



10. Social Factors

10.1 Overview

This report presents the findings of an analysis targeted at the social factors identified during the research as being relevant to this Public Environmental Review. Rather than a comprehensive or exhaustive social impact assessment, the analysis is designed to address factors being assessed as part of the Public Environmental Review and outlined as relevant in Part D (Social Surroundings) of EPA Guidance Statement No 33 *Environmental Guidance for Planning and Development* (EPA 2008).

10.2 Purpose and Scope of the Social Issues Analysis

Social impacts refer to changes (positive or negative) that are considered likely to affect individuals and communities by altering the environment they live within. These impacts can take the form of direct or indirect changes to the way in which people live, work, recreate and relate to one other (Burdge 2004). Some impacts can be experienced as nuisances while others can affect long term health, wellbeing, community cohesion and levels of trust in companies and authorities.

The analysis of social factors for the Collie Urea Project was undertaken alongside the environmental investigations and stakeholder consultation to inform overall project investigations and planning with respect to possible impacts on local communities. The purpose of the analysis is to investigate key issues arising from the consultation and fieldwork, and to identify potential management strategies. Analysis of the social factors included consideration of opportunities for community benefits.

The following objectives guided the social analysis:

- » To gain an appreciation of the current social setting relevant to the study area and project;
- » To identify potential social impacts (including perceived impacts), and provide an indication of their relative significance, interrelationships and collective impact; and
- » To identify possible avoidance, mitigation and offset strategies that can contribute to addressing impacts.

The analysis was based upon a desktop review of existing information about the project and study area, experiences of similar projects and impacts, research interviews and the outcomes of the stakeholder and community consultation.

Rather than a comprehensive or exhaustive social impact assessment, the social analysis was targeted at key factors identified during the research and those outlined as relevant in Part D (Social Surroundings) of EPA Guidance Statement No 33 *Environmental Guidance for Planning and Development* (EPA 2008). Other legislation and policies relevant to social factors include the following:

- » Environmental Protection Act 1986 EPA Environmental Impact Assessment (Part IV Division 1) Administrative Procedures 2002
- » Department of Environment (2003) Interim Industry Guide to Community Involvement
- » EPA Position Statement 2: Environmental Protection of Native Vegetation in Western Australia
- » EPA Position Statement 6: Towards Sustainability
- » EPA Position Statement 8: Environmental Protection in Natural Resource Management



- » EPA Draft Environmental Noise Guidance Statement
- » National Environment Protection (Ambient Air Quality) Measure (Air NEPM) (1998)
- » World Health Organisation (WHO) (2000) Air Quality Guidelines
- » Port Authorities Act 1999
- » Town Planning and Development Act 1928
- » Planning and Development Act 2005
- » Local Government (Miscellaneous Provisions) Act 1960 (regarding impact on local community facilities)
- » Shire of Collie (2008) Town Planning Scheme No 5
- » Shire of Harvey (2009) Town Planning Scheme No 1. Amendment 63
- » Heritage of Western Australia Act 1990
- » Aboriginal Heritage Act 1972

10.3 Social Setting

10.3.1 Regional Context

Mining, construction and manufacturing industries are important contributors to economic production in the South West region, at 25.9%, 15.1% and 11.9 % of total production respectively (SWDC 2009a). Mineral extraction, processing and associated manufacturing provided an estimated \$2.1 billion in 2004/05, equating to 5 % of the State's total mineral production by value (SWDC 2006).

Such industries have contributed to the 72.8 % increase in the South West's Gross Regional Product over the past five years (SWDC 2009a). Coupled with this economic growth has been a rapid increase in the South West Region's population. Figures released by the ABS to the South West Development Commission show that the South West Region's average annual growth rate of 2.8 % over the past five years is greater than the state and national growth rates for the same period of 2.1 % and 1.5 % respectively. The region's coastal fringe has accommodated much of this population growth, with greater Bunbury showing an average annual growth rate of 4.2 % for the period 2003-2008. Inland areas, on the other hand, have generally remained stable (SWDC 2009a, citing Regional Population Growth, ABS, April 2009).

Bunbury Port has been crucial to economic growth in the South West Region. It is located close to the centre of Bunbury, with the inner harbour berths located less than one kilometre from residences in East Bunbury and three kilometres from residences of Pelican Point and the Grand Canals (north east of the Port).

10.3.2 Collie

Overview

The proposed Collie Urea Plant is located approximately 7.5 km east of Collie at the proposed Shotts Industrial Park, situated in the Collie Basin. It is likely to effect most directly the Collie community, but will also effect the surrounding communities of Dardanup and Harvey, and Bunbury because of the associated port operations. The site of the proposed Plant is within the Shire of Collie, a medium sized



local authority with revenue amounting to \$10.2 million during the 2007/08 financial year (Shire of Collie 2008).

Collie has a rich history over the past 100 years spanning timber, agriculture and coal mining industries. With 80% of the Local Government Area being taken up with State Forest, Collie attracts various industrial, urban and rural developments (Shire of Collie 2008). The Shire of Collie and Collie River Valley Marketing Group promote Collie as a unique place where major industries, state forest and natural and man made waterways coexist (CCCI 2008).

Today, coal mining, power generation and bauxite refining are key industries in the Collie area, employing in excess of 2,000 people directly in an average year, and approximately double that figure in years with significant construction or expansion works (Shire of Collie 2008). The Collie Basin is the only producing coalfield in Western Australia, and 80% of coal mined in Collie is used to generate about 42% of Western Australia's power. Approximately 6.5 million tonnes of coal is mined per annum by Griffin Coal and Wesfarmers Premier Coal generating an estimated \$270 million pa (New Collie Coal 2009). With projected revenues of \$850 million pa, the Collie Urea Plant would add value several fold to the coal resource and contribute to the diversification of the industrial base of Collie and its economic security, such as with direct and indirect employment opportunities to the local community and support to local businesses.

With the Worsley Alumina expansion, Blue Waters 1 and 2 power station developments and both coal mining companies trialling charring plants, Collie is experiencing a considerable increase in industrial activity. Based on recent consultation and community surveys, the Shire asserts that the Collie community embraces the development of these industries, but qualifies this support with the statement that the Council and the Community should be informed, consulted and recognised by these major industries in relation to their environmental, social and economic impacts on Collie. In order to provide benefits back to the community, the Shire recommends working with industries to foster partnerships and long term mutually beneficial relationships (Shire of Collie 2008).

Population and Demographics

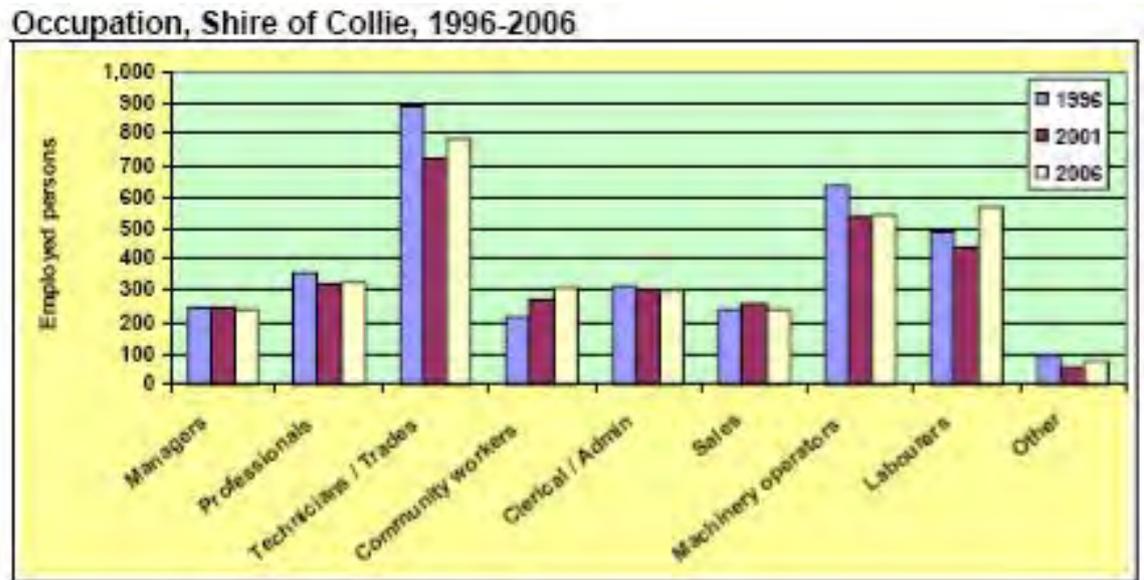
According to the most recent ABS Census of the Collie Statistical Local Area (ABS 2006), there were 8,613 persons usually resident in the Collie area, with 50.7% male and 49.3% female. Of the total 2006 population, 2.7% were Indigenous persons, compared to the slightly lower proportion of 2.3% Indigenous persons in Australia. There were approximately 3,672 people aged 15 years and over in the labour force, with 57.6% employed full-time, 28.6% part-time and 5.4% unemployed. There were 2,418 usual residents aged 15 years and over not in the labour force.

The most common industries of employment for persons aged 15 years and over were Coal Mining 14.6%, School Education 6.6%, Basic Non-Ferrous Metal Manufacturing 4.9%, Electricity Generation 4.4% and Cafes, Restaurants and Takeaway Food Services 3.6%. The median weekly individual income for persons aged 15 years and over was \$388, compared to \$466 in Australia, while the median weekly family income was \$1,157, compared to \$1,171 in Australia.

Figure 55 shows the shifts in occupation in Collie over time, with labourers increasing in number and technicians and trades workers decreasing but still the largest group.



Figure 55 Shift in Collie Occupations



Source: Shire of Collie Time Series Profile Overview 1996-2006 (SWDC 2009d).

In terms of employment by industry, the mining industry was the largest employer of people in the Shire of Collie in 2006, increasing its share of the total workforce from 11.0% in 1996 to 16.1% in 2006, with an additional 160 people. This growth in employment reflects the strength of the mining industry in Collie and its importance to the shire’s economy. The next largest industry by employment in the shire was manufacturing with 11.2%, followed by retail trade with 11.0% and health care and social assistance with 9.1% (SWDC 2009d).

10.4 Impacts and Management

10.4.1 Local Business, Employment and Training

The construction and operation of the proposed urea plant will generate substantial economic revenue for the state, the town of Collie and surrounding districts. Capital investment for this project is estimated at AUD \$3.5 billion of which approximately AUD \$2.0 billion is anticipated to be spent in Australia during construction.

The three and a half year construction phase will employ a workforce of between 1,200 and 1,500, many of whom will live in the towns of Collie, Australind, Eaton and the City of Bunbury. Project management and construction expertise will be specifically contracted by PCF. These contractors may not necessarily live in the abovementioned towns. Direct permanent employment for the operational phase of the plant is approximately 200 people. PCF estimates that direct payroll payments to employees during the operational phase of the plant will be in excess of \$125 million per annum.

In the stakeholder consultation, the Shire of Collie advocated that employees should be sourced from Collie where possible or encouraged to relocate to Collie. According to the Shire and local reports, Collie has missed out on opportunities in the past to attract new residents from the workforce of projects in the region. Time series data for the Shire of Collie population shows that it has declined



3.1% over the period 1996-2006, not dissimilar from other inland towns (SWDC 2009d). The Collie population has been relatively stable over time and has not been significantly impacted by growth in local industries over the past 10 years (SWDC statistician).

PCF is intending at this time to operate the Collie Urea plant on a 24x7 basis with two 12 hour shifts. Shift employees will work an eight day roster of two day shifts and two night shifts with a four day break. Additional day staff will be provided for technical and administrative support. PCF consider operator experience as a key success factor and therefore intends to start operator training at least one year prior to start-up.

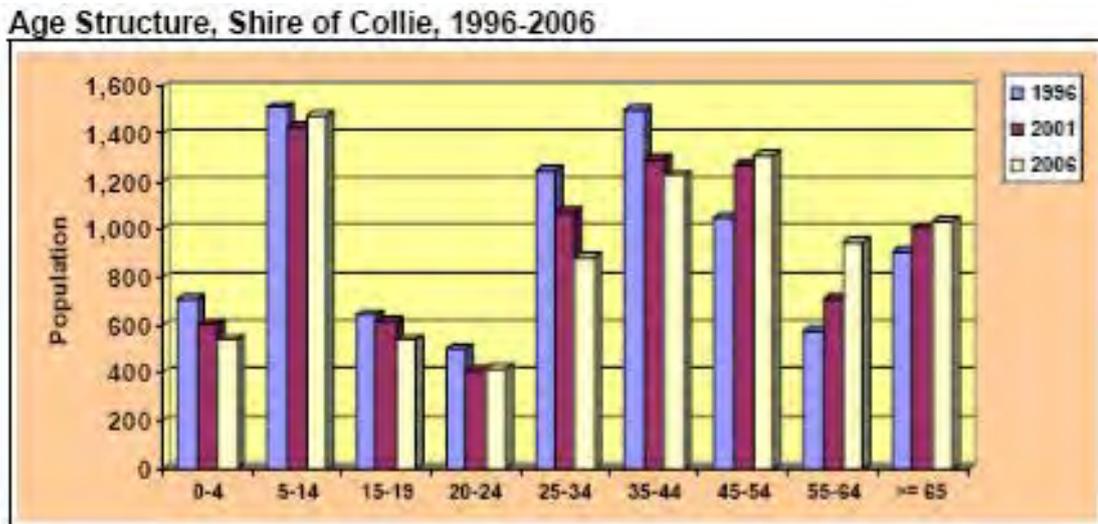
In addition to the permanent workforce, the Collie Urea project will create indirect employment opportunities in third party services from industries including transport, mining, engineering and human services. PCF estimates conservatively that an additional 400 permanent positions will be created in these industries. A multiplier of four is typically used to estimate the total employment impact of Coal Product developments, so the project could generate direct and indirect employment for as many as 800 people (DMP interview; Clements and Qiang 1995). Increased local and regional business activity may include maintenance, supply, cleaning and security services.

According to recent figures for the December Quarter 2008, Collie has the highest unemployment rate in the South West Region at 4.9%, and Bunbury next highest at 3.6%; this can be compared with the South West Region's rate of 3%, and the lowest rate in the region of 1.5% at Boyup Brook (SWDC 2009a).

Communities of Collie and Bunbury therefore have much to gain from the employment opportunities presented by the Collie Urea Plant. Indigenous communities also stand to gain from employment opportunities associated with project: in 2006, indigenous unemployment in the South West Region stood at 14%; furthermore, almost 60 % of the Indigenous population were less than 25 years of age, compared with one third of the non-Indigenous population less than 25 years of age (SWDC 2009a).

Youth are also recognised as an important group for training and employment opportunities (SWDC interviews). Young people currently have limited opportunities in Collie and would need dedicated training programmes to be job ready for opportunities presented by the Collie Urea Project. As Figure 56 illustrates, 5-14 year olds are the largest age group in Collie, but 15-19 year olds and 20-24 year olds are much smaller groups, and are clearly attracted to other places for work and study.

Figure 56 Shifts in Collie Age Structure



Source: Shire of Collie Time Series Profile Overview 1996-2006 (SWDC 2009d).

Realisation of the positive, potential impact on local employment, training and business will require close cooperation between PCF and key stakeholders such as the Collie Chamber of Commerce and Industry, local suppliers and contractors, the South West Development Commission and the Department of Education and Training. Collie CCI and the SWDC have recommended a PCF representative is made available to the public at their local office/enterprise centre to help identify opportunities early in the project. Realising opportunities for indigenous employment will mean partnerships with groups such as the Nulang Boodja and participation in such initiatives as the Australian Employment Covenant, which is currently signing up industry partners in the South West Region (SWDC interviews). PCF has met with both these groups and intends to progress joint initiatives on training and employment as the Urea project moves forward. PCF has also supported current initiatives by Nulang Boodja to obtain Federal Government grant funding for current enterprises such as aquaculture.

10.4.2 Housing and Accommodation

Although the construction and operational workforces for the Collie Urea project are expected to be drawn from across the South West Region, and many are expected to be existing residents of Collie, Australind, Eaton and Bunbury, the project is expected to involve a minor increase in the number of temporary and permanent workers (and their families) in Collie. The higher numbers for the construction period are in particular expected to add to current pressures on housing and rental accommodation.

According to the 2006 Census, there were 3,609 private dwellings in the Collie local area of which 3,243 were occupied (ABS 2006). This discrepancy indicates some capacity for rental accommodation, but further data provides a more complex picture. According to the SWDC summary of time series data (SWDC 2009d), the number of dwellings being purchased in the Shire of Collie has continued to increase over the census periods 1996, 2001 and 2006, while the number of dwellings fully owned or rented decreased over the same period. As at 2006, 38.7% of dwellings in the shire were fully owned, 35.6% were being purchased and 17.4% were being rented. This compares to the WA figures for 2006



where 30.2% of dwellings were fully owned, 35.1% were being purchased and 26.0% were being rented.

Reports from several local sources reveal that short stay accommodation in Collie is accessible on weekends but is at capacity during the week when visitors (for example, those visiting government and non-government offices) must compete with the increasing industry workforce not resident in Collie (stakeholder interviews; Shire of Collie 2008).

An analysis of REIWA figures shows that Collie has experienced strong growth in property prices in relation to other centres in the region over the past 10 years, and particularly over the past 5 years. This supports the conclusion that the Collie housing market has been susceptible to the recent parallel growth in industrial development in the Shire. It is this industrial activity that is likely to have made Collie relatively resilient to the recent global economic downturn in comparison with other towns.

Table 82 House Price Growth Rates

	1 year	5 years	10 years
Regional WA	-5.4%	16.2%	11.8%
Greater Bunbury	-6.7%	16.5%	11.1%
Harvey	0.8%	23.6%	14.2%
Collie	-1.1%	27.6%	14.7%
Boyanup	-3.8%	21.4%	14.1%
Boyup Brook	-10.5%	21.6%	16.1%

Source: REIWA 2009, Regional Town Profiles

The Collie housing market has experienced considerable activity over the past 12 months. It has had 126 sales and the median house price at March 2009 was \$245,000, compared to 16 sales in Boyup Brook, which had a median house price of \$192,500.

Stakeholder consultation has also indicated PCF will need to give careful consideration to placement of workers in housing and accommodation. Provision of work camps on the eastern side of town would reduce worker travel in to Collie from the west and would lessen the potential impact upon housing affordability (rental and property prices) from dependence upon existing housing stock. At the same time, encouragement of workers to locate in Collie over the long term is expected to support the health of the property and rental market. To balance out impacts, PCF therefore will need to diversify its programme for accommodating temporary and permanent workers, and will need to plan and monitor changes through consultation with key stakeholders such as accommodation providers, work camp suppliers, local real estate agencies and government agencies.

10.4.3 Community Services and Facilities

Collie has a range of services and amenities typical of a major centre, including five Primary Schools and one Senior High School (to year 12), Collie TAFE, an 83 bed hospital, two doctors surgeries, aged care facilities and ample passive and active recreational facilities (Shire of Collie 2009; CCCI 2008). The Shire of Collie has 31 ha of parks and gardens, a swimming pool, recreation centre, a modern library and a best in class visitor centre (CCCI 2008).



Collie Senior High School draws from a relatively wide area with the population ranging from within the town of Collie and spreading to the surrounding rural areas (DET 2009). Over the past five years the school's population has been consistently around six hundred, with currently 620 students and 673 students at its highest in 2008. This indicates the capacity of the school to accommodate students at times of high demand and the relatively stable school population over time despite industry developments. Since 2004, Structured Workplace Learning (SWL) has been offered to all students in the Upper School and over one-third of students participate. SWL places are dependent upon local businesses and industries providing workplaces.

At present, Collie is considered to be well serviced in terms of community services (SWDC interviews). The Collie 2008 Business Directory lists over 100 community service organisations, most of which are based in Collie (CCCI 2008). There are two child care providers, a playgroup and kindergarten, and a number of family and children support services. Collie has several churches of various denominations, several counselling service providers and disability support. Employment and training services include Centrelink and Forrest Personnel (supporting the less abled), and in Bunbury, Job Placement, Employment and Training (JPET) (at risk and homeless youth) and Jobs South West (youth mentoring program with Collie based mentors). Medical support services include Manjimup and Collie Aboriginal Health Service, Silver Chain and Collie Home Support Services. Other community groups include the Collie Aboriginal Focus Group, Collie Community House, Collie Volunteer and Fire Rescue Service, Injured and Orphaned Wildlife, Collie Conservation Group, Collie River Valley Marketing Group and the Community/Youth Development fund. Collie has approximately 50 sporting clubs ranging from archery, dressage and BMX, to darts, women's softball and underwater hockey.

The additional temporary workers in Collie during construction of the Collie Urea Project are not expected to impact significantly upon Collie's services, but additional permanent employees and their families locating in Collie would have a minor impact upon the centre's services, particularly schools because of couples with children being the largest household group and 5-14 year olds being the largest population group (SWDC 2009d). Collie's healthy array of community services and facilities makes it resilient to changes in population. Additional people visiting and working in Collie is likely to inject greater vitality into existing services (e.g. new residents participating in sporting clubs, visitors gaining awareness of the diversity of Collie's community and business activity). Businesses and business associations have much to gain from increased activity in Collie brought by the Collie Urea Project, and this would have generally positive flow on effects to the community.

In the context of the cumulative impact of recent projects and the Collie Urea Project, the stakeholder consultation revealed concerns about hospital capacity and emergency access. Additional workers in the area could increase emergency department presentations and emergency access requirements. Coalfields Road is perceived to be limited for emergency access and the feasibility of a helicopter pad should be investigated.

Impacts on services can be managed by maintaining strong communication lines with relevant government and non-government agencies and schools in Collie. PCF has the opportunity to contribute to positive development of community groups and services through an open and transparent community investment program involving yearly sponsorships and grants.

Collie Recreational Impacts

Collie has a range of natural attractions used by both local residents and visitors. Collie people have for generations used many of the pools and water bodies in the region that are surrounded by natural



landscapes. Most of these recreational areas have a range of facilities managed by the Department of Environment, including the following:

- » Stockton Lake – former mine void 5 km east of Collie popular for BBQs, picnics, camping and waterskiing in summer with very basic facilities; approximately 1 km to the West of the proposed Shotts Industrial Park;
- » Minningup Pool – 3 km south of Collie on the Collie River used for picnics, fishing, canoeing and swimming;
- » Glen Mervyn Dam – 18 km south of Collie used for irrigation and waterskiing, swimming, fishing, picnicking and camping and with limited facilities;
- » Harris Dam – 12 km north of Collie for picnics and BBQs; water based activities not permitted;
- » Potters Gorge at Wellington Dam – extensive facilities and good for camping, swimming, canoeing and fishing; and
- » Honeymoon Pool – picturesque location deep in the valley on the banks of the Collie River used for bushwalking, swimming and canoeing; range of facilities available at adjacent Wellington Dam (Collie River Valley 2009a and 2009b; CCCI 2008).

Many of these recreational areas have been formalised to control use and some involve camping fees. Stockton Lake, in contrast, involves no fees and is valued as a “natural spot” (Collie River Valley 2009a), that is, an informal, uncontrolled space seen as a key ‘local’ spot. The relatively limited amenities include skip bins, signage, ungraded access roads and carpark, camping areas, BBQs and long drop toilets. Waterskiing and boating are particularly popular but swimming is not recommended because of the acidic nature of the water. Up to 1,000 people camp at Stockton Lake over long weekends, indicating it is a well used area. The recreational spot has been used for decades by local families and the Collie community has a strong sense of place and attachment to the area (various stakeholder interviews, including DEC) (Plates 7, 8, and 9).

Parts of the informal landscape are degraded but the surrounding bush and State Forest are in good condition and make for a pleasant environment at the Lake. DEC has considered upgrades to the area in the past because of the high level of use, but local communities has resisted any plans to upgrade the area and insist on keeping the Lake as it is - an informal space. Any changes to Stockton Lake and its use and access therefore would be strongly resisted from the Collie community. This is despite an action item in the Shire of Collie Strategic Plan saying “lobby DEC to develop Stockton Lake” (Shire of Collie 2008b).

It should also be noted that the surrounds of Stockton Lake and the proposed Shotts Industrial Park, like much of the forest in the Shire, are accessible to locals who use the areas at any time of the day or night for four-wheel driving, shooting of kangaroos and shooting of feral pigs and deer. This is not approved by the DEC but is commonplace and local tradition. Attempts to deny access by blocking tracks have usually been overcome and removal or rehabilitation of tracks tend to work better at preventing public access.

The Collie Urea Project is expected to have minor visual and noise impacts on the Stockton Lake environment during the construction period. There are existing visual (including light) and noise effects from industries in the area, which, as discussed earlier, are seen largely to coexist with other land uses in the Collie region. Minor visual impacts associated with the project are discussed in the sections



below and intermittent noise impacts are discussed in the relevant noise assessment section of the PER.

According to the PER air quality study, winds are strongest in spring and calmest in autumn. The prevailing wind direction on spring and summer mornings is south easterly, with both east south east and south east directions typical. This is the main direction relevant to Stockton Lake in relation to the proposed Collie Urea Project.

Stockton Lake lies south-west of the proposed Shotts Industrial Park and therefore is unlikely to be susceptible to emissions carried from the east south east or south east. The area, nevertheless, will be perceived as close to the project site so Stockton Lake managers and users will be interested to understand the actual level of impact in relation to visual, noise and air quality effects. Users of the Motorcross/Motorcycle club west of Stockton Lake will likewise be interested. A caretaker and his child are reported to be in residence in the area.



Plate 7 Entry to the Shots Industrial Park



Plate 8 Degraded area at the western end of the Shotts Industrial Park within the proposed Plant site



Plate 9 View north-east from Stockton Lake with mine landscape in the background



Plate 10 View of Bunbury Port landscape from Jetty Road



Monitoring outcomes and management practices as they relate to the construction and operation of the plant will be reported to stakeholders in an open manner. PCF will also seek specific feedback from the local community in relation to matters of concern and interest about Stockton Lake at its follow up community workshop in September.

It should be noted that a significant amount of local investment has been directed to the Lake Kepwari development, which is several kilometres south of Stockton Lake and approximately four times larger, offering an excellent boating and waterskiing environment. Its opening by the DEC towards the end of 2009 is highly anticipated as it will provide a well designed recreational environment with modern facilities.

PCF will consider a range of initiatives for supporting the amenity and development of the local community. PCF is keen to contribute to the enhancement of recreational facilities in the Collie Region generally, including Stockton Lake, and it proposes to discuss the nature and extent of any support it provides with the Community Reference Group it establishes for the project and broader stakeholders.

10.4.4 Public Amenity, Environmental Health and Safety

Amenity and Environmental Health Impacts - Collie

Collie is a neat, attractive town with a mix of historic buildings such as the Post Office and modern facilities such as the Visitor Centre and Library. The Shire and community have invested considerable effort over time to maintain the amenity of the place and in 2006 the town was granted a prestigious National Tidy Town award.

While Collie residents are clearly proud of their town, Collie is physically divided by the railway line, restricting access to the businesses and community infrastructure distributed on either side, and the central business is seen by some as a 'dead centre' in need of attention. The Shire is planning an upgrade of the area (Shire of Collie 2008), so there is considerable opportunity to support this renewal of the urban centre through community investment grants.

According to the PER air quality study, sensitive receptors in Collie and at locations downwind of the proposed plant are of sufficient distance not to be affected significantly by urea particulates and other air emissions. PCF will nonetheless monitor and manage any amenity impacts and will report regularly to the community through publicly accessible project updates and local information channels, particularly when climatic conditions are unfavourable.

Regarding general or cumulative amenity impact, increased traffic movements through Collie during construction and operation of the Plant, and associated noise, emissions and dust impacts, are likely to add to the effects already being experienced in Collie from other industrial projects in the area. Dust management plans for vehicles are likely to combat this effect and there is potential to offset amenity impacts through community contributions such as support for streetscape improvements and beautification initiatives. A decision by PCF to build fully enclosed rail cars for the transport of urea will ensure no urea dust issues arise during rail operations through Collie township.

Even though the proposed plant will have a small footprint on the emissions in Collie, there will inevitably be a perception amongst some residents that it does contribute, particularly given the existing dust issues experienced by Collie residents during summer east south easterly winds. Such effects can be the source of inconvenience and annoyance (e.g. local reports of having to clean outdoor furniture frequently in summer), can disturb sense of wellbeing in ones environment and can exacerbate serious health issues for certain residents (e.g. those with respiratory problems, chemical sensitivities, infants



and the aged). Monitoring outcomes and management practices as they relate to the construction and operation of the plant will be reported to stakeholders in an open manner.

A Community Reference Group for the project will be established to identify priorities and initiatives for supporting town amenity and community development generally. A community investment program will be established with the assistance of the Community Reference Group.

Road Safety - Collie

The project will impact upon transport routes in the Collie region and particularly those between Shotts and Bunbury and between Shotts and the source of the construction material. The construction phase is likely to take up to 3 years and will involve heavy vehicles and wide loads moving through town. Construction workers for other projects are currently drawn from various locations in the region, meaning workers living in accommodation camps during the work week create pressures on roads coming in to the Collie area on Monday mornings and when leaving on Friday afternoons. Movements during the operational phase will be considerably less than during construction but not insignificant, as the workforce is expected to consist of a large proportion of shift workers. Increased traffic on roads will also have implications for road safety.

The Coalfields Highway is the major road transport route between Bunbury and Shotts. As a major route it is managed by Main Roads WA, and due to the undesirable geometry of some of the curves in the Highway between Allanson and Collie, Main Roads is seeking funding for a major upgrade of this section (the Highway has been earmarked for upgrade for some time) (Main Roads WA, interview).

According to Main Roads Bunbury Office, use of the Coalfields Highway has remained relatively steady over time, with on average 3000 vehicles per day and capacity for considerably greater traffic volume. Traffic volumes vary at times of industry expansion and construction, depending upon where construction workers, suppliers and contractors are based. Traffic is also greater at times of changes in shifts.

Consistent with this information is observation of considerable traffic heading into Collie from the West at 5.30 am on a mid-week morning and reports from a number of local sources about heavy traffic at peak hour shift times.

With the urea product transported by rail twice daily to Bunbury Port, the Collie Urea Project is expected to have an overall minor impact on the Coalfields Highway and traffic volumes. Impacts will be greater during the construction period and shift change times, so PCF will implement management strategies such as coordinating with other industries to stagger shift change times, careful location of construction camps/accommodation, supporting buses for workers or car pooling and driver road awareness (Main Roads WA and WA Police interviews).

Apart from being discussed in the research interviews with stakeholders involved in the Collie Industry Road Safety Alliance (i.e. WA Police and Main Roads), road safety was also raised as a key concern at the Collie Community and Stakeholder Information Session. Road traffic associated with the Worsley Alumina expansion, Blue Waters 1 & 2 power station developments, together with additional traffic from the Collie Urea Project, are likely to have cumulative impacts on the Coalfields Highway, road congestion through town and potential impacts on road safety, with a number of intersections on the Coalfields Highway within town already hazardous in peak times and some sections approaching town from the west known for accidents. The additional two trains per day (55 carriages long) required for the Collie Urea Project have the potential to add to road congestion and delays at Lefroy and Princep



Street crossings. PCF has communicated community concerns over traffic expressed at the workshop and the possible need for a Coalfields Highway bypass to the State Government.

PCF has joined and contributed funding to the Industry Road Safety Alliance, which involves a number of key stakeholders such as Main Roads WA, WA Police, the Shire of Collie and industries in the Collie region.

According to the WA Police, the Industry Road Safety Alliance has been very effective in a short time frame at addressing risks and hazards on roads in the Collie region and has led to measures such as improving lighting and repairing sections of roads. The group is very result orientated and takes the safety of employees and wider community very seriously. Companies have made joint arrangements to spread out shift start and finish times and place curfews on heavy vehicle movements during these times. Measures to monitor and improve employee driver behaviour have been implemented and companies are using car pooling and buses to alleviate congestion and make commuting safer. A recent cost benefit study for using commuter buses in the area has been conducted by South West Coach Lines and reveals potential to develop a bus terminal in Collie and a number of safety and social benefits (e.g. combating driver fatigue and cost savings for workers).

General Public Safety - Collie

Interest in planned public safety measures for the project was apparent during the stakeholder and community consultation because of the risk of explosion, chemical leaks or spills. A quantitative risk assessment using internationally recognised methodologies has been conducted for the project and it concluded that the risk to local communities from the project was low. PCF will develop a management plan that will include response, cleanup and monitoring procedures. .

Amenity and Environmental Health Impacts - Bunbury

On the port side of the project, additional train movements to Bunbury Port, and specifically to Berth 5, are expected to add to noise at the Port.

Ship loading facilities will be provided by Bunbury Port. This facility will be enclosed such that urea may be unloaded from trains and loaded onto ships in all weather conditions. Dust (urea) generated in this process will be contained within this facility.

The Bunbury Port Authority (BPA) consults on most issues regarding Port operations through regular presentations to the Port Community Liaison Committee (PCLC), which it manages. The PCLC represents a broad cross section of the Bunbury community, particularly residents who have been impacted by noise and dust from Port operations in the past (Plate 10). Members of the PCLC include residents of the Port area, City of Bunbury Councillors, representatives of the Bunbury Wellington Economic Alliance and the Bunbury Port Authority.

Interviews were conducted with the Bunbury Port Authority regarding potential amenity and health impacts, and feedback was sought from the Port on concerns raised by the PCLC. A number of aspects were raised by the group in relation to the Collie Urea Project:

- » Urea product – size, dust, solubility and hazard rating;
- » Transport – noise from additional rail movements, number of trains per day, timing of movements and unloading timing;



- » Amenity impacts of infrastructure and operations – visual impact of ship loader, number of ships and timing of loading; location of storage shed, visual impact (i.e. colour) and ventilation; noise levels of operations; product management on conveyors and loaders and in the shed;
- » Security – alarm system;
- » Lighting – light spill;
- » Environmental protection – spillage control; storm water management; site monitoring processes (monitoring shallow ground water); and
- » Site administration – personal contact with PCF desirable.

The Port Authority maintains a real time ambient dust monitoring system and during 2007/2008 no port related exceedances were recorded (Bunbury Port Authority 2008). Interviews with the Port Authority revealed that complaints from local residents about dust and noise associated with Port activities have decreased in recent times but been issues in the past. Dust and noise complaints peaked approximately four years ago, with 54 contacts regarding noise in the 2004/2005 financial year and 25 regarding dust. In the past few years they have decreased significantly, with seven contacts regarding noise in the 2007/2008 financial year and one regarding dust. The drop in complaints is attributed to better management and a decrease in rail movements.

Table 83 **Contacts received by BPA regarding port activities**

	Number of contacts received in financial year			
	2004/2005	2005/2006	2006/2007	2007/2008
Dust	25	25	17	1
Noise	54	33	21	7

Source: BPA

Noise has been a significant issue in the past, particularly for Austral Parade residents less than 100 m south-west of Berth 5. In response, the Port Authority considered building a 3 to 3.5 m high wall on the estuary side of the Port along a 600 m stretch of the Koombana Drive boundary, but wall plans were set aside when rail movements and noise complaints decreased. The Port, however, would need to reconsider the wall option closely again in the context of additional rail movements from the Collie Urea Project.

Little to no dust is expected from the handling of granular urea from the Collie urea project, as the product contains resins to mitigate against the generation of urea dust during handling. Given the history of dust and noise concerns raised by the Port Community Liaison Committee, PCF will engage closely with the PCLC and BPA to address concerns and develop management strategies. Monitoring outcomes and management practices will be reported to these stakeholders (and others expressing interest) in an open manner.

10.4.5 Visual Amenity – Collie

Visual impacts associated with the plant are considered to be minor as it is to be located between two working coal mines that are existing stark features in the landscape. The plant will occupy a much smaller footprint than the mines and will therefore be visually less dominant. While the Collie area is



highly forested, mining is well-established in the landscape and can be seen at several points when approaching from the west along the Coalfields Highway.

A site investigation revealed that the plant may be visible from a small section of Coalfields Road when approaching from the west, and within 500 metres of the site, however the local topography limits visibility and such views would be followed closely by those of the existing coal mine area to the north of the site. Views in this immediate area are also expected to be modified by other development in the Shotts Industrial Park. Visual accessibility surrounding Shotts tends to be limited by the undulating terrain of the study area and roadside vegetation. The industrial parts of the landscape become most apparent when in close proximity on the Coalfields Road. Visual impacts are therefore likely to be largely localised.

At present, mines and mine infrastructure can be seen from some locations, including from high points adjacent to Stockton Lake, but are mostly filtered by roadside vegetation and local topography. The highest parts of the plant infrastructure therefore may be seen from these points but will not be dissimilar to existing views. From lower elevation viewing points, that is, on the shores of Stockton Lake itself, the industrial features of the landscape are largely invisible and do not impact upon the visual qualities of the site. (Plates 11, 12 and 13).

Light spill likewise will be minimised by the undulating topography and vegetation, but is likely to be less localised, and a small number of residences in the area may experience minor impacts. It is noted that contemporary lighting technology such as that to be installed at the Urea plant greatly reduces night-time light spill.

10.4.6 Visual Amenity – Bunbury

Development of the PCF facilities at the port will include a large (60 - 100,000 tonne capacity) storage shed and a ship-loader at Berth 5, on the south-west side of the Inner Harbour. The storage shed is expected to be approximately 285 m long and 27 m high. In comparison to the current woodchip pile, the shed will be similar in height and will therefore be partly visible from Koombana Drive and from the public open space and residences across the Leschenault Inlet (Plates 14 and 15).

However, because these structures are consistent with the types of existing port structures, visual impacts associated with the port infrastructure are considered to be minor. A number of mechanisms for mitigating these impacts will be considered such as the colour of the shed (advice from the Bunbury Port Authority is that green is typically the most preferable colour), use of screening vegetation between the shed and Koombana Drive and architectural design solutions such as panelling to break up the solid structure.



Plate 11 Entry to Stockton Lake



Plate 12 Informal basic facilities at Stockton Lake carpark



Plate 13 Pleasant environment at Stockton Lake



Plate 14 View of woodchips from Frank Buswell Reserve



Plate 15 View of Bunbury Port from Koomana Drive



10.4.7 Community Environmental Values

The analysis of recreational facilities and associated potential impacts raises the distinct value Collie residents and visitors place on the natural environment surrounding Collie. With its dams, pools, forested areas and the Collie River, this environment provides attractive areas for local residents and visitors to enjoy for recreation and relaxation. Many people also undertake nature appreciation (e.g. birdwatching) and conservation activities in the region. Environmental objectives are in this context community values that need to be recognised within an analysis of social impacts.

A number of community members (some associated with local environmental groups) have expressed concern regarding environmental aspects such as carbon emissions, water use, waste water management, clearing of native bush and disturbance of native flora and fauna.

The plant's water requirements have attracted considerable comment, ranging from concern about increased pressures on the Collie River and water bodies in the area from mine dewatering and overall water abstraction in the area, to anxiety about future water resources in the region. To combat impacts it was suggested that PCF harvest rain water on site for use in production and this will be done. However, rainfall runoff alone will not be sufficient to meet the urea plant's water needs. Treatment of waste water was also considered a priority for attention, with questions raised about urea discharge into the environment. Because of the level of interest in water issues, further public information about the project's water use, reuse and waste water management strategies will be provided to community and stakeholders.

Another key issue related to community environmental values raised in the consultation was the carbon footprint of the project, with several stakeholders questioning the amount of greenhouse gas emissions that would be generated by the project. This was often raised in the context of concern regarding general air quality impacts. With climate change of late being at the forefront of global, national and local news, PCF has been investing in plantation offsets and research on geosequestration but will explore this topic further with stakeholders and raise awareness of the projects actual impacts, efficiency innovations and offset strategies. Stakeholders of Collie and Bunbury communities are likely to continue to be interested in this issue.

Concerns were raised about impacts from clearing of vegetation on the three species of black cockatoos that are reported to frequent the area (Baudin, Carnaby and Nasso). Concerns include the cumulative impact of clearing from recent projects, vehicles injuring birds and removal of habitat. It was noted, however, that birds are known to cohabit with industry and can be accommodated nearby. It was suggested that PCF work with wildlife groups to identify strategies to offset lost habitat and monitor and accommodate sick or injured fauna (many of these groups will take in injured wildlife but require support to collect fauna), and PCF will do this in accordance with its policy of engagement with and active participation in the local community. Such groups are typically sustained by volunteers and would benefit from funding contributions and in kind support.

The combination of these varied environmental values and concerns raises the opportunity for PCF to proactively work with key stakeholders and community groups to identify effective management strategies. Contributions to conservation and wildlife groups will be beneficial in supporting the work of these groups as well as in developing relationships in the community.



10.4.8 European Heritage

A search of Western Australia's Heritage Council database found that there is no listing of European Heritage sites at either the Shotts Industrial Park or Berth 5 at Bunbury Port.

Outside the PCF project site but elsewhere within the proposed Shotts Industrial Estate is the former Shotts town site dating back to the early 1900s. The project site visit for the social analysis included a tour of this location, which revealed that no structures remain and that the area has been overgrown with native and introduced species over time. Regarding this local history, there are several sites of local significance listed for the former townsite in the Shire of Collie Municipal Heritage Inventory Review (currently being completed with draft chapters accessible from the Shire website): the Shotts Railway Siding site, Shotts Post Office site and Shotts School site. These are listed as site only (without built features) but considered "historic."

According to the draft chapters of the Shire of Collie Municipal Heritage Inventory Review, the Shotts Railway Siding site (place number 3A.16) is located at King Street, Shotts on the Collie-Narrogin Railway line some 200 metres south of the Coalfields Highway, which ran adjacent to the railway. It is approximately 12 kilometres east of Collie. No infrastructure remnants are left to indicate the siding site. The site is significant for its connection to the coal mining industry.

The name "Shotts" is said to have come from Lanarkshire, Scotland where there is also a small coal mining town of the same name. The siding was gazetted in 1911 and the townsite gazetted in 1917. A Forest Block with this name was one of the original blocks shown on the first Forest Department plan for the areas in 1923. The Shotts settlement was initially based around the Premier Colliery to the south of the siding. Difficult mining conditions resulted in a stop/start growth in the settlement from 1912 to 1952 when mining ceased in the area for over 40 years. Outside the settlement were some farming properties nestled in the forest and along the riverfront. Among the early settlers were the Marley family who took over Broney Gully, which was later sold to Livio Piavanini (Shire President, 1970–77).

With the opening of the new Premier Mine, the Coalfields Highway east of Shotts was re-built to the north and the railway line east of the Shotts siding was removed. A rail spur to the mine site was constructed to facilitate the transport of coal.

The Shotts Post Office site (place number 3F.6) is located at 10 King Street, Shotts. It is significant for providing the isolated township vital access to communication (postal and telecommunication) and stores. The first post office was in a room on the back verandah of the Smith Family. The first shop was six blocks (300 metres) from Smith's house on the corner of King Street and Shotts River Road (Arthur Street). This operated from 1923 – 1928 and was directly opposite the old rail crossing out to the Marley and O'Sullivan farms. In 1925, the only telephone subscriber was the Premier Colliery Office and Managers' Residence with limited service hours. By 1959 two farmers had been connected, A. Borlini and L.P. Piavanini. In 1971 the Post Office closed.

The Shotts School site (place number 1.B.20) is considered significant for its association with the provision of education in the Collie Shire. In July 1912, A.A. Wilson, MLA, on behalf of Premier Coal Mining Co. Ltd, called on the Department on 27 July 1912 to put the case for a school at the Shotts settlement. He claimed there were 80 men employed at the Muja lease and the reason for many of them not bringing their families was the lack of school. The school was built in June 1913. The site is marked by a wooden sign depicting the site and years of operation.



As the first project planned for the proposed Shotts Industrial Park, PCF has the opportunity to help the Collie community recognise the former Shotts site but contributing to initiatives that will give recognition to this local heritage.

10.5 Conclusion: Key Management Areas

This report on the social factors relevant to the Collie Urea Project has identified a number of potential issues and management strategies. The following provides a summary of key areas that will be attended to by PCF.

- » **Realising opportunities for employment, training and small business** – PCF will build partnerships with Collie CCI, SWDC, DET and local suppliers and contractors; engage stakeholders early and develop a presence in the SWDC/Collie CCI office so that information about job opportunities is made accessible; work closely with groups such as the Nulang Boodja to develop training initiatives for indigenous youth.
- » **Diversifying housing and accommodation options** – PCF will carefully locate and develop new workers accommodation to prevent impacts on current housing capacity and affordability and minimise additional road traffic between Collie and Bunbury; continue to consult with relevant stakeholders to prepare for changes.
- » **Enhancing community services and facilities** – PCF will maintain strong communication lines with relevant government agencies and non-government service providers to prepare for increased pressures on services; contribute to recreation and community development initiatives.
- » **Managing amenity, health and safety impacts** – PCF will provide regular reporting of monitoring and management outcomes to communities in Collie and Bunbury regarding dust, noise, emissions and traffic; respond to concerns raised quickly; participate actively in the Collie Industry Road Safety Alliance.

Effective management of impacts will require that strategies are developed in close consultation with key stakeholders such as the Shire of Collie, industry partners, government agencies and community groups. Establishment of a community reference group for the project with diverse membership and transparent processes will help to enable this consultation. Such a mechanism can help to inform ongoing management of impacts and can be used to identify ongoing opportunities for community investment and benefit. Another key initiative will be to provide ongoing and regular project updates in local media and information channels to keep stakeholders and communities informed of the project's progress, management plans being implemented and outcomes of environmental monitoring.