14. Socio-Economic Environment

14.1 Introduction

This chapter provides an assessment of the potential social and economic impacts and benefits of the proposed Emu Swamp Dam Project, including potential changes resulting from the construction and operation of the Project. Possible mitigation measures are also identified to maximise the benefits and minimise the impacts of the project for local and regional communities.

14.1.1 Methodology

This assessment has been based on quantitative and qualitative analysis of existing community characteristics, specifically:

- an analysis of the existing socio-economic environment, including an assessment of key population and demographic characteristics of the affected communities, an analysis of local social infrastructure (including housing, education, health services and facilities), a review of existing housing and accommodation factors, and assessment of employment and local business;
- consultation with key stakeholders including Stanthorpe Shire Council (SSC) , relevant government agencies, social service providers, and key community stakeholders, to identify local community values of existing and future social service needs;
- assessment of the potential socio-economic impacts of the construction and operation of the Project including affects on local and regional communities, social infrastructure, community values, and workforce; and
- identification of potential mitigation strategies to maximise the community benefits and minimise any adverse socio-economic impacts.

14.1.2 Stakeholder Consultation

Community and stakeholder consultation, including with affected property owners, was undertaken for this EIS by SSC. The key outcomes of this consultation are described in **Appendix D** and have informed this socio-economic assessment. In addition, specific consultation has been undertaken with key stakeholders for this social impact assessment. This involved consultation with community service providers, environmental groups, business and industry representatives, SSC officers and elected representatives, and State agencies. The purpose of this consultation was to identify potential impacts and benefits of the Project specific to these stakeholders.

14.1.2.1 Study Area

The Project is located on the Severn River, approximately 15 km southwest of the Stanthorpe. Townships in the vicinity of the proposed dam include Ballandean and Glen Aplin. The proposed Urban Pipeline route extends north from the proposed dam to Stanthorpe, passing through the localities of Glen Aplin and Severnlea. The Irrigation Pipeline route extends north from Stanthorpe and services the localities of Amiens, Pozieres, Thulimbah, and Applethorpe.

Stanthorpe Shire covers an area of approximately 2,697 km^2 and is located approximately two and a half hours south west of Brisbane, on the border with New South Wales. The Shire is located in the Darling Downs region. The region around Stanthorpe is known as the “Granite Belt”.

The Stanthorpe urban centre is the largest town and primary business and community centre for Stanthorpe Shire, comprising nearly 50% of the Shire’s population. The town is an important service centre for adjoining Shires and regional communities, which access the Shire’s broad range of health, education, retail, commercial, and local government services and facilities (SSC 2007c). A number of villages are also located throughout the Shire providing a range of urban and rural lifestyle opportunities for local residents. These include Cottonvale, Thulimbah, The Summit, Applethorpe, Amiens, Glen Aplin and Ballandean.

Other major centres in the broader region include Warwick, which is located approximately 60 km north of the Stanthorpe urban centre and Tenterfield in NSW, which is located approximately 55 km south.

Key industries in the Shire include:

- agriculture, including fruit and vegetable growing (i.e. apples, pears, stone fruit, lettuce, cauliflower, cabbage, capsicums and tomatoes), wool and cattle grazing;
- viticulture;
- manufacturing, including abattoirs, winery cellar doors, sawmills, fruit and vegetable processing and packing, and hail netting installation;
- construction; and
- tourism, particularly focussing on the region's wineries, and National Parks (i.e. Girraween, Bald Rock, Sundown, Main Range and Boonoo Boonoo).

Emerging industries in the Shire include post-secondary education (i.e. Queensland College of Wine Tourism), agriculture (i.e. berry, mushroom and lavender farms, organic produce, and herbs), and agriculture value adding (i.e. boutique beverages, essential oils (AEC Group 2007).

14.2 Existing Socio-Economic Environment

This section describes the existing socio-economic environment of communities near to the Project, including the demographic and population profile of local and regional communities, social infrastructure including facilities and housing, business and employment, and local community values.

This description of the existing environment drew on:

- an analysis of demographic data and population projections based on the Stanthorpe Urban Centre (UC); Stanthorpe Local Government Area (Shire); Darling Downs Statistical Division (SD) and Queensland;
- previous research and existing SSC strategies, such as the *Emu Swamp Dam Planning Report* (SKM 2007e) and the *Stanthorpe Shire Council Economic Development Strategy* (AEC Group 2007);
- an analysis of social infrastructure, including housing, community, sport, recreation and leisure, cultural, education and health services and facilities; and
- consultation with key stakeholders including Local and State Government agencies and local service providers.

Demographic data from the 2006 ABS Census was used, where this is available. This data has been supplemented with data from the 2001 Census, information from the Queensland Government Planning Information Forecasting Unit (PIFU), and data from the Commonwealth Department of Employment and Workplace Relations (DEWR).

Information is provided for the Stanthorpe urban centre (UC), Stanthorpe Shire, the Darling Downs Statistical Division (SD), and Queensland.

14.2.1 Demographic Profile

14.2.1.1 Population Size and Growth

The Stanthorpe Shire had a population of 10,123 people at the 2006 Census. Approximately 46% of the Shire's population resided in the Stanthorpe urban centre, which had a population of 4,695 people.

Table 14-1 shows population of key localities in the vicinity of the Project. Applethorpe, Broadwater and Glen Aplin are the largest localities in the vicinity of the Project, behind the Stanthorpe urban centre.

Table 14-1 Population of Key Localities, 2006

Locality	Total Population
Stanthorpe Urban Centre (UC)	4,695
Applethorpe	748
Broadwater	687
Glen Alpin	645
Sugarloaf	568
Thumlimbah	534
Thorndale	394
Pozieres	350
The Summit	273
Amiens	235
Ballandean	133
Stanthorpe Shire	10,123
Darling Downs SD	213,754

Source: ABS Census 2006

The annual average population change between 2001 and 2006 for the Stanthorpe Shire and urban centre is shown in **Table 14-2**.

Between 2001 and 2006, the Shire's population increased by approximately 3.1%, an annual average of approximately 0.6%. This was lower than the annual population growth for the Darling Downs SD and Queensland, at 1.1% and 1.8% respectively. Approximately 50% of population growth in the Stanthorpe Shire occurred in the Stanthorpe urban centre.

Table 14-2 Population Change, 2001-2006

			Ave Annual Population Growth	
Location	2001 Population	2006 Population	Number	%
Stanthorpe UC	4,540	4,695	31	0.7
Stanthorpe Shire	9,818	10,124	61	0.6
Darling Downs SD	202,405	213,754	2,270	1.1
Queensland	3,585,639	3,904,532	63,779	1.8

Source: ABS Census 2001 and 2006

Population projections have been prepared by the Planning Information Forecast Unit (PIFU) for the Stanthorpe Shire based on low, medium and high growth scenarios. Medium growth scenarios are presented in **Table 14-3**.

Based on a medium level of population growth, annual population growth in Stanthorpe Shire over the next 20 years is generally predicted to remain at the same rate as the five years previous to 2006. The Shire's total population is predicted to be 11,564 people in 2026.

The rate of growth in Stanthorpe Shire would be lower than that predicted for the Darling Downs SD and Queensland.

- **Table 14-3 Projected Population, 2006-2026**

Location	Projected Resident Population					Ave Annual Population Growth	
	2006	2011	2016	2021	2026	No	%
Stanthorpe Shire	10,525	10,741	11,005	11,270	11,564	52	0.5
Darling Downs SD	225,99	239,85	251,27	262,36	274,62	2,432	1.0
Queensland	4,041,368	4,428,138	4,823,408	5,211,995	5,583,956	77,129	1.6

Source: Planning Information Forecast Unit (PIFU) 2006

14.2.1.2 Age Profile

The Stanthorpe Shire had an older population than Queensland and the Darling Downs SD. The Shire had a median age of 43 years at the 2006 Census, compared to 36 years and 37 years for Queensland and the Darling Downs respectively. The median age of the Stanthorpe urban centre was 45 years.

Figure 14-1 shows the age profile of the Stanthorpe urban centre and the Stanthorpe Shire, compared to the Darling Downs SD and Queensland. The age profiles of the Stanthorpe urban centre and the Shire as a whole are typical of many rural areas, with lower proportions of younger people (15-24 years) and higher proportions of older people (over 65 years). This reflects the population trends such as young people leaving the area to seek education opportunities or to find work, population ageing, and the inflow of older “tree-changers” who seek the rural lifestyle and more affordable retirement options.

At the 2006 Census, approximately 20% of the Shire’s population were aged under 14 years. This was lower than the proportion of children in the Darling Downs SD, but similar to the proportion of children in Queensland as a whole. The Stanthorpe urban centre had a slightly lower proportion of children than the Shire as a whole.

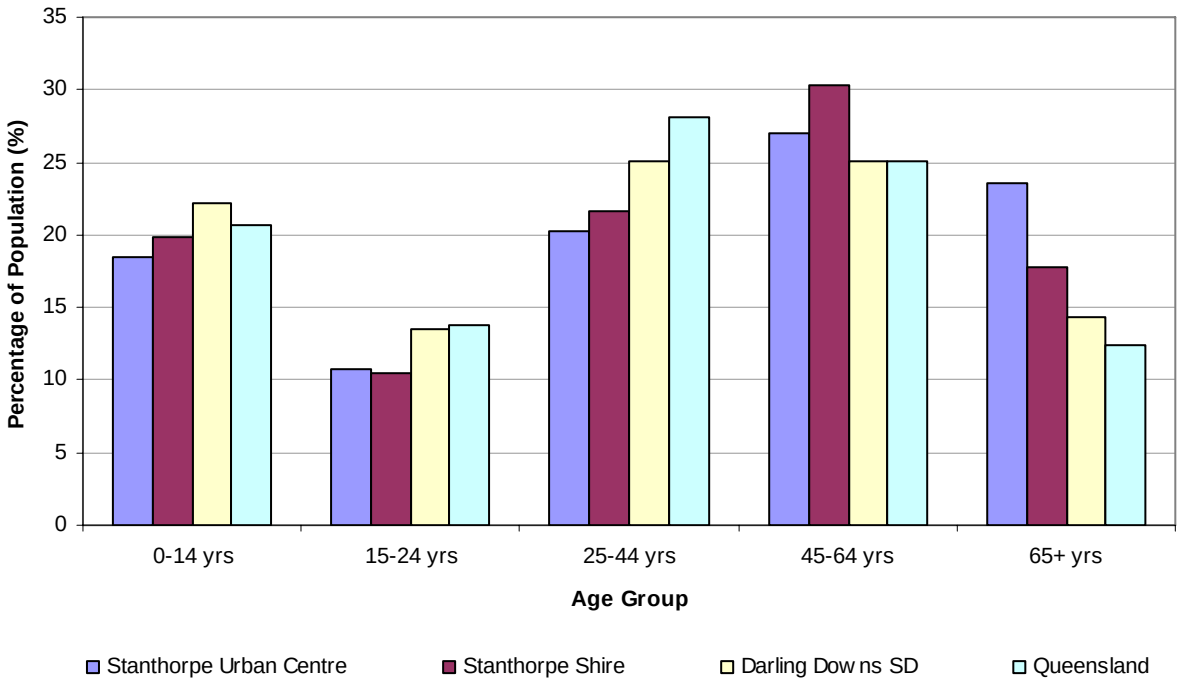
People aged 15-24 years comprised approximately 10% of the Shire’s population, which was lower than the Darling Downs SD and Queensland at approximately 14%. This is typical of many rural areas and reflects the trend for young people to move to the city for education and employment opportunities.

At the 2006 Census, approximately 48% of the Shire’s population and more than 50% of the population of the Stanthorpe urban centre were aged over 45 years. This is higher than both Queensland and the Darling Downs SD at approximately 37% and 39% respectively. This reflects the feedback from consultation which suggests that Stanthorpe has recently attracted an influx of “tree-changers”, including may people who are retired or nearing retirement age and are seeking a quieter, rural lifestyle and more affordable living options.

Approximately 24% of people living in the Stanthorpe urban centre are aged over 65 years, compared to approximately 18% for the Shire as a whole. This would suggest that many older people from the Shire’s rural areas relocate to the urban centre following their retirement.

The proportion of people aged over 65 years in the Stanthorpe urban centre is double the proportion of this group in Queensland.

- **Figure 14-1 Age Profile by Locality, 2006**



Source: ABS Census 2006

Over the next twenty years, the Shire's population is predicted to grow older at a faster rate than both the Darling Downs SD and Queensland. In 2026, the median age of the Shire is predicted to be approximately 51 years, ten years older than the Darling Downs SD and Queensland (PIFU, 2006).

Table 14-4 shows the predicted age profile of the Stanthorpe Shire in 2026. It is predicted that in 2026, the proportion of the Shire's population aged over 65 years would be approximately 30%, an increase from approximately 17% in 2006. The proportion of people in the Darling Downs SD and Queensland aged over 65 years is predicted to be approximately 20% in 2026. The proportion of working aged people (i.e. 15-64 years) in the Stanthorpe Shire is predicted to decrease from approximately 63% in 2006 to approximately 54% in 2026.

- **Table 14-4 Predicted Age Profile, 2006 and 2026**

	Stanthorpe Shire		Darling Downs		Queensland	
Age Group	**2006**	**2026**	**2006**	**2026**	**2006**	**2026**
0-14 years (%)	19.6	15.0	21.6	18.6	20.1	17.4
15-39 years (%)	27.6	22.7	33.5	30.3	35.2	31.6
40-64 years (%)	35.5	31.2	31.1	29.8	32.3	31.2
65+ years (%)	17.4	31.1	13.8	21.3	12.4	19.7
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0

Source: Planning Information and Forecasting Unit, 2006

14.2.1.3 Cultural Diversity

The number and percentage of people born overseas in the Stanthorpe Shire and urban centre is shown in **Table 14-5**. At the 2001 Census, the number of people in the Stanthorpe Shire born overseas was approximately 1,900 people, or about 19% of the total population. This was higher than the proportion of overseas born people in the Darling Downs SD, at approximately 14%, but lower than Queensland, at approximately 25%.

People born in the United Kingdom were the largest overseas born group represented in the Shire, with this group comprising 3.6% of the Shire's total population, or 18.9% of overseas born people.

The Shire also had a strong Italian community, with Italian born people comprising 3.1% of the total population, or 16.4% of overseas born people. More than two thirds of the Shire's Italian born population live in the Stanthorpe urban centre, almost 23% of the urban centre's overseas born population. Italian born people in Queensland and the Darling Downs comprise approximately 0.4% and 0.2% of the total population in these areas respectively (or 20% and 18.2% overseas born people).

- **Table 14-5 Overseas Born People, 2006**

Location	Number	Percentage
Stanthorpe UC	949	20.2
Stanthorpe Shire	1,930	19.1
Darling Downs SD	29,466	13.8
QLD	969,273	24.8

Source: ABS Census 2006

At the 2006 Census, approximately 8% of people in the Stanthorpe Shire spoke a language other than English at home (refer **Table 14-6**). This was similar to the proportion of people who spoke a language other than English in Queensland. The Stanthorpe urban centre had a slightly higher proportion of people who spoke a language other than English at home, at 9.3%.

Other than English, Italian was the most frequent language spoken at home by residents of the Stanthorpe Shire, with 479 people or 4.7% of the total population, speaking Italian. This represented approximately 60% of people who spoke another language.

Other languages also frequently spoken at home included Croatian (48 people or 0.5% of the total population), German (47 people or 0.5%) and Spanish (36 people or 0.4%).

- **Table 14-6 People Who Speak a Language Other Than English at Home, 2006**

Location	Number	Percentage
Stanthorpe UC	435	9.3
Stanthorpe Shire	799	7.9
Darling Downs SD	6,656	3.1
QLD	303,096	7.8

Source: ABS Census 2006

Approximately 200 people in the Stanthorpe Shire identified as Indigenous at the 2006 Census, approximately 2% of the Shire's total population. This was lower than the proportion of Indigenous people in the Darling Downs SD and Queensland, at 3.1% and 3.3% respectively.

14.2.1.4 Households

There were 3,825 households in the Shire at the 2006 Census, of which approximately 50% were located in the Stanthorpe urban centre. The Shire had an average household size of 2.4 persons per household, slightly lower than the household size for both the Darling Downs SD and Queensland. The household size in the urban centre was slightly lower than for the Shire as a whole, at 2.2 persons per dwelling.

Table 14-7 shows a breakdown of household type in the Stanthorpe Shire and urban centre at the 2006 Census.

Approximately 72% of households in the Shire comprised family households, while one in four comprised lone person households. The urban centre had a higher proportion of lone person households, with this household type

comprising approximately 34% of total households. The proportion of lone person households in the Stanthorpe Shire and urban centre was higher than the Darling Downs SD and Queensland, which may reflect the Shire's older population. Approximately 2% of households in the Stanthorpe Shire comprise group households, which is lower than both the Darling Downs SD and Queensland.

- **Table 14-7 Household Type, 2006 (Number and (Percentage))**

	Family Household		Lone Person Household		Group Household		Total
Locality	No	%	No	%	No	%	No
Stanthorpe UC	1,217	64.4	635	33.6	38	2.0	1,890
Stanthorpe Shire	2,768	72.4	977	25.5	80	2.1	3,825
Darling Downs SD	55,952	72.5	18,663	24.2	2507	3.3	77,122
Queensland	1,011,979	72.7	316,788	22.8	62,867	4.5	1,391,634

Source: ABS Census 2006

The number of households in Stanthorpe is projected to increase by approximately 1.2% annually to approximately 4,900 households in 2016 and 5,500 households in 2026 (Department of Housing, 2007).

14.2.1.5 Dwellings

The Stanthorpe Shire had approximately 3,820 occupied private dwellings at the 2006 Census. **Table 14-8** provides a breakdown of dwelling type. Approximately 92% of dwellings in the Shire were detached dwellings. This was higher than the proportion of detached dwellings in the Darling Downs SD and Queensland, reflecting the predominantly rural nature of the Shire.

Dwelling Type

The Shire had a lower proportion of flats, units or apartments, with this dwelling type comprising approximately 4.0% of the Shire's total dwellings. Nearly all of these dwellings were located in the Stanthorpe urban centre. Approximately 3% of dwellings in the Shire comprise semi-detached, row or terrace houses, or townhouses.

- **Table 14-8 Dwelling Type, 2006**

Dwelling Type	Stanthorpe UC	Stanthorpe Shire	Darling Downs	Queensland
Separate house (%)	87.0	92.1	87.3	79.5
Semi-detached, row or terrace house, townhouse, etc (%)	4.4	2.8	4.0	7.6
Flat, unit or apartment (%)	7.9	4.0	7.5	11.2
Other dwelling (%)	0.6	1.1	1.2	1.5
Dwelling structure not stated (%)	0.0	0.0	0.0	0.1
Total (%)	100.0	100.0	100.0	100.0

Source: ABS Census 2006

Dwelling Tenure

Dwelling tenure in the Stanthorpe Shire and urban centre is shown in **Table 14-9**. The Stanthorpe Shire has a high proportion of home ownership. At the 2006 Census, approximately 45% of houses in the Shire and 44% of houses in the urban centre were fully owned, compared to 37% and 31.6% in the Darling Downs SD and Queensland respectively. This reflects a stable population in the Shire and urban centre.

The Stanthorpe Shire as a whole had low levels of rental accommodation compared to Queensland, with approximately 25% of dwellings being rented. However, the proportion of rental houses in the Stanthorpe urban centre (31%) was the same as for Queensland.

Seventy two dwellings in the Shire, approximately 2% of total dwellings, were being rented from a State Housing Authority. The majority of these were located in the Stanthorpe urban centre. This was lower than the proportion of public rental dwellings in Queensland, at 3.4%.

- **Table 14-9 Dwelling Tenure, 2006**

Tenure	Stanthorpe UC	Stanthorpe Shire	Darling Downs	Queensland
Fully owned (%)	43.7	44.9	37.0	31.6
Being purchased (%)	21.6	26.5	30.8	33.8
Rented Total (%)	31.4	25.2	28.5	31.1
Rented - Real Estate Agent (%)	17.5	11.7	13.5	15.8
Rented - State or Territory Housing Association (%)	3.4	1.9	2.3	3.4
Rented – Other (%)	10.4	11.6	12.7	11.8
Other tenure type (%)	0.6	0.7	1.0	0.8
Tenure type not stated (%)	2.6	2.6	2.7	2.7

Source: ABS Census 2006

14.2.1.6 Education

Level of Schooling

Table 14-10 shows the highest level of schooling achieved by residents of the Stanthorpe Shire and urban centre aged over 15 years.

Residents of Stanthorpe Shire had lower levels of secondary schooling than the Darling Downs SD and Queensland, with higher proportions of people aged over 15 years completing school at Year 8 or below, and lower proportions of people over 15 years completing school at Year 12 or equivalent. This is consistent with other rural areas which often experience young people leaving to pursue education or work opportunities elsewhere, or young people leaving school early to work on farms.

The Stanthorpe urban centre had slightly lower levels of secondary schooling than the Shire as a whole, likely reflecting the higher proportion of older people living in the urban area.

- **Table 14-10 Highest Level of Schooling Completed, 2006**

Level of Schooling	Stanthorpe UC	Stanthorpe Shire	Darling Downs	Queensland
Year 8 or below (%)	16.3	13.8	11.2	7.4
Year 9 or equivalent (%)	7.0	7.5	6.8	5.8
Year 10 or equivalent (%)	29.1	31.5	31.3	26.9
Year 11 or equivalent (%)	7.3	7.6	7.3	8.2
Year 12 or equivalent (%)	28.3	30.0	34.4	41.3
Did not go to school (%)	1.4	0.9	0.5	0.5
Highest year of school not stated (%)	10.5	8.8	8.5	9.9
Total (%)	100.0	100.0	100.0	100.0

Source: ABS Census 2001

Education Attendance

At the 2006 Census, approximately 2,660 people in the Stanthorpe Shire were attending an educational institution, of which about 45% resided in the Stanthorpe urban centre.

Table 14-11 provides a breakdown of the type of educational institution attended by students in the Stanthorpe Shire and urban centre. Approximately 40% of the Shire's students were attending a pre-school, infants or primary school, which is higher than the proportion of these students in either the Darling Downs SD or Queensland. The Shire had higher proportions of secondary students, with 23.4% of students in the Shire attending secondary school, compared to 22.2% in the Darling Downs SD and 19.8% in Queensland.

The Shire also had higher proportions of students attending a Technical or Further Educational Institution, compared to the Darling Downs SD and Queensland, but lower proportions of students attending University or other Tertiary Institutions. The higher proportion of students attending a Technical or Further Educational Institution reflects the presence of the Southern Queensland Institute of TAFE and the recently opened Queensland College of Wine Tourism in the Stanthorpe urban centre.

Table 14-11 Type of Educational Institution Attending, 2006

Education Institution	Stanthorpe UC	Stanthorpe Shire	Darling Downs	Queensland
Pre-school (%)	5.3	5.3	5.2	4.9
Infants/Primary (%)	31.1	33.8	32.7	29.1
Secondary (%)	21.5	23.4	22.2	19.8
Technical or Further Educational Institution (%)	6.7	6.1	5.5	5.7
University or other Tertiary Institutions (%)	3.6	3.5	9.8	11.5
Other type of educational institution (%)	3.2	2.1	1.6	1.9
Type of educational institution not stated (%)	28.6	25.8	22.9	27.1
Total (%)	**100.0**	**100.0**	**100.0**	**100.0**

Source: ABS Census 2001

Qualifications

The latest information on non-school qualification is available from the 2001 Census. The level of qualification achieved by residents in the Stanthorpe Shire and urban centre is shown in **Table 14-12**. Stanthorpe had lower proportions of people with tertiary qualifications compared to Queensland. At the 2001 Census, approximately 2,650 people had a tertiary qualification. This represented 34.5% of people aged over 15 years, compared to 43.2% in Queensland.

Certificate level qualifications comprised the largest qualification group in the Shire. People with Certificate level qualifications comprised 13.0% of the Shire's population aged over 15 years. This was slightly higher than the proportion of people in the Stanthorpe urban centre with a Certificate qualification, at 12.3%, but lower than the Darling Downs SD and Queensland.

People with a Bachelor Degree comprised 5.3% of the Shire's population aged over 15 years, while people with Post-graduate qualifications comprised a further 1.5% of the population over 15 years.

- **Table 14-12 Level of Qualification Achieved, 2001**

Qualification	Stanthorpe UC	Stanthorpe Shire	Darling Downs	Queensland
Postgraduate Degree (%)	0.5	0.5	0.9	1.4
Graduate Diploma and Graduate Certificate (%)	0.7	1.0	1.0	1.1
Bachelor Degree (%)	4.2	5.3	6.8	8.3
Advanced Diploma and Diploma (%)	3.2	3.9	4.7	5.5
Certificate (%)	12.3	13.0	14.0	16.0
Not stated/ Inadequately described (%)	10.3	10.8	9.7	10.8
Not applicable (%)	68.9	65.5	62.7	56.8
Total (%)	100.0	100.0	100.0	100.0

Source: ABS Census 2001

14.2.1.7 Labour Force, Employment and Income

Labour Force Participation and Unemployment

Information on labour force participation is available for the 2001 Census. The Stanthorpe Shire and urban centre had lower rates of labour force participation compared to the Darling Downs SD and Queensland. This would likely reflect the Shire's older population.

At the 2001 Census, approximately 56% of working aged people were either employed or looking for work, compared to approximately 61% for both the Darling Downs SD and Queensland. Within the Stanthorpe urban centre, approximately 50% of working aged people were participating in the labour force.

The Shire had slightly lower proportions of people working full-time and higher proportions of people working part-time, compared to the Darling Downs SD and Queensland. At the 2001 Census, 56.3% of the Shire's total labour force was working full-time, and 33.1% were working part-time.

Between the March 2006 quarter and March 2007 quarter, the rate of unemployment in the Stanthorpe Shire was about 4.5% to 5.0%, similar to the rate of unemployment in Queensland (refer **Table 14-13**). At the March 2007 quarter, the Shire had a labour force of approximately 5,540 people, of which approximately 250 were unemployed. This provided an unemployment rate of 4.5%, which was similar to the unemployment rate for Queensland (DEWR, 2007). The small sizes of the local population and workforce increase the local significance of any investment or infrastructure expansion, such as that for the proposed Emu Swamp Dam, and associated employment locally.

- **Table 14-13 Quarterly Unemployment Rate, March 2006 – March 2007**

Locality	March 2006	June 2006	September 2006	December 2006	March 2007
Stanthorpe Shire (%)	4.6	5.0	4.9	5.0	4.5
Queensland (%)	5.0	5.0	4.9	4.7	4.4

Source: Department of Employment and Workplace Relations, Small Area Labour Markets Australia, Smoothed Series, March Quarter 2007

Employment by Occupation

Information on occupation type is available for the 2001 Census. **Table 14-14** shows employment by occupation for people aged over 15 years in the Stanthorpe Shire and urban centre.

Labourers and related workers comprised the largest occupation group in the Stanthorpe Shire and the urban centre, comprising 19.6% of the Shire's workforce and 20.2% of the urban centre's workforce. This was more than twice

the proportion of labourers and related workers for Queensland. This reflects the predominance of agriculture and horticulture industries in the Shire.

The Shire also had a high proportion of managers and administrators, with this occupation group comprising approximately 18% of workers. This was also more than twice the proportion of this occupation group in Queensland. The majority of managers and administrators are located in the rural area of the Shire, and would generally include farm managers.

- **Table 14-14 Employment by Occupation, 2001**

Occupation	Stanthorpe UC		Stanthorpe Shire		Darling Downs SD		Queensland	
	No.	%	No.	%	No.	%	No.	%
Managers & Administrators	116	7.5	708	17.9	12,405	14.1	133,295	8.5
Professionals	165	10.7	435	11.0	12,117	13.7	251,273	16.0
Associate Professionals	177	11.4	372	9.4	8,975	10.2	187,910	12.0
Tradespersons & Related Workers	194	12.5	450	11.4	11,244	12.8	200,665	12.8
Advanced Clerical &Service Workers	34	2.2	86	2.2	2,515	2.9	54,677	3.5
Intermediate Clerical, Sales & Service Workers	250	16.2	492	12.4	12,782	14.5	265,751	16.9
Intermediate Production & Transport Workers	126	8.2	281	7.1	7,570	8.6	133,702	8.5
Elementary Clerical, Sales & Service Workers	135	8.7	292	7.4	7,912	9.0	158,222	10.1
Labourers & Related Workers	313	20.2	776	19.6	11,215	12.7	152,773	9.7
Inadequately described	12	0.8	19	0.5	513	0.6	11,385	0.7
Not stated	24	1.6	44	1.1	1,080	1.2	19,211	1.2
Total	1,546	100	3,955	100	88,148	100	1,568,864	100

Source: ABS Census 2001

Employment by Industry

Information on employment by industry is available for the 2001 Census. **Table 14-15** shows a breakdown of employment by industry at the 2001 Census for the Stanthorpe Shire and urban centre.

Agriculture, horticulture and viticulture are key industries in the Stanthorpe Shire. As such, the Shire has a very high proportion of people employed in primary industries (28%) compared to the Darling Downs at 15% and Queensland at 5%. All other industries in the Shire had proportions of workers equal to or lower than Queensland.

Retail trade was the second largest industry in the Shire employing approximately 13% of the workforce. This was followed by health and community services at 8.8%, education at 7.6%, and manufacturing at 6.9%.

People employed in tourism and hospitality industries (i.e. accommodation, cafes and restaurants) accounted for 5.4% of the workforce, which was similar to the proportion of people in these industries in Queensland as a whole, but higher than the proportion of people in these industries in the Darling Downs SD (3.9%). Approximately 8% of people in the Stanthorpe urban centre were employed in tourism and hospitality.

The Shire had lower levels of people employed in construction, with 220 people employed in construction in 2001, 5.5% of the Shire's workforce. This is lower than the proportion of people employed in construction in the Darling Downs SD (6.3%) and in Queensland (7.1%).

Table 14-15 Employment by Industry, 2001

Industry	Stanthorpe UC		Stanthorpe Shire		Darling Downs SD		Queensland	
	No.	%	No.	%	No.	%	No.	%
Agriculture, Forestry & Fishing	235	15.2	1,108	28.0	13,129	14.9	76,532	4.9
Mining	0	0.0	12	0.3	313	0.4	19,286	1.2
Manufacturing	104	6.7	274	6.9	9,124	10.4	167,380	10.7
Electricity, Gas & Water Supply	10	0.6	18	0.5	640	0.7	12,359	0.8
Construction	90	5.8	216	5.5	5,541	6.3	111,209	7.1
Wholesale Trade	83	5.4	172	4.3	4,694	5.3	79,718	5.1
Retail Trade	259	16.7	519	13.1	13,110	14.9	239,615	15.3
Accommodation, Cafes and Restaurants	120	7.7	215	5.4	3,456	3.9	88,381	5.6
Transport and Storage	65	4.2	124	3.1	3,745	4.2	77,587	4.9
Communication Services	17	1.1	46	1.2	1,042	1.2	23,016	1.5
Finance & Insurance	30	1.9	54	1.4	1,686	1.9	44,562	2.8
Property and Business Services	91	5.9	201	5.1	5,561	6.3	153,864	9.8
Government Administration & Defence	57	3.7	132	3.3	3,982	4.5	75,048	4.8
Education	112	7.2	300	7.6	7,765	8.8	118,896	7.6
Health & Community Services	176	11.4	347	8.8	8,803	10.0	151,029	9.6
Cultural & Recreational Services	10	0.6	44	1.1	1,238	1.4	37,341	2.4
Personal & Other Services	55	3.6	93	2.3	2,508	2.8	57,662	3.7
Non-classifiable economic units	12	0.8	18	0.5	277	0.3	7,452	0.5
Not stated	23	1.5	65	1.6	1,533	1.7	27,927	1.8
Total	1,549	100.0	3,958	100.0	88,147	100.0	1,568,864	100.0

Source: ABS Census 2001

Employment trends in the Stanthorpe Shire between 1996 and 2001 are presented in **Table 14-16**. Over this period, aggregate employment increased by 284 persons. This was largely the result of growth in agriculture (83 persons), health and community services (58 persons), manufacturing (40 persons), wholesale trade (46 persons) and retail trade (112 persons).

Employment in some industries reduced over this period. These included construction, which reduced by 41 persons, government, administration and defence (12 persons) and finance and insurance, (12 persons).

- **Table 14-16 Employment Trends, Stanthorpe Shire, 1996-2001**

Industry	1996	2001	Change (1996-2001)
Agriculture, Forestry & Fishing	1,035	1,118	83
Mining	0	0	0
Manufacturing	273	313	40
Electricity, Gas & Water Supply	29	27	-2
Construction	205	164	-41
Wholesale Trade	169	215	46
Retail Trade	392	504	112
Accommodation, Cafes & Restaurants	205	224	19
Transport & Storage	97	111	14
Communication Services	43	36	-7
Finance & Insurance	65	53	-12
Property Business & Services	165	195	30
Government Administration & Defence	144	132	-12
Education	295	289	-6
Health & Community Services	284	342	58
Cultural & Recreational Services	18	38	20
Personal & Other Services	86	82	-4
Non-classifiable economic units	36	6	-30
Not stated	57	28	-29
Total	3,593	3,877	284

Source: ABS Census 1996 and 2001

Household Income

Households in the Stanthorpe Shire had lower median weekly incomes compared to the Darling Downs SD and Queensland (refer **Table 14-17**). At the 2006 Census, median weekly household income in the Shire was $638, compared to $875 for the Darling Downs and $1,033 for Queensland. Households in the urban centre had slightly lower median weekly incomes than the Shire as a whole, at $600. This would reflect the higher proportion of older people in the Shire.

- **Table 14-17 Median Weekly Household Income, 2006**

Locality	Median Weekly Income ($)
Stanthorpe UC	600
Stanthorpe Shire	638
Darling Downs SD	875
Queensland	1,033

Source: ABS 2006

14.2.2 Housing and Accommodation

14.2.2.1 Property Values

Table 14-18 outlines median house prices in the Stanthorpe Shire between the December 2003 quarter and the March 2007 quarter. House prices in the Stanthorpe Shire are reasonable. The median house price in the Stanthorpe Shire at the March 2007 quarter was $177,500 and $173,000 for the 12 months to the end of March 2007. Between the December 2003 quarter and the March 2007 quarter, median house prices have increased by approximately 50%.

Median house prices have been variable throughout the year since December 2003, but have generally been increasing.

- **Table 14-18 Stanthorpe Shire Median House Prices, December 2003 – March 2007**

Quarter	Median House Price	Change Over Quarter (%)
December 2003	115,000	
March 2004	140,000	21.7
June 2004	138,500	-1.1
September 2004	130,000	-6.1
December 2004	143,000	10.0
March 2005	142,500	-0.3
June 2005	185,000	29.8
September 2005	157,500	-14.9
December 2005	165,000	4.8
March 2006	155,000	-6.1
June 2006	171,250	10.5
September 2006	167,500	-2.2
December 2006	177,500	6.0
March 2007	173,000	-2.5

Source: REIQ

14.2.2.2 Rental Accommodation

At the 2006 Census, there were approximately 870 privately rented dwellings in the Stanthorpe Shire, with approximately 58% of these located in the Stanthorpe urban centre. This excludes dwellings rented from a State or Territory Housing Authority or Housing co-operative/ community/ church group.

The number of rental bonds held by the Residential Tenancies Authority (RTA) provides an estimate of the number of rental properties. However, some rental properties are managed privately by their owners, so may not have rental bonds registered with the RTA. As such, the total number of rental bonds underestimates the total private rental market.

Table 14-19 shows the number of rental bonds in Stanthorpe Shire. At the 30 June 2007, there were approximately 770 rental bonds held by the RTA for properties in the Stanthorpe Shire. The number of bonds lodged with the RTA has increased by approximately 195 properties since the 30 June 2002, with the majority of these in the Stanthorpe urban centre (Residential Tenancies Authority, 2007).

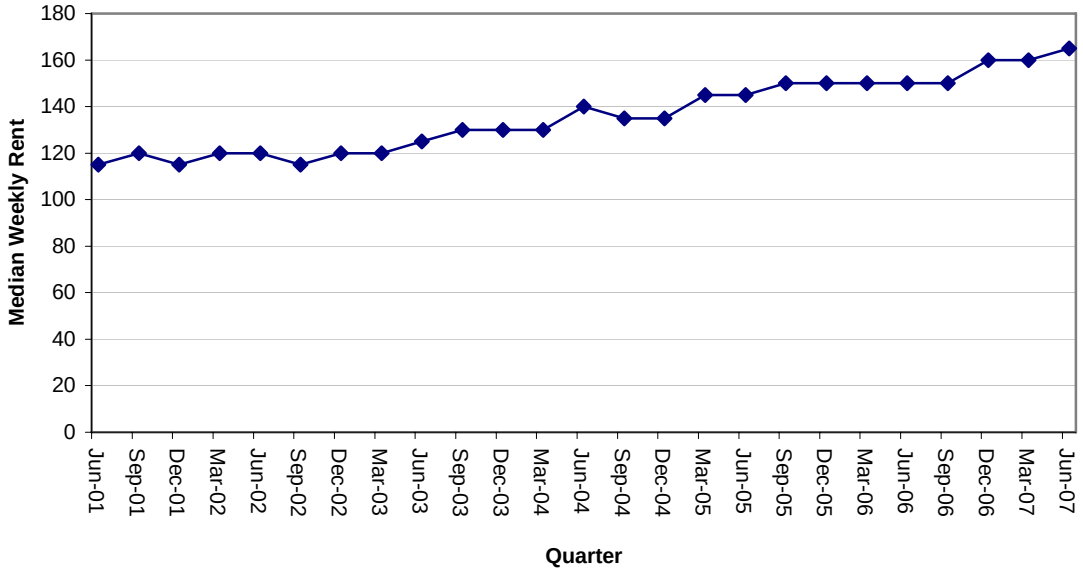
- **Table 14-19 Number of Bonds Held by the RTA, Stanthorpe Shire (2001-2007)**

Year*	Rental Bonds Held by the RTA	Change in the Number of Bonds Held by the RTA (%)
2001	560	
2002	574	2.5
2003	577	0.5
2004	635	10.1
2005	687	8.2
2006	713	3.8
2007	768	7.7

* as at 30 June

The median rent for a three bedroom house at the June 2007 quarter was $165 per week in the Stanthorpe Shire, and slightly higher at $170 per week in the Stanthorpe urban centre. Median weekly rents for the Shire have increased steadily since the June 2001 quarter, as shown in **Figure 14-2** (Residential Tenancies Authority, 2007).

- **Figure 14-2 Stanthorpe Shire Median Weekly Rents, June 2001-June 2007**



Source: Residential Tenancies Authority, 2007

Rental accommodation in Stanthorpe Shire is generally more affordable compared to Queensland as a whole. **Table 14-20** shows the proportion of affordable rental properties in 2006 in Stanthorpe Shire and Queensland. The proportion of affordable rental properties in the Shire, were above 98% for each dwelling size. This is compared to the proportion of affordable rental properties of less than 46% in Queensland.

- **Table 14-20 Affordable Rental Stock, 2006**

Locality	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Stanthorpe Shire	100.0	98.0	98.2	98.9
Queensland	46.0	38.6	28.5	31.0

Source: Department of Housing, 2007

Figures on rental vacancies are not available at the Stanthorpe Shire or township level. However, consultation for this assessment indicated that there was a shortage of rental accommodation, and that rental vacancy rates were generally very low, particularly during the picking season over the summer months.

14.2.2.3 Housing Stress

The Department of Housing in Queensland generally considers housing stress to relate to low and very low income households paying more than 30% of their gross household income on rental housing costs. Low and very low income households in Stanthorpe had a lower level of housing stress than Queensland. In 2006, approximately 120 low and very low income households (17%) were paying more than 30% of their household income on rental housing costs. This is compared to 35% of low and very low income households in Queensland (Department of Housing, 2007).

The numbers of low income households include only those households that receive Centrelink benefits, and do not include working people on very low wages or self funded retirees. As such, the actual numbers and proportions of

all low income households experiencing affordability problems are therefore likely to be understated in this analysis.

Concerns were identified during consultation for this assessment about the shortage of low cost rental accommodation and crisis accommodation and emergency housing within the Shire.

14.2.2.4 Tourist Accommodation

The Stanthorpe Shire offers a range of tourist accommodation, including hotels, motels, bed and breakfasts, backpacker hostels and caravan and camping areas. **Table 14-21** provides a breakdown of tourist accommodation establishments in the Stanthorpe Shire.

There are approximately 88 tourist accommodation establishments in the Shire, comprising approximately 1,100 rooms/caravan sites (Stanthorpe Visitor Information Centre, undated). Many of the tourist accommodation establishments are located in or close to the Stanthorpe urban centre, including in nearby villages.

- **Table 14-21 Tourist Accommodation Establishments, Stanthorpe Shire**

Accommodation Type	Number of Establishments	Number of Rooms
Motels	7	147
Hotels	7	53
Caravan Parks	3	611*
Country Resorts	3	42
Hostels	3	107
B&B, Cottages, etc	59	141
Designated Camping Areas	6	N/A
Total	88	290

* Represents number of sites

Source: Stanthorpe Tourist Information Centre, undated

Table 14-22 shows hotel and motel occupancy between September 2005 and September 2006 in the Stanthorpe Shire. Between September 2005 and September 2006, Stanthorpe experienced a drop in room occupancy rates for hotels and motels from 49.6% to 45.7%. However, average length of stay increased from 1.43 nights to 1.55 nights. Between September 2005 and September 2006, the total daily room stock increased by 14 rooms to 197 rooms (AEC Group 2007).

- **Table 14-22 Hotel and Motel Occupancy, 2005-2006**

Description	Sept 05	Sept 06	Annual Comparison
Room Occupancy	49.6%	45.7%	-4.0%
Average Room Rate	n/a	$87.06	n/a
Average Length of Stay (nights)	1.43	1.55	0.12
Total Room Stock (per day)	183	197	14

Source: AEC Group 2007

Accommodation occupancy rates vary on a weekly basis, with motel and guest accommodation generally experiencing lower occupancy rates mid-week and higher occupancy rates on weekends. Accommodation occupancy rates also vary throughout the year, depending on the region's peak tourist season and fruit and vegetable picking season.

Stanthorpe's peak tourist season is generally the "Brass Monkey Season" during the winter months, although there is now a slightly more even distribution of visitors throughout the year, particularly due to the success of recent

promotional campaigns (AEC Group, 2007). The Apple and Grape Festival is a popular tourist event attracting between 60,000 and 80,000 visitors. The biennial festival is held over three days in either February or March, with the next Festival scheduled for the 7-9 March 2008 (Stanthorpe Apple and Grape Harvest Festival, 2003).

The summer picking season also attracts a large number of backpackers, which affects demand for short term accommodation, particularly hostel accommodation and lower cost motel and guest accommodation. In 2005, backpackers made up approximately 32% of total passengers getting off coaches in Stanthorpe (approximately 600 people). However, the actual numbers of backpackers is difficult to estimate as many use private transport (AEC Group 2007). Discussions for this social impact assessment suggest that up to 2,000 backpackers are estimated to visit Stanthorpe during the picking season, with approximately 1,000 backpackers staying in Stanthorpe at any one time (pers comms Cr Glen Rogers, 4 Sept 07).

14.2.3 Transport and Access

The Stanthorpe Shire is well connected to other major regional centres by a range of transport services, including road, rail and air transport.

Main roads within the Shire are described in **Section 13** and include the New England Highway, Stanthorpe-Texas Road, Stanthorpe Connection road, and Amiens Road. Roads within the vicinity of the Project include:

- Fletcher Road, which connects the New England Highway to Emu Swamp Road and provides access for local residents and tourists to farm properties and wineries;
- Emu Swamp Road; and
- Stalling Lane, which provides local access to rural properties.

The Southern Railway currently provides freight and passenger services between Brisbane and Sydney via Toowoomba and Wallangarra (AEC Group, 2007). The railway line is located adjacent to the New England Highway and Severn River in the vicinity Project.

Stanthorpe is serviced by two regular coach services including:

- Crisps Coaches, providing one to three daily coach services between Brisbane and Tenterfield; and
- Greyhound Coaches, providing two services per day between Sydney and Brisbane via the New England Highway (AEC Group 2007).

While there is no local public transport, Stanthorpe is serviced by three taxis. The Stanthorpe Shire is currently serviced by an aerodrome at Applethorpe. Toowoomba provides the major airport in the region with other main airstrips located at Goondiwindi and Warwick (AEC Group 2007)

14.2.4 Social Infrastructure

Social infrastructure refers to community facilities, services and networks which help individuals, families, groups and communities meet their social needs, maximise their potential for development and enhance community well-being. It includes community support, education and training, sport and recreation, cultural, health, and emergency facilities and services (OUM 2007).

The Shire has a wide range of social infrastructure which service the needs of local communities and the broader district and regional communities. Each of the villages generally include a primary school, community hall, store and sport and recreation facilities to service the local community. The majority of the district and regional level services and facilities are located in the Stanthorpe urban centre.

The following provides a description of the community facilities in the study area.

14.2.4.1 Education

The Stanthorpe Shire has twelve state primary schools, one state high school and one non-state school. Primary schools in the vicinity of the Project and the number of enrolled students at February 2007 include:

- Applethorpe State School (54 students);
- Ballandean State School (87 students);
- Broadwater State School (34 students);
- Glen Aplin State School (81 students); and
- Stanthorpe State Primary School, including preschool and special education unit (383 students).

The Stanthorpe State High School caters for students in Years 8-12. In February 2007, the high school had a total of 624 students. There is one private school in the study area, which is St Joseph's College. The College provides for pre-school to Year 12 and had an enrolment of 322 students in July 2006.

The Stanthorpe Campus of the Southern Queensland Institute of TAFE is located at the Queensland College of Wine Tourism. The campus has approximately 500 enrolments and offers courses in wine, tourism, hospitality, business, information technology and general education. The campus also provides vocational education to high school students and school-based apprentices and trainees (South Queensland Institute of TAFE, 2007).

The Queensland College of Wine Tourism was recently established in partnership with the secondary, TAFE and tertiary education sectors and industry. The College offers courses in viticulture and wine making, business, wine tourism and hospitality, and includes a teaching winery, cellar door with café, laboratory and research facility, hospitality training kitchen, and multi-purpose teaching, seminar and restaurant area (Queensland College of Wine Tourism, 2006).

The Shire also includes a number of adult education networks including the Learning Network Queensland, the University of the Third Age, the Granite Belt & Southern Downs Life Education Association, and the Granite Belt Support Services.

Kindergarten and child care facilities are located in Stanthorpe urban centre and include the Stanthorpe Public Kindergarten, Kids Korner Child Care Centre and Stanthorpe Family Day Care.

14.2.4.2 Employment and Training

A number of employment and training services are provided in the Shire including:

- Best Employment;
- Ready Workforce;
- Stanthorpe Supported Employment Service;
- Stanthorpe Training Centre; and
- Centre Link.

These provide a range of services including recruitment, training, disability employment services, and employee support.

14.2.4.3 Health, Aged Care and Emergency Services

The study area has good access to a broad range of health, aged care and emergency services and facilities, which cater for the needs of local and regional communities.

The Toowoomba and Darling Downs Health Service District - Stanthorpe Health Service provides a range of health and medical services, including:

- Stanthorpe Hospital, which provides general medicine, surgery, obstetrics, long stay patients, paediatrics, emergency, high dependency care, outpatients, palliative care and acute care;
- visiting specialists, including general surgeon, neurologist, obstetrician, and gynaecologist;
- clinic services, including oral health, ante natal, dietetics, well womens, child speech pathology, and general outpatients;
- allied health services, including physiotherapy, occupational therapy, radiography, social work, dietetics, tele-health, speech pathology, visiting rural allied health team
- community health services, including child health, mental health, school health, women's health, health promotion, indigenous health, ethnic health liaison officer;
- HACC Services, including home help, meals on wheels, palliative care, blue nursing service, home maintenance; and
- health professional training.

A number of general medical services are also located in the study area including general practitioners and dentists. Blue Care provides a range of aged care services including day respite care, and home nursing services. There are three nursing homes in the Shire which provide residential care facilities. A new aged care facility is also proposed for Stanthorpe.

Emergency services serving the study area include:

- Queensland Ambulance, located in Stanthorpe township;
- Queensland Fire and Rescue Authority, located at Stanthorpe and Wallangarra;
- A number of Rural Fire Brigades including Ballandean, Broadwater North, Broadwater South, Stanthorpe Town, Sugarloaf, and Thorndale Glen Aplin;
- Police stations located at Stanthorpe and Wallangarra; and
- State Emergency Services located at Stanthorpe.

14.2.4.4 Sport, Recreation and Leisure

The Shire includes a wide range of sport, recreation and leisure facilities and clubs. These cater for local and regional communities, and include facilities providing organised sporting activities, as well as informal recreational and leisure opportunities. Some of the key sport and recreation facilities in the study area include:

- numerous parks which cater for the informal recreational needs of local residents;
- formal sport facilities, including C F White Memorial, Sheahan, Crisp and Sullivan ovals; McGregor Park, Stanthrope Pony Club, and the Stanthorpe Golf Club;
- YMCA Indoor Sports Centre;
- Stanthorpe Public Swimming Pool; and
- Stanthorpe Showgrounds.

Recreational fishing is an important past-time for many residents in the study area. Key fishing locations include Storm King Dam, Glenlyon Dam and the Severn River. Fishing clubs in the area include the Fish Club – Live and Stanthorpe Bluewater Fishing and Restocking Club.

Storm King Dam is located approximately 10 km from Stanthorpe and includes BBQ facilities, picnic areas, accommodation, and a range of organised and informal recreation activities, including water based activities. The dam was previously used for power boating and water skiing activities, but has been closed to these activities due to low water levels.

14.2.4.5 Community and Cultural

The Shire has good access to a broad range of community and cultural facilities. Community and cultural facilities in the vicinity of the Project include:

- Community halls, including Ballandeen Hall and Sports Club, Severnlea Hall, Broadwater Hall, Glen Aplin Hall, The Summit Hall, Thulimbah Hall and Stanthorpe Civic Centre;
- Youth activities and services, including Guides, Scouts, YMCA and Stanthorpe Youth Development Service;
- Stanthorpe Regional Art Gallery, Stanthorpe Shire Library, and Stanthorpe & District Historical Society and Museum;
- Churches;
- Community support services, including support services for youth, families, aged people;
- Queensland Country Women's Association (QCWA), including Glen Aplin QCWA and Stanthorpe QCWA; and
- Land management and environmental groups, including Land Care and Stanthorpe Field Naturalist Club.

14.2.4.6 Economic Development

The study area has a number of economic development organisations, particularly focusing on wine, tourism and agriculture, including the Granite Belt Wine and Tourism, Southern Downs & Granite Belt Regional Tourism, and the Chamber of Commerce and Industry.

14.2.5 Community Values

Stanthorpe Shire is considered to have a strong and vibrant population that is culturally diverse, creative and resilient, which derives from the Shire's strong community identity, and unique location or place. The vision for the Stanthorpe Shire as outlined in the *Stanthorpe Shire Council Corporate Plan 2005-2010* (SSC 2005) is "*a community of lifestyle and opportunity*".

The Corporate Plan (SSC 2005) identifies a range of desired community values including:

- a safe, healthy, well-serviced, involved community, which preserves and enhances the community's health and well-being, maintains a safe and caring community and encourages a range of appropriate housing options and infrastructure and amenities to meet the community's needs;
- an innovative and learning community;
- an empowered, diverse and engaged learning community supported by a vibrant and prosperous economy, with a vibrant, diversified and competitive business environment, supported and enhanced export capacity, prosperous primary industry base, and opportunities to increase employment and skill development;
- a community with a creative economic base, fostering the arts, creative activities, cultural diversity and increased social capital; and
- a community living in harmony with its natural and built environment, by preserving the natural environment and ensuring sustainable natural resource management (SSC 2005).

The *Stanthorpe Shire Council Planning Scheme* (SSC 2004) includes a desired environmental outcome relating to community wellbeing, which seeks to maintain the cultural, economic, physical and social wellbeing of the Shire's residents. This would be achieved by measures such as:

- residential communities of Stanthorpe and Wallangarra will be well serviced, enjoy high levels of safety and amenity, and offer a range of housing options;
- villages provide a community focus and service centre and resource for residents of surrounding rural areas;
- areas of cultural and historical significance to Indigenous people and the wider community will be respected, and where known, protected;

- residents will enjoy a high level of amenity created by compatible mixing of land uses and activities and effective buffering of incompatible uses;
- an efficient road network will serve local and regional needs and will facilitate the safe and convenient movement of people and goods throughout the Shire.

Some of the key characteristics identified during community consultation for this EIS, which contribute to the Shire's amenity and lifestyle, harmony and well-being and sense of community include:

- a multi-cultural and inclusive society, with a large Italian/European resident population, and strong backpacker market which contributes to the Shire's seasonal workforce;
- an attractive, relaxed rural lifestyle, and village atmosphere;
- a safe, supportive community, with low levels of crime;
- an innovative and flexible farming community, which is quick to adopt and adapt to new farming techniques and technologies, and adjust to new conditions;
- a resilient community, in which community ownership, connectedness, strong leadership and purpose are important;
- cohesive community, which is well networked and has a high level of community ownership, community pride, and passion in keeping the community together;
- a well-serviced community with access to good levels of business services, education, health facilities, and recreation and cultural services, which support community vitality; and
- good access to natural attractions in the region, including Girraween and Sundown national parks.

14.2.6 Social Amenity and Use

14.2.6.1 Rural and Forestry Uses

The Stanthorpe Shire's economy has strong agricultural focus, particularly in vegetable and fruit growing, wool and beef cattle farming. Timber growing and sawmilling are also important agricultural industries with soft wood production from State as well as privately owned forests (AEC Group 2007). Almost all agricultural production is exported from the Shire.

The natural benefits of the region for agriculture include suitable soils, relatively low cost land, a benign climate, and easy access to the sizeable south-east Australia market. While the Shire has traditionally been devoted to crops and livestock for the past 150 years, today irrigated agriculture is the main industry. The gross value of horticultural production is some $200 M and horticultural activity supports over 1,000 jobs in the region.

Table 14-23 provides a breakdown of registered agricultural businesses in the Stanthorpe Shire in 2005. In 2005, the Shire had approximately 700 registered agricultural businesses, which represented approximately 29% of all registered businesses in the Shire. Beef cattle farming and vegetable growing each comprised approximately 26% of registered agricultural businesses (AEC Group 2007).

- **Table 14-23 Registered Agricultural Businesses by ANZSIC Code, Stanthorpe Shire, 2005**

Industry	Number of Registered Businesses	Proportion of Agricultural Businesses
Beef Cattle Farming	183	26.2
Vegetable Growing	182	26.0
Services to Agriculture; Hunt & Trapping	71	10.2
Stone Fruit Growing	50	7.2
Fruit Growing N.E.C.	46	6.6
Sheep Farming	42	6.0
Grain-Sheep/Grain-Beef	39	5.6
Apple and Pear Growing	34	4.9
Grape Growing	33	4.7
Sheep-Beef Cattle Farming	28	4.0
Livestock Farming N.E.C.	25	3.6
Plant Nurseries	14	2.0
Crop and Plant Growing N.E.C.	8	1.1
Horse Farming	5	0.7
Cut Flower/Flower Seed Growing	2	0.3
Grain Growing	2	0.3
Dairy Cattle Farming	2	0.3
Poultry Farming (Eggs)	2	0.3
Poultry Farming (Meat)	1	0.1
Deer Farming	1	0.1
Agriculture (Total)	**699**	**100.0**

N.E.C. = not elsewhere classified

The main fruit and vegetable crops in the Shire include summer vegetables (i.e. lettuce, cauliflower, cabbage, capsicums and tomatoes), apples, pears and stone fruits (i.e. plums, nectarines, peaches, apricots). The region is a major supplier of the State's fruit and vegetables to Queensland markets, and is a key exporter of fresh produce to interstate and overseas markets (SSC 2005).

The first vineyard was established in the Shire during the 1990's, sparking interest in viticulture and other high value crops. These industries have developed since this time. Today, the Shire is the number one wine producing region in Queensland, with approximately 640 ha of wine grapes produced and sold from 52 vineyards and wineries and 43 cellar doors. Approximately 1,000 tonnes of grapes are crushed each year, with this expected to increase to approximately 4,000 tonnes within the next few years (Stanthorpe Visitor Information Centre, undated).

The availability of a secure water supply is a key issue for farmers in the Shire, with many farmers purchasing and leasing blocks across the Shire to ensure a good water supply and reduce potential risk of adverse weather. This has resulted in larger and fewer landholdings and a more diverse range of crops (AEC Group 2007).

14.2.6.2 Industry

Major industries in the Stanthorpe Shire include:

- agriculture, including fruit and vegetable growing (i.e. apples, pears, and stone fruit and lettuce, cauliflower, cabbage, capsicums and tomatoes), wool and cattle grazing;
- viticulture;
- manufacturing, including abattoirs, winery cellar doors, sawmills, fruit and vegetable processing and packing, and hail netting installation;
- construction; and

- tourism, particularly focussing on the region's wineries, and National Parks (i.e. Girraween, Bald Rock, Sundown, Main Range and Boonoo Boonoo) (AEC Group 2007).

An outline of the Shire's agriculture and viticulture industries are provided in **Section 14.2.6.1**.

Manufacturing is an important industry in the Shire, employing approximately 7% of the Shire's workforce. The Shire includes a range of manufacturing businesses including:

- a well-established meat processing sector, including two abattoirs and small goods manufacturing;
- two sawmills;
- three concrete products manufacturers;
- five steel fabricators;
- three machinery manufacturers;
- fruit & vegetable processing & packaging;
- three mushroom factories;
- traprock fine wool products; and
- hail netting installation (AEC Group, 2007).

The Shire also includes a number of existing and emerging smaller scale value adding activities, with value-adding food manufacturing identified as a strong opportunity area for investment in the Shire (AEC Group, 2007a).

Building construction is also a key industry, with the Shire recording strong growth in dwelling approvals and total dwellings over the previous year. Further rises in building approvals are also predicted by SSC, with four new subdivisions currently under construction and due for release in 2006/07. The Shire has also experienced strong activity in non-residential building construction, with a number of major construction projects undertaken in 2006, including the construction of the Queensland College of Wine Tourism (AEC Group 2007).

Tourism is another key industry and important growth sector for the Shire, with large numbers of tourists visiting the Stanthorpe each year. In 2000, the number of visitors to Stanthorpe was estimated to be in excess of 200,000 to 250,000 per annum (SSC, 2007).

Key areas of interest for tourists include National Parks (i.e. Girraween, Bald Rock, Sundown, Main Range and Boonoo Boonoo), wineries, cultural activities (i.e. museum, regional art gallery, crafts), and recreational tourism (i.e. walking tours, fishing, boating, fossicking). The Shire also hosts a number of annual and biennial festivals including the Apple and Grape Harvest Festival (Stanthorpe Visitor Information Centre, undated).

Emerging industries in the Shire include post-secondary education (i.e. Queensland College of Wine Tourism), agriculture (i.e. berry, mushroom and lavender farms, organic produce, and herbs), and agriculture value adding (i.e. boutique beverages, essential oils (AEC Group, 2007).

Table 14-24 shows the value of regional product for the Stanthorpe economy for 2004-2005. By value, agriculture is the dominant industry, contributing 34.4% of total GRP at factor cost. Retail trade is the second largest industry, contributing 7.4% of GRP, followed by ownership of dwellings (7.0%), education (6.0%) and construction (5.5%).

- **Table 14-24 Production Value by Industry, Stanthorpe Shire, 2004-2005**

Industry	GRP ($M)	Percentage
Agriculture, Forestry and Fishing	108.1	34.4%
Mining	0.5	0.2%
Manufacturing	16	5.1%
Electricity, Gas and Water Supply	2.5	0.8%
Construction	17.3	5.5%
Wholesale Trade	15.4	4.9%
Retail Trade	23.4	7.4%
Accommodation, Cafes and Restaurants	9.8	3.1%
Transport and Storage	10.5	3.3%
Communication Services	6.5	2.1%
Finance and Insurance	7.4	2.4%
Property and Business Services	16.1	5.1%
Government Administration and Defence	15.8	5.0%
Education	18.7	6.0%
Health and Community Services	16.2	5.2%
Cultural and Recreational Services	1.4	0.4%
Personal and Other Services	6.5	2.1%
Ownership of Dwellings	22.1	7.0%
Total	314.2	100.0%

14.2.6.3 Residential Uses

Stanthorpe Shire offers diverse lifestyle options comprising a mix of urban residential development within the Stanthorpe urban centre, Wallangarra and villages, rural residential living, and rural properties, including small acreage farmlets. Half of the Shire's population live in the Stanthorpe urban centre, with the remaining population in local villages and on rural properties (SSC 2007c).

In recent years, the Shire has attracted an influx of "tree-changers", many of which are people who are retired or nearing retirement age and are seeking a quieter, rural lifestyle and more affordable living options. This has helped to stimulate activity and investment in residential development, with the Shire recording positive growth in dwelling approvals in recent years (SSC 2007c).

14.2.6.4 Recreational Uses

The Stanthorpe Shire offers good access to sport, recreation and leisure activities and facilities as described in **Section 14.2.4.4**. At a broad level, residents in the Shire have good access to nature based recreation facilities such as National Parks (i.e. Girraween, Bald Rock, Sundown, Main Range and Boonoo Boonoo), Storm King Dam and Glenlyon Dam. These provide a variety of casual recreational opportunities including bushwalking, camping, fishing, boating, swimming and picnicking.

Fishing is also a popular recreational activity for local residents, with the main fishing holes being the Storm King Dam and Glenlyon Dam as well as the Severn.

The Shire also provides a wide range of sport and recreation clubs, including for families, youth and aged people. A number of sport and recreation groups experienced increases in membership over the three years to 2004/2005, and many expected membership numbers to continue to increase (ROSS Planning 2005). However, it was identified during consultation for this assessment than many sporting clubs are also struggling to maintain sporting teams (pers. comms. S McEvoy 2007).

14.3 Social Impact Assessment

This section provides an assessment of potential social benefits and impacts of the Project. Mitigation measures are also identified to maximise the benefits of the Project and minimise potential construction and operation impacts. It includes an assessment of potential benefits and impacts of the:

- **Urban Water Supply Dam**, which has an urban water supply capacity of 750 ML/year, and is primarily required to meet the future urban water demands of Wallangarra, Ballandean, Glen Aplin, Applethorpe and The Summit;
- **Combined Urban and Irrigation Dam**, which would provide an additional 1,740 ML/ year to irrigators in Shire;
- **Urban Pipeline**, which includes a 23.2 km long pipeline extending generally in road reserves, from the Emu Swamp Dam to the Mt Marlay water treatment plant; and
- **Irrigation Pipeline**, which is about 102 km in length, and connects from the Urban Pipeline to farming properties surrounding the townships of Ballandean, Glen Aplin, Amiens, Applethorpe, Thulimbah, and Pozieres.

A detailed description of the Project is provided in **Section 3** of the EIS. Many of the impacts and benefits on the social environment relate to the Project as a whole. However, where potential benefit and impacts relate to a particular component of the Project (i.e. urban dam supply, urban water supply pipeline, etc), this has been identified.

Potential benefits and impacts that are expected to occur during the construction phase and during operation of the dam are assessed. Potential benefits and impacts of the construction phase are expected to be temporary, and would generally occur for the duration of the construction phase, while potential benefits and impacts of operation would be more permanent or longer term. However, there are some benefits and impacts that may also begin during the construction phase and continue during the dam's operation.

14.3.1 Property, Housing and Demography

14.3.1.1 Property Impacts

Property Acquisition

The Project is anticipated to require either the acquisition or partial acquisition of approximately 18 properties for the inundation area of the dam and road realignments. These properties are generally located in the vicinity of Fletcher Road and Emu Swamp Road. These properties would be acquired by SSC either wholly or in part.

Two properties would be affected by the location of the urban water supply pipeline, and an additional seven properties would be affected by the Irrigation Pipeline. These would require an easement to be identified over the property.

A description of existing land uses of properties affected by the Project is provided in the **Section 5** of the EIS.

Where possible, the urban and irrigation water supply pipelines would be located in the road reserves of the New England Highway and various local roads. This would reduce the property impacts of the Project.

Table 14-25 provides a breakdown of the property requirements of the Project, including the urban water supply and the combined urban and irrigation water supply.

Table 14-25 Number of Properties Affected

Project Component	Number of Properties Affected
Dam – urban water supply	18 properties
Pipeline – urban water supply	4 properties
Dam – combined urban and irrigation water supply	18 properties
Pipeline – combined urban and irrigation supply	9 properties

The majority of the properties affected by the Project are held under Freehold title. However, one property is reserve and one property is held under leasehold. The pipelines also cross the railway line in a number of locations, which is also held under Lands Lease.

Use of Land within the Buffer Area

A 200 m buffer would be provided around the FSL inundation area of the combined urban and irrigation dam option to maintain water quality, prevent access to the dam, ensure public safety, prevent property damage in the event of a flood, and maintain connectivity of the ecological communities.

The buffer area may be acquired or remain with the existing owners. The useful land within the buffer area will be restricted so that water quality, access and ecological objectives are achieved. All farming, livestock and similar intensity activities will be prohibited.

Impact on Property Values

A few properties on Emu Swamp Road and Fletcher Road are located close to the proposed construction site and would be potentially affected by the construction works. These include some residential, rural business (i.e. agriculture and horticulture) and tourist (i.e. host farm, cellar door) uses. Potential impacts of construction activities would include noise, dust, and traffic disruptions.

It is expected that any impacts on property values near the dam would be site specific and largely dependent on the location of the property relative to the construction works. Potential impacts on property values for construction would also be temporary.

In the longer term, there are not expected to be any tangible detrimental changes in property values from the operation of the dam, due to the limited number of properties with direct line of sight to the dam wall.

Future Property Development

The availability of a reliable water supply is a major constraint to the future growth and development of the Stanthorpe Shire and additional urban water is required to allow any urban growth in the Shire. The existing urban water supplies are current over-committed (SKM 2007e).

The provision of a reliable urban water supply would allow future residential development within the Shire's urban areas. The Shire has experienced growth in residential development and dwelling approvals in recent years and the SSC predicts further increases in building approvals. Four new subdivisions are currently under construction in the Shire and a large 700-lot subdivision located at Applethorpe is currently in the planning stages (SKM 2006a). It is estimated that the additional water provision of 750 ML/year would satisfy the urban water demands of the Shire for another 30-35 years, depending on the growth scenario (SKM 2006).

Summary and Mitigation

Table 14-26 provides a summary of potential benefits and impacts of the Project for property, as well as recommended mitigation measures to manage or avoid potential impacts.

Table 14-26 Potential Benefits and Impacts on Sport and Recreation

Potential benefit or impact	Recommended mitigation measure
Partial or full loss of properties due to the construction of the dam and pipelines.	Fair compensation will be paid for land acquired for the Project. Where possible, the pipeline should be located within the road reserve to minimise property impacts.
Restriction on use of land within the buffer area, including prohibition of farming practices.	Communicate potential restrictions on land use and farming and land management practices for properties within the buffer area.
Opportunity for further residential development within Stanthorpe's residential areas.	No mitigation required.

14.3.1.2 Housing and Accommodation

Impact During Construction Phase

It is expected that there would be up to approximately 145 workers required during the peak period for the construction of the Project, including the dam and pipelines. This includes approximately 40 management and professional staff (i.e. engineers, project managers, etc) and approximately 80 to 105 labourers (refer **Table 14-27**).

Table 14-27 Construction Workforce Requirements

Occupation	Dam Construction	Pipeline Construction	Total
Management (i.e. Engineers, Project Managers, etc)	30 persons	10 persons	40 persons
Labourers (i.e. trades, machine operators, etc)	50 persons Peak of 75 persons	30 persons	80 – 105 persons
Total	80 – 105 persons	40 persons	120 – 145 persons

Assuming that approximately 30% of workers would be sourced locally, it is estimated that between about 85 and 100 workers would need to be sourced from outside of the Stanthorpe Shire. It is expected that some of these workers would commute from surrounding urban centres such as Warwick and Tenterfield. However, it is also expected that other workers would relocate to Stanthorpe, either full-time for the duration of the construction phase or on a part-time, weekly basis (i.e. Monday to Friday).

Construction of the dam is expected to commence in mid 2008 and take approximately 16 months for the urban dam option, and approximately 18 months for the combined dam option. The peak workforce construction period would be during the construction of the RCC embankment. This is expected to take up to six months and occur in early 2009.

It is expected that demand for accommodation from the construction workforce would be for temporary accommodation, such as hotel and guest accommodation, and permanent accommodation, such as rental housing. It is unlikely that construction workers would look to buy houses in the local area. It is anticipated that the majority of workers would seek accommodation within or close to the Stanthorpe urban centre, which provides access to a wide range of services and facilities.

Increased demand for rental accommodation in the Stanthorpe Shire during the construction phase could lead to an increase in rents. While the number of rental properties in the Stanthorpe Shire has increased by approximately 200 properties since 2001, vacancy rates for existing private rental accommodation in the Shire are reported to be tight.

Median weekly rents for a three bedroom house have increased steadily since 2001. Between the June 2001 quarter and the June 2007 quarter, median weekly rents increased from $115 to $165, an increase of approximately 43%. Whilst the Shire currently has a good level of affordable rental accommodation and low levels of housing stress compared to Queensland, increasing rents would have the greatest impact on affordable rental housing, resulting in

a potential increase in housing stress for low and very low income households, or requiring low income households to find alternative rental accommodation.

The construction phase is also expected to increase demand for temporary accommodation options, such as motels and other 'guest' accommodation, particularly within the Stanthorpe urban centre and in those localities close to the proposed worksite. The use of some of the available, under-utilised tourist accommodation for temporary workforce accommodation would provide economic benefits for accommodation owners by providing a base load demand. The workforce accommodated in temporary accommodation would also increase demand for goods and services to local businesses such as local shopping, personal and related services, and entertainment and leisure facilities.

The use of tourist accommodation such as motels and guest houses would help to minimise potential impacts on rental accommodation. However, early consultation with local accommodation providers and tourism development associations should be undertaken to ensure that accommodation demands can be managed, particularly during peak tourist times, including major festivals, and during the picking season.

Early consultation with community support agencies should also be undertaken to ensure that impacts for low income earners resulting from potential increased demand for rental accommodation can be appropriately managed.

Maximising the use of local labour would also minimise the influx of workers during construction and minimise subsequent impacts on the local rental housing market. However, the existing availability of appropriately skilled and qualified workers, may impact on the ability for construction workers to be sourced locally. Further discussion on employment and training needs for construction workers is discussed in **Section 14.3.2.1**.

Impact During Operation Phase

There are seven houses located on properties directly impacted by the proposed dam. This includes two dwellings that would be fully acquired.

Following construction, it is expected the dam would be operated by SSC's existing workforce, which currently operate the Storm King Dam. As such, there is not expected to be increased demand for housing and accommodation as a result of operation.

The availability of a reliable urban water supply is identified as a key constraint to the future urban growth and development in the Shire. The provision of a reliable water supply would provide opportunities for the development of additional housing and tourist accommodation in the Shire. Approvals have already been given for up to 10 tourist accommodation developments in the Shire including caravan parks, hostel accommodation, motel and bed and breakfast accommodation. In addition, two international tourist groups have expressed interest in developing an international resort at Ballandean, which includes housing, golf course and motel accommodation (SKM 2007e).

Summary and Mitigation

Table 14-28 provides a summary of potential benefits and impacts on accommodation and housing within the Stanthorpe Shire, as well as recommended mitigation measures to manage or avoid potential impacts.

Table 14-28 Potential Benefits and Impacts on Sport and Recreation

Potential benefit or impact	Recommended mitigation measure
Increased demand for rental accommodation could temporarily increase rental costs, particularly impacting on households with low and very low incomes.	Where possible, construction workers should be sourced locally to minimise the number of workers needing to relocate to Stanthorpe; Early consultation with community support agencies should be undertaken to ensure that housing impacts, particularly for low income earners, can be appropriately managed.
Increased demand for short-term tourist accommodation during construction.	Ensure ongoing consultation and notification with local tourist accommodation providers and tourism development associations regarding accommodation needs, and peak periods of tourist accommodation demand (i.e. peak tourist season, biennial festivals, etc);
Provision of a reliable water supply would provide opportunities for the development of additional housing and tourist accommodation in the Shire.	No mitigation required.

14.3.1.3 Demography

Project related factors which could impact on the demography of the Shire including property purchases and relocation of construction workers. External factors such as land use change, changes to primary industry, and population trends such as the influx of "tree changers", ageing of the population and movement of young people away from the district, would also impact on the Shire's demography. Many of these external factors would be influenced by the provision of a reliable water supply, particularly in relation to timing.

Impact During Construction Phase

The acquisition of properties for the Project is not expected to impact on the Shire's total population or demography. This is generally due to the relatively low number of properties with dwellings to be acquired for the Project.

It is estimated that between 85 and 100 workers would need to be sourced from outside of Stanthorpe for the construction phase. While some of these workers would commute from surrounding centres (i.e. Warwick and Tenterfield), it is assumed that others would relocate to Stanthorpe given the duration of the construction period. It is also expected that some of these workers would move their families to the region. This could result in a small increase in the population of the Shire for the duration of the construction phase, including a potential increase in the number of children.

An increase in population during the construction phase could impact on community services and facilities in the Shire, such as health, education and childcare, through increased demand for existing services. Consultation with providers of community services and facilities, including Education Queensland, local schools, Queensland Health and childcare centres, should be undertaken to ensure that potential impacts associated with an increase in population are managed.

There could be benefits for other local community facilities such as sporting clubs, shops, and community organisations from an increase in population during the construction phase. This could include increased membership and participation in sporting clubs and community organisations. Further discussion about possible impacts on community services and facilities is provided in **Section 14.3.3**.

The lack and diversity of employment options is considered a key reason for the decrease in young people in the Shire. Many young people currently leave Stanthorpe to seek employment opportunities elsewhere. The retention and attraction of young people in the Shire is important for the future growth and vitality of the Shire. Employment and training associated with the Project may provide opportunities for young people to remain in Stanthorpe and

gain skills in the construction industry. The magnitude of this benefit would be dependent on access to appropriate skilling and employment programs prior to construction. Consideration should be given to maximising employment and training opportunities for young people in Stanthorpe, in consultation with local schools, TAFE and employment providers.

Further discussion on employment and training needs for construction workers is discussed in **Section 14.3.2.1**.

Impact During Operation Phase

The Stanthorpe Shire's ability to support a larger population would be limited without a change to the Shire's water supply. The provision of an additional urban water supply of 750 ML/ yr would allow future urban growth and housing development in the Shire, and is expected to meet the Shire's urban water supply needs for about 30 years (SKM 2007e). This could accelerate predicted population increases.

The Project would also provide opportunities to develop further tourist accommodation, expand existing businesses and establish new value adding businesses to support the Shire's existing industries, particularly the horticulture and agriculture industries. The development of the combined dam option would allow opportunities to expand existing and develop new agricultural and horticultural businesses. This would provide new employment opportunities in the Shire and help to create diversity in employment opportunities. This is essential for encouraging young people to remain in Stanthorpe, and for encouraging skilled workers to relocate to the district (SKM 2007e).

Summary and Mitigation

Table 14-29 provides a summary of potential benefits and impacts on demography within the Stanthorpe Shire, as well as recommended mitigation measures to manage or avoid potential impacts.

Table 14-29 Potential Benefits and Impacts on Sport and Recreation

Potential benefit or impact	Recommended mitigation measure
Potential impact on social infrastructure (i.e. health, education and childcare) due to an increase in population.	Consultation should be undertaken with providers of community services and facilities to ensure that potential impacts associated with an increase in population are managed.
Increased population for the duration of the construction phase may provide benefits for local community services and facilities.	No mitigation required.
Employment and training opportunities should be maximised for young people.	Early consultation should be undertaken with local schools and employment providers to identify employment opportunities and necessary training requirements.
The provision of an additional urban water supply of 750 ML/ year would allow future urban growth and housing development in the Shire.	No mitigation required.
A reliable water supply would create opportunities for the expansion of existing industries and the establishment of new industries and businesses, providing employment opportunities for young people.	No mitigation required.

14.3.2 Employment, Training and Business Opportunities

14.3.2.1 Construction Workforce, Skills and Training

It is expected that there would be up to about 145 workers required during the peak period for the construction of the Project, including the dam and pipelines. This includes approximately 40 management and professional staff (i.e. engineers, project managers, etc) and approximately 80 to 105 labourers (refer **Table 14-27**).

Where possible, construction workers would be sourced locally to maximise the employment benefits for local residents and communities in the Stanthorpe Shire. However, the existing availability of appropriately skilled and qualified workers, may impact on the ability for construction workers to be sourced locally and the level of benefit would be dependent on access to appropriate skilling and employment programs prior to construction.

The Stanthorpe Shire generally has lower levels of labour force participation, qualification levels and people employed in construction, compared to Queensland and the Darling Downs SD. At the March 2007 quarter, Stanthorpe Shire had a labour force of approximately 5,540 people, of which approximately 250 were unemployed (DEWR, 2007).

In order to maximise employment opportunities for local people, an Employment and Training Strategy should be considered to identify the skills required for construction and training needs to enable local employees to gain the necessary skills to undertake construction jobs. This would be prepared in consultation with key stakeholders, such as local secondary schools, SSC, TAFE, employment services and training providers.

Indirect employment opportunities are also likely to be created during the construction phase through increased demand for goods and services. This would have positive benefits for local residents, including increased workforce participation and income levels.

14.3.2.2 Business Enterprise

Impacts of Construction

Business enterprises directly affected by the Project through the acquisition of land generally include some rural industries (i.e. horticulture and viticulture), and tourist facilities (i.e. cellar door and host farm accommodation) along Fletcher Road.

The Rumbalara Estate Wines vineyard and cellar door, Chaple Hill Estate, and Severn River Wines are located on or in the vicinity of Fletcher Road. There are also additional vineyards in the surrounding areas to the north and south of the proposed dam, with the closest winery cellar door in the north being Mountview Wines, which is located near the intersection of Emu Swamp Road and Mt Stirling Road. The Rumbalara Estate Wines cellar door would be able to continue to operate during the construction phase of the Project.

The amenity of tourists and visitors at the host farm accommodation could be affected by construction activities, which generate noise and dust.

The construction phase of the Project is expected to provide a range of opportunities for local contractors and suppliers, including plant operators and hire, and transport services. This would have direct and indirect employment benefits for local residents in the Shire. Consultation should be undertaken with local contractors and suppliers to identify potential opportunities during the construction phase, and how these can maximise employment benefits for local residents.

Impact of Operation

Property acquisitions for the Project would result in the reduction in the size of some vineyards along Fletcher Road. This could impact on the viability of these vineyards, particularly smaller vineyards.

Following construction, the dam would be a key visitor attractor. The level of attractiveness would be increased by the provision of proposed recreation and leisure activities and facilities, such as boating, picnicking, fishing, etc). This would have flow on effects for local tourist facilities and other business enterprises.

The provision of a reliable urban water supply would provide the opportunity to support and attract new business activity and expand existing businesses and industries within the Shire. This includes opportunities for development of a wider range of tourism facilities, including resort accommodation and convention centre, and a range of food production industries

The provision of water for irrigation would also provide opportunities to expand existing primary industries and to develop value added agricultural products. Opportunities to improve the viability of small farmers would also be provided through the provision of an improved water supply for irrigation. The development of new businesses and industry and expansion of existing business and industry would have benefits such as increased employment and income levels.

Summary and Mitigation

Table 14-30 provides a summary of potential benefits and impacts for employment, training and business opportunities, as well as recommended mitigation measures to manage or avoid potential impacts.

- **Table 14-30 Potential Benefits and Impacts on Sport and Recreation**

Potential benefit or impact	Recommended mitigation measure
Existing availability of appropriately skilled and qualified workers, may impact on the ability for construction workers to be sourced locally and the level of benefit would be dependent on access to appropriate skilling and employment programs prior to construction.	An Employment and Training Strategy should be considered to identify the skills required for construction and training needs to enable local employees to gain the necessary skills to undertake construction jobs.
Indirect employment opportunities created during the construction phase would have positive benefits for local residents, including increased workforce participation and income levels.	No mitigation required.
The provision of a reliable urban water supply would provide the opportunity to support and attract new business activity and expand existing businesses and industries within the Shire.	No mitigation required.
The provision of irrigation water supply would provide opportunities to expand existing primary industries and develop value added agricultural products.	No mitigation required.

14.3.3 Community Services and Facilities

This section provides an assessment of potential impacts on community services and facilities, including education and childcare, medical and health services, aged care, emergency services and social support services. Potential benefits and impacts for recreational uses are described in **Section 14.3.5.4**.

Impacts During Construction

The Project would not have a direct impact on existing community services and facilities in the Stanthorpe Shire. However, potential impacts on community services and facilities could occur as a result of an increase in population during the construction phase.

Stanthorpe Shire is well serviced by medical and health facilities, including Stanthorpe Hospital, and a number of general practitioners and dentists. An increase in the population during the construction phase could increase demand for medical and health services, potential impacting on service levels. Consultation should be undertaken with Queensland Health to ensure that potential increases in population and demand for medical and health services can be appropriately managed.

The types of activities undertaken during construction are typical of construction projects elsewhere, although they may be at a larger scale than other construction projects in the Shire. Construction safety procedures would be implemented as part of the construction management, to minimise potential safety incidents on the construction site. It is expected that the emergency services and hospital would have the capacity and capability to respond to most construction incidents and emergencies. However, consultation should be undertaken with the hospital and

emergency services, including Queensland Police, Queensland Ambulance and Queensland Fire and Rescue, in the preparation of emergency response procedures.

An increase in the number of children relocating to the Shire for the duration of the construction phase could impact on child care services and local schools, particularly the smaller schools in the Shire. Early consultation should be undertaken with Education Queensland, local schools and child care providers to manage potential impacts of increased numbers of children during the construction phase.

Impacts During Operation

The Project is not expected to impact on community services and facilities during the operation phase.

The provision of additional urban water would allow future urban growth and housing development in the Shire, and could accelerate predicted population increases. This could impact on the long term planning for community services and facilities. Ongoing consultation and communication about predicted population changes should be undertaken with community service providers to ensure appropriate long term planning of service provision.

Summary and Mitigation

Table 14-31 provides a summary of potential benefits and impacts on community services and facilities, as well as recommended mitigation measures to manage or avoid potential impacts.

Table 14-31 Potential Benefits and Impacts on Sport and Recreation

Potential benefit or impact	Recommended mitigation measure
Potential for increased demand for medical and health services due to an increase in population during the construction phase.	Consultation should be undertaken with Queensland Health to ensure that potential increases in population and demand for medical and health services can be appropriately managed.
Response to incidents and emergencies during the construction phase.	Consultation should be undertaken with the hospital and emergency services, including Queensland Police, Queensland Ambulance and Queensland Fire and Rescue, in the preparation of emergency response procedures
A temporary increase in the number of children could impact on local schools, particularly the smaller schools in the Shire.	Early consultation should be undertaken with Education Queensland and local schools to manage potential impacts of increased numbers of children during the construction phase.
Potential to accelerate predicted population increases could impact on the long term planning for community services and facilities.	Ongoing consultation and communication about predicted population changes should be undertaken with community service providers to ensure appropriate long term planning of service provision.

14.3.4 Transport and Access

The following provides an assessment of potential social impacts relating to transport and access during construction and operation of the Project. A detailed assessment of potential traffic impacts is provided in **Section 12** of the EIS.

Potential impacts on local transport and access would likely result from closure of local roads, construction traffic, including the delivery and collection of materials and machinery, and movement of the construction workforce. Impacts for local transport and access would also occur from the construction of the pipeline in the road reserve of the New England Highway and other local roads.

Impacts of Road Closures

The Project would require the closure of a section of Emu Swamp Road in the vicinity of the dam wall. Emu Swamp Road currently provides local access between Ballandean and Glen Aplin, as an alternative to the New England Highway. This would be closed at the commencement of construction and be closed permanently. Properties north of the dam would continue to access the New England Highway via Glen Aplin, while those properties south of the dam would use Fletcher Road.

The closure of Emu Swamp Road would impact on access for local residents and would increase travel times for residents on Emu Swamp Road north of the dam, who want to travel south to Ballandean, Wallangarra or Tenterfield. The closure of Emu Swamp Road may also impact on access and travel times for emergency vehicles. Access would be maintained to properties along Emu Swamp Road during the operation of the dam. Early consultation and communication with local residents and emergency services providers should be undertaken about proposed changes to local access, to raise community awareness about proposed changes and to ensure that potential issues are identified and appropriately managed.

Stalling Lane would also need to be realigned and a new intersection constructed with Emu Swamp Road. This would allow access to be maintained to two properties on Stalling Lane. Early consultation should be undertaken with property owners about changes to local access to ensure that potential issues are identified and appropriately managed.

Impacts of Construction Traffic and Access

Access to the worksite for construction traffic, including heavy vehicles and workforce traffic, would be via the New England Highway and Fletcher Road. It is not intended that Emu Swamp Road would be used for access to the construction site.

There is likely to be an increase in traffic, including heavy vehicles, using the New England Highway and Fletcher Road during the construction phase. An increase in traffic on Fletcher Road, including an increase in the volume of heavy vehicles, could also impact on safety for local road users.

Potential increase in traffic on the New England Highway is not anticipated to have significant impacts on local access and connectivity, given the volumes of traffic and heavy vehicles currently using this road. However, the New England Highway is an important national and regional connection for residents, tourists and interstate travellers, and there are potential safety impacts for motorists on this road through the increase in construction traffic.

Management of construction traffic would be required to ensure safety for motorists is maintained during construction. This should include communication with local residents and road users about changes to local access and traffic during the construction phase. Regular monitoring of haulage routes should also be undertaken during the construction period and damage caused by construction traffic should be repaired.

The construction of the pipelines within the road reserves of the New England Highway and local roads may also impact on local access and connectivity. Potential impacts may include delays and disruptions for road users in the vicinity of the construction works, and temporary changes to local property access, where works are being undertaken in front of properties. Traffic management in the vicinity of construction works would be required to ensure safety for motorists and construction workers. Possible changes to local access and potential traffic impacts resulting from works associated with the pipeline construction should also be communicated to local residents and visitors.

No school bus routes current use Fletcher Road or Emu Swamp Road. However, school buses use the New England Highway, and where possible, the haulage of construction materials should avoid school drop-off and pick-up times along school bus routes.

Impacts During Operation

A range of recreational facilities would be provided adjacent to the dam following construction. Fletcher Road would provide access to the recreational facilities. An increase in the use of Fletcher Road could impact on safety for local road users, including pedestrians and cyclists. Appropriate traffic management measures, including road signage, should be implemented to ensure safety for road users.

Potential increases in traffic on Fletcher Road could also impact on amenity for residents and tourist facilities on Fletcher Road, through increased traffic noise and dust.

Summary and Mitigation

Table 14-32 presents a summary of potential benefits and impacts for local transport and access, as well as recommended mitigation measures to manage or avoid potential impacts.

Table 14-32 Potential Benefits and Impacts on Transport and Access

Potential benefit or impact	Recommended mitigation measure
Closure of Emu Swamp Road and realignment of Stalling Lane.	Early consultation and communication with local residents and emergency service providers should be undertaken, to raise community awareness about proposed changes and to ensure that potential issues are appropriately managed.
Safety for road users during construction due to an increase in construction traffic, including heavy vehicles.	Implement a construction traffic management plan to ensure safety for motorists and other road users is maintained. Communicate changes to local access and traffic impacts to local residents and tourists, including potential for delays and disruptions. Regularly monitor haulage routes during the construction period and repair damage caused by construction traffic.
Changes to property access.	Access to individual properties should be maintained. Early consultation should be undertaken with property owners whose access may alter to ensure potential issues are appropriately managed.

14.3.5 Social Amenity and Use

This section assesses potential benefits and impacts on social amenity and use relating to farming and forestry, industry, residential uses, and recreational uses.

14.3.5.1 Rural and Forestry Uses

Impacts During Construction

The Project would inundate land currently used for horticultural, agricultural and viticulture uses. This would impact on approximately 77 ha of agricultural land for the urban dam option and 150 ha of agricultural land for the combined dam option. The acquisition of land would occur at a fair price based on an independent valuation. Reasonable compensation would also be provided to landowners for any relocation and/or disturbance experienced by affected landowners as a result of the Project.

Property requirements would result in the reduction in the size of some rural properties. This may impact on the viability of some farms, particularly those smaller farms that are currently competing with larger farms.

The realignment of Emu Swamp Road and Stalling Lane and the construction of the pipeline could change access arrangements for some farming and rural uses. This is not expected to have impacts for these farming and rural uses.

Construction of the Urban and Irrigation Pipeline would cause temporary disruption to activities that occur on affected properties. The location of the pipeline along property boundaries and fence lines would help to minimise impact on these rural uses.

Impacts During Operation

The Project could benefit farming and rural uses in the Shire through the provision of a more reliable water supply.

The lack of a reliable water supply is identified as a significant threat to the growth of primary production. The provision of a secure water supply is required for the horticulture and agriculture sectors in the Shire and has been identified as a key goal for SSC's Economic Development Strategy (AEC Group, 2007a).

The provision of water for irrigation would provide opportunities to strengthen existing farming and rural uses, including high value horticulture crops, as well as opportunities to develop value added agricultural products. Improved viability of small farmers would also be achieved through the provision of an improved water supply for irrigation.

Summary and Mitigation

Table 14-34 presents a summary of potential benefits and impacts for rural and forestry uses, as well as recommended mitigation measures to manage or avoid potential impacts.

- **Table 14-33 Potential Benefits and Impacts on Rural and Forestry Uses**

Potential benefit or impact	Recommended mitigation measure
Loss of horticulture land. Reduction in the size of some properties through property acquisition may impact on the viability of some farms, particularly those smaller farms that are currently competing with larger farms.	Ensure reasonable acquisition price and compensation is provided to landowners for any relocation and/or disturbance experienced by affected landowners as a result of the Project.
The provision of water for irrigation would provide opportunities to strengthen existing farming and rural uses and improve viability of small farms through the provision of an improved water supply for irrigation.	No mitigation required.

14.3.5.2 Industry

Impacts During Construction

The Project construction would have potential benefits for manufacturing industries in the Shire, which may provide materials for construction. Construction materials should be sourced from local industries and manufacturers, where possible, to maximise the potential economic benefits of the Project. Potential impacts could occur for existing manufacturing businesses in relation to increased demand for skilled and unskilled labour. An Employment and Training Strategy should be considered to identify the skills required for construction and training needs to enable local employees to gain the necessary skills to undertake construction jobs. This could be prepared in consultation with key stakeholders, such as local secondary schools, SSC, TAFE, employment services and training providers.

An influx of construction workers for the duration of the construction phase would also benefit the tourism industry, particularly accommodation providers, through an increased demand for temporary accommodation. This is described in **Section 14.3.1**. Some tourist facilities are also affected by proximity to construction activities and acquisition of properties for the Project. These include the Rumbalara Estate Wines cellar door and host farm accommodation on Fletcher Road. The Rumbalara Estate Wines cellar door would be able to continue to operate during the construction phase of the Project. However, the amenity of tourists and visitors at the host farm accommodation could be affected by construction activities, which generate noise and dust. Consultation should be undertaken with tourist facilities in the vicinity of construction works to identify and manage potential impacts of the Project.

Impacts During Operation

Industry in the Shire would benefit from the Project through the provision of a reliable urban water supply. This would provide opportunities to support and attract new businesses activities and industry and expand existing businesses and industries within the Shire. This includes opportunities for development of a wider range of tourism facilities, including resort accommodation and a convention centre, and a range of food production industries

The provision of water for irrigation would also provide opportunities to strengthen existing primary industries and to develop value added agricultural products. Opportunities to improve the viability of small farmers would also be provided through the provision of an improved water supply for irrigation. The development of new businesses and industry and expansion of existing business and industry would have benefits such as increased employment and income levels.

Summary and Mitigation

Table 14-34 presents a summary of potential benefits and impacts for industry, as well as recommended mitigation measures to manage or avoid potential impacts.

- **Table 14-34 Potential Benefits and Impacts on Industry**

Potential benefit or impact	Recommended mitigation measure
Potential benefits for manufacturing industries in the Shire, which may provide materials for construction.	Where possible, construction materials should be sourced from local industries and manufacturers.
Potential impacts for existing manufacturing businesses in relation to increased demand for skilled and unskilled labour	Consider an employment and training strategy in consultation with local schools, SSC, TAFE and employment and training providers.
Potential impacts on tourist facilities in the vicinity of the Project through property acquisition and construction activities.	Consultation should be undertaken with tourist facilities in the vicinity of construction works to identify and manage potential impacts of the Project.

14.3.5.3 Residential Uses

Construction of the project would impact on some “rural residential” uses in the vicinity of the proposed dam through acquisition. The acquisition of land would occur at a fair price based on an independent valuation. Reasonable compensation would also be provided to landowners for any relocation and/or disturbance experienced by affected landowners as a result of the Project.

The use of Fletcher Road by construction vehicles and the haulage of construction materials could also impact on the amenity for local residents, particularly resulting from increased traffic noise and dust. The construction of the Urban and Irrigation Pipeline would also impact on residential uses in the vicinity of construction works, particularly through increased noise, dust and changes to local access. Ongoing consultation with local residents in the vicinity of construction works should be undertaken to ensure potential impacts are identified and appropriately managed.

Following construction, the provision of a reliable urban water supply would provide opportunities for future urban growth and residential development. This would allow opportunities for the development of a range of housing options to meet the needs of the Shire’s current and future population.

Summary and Mitigation

Table 14-35 presents a summary of potential benefits and impacts for residential uses, as well as recommended mitigation measures to manage or avoid potential impacts.

- **Table 14-35 Potential Benefits and Impacts on Residential Uses**

Potential benefit or impact	Recommended mitigation measure
Loss of some “rural residential” uses through	Ensure reasonable acquisition price and

Potential benefit or impact	Recommended mitigation measure
acquisition.	compensation is provided to landowners for any relocation and/or disturbance experienced by affected landowners as a result of the Project.
Impact on residential amenity, including increased noise and dust.	Ongoing consultation with local residents in the vicinity of construction works should be undertaken to ensure potential impacts are identified and appropriately managed.
Opportunities for future urban growth and development would occur with the provision of a reliable urban water supply.	No mitigation required.

14.3.5.4 Recreational Uses

The Project is not expected to have a direct impact on existing recreation facilities and activities during either the construction or operation phase.

An increase in the Shire's population during the construction phase could have benefits for local sporting clubs and sport and recreation facilities through increased membership and participation in sporting activities.

The operation of the dam would provide opportunities for the establishment of new outdoor recreation facilities and activities. Following construction of the dam, a range of informal recreation facilities are proposed to be provided adjacent to the dam, including:

- Picnic areas, shelters, BBQs and playground equipment;
- Toilet facilities; and

A range of water based activities are currently permitted at Storm King Dam, depending on water levels. These include:

- Motorised boating, including jet skiing, power boats and houseboats;
- Water skiing;
- Non-motorised boating, including sailing, canoeing and rowing;
- Swimming; and
- Fishing.

The Project may provide opportunities to separate some of the less compatible water based activities between the Emu Swamp Dam and Storm King Dam.

It is expected that fish stocking would occur at Emu Swamp Dam, either intentionally or by fish being washed in from upstream.

Summary and Mitigation

Table 14-36 presents a summary of potential benefits and impacts of the Project on sport and recreation uses, as well as recommended mitigation measures to manage or avoid potential impacts.

Table 14-36 Potential Benefits and Impacts on Recreational Uses

Potential benefit or impact	Recommended mitigation measure
Potential for increased membership of sporting clubs and participation in recreation activities due to an increase in the construction population.	No mitigation required.
Opportunities for the provision of a range of sport and recreation facilities adjacent to the dam.	No mitigation required.

14.4 Economic Impact Assessment

This section provides an analysis of the potential economic impacts from the Project on the local and the wider regional economies.

The economic analysis is not concerned with who pays for the water or how the rewards are distributed. However, generation of the costs and benefits is relatively complex since the economic impacts must be incorporated and the regional impacts must be separated. The dam would have impacts on developers, producers, workers, and others affected indirectly by the Project.

The economic analysis is mainly concerned with the capacity of the project to generate a net social gain over its productive life. Therefore, a relatively low discount rate is used to reflect the fact that society will not value current versus future consumption as highly as would a private developer. The lower discount rate and the nature of the investigation also mean that a longer modelling horizon is appropriate for assessing the net social benefit arising from the Project.

Costs identified in the economic analysis include capital costs associated with construction of storages and distribution systems, land development costs for the purposes of utilising the water, and farm overhead costs, excluding those associated with water rights. The costs also include environmental externalities (positive or negative) that might arise following construction and operation of each development scenario.

An economic analysis differs from a financial analysis in the following ways:

- the income streams are based on the returns from additional production (rather than the returns from the sale of water);
- the analysis considers the externalities of the Project (i.e. impact on native forests);
- transfer payments are ignored;
- the distribution of benefits and costs between stakeholders is not defined; and
- the opportunity cost of taking the land for the Project out of its current usage is included in an economic evaluation (NECG 2001).

From a regional perspective, the development would boost the economy through increased demand for goods and services with implications for job creation. However the fundamental economics of the Project relies upon two main factors:

- the cost of creating the new water; and
- the improved prospects for irrigated agriculture and other industries that arise from the increase in irrigation water.

The economic analysis estimates the additional net income from irrigated agriculture that is likely to be generated by the Project. Consequently, this analysis is based on the difference between the ‘without project’ scenario and the scenario expected to apply if the additional irrigation water supplies are made available.

The proposed development and the resulting increase in agricultural output would have a substantial impact on the economic environment, particularly given the relatively small local labour market. These impacts would be felt locally, and would also have flow-on effects throughout both the Darling Downs region and the State.

14.4.1 Project Outline

This section provides a brief summary of the project and it's estimated costs. A detailed description of the Project is provided in **Section 3** of the EIS.

14.4.1.1 Urban Water Supply Project

If the urban water supply project does not proceed, Stanthorpe would need to cap its current level of development as the current unrestricted demand exceeds the yield of Storm King Dam. As such, the level of development in the Shire would need to be reduced, and growth in population or area would not be possible.

There is considerable development demand in Stanthorpe and a "no Project" outcome would require a complete change in perception and lifestyle for the Stanthorpe community.

14.4.1.2 Irrigation Water Demand

Additional irrigation water has been sought by irrigators and associated industries for many years. Public consultation undertaken by Gordon Stone & Associates (1998) invited responses to the potential take-up of additional irrigation water in the area extending from Ballandean to Stanthorpe. Of the 237 responses received, 49% of respondents indicated they would be interested in taking up additional irrigation water, but would use this water to improve existing cropping rather than to diversify into new areas. A further 14% of respondents indicated that they might be interested in the taking up additional water, depending on the price. This group was also more interested in improving their current crops than increasing their area of cropping. The remaining 37% of respondents were not interested in taking up additional water.

The anecdotal information from irrigators involved with the current scheme is similar (i.e. they want water to improve their security rather than to increase their crop area). This is supported by the distribution of allocations requested by these irrigators, which shows that 86% of irrigators want less than 50 ML/year. This is a small volume of irrigation and confirms that the water is required for its higher security rather than to increase the cropped area.

14.4.1.3 Capital and Operating Costs

The capital cost of the infrastructure is shown to be around $44.5 M for the Urban Water Supply Dam and $82 M for the Combined Urban and Irrigation Dam. The estimate of capital cost includes:

- dam construction;
- pipeline construction;
- construction of Stalling Lane Access;
- land acquisition; and
- environmental works and investigation.

Annual operation and maintenance costs are estimated to be $175,000 for the Urban Water Supply Dam and $610,000 for the Combined Urban and Irrigation Dam.

Previously, economics of new irrigation dams have sometimes been undermined by slow uptake of the water. It is expected that there would be little risk of slow uptake in the Granite Belt catchment due to the amount of country already developed for irrigation needing higher application rates to optimal yield and product quality, such as fruit growing.

14.4.2 Economic Modelling

An economic model (input-output model) has been used for this assessment to estimate the impact on local employment and production. The primary economic impact measures derived from the input-output model are:

- Gross output (regional turnover);
- Value added; and
- Employment.

Gross output (regional turnover) refers to the gross value of increased production from an additional economic activity. This gross value includes the value of raw materials that, in most cases, have already been counted as part of Gross Output from earlier production. Therefore, there is a tendency for Gross Output figures to include some double counting. As a result, more concentration is placed upon incremental (additional output created) or value added. Gross output is a good indicator of the level of turnover in the economy and a good measure of the total level of economic activity.

Value added refers to added or net output. Value Added is equivalent to the Gross State Product as used by the ABS and is the measure usually preferred when measuring economic impact. It measures the added value placed on intermediate products (raw materials) from the productive process. It is made up of margins, wages, profits and transfers.

Employment relates to the amount of labour required for the level of production/investment. Depending upon the type of activity, job numbers measure either the use of existing labour (continuing jobs) or hiring new staff.

14.4.2.1 Input-Output Methodology

The 1996–97 Queensland Regional Input-Output (I–O) tables were released by the Office of the government Statistician in August 2004. There is a regional I–O table for each of the Queensland Statistical Divisions (SDs), as classified by the Australian Standard Geographical Classification, with the exception of the Brisbane and Moreton SDs, which have been combined.

The regional multipliers used in this assessment were sourced from the Queensland Treasury. These were produced in 1996 and are the most recent input-output tables published in Queensland. The regional I–O tables are available at the 34 industry level with seven final demand and six primary input categories. Direct allocation of imports tables are also included in the publication for each SD. Even though the tables were produced a decade ago, the same relationships between industries in the economy generally holds and the minimal changes that have occurred in this time are not expected to impact the estimates significantly because industries are defined at a relatively high grouping (i.e. “communication services” as the industry grouping for IT).

The geographical region used to analyse the impacts for this assessment is the Darling Downs SD, of which Stanthorpe is a part, and the overall economic impacts are reported at the SD and State levels. Impacts on the Stanthorpe economy are ignored, as the small size of the Stanthorpe economy would mean that many of the Project’s benefits would flow out of the area and it would significantly underestimate the benefits. Analysis at a SD level is also relevant as a large proportion of the construction and operational workers are expected to come from outside of Stanthorpe.

This proposal involves construction works to build the dam and associated infrastructure. The industries primarily affected in the region are construction and support services. It is activity in these industries that the input-output model is based.

The multipliers for these two industries in the Darling Downs SD are presented in **Table 14-37**. The values are based on the impacts from an increase in the value of output in the industry of $1 M. These are the type-2 multipliers which include economic impacts created from a given level of economic activity in the industry. They include the boost to production in the industry itself, to businesses supplying that industry and additional activity created from the spending of wages and salaries by employees in those industries.

An example of the employment multiplier in construction is as follows. A $1 M increase in output in the construction industry supports on average, 13.6 full time equivalent jobs. This comprises 8.6 jobs in construction, 2.8 in associated industries and 2.2 jobs created elsewhere in the economy by consumption expenditure from employees in these industries.

- **Table 14-37 Type-2 Economic Multipliers for the Darling Downs Region (per $M)**

Impact per $1M	Other Agriculture	Construction
Employment (FTE)	9.7	13.6
Value added ($M)	$0.8 m	$0.7 m

Source: Queensland Treasury

14.4.3 Construction Impacts

Economic assessments have a tendency to downplay or ignore the construction aspects of a project due to difficulties in accurately modelling these impacts. This is because construction companies and workers are mobile, with the result that there is no certainty that the bulk of the payments to these companies and workers will be spent or invested in the region where construction is occurring.

Construction activity is also cyclical. Where a project takes place at the lower end of the cycle its economic benefit go considerably beyond its direct value because it helps to maintain the industry. By contrast, if a project is commenced at the height of a building boom it may add to supply-bottlenecks and compete for scarce resources. In this case its real value to the economy is less than the direct value of the project. Therefore, the real value of the construction phase of a project, particularly in terms of net additions to gross state product and employment retention and creation, is considerably influenced by its positioning within the construction cycle.

Due to these difficulties of an accurate evaluation, it is common for economic modelling to discount construction effects as they are regarded as temporary and do not provide the continuous shocks that many models depend upon. This is somewhat surprising because the construction industry by its nature consists of a series of temporary projects in which large-scale temporary construction projects are essential to keep, what is essentially a very mobile workforce, in continuous employment. For these reasons, it is important to fully consider the construction impacts associated with projects, both for their project-specific benefits and for the vital role they play in the construction industry in general.

Data on construction costs for both dam options is shown in **Section 14.4.1.3**. Keeping with the conservative nature of the analysis it is assumed that only approximately 30% of materials and factors of production would be sourced locally.

14.4.3.1 Construction Workforce

It is anticipated that the construction workforce would comprise approximately 30 management staff for the duration of the Project, and approximately 50 labourers, with a peak of 75 labourers during the construction of the RCC wall.

The Urban Pipeline from the dam to the Mt Marlay water treatment plant essentially have the same construction inputs for both Project options with the Irrigation Pipeline making up the majority of the difference in costs ($31.9 M). The workforce numbers are the same for both the Urban Water Supply Dam and the Combined Urban and Irrigation Dam. The construction period for the Urban Water Supply Dam and the the Combined Urban and Irrigation Project is 14 and 16 months respectively.

Where possible, the construction workforce is proposed to be recruited locally to reduce the size of the incoming workforce and potential associated impacts on the local community. These are discussed in **Section 14.3**.

The construction phase of the Combined Urban and Irrigation Project is scheduled to take place from mid 2008. The full cumulative expenditure over the construction phase is expected to be $76 M (2007 prices). A large amount of this spending would occur in the Darling Downs economy.

There are two common errors made in the evaluation of the impacts of construction expenditure:

- unduly discounting such impacts by stressing their temporary and essentially one-off nature, particularly with regards to their contribution to employment; and
- treating construction impacts as if they were continuing economic activity.

Both approaches are incorrect and fail to identify the true role of large construction projects to the building and construction industry specifically and the State economy in general. Individual construction projects should be seen as part of the established building and construction industry. As such, the existing industry base may be used as the initial impacting sector. This assumes that the characteristics of the new activity in terms of capital/labour ratios and factor usage patterns are broadly in step with the average of those industries used to construct the initial model. Where this is not the case a new sector would need to be created specific to the new activity. Unless there is serious displacement of existing activity, new construction projects, particularly major ones, expand the size and influence of construction activity on the economy and help stabilise what is an essentially an unstable industry. That is, a series of non-displacing construction projects are essential to the maintenance of a healthy domestic construction industry and their role in maintaining jobs and skilled workers within the State is often overlooked.

In this sense there is a number of synergy effects derived from such projects that go beyond their immediate or apparent impact. In considering the real value of construction activity to a region or State economy a number of parameters need to be established. These include:

- the length of the construction period (i.e. the longer the period, the less likely that the project would displace existing projects and the more likely there would be significant and quasi-permanent employment effects);
- the source of the workforce (e.g. use of local labour or use of other arrangements such as commute labour); and
- the source of raw materials such as capital equipment and building materials.

The length of the construction period is likely to expand the construction industry in Queensland, although some initial displacement and crowding out of other projects cannot be discounted.

The results of the economic modelling are shown in **Table 14-38**. This modelling estimates that the annual economic impact on the Darling Downs SD during construction of the Combined Urban and Irrigation Project would be:

- $14.9 M in Value Added; and
- support for 54 jobs in the Darling Downs SD and 79 in Queensland.

Table 14-38 Construction impacts on Darling Downs region and the State

Expenditure category	Darling Downs SD	Queensland
Value added ($M)	$14.9	$35.8
Employment (FTE)	54	79

14.4.4 Operational Impacts

There are basically two types of economic benefits; the direct benefits from irrigated agriculture and other industries that arise from the increased water supply; and a range of related benefits such as recreation, and tourism.

There is also an additional consideration that current levels of production may be lost if more reliable water sources do not become available.

Stanthorpe is a unique, vibrant area in Queensland with irrigated agriculture the main industry. The gross value of horticultural production is some $200 M and horticultural activity supports over 1,000 jobs in the region. The Combined Urban and Irrigation Project would involve the reticulation of irrigation water to important horticultural areas to the north and south of the dam. The reticulated water would be available to individual growers in the area serviced by the system. The irrigation water would be delivered to a series of nodes. Growers would be able to access water from these nodes and the pipeline with their own infrastructure. Stanthorpe is an important horticultural region and irrigation is critical to the long term viability of the district. Horticultural activity in the district is restricted by water availability and reliability. The Project would improve the reliability and availability of water, helping to ensure a viable, sustainable future for the community.

The Combined Urban and Irrigation Project is being driven by a number of economic benefits such as:

- more flexibility in general farming operations;
- greater security for existing production;
- a more sustainable economy, especially during extended periods of drought with less dependency on Federal Government “Exceptional Circumstances” funding;
- more reliable agricultural yields during summer production, (the proposed reticulated area is recognised as the only production region of high value summer fruit and vegetable crops in Queensland); and
- greater equity for those who have no access to water on-stream.

14.4.4.1 Benefits from Irrigated Agriculture and Other Industries

Discussions with various agricultural stakeholders indicate that the large bulk of the new agricultural production is aimed at expanding export markets and not at displacing currently produced product for the local market. It is the fruit and vegetable growers that would be the main beneficiaries of the Combined Urban and Irrigation Project. There is a possibility of some displacement among vegetables. However, it is understood that the enhanced reliability afforded by the water storage infrastructure would facilitate growers penetrating export markets. It is water reliability that has been a barrier to growers pursuing export markets in the past.

It is anticipated that the main beneficiaries would be fruit and vegetable growers in the Stanthorpe region. Current estimates of the value of production and the number of growers in these sectors are presented in **Table 14-39**. These values understate the true value of production of vegetables and fruit in the Shire because they are from 1996, which is the last year of consistent data available. According to the Department of Natural Resources and Water (DNRW) vegetables and fruit production comprised some 86% of total agricultural production in 1996. This is presented in the table below, which shows total vegetable production of $21.3 M and total fruit production of $30.7 M in 1996.

Horticulture farms are mainly focussed on production of apples, pears and high-chill stone fruit. Today, the value of these crops are thought to vary between $85 M and $100 M.

Vegetable growing farms in Stanthorpe produce a comprehensive range of summer vegetables including lettuce, cauliflower, cabbage, capsicums and tomatoes. Although no official statistics are available on vegetable production, estimates from various sources place the value of vegetable production between $50 to $150 M per annum. The huge degree of annual variability is dependent on the following factors: climatic events; water availability; highly variable domestic market prices; disease and pest management and the grower’s decisions on what to produce given last season’s prices and outcomes. A key issue however for farmers in Stanthorpe Shire is to secure a more reliable water supply.

Table 14-39 Total Agricultural Production, Stanthorpe Shire, 1996

Industry	Value $m	Number of growers
Total Vegetables	21.3	181
Apples	21.3	144
Plum and prunes	2.8	192
Nectarines	2.0	157
Peaches	1.9	157
Grapes	1.7	0
Pears	0.7	90
Apricots	0.3	72
Total fruit	30.7	289
Total fruit and vegetables	52.0	470

Source: DNRW, 1999

To come up with an accurate estimate of the value of these industries today, this assessment has used the QDNR estimate of the size of the fruit and vegetable sector in total agriculture (86%) and applied this to the 2004-05 gross regional product (GRP) of agriculture value of $108.1 M displayed in **Table 14-24**. This equates to $92.3 M in GRP in 2004-05. Given the growth in these sectors over the past 10 years this is a somewhat conservative estimate and reflects the nature of this analysis.

It has been decided to model the benefits to irrigators on the basis that current levels of production would remain and past growth levels would continue. In this way we can compare the Project with a "base case" of current levels of production, which is very conservative considering that many farmers have suggested they would go out of business without a new source of water. The impact of additional irrigation supplies in the region has been assumed to result in 5% growth per annum on top of current production values. Because most increases in output will be destined for export markets, the non displacing nature of this production also makes this growth rate somewhat conservative.

14.4.4.2 Recreation and Tourism Benefits

As discussed in **Section 14.2.6.4**, the operation of the dam would provide opportunities for the establishment of new outdoor recreation facilities and activities. The economic benefits for recreation and tourism provided by these new facilities are likely to be significant.

Annual visitors to Glenlyon Dam, which is also located in the Stanthorpe Shire were estimated to be 43,450 (DNRW 1998). If a net addition of 20,000 visitations per year were attracted by the Project, after allowing for any reduction to nearby sites, a net economic benefit of approximately $600,000 per annum would be expected. However, given the lack of data, no attempt has been made to quantify these benefits in the cost benefit analysis.

14.4.5 Cost Benefit Analysis

An economic model of the Darling Downs was prepared based on information presented above for Emu Swamp Dam. The economic modelling was undertaken over a 30 year period, from 2007 to 2037. The construction period started in 2009 and spanned 18 months. The outputs of this economic model determined the cost benefit analysis of the Urban Water Supply Project. The cost benefit analysis for both dam options is presented in **Table 14-40**.

Both dam options have cost benefit ratio greater than 1 which means they both have a positive economic benefit on the Darling Downs SD. The dam and pipeline construction for both projects will have direct and indirect benefits on the region. The provision of secure water supply for Stanthorpe Town will allow the recent growth in industrial and commercial water use to continue. The irrigation component of the Combined Urban and Irrigation Project will significant economic benefits for Darling Downs SD.

- **Table 14-40 Cost benefit analysis for the Project on Darling Downs SD ($M 2007)**

Economic Impact	Urban Water Supply Dam	Combined Urban and Irrigation Dam
Irrigation/Industry benefits		
Output	$26 M	$177.67 M
Value added	$13 M	$87.05 M
Employment (FTE/yr)	3	23
Construction impacts		
Construction costs	-$38.54 M	-$65.82 M
Construction benefits	$17.60 M	$30.06 M
Value added	$8.62 M	$14.73 M
Regional direct employment (FTE/yr)	15	25
Indirect employment (FTE/yr)	17	29
Operational costs	-$9.30 M	-$15.89 M
Employment retained	1	2
Cost benefit ratio	1.46	2.54

14.5 Conclusion

This Section provides an assessment of the potential social and economic impacts of the proposed Emu Swamp Dam Project, including potential changes to the social environment resulting from the construction and operation of Emu Swamp Dam and the Urban and Irrigation Pipelines. Possible mitigation measures have also been identified to maximise the benefits of the Project for local communities, and minimise potential impacts.

Overall, local residents are generally supportive of the project and believe that the provision of a reliable urban water supply is necessary for the future growth and sustainability of the Shire. The development of a reliable irrigation supply is also seen as important for the future development of the Shire's primary industries.

Maximising the direct and indirect benefits of the Project for local residents is important for the local community. This could be achieved through:

- ensuring local employment and training opportunities during construction, particularly for young people;
- ensuring access to the recreational and amenity values of the dam, including fishing, boating, canoeing, and casual recreation; and
- ensuring business opportunities during construction are maximised, through the use of local goods and services.

A number of impacts on the social environment have been identified that would need to be managed, through construction management and consultation and communication with key stakeholders, community service providers, and local residents. In particular, this includes:

- appropriate management of potential impacts on rental housing, particularly for low income earners;
- management of potential impacts on community facilities, such as local schools and health services, through an increase in population during construction, through consultation with agencies and service providers; and
- appropriate management of construction traffic, to ensure safety for motorists on roads likely to experience an increase in construction traffic or in the vicinity of construction works.