Research Centre	Cycling Mountain-biking Walking trails Horse riding trails Triathlon course Picnic / BBQ areas Playgrounds Adventure racing course Abseiling Ballooning / Gliding Boat ramps Fish cleaning Boat sheds / storage Clubs / Club houses	Accommodation Up-market accommodation Eco tourism resort / lodge Bush retreat Cabins Caravan Park Camping Ground Adventure lodge Fishing lodge Sport & Rec camp for children School camp/s Other Facilities Tea rooms / café / eatery Conference Centre

There is a divergence of views within the community relating to the type of boating that should be permissible on the Dam. While the community workshops identified motorised / power boating as a desirable activity at the Dam, some residents who live in close proximity to the Dam do not want motorised boating due to possible noise impacts. According to the Boating Industry Association of Australia, motorised boats now have to meet strict noise emission standards, with noise no longer being the issue that it once was.

The Dungog Shire community also expressed the view that there is a need for cycling and mountain bike trails, in particular:

- Cycleway from Dungog to Tillegra Dam.
- Trunk cycle / walking trail around the Dam (full circuit), with branching walking and mountain-bike trails to various features such as lookouts and foreshore areas.
- Mountain bike track linking Tillegra Dam to the Chichester Valley and to the trails in the Chichester State Forest.
- A mountain bike trail linking Tillegra to Newcastle either following the water pipeline corridor or by utilising road reserves, travelling stock routes, Crown Land and State Forests. Where possible, the cycle trail should be separated from vehicle traffic.

3.5 Support Infrastructure

The Dungog Community has identified the need to upgrade infrastructure in the Shire to support the Dam, including:

- Upgrading the access roads into the Shire - including road widening, providing over taking lanes and repaving.

- Improving the local roads linking the Dam to the main attractions in the area, in particular to the Upper Williams Valley / Barrington Tops National Park, Chichester River Valley / Chichester State

Forest and the Upper Allyn River Valley.

- Improving the recreational areas and facilities in the surrounding State Forests and National Parks to accommodate an increase in visitors.

- Improving health care services in Dungog, including emergency services.

3.6 Issues & Considerations

Key issues and concerns identified by the Dungog community included:

- Impact of the Dam on the Williams River - The Williams River is a key feature of the Shire and an integral part of the Shire's environment, character and economic well-being. The River is one of the Shire's major tourism and recreational assets, with the River known for its clear waters, native fish, platypus and attractive scenery. The River is popular for swimming, fishing, picnicking and camping, with the River below Clarence Town also popular for recreational boating and water skiing. The Dungog community wants to see the water levels in the River maintained, with consistent environmental flows to ensure the health of the River, plus additional water released for agricultural purposes.

- Restrictions that could potentially be placed on the Dam by Hunter Water. The community wants to see the Dam available for a full range of recreational activities, as well as access to the foreshore. The community is strongly against any concept of fencing the foreshore area to limit access to the waterway.

- Tree planting - the community wants to ensure that the tree planting program is undertaken in accordance with a development plan for the Dam and that the tree planting does not create bushfire risks or constraints for existing properties in the valley or for future use and development at the Dam and in the surrounding catchment area.

- The need to stock both the Dam and the river below the Dam with native fish, with the stocking rates being sufficient to support recreational fishing.

- The Tenure and Planning Controls for the land around the Dam - the community recognises that the land tenure arrangements and the planning controls need to be suitable to encourage investment in facilities, services and infrastructure at the Dam. The community would like to see land made available for development on a freehold or long lease arrangement, with the length of the lease sufficient to encourage investment. The need to revise the rural tourism provisions of the Dungog Shire LEP to facilitate the development of tourist accommodation at the Dam was also identified.

- The need for on-going compensation / royalties for the Shire as custodian of the area.

- Flexibility in the development plans for the Dam, in order to meet the future needs and expectations of the Dungog Shire and broader regional communities.

4. ATTRACTION & RECREATION BASE OF THE SHIRE

This chapter explores the potential for the proposed Tillegra Dam to become both a tourist attraction and recreational asset for Dungog Shire.

4.1 Attraction Base

The attraction base of Dungog Shire includes:

- Barrington Tops / the Barringtons – this is by far the most significant attraction within the Shire.
- Rural Scenery / scenic drives
- Dungog and the villages - historic buildings, arts and crafts, riverside reserves, eateries and, in Dungog, boutique shops and the historic theatre.
- Williams River – with the National Park picnic area, Bandon Grove, Dungog Riverside Reserve, Clarence Town riverside reserves being popular with both Shire residents and visitors. The tourism sector in Clarence Town is almost solely dependent on the River, with visitors coming into town to camp by the River, fish, boat and water ski. Visitors to Clarence Town help underpin the viability of the local businesses. Maintenance of current water levels and the retention of boating and water skiing in the area is critical for Clarence Town.
- Allyn & Paterson Rivers – in addition to being a scenic feature of the western side of the Shire, the picnic areas and swimming holes in Gresford and Paterson are popular with visitors, with the John Tucker Park at Paterson being popular with large groups (eg sporting club picnics).
- Chichester Dam – the picnic area at the Dam attracts some local and regional residents and the occasional coach tour group. Lack of access to the area above the Dam wall, and no access to the waterway above or below the Dam limits the appeal of the area (see Section 5.1).
- Lostock Dam – the Dam primarily attracts anglers and picnickers, with visitation concentrated in the warmer months (see Section 5.1).
- Wineries – there are two wineries in the Gresford area, Camry Allyn and the Northern Hunter Winery (Glendonbrook Wines). While the wineries don't necessarily bring visitors into the Shire, they are an important local attraction that people visit while in the area.
- Bunna Bunoo Olive Grove, Gresford – this is a relatively new attraction that sells a range of olive products.
- Camelot Lavender & Llama Farm – this is a quality attraction located on the Dungog Road between Dungog and Paterson. The Farm is popular with coach tour groups.
- Harvest Trail – there are a number of farm gate outlets and specialty food producers in Dungog Shire that form part of the Hunter Harvest Trail.
- Museums – Dungog, Clarence Town and Paterson have small historical museums, with Paterson also having an historic rail motor museum. These attractions have limited opening hours and attract a few visitors.

In addition, the Shire hosts a number of events with the main events being Pedalfest, the Dungog Film Festival and the Tocal Field Days. The Thunderbolt Rally (Motorcycle rally) is also held in Dungog. Minor events include the Dungog and Gresford Agricultural Shows, Dungog and Gresford Rodeos, Heritage events at Tocal Homestead, Open Gardens and the monthly markets at Dungog, Clarence Town and Gresford.

The main attraction in the Shire is Barrington Tops / the Barrington Ranges, followed by the scenic beauty of the area and the rivers and waterways.

Barrington Tops / The Barringtons

Barrington Tops is an iconic natural attraction that has a very high level of recognition in the marketplace. The area, hereafter referred to as the 'Barringtons', incorporates a number of National Parks, State Forests and Nature Reserves including, in Dungog Shire, Barrington Tops National Park (BTNP), Mount Royal National Park, Chichester State Forest (2 separate areas), Masseys Creek State Forest, Fosterton State Forest and a number of Nature Reserves. BTNP forms part of the Central Eastern Rainforest Reserve of Australia, with the Park being a World Heritage Area. 85% of the Park is wilderness

Visitation to the BTNP is estimated by the Department of Environment & Climate Change (National Parks) to be in the order of 700,000 to 1,000,000 people per annum, with visitation concentrated in the northern and central areas of the Park. The Department of Primary Industries (Forests) estimates that the Chichester Forest area in Dungog Shire attracts around 250,000 to 300,000 visitors per annum, including more than 100,000+ campers. Within the Barringtons, the primary visitor nodes are:

- Barrington Tops - the plateau area, with Polblue being the focal point for visitation. This area is mostly accessed via Gloucester, with no vehicle access from Dungog Shire.
- Gloucester Tops - accessed via Gloucester.
- Williams - Allyn River area - accessed via Dungog Shire.
- Chichester State Forest - accessed via Dungog Shire.

The main attractions within the Dungog Shire area of the Barringtons are:

State Forest:
- Allyn River - Ladies Wells area
- Lagoon Pinch (start of the Careys Peak walking trail)
- Jerusaleum Creek Forest Park and Falls
- Dundungra Falls and Arboretum
- Telegherry Forest Park - 4 camping areas and picnic area

BTNP:
- Williams River picnic area and river walk
- Burraga Swamp
- Mt Allyn Lookout

The highest profile attraction, Barrington Guesthouse, was destroyed by fire a few years ago, leaving the Shire without an iconic attraction and accommodation property.

The Barrington attractions are all located within close proximity to Tillegra Dam, with Salisbury Road being the main access road to the BTNP visitor facilities and an access road to the western (Allyn River) areas of the Chichester State Forest. The other attractions are accessed from the Chichester Dam - Wangat Road.

The Dungog Shire Tourism Plan (2004) identified that the southern (Dungog) end of the Barringtons is performing well below its potential, with issues including:

- Lack of definition and development of the visitor nodes, with the attractions and visitors areas not having a high level of recognition in the marketplace.

- Poor condition of the National Park and Forest access roads, including Salisbury Road and the connecting roads within the Forest.

- Declining visitor experiences as a result of environmental degradation due to over use. Over-crowding and resultant anti-social behaviour is also creating conflict between user groups. The Forest and National Park areas need a major capital injection to protect the assets and revamp and improve facilities, as well as sufficient funding and resources to effectively manage these areas.

- Lack of investment by NPWS in visitor areas and facilities within the southern area of the Park. This is largely due to issues associated with the Wilderness classification of the southern areas of the Park.

There is potential for Tillegra Dam to play a pivotal role in capitalising more effectively on the Barrington attractions in Dungog Shire. The Dam is well positioned to provide a focal point and an accommodation node, with visitors using the Dam as a base to explore the Barringtons. While the Dam could relieve some of the pressure on the Forest camping areas, it is likely to significantly increase visitation to the area, which will increase the use of the access and internal forest roads, day use picnic areas and walking trails. The visitor areas are already operating at or close to capacity and will not be able to sustain additional use.

If DECC proceeds with the proposal to develop a rainforest canopy sky-walk in the Upper Williams River Valley, visitation to the area will be further increased.

An integrated development plan is needed to co-ordinate the use and development of the southern Barringtons area, with the Plan addressing access (walking, cycling and vehicles) and linkages, the provision of facilities and infrastructure and on-going resourcing and management.

The proximity of Tillegra Dam to the Barringtons provides the Dam with a strong competitive advantage over other water storage dams in the Hunter Region.

Scenery

The rugged topography of the Shire with its prominent ridge lines, steep slopes and fertile river valleys, backed by the Barrington Ranges, combines to create very attractive scenery. The beauty of the area is one of the key attractions of the Shire and one of the key reasons why people visit. Scenic driving is one of the main activities undertaken by visitors to the area. Stopping to take photographs of the scenery is very popular with visitors to the Shire, with this creating problems on the Shire's narrow roads.

The Williams River Valley is one of the scenic highlights of the Shire. Tillegra Dam will have an impact on the visual amenity of the area, with the impact being both positive and negative depending on the view-shed and also on the perspective of the viewer.

The planning for development at the Dam needs to address the importance of the scenery in terms of:

- Siting of Salisbury and other access roads to maximise views, while minimising negative visual impacts resulting from construction activities (eg cut and fill).

- Providing vantage points and lookouts where visitors can stop and enjoy the views. Salisbury Road is already a popular scenic touring route, with touring traffic expected to increase when the Dam comes on-line. Providing safe areas where vehicles can pull off the road to take in the view will be important.

- Designing and siting development and using appropriate landscaping to minimise visual impacts, when viewed from key vantage points.

- Designing and siting development to take advantage of views, with quality views being one of the attributes being sought be visitors to Dungog Shire, and also visitors to water storage dams. Accommodation with quality views can command a premium price.

Rivers & Waterways

The rivers and waterways are one of the primary attractions in Dungog Shire, with visitors frequently asking where they can access rivers for swimming and picnicking. 'Wild Rivers' are part of the attraction base of the Barrington Tops area, with images associated with the area including the pristine, crystal clear rivers and creeks, waterfalls, and pools and rapids.

The rivers and creeks are a scenic and recreational asset. There is strong demand for both camp sites and accommodation with frontage to and/or views of the waterways, with visitors wanting foreshore access. The rivers and creeks in the Shire are popular with both local residents and visitors for swimming, fishing and picnics. The lower reaches of both the Williams and Paterson Rivers are popular for canoeing and kayaking, with the Williams River between Clarence Town and Seaham Weir also used for recreational boating, boat-based fishing and water skiing.

The development at Tillegra Dam needs to recognise the desire by both residents and visitors for access to the foreshore and waterway for a range of activities including swimming, boating, picnicking, camping and other forms of accommodation.

The Williams River is an integral part of the attraction base of both Dungog and Clarence Town, and river flows need to be maintained to ensure that there is no deterioration of the attraction or the experience. Clarence Town in particular is dependent on the visitation generated by the Williams River. Any decline in the amenity of the River that has the potential to impact negatively on visitation, needs to be addressed in determining the 'compensation' for the Shire.

4.2 Recreation & Sporting Facilities

The recreational and sporting facilities available in Dungog Shire are concentrated in Dungog, with limited facilities in the larger villages. The facilities are designed for local use, with the Shire not having the recreational or sporting facilities to host carnivals or larger events.

The sporting and recreational facilities available in the Shire include:

Facilities	**Dungog**	**Clarence Town**	**Paterson**	**Gresford**	**Vacy**	**Rural Areas**
Ovals / playing fields	■	■	■	■	■	■
Showground	■			■		
Playground	■	■	■	■		
Riverside Picnic Area	■	■	■	■		■
Picnic Area - Other	■			■		■
Swimming Pool	■	■				
Tennis Courts	■		■	■		■
Netball Courts	■		■			
Squash Courts	■					
Golf Course	■		■			
Lawn Bowls / Bowling Club	■	■		■		
Boat Ramp		■	■			■**LS**
Skate Park	■			■		
Gymnasium / Fitness Centre	■					
Cycleway	■					
Formed walking trails	■					■**WR**

LS = Lostock Dam
WR= Barrington Tops National Park Williams River Picnic area

There is a cricket ground at Tillegra on land that is now owned by Hunter Water, with the ground used by the local community each cricket season.

Dungog Shire is popular for motorcycle related activities. The Newcastle Motorcycle Club complex is located on Monkerai Road, near Dungog, with the Club hosting weekend events. In addition the Forests in the Shire are popular for off-road riding, with the Forests attracting off-road motorcycle tours, organised groups from motorcycle clubs and individuals. Dungog Shire also attracts the touring road bike market. Dungog Showground is used by the Central Coast American Motorcycle Club for their annual 'Thunderbolt Rally' which brings over 500 bikes into town for the two day event.

Tillegra Dam has the potential to be a quality recreational asset for Dungog Shire, with the Dam providing a range of passive and active recreational activities. Cycling and mountain-biking are both growing sports in Dungog Shire. The Dungog Pedalfest has become a regional event. Dungog also attracts the occasional long distance road cycling events. Mountain-bikers from both the Shire and the surrounding region also use the Forests in Dungog Shire for recreational and training rides. There is potential to build on these sports.

In addition to water-sports, Tillegra Dam provides the opportunity to increase the cycling and mountain biking infrastructure in the Shire. There is a need for a formed cycle way linking Dungog and the Dam, as well as a trunk cycleway circumnavigating the Dam, with branch trails off this trunk. A mountain bike trail linking the Dam across to the Chichester River Valley and through to the forest trails in the Chichester State Forest should also be considered. Another option, is the establishment of a mountain-bike park, potentially on the western side of the Dam, with the park providing a range of trails of varying length and technical specifications.

Mountain biking and cycling would provide the Dam with year-round land-based activities to support the on-water activities, in particular the cycling and mountain-biking would increase use of the area in the colder months when boating and water-ski activities drop-off.

Walking and cycling trails around the Dam and linking to Dungog and the Chichester Valley would also provide the Dam with ability to host a range of long distance and endurance events including orienteering (running and mountain bike), rogaining, triathlons, adventure racing, iron man style events, marathon, cross country (running and mountain bike) and off-road Audax. The venue would also be ideal for community / fun rides and walks.

4.3 Considerations for Tillegra Dam

Tillegra Dam has the potential to be a major tourist attraction and destination and a significant regional recreational asset. Planning for Tillegra Dam needs to take into consideration:

- The role of the Dam in the context of the 'Barringtons', with the Dam having the potential to become the focal point and accommodation node for visitors to the Barringtons. It has the potential to replace the former Barrington Guesthouse as the iconic accommodation property for the Shire.

- Developing strong links between the Dam and the Barringtons. The proximity to the Barringtons will provide the Dam with a strong competitive advantage over other water storages in the Hunter, and should be a key feature in the marketing and promotion of the area. The Dam strongly compliments the Barringtons - providing a 'summer' activity, where visitors can spend the hottest part of the day on / near the water and explore the surrounding forests in the morning and late afternoon when it is cooler.

- The demand for camping sites in the Barringtons is very high, with the camping areas being at capacity in peak times. There will be strong demand for camping at Tillegra Dam.

- Opportunities to provide cycle and walking trails around the Dam with links to Dungog and the Chichester River Valley and Chichester State Forest.

- Scenery - the scenery is a very strong component of the attraction base of the Shire, and one of the reasons why people visit the area. The Dam needs to capitalise on the desire for quality views in the design and siting of its accommodation and visitor facilities. (Note: quality views will translate into higher achieved room rates). Consideration also needs to be given to the design and siting of development to minimise negative visual impacts from any key vantage points in the surrounding area.

- Creeks and rivers are also a strong part of the attraction base of the Shire. Visitors and Shire residents will be seeking access to both the foreshore area and waterway.

- The Williams River is an integral part of the attraction base of Dungog and Clarence Town, with it being the main attraction in Clarence Town and the basis for the village's tourism industry. The integrity of the River needs to be maintained.

A subregional development and management strategy is needed for the southern end of the Barringtons, to integrate the visitor facilities and infrastructure available in the Chichester State Forest, Barrington Tops National Park and at Tillegra Dam.

5. THE COMPETITIVE ENVIRONMENT - WATERWAYS

For on-water activities, Tillegra Dam will be competing with all larger water bodies in the Hunter Region, Central Coast and Port Stephens areas, namely:

- **Water Storage Dams:**
  - Chichester
  - Lostock
  - Grahamstown
  - Glennies Creek / Lake St Clair
  - Lake Liddell
  - Lake Glenbawn
  - Lake Keepit (Gunnedah Shire)

- **Coastal Lakes & Estuaries**
  - Brisbane Water and Tuggerah Lakes (Tuggerah, Budgewoi and Munmorah) on the Central Coast
  - Lake Macquarie
  - Port Stephens
  - Myall Lakes

- **Rivers**
  - Hunter
  - Williams

- **Beaches**
  - Numerous beaches extending from the Central Coast through Lake Macquarie and Newcastle Cities and Port Stephens Shire.

The activities undertaken at each of these waterways, facilities provided and the experience offered is detailed in the following sections.

5.1 Water Storage Dams

Chichester Dam

Chichester Dam is located at the confluence of the Chichester and Wangat Rivers, which are major headwater tributaries of the Williams River. The Dam is approximately 22km north of Dungog and 5km north east of Tillegra Dam. The two Dams are separated by a steep ridgeline.

Chichester Dam provides around 35% of the Lower Hunter potable water supply. The water is pumped from the Dam to reservoirs at Grahamstown and Newcastle. Water is also released down the River for both agricultural and domestic use.

As the water from Chichester Dam is for domestic consumption, no human contact is permitted, with no public access to the water above the Dam wall. A day-use picnic area is provided below the Wall. This area is managed by Hunter Water.

The Dam attracts a few thousand visitors per annum, with most visitors drawn from Dungog and Port Stephens Shires and the Lower Hunter. Visitors include family groups, retirees and coach tour groups (generally pensioners).

Lostock Dam

Lostock Dam is a small water storage dam located on the Paterson River approximately 13km north west of Gresford. The Dam is operated by State Water and was constructed to regulate flow in the

Paterson River to meet stock, domestic and irrigation requirements for the Paterson River Valley.

The Dam is open to the public. Boating is permissible however there is an 8 knot speed limited over the entire dam. The most popular activities undertaken at the Dam are fishing (primary activity) and picnicking. Minor activities include swimming, wind surfing, canoeing and bird watching.

Visitor facilities are relatively limited, with a picnic area and boat ramp above the Dam wall and a caravan park below the wall. The picnic area above the wall has recently been upgraded. There was a picnic area below the Dam wall, however State Water has recently closed this area to save money. The picnic area above the wall is popular in summer in calm weather, whereas the area below the wall was far more sheltered and was more popular in winter and on windy days.

The Lostock Dam Caravan Park is privately owned and operated. It is located below the Dam wall on the Paterson River, with the River bordering the Park on three sides. The Park provides 4 self contained cabins, 8 powered` tourist sites, around 100 un-powered sites and 45 holiday vans that are privately owned.

The Dam attracts a few thousand visitors per year. Visitation is seasonal, peaking in the summer school holidays and on warmer weekends. Outside of school holidays, mid week visitation is low with the Dam attracting the occasional retiree, angler and coach tour group (usually seniors). On weekends the main users are anglers - both individuals and clubs, and families. Most visitors to the Dam and Caravan Park are drawn from the Hunter Region, primarily from the Lower Hunter.

The Caravan Park is popular with families, anglers and social groups (eg Church groups). The Park is often used by 4WD clubs and groups as a base to explore the nearby Barrington Tops National Park, Chichester State Forest, Massey Creek State Forest and Mt Royal National Park.

Grahamstown Dam

Grahamstown Dam is located at Grahamstown, approximately 3km east of Raymond Terrace. The Dam is operated by Hunter Water and is an off-river storage used solely for potable water supply for the Lower Hunter. Access to the Dam is restricted to prevent potential contamination. Non-powered boating is permissible on the Dam, with sailing being the main activity. Electric motor boats are also permissible and are used by some anglers. Swimming and motorised (petrol) boating are not permitted.

There is a small recreation reserve on the southern foreshore of the Dam. Port Stephens Shire Council leases this area from Hunter Water, and in turn sub-leases it to the Grahamstown Sailing & Aquatic Club. The Club operates the area on behalf of Council, with the area only open to the public on weekends during the sailing season (October to April) and on Sundays during winter. There is no public access to the Dam or Reserve at other times.

The Club is primarily involved in a 'Sailability' Program which provides an introduction to sailing for people of all abilities, with the program specialising in sailing for the disabled. From Wednesday to Friday the Club runs sailing classes for schools and special needs groups, with sailing competitions on Saturday mornings. The Club also runs sailing programs during school holidays. Within the Hunter Region, there is a Sailability Program at Belmont with a program being introduced in the Upper Hunter, possibly at Lake Liddell, for the 2008/09 sailing season. The sailing season extends from October through to April. Visitors can bring their own sailing boat to the Dam, however the boats have to be inspected by Club Officials before they can be launched.

The Club House is available for hire by schools and community groups. The Club will allow motorhome and caravan groups to day overnight at the Reserve, provided that all rigs are fully self contained. There are no connections to power, water or drainage.

The Reserve attracts around 2,000 to 3,000 visitors per annum.

Lake St Clair / Glennies Creek Dam

Lake St Clair is the body of water created by Glennies Creek Dam. The Lake is located on Glennies

Creek, a tributary of the Hunter River, approximately 25km north of Singleton. Glennies Creek Dam is operated by State Water. The water if used for domestic water supply for Singleton City and for agricultural and mining purposes.

The Lake has two main arms, with an 8 knot speed limit on the western arm and in the upper reaches of the eastern arm. These areas are very popular with anglers as the submerged trees provide good fish habitat. Water skiing and power boating are undertaken on the trunk area of the Lake. This area is quite exposed and suffers from wind chop.

Lake St Clair Recreation Reserve is operated by Singleton Council. There is a caretaker who lives near the Dam and remains on site during peak periods. The Recreation Reserve has day-use picnic areas plus a camp ground and kiosk. The camp ground has 12 powered sites, with primitive camping permitted in the most other parts of the Reserve. The caretaker advised that there is a need for at least 10-12 more powered sites plus onsite cabins. Council would like to increase facilities and accommodation however the Lease from State Water for the area can be terminated on a week's notice, which is not conducive to investment.

The Lake is a significant recreational area for the Singleton and Muswellbrook areas. The Lake attracts around 10,000 to 15,000 visitor per annum. Visitation is concentrated on weekends and during school holidays, with peak visitation over the Christmas-New Year period, of up to 1,500 people per day, with a secondary peak at Easter, with up to 1000 visitors per day. Visitation fluctuates with water levels, with visitation almost halving when the water level falls below 35 - 40%.

The Lake draws primarily from the Hunter Region on weekends, with visitors starting to arrive on Thursday nights and Friday morning and departing Sunday afternoon. During school holidays, the Lake draws visitors from a wider area, including Sydney, Central Coast, Lower Hunter, Port Stephens and the Tamworth - Gunnedah - Liverpool Plains area.

The Lake attract a variety of users including:

- Families - primarily on weekends and during school holidays.
- Powerboat and jet ski enthusiasts - concentrated in summer.
- Anglers - individuals, small groups and fishing clubs - main weekend market year round.
- Social groups - such as church groups and 4WD clubs.
- Retirees - touring van market. This market is a relatively new market for the Reserve, with the Reserve generally having a few vans in most nights. Some retirees have stayed at the Dam for up to 3 months.

In terms of water craft on the Lake, around 60% are power boats, ski boats and jet skis, with the remainder being primarily fishing boats. According to the care-taker, a significant proportion of the watercraft on the Dam are owned by mine and mine-related workers.

Lake Liddell

Lake Liddell is located 15km south of Muswellbrook, and is visible from the New England Highway. The Lake was constructed to provide cooling water for Lake Liddell Power Station, with the water in the Lake supplemented by water from the Hunter River. The Lake is operated by Macquarie Generation.

The Lake has an industrial setting, with the Lake Liddell Power Station dominating the southern foreshore and the Liddell Open Cut Coal Mine, the eastern shore. The water quality of the Lake is lower than that of the water storage dams, with raised salinity and nutrient levels. It is not suitable for swimming. Powered and non-powered boating and fishing are permitted on the Lake. The Lake is also known as a bird 'hotspot', with the Lake having a large black swan colony and breeding ground.

A small recreation reserve has been developed on the northern foreshore. The reserve is Crown Land which is operated by a local Trust, with an on-site caretaker.

The Reserve provides very basic picnic facilities, camp ground, boat ramp and a large recreation hall. The camp ground has 4 powered sites ($3 per night). The recreation hall is used occasionally for

Trust meetings. The area was developed in the late 1960's with the infrastructure and facilities now being in very poor condition. The Trust advised that is does not have the funds to maintain or improve the area.

Visitation is very low, estimated at around 3,000 visitors per year. Most visitors are local residents, however the camp ground attracts a few longer stay visitors (eg mine contractors) who are looking for 'cheap' accommodation. When the area first opened visitation was considerably higher, however most locals now use Glenbawn Dam and Lake St Clair which have far superior facilities and more attractive settings.

Lake Glenbawn

Glenbawn Dam is located on the Hunter River approximately 14km east of Scone in the Upper Hunter Valley. The Dam is 160km north west of Newcastle.

The Dam is operated by State Water primarily to regulate the flow of water in the Hunter River and provide water for agriculture and stock. Activities permitted on the Dam include powered and non-powered boating, swimming, and fishing.

The area below the Dam wall and the Eastern Foreshore adjacent to the Dam wall are managed by the Department of Lands as a State Park. The facilities provided include:

- Below the Dam Wall
  - Caravan Park 15 powered sites, 30 holiday vans sites, unpowered sites
  - Kiosk
  - Golf Course 3 holes
  - Tennis courts (2)
  - Recreation Hall - 50 people for functions and meetings
  - Oval
  - Caravan and boat storage (8 boat sheds) areas
  - Park office

- Eastern Foreshore
  - Camping - numerous areas
  - Cabins (8), bungalows (6) villas (4)
  - Boat ramps
  - Picnic areas and playground
  - Club houses & facilities - Lake Glenbawn Water Ski Club, Upper Hunter Rowing Club, Scone Amateur Fishing Club and Lake Glenbawn Field Archery Club.

Glenbawn State Park attracts in the order of 50,000 to 70,000 visitors per annum, the majority of whom are day trippers. Visitation varies in-line with water levels. The Lake draws visitors from Sydney, Central Coast, Hunter, the southern part of the New England area and the Narrabri district. Most weekend visitors are located within 2-3 hours drive of the Lake, with holiday-makers coming from further afield, including Sydney. An entry fee of $8 per vehicle applies.

Families and anglers are the main weekend and school holiday markets, with retirees, anglers and coach tour groups being the main mid-week markets. Groups attracted include fishing clubs, church groups, schools, Probus and View Clubs and bird-watchers.

Fishing is popular year round. The Lake hosts up to 9 fishing tournaments per year, with these each attracting around 100 competitors. Waterskiing, wakeboarding and jet ski activity is concentrated in summer, and are the main activities undertaken at the Lake during school holidays. The Rowing Club uses the Lake for training and hosts one event per year. Sailing, kayaking and canoeing are minor activities. The Lake also hosts one major Open Water Swimming Carnival each year with this attracting a few hundred competitors. When water was regularly released from the Lake, white water rafting and kayaking were undertaken on the river below the Dam wall. The river has been used for Secondary School Kayaking Championships and has hosted an international event. Since 2000 most major kayaking events have been held at the Penrith White Water Stadium.

The facilities that attract the most use are the picnic areas, playgrounds and boat ramps. The tennis, golf and oval facilities attract minimal use other than during school holidays. These facilities are located below the wall and incur a 'use' fee. In the past there have been a commercial boat hire operation however the consistently low water levels over the past 8 years have rendered this operation non-viable.

The cabins are the most popular form of accommodation, with the larger cabins (6 berth) filling first. The cabins are achieving an occupancy rate of around 35% and are booked out most weekends and school holidays. The caravan park is located below the Dam wall. Occupancy rates for both powered and unpowered short term (tourist) sites in the caravan park are low. People prefer to stay above the dam wall, and will camp in the primitive camping areas (toilets but no power) rather than stay in the caravan park. There is a waiting list for the holiday van sites.

Lake Keepit

Lake Keepit is located in Gunnedah Shire on the Namoi River, between Gunnedah and Tamworth. The Lake is operated by State Water with the water being used primarily for agriculture and stock with some domestic consumption.

Lake Keepit State Park is located on the southern foreshore of the Lake, with the Park managed by the Department of Lands. The Department of Sport & Recreation operates a Sport & Recreation Camp on the eastern foreshore of the Lake.

Lake Keepit State Park provides a range of facilities including:

- Self contained accommodation - 1 chalet, 2 x 6 bed ensuite cabins, 10 x 4 bed ensuite cabins and 7 standard cabins (no ensuites)
- Campotel units - permanent onsite tents which sleep up to 8
- Powered caravan sites (39), unpowered caravan sites (28) and bush camping (209 sites)
- Holiday van sites (69)
- Boat ramps
- Playgrounds
- Licensed Kiosk
- Tennis courts
- Golf course - 5 holes
- Fishing Club with Club house
- Soaring Club with airstrip and club house

Visitation is currently around 30,000 to 40,000 casual visitors per annum. Lake Keepit primarily draws from the New England - North West Region and the Hunter Valley. Water levels have been very low for the past 10 years with this having impacted significantly on visitation. Frequent users generally buy an annual State Parks pass, and move between Glenbawn, Keepit and Copeton State Parks, depending on water levels. With higher water levels and good weather, the Park can attract up to 5,000 visitors per day during the summer school holidays and around 4,500 per day over Easter.

The most popular on-water activity is fishing, with fishing occurring year-round. Water skiing and power boating are popular in summer, however these are water level dependent. Picnics are the main shore-based activity.

The Park offers a variety of accommodation, with the most popular accommodation being the Chalet (49% occupancy) followed by the 6 bed cabins (46% occupancy) and then the 4 bed cabins (41%) and the standard caravans (39%). The Park also has 8 permanent tents (8 beds per tent), with these being very popular for groups and fishing clubs. The park attracts around 7,200 camping / caravan nights per year, with the powered camp sites (39 sites) achieving an occupancy rate of 18% and the unpowered sites in the caravan park (28 sites) achieving 8%. There are also 209 primitive camping sites which achieve around 5% occupancy, which equates to just over 3,800 camp nights per year. The Park has 69 holiday van sites, with these being fully occupied with a long waiting list.

Table 5.1 Water Storage Dams

Dam	Location	Operator	Purpose	Volume	Surface Area	Permitted Uses	Visitor Facilities	Accommodation
Grahamstown	Raymond Terrace	Hunter Water	Domestic Water	190,000	2800	Sailing Canoeing	Picnic area	Nil
Chichester	Chichester / Wangat Rivers 22km north of Dungog	Hunter Water	Domestic Water Supply - Lower Hunter	21,000	180ha	None	Picnic area below	Nil
Lostock	Paterson River, 13km north of Gresford	State Water	Stock Agriculture Domestic	20,000 million litres	220ha	Secondary Contact: Boating (<8 knots) Windsurfing Canoeing	Picnic area Boat Ramp	Caravan Park: 4 cabins 8 powered sites 100 non-powered
Glennies Creek Dam / Lake St Clair	Glennies Creek 25km north of Singleton	State Water Council manages visitor facilities	Agriculture	283,000 million litres	540ha	Fishing Swimming Power & non-power boating Water skiing & wake boarding	Picnic area Boat ramp	Caravan Park 12 powered sites unlimited camping sites
Glenbawn Dam	Hunter River 15km east of Scone	State Water Dept of Lands - State Park	Regulate flow of Hunter River Stock Agriculture	750,000	2615	Fishing Swimming Power & non-power boating Water skiing & wake boarding	Picnic areas Boat Ramps Playground Cricket Oval Golf - 3 holes Tennis - 2 Recreation Hall Kiosk Park Office Walking Trails Archery Fishing Club Ski Club Rowing Club Archery Club Caravan & boat storage	Below the Wall Caravan Park 15 powered sites 30 holiday vans camp sites Eastern Foreshore 8 cabins 6 bungalows 4 villas

Dam	Location	Operator	Purpose	Volume	Surface Area	Permitted Uses	Visitor Facilities	Accommodation
Lake Liddell	15km south of Muswellbrook		Provide cooling water for Liddell Power Station	152,000	1133	Powered & Unpowered boating Fishing	Picnic area Boat Ramp	Camp ground - 4 powered sites
Lake Keepit	Namoi River 32km east of Gunnedah	State Water Dept of Lands - State Park	Regulate River flow Stock Agriculture	425,000	4130	Fishing Swimming Power & non-power boating Water skiing & wake boarding	Picnic areas Boat Ramps Playground Tennis - 1 court Half courts (3) Golf BMX track Skate ramp Wading Pool Boat Hire Recreation Hall Kiosk Park Office Walking Trails boat storage	12 ensuite cabins 7 on-site vans 1 chalet (10 bed) 8 permanent tents 39 powered caravan sites 35 unpowered caravan sites 209 primitive camping sites 69 holiday vans
		Sport & Recreation Camp				Canoeing / Kayaking Sailing Swimming	25m pool Abseiling & Ropes courses	11 x 14 bed dormitories cabins 1 cottage (14 bed) camping sites

5.2 Coastal Lakes & Estuaries

There are five major coastal lake and estuarine systems within 2.5 hours drive of Tillegra Dam:

- Brisbane Waters
- Tuggerah Lakes
- Lake Macquarie
- Port Stephens
- Myall Lakes

Brisbane Waters

Brisbane Waters is a broad shallow estuary located in Gosford City at the southern end of the Central Coast. Brisbane Waters has an area of approximately 27km^2 with an average depth of 5-6m. The estuary is tidal with mud flats exposed at low tide.

The estuary is fringed by urban development around most of the foreshore. Brisbane Waters National Park is located in the southern and western areas of the catchment. Water quality is variable.

The estuary is used primarily by residents from the surrounding area, with the main activities being fishing and general boating, followed by sailing and recreational kayaking. Some water skiing is undertaken however this activity has declined significantly over the past decade due in part to increased siltation and water quality issues.

Accommodation around the Lake is limited with motels at Woy Woy and Gosford, and a few holiday houses available for short-term lettings.

Tuggerah Lakes

Tuggerah Lakes is a series of three interconnected coastal lagoons located primarily in Wyong Shire. The Lakes have a combined water area of 77km^2. The Lakes are shallow with an average depth of just less than 2m. The Lakes are tidal and experience fluctuating water levels which exposes extensive mud flats at low tide. Due to the narrow interconnecting channels, tidal flushing is minimal.

The Lakes are surrounded by urban development, with the Lakes affected by siltation and storm-water run-off, with nutrient enrichment resulting in algal blooms. The water quality is variable, with swimming not recommended. The northern-most lake, Lake Munmorah, provides cooling water for the Lake Munmorah Power Station. The Lakes are primarily a scenic resource and are popular for fishing. There are a number of caravan parks around the Lake, most of which were established more than 50 years ago when the Lakes were cleaner and deeper.

Lake Macquarie

Lake Macquarie is the largest salt-water lake in Australia. The Lake is approximately 21.8km long, up to 7.9km wide and covers an area of 110 km^2. The Lake has a predominantly urban setting, with the Vales Point and Eraring Power Stations located at the southern end of the Lake.

In the past, the Lake suffered significant siltation, pollution and nutrient enrichment problems. Six years ago an environmental management plan was implemented which included storm water management and the cessation of commercial fishing. The water quality of the Lake has improved significantly, with the Lake again suitable for swimming and primary contact.

Lake Macquarie is being promoted as a haven for water sports and water based activities. It is one of the premier sailing destinations in NSW, with eight registered yacht and sailing clubs. The Lake hosts a range of sailing events including national and state regattas. The Lake also has a number of charter boat operators with houseboats, cruisers, yachts, catamarans, sports boats, fishing boats and run-abouts being available for hire. For the larger boats, both skippered and bare-boat charters are available. Kayak, canoe and bicycle hire is also available around the Lake.

While sailing, followed by fishing are the most popular activities, the Lake is also used for water skiing, wake-boarding, jet skiing and power boating. There is a water ski tournament training course at Myuna Bay.

Accommodation available around the Lake includes the Rafferty Mecure Resort, up-market boutique hotels, motels, serviced apartments, holiday apartments and houses, caravan parks and bed & breakfast establishments. There are also two NSW Department of Sport & Recreation Camps on the Lake, Myuna Bay and Point Wolstoncroft.

Port Stephens

Port Stephens is a large estuary located north of Newcastle. The Port covers an area of 119 km^2 and extends inland approximately 24km. It ranges in width from 1.1km to 6.5km. Port Stephens forms part of the Port Stephens - Great Lakes Marine Park. Water quality is generally good with the Port suitable for swimming.

The southern foreshore area of the Tomaree Peninsula is intensively developed, with more than 22,000 people residing within 3km of the shoreline. Most of the western and northern foreshores remain in native forest.

Port Stephens is a high profile tourist destination area. The area is promoted as the 'Blue Water Paradise' and is known for its spectacular scenery, deep sea fishing and dolphin and whale watching cruises. All forms of recreational boating are undertaken on Port Stephens, with the Port having marina facilities to cater for the larger ocean-going yachts and cruisers.

The Port Stephens area has a concentration of visitor accommodation with around 50 hotels, motels and serviced apartments (from budget to luxury) providing more than 1,000 rooms, 15 caravan parks plus an extensive range of holiday houses and flats. The area also has a range of land-based recreational activities including golf, wineries, restaurants, shopping, toboggan rides, tours etc.

Myall Lakes

Myall Lakes encompasses three inter-connected freshwater lakes in Great Lakes Shire, just north of Port Stephens. The Lakes form part of the Port Stephens - Great Lakes Marine Park and are a designated Ramsar Wetland. The Lakes have a surface area of approximately 10,000 hectares. They are surrounded by the Myall Lakes National Park, with most of the Lake foreshores managed by the Department of Environment and Climate Change (National Parks & Wildlife Service).

Boating is permitted on the Lakes, with power boating, jet skiing and water skiing restricted to designated areas. General boating is the most popular on-water activity, with a number of boat-access-only camping areas spread around the foreshore. Boat and Houseboat hire is available from Bulahdelah and Tea Gardens. There are 16 DECC managed picnic areas around the Lake as well as 7 designated walking tracks through the National Park plus a number of longer distance trails. Mountain biking is permissible on the fire and management trails.

DECC operates 23 primitive camping grounds around the Lakes, with these ranging in size from 2 sites to 132 sites. There is also a caravan park resort, Eco Point Myall Shores Resort, which provides 76 cabins and villas, bunkhouse (120 beds in 24 rooms), camp ground, shop, licensed bar and restaurant, swimming pool, boat ramps and jetty, and boat and canoe hire. Eco Point is a potential development model for Tillegra Dam.

The Lakes are extremely popular, with the accommodation and the main camping areas being at capacity during the summer school holidays and at Easter, with relatively high occupancy rates during the spring and autumn school holidays and on weekends during summer. Families are the main visitor market. Other visitors include short-breaks couples, retirees, touring caravans, 4WD groups, anglers, bushwalkers, bird waters, canoeists / kayakers, and water sports enthusiasts.

5.3 Rivers

The rivers in Dungog Shire and surrounding region are part of the recreational base and tourism assets of the area.

The three major rivers in Dungog Shire, the Paterson, Allyn and Williams, each rise at Barrington Tops and are northern tributaries of the Hunter River.

The Paterson and Allyn Rivers are popular for swimming, fishing and camping and are a significant part of the attraction base of Barringtons area, Gresford, Vacy and Paterson. The Paterson River is navigable from its confluence with the Hunter River at Morpeth to Paterson (approximately 15km), however no skiing or aquaplaning is permissible on this reach. Water craft use of this reach is limited.

The Williams River is the largest river in the Shire, flowing through Dungog and Clarence Town to join the Hunter River at Raymond Terrace. The Williams River is one of Dungog's attractions, with the riverside picnic area being popular with both visitors and residents. Dungog has a small caravan park located adjacent to the River. The River is suitable for fishing and swimming. There are also a number of picnic areas located along the River, the most significant of which is Bandon Grove, which is a picnic and primitive camping area. There is concern that Tillegra Dam will reduce the flow in the River, which will have an adverse impact on the recreational and scenic value of the River in the Dungog area.

The Williams River is the main attraction in Clarence Town, with the Town having two popular riverside recreation reserves. The Williams River Caravan Park is located on the river bank, with the river being used for boating, swimming and fishing. The normal limit of navigation is located just north of the Clarence Town Bridge. In the past, waterskiing was a very popular activity in Clarence Town, however the introduction of 4 and 8 knot speed limits on the reach adjacent to Clarence Town and the banning of boats 2.4km upstream from Seaham Weir has resulted in a decline in water skiing in the area.

Until recently, water-skiing and wake-boarding were permissible from Seaham Weir through to Raymond Terrace. In 2006, as a result of river bank erosion, a no-wake zone was introduced in the mid-section of the River. This has restricted power boat activities to the Raymond Terrace area of the Williams River, and along the Hunter River, between Raymond Terrace and Morpeth (limit of navigation). Raymond Terrace is the focal point for water skiing, wake boarding and power boating, with the town having the infrastructure needed to support these activities.

Bank erosion is an ongoing issue along the Williams and Hunter Rivers. While the introduction of speed controls and no-wake zones is helping to reduce erosion it has concentrated power boating, water skiing and wake boarding into the reach of the River adjacent to Raymond Terrace. This has resulted in increased congestion. The Hunter Office of the Waterways Authority has advised that they would like to take the pressure off this area by providing appropriate areas for power boating, jet skiing and wake boarding at Tillegra Dam, with the relocation of wake boarding being the main priority.

Rowing occurs on the Hunter River between Raymond Terrace and Morpeth, with the activity centred on Berry Park, 5km downstream of Morpeth. Rowing regattas are held occasionally on the River, however since 2000, many of the major State and National events hosted in NSW have been held at the International Regatta Centre at Penrith (former Olympic Venue).

5.4 Beaches

The beaches, extending from the Central Coast through to Port Stephens provide an alternative holiday destination and water-based recreational resource to water storage dams. The beaches are very popular in summer. Visitors holidaying on the coast are a potential day-trip market for Tillegra Dam.

5.5 Main Findings

- There are a diversity of waterways in the Hunter Region and surrounding area, including beaches, coastal lakes and estuaries, rivers and water storage dams. These waterways cater for a wide range of water-based recreational activities.

- There is some concentration of activities at specific locations within the Region, namely:

  - Lake Macquarie - focal point for sailing
  - Williams & Hunter River - power boating and water skiing, including competitive events
  - Myuna Bay on Lake Macquarie - tournament water ski training
  - Myall Lakes - house boats

Water Storage Dams

- The water storage dams are popular tourist attractions and recreational assets. The level of visitation is related to the activities that can be undertaken at the dam and the facilities and accommodation provided. The larger water storage areas with associated State Parks, attract significantly higher levels of visitation than the dams with minimal recreational activities and/or limited / poor quality facilities.

- The water storage dams in the Hunter and Keepit Dam at Gunnedah draw visitors from the Hunter Region, Central Coast and Sydney Metropolitan Area, with these visitors by-passing the range of coastal waterways to visit the dams.

- The water storage dams are subject to significant fluctuations in water levels. This impacts on the visual and recreational amenity of the dam. Visitation levels are directly related to water levels.

- Fishing is the most popular on-water activity at the water storage dams and in the coastal lakes, with fishing undertaken year-round. Most fishing is boat-based.

- Recreational boating, sailing, power boating and towing sports are summer sports, with activity concentrated from October through to March - April.

- While Dams are very popular for recreational boating, power boating and tow activities, the competitive / tournament component of these sports prefers river environments with protected waters (see Section 7.6).

- The water body is the main attraction. There is a strong preference for accommodation and facilities above the dam wall, with proximity to the water and water views strongly influencing the patterns of use within the recreation area and the choice of accommodation.

- The accommodation and facilities at most of the Dams were developed more than 50 years ago, with facilities added as funds have become available. All of the dam recreation areas are on Crown Land and managed by public sector agencies or community Trusts. Budgetary constraints and land tenure arrangements impact on the level and type of investment in activities, facilities and services provided.

- There is strong demand for on site accommodation across all accommodation types. Cabins are very popular and attract use year round. Caravan and camping are more seasonal, with camping in particular, concentrated in summer. The caravan sites, cabins and dormitory accommodation are usually fully booked during the summer school holidays and at Easter, with high occupancy rates in the spring and autumn school holidays and at weekends during the warmer months. There is a waiting list at all the State Parks for holiday van sites. There are also waiting lists for the boat sheds that are available at some Parks.

- None of the dams in the Hunter Region offer lodge or resort style accommodation - this type of accommodation has proved popular on the coastal lakes and also on freshwater lakes in the Snowy Mountains, Tasmania and New Zealand. There is potential for Tillegra Dam to provide this form of accommodation.

- The dams attract a diversity of markets with the primary markets being families and anglers, followed by boat-related users and retirees.

5.6 Comparative Analysis

In comparison to the other water storage dams in the Hunter Region, Tillegra Dam has the advantages of:

- Being the closest large recreational dam to the main population centres - the Lower Hunter, Central Coast and Sydney.

- Being readily accessible to the coastal holiday destination areas (from Central Coast through to Myall Lakes), to attract day-trip visitors.

- Having a very attractive setting, with superb scenery. The setting is more appealing than the setting of other recreational dams in the Region.

- Proximity to the Barrington Ranges, which is an iconic tourist attraction with a high level of marketplace recognition. The other Dams do not have the same level of accessibility and association to a major attraction.

- Tillegra is expected to experience minimum fluctuations in water levels. The Dam could expect to attract some 'transfer' demand from other water storages when water levels in these storages are low.

6. ACCOMMODATION & ASSOCIATED FACILITIES

This chapter provides an overview of the accommodation available in Dungog and at the water storage dams in the Hunter Valley and inland NSW, and identifies possible accommodation that could be developed at Tillegra Dam.

6.1 Demand for Accommodation at Water Storage Dams

With the exception of Chichester and Grahamstown Dams, the water storage dams in the Hunter Valley provide accommodation, with accommodation available including:

- Primitive camping - informal camping areas with very basic facilities
- Caravan sites - formed sites - mix of powered and unpowered sites
- Onsite caravans - no ensuite bathroom facilities
- Cabins and Cottages - self contained with ensuite bathroom facilities
- Permanent tents
- Bunkhouses
- Holiday van sites - where people can leave their caravans permanently on-site

Each of the Dam recreation areas were established 40 to 50 years ago, with the accommodation 'evolving' rather than being planned. With the exception of the Lostock Dam Caravan Park (which is privately owned), each of the recreation areas are on Crown Land and are administered by a Government Agency or Trust. The level of investment is largely governed by the lease conditions and/or the management structure. The Land Managers are not in a position to develop resort or lodge style accommodation.

The demand for accommodation is reasonably consistent across each of the Hunter dams and also consistent with the demand for accommodation at other large inland dams (Copeton, Keepit, Burrendong, Wyangala / Grabine and Burrinjuck), namely:

- There is a strong preference for accommodation above the dam wall, rather than below it.

- Access to the water is a key driver, with accommodation close to the water preferred over more remote accommodation.

- Views are also an important consideration, with the accommodation that has uninterrupted water views being more popular than accommodation with limited or no views.

- Self contained cabins & cottages achieve the highest occupancy rates, with cabins & cottages generally being booked out most weekends in the warmer months (October to April) and during the spring, autumn and summer school holidays, often with waiting lists during the Xmas - New Year period and at Easter.

- The demand is higher for larger cabins (6+ berths) than for the smaller 4 berth cabins.

- Bunkhouses/ dormitory accommodation is popular with fishing clubs, schools and social groups.

- There is a waiting list at all of the State Parks for holiday van sites.

There is opportunity for Tillegra Dam to provide a range of accommodation, including eco-resort or lodge style accommodation through to primitive camping.

6.2 Likely Demand for Accommodation from Tillegra Dam

The development of Tillegra Dam will result in an increase in the demand for accommodation within the Shire. During the construction phase, there is likely to be demand for accommodation from workers, contractors, consultants, regulatory officers, union representatives etc. Hunter Water owns a number of homesteads within the Dam catchment area that could potentially be utilised for key construction staff and workers. Other visitors will be looking for accommodation close to the Dam, with Dungog expected to be the preferred place to stay due to the range of facilities and services available. Properties in the Upper Williams Valley may attract some business, with Salisbury Lodge able to provide both accommodation and meals. There may also be some spin-off to the accommodation properties along the Chichester Dam Road area.

Once operational, the demand for accommodation will depend on the activities undertaken at the Dam and the facilities available. Demand will come from Dam users, with minimal or no demand from Dam staff and Dam-related workers. The more activities available, the greater the demand for accommodation. The preference however will be for foreshore accommodation as close as possible to the water. Experience at other water storage dams indicates that visitors who are coming to the area specifically to use the dam, will generally not stay in the surrounding towns unless they are coming for an event and the accommodation at the dam is not suitable or is booked out.

6.3 Existing Supply of Accommodation in Dungog Shire

There are in the order of 56 accommodation properties in Dungog Shire incorporating:

- 2 larger resorts - Eaglereach and the Barringtons Country Retreat
- 2 small motels - Dungog and Vacy, plus motel accommodation at Tocal Agricultural College.
- 5 pub hotels - Dungog (2), Clarence Town (1), Gresford (1) and Paterson (1)
- 7 bed & breakfast properties
- 3 caravan parks - Lostock Dam, Dungog and Clarence Town with powered sites also available at Gresford Showground.
- 26 properties providing self contained cabin, cottage and homestead accommodation.
- 1 farm stay
- Primitive camping - State Forests and Bandon Grove.

The stock of accommodation is summarised in Table 6.1.

Accommodation is concentrated in and around Dungog and the larger villages, and in the upper river valleys, in particular along the Chichester Dam and Wangat Roads, Main Creek Valley, and the Upper Williams and Allyn River Valleys.

Of the properties in the Shire, the ones that will potentially benefit directly from Tillegra Dam are those in close proximity to the Dam, primarily the properties in Dungog and immediate surrounds, Upper Williams River Valley and possibly those along Chichester Dam Road. The properties in Gresford, Vacy. Paterson and Clarence Town are unlikely to attract dam-generated visitation, other than possibly during a major event held at the Dam.

Table 6.1 Accommodation Establishments - Dungog Shire & Surrounds

Locality	Property	Type	Star Rating	Accommodation Units	Bed / Capacity
Dungog Township	Tall Timbers Motel	Motel	3	11 rooms	35
	Dungog Country Apartment	SA	3	2 apartments	14
	Bank Hotel	Pub Hotel	2.5	22 rooms - shared facilities	21
	Royal Hotel	Pub Hotel	2.5	24 rooms - shared facilities	36
	Settlers Arms	B&B	3	3 ensuite rooms/ 6 rooms shared facilities	18
	Dungog Caravan Park	Caravan Park	basic	6 powered sites	
Dungog Surrounds	The Carriageway Resort	Resort	4	4 carriages, 2 cottages, 3 rooms	44
	Cangon Cottages	Cottage	3	2 cottages	8
	Cairnsmore	B&B	3.5	1 room	2
	Olivedale	B&B	4	1 cabin, 1 motel style room	4
	Camelot Retreat	House	3.5	House	8
Fosterton	Fosterton Lodge	B&B / Cabins	4	B&B (1 room) + 2 cabins	10
	Horseshoe House	House	3.5	House - 4 bedroom	10
Chichester Dam Road & surrounding area	Wangat Lodge / Melia / Overflow	Lodge + cottages	2.5	Lodge - 10 rooms, 2 cottages	58
	Ferndale Country Cottage	Cottage	3	1 cottage	5
	Ferndale Camping Area	Camp ground			
	Yawata Homestead & Cottage	House / Cabin	3	1 house / 1 cabins	14
	Chichester Forest Cabins	Cabin	3	2 cabins	20
	Gully Falls House	House	4	House - 4 bedroom	10
	Blue Gum Cabins	Cabin	4.5	2 cabins	4
	Dusodie Holiday Farm	Farm Stay	2.5	1 cottage / 1 cabin	16
	Barringtons Country Retreat	Resort	4-4.5	8 motel rooms, 25 houses,	200
Upper Williams River	Salisbury Lodge	Resort	4	8 rooms	20
	Barrington Wilderness Cottages	Cottages	3	20 cottages	120
	Treetops Hideaway	Cottage	4	1 cottage	6

Locality	Property	Type	Star Rating	Accommodation Units	Bed / Capacity
Main Creek Valley	The Bower Retreat	House	3.5	4 bedrooms	8
	Carawirry Cabins	Cabins	3	2 cabins	16
	Yeranda	Cabins	4	3 cabins	12
	Dingadee	House	2.5	1house	2
	Noonameena	House	3	House	10
Gresford - East Gresford & Surrounds	Tyraman Retreat	House	4	House	16-20
	Camry Allyn Homestead	Guesthouse	4	7 rooms	15-20
	Clevedon B&B	B&B	4	2 rooms	4
	Beatty Hotel	Pub Hotel	3	6 rooms	13
	Clements Road Farm House	House	2.5	4 rooms	8
	Showground Caravan Park	Caravan Park	basic	12 powered sites + camping	
Vacy & Surrounds	Vacy Village Motel	Motel	2.5	8 rooms	19
	Eaglereach Resort	Resort	4.5	40 houses - 100 rooms	200+
	Banjo's Bushland Retreat	House	4.5	House	12
	Gum Trees Heaven	House	4	House	10
Paterson	CBC Bed & Breakfast	B&B	4.5	4 - 5 rooms	6
	Court House Hotel / Motel	Hotel / Motel	2.5	8 rooms	16
	The Rileys	B&B	-	1 room	2
	Rivendell	House	4.5	2 houses	98
	Tocal Campus	Campus	2.5	90 single rooms / 2 flats	52
	Tocal - Glendarra Motel	Motel	3	27 rooms	
Clarence Town	Williams River Caravan Park	Caravan Park	3	5 cabins, caravan/camping sites	200+
	Erringhi Hotel	Pub Hotel	2.5	5 rooms	15
	Clarence Town Holiday Lodge	Lodge	3	12 rooms	24
	Wharf Reserve	Camp Ground	basic	100+ unpowered sites	200+
Clarence Town Surrounds	Gumnut Glen Cabins	Cabin	4	4 cabins	19

Locality	Property	Type	Star Rating	Accommodation Units	Bed / Capacity
Allyn River Valley	Tristania Tops Cabins	Cabins	3	2 cabins	18
	Allyn Riverside Cabins	Cabins	4	2 cabins	8
	Gunyah Hut (State Forest)	Cabin / camping	basic	1 cabin	20 max
	Allyn River Camping Areas (SF)	Camping	basic	informal camping	100+
Upper Paterson River Valley	Lostock Caravan Park	Caravan Park	3	4 cabins, 45 on-site holiday vans, 8 powered sites, camping sites	200+
Flat Tops Road	Jindabella Mountain Lodge	House	4.5	4 bedrooms	8

6.4 Demand for Accommodation - Dungog Shire

The demand for accommodation in Dungog Shire varies with the locality and the purpose of visit.

Dungog

The accommodation available in Dungog is limited, with only one motel (11 rooms), two pub hotels (46 rooms), a Bed & Breakfast property (9 rooms) and 2 serviced apartments.

The Dungog accommodation properties primarily service people coming into the area to work (eg road crews, Telstra linesmen, Government workers etc), with some tourist traffic on weekends. The Motel and Bank Hotel operate at or very close to capacity mid-week, while the occupancy rate at the Royal Hotel fluctuates between 50 and 100%. Without new accommodation, Dungog will not be able to meet the likely demand for accommodation generated during the Dam construction period.

There is concern that Dam workers will rent self contained tourist accommodation close to Dungog and/or the Dam during the construction phase, reducing the accommodation available for tourists.

The Dungog Caravan Park is designed for short-stay transit visitors and does not have the facilities to cater for longer stay visitors. There is no cabin accommodation available at the Park. The Caravan Park is also flood prone.

Rural Areas

The demand for accommodation in the rural areas of the Shire is generated by leisure-based short breaks and holiday markets. The main markets are:

- Couples - often looking for a 'romantic' escape or taking 'time out'.
- Groups of couples / adult friends
- Families - primarily visiting during school holidays
- Groups of families

Location, in terms of the quality of the site and proximity / access to attractions and activities, are important considerations for the leisure market. The strongest demand from the marketplace is for accommodation in, or within very close proximity to the Barringtons - the Barrington Tops National Park and the Chichester State Forest. The attributes being sought by the marketplace include :

- Location in very close proximity to the Barrington Ranges - most visitors want to be close to the Barrington Tops National Park.

- A very attractive bush or rural setting - views and setting are extremely important for the short breaks - romantic weekend market.

- River frontage or access to a creek / river / swimming hole. This is a major factor in summer and very important for the family market.

- An open fire-place (log fire), with air conditioning in summer.

- Properties that are in keeping with the surrounding environment, eg stone and timber cottages as opposed to transportable or prefabricated buildings. The setting and landscaping are also important in creating the 'right' atmosphere.

The weekend couples market generally seeks properties that offer privacy, while couples and families holidaying together prefer group accommodation or cabins clustered close together.

Quality, well located properties tend to have a reasonably high occupancy rate during spring and autumn weekends, public holiday weekends and school holidays. Properties with log fires are popular in winter. Occupancy is generally very low mid-week and in summer across most properties.

Camping

Camping is one of the most popular activities undertaken within Dungog Shire, with the preference being for camp-sites in the Barrington Ranges and along creeks and rivers, in particular along the Williams and Allyn Rivers.

Within the Barrington Ranges, camping is concentrated in the State Forests, with the most popular areas being at Ladies Well, White Rock and the Allyn River Forest Park on the Allyn River in the western section of the Chichester State Forest, and Telegherry Forest Park in the eastern section of the forest. The camping areas are primitive with facilities limited to pit toilets.

Based on vehicle surveys, State Forests estimates that the dedicated camping areas attract more than 100,000 campers per annum. Use of the State Forest camping and picnic areas has increased substantially in recent years. This is partly due to the transfer of forest areas within the Hunter Region to the National Parks and Wildlife Service, with the NPWS having introduced camping fees and other restrictions on campers.

Over-use is a major issue with the Forest camping areas having become degraded, with issues such as litter, destruction of vegetation to expand camp-sites and obtain firewood, pollution from human effluent and anti-social behaviour. Overcrowding and conflict between users are significant issues during peak periods.

6.5 Issues with the Accommodation Sector

The Dungog Shire Tourism Plan (2004) identified a range of issues with the accommodation sector, with the issues relevant to Tillegra Dam including:

- Capacity constraints - accommodation in Dungog is not sufficient to meet existing demand, with the motel and hotels operating at or close to capacity mid week. The accommodation throughout the Shire is generally booked out on long weekends and on public holidays. Capacity constraints limit the potential of the Shire to develop and grow events and activities and to attract markets such as coach tour groups.

- Lack of scale / capacity with dominance of very small properties most of which are not viable as stand-alone operations. The Plan identified a need for larger, commercially operated properties.

- Overuse of the camping sites within the Shire, particularly the forest sites, with demand for sites exceeding supply at peak times.

- Very strong fluctuations in demand - strong weekend and school holiday markets and low mid-week markets. The Shire experiences strong seasonal peaks and troughs. With the exception of Clarence Town, summer is the low season for most of the accommodation properties in the Shire.

- The prime locations for tourism development are often the most environmentally sensitive. Market demand is primarily for accommodation in or in very close proximity to the forests and/or rivers/creeks. Visitors are often looking for properties that have superb views, atmosphere (eg stone cottages, timber cabins), open fires and creek or river frontage. Some segments of the market are also seeking seclusion.

With the loss of the Barrington Guesthouse the Shire does not have an iconic accommodation property that is well-known in the market place. There is opportunity for accommodation at Tillegra Dam to take on this positioning.

6.6 Conference, Meetings & Function Venues

Dungog Visitors Information Centre and accommodation properties within the Shire frequently receive enquiries from organisations looking to hold small conferences and meetings in the Shire, in particular in the Dungog and Barringtons area. The conference and meeting facilities available in the Shire are limited. The venues and facilities that are of a standard suitable for 'commercial' use (as opposed to community groups) are summarised in Table 6.2.

Table 6.2 Conference, Meeting & Function Venues in Dungog Shire

Venue	Standard	Capacity - Delegates	Accommodation Capacity	
			Rooms	Beds
Venues without Accommodation				
Dungog Services Club	Basic	150 - auditorium		
Gresford Bowling Club	Basic	60 - meeting room		
Clarence Town Bowling Club	Basic	100 - lounge bar area		
Venues with Accommodation				
Eaglereach, Vacy	4.5 *	130	100 +	200+
Barrington Country Retreat	4*	25	25 lodges (up to 5 bedroom) 6 cabins Motel rooms	200+
CB Alexander Agricultural College, Tocal	3*	40 meeting room Lecture rooms Auditorium 100 - woolshed	25 single + campus accommodation outside of teaching semesters	40 – motel 100 campus – limited availability
Salisbury Lodge	4*	8-20 meeting 50 function	8	18
Tyraman Retreat, Gresford	4*	16 overnight 30 day – theatre style		16
Camry Allyn House, Gresford	4*	12 – live in		12
CBC Bed & Breakfast, Paterson	4.5*	5 meeting 45 function indoors 20 function outdoors	5	

None of the accommodation properties in Dungog have meeting facilities. Meetings are generally held at the Services Club. The small meeting room at the Club is of reasonable standard, while the Auditorium area is very basic. Noise intrusion is a major constraint in using the Club rooms.

The meeting facilities at the Clarence Town and Gresford Bowling Clubs are also basic with noise intrusion being a problem. Each of the villages has a community hall, however these are only suitable for community style meetings.

Eaglereach and Tocal Agricultural College have purpose-built meeting rooms. The Barrington Country Retreat has a house that has been designed as a live-in conference facility with a large meeting room and associated facilities. Some of the other houses at the Retreat can accommodate small meetings and/or functions in their dining or communal rooms. There are also a number of large houses within the Shire that are occasionally booked for a very small conference group (3-5 people).

There is opportunity to provide conference - meeting facilities at Tillegra Dam in conjunction with accommodation.

6.7 Implications for Tillegra Dam

In relation to visitor accommodation there is demand in Dungog Shire for:

- Additional motel accommodation in Dungog.

- A commercial caravan park in, or in relatively close proximity to Dungog. Tillegra Dam would be an optimal location for a holiday park (short term and long term holiday van sites), while Dungog is a more suitable location for a caravan park catering primarily for permanent / long term residents.

- Larger resort / eco lodge style accommodation properties - properties that have the scale to have professional management, generate employment and undertake marketing and promotion. Tillegra Dam potentially has the combination of attributes (setting, water frontage, range of activities, proximity to the Barrington's etc), that would support a quality resort.

- Accommodation with purpose-built conference and meeting facilities.

- Additional camping areas in or within close proximity to the Barrington Ranges and/or river or creek frontage.

Tillegra Dam provides the opportunity for Dungog Shire to address some of the accommodation issues including:

- Commercial caravan park targeted to the holiday and leisure markets.
- Additional camping areas / camping sites
- Larger resort / eco tourism lodge
- Accommodation with in-house conference and meeting facilities

There is sufficient area available around the Dam to provide different accommodation options targeted to different segments of the market. For example, the Dam could readily support a larger accommodation complex, similar in concept to Eco Point Resort at Myall Lakes on the eastern shore, boutique upmarket eco-lodge style accommodation on the southern arm of the dam, as well as camping in a number of primitive camping grounds around the foreshore.

Consideration should also be given to permitting house boats on the Dam as a supplementary form of accommodation.

7. POTENTIAL VISITATION - MARKET ASSESSMENT

The level and mix of visitation at Tillegra Dam will be supply-led and determined by the on-water and shore-based activities, facilities and services available.

Tillegra Dam has the potential to function as a recreation resource for residents of Dungog and the surrounding region and a day trip, short breaks and holiday destination area for both 'general' visitors and special interest groups. With the right facilities, there is also potential for the Dam to attract the conference and meetings market and to be used as an event venue.

7.1 Visitation to Water Storage Dams

The following review of visitation levels and patterns of visitation at water storage dams in the Hunter Region and inland NSW provides an indication of what could potentially be achieved at Tillegra Dam. The estimated visitation to the dams in the Hunter Valley and the larger recreational dams in inland NSW is summarised in Table 7.1.

Table 7.1 Estimated Annual Visitation to Water Storage Dams

Water Storage Dam	Estimated Number of Visitors per annum	
	Low Water Levels	High Water Levels
Large dams - with a range of on-water activities, accommodation & recreational activities:		
Glenbawn	35,000 - 40,000	50,000 - 70,000
Keepit	40,000 - 45,000	60,000 - 70,000
Copeton	30,000 - 40,000	80,000 - 100,000
Wyangala / Grabine	20,000 - 30,000	50,000 - 60,000
Burrendong	20,000 - 30,000	40,000 - 50,000
Burrinjuck	20,000 - 30,000	45,000 - 60,000
Smaller dams - some recreational facilities & caravan / camping accommodation		
Lake St Clair (power boating)	10,000 - 15,000	
Lostock Dam (no power boating)	3,000	5,000
Dams - Limited activities and facilities		
Chichester		<3,000
Grahamstown		2,000 - 3,000
Lake Liddell		2,000 - 3,000

Source: Discussions with Dam Managers

The level of visitation to water storage dams is dependent on a range of factors include the activities permitted on the waterway, the restrictions in place, the diversity and quality of the facilities available and water levels.

Throughout regional NSW, visitation is highest at the larger water storage dams with associated State Parks. These dams cater for a range of on-water activities including fishing, power boating, water skiing, wake boarding and sailing and also provide on-site accommodation and shore-based recreational facilities.

Visitation at the larger dams is strongly related to water levels, with these dams attracting upwards of 50,000 visitors per year at high water levels. Over the past decade, most of these dams have been operating at water levels of less than 50%, with water levels falling to below 10% at some of the dams. Even with the very low water levels, visitation has been relatively significant and has exceeded visitation achieved at the dams that have limited facilities and/or limited access to the water (eg Chichester, Grahamstown)

The domestic water supply dams, Chichester and Grahamstown have the lowest visitation levels, attracting less than 3,000 visitors per annum. This reflects the restrictions on on-water activities, limited recreational facilities and no accommodation. The low level of visitation to Lake Liddell is primarily due to the very poor quality of the recreational facilities available, the 'industrial' setting, the lower water quality levels and the competition from nearby dams that offer more activities and far superior facilities. Visitation to Lostock Dam is also low, again reflecting the limited facilities available, the lack of accommodation above the Dam wall and the 8 knot speed limit which prohibits power boating and towing activities.

The market mix and pattern of visitation at the Dams that cater for power boating and towing activities and provide onsite accommodation, are very similar, with the key characteristics being:

- For day trips, the Dams primarily draw visitors from the surrounding region (up to 2 hours drive). For weekends, public holidays and school holidays the Dams draw from a much wider area. All Dams contacted drew some holiday-makers from the Sydney Region, while all Dams within 5 hours of Sydney reported some weekend / long weekend visitors from Sydney. Copeton Dam near Inverell, also draws visitors from South East Queensland, including visitors from Brisbane and the Gold Coast (5-6 hours drive) confirming that residents of major coastal urban areas will travel inland to the Dams.

- Fishing is the most popular activity, with fishing undertaken year round. Around 90% of anglers fish from boats.

- Recreational boating, power boating, jet skiing, water skiing, wake boarding and other tow activities are concentrated in the warmer months, starting around October and extending though to March - April.

- Picnicking and camping are the most popular shore-based activities.

- Visitation peaks during school holidays, at Easter and on the long weekends. All accommodation and powered sites are generally booked out from the end of December though to the last week in January. Over the Christmas-New Year period the dams can attract up to 5,000 visitors per day. Visitation is low in winter, with anglers being the main visitor market.

- Outside of school holidays, visitation is higher on weekends than mid-week.

- Families and social groups are the main weekend and school holiday markets.

- Anglers, retirees and coach tour groups (primarily seniors groups), are the main mid-week markets. The Dams are seeing an increase in the 'grey nomad' touring caravan and motorhome markets.

- The larger Dams host a range of events, with fishing tournaments being the main activity. Other events include open water swim meets, power boating and ski events, sailing and rowing events, community picnics, entertainment, car and motor cycle club rallies, scout jamborees etc.

- The Dams attract a range of organised groups including:

    - Fishing clubs and social groups of anglers

- Coach tour groups
- School camps and excursions
- 4WD clubs and social groups
- Motorhome, caravan and campervan rallies and social groups
- Car and motor cycle clubs
- Scouts, Guides, Adventurers etc
- Church groups
- Family re-unions
- Institutional groups - nursing /retirement home groups, disability groups, welfare groups etc

The Dams that have a meeting / function room and on-site group accommodation also attract a range of small meetings and functions.

7.2 Potential Source of Visitors

Tillegra Dam has the potential to draw visitors from:

- Local and regional resident population with the Dam attracting day trippers, weekend, short breaks and holiday-makers.

- Sydney, Central Coast, Upper Hunter and possibly Great Lakes Shire for weekend, short breaks and holiday makers.

- Central NSW and the southern part of North Western NSW - primarily for holidays.

- Visitors staying in Dungog Shire and the surrounding region, coming to the Dam for a day trip or visiting the Dam as part of a scenic drive or visit to the Barrington areas.

- Special interests / activity based markets, coming to the Dam to undertake a specific activity - eg water skiing.

These sectors are discussed in the following sections. There is some overlap between the different data sets with, for example, residents of the Hunter Region, who take trips or holiday within the Hunter, being included in the visitor statistics.

7.3 Resident Population

As discussed in Section 2.3, Tillegra Dam is well located to attract patronage from the main population centres from Sydney through to Myall Lakes, with around 530,000 people residing within 1.5 hours drive of the Dam and 5.3 million people within 3.5 hours drive of the Dam (see Table 2.2).

Over the next 23 years (to the Year 2031), the population resident within 3.5 hours drive is forecast by the NSW Department of Planning, to increase by 1.38 million people, with growth concentrated in the Sydney Metropolitan area, Central Coast and Lower Hunter:

Region	Additional Population by 2031
Sydney Metropolitan Area	1.1 million
Central Coast	100,000
Lower Hunter	160,000
Upper Hunter / Barrington Tops	4,320
Great Lakes Shire	14,850

The expected growth in population will increase pressure on the coastal holiday destination areas as well as on recreational areas. Tillegra Dam provides the opportunity to provide a significant regional recreation area to service the Lower Hunter and Central Coast areas.

7.4 Visitors to Hunter Region, Port Stephens and Central Coast

Tillegra Dam will attract some day trips from visitors who are visiting the Hunter Region, Port Stephens and Great Lakes Shires and the Central Coast.

Based on figures provided by Tourism NSW, the Hunter Tourism Region (nine LGA's of the Hunter Valley - Barrington Tops area, excluding Port Stephens) attracts in the order of 2.2 million overnight visitors per annum and around 4.8million day trippers. Visitation in the Hunter Region is concentrated in the Lower Hunter with Newcastle, Wine Country (Pokolbin area) and Lake Macquarie being the main destinations.

Table 7.2 Estimated Visitation to the Hunter Region 2003-2007

	Estimated Visitation to the Hunter Region				
	2003	**2004**	**2005**	**2006**	**2007**
Visits ('000)					
Domestic Overnight Trips	2018	2133	1955	2147	2148
International	95	106	97	115	110
Domestic Day Trips	4198	3475	3708	4121	4821
Visitor Nights ('000)					
Domestic	5304	5300	5225	5581	5733
International	1301	1301	1507	1123	1595

Source: Tourism NSW Regional Profiles

Characteristics of visitation to the Hunter Region in 2007 are summarised below.

- The majority (82.9%) of domestic visitors to the Hunter were from NSW, with Regional NSW generating 41% of visitors and Sydney 41.9%. 17.1% of visitors were from interstate, with 7% from Queensland and 5.9% from Victoria. International visitors come primarily from the United Kingdom (22.5%), New Zealand (13.1%) and the US (12.5%).

- The main reasons for visiting the Hunter in 2007 were:

	Visits	Nights
Visit Friends and Relatives	41.9%	47.8%
Holiday / Leisure	38.8%	35.6%
Business / Conference	15.7%	11.2%
Other	4.1%	5.4%

  For international visitors, 61.4% were on holidays, 25.6% visiting friends and relatives and 7.8% travelling for business purposes. Tillegra will draw mainly from the VFR and Holiday / Leisure markets.

- Using the Australian Travel Segments, 27% of domestic visitors to the Hunter were Pampadours (want luxury), 26% were Wanderers (primarily retirees - time to tour around), 17% were compatriots (families), 15% were peer group travellers (seeking a fun experience with others), 11% were True Travellers (looking for depth of experience) and 6% other markets.

- 85.3% of domestic visitors drove to the Hunter, 7.5% flew and 3.5% travelled by rail.

- For nights spent by domestic visitors, 52.5% were in homes of friends and relatives, 13.7% in standard hotels and motels and 10.9% in luxury hotels / resort 4-5 star. International visitors preferred rented accommodation (42.1%) and staying with friends and relatives (24.8%).

- The Hunter Region attracted 4.821 million day trippers in 2007. 45.3% were holiday and leisure related, 31.1% to visit friends and relatives and 14.3% to undertake business.

Tourism Australia publishes Tourism Profiles for LGAs in regional NSW. The profiles are derived from the National and International Visitor Surveys and are based on the three year average to June 2007. The figures indicate the 'order of magnitude' of visitation.

Table 7.3 Estimated Visitation to LGA's within the Hunter and Central Coast Regions and Port Stephens and Great Lakes Shires

LGA	Domestic Day Visitors	Domestic Overnight Visitors	International Visitors
Dungog	126,000	75,000	np
Newcastle City	1,959,000	903,000	59,000
Port Stephens	612,000	617,000	27,000
Lake Macquarie	434,000	220,000	9,000
Cessnock City	543,000	322,000	29.000
Maitland City	395,000	151,000	np
Singleton City	188,000	144,000	np
Upper Hunter	np	114,000	np
Gloucester	np	103,000	np
Gosford	2,078,000	848,000	25,000
Wyong	1,084,000	488,000	9,000
Great Lakes	401,000	511,000	14,000

Source: Tourism Australia LGA Profiles NSW

These figures indicate that there are in the order of 4.370 million overnight visitors per year staying in the Hunter Region, Central Coast and Port Stephens Area, with a further 525,000 staying in Great Lakes Shire, with Tillegra Dam being accessible to these visitors for a day trip.

7.5 Visitation to Dungog Shire

Tourism Australia has prepared a visitor profile for Dungog Shire. The visitation estimates are based on a number of factors including the supply of commercial accommodation (motels, hotels, caravan parks etc). Visitors staying in the small accommodation properties and the primitive camping areas are not taken into account in the estimates, with the visitor estimates likely to be lower than the visitation achieved by the Shire. The visitor profile is summarised below:

- Dungog Shire attracts around 75,000 domestic overnight visitors per year and 126,000 domestic day trippers.

- 94% of overnight visitors to the Shire are from NSW, with 49% from Sydney and 45% from Regional NSW.

- 60% of visitors are on holidays, with 29% visiting friends and relatives.

- 34% of visitors stay with friends and relatives, 26% stay in caravans or camp, and 21% use motels, hotels, resorts or guesthouses.

- 96% drive to the Shire.

- 87% come specifically to stay in the Shire, with 13% staying in the Shire as part of a multidestination trip.

- 72% of visitors stay 1 to 2 nights, with 21% staying 3 to 4 nights.

- 51% of visitors are aged 15 to 44 years, with 31% being 45 to 64 years of age.

- Midlife singles and couples are the main market segment (34% of visitors) followed by families (29%), older working couples (19%) and retirees (18%).

- 51% of people visit the Shire with friends and/or family, 29% as adult couples and 16% by themselves.

- Bushwalking / visiting rainforest is the most popular activity undertaken (36% of visitors), followed by eating out (28%) and touring / scenic driving 26%.

In relation to Tillegra Dam, the salient points of the profile are:

- Dungog Shire is a destination area with people coming into the area primarily for holiday and leisure purposes.

- Based on the length of stay, Dungog Shire is primarily a weekend and short-breaks destination, with the Dam expected to attract these markets. In addition, the Dam will attract holiday-makers which will increase the length of stay in the Shire, with flow-on benefits for local businesses.

- There is demand for both clustered accommodation to cater for families and groups of friends, and also for more secluded / private accommodation to cater for the couples market.

- The importance of bush-walking / rainforest visits and scenic driving / touring in the activities that are undertaken by visitors to the Shire. The Dam is close to the forests and located on one of the main forest access roads and scenic drives. The Dam needs to be integrated with these attractions.

The following information on characteristics and patterns of visitation to Dungog Shire is taken from the Dungog Shire Tourism Plan (2004).

Market Segments

The Dungog Shire Tourism Plan (2004) found that the market segments attracted and the visitation patterns vary markedly throughout the Shire. These variations result from the attractions and accommodation available locally and the activities that visitors are looking to undertake while in the Shire. Broadly:

- Dungog, as the service centre for the Shire and the main rail access point, attracts a variety of market segments including business travellers, workers, day-trippers and visitors staying in accommodation in the central areas of the Shire - Main Creek, Chichester River Valley, Williams River (Salisbury Road) and Monkerai Valley. Dungog sees more of the middle to high income visitors than it does of the camping market.

- In Clarence Town, the Williams River is the main attraction with visitors coming to town to camp by the river, boat, waterski and fish. Visitation is concentrated during the warmer months, peaking in summer.

- Visitation to Paterson is strongly influenced by the events, conferences / meetings and activities held at the CB Alexander Agricultural College at Tocal. Day visitation is influenced by the proximity of Paterson to Maitland and Morpeth and to the availability of attractive riverside picnic areas, the historic hotel and the eateries.

- The visitation to Gresford is mixed. Gresford services the camping and caravan markets that are staying at Lostock Dam in the Upper Paterson River Valley and in the State Forests on the Upper Allyn River. It also has a strong local holiday home market.

- In the rural areas, the Chichester State Forest and the Upper Paterson and Allyn River areas attract mainly campers. Lostock Dam attracts anglers, day visitors (picnics and boating) and people with boats. The Allyn River camping area is very popular with families and social groups and clubs. The Upper Williams River Valley and the Main Creek area tend to attract visitors looking for a 'nature-based' experience and/or a rural / bush escape. Chichester Dam attracts some picnickers and coach groups. Chichester State Forest / Telegherry Forest Park attracts larger groups, 4WD enthusiasts , families and off-road motorcyclists.

The primary and secondary visitors markets (excluding VFR) attracted to the different areas within the Shire are summarised in Table 7.4.

Table 7.4 Market Segments by Locality - Dungog Shire

Locality	**Primary Markets**	**Secondary/Minor Markets**
Towns & Villages		
Dungog Township	▪ Business travellers / workers ▪ Short breaks ▪ Day visitors - Country Drive ▪ Short-breaks market ▪ Retirees - FIT & group	▪ Walking / social clubs arriving by train ▪ Coach tours - day ▪ International FIT ▪ Families ▪ Cyclists ▪ Show and Sporting events
Clarence Town	▪ Seniors - day visitors from the surrounding region ▪ Seniors - staying on the river ▪ Anglers ▪ Waterskiers / Boating ▪ Families - riverside camping	▪ Day coach tour groups ▪ Anglers - events ▪ Car clubs ▪ Pony clubs ▪ Social groups ▪ Bowling - events
Paterson	▪ Day visitors - country drive ▪ Barringtons through traffic ▪ Picnickers - groups and individuals ▪ Conference / meeting delegates - Tocal ▪ Major regional events - Steamfest, Morpeth Jazz Festival, Tocal Field Days	▪ Weddings & functions ▪ Coach tours - day ▪ Walking clubs (rail) ▪ Short breaks ▪ Car Clubs
Gresford-East Gresford	▪ Day visitors from the surrounding resorts visiting the wineries / bistro ▪ Day visitors - Central Coast / Lower Hunter - country drive ▪ VFR / local functions ▪ Events - show / rodeo ▪ Barrington's traffic - camping ▪ Second home / holiday home	▪ Special interest craft groups ▪ Short breaks - couples ▪ Daytrip coaches ▪ Motorcycle groups ▪ Motor Home & Caravan Clubs ▪ Barrington traffic - non camping

Rural Areas		
Upper Paterson River Valley / Lostock Dam	▪ Day trippers - picnics & boating ▪ Families - camping ▪ Social groups - camping ▪ Holiday van users	▪ Anglers ▪ Short breaks (non camping accommodation)
Upper Allyn River - Chichester State Forest	▪ Families - camping ▪ Social groups - camping ▪ 4WD enthusiasts ▪ Dirt bike riders	▪ Short breaks (non camping accommodation) ▪ Bushwalkers / nature based ▪ Guided tours
Upper Williams River - Barrington Guesthouse, Salisbury area	▪ Day visitors - sightseeing, picnics, dining, walking ▪ Short breaks - couples & groups of couples ▪ Walkers / nature based	▪ Conferences & meetings ▪ International groups ▪ International FIT ▪ 4WD ▪ Families ▪ Coach groups
Chichester Dam - Chichester Valley	▪ Short breaks - couples ▪ Short breaks - groups of couples ▪ Families - school holidays ▪ Day visitors - picnics	▪ Conference & meetings ▪ International FIT ▪ Campers ▪ School groups ▪ Church groups
Chichester State Forest areas - Jerusalem Creek & Telegherry Forest Parks	▪ Families ▪ Large social groups ▪ 4WD enthusiasts ▪ Dirt bikes - individual, groups, tours	▪ Day visitors ▪ Bushwalkers ▪ Bike tours
Main Creek	▪ Short breaks - couples ▪ Families ▪ Nature enthusiasts	▪ Special interest groups ▪ Bird watchers
Other rural (non Barringtons located)	▪ Short breaks - couples ▪ Short breaks - groups of couples	▪ Families ▪ Retirees

Source: Dungog Shire Tourism Plan (2004)

Source of Visitors

Visitors to Dungog Shire are drawn primarily from the Hunter Valley, Central Coast and Sydney. Based on discussions with operators, the primary and secondary sources for each of the main market segments are summarised in Table 7.5.

Table 7.5 Market Segment by Origin

Market Segment	Primary Source	Secondary Source
Short breaks couples - up-market	Sydney	Newcastle, Hunter
Short breaks - couples mid-market	Newcastle, Lake Macquarie	Sydney, Central Coast, Hunter
Groups of couples	Newcastle, Sydney	Central Coast
Families - non camping	Sydney, Lower Hunter	Other Hunter, Central Coast
Families - camping	Newcastle, Lower Hunter, Central Coast	Other Hunter, Sydney
Day trippers - FIT sight seeing	Residents of & visitors staying in Newcastle, Lower Hunter, Central Coast, Port Stephens	Other Hunter
Day trippers - picnickers	Lower Hunter - mainly Maitland & Newcastle	Other Hunter
Waterskiers, boating	Lower Hunter, Port Stephens	Central Coast, Sydney
Retirees - FIT self drive	Sydney	All NSW & interstate
Coach Tour Groups - day trips	Lower Hunter, Central Coast	Port Stephens, Great Lakes Shire, other Hunter
Social groups - walking clubs (arrive by train)	Central Coast	Lower Hunter
Conferences & Meetings	Newcastle, Sydney	Lower Hunter, other Hunter
4WD / Off-Road	Newcastle, Lower Hunter	Central Coast, Sydney
International	Mainly coming out of Sydney - visiting as part of a self-drive Hunter or North Coast trip	

Source: Dungog Shire Tourism Plan (2004)

Visitation Patterns

- Visitation to the Shire is seasonal. For all areas, excluding Clarence Town, visitation is concentrated in the cooler months, peaking in autumn and spring. Due to the heat, visitation in summer is very low in all areas, except Clarence Town. Tillegra Dam will provide a 'summer' attraction for the Shire, which will help address seasonality issues.

- Visitation is concentrated on weekends with very low midweek visitation, other than for business or school excursion related travel. Most accommodation within the Shire is booked out for public holidays - long weekends in June and October and the Easter weekend.

- There is a high level of repeat visitation with visitors often using the area in a number of ways - as a couple looking to escape for the weekend, visiting with other couples - a social weekend and bringing their families. It is not uncommon for visitors to choose different accommodation depending on the purpose of their visit and who they are travelling with.

- Riverside camping is very popular in the warmer months and summer school holiday periods.

- Other than for peak periods, booking lead times are generally very short.

Reasons for Visiting

Based on discussions with operators, the main reasons for visiting the Shire appear to be:

- To 'escape' from the day-to-day grind of urban living - visitors want to relax and unwind in an attractive rural or bush setting. The preference from visitors is to be as close as possible to the

Barringtons, with a creek / riverside location or a location with views preferred.

- Sight-seeing - 'a country drive' - Dungog Shire is one of the closest rural and mountainous areas to the Lower Hunter and Central Coast urban areas. In contrast to other areas also bordering the Lower Hunter, such as Port Stephens and the Hunter Wine Country, Dungog is perceived as being uncrowded, not 'touristy' and not over-commercialised (which is one of the main complaints about Wine Country).

- To visit the Barrington Tops National Park.

- To go camping - 'back to basics' or 'back to nature'.

7.6 Special Interest / Activity Based Markets

The recreational-based water storage dams attract a range of special interest / activity based markets. This section explores the characteristics of the main activity based market segments that are potentially significant users of Tillegra Dam and surrounding area:

<u>On-water</u>
- Anglers
- Boating enthusiasts / power boating
- Water-skiers and wake-boarders

<u>Shore-based</u>
- Mountain bikes
- Caravan & Motorhome
- Coach Tour Groups
- 4WD groups

Anglers

Fishing is the most popular activity undertaken at water storage dams. It is also the most popular activity undertaken in the coastal lakes. Fishing is undertaken year round, with the market incorporating individuals, families, small groups of friends and fishing clubs.

In 2000-01 a major survey, the National Recreational and Indigenous Fishing Survey (NRIFS) was undertaken Australia-wide to collect information on the recreational fishing. The key findings of this survey of interest for Tillegra Dam were:

- In 2000/01 there were an estimated 3.6 million anglers in Australia, with these anglers taking 23.2 million fishing trips per annum.

- NSW and Queensland have the highest numbers of anglers, 999,000 and 785,000 respectively.

- Around 6.3 million fishing trips are undertaken in NSW each year.

- Almost half of anglers in NSW (482,739 anglers) lived in the Sydney Metropolitan area. The Hunter Region (131,348 anglers) ranked second, followed by the Mid North Coast (74,441 anglers) and the Illawarra Region (73,686 anglers).

Region of Residence	No Anglers	% of State	Participation Rate
Sydney	482739	48.3%	13.1%
Hunter	131348	13.2%	25.2%
Illawarra	73686	7.4%	20.9%
Richmond -Tweed	49995	5.0%	26.0%
Mid North Coast	74441	7.5%	29.9%
Northern & Central West	62894	6.3%	20.5%
North West & Far West	28404	2.8%	22.7%
South East	49264	4.9%	30.1%
Murray - Murrumbidgee	45729	4.6%	19.9%
Total	**998501**	**100%**	**17.1%**

- Nationally, freshwater fishing accounts for 20% of fishing trips. Of the freshwater fishing trips, 55% were to rivers and 45% to dams. In NSW freshwater fishing accounted for 24% of fishing trips (1.85 million trips – 60.3% rivers and 39.7% dams and lakes)

- 57% of fishing is shore-based, with 43% from boats.

- Recreational fishing is more popular with males (2.3million male anglers to 1.1million female anglers), and is dominated by people aged 30-44 years.

- The majority of anglers nominated non-catch related factors as more important than catching a fish. The primary reasons for going fishing were 'to relax and unwind' (37% of respondents), 'for sport' (18%), to 'spend time with family' (15%) and 'to be outdoors' (13%). Only 8% of respondents nominated 'catching a fish to eat' as their primary motivation for fishing.

- Only 4.3% of anglers were members of Fishing Clubs, with males (5%) more likely to belong to a Club than females (3%). Around 5% of anglers participated in tournaments. 5.6% of anglers in NSW belonged to Clubs.

- Anglers are moving more up-market, with a growing trend to staying in cabins, apartments and lodges rather than camping. The quality of the boats used is increasing, with less 'tinnies' and more $30,000+ vessels.

The fishing market is segmented, with the market segments attracted to Water Storage Dams including:

- **Fishing Clubs -** Most fishing clubs organise weekends away (usually 6-10 trips per annum), with 1 to 2 of these trips each year often being to freshwater locations. Fishing club trips are generally weekend based, from Friday through to Sunday. An increasing number of the fishing clubs are organising family weekends away, rather than just groups of men. Group size tends to be in the order of 15-30 anglers (plus partners and families). Groups dominated by families generally prefer to camp while smaller groups of males will stay in cabins, pub hotels or camp, depending on the accommodation available.

- **Seniors / Grey Nomads -** Fishing is popular amongst retirees, with fishing being one of a range of activities undertaken while travelling. Retirees coming to Dams to fish generally have their own caravan, motorhome or camper van, or stay in cabins if available. Some retirees travel with a small boat as part of their rig, while others will hire a boat. Shore-based fishing is also popular, with travellers looking for water-front camp sites so that they can fish.

- **Families** – Dams are very popular with families. Visitation is concentrated in the summer school holidays, at Easter and the October Long Weekend. Families primarily camp (particularly if travelling with other families), or stay in cabins. Most families / groups staying at Dams bring a boat, with fishing being one of a range of activities undertaken at the Dam.

- **Groups of Friends -** This market consists of hard-core anglers (mostly male) who organise fishing trips. Groups are generally in the order of 10-15 people. The two priorities are usually fishing and drinking. In the past this was primarily a camping market, however as the market has aged, there has been a shift to cabins.

- **Competitors -** competing in fishing tournaments at the Dams. The larger tournaments (eg Great Inland Fishing Festival held at Copeton Dam) attract around the 500-600 competitors, while smaller tournaments (eg the tournaments held at Glenbawn Dam) average around 100 competitors.

One market that the Snowy Mountains Dams attract that is not strong at the other water storage dams are individual, experienced anglers**.** This market comes mainly out of the capital cities, and is predominantly male, 40+ years of age, professionals or self employed with reasonably high disposable income. This market has a preference for up-market accommodation and tends to use fishing guides. This product is not available at the water storage dams throughout NSW.

Boating Enthusiasts / Power Boating

According to the Boating Industry Association of NSW, in June 2007 there were 214,063 registered recreational boats in NSW, representing around 92.4% of total registered boats in NSW. The number of new boats being registered per year has between 13,400 and 15,800 pa over the past 6 years, with slowing in growth over the past 4 years. Around 85% of registered boats in NSW are trailer boats (<6m in length).

There is a strong link between boat sales and the state of the economy / economic outlook. The slowing in new boat registrations is partially due to the slowing of the economy and partially to the increase in fuel prices. Based on discussions with Dam Managers, there has been a fall-off in boating activity in recent years, however they believe that this is mainly attributable to the drought and low water levels. There are some indications that rising petrol prices are having an impact on boating with people are finding it more expensive to both tow and operate their boats. Since Christmas, there has been an increase in the number of people wanting to store their boats at the Dams rather than tow them home. Some of the Dams also report an increase in visitation from local and regional residents holidaying at the Dam rather than towing their boats to the coast.

Fresh water dams are popular with boat owners as freshwater is not corrosive, and boat engines do not need to be flushed each time they are pulled out of the water.

Competitive powerboat racing is a relatively small sport. There are 9 power boat racing clubs in NSW, including the Raymond Terrace Aquatic Club, NSW Hydroplane Club at Singleton and the Port Stephens Regatta Club, with these clubs having around 150 competitive boats. There are 6 racing divisions - Displacements (inboard power boats), Hydroplanes (purpose built racing boats), Outboards, Drag Boats, Offshore boats and Juniors (small outboards). Hydroplane Boats travel at higher speeds and are less manoeuvrable than the displacements and outboard boats and as such have more stringent requirements and are not always suitable to river courses.

The Raymond Terrace Aquatic Club races on the Hunter / Williams River at Raymond Terrace. The Club has around 50 members and 20 competitive boats. It holds a monthly competition, and generally hosts a State or National event each year.

The NSW Hydroplane Association used to hold events on Lake Liddell however the fluctuating water levels were a major problem. The Association currently uses other venues including Toukley, the Raymond Terrace facilities, Lake Lyell near Lithgow and the Manning River at Taree. The Association is looking for a competition venue close to Sydney - Newcastle Region.

Factors taken into account in selecting locations for power boat competitions include:

- Ability to establish a course - power boats use a running start. The course needs to be at least 1.5km long (with the racing straight being 800 to 900 metres long plus space on either end to provide for the running start and the power down) and 80-100m wide for power boat events and 100-300m wide for the hydroplane boats. The Australian Power Boat Association recommends a course length of 1,800 to 2,400 metres.

- Depth - minimum depth of 3 metres and maximum of 20 metres, with around 10m preferred. The depth needs to be suitable to anchor the course marker buoys and also to recover boats and competitors if they have an accident.

- At least 30m between the shoreline and the edge of the course.

- Protected areas - minimal wind and chop.

- Beach / foreshore area to leave the boats between races. For National events and 'Spectaculars' boats are pulled in and out of the water after each race. This requires either two boat ramps each 2-3 lanes wide (preferred option) or one large (4-6 lane) ramp.

- Control tower - which has visibility of the total course.

NSW struggles to accommodate major power boat and hydroplane events. Major events, such as the Griffen Cup, Bundy Thunder or the TransTasman Challenge will attract 5,000 to 10,000 spectators. Currently these events are being mainly held at Yarrawonga in Victoria and on the Burnett River at Bundaberg in Queensland. There is a proposal being considered to include a powerboat racing course as part of the Nepean Lakes Scheme in Western Sydney.

Additional facilities needed to accommodate the large events (as opposed to Club racing) include:

- Pit area - large sealed area that is accessible to the boat ramp and can be screened off to prevent public access.

- Flat, sealed area adjacent to the foreshore which can accommodate a small crane, to lift boats into and out of the water.

- Facilities to cater for 5,000 to 10,000 spectators.

The NSW Hydroplane Club advised that if it had a venue, it would be looking to hold regular club days plus 3-4 larger events per year potentially including one major National / International event.

If a power boat club was to be based at the Dam, the Club would be looking to establish a club house / storage facilities with the storage facilities able to accommodate the rescue boat, buoys and other equipment (double garage size).

Towing Activities - Water Skiing / Wakeboarding

Tow activities are a very popular summer activity at the recreational water storage dams. Most of the use is recreational with the very occasional competitive event.

The Waterski and Wake Board Federation of Australia estimate that there are around 1.5 to 1.6 million people in Australia per year that participate in some form of water-skiing, wake boarding and/or biscuit riding. Most participants are recreationalists. The competitive ski / wake board market is relatively small, around 5-10% of participants.

The Waterways Authority advise that wake boarding is the fastest growing water sport in Australia. Wake boarding however relies on the boat creating 'waves' which can, in confined waters, result in bank erosion.

According to the Federation, large water storages are ideal for all forms of recreational skiing activities however they are generally not suitable for competitive events, unless there is a protected arm.

Competitive water skiing and wake boarding events require protected waters with no cross-winds. Most competitive racing in NSW is undertaken on the larger coastal rivers and the Murray River. Water storage dams are mainly used for training and for recreational skiing. In competitive racing, only one boat is used to tow all competitors.

Until 2006, the Williams River was the focal point for water skiing and wake boarding in the Lower Hunter Region, with activities undertaken on the River at Clarence Town, Seaham and Raymond Terrace. As a result of bank erosion, speed limits and no-wake zones have been introduced at various locations along the River. This has focused tow activities at Raymond Terrace. Congestion is a major issue. The Waterways Authority has advised that it would like to see these activities relocated elsewhere, in particular wake boarding which the Authority does not consider sustainable given the condition of the river banks.

Competitive water skiing and water ski training on the Williams River has been scaled back. A tournament training site has been developed at Myuna Bay on Lake Macquarie, with most training programs now undertaken at this site.

Zone 2 (Hunter Region) water skiers advised that they would potentially use Tillegra Dam 2 to 3 times per year for competitive events, provided that the water body is suitable for setting up a course, and the facilities are adequate. Course requirements include:

- Very calm water - no cross winds or chop
- No back wash - bank slopes of 30-45^{o} to absorb rather than reflect the wash.
- Course length of 800 to 900m (preferred - 700 minimum) plus run-up and power down zones at each end
- Width 50m minimum for straight racing, 100m for slalom.
- Water depth 3 to 5 metres preferred.
- Control / judges tower
- Boat launching ramp
- Foreshore area to ski from

Tournaments are generally run over a weekend and attract around 100 to 150 competitors.

Mountain Biking

Cycle tourism is growing both in Australia and internationally, with mountain-biking being the strongest growing sector. According to Bicycle Industries Australia, there are on average 1.133 million bicycles sold in Australia each year with 69.8% of the adult bikes sold being mountain bikes (73.4% in NSW). There are 26 mountain bike clubs in NSW, including the Hunter Mountain Bike Association which has around 300-350 rider members.

According to Mountain Bike Australia, the majority of Mountain-bikers are recreational based with this market including a wide spectrum of people of varying levels of skill. The purpose built mountain bike trails attract a greater proportion of intermediate and advanced riders while the service trails, rail trails etc tend to attract family groups, older riders and beginners.

In selecting locations to ride, considerations include:

- Concentration of trails - looking for a network of trails that offer a range of experiences.
- Mix of trails - preference is for single trails, however fire trails are acceptable as a 'link ' between single trails.
- Progression of trails - from easy through to advanced with a variety of challenges.
- Iconic country with attractive setting
- Safety / easy of navigation - preference being for defined track heads and marked trails.
- Support infrastructure close by.
- For down hill / gravity riding - options for getting back up the hill

Off-road riding is a relatively new activity, with the off-road disciplines still developing as people discover different ways to use mountain bikes. Competitive off-road events include:

- Mountain Bike
  - Cross Country (XC)
  - Down Hill (DH)
  - Mountain Cross / Gravity 4X Course (part of down hill)
  - Dirt Criterium
  - Trials (obstacle course)
  - Endurance
  - Timed events - eg 24 hour
  - Freestyle

- Orienteering & Rogaining - offshoot from mountain biking and generally organised by the orienteering associations

- AUDAX - long distance rides 35-200 km on dirt

- Polaris - bike navigation events - urban and dirt challenges - using mountain bikes

- Adventure Racing - multi-discipline which can include a cycle leg (usually mountain bike).

- Triathlon / Duathlon (combined disciplines - with an off-road cycling leg)

Each of these disciplines could potentially be undertaken at Tillegra Dam through the development of purpose-built mountain trails around the Dam and by linking these trails across to the trails in the Chichester State Forest.

According to Mountain Bike Australia, around 10% of 'regular' mountain bike riders belong to Clubs, with the Clubs undertaking a range of social and training rides and competitive events. Social rides attract between 30 and 150 riders, while Club events generally draw around 100-300 competitors. Open events attract from 500 to 3,000 competitors.

Club members spend around 10% of time competing and 90% riding for training and recreational purposes. Around 70 - 75% of serious mountain bikers are male, with the number of females increasing. For events, the ratio is around 80% men and 20% women, with this having shifted from 90:10 over the past decade.

There are three main groups of competitive riders:

- Males - Late teens / 20's - prefer downhill and extreme riding
- 30-50's - men and women - cross country, endurance and long distance trail riding
- 50's+ around 50% of this group compete in hard core cross country with the remainder participating in shorter, easier rides.

Mountain-bike riders, particularly the competitive riders, generally have relatively high disposable incomes and will travel to access trails. The preference is for cabin, lodge and motel accommodation, more-so than camping.

Within the Hunter Valley the main areas used for mountain-biking are the Awaba State Forest, Watagans (Ourimbah to Congewai Loop 30km), Glenrock State Conservation Area and around Caves Beach. The availability of areas to ride has been reduced with the transfer of State Forests to National Parks (DECC). DECC is currently looking to scale back riding at Glenrock.

The Hunter Mountain Bike Association, with the approval of State Forests, is currently developing a Mountain Bike Park in the Awaba State Forest. The Club has developed a downhill course and has started on constructing a cross country course (8km). The Club is also looking to put in around 40km of trails.

Both the Dungog Community and the Hunter Mountain Bike Association have suggested developing mountain bike trails around the Tillegra Dam foreshore, with the Dam having a network of trails that would allow for both recreational and competitive riding.

Track lengths needed for competitive riding include:

- Cross country - 6 to 10km circuit
- Endurance (8 hour) races - 10 to 15km circuit
- 12 and 24 hour races - 18 to 20km circuits
- Marathon - 110km point to point

According to Mountain Bike Australia, preference is for an area to provide a concentration of single trails of varying difficulty, with access to a network of long distance tracks, again of varying degrees of difficulty. For a day ride (for people wanting to 'explore), single purpose built trails need to be about 40km in length, while mixed single - fire trail trails need to be 60-80km in length. Ideally trails should be looped from track heads where car parking and facilities are available. Any trail less than 10km in length is regarded as a 'short' ride by recreational riders. In addition to providing trails around the Dam foreshore, a network of trails would need to be identified in the Chichester State Forest, with a trail linking the Dam to the Forest. Consideration also needs to be given to establishing a cycle way from Dungog to the Dam and also from Dungog to Newcastle, either along the pipeline of by using State Forests, Crown Reserves, Road Reserves, Travelling Stock Routes etc.

The Hunter Mountain Bike Association and Mountain Bike Australia have suggested the following recent developments / proposals as examples for incorporating mountain bike parks into major regional recreation areas:

- Lysterfield Park in Victoria - Lake (82ha) and regional park incorporating the State Mountain Bike Centre (used for the Commonwealth Games), equestrian trails and walking trails as well as picnic areas, beaches and non-motorised boating activities.

- Traverston Dam in Queensland - currently going through the assessment process, with a proposal to develop the Dam as a major recreational and tourism destination, with mountain biking being one of the activities proposed.

- Stromlo Forest Park in the ACT - major recreation area including an international standard mountain bike park, road and criterion cycling circuits, walking trails, equestrian trails and facilities, general recreation areas and event staging areas. This Forest was completely destroyed by the 2004 fires in the ACT, with the ACT Government putting in the recreation facilities and infrastructure before re-planting the forest.

Caravans, Campervans and Motorhomes

The touring caravan, campervan and motorhome market is a growing market throughout Australia. with all Dams contacted for this study reporting an increase in the number of touring vans attracted. Some of the Dams are also attracting rallies and social outings from caravan, campervan and motorhome clubs and associations. Dungog Shire is seeing some growth in this market, albeit from a very small base, with an increase in travellers at both commercial and free camping areas. Gresford Showground has also been used by motorhome clubs from the surrounding region for rallies.

The peak industry group, the Campervan and Motorhome Club of Australia (CMCA) has over 50,000 members, with membership growing strongly. The CMCA has a regional Chapter structure, with each Chapter holding an annual meeting and also organising a number of trips each year. CMCA also hold State and National meetings and conventions, with these events attracting over 1,000 rigs. Other similar associations and clubs (eg Winabago Owners Association, Caravan Club of Australia) also regularly organise trips and rallies.

International visitors hiring Campervans to tour Australia are a growing market with hire companies, such as Britts and Kia, expanding rapidly and expecting this market to continue to grow strongly over the next decade.

Most rigs are now self-contained. Travellers tend to travel outside of school holiday periods and generally stay in a mix of commercial parks and 'free' areas. Most travellers do not have 'set' itineraries. As such travellers are relatively flexible in where they travel and how long they stay. The Dams report that travellers will often stay 5 to 7 days, with Lake St Clair having travellers who have stayed for up to 3 months. Factors that are important to this market, which influence travel patterns include:

- Word-of-mouth referrals from other travellers.
- Camping areas in scenically attractive areas, with water bodies and river foreshores being a favoured location.
- Rallies, meetings and events held by the caravan / motor home clubs and associations, with travellers slowly making their way to and from these activities.
- Safety - there is a fear and avoidance of areas that have a reputation for crime.
- Need to access facilities such as a dump point, laundry, power to recharge batteries etc
- The attraction base of an area and the events being held.

The provision of caravan and camping facilities at Tillegra Dam should enable Dungog Shire to build the touring van market and also to bid for club trips and rallies.

Coach Tour Groups / Social Groups

Coach tour groups are a small mid-week, day trip market for most of the water storage dams in the Hunter Valley and also for the larger recreational dams in inland NSW. Most coach tour groups are retirees and special needs groups, who visit dams primarily as a morning or lunch stop, with groups generally bringing their own picnic. These groups tend to use the large picnic shelters where available. Coach tour groups generally don't stay at the Dams as the accommodation available is not suitable for groups, with groups preferring motel style accommodation.

Dungog Shire attracts the occasional coach tour group, however the number of groups has decreased since the Barrington Guesthouse burnt down. Dungog also attracts walking groups (mainly seniors) who catch the train to Dungog, walk around town, have a meal and then catch the train home. These groups are mainly from the Lower Hunter and Central Coast.

With the loss of the Guesthouse, Dungog Shire does not have accommodation suitable for the coach tour market, with the few larger properties that are available being too expensive for the coach market.

With quality picnic facilities at Tillegra Dam, the Dam should attract some coach tour groups, particularly if the Dam is effectively packaged with the river-walk at the Williams River Picnic Area of the Barrington Tops National Park and other activities within the Shire (eg Camelot Lavender Farm, the wineries at Gresford, farm gate sales, the historic museums etc). There is potential for the local coach operator to meet the train and run tours for groups out to the Dam and the base of the Barringtons.

The ability of Tillegra Dam to attract overnight coach tour groups will depend on the accommodation provided at the Dam. The coach market will use mid-priced motel, lodges, guesthouse and resort accommodation. The market is typically looking for well presented 3.5 to 4 star properties, with a minimum of 25 rooms of the same standard, and an in-house restaurant or an adjoining eatery.

Most coach tour passengers are elderly and this influences the choice of accommodation. The features taken into consideration in selecting accommodation include:

- Size of the property - 25+ rooms. The demand is generally higher for twin share than double beds, particularly for seniors.
- Disabled / assisted access provisions.
- Package offered and price - for accommodation, dinner (2 course meal), bed and breakfast tour organisers are looking at around $80-$90 per person and will generally not go above $110 per person per night in regional areas.
- Ground floor rooms or properties with lifts preferred. (With elderly clientele the coach driver often has to deliver luggage to the rooms). The rooms need to be near the coach drop-off and pick-up point.
- Ensuite facilities for each room.
- Separate showers in the bathroom - tour organisers will generally not book rooms were the shower is over the bath.
- Facilities in the rooms - tea and coffee and own iron and ironing boards are essential, with hair driers preferred.
- On-site parking for the coach (preferred but not essential).
- The rooms need to have air-conditioning and heating.
- On-site restaurant / dining room and the ability to provide group breakfast.
- An area for group interaction - can be outdoors if appropriately sheltered and heated in winter.

Coach operators prefer not to split a coach group between different properties or spread the group out over a wide area. Tillegra Dam has the potential to attract the overnight coach tour market if the accommodation available meets the requirements of this market.

4WD Market

The 4WD market is a market for the Dams, with the Dams attracting both 4WD club and visitors who drive 4WD and are looking for some 'soft adventure' driving. The Lostock Dam and Lake St Clair caravan parks both attract 4WD clubs and social groups with 4WD vehicles, who set-up camp at the Parks and explore the forest trails in the Barringtons.

Broadly the 4WD market incorporates a number of segments:

- Hard core 4 WD enthusiasts – looking for challenging trails (small proportion of the market)

- 4WD clubs – organize regular trips, with the trips designed for different skill levels.

- Beginners - Owners of 4WD who want to try their vehicle off-road on fire trails and gravel roads, but don’t have the technical skills for difficult terrain.

- ‘Soft Roaders’ – people who own the ‘light-weight’ vehicles with 4WD and All Wheel Drive capability, such as the Suburu Forester, RAV 4 etc. These vehicles are suitable for fire trails and gravel roads but don’t have the low range capability and/or clearance for hard core 4WD driving.

- Outdoor recreationalists - There is a high level of 4WD and soft roader ownership amongst people involved in outdoor recreation - campers, bush walkers, mountain bikers, anglers, horse riders, boat owners etc, with these people using their vehicles to access the activities that they want to undertake. This market will use 4WD trails to access a landmark or attraction and to explore the surrounding area.

- Commercial 4WD tour and tag-along operators and 4WD instructors.

- Driver Training - including emergency services, government and council staff.

There are eighty 4WD Clubs in NSW registered with 4WD NSW. Of these, 36 clubs are Sydney-based, with 12 clubs in the Hunter, 4 on the Central Coast and 1 at Tamworth. Club membership is dominated by families, followed by 'empty nesters'.

Most Clubs organise at least one trip per month, with the larger clubs offering at least one trip per week. The trip calendar is generally set 12-18 months ahead. In addition, Club members can organise trips amongst themselves, with these trips then registered with the Club for insurance purposes. Trip programs typically include a mix of extended trips (eg Simpson Desert), shorter trips (up to 14 days), weekend/short breaks (2-4 days) and day trips. Trips are generally graded in terms of difficulty, with soft roaders usually catered for on the easier grades (There is no Australia-wide grading system with each club having their own grading system). The number of vehicles participating on a trip is usually capped, with 6-10 vehicles for a difficult trip with 'tight' trails and up to 30 vehicles for 'easy' trips.

While most trips involve some unsealed roads and/off-road driving, Clubs also organise road trips, eg to winery areas, Warrumbungles National Park, inland dams, Myall Lakes etc. Camping is the preferred form of accommodation, although not the only form of accommodation used. Scenery, the quality of the camping area/s and the ability to participate in outdoor activities (eg bushwalking, fishing, canoeing) are key considerations in developing trip itineraries.

Camping is one of the primary activities undertaken by the 4WD market, with camping in natural areas being one of the main attractions of 4 wheel driving.

In recent years there has been a strong growth in sales of 4WD camper trailers, with these trailers proving very popular with the 4WD market. They are also popular with the grey nomad market as they are more cost effective and easier to tow than a caravan. The trailers can be taken on most 4WD trails. The trailers are changing the way people tour and camp, with the trailer containing the tent and cooking facilities.

The Hunter Region is popular for 4WD trips, with Clubs in Sydney, Central Coast and Hunter Region organising both day trips and 2-3 day touring trips to the Region. The highest profile 4WD areas in the Region are:

- Barrington Tops - with the Barrington Trail considered a 'must do' trail.
- Chichester State Forest
- Massey Creek State Forest - the Newcastle 4WD Club has a 4WD park in this Forest
- Stockton Beach / Stockton sand dunes
- Watagans - National Park and surrounding State Forests

There are also a number of 4WD tour operators and off-road motorcycle tour operators who run guided and tag-along tours in the State Forests and National Parks in the Barrington Region and other nearby areas of the Hunter.

With the proximity to Barrington Tops and the Chichester and Massey Creek State Forests, and being within 1 hours drive of the Watagans and Stockton Beach, Tillegra Dam would be a 'logical' place for 4WD clubs and social groups to camp and use as a base to explore the surrounding region.

The availability of 4wd tours as well as self-drive trails in the area surrounding the Dam are 'soft adventure' activities that can be promoted to Dam users, increasing the attraction base of the Dam. A large camp kitchen with group facilities, plus a communal fire pit will prove popular with the 4WD club market and also with other groups (eg caravan and motorhome groups).
.

8. KEY FINDINGS & RECOMMENDATIONS

The proposed Tillegra Dam is located on the Williams River, on the southern side of the Barrington Ranges, approximately 12km north of Dungog. The Dam will be a large water storage area (around 2,000 hectares in surface area), that will developed and operated by Hunter Water. Hunter Water has advised that the Dam will be available for recreational and tourism activities, including motorised boating. Activities on and around the Dam will need to be non-polluting and meet stringent environmental controls.

The Dungog community is seeking the 'best' outcomes from the Dam from environmental, community and economic perspectives. The community strongly supports the Dam becoming a regional recreational area and a major tourist attraction and destination.

The main finding of the assessment of potential recreation and tourism uses for the Dam are summarised below.

8.1 Potential of Large Water Storage Dams

- Large water storage dams with quality recreational facilities and a range of accommodation are important recreational and tourism assets for their local areas. These dams attract upwards of 20,000 visitors per annum, with the State Parks attracting in excess of 50,000 visitors per annum when water levels are high.
- Dams with limited access and or limited / poor standard facilities (eg Chichester, Grahamstown, Lake Liddell) attract very low levels of visitation (less than 3,000 people per annum) and make minimal contribution to the local economy.
- The larger water storage dams in both the Hunter Region and more remote inland areas of NSW, draw from a variety of source markets including the Sydney Metropolitan Area, Central Coast and Lower Hunter.
- Visitation levels are linked to water levels. Most of the dams used to supply water for agriculture, experience significant fluctuations in water levels.
- Fishing is the most popular on-water activity, followed by power boating and tow activities (water skiing, wake boarding etc). Fishing occurs year round, with other on-water activities concentrated in the warmer months.

8.2 Assessment of Tillegra Dam

Tillegra Dam has the potential to become a major recreational resource and tourist attraction for Dungog Shire and the Hunter Region. The main attributes and competitive advantages of the proposed Dam are:

- Tillegra will be the closest large, recreational freshwater body to the major population centres (Sydney, Central Coast and Lower Hunter). There are 530,000 people residing within 1.5 hours drive of the Dam and 5.3 million within 3.5 hours drive. By 2031, the population within the Lower Hunter area is expected to have increased by 160,000 people, while the population of the areas within 3.5 hours of the Dam is expected to have increased by 1.38million people.
- Proximity close to Dungog (12km) with potential to access the Dam by public transport.

- Proximity to the Barrington Ranges / Barrington Tops National Park. This is an iconic attraction with a very high level of market-place recognition and attracts over 700,000 visitors per annum. None of the other Dams are located close to major attractions. The Dam is ideally positioned to become the focal point for the southern end of the Barrington Ranges.

- Beautiful setting for the Dam - with scenery being one of the key attributes of Dungog Shire and one of the main reasons that people visit the Shire.

- Size of the Dam (2000ha) - with the Dam potentially able to accommodate a range of on-water and foreshore based activities.

- The Dam is to be operated at 90% capacity and is not expected to experience the significant water level fluctuations that impact on other large water storage dams in the Hunter and inland NSW.

8.3 Potential Contribution to Dungog Shire

Tillegra Dam has the potential to significantly diversify and strengthen the recreational and tourism product and infrastructure available in Dungog Shire including:

- Provide a focal point and an accommodation and service node for the southern end of the Barrington Ranges - replacing the former Barrington Guesthouse as an iconic location / accommodation.

- Provide a year-round attraction for the Shire, in particular provide water based activities in summer. This will help reduce the strong seasonal fluctuations in visitation currently experienced throughout the Shire.

- Potentially become a 'soft adventure' node, within the Barrington region, building on the outdoor activities / adventure tourism image that is emerging for the northern parts of the Barringtons.

- Provide additional accommodation within the Shire. The Dam is likely to help ease the pressure on the camping areas within the Barringtons. It also has the potential to provide a much needed caravan park for the Dungog area, and also to provide quality waterfront accommodation (eg lodge, guesthouse, resort) and potentially a conference and meetings venue.

- Potential to draw visitors through the Shire - with an increase in visitors moving through Dungog and the villages.

- Provide a venue to host a range of events that will bring visitors into the Shire on a regular basis.

8.4 Potential Negative Impacts on the Shire

The Dam has the potential to impact negatively on tourism in terms of:

- Reduction in water flows in the Williams River, which would impact on the tourism and recreational use of the River down stream, in particular in Dungog and Clarence Town but also potentially at Raymond Terrace and Seaham.

- Further deterioration of access roads into and through the Shire. The roads are already in very poor condition and cannot accommodate an increase in traffic, in particular an increase in heavy vehicles.

- If construction workers stay in the Shire, the loss of beds available for visitors.
- Increased use of the attractions and facilities in the Barrington Tops National Park and Chichester State Forests, further degrading already degraded areas.

8.5 Development Potential of the Dam

Tillegra Dam has the potential to be developed as an integrated recreation and tourism complex with potential uses including:

- On-water activities - including both motorised and non-motorised boating, towing activities, fishing, sailing, para sailing, house boats etc. There is a need in the Hunter Valley for a course/s for competitive water skiing, wake boarding, power boating and hydroplane racing, with Tillegra Dam being a possible location.
- Providing a mix of accommodation including the traditional camping, caravan and cabin facilities that are very popular at water storage dams, and also some up-market and/or specialty accommodation including lodge, resort, guesthouse, health spa, fishing lodge and/or boutique hotel.
- Using the proposed planting of 1.5 million trees to create an iconic feature that will become a tourist attraction in its own right in the future.
- Capitalising on the growth in mountain biking and cycle tourism by providing a network of trails both around the Dam and connecting to Dungog, the Chichester Valley and the Chichester State Forest and possibly from Dungog to Newcastle.
- Providing a base from which people can explore the southern end of the Barrington Ranges.

With the range of uses possible at the Dam, it will be important to ensure that non-compatible uses are segregated to minimise potential conflict.

Table 8.1 Potential Activities & Infrastructure that could potentially be provided at Tillegra Dam

On water Activities	Shire-based Activities & Attractions	Events	Accommodation	Support Infrastructure & Facilities
Fishing Kayaking / Canoeing Power Boating / Hydroplanes Water skiing Wake Boarding Other town activities Jet Skis Recreational boating Rowing Sailing Para-sailing Wave / Kite Surfing House boats Boat hire Jet boat rides Tours <u>Below Dam Wall</u> White Water Rafting Canoeing / Kayaking Trout Farm / Aquaculture	Cycling Mountain-biking Walking trails Picnic / BBQ areas Playgrounds Adventure Playgrounds Jumping balloon / pillow Tennis courts Basketball court Lookouts Water slides High and low ropes / abseiling courses Arboretum / Forest attractions	Fishing tournaments Water skiing, wake boarding power boat / hydroplane racing / spectacular Kite surfing competition / festival / Sailing / Rowing regattas Entertainment / Concerts Open water swimming carnival Novelty / community events - eg raft races Adventure racing - combining different activities - mountain bike, kayaking, swimming, cross country running etc Mountain bike events - cross country, off-road audax, MB orienteering etc. Car and motor cycle club rallies Caravan, campervan and motorhome club rallies Scout / Guide jamborees	Up-market accommodation Eco tourism resort / lodge Bush retreat Health Spa Cabins Caravan Park Camping Ground Adventure lodge Fishing lodge Sport & Rec camp for children School camp/s Conference Centre with accommodation	Tea rooms / café / eatery Conference / meeting / function facilities General store / shop Network of cycling, mountain biking and walking trails Boat ramps Event staging areas Fish cleaning Boat sheds / storage Clubs / Club houses Helicopter Landing Pad (emergencies)

8.6 Potential Markets

Tillegra Dam has the potential to draw visitation from the resident population of the Hunter, Central Coast and Sydney Metropolitan Areas, as well as attract day trips from people holidaying in Dungog Shire and the surrounding region and special interest groups coming into the area to undertake and activity.

The different markets that could potentially be attracted to the Dam include:

Table 8.2 Markets that could potentially be attracted to Tillegra Dam

General Recreation / Tourism Users	Special Interest / Activity Based
Retirees, families, couples, groups visiting for:	Anglers
▪ Day trips	Water skiers / Wake Boarders
▪ Short breaks	Power boat / hydroplane
▪ Holidays	Boating enthusiasts
	Canoeists / Kayakers
Touring caravan, campervan & motorhomes	Cyclists / Mountain Bikers
Coach tour groups	Sailors/ wind and Kite Surfers
School groups	Bush walkers
Social Groups	Bird Watchers
	4WD / Off road motor bike enthusiasts
Conference, Meetings & Functions	Car and Motor cycle clubs
	Endurance / long distance sports (marathon, iron man, adventure racing etc)

8.7 Infrastructure Improvements Required to Support Tillegra Dam

The following infrastructure improvements are required to enable Dungog Shire to capitalise effectively on the recreation and tourism potential of Tillegra Dam.

- Upgrading the access roads into and through the Shire, including the provision of overtaking lanes.

- Upgrading visitor facilities and infrastructure in the Barrington Tops National Park and Chichester State Forests to accommodate increased use. If possible, proceed with the development of the Sky Walk proposal at the Williams River picnic area within the National Park to futher strengthen and consolidate the Barrington product.

- Upgrading Salisbury Road from Dungog through to the Barrington Tops National Park.

- Upgrading the Salisbury Gap Road to provide the link between the Williams and Allyn River Valleys, and improve access to the Dam from Gresford and the Upper Hunter Valley.

- Constructing a road link from Tillegra Dam across to the Chichester Valley and improve the roads in and through the Chichester State Forest.

- Providing a cycleway (preferably separate from the road) from Dungog through to Tillegra Dam, connecting to a trunk cycle track around the Dam and a network of mountain bike trails. Explore options for a cycleway link from Dungog to Newcastle.

- Providing access roads to the southern arm and western foreshore of the Dam.

- Increasing the stock of motel and other accommodation in Dungog.

- Ensuring that the Dam is effectively signposted from the major Highways surrounding the Shire.

- Providing the road, water, sewerage and power infrastructure to support development and use of the Dam.

8.8 Directions Forward

For Tillegra Dam to become a significant recreational and tourism asset for Dungog Shire and the Hunter Region consideration needs to be given to:

- Recognition of the recreation and tourism potential of the Dam and a commitment by State Government Agencies to put in place the infrastructure and resources needed to achieve this potential.

- Preparation of a development and management strategy for the southern part of the Barrington Ranges, integrating the visitor facilities in the Barrington Tops National Park, Chichester State Forest (and other small forests in the area, Upper Williams River Valley, the Chichester Valley / Wangat area and Tillegra Dam.

- Preparation and implementation of an integrated land-use plan for Tillegra Dam that permits a range of on-water and shore-based recreation activities, accommodation and support infrastructure.

- Planning controls that will encourage investment and development in the area, while protecting the environment and the attributes that form the attraction base of the Shire.

- Land tenure arrangements (free hold, long leasehold) and a management regime that will facilitate major investment in the area.

- Provision of the infrastructure (eg roads, power, water, sewerage) needed to support development at the Dam.